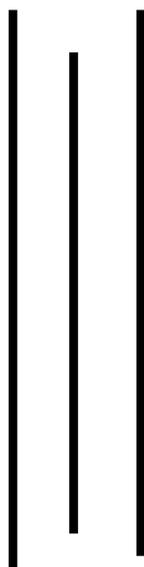


Evaluation of Postpartum Hemorrhage Prevention Program in Nepal



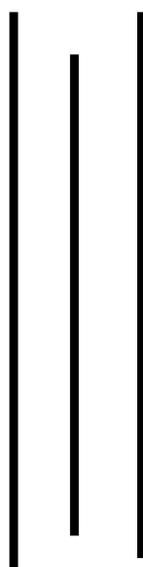
Gynuity
HEALTH PROJECTS



New ERA

January, 2014

Evaluation of Postpartum Hemorrhage Prevention Program in Nepal



January 2014



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HEALTH PROJECTS



TABLE OF CONTENTS

TABLE OF CONTENTS	i
LIST OF TABLES AND FIGURES.....	iii
FOREWORD.....	v
ACKNOWLEDGMENT	vi
STUDY TEAM.....	vii
LIST OF ABBREVIATIONS	viii
EXECUTIVE SUMMARY	ix
CHAPTER 1: INTRODUCTION.....	1
1.1 The Context.....	1
1.2 Rationale for the Evaluation Study	2
1.3 Objectives of the Study	2
CHAPTER 2: STUDY METHODOLOGY	3
2.1 Sample Design	3
2.1.1 Estimation of Sample Size	3
2.1.2 Selection of Districts, Clusters, and Respondents	4
2.2 Instrumentation and Pre-Testing	6
2.2.1 Instruments	6
2.2.2 Pre-testing.....	7
2.3 Implementation of Survey.....	7
2.3.1 Training for Field Researchers	7
2.3.2 Fieldwork	7
2.4 Quality Control	8
2.5 Data Entry, Cleaning, Processing and Analysis	8
CHAPTER 3: FINDINGS FROM RECENTLY DELIVERED WOMEN AND CURRENTLY PREGNANT WOMEN.....	9
3.1 Background Characteristics of the Respondents.....	9
3.2 Contact with FCHV during Pregnancy	10
3.3 Antenatal Care Service.....	11
3.3.1 Knowledge of Danger Signs during Pregnancy and Place to be Consulted.....	11
3.3.2 Utilization of Antenatal Care Service.....	12
3.4 Delivery Service.....	13
3.4.1 Knowledge of Danger Signs during Delivery	13
3.4.2 Assistance during Delivery	13
3.4.3 Place of Delivery	14
3.5 Knowledge and Use of Misoprostol.....	17
3.5.1 Knowledge on Postpartum Hemorrhage	17
3.5.2 Awareness of Misoprostol.....	17
3.5.3 Coverage and compliance of Misoprostol.....	19
CHAPTER 4: FINDINGS FROM FCHVS	22
4.1 Background Characteristics of FCHVs.....	22
4.2 Knowledge on Misoprostol among FCHVs	22
4.3 Counselling Provided by FCHVs.....	23
4.4 Provision and availability of Misoprostol among FCHVs.....	25
4.5 Training, Supervision to FCHVs and their Participation in Periodic Meetings	26

CHAPTER 5: FINDINGS FROM HEALTH FACILITIES.....	28
5.1 Characteristics of Health Facilities	28
5.2 Provision of Uterotonics for PPH Prevention	28
5.3 Active Management of Third Stage of Labour (AMTSL) Practices for PPH Prevention	29
5.4 Treatment and Intervention for PPH Cases.....	30
5.5 Availability, Storage and stock situation of Uterotonics in Health Facilities	30
5.5.1 Availability of Different Uterotonics	30
5.5.2 Availability, Storage and Adequacy of Oxytocin.....	31
5.5.3 Availability and Adequacy of Misoprostol	31
5.5.4 Stock-out Situation and its Duration for Key Uterotonics	32
5.6 Suggestions to Improve Supply, Storage and Coverage of Misoprostol at District Level .	32
CHAPTER 6.0: STUDY LIMITATIONS.....	34
CHAPTER 7.0: CONCLUSION AND RECOMMENDATIONS	35
BIBLIOGRAPHIES	37
ANNEX:	
STUDY DESIGN SUMMARY	38

LIST OF TABLES AND FIGURES

Table 2.1:	Coverage of Misoprostol in Various Districts.....	4
Table 2.2:	Sample size determination	4
Table 2.3:	Summary- sample stratum, districts and actual sample size	6
Table 3.1:	Percent distribution of RDW and CPW by their background characteristics	10
Table 3.2:	Percent distribution of RDW and currently pregnant women who had met FCHV during their last/current pregnancy	10
Table 3.3:	Percent distribution of RDW and CPW by knowledge about danger signs during pregnancy and places to be visited to seek care for danger signs	11
Table 3.4:	Percent distribution of RDW and CPW by type of health provider consulted and place of ANC visit during their last/current ANC check up	12
Table 3.5:	Percent distribution of RDW and CPW by counselling received from a health worker during their pregnancy among those who had consulted a health worker	12
Table 3.6:	Percent distribution of RDW by their knowledge of signs and symptoms during labour indicating the need to seek immediate care.....	13
Table 3.7:	Percent distribution of RDW with live birth by persons providing assistance during delivery.....	13
Table 3.8:	Percent distribution of RDW with live birth who received assistance from SBA during delivery by background characteristics.....	14
Table 3.9:	Percent distribution of RDW and CPW by place of delivery planned beforehand	14
Table 3.10:	Percent distribution of RDW by place of delivery among RDW with live birth	15
Table 3.11:	Percent distribution of RDW with live birth by place of delivery by background characteristics	15
Table 3.12:	Percent distribution of RDW experiencing complications during the delivery of their last child and source of care sought for management of complications.....	16
Table 3.13:	Percent distribution of RDW by their knowledge on recognition of excessive bleeding	16
Table 3.14:	Percent distribution of RDW with live births and CPW who had received information about bleeding before the delivery of baby.....	17
Table 3.15:	Percent distribution of RDW with live birth and CPW who had received information about MSC during last/current pregnancy	17
Table 3.16:	Percent distribution of RDW among live birth and CPW who had knowledge on why and when MSC should be taken.....	18
Table 3.17:	Percent distribution of RDW with live birth and CPW by their knowledge about conditions when a woman should not take MSC	18
Table 3.18:	Percent distribution of RDW with live birth and CPW who had knowledge of side-effects of MSC, and actions to be taken when experienced side-effects.....	18
Table 3.19:	Percent distribution of RDW with live birth who reported FCHV counselled them on various aspects of MSC.....	19
Table 3.20:	Percent distribution of RDW with live birth and CPW who were satisfied with the information/counselling received from FCHV.....	19
Table 3.21:	Percent distribution of RDW with live birth who received MSC by background Characteristics	20
Table 3.22:	Percent distribution of RDW with live birth by source of Misoprostol received.....	20
Table 3.23:	Percent distribution of RDW with live birth by timing of MSC taken and number of MSC taken.....	21
Table 3.24:	Percent distribution of RDW among live birth who gave reasons for not taking any or all MSC	21

Table 4.1:	Percentage distribution of FCHVs by background characteristics.....	22
Table 4.2:	Percentage distribution of FCHVs by knowledge on Misoprostol.....	22
Table 4.3:	Percentage distribution of FCHVs by Counseling they provide	24
Table 4.4:	Percentage distribution of FCHVs by Provision and availability of Misoprostol.....	25
Table 4.5:	Percentage distribution of FCHVs by duration of stock-out and action taken when out-of stock for misoprostol	25
Table 4.6:	Percentage distribution of FCHVs by training they received on misoprostol.....	26
Table 4.7:	Percentage distribution of FCHVs by monitoring and supervision they received	26
Table 4.8:	Percentage distribution of FCHVs by their participation in periodic meetings	27
Table 4.9:	Possession of job aids.....	27
Table 5.1:	Percentage distribution of health facilities by background characteristics	28
Table 5.2:	Percentage distribution of health facilities by uterotonic/s used for PPH Prevention.....	28
Table 5.3:	Percentage distribution of health facilities by stage of administering uterotonic and authorized personnel	29
Table 5.4:	Percentage distribution of health facilities by AMTSL Practices for PPH Prevention..	29
Table 5.5:	Percentage distribution of health facilities by treatment and intervention for PPH cases	30
Table 5.6:	Percentage distribution of health facilities by availability of different uterotonics	30
Table 5.7:	Distribution of health facilities by amount of oxytocin in-stock, its storage and adequacy.....	31
Table 5.8:	Distribution of health facilities by average misoprostol packets in stock and its adequacy.....	31
Table 5.9:	Percentage distribution of health facilities by stock-out situation and its duration for key uterotonics.....	32
Table 5.10:	Suggestions to improve procurement/supply of Misoprostol.....	32
Table 5.11:	Suggestions to improve storage of Misoprostol	33
Table 5.12:	Suggestions to improve misoprostol coverage during at home births.....	33
Table 5.13:	Suggestions for ways to improve Misoprostol program as a whole.....	33

List of Figures

Figure 3.1:	Percentage of RDW who had live births and CPW (with eight or more months of gestation) who received MSC during their last/current pregnancy	19
Figure 3.2:	Percent distribution of RDW who were protected from the risk of PPH	21
Figure 4.1:	Retrieval of Unused Misoprostol Tablets	24
Figure 4.2:	Action Taken with Retrieved Misoprostol	24
Figure 4.3:	Stock-out for misoprostol in Last 12 Months.....	25
Figure 5.1:	Uterotonic(s) Generally Used for Treatment of PPH	30

FOREWORD



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FOREWORD

“An evaluation of Postpartum Hemorrhage Prevention Program in Nepal” specifically focussed on evaluating the existing post-partum prevention interventions at both community-level and health-facility level of care in Nepal. The study was being implemented by New ERA under the aegis of Family Health Division, Department of Health Services, Ministry of Health and Population. The technical and financial support for this study has been provided by Gynuity Health Projects, U.S.A.

Undoubtedly, Postpartum Hemorrhage remains a leading direct cause of maternal mortality in Nepal. In order to address this public health challenge, the government of Nepal made provision of oxytocin prophylaxis to prevent postpartum haemorrhage among facility-based births. Moreover, misoprostol tablets are being distributed through Female Community Health Volunteers to prevent postpartum haemorrhage among home-births. Despite phase-wise scale-up of community-based intervention, time and often we have realized the information gaps on effective monitoring and evaluation of these interventions.

This study aimed at evaluating the PPH Prevention Interventions (Oxytocin Prophylaxis and Misoprostol in particular) provides valuable information on coverage, compliance and knowledge of Misoprostol among women at the community level and its provision and availability among the Female Community Health Volunteers who distribute it. In addition, the study provides evidence on provision of oxytocin prophylaxis for PPH Prevention, its storage and availability in the public sector health facilities.

The survey was carried out in 9 districts where the Misoprostol Programme has been operational for at least a year preceding the survey, and were selected representively from 3 stratum – Mountain, Hill and Terai. I believe that the findings of this study would be of significant importance to policy makers, program managers and relevant stakeholders towards further streamlining the existing postpartum hemorrhage prevention programs in Nepal.

I would like to acknowledge the efforts rendered by various individuals and institutions towards the accomplishment of this study. The technical inputs, guidance and cooperation from the staffs of Family Health Division and the members of Technical Working Group in successful completion of this study is worthwhile acknowledging. I extend my appreciation to Gynuity Health Projects for providing technical and financial assistance for this study. Besides, I would like to thank New ERA for the successful and timely implementation of the survey.

The support received from District Public/Health Offices, peripheral public health facilities, District and Village Development Committees during the implementation of this study is highly commendable. My special thanks go to Female Community Health Volunteers and all women who participated in this survey.

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It is a pleasure to introduce this study report on "Evaluation of Post-partum Hemorrhage Prevention Program in Nepal" conducted under the aegis of Family Health Division, Department of Health Services, Ministry of Health and Population with technical and financial support from Gynuity Health Projects, U.S.A. The survey was being implemented by a research firm - New ERA, with extensive experience of conducting large-scale surveys in Nepal.

The study was being carried out in 9 misoprostol intervention districts which were selected representively from different ecological zones and development regions of Nepal.

This report provides valuable information on coverage, compliance and knowledge on Misoprostol and its availability at the community level in present context. Moreover, the study has explored upon the provision of oxytocin prophylaxis for PPH Prevention, its storage and availability in the health facilities. To a greater extent, the findings of this study would serve as a programmatic guidance to further streamline the existing postpartum hemorrhage prevention programs in Nepal.

The accomplishment of this study has been possible due to the concerted efforts from various individuals and institutions and it is with great pleasure that I would like to acknowledge the work put in to produce this valuable document. I appreciate the participation and cooperation extended by the members of Technical Working Group and staffs of Family Health Division for their continued support, invaluable guidance and inputs towards the attainment of the study objectives.

I would like to extend my appreciation to Gynuity Health Projects for providing technical and financial assistance for this study. Moreover, I am thankful to New ERA study team for the successful and timely implementation of the survey.

The support received from District Public/Health Offices, peripheral public health facilities, District and Village Development Committees during the implementation of this study is highly commendable. My special thanks go to Female Community Health Volunteers for providing their valuable time and responses to this study.

Dr. Kiran Regmi

Director

Family Health Division

ACKNOWLEDGMENT

—Anevaluation of Post-partum Hemorrhage Prevention Program in Nepal” is a comprehensive evaluation study carried out in 9 districts selected representatively from the ecological zones and development regions in Nepal. The study was implemented by New ERA under the aegis of Family Health Division, Department of Health Services, Ministry of Health and Population. The technical and financial support for this study has been provided by Gynuity Health Projects, U.S.A.

Firstly, New ERA wish to thank Family Health Division, Department of Health Services and Gynuity Health Projects (U.S.A) for entrusting us to undertake this valuable study. We are hugely indebted to Dr. Kiran Regmi, Director, Family Health Division and Dr. Senendra Raj Upreti, Director, Child Health Division for their relentless support, guidance, monitoring and supervision and constructive feedback. We wish to express our deep gratitude to staffs of Family Health Division– namely Mr. Bhogendra Raj Dotel, Dr. Shilu Aryal, Ms. Mangala Manandhar for their valuable inputs and continuous support rendered across the vital stages of survey implementation. We are thankful to Mr. Om Khanal, Family Health Division for providing essential information relating to the National Misoprostol distribution Program and his valuable inputs throughout the study.

We wish to gratefully acknowledge the technical inputs, guidance and support provided by Dr. Beverly Winikoff and Dr. Wendy R. Sheldon (Senior Program Associate, Gynuity Health Projects) in key stages of the study including sampling design, survey instruments formulation, monitoring of survey implementation, survey data analysis and finalization of the report. We take this opportunity to express our sincere thanks to Dr. Swaraj Rajbhandari (Senior Consultant, Gynuity Health Projects) for her relentless efforts, technical inputs and support in terms of effective co-ordination between Technical Working Group of Family Health Division, Department of Health Services and New ERA towards the timely attainment of expected outcomes of the study. Thanks are due to all members of the Technical Working Group for their valuable inputs and guidance on formulation and implementation of this study.

Last but not the least, we wish to express our sincere appreciation to various institutions and local level agencies including District Public/Health Offices, Peripheral public health facilities, District and Village Development Committees for their support during the implementation of the survey. Our special thanks go to Female Community Health Volunteers and the respondents of the study for providing us their valuable time and responses to the survey.

~ New ERA Study Team ~

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LIST OF ABBREVIATIONS

AHW	Auxiliary Health Worker
AMTSL	Active Management of Third Stage of Labour
ANC	Antenatal Care
ANM	Auxiliary Nurse Mid-wife
BCs	Birthing Centres
BEONC	Basic Emergency Obstetric and Neonatal Care
BPP	Birth Preparedness Package
CB-MNC	Community-based Maternal Neonatal Care
CBNCP	Community-based Neonatal Care Programme
CCT	Controlled Cord Traction
CEONC	Comprehensive Emergency Obstetric and Neonatal Care
CHX	Chlorhexidine
CPW	Currently Pregnant Women
DoHS	Department of Health Services
DPHO	District Public Health Office
FCHV	Female Community Health Volunteer
FHD	Family Health Division
HP	Health Post
mcg	micro gram
MCHW	Maternal and Child Health Worker
MDGs	Millenium Development Goals
MNH	Maternal and Newborn Health
MoHP	Ministry of Health and Population
MSC	<i>Matri-Surakshya Chakki</i> (Misoprostol)
N/A	Not Applicable
NDHS	Nepal Demographic and Health Survey
NFHP	Nepal Family Health Programme
NHRC	Nepal Health Research Council
Non-BCs	Non-Birthing Centres
ns	not significant
PHCC	Primary Health Care Centre
PPH	Post-Partum Hemorrhage
PPS	Probability Proportional to Size
PSU	Primary Sampling Unit
SBA	Skilled Birth Attendant
SHP	Sub-Health Post
SLC	School Leaving Certificate
SPSS	Statistical Package for Social Sciences
TBA	Traditional Birth Attendant
TWG	Technical Working Group
VaRG	Valley Research Group
VDC	Village Development Committee
VHW	Village Health Worker
WHO	World Health Organization

EXECUTIVE SUMMARY

Introduction

This evaluation survey was conducted by New ERA for Gynuity Health Projects—a New York based research and technical assistance organization, under the aegis of Family Health Division/Department of Health Services, Ministry of Health and Population.

Postpartum Hemorrhage (PPH) remains a leading direct cause of maternal deaths in Nepal. Efforts to address PPH have focused primarily on active management of third stage of labour (AMTSL) with Oxytocin as the preferred uterotonic drug for facility-based births. Given that the significant number of births still take place at home, the Government of Nepal has introduced a community-based PPH prevention intervention (Misoprostol) since 2010 subsequent to a pilot-testing in Banke district in 2005. In 2010, the Government of Nepal approved national level scale-up of misoprostol for the prevention of postpartum hemorrhage at home births and, currently, in 2013 the program has reached to 31 out of 75 districts of Nepal. Despite continual scale-up, a comprehensive evaluation of these community-based as well as facility-based PPH prevention interventions (Misoprostol and Oxytocin, in particular) had not been performed. This evaluation study aimed to fill this information gap.

Objectives and Methodology

The key objectives of this survey were to assess the provision, use and acceptability of Misoprostol during at-home births; assess the availability and stock-situation of Misoprostol among FCHVs; and assess the provision of oxytocin prophylaxis for prevention of postpartum hemorrhage during facility-based births.

This survey was carried out in 9 districts where the Misoprostol Programme has been operational for at least a year preceding the survey, and were selected purposively from 3 stratum – Mountain, Hill and Terai. A three-staged cluster sampling design was followed to select 90 rural clusters: 30 from each of the strata. From each stratum, rural wards (clusters) had been sampled following the probability proportional to size (PPS) method. The respondents in the survey comprised of women who had given birth (either live birth or still birth) in the last 12 months preceding the survey (RDW); Currently Pregnant Women (CPW), Female Community Health Volunteers (FCHVs), and staff from government health facilities (HF).

Twenty three RDWs were recruited from each of the sampled clusters, accounting for a total of 2,070 RDW sample size. In addition, 691 CPWs were also interviewed from the same clusters. A total of 270 FCHVs (3 from each cluster) and 99 government health facilities (1 from each sampled cluster as well as a district hospital/regional/sub-regional hospital from each of the 9 study districts) were surveyed as part of the study.

Key Findings

Findings from RDW and CPW

Background Characteristics

Throughout this report, the numbers and percentages shown in the tables for RDW reflect weighted values while for the CPW they are unweighted.

A higher proportion of both RDW and CPW belonged to the age group 20-24 years (41% RDW and 39% CPW) followed by the age group 25-29 years in case of RDW (25%) and 15-19 years in case of CPW (28%). Their median age indicates that CPW were one year younger (22 years) than the RDW (23 years). Slightly less than four in ten RDW (38%) and CPW (36%) had no education while about

27 percent of RDW and 32 percent of CPW had some secondary level of education. About 16 percent of both type of respondents had School Leaving Certificate (SLC) and above level of education. Both RDW and CPW of Brahmin/Chhetri group were the prominent ethnic group in the study areas as four in ten RDW and 46 percent of CPW represented this ethnic group.

Contact with FCHVs

Nearly 2/3rd of RDW and ½ of the CPW reported that they had made a contact with a FCHV during their most recent pregnancy. A majority of RDW and CPW (about half) had contacted first time at their four month of gestation.

ANC Services

Severe lower abdominal pain was most commonly recognized danger sign during pregnancy recognized by about 70 percent of the RDW and CPW. The knowledge of other danger signs during pregnancy was inadequate as less than one-half of the respondents recognized vaginal bleeding as another danger sign and between one-fourth and one-fifth of RDW and CPW respectively mentioned severe headache. Convulsion as another danger sign was recognized by less than 10 percent of the respondents. Respondents were aware that health facilities should be consulted if a pregnant woman experiences a danger sign during pregnancy.

More than nine out of ten RDW and 85 percent of the CPW had received ANC services. Most of them had consulted a health worker for ANC services but a considerable proportion of the RDW (35%) and CPW (31%) had also consulted FCHVs. During ANC service with a health worker most of them were advised to deliver in a health facility and financial incentive they receive when deliver in a health facility. Use of MSC when delivered at home was the least information they received from a health worker.

Delivery services

The SBA assisted delivery as well as institutional delivery among RDW was much higher (54% each) than the national average (35%). ANMs were most common (38%) to assist last delivery of RDW followed by a staff nurse and a doctor. A considerable proportion of RDW's (70%) last birth was assisted by their relatives and friends. An overwhelming proportion of RDW visited a government health institution for delivery services. The background characteristics like RDW's age, ecological zone, educational level, caste/ethnicity and wealth quintile were found to be significantly associated with SBA-assisted delivery.

More than one-half (54%) of RDW with live births, delivered their last baby in a health institution, which is encouraging. Moreover, background characteristics like respondent's age, ecological zone, educational level, caste/ethnicity and wealth quintile were found to be significantly associated with place of delivery.

Awareness, Coverage and Compliance of MSC

About one-half of RDW and slightly less than that CPW (46%) had received information about excessive bleeding during their last/current pregnancy. More than nine in ten received information that they should visit a health facility in case of excessive bleeding while about one-third had received information that excessive bleeding can result in a death of mother.

The awareness of MSC was very poor as only 17 percent of RDW and five percent of CPW had received information about it during their last/current pregnancy, and most of them had received information about it during 4-7 months of pregnancy. Of those who received information about MSC more than three quarters mentioned that MSC should be taken for prevention of PPH, MSC should be taken immediately after delivery of birth but before placenta is out (>80%), that three MSC tablets should be taken (83% RDW and 90% CPW), they should visit a health facility if bleeding continues even after taking MSC (about 90% each) and MSC should not be taken during pregnancy (nearly 2/3rd each).

When asked the specific information about the MSC that they had received from a FCHV more than nine in ten RDW were informed by FCHV about the purpose of taking MSC, when to take MSC, how many MSC to take and where to seek help in case of excessive bleeding. Most of the RDW were satisfied with the information they received from the FCHV.

Survey result indicates that MSC program is not reaching to a great majority of pregnant women because only 15 percent of RDW and four percent of CPW had received MSC during their most recent/current pregnancy. Of those RDW who received MSC (309) 82 percent had received from a FCHV and 17 percent had received from a health worker/health facility. While 59 percent of RDWs had received Misoprostol at their 8th month of gestation, rest had received in other months of gestation.

Amongst those RDWs who received Misoprostol during last pregnancy, only 42 percent had consumed it. As women delivering at health facility aren't required to consume it, further analysis revealed that among the RDW who delivered at home, 88 percent had consumed Misoprostol. Of those RDW who consumed MSC (191) nearly three-fourth consumed it immediately after delivery but before delivery of placenta while one-fifth consumed immediately after the placenta was out. While nine in ten RDW consumed all three MSC tablets remaining RDW took less than that. While seven in ten RDW returned unused MSC tablets to a FCHV/health worker rest either threw away or had with them at the time of survey or lost the tablets.

Overall, about six in ten RDW were protected from the risk of PPH as they either delivered in a health facility or had consumed three misoprostol tablets during at-home birth.

Findings from FCHVs

Knowledge on Misoprostol

Most of the FCHVs have fairly good knowledge on several aspects of Misoprostol. For instance, over nine in ten FCHVs had correct knowledge that MSC is for 'prevention of PPH' that the tablets should be consumed 'immediately after delivery of baby but before delivery of placenta' it should not be consumed during pregnancy, and 3 tablets should be consumed during delivery. However, the awareness on the 'side-effects' appeared to be relatively low. Over half of the FCHVs stated that 'excessive bleeding/bleeding more than normal delivery' and 'wet of more than 2 pads/clothes within ½ hour of delivery' - were the signs and symptoms of PPH.

Counseling Provided by FCHVs

Information provided during counseling by majority of respondents were on: a. purpose of MSC (77%); b. when to consume it (72%); and how many tablets to consume (54%). Majority (77%) said that they provide MSC at 8th month of pregnancy, while 4 percent FCHVs had never distributed MSC despite having received the training.

Retrieval of Unused Misoprostol tablets

Amongst the respondents who had ever distributed misoprostol, only 1/3rd of them were able to retrieve the unused tablets from all women. Amongst those who ever distributed misoprostol and were also able to retrieve unused tablets from all/most/few of the clients, nearly 71 percent return it to the health worker/health facility, while one-fourth of them would distribute it to another women — a practise discouraged by the revised Misoprostol guideline- 2012.

Misoprostol supply to FCHVs

It is a concern that nearly two-thirds of the FCHVs (65%) had no MSC in stock at the time of the survey. Thirteen percent of FCHVs had only one packet in stock and seven percent had only two packets in stock. Moreover, about five percent FCHVs had never received supply of MSC after their training except a demonstration sample received during the training. Amongst those who had certain stock at time of visit, it was expressed to be adequate for just less than 2 months for greater majority.

Nearly 40 percent of FCHVs were found to have received the last misoprostol supply more than a year ago.

Because of irregular and inadequate supply of MSC a great majority of FCHVs (77%) had encountered stock-out for Misoprostol at least once during the 12 months preceding the survey; and the stock-out lasted for 7 to 12 month duration for a greater proportion (48%) of those FCHVs in the same period.

Support to FCHVs

Monitoring support to FCHVs was inadequate as nearly 56 percent FCHVs expressed that they hadn't received any monitoring or supervision visit from health facility staff to date. Amongst those who ever received such visit, majority (57%) of them cited to have discussed on Misoprostol progresses during the visit.

Nearly 89% of FCHV participated in their recent monthly mother's group meeting and 54% of those participating in the meeting stated that the discussion on MSC was done during the meeting. Similarly, nearly three-fourth of FCHVs (74%) mentioned that they had attended the recent FCHV bi-annual meeting. Of those who attended two-thirds reported discussion was done on MSC progress. Survey findings showed that two-thirds of FCHVs had a Action chart and 83 percent had a Birth Preparedness Flip Chart at the time of the survey.

Findings from Health Facilities (HFs)

The sample of health facilities included in this evaluation study comprised of 10 District hospital or higher level facilities, 8 PHCCs, 33 HPs and 48 SHPs. Among them, the number of Comprehensive Emergency Obstetric and Neonatal Care (CEONC) sites, Basic Emergency Obstetric and Neonatal Care (BEONC) sites, Birthing Centres (B.Cs) and Non-Birthing Centres (Non-B.Cs) were 4, 7, 64 and 24 respectively.

Uterotonics used for PPH Prevention

Oxytocin was the commonly used uterotonic for all HFs provisioned with delivery services for PPH Prevention. Nearly 1/4th of those facilities reported of using methergine in some cases, which might have been purchased locally, as it is not under the 'list of essential drug' supplied via government. Misoprostol use was also reported to be in use by 28 percent of health facilities provisioned with delivery services. Active Management of Third Stage of Labour (AMTSL) protocol was reported to be available in 77 percent of health facilities provisioned with delivery services. Nonetheless, almost all facilities claimed of adopting CCT and Uterine massage method for PPH prevention.

Treatment and intervention to PPH cases

Amongst those facilities which have dealt with at least one PPH cases in the 12 months preceding the survey, the most popular treatment procedures adopted to manage PPH cases were uterine massage (95%), therapeutic repair of tears (58%) and therapeutic uterotonic administration (63%). Besides, when all of the Birthing Centres and above facilities were asked about the uterotonics they generally use for PPH treatment, all of them stated of using oxytocin, followed by use of methergine (23%) and misoprostol (20%) in some cases.

Availability, storage and stock-situation of Uterotonics

Almost all of the BCs and above health facilities (except 1 HF), had certain stocks for oxytocin available at time of visit. A distinct variation was noticed for average number of ampoules available in stock, across different types of health facility – CEONC (1,538 ampoules), BEONC (1,254 ampoules), BCs (128 ampoules), Non-BCs (60 ampoules). Amongst those BCs and above facilities with certain oxytocin stock, great majority (93%) were found to have kept oxytocin outside refrigeration, and in terms of adequacy, large majority (96%) of those facilities claimed the available stock to be adequate to meet their current demand.

Methergine and methylergometrine was also noticed in 19 percent and 4 percent of those facilities respectively. Surprisingly, 15 out of 24 Non-BCs were also found to have maintained certain oxytocin stock, which was claimed to be used during at-home births attended by the health worker.

Almost 2/3rd (i.e., 68%) of the total HFs surveyed had maintained certain stocks for misoprostol at time of visit. A distinct variation was noticed for average number of packets (each contains 3 tablets) available across different types of health facility—CEONC (6 packets), BEONC (85 packets), BCs (52 packets), Non-BCs (68 packets). More than 1/4th of those facilities with certain stock expressed that the current misoprostol stock was inadequate to meet their current demand.

Amongst the BC and above health facilities, nearly one-fifth (19%) had encountered stock-out for oxytocin at least once during the period of 12 months preceding the survey. On the other hand, 71 percent of the total health facilities surveyed have claimed of experiencing stock-out for Misoprostol at least once during the period. Amongst those facilities, the stock-out duration lasted for an average of 5.8 months in the same period.

CHAPTER 1: INTRODUCTION

1.1 The Context

Postpartum Hemorrhage (PPH) is a leading cause of maternal mortality in low-income countries and the primary cause of nearly 1/4th of all maternal deaths worldwide—most of which resulting from PPH could be averted through the use of prophylactic uterotonics and by timely and appropriate management (World Health Organization,2012).

In Nepal, despite the continued efforts and government's commitment in policies, plans and health system strengthening actions to create enabling political environment towards maternal, newborn and child health, PPH remains a leading direct cause of maternal deaths in Nepal (Pradhan A et al., 2010), contributing to 19 percent of total deaths attributed to pregnancy and obstetric complications. Over the last 15 years, Nepal has demonstrated considerable progress towards improvement of maternal and child health status, halving its maternal mortality ratio from 539 (Pradhan A et al., 1997) to 281 (Ministry of Health & Population et al., 2006) and have received MDG award for its commitment and progress towards achievement of Millennium development Goal-5. Despite significant progresses made in maternal health status, an unavoidable challenges lies ahead to address maternal mortality as large share of births take place at home with only 44 percent of deliveries being conducted in health facilities (Department of Health Services et al., 2013).

In clinical terms, postpartum hemorrhage (PPH) is considered an obstetrical emergency that can follow sequelae such as shock, renal failure, acute respiratory distress syndrome, coagulopathy, and Sheehan's syndrome (Ministry of Health & Population, 2009). A blood loss of more than 500ml in the first 24 hours of postpartum defines a primary or acute postpartum hemorrhage whereas a blood loss greater than 1000ml is termed as 'severe PPH'(Ministry of Health & Population, 2009) An active management of third stage of labour (AMTSL) has been emphasized as an approach to prevent and manage obstetric complications including administration of Oxytocin injection, as an intervention to prevent PPH. Oxytocin is an injectable drug, requiring proper storage (due to sensitivity towards light and high ambient temperature) and must be administered by skilled health workers only.

World Health Organization's (WHO) health practitioners and international advocates have encouraged use of misoprostol for PPH in resource-poor settings when oxytocin is not available or feasible to administer (Prata et al.,2009) as empirical evidence exists to demonstrate the cost-effectiveness of Misoprostol distribution in prevention and treatment of Postpartum Hemorrhage especially in low-resource settings (Bradley et al., 2007, Sutherland et al., 2010).

Realizing the large share of PPH in maternal mortality worldwide, preventing and treating this condition is difficult in topographically challenged and resource-constrained settings where most deliveries occur in homes and access to immediate management of obstetric complications is limited in which case, the administration of oxytocin is not feasible (as it requires low temperature regulation, availability of sterile syringes, and skilled healthcare provider). In recognition of these circumstances, the Government of Nepal in partnership with USAID/Nepal Family Health Program launched a community-based Misoprostol distribution through Female Community Health Volunteers (FCHVs) in Banke district as a pilot intervention in 2005. As part of Misoprostol distribution program in Nepal, the Female Community Health Volunteers (FCHVs) are trained to provide: antenatal counseling and other support to pregnant women and household decision makers; dispense Misoprostol (600 mg, 3 tablets) with instructions on its use at 8th month of pregnancy; warnings and contradictions; information about possible side effects and actions to take if PPH continuous upon intake of Misoprostol. FCHVs are also required to retrieve any unused Misoprostol from the delivered women and return it to health worker/nearest health facility. The evaluation of pilot district– Banke revealed the feasibility of expanding Misoprostol distribution through FCHVs to the pregnant women at later stages of pregnancy (Rajbhandari S et al., 2010).

Based on the learning and experience from the pilot district, the Government of Nepal approved national level scale-up of misoprostol for the prevention of postpartum hemorrhage at home births in 2010 and planned to expand a nation-wide PPH Prevention program for at-home births. To date, the Misoprostol distribution program has been implemented in 31 out of 75 districts in Nepal.

1.2 Rationale for the Evaluation Study

The Follow-up surveys of Community-based maternal neonatal care in Jhapa, Banke and Kanchanpur in 2007 (Nepal Family Health Programme-I et al., 2007) and endline survey in Sindhuli in 2011 (Nepal Family Health Programme-II et al., 2011) provided the information on knowledge and practices related to maternal and neonatal health care including knowledge, purpose and coverage of Misoprostol among the recently delivered women (RDW), and compared it with the baseline status in the same districts. Though the earlier surveys provide certain information on the demand-side (knowledge, utilization, compliance, etc.), the supply-side factors (availability, storage, trainings and appropriate distribution, etc.) that may influence the community-based PPH intervention as well as facility-based PPH prevention have not been taken into account. Moreover, the previous studies were conducted in a limited number of districts.

Therefore, this evaluation study attempted to fill this information gap through comprehensive evaluation of PPH prevention interventions in an attempt to provide an evidence-based programmatic guidance for effective and efficient management of the PPH prevention programs at both community and health facility levels of service delivery.

1.3 Objectives of the Study

The specific objectives of this evaluation study are outlined as follows:

- a) Assess the provision of advance Misoprostol for PPH prevention during at-home births.
- b) Assess the use of advance Misoprostol for PPH prevention during at-home births.
- c) Assess the acceptability of advance Misoprostol for PPH prevention during at-home births.
- d) Assess the provision of oxytocin prophylaxis for PPH prevention during facility-based births.

CHAPTER 2: STUDY METHODOLOGY

The study is mainly based on the primary sources of information collected using quantitative technique. Some information was also collected using qualitative technique such as observation and review of records.

The study was conducted in close coordination with Family Health Division (FHD) of Department of Health Services (DoHS) and Gynuity Health Projects. The research methodology and tools were shared with the Technical Working Group (TWG) at Family Health Division and their feedbacks were incorporated. Ethical approval of the study was taken from Nepal Health Research Council (NHRC). The study was carried out in the randomly selected rural areas of the nine misoprostol program districts which had at least one year program maturity. The estimation of sample size, selection of districts, clusters, and households have been described below:

2.1 Sample Design

A three-staged cluster sampling method was adopted in selection of sample population. Firstly a representative selection of districts was made based taking into account the ecological regions, duration of misoprostol program and diversity in program implementation partners. This is followed by selection of 30 rural clusters in each ecological region (stratum) using probability proportional to size (PPS) methodology. The second stage involved the mapping and segmentation of sampled cluster. In the third stage, within the randomly selected segment of the sampled cluster, households were screened to identify and interview Recently Delivered Women (RDW) - the primary respondents for estimation of coverage and compliance of misoprostol. Moreover, currently pregnant women (CPW), FCHVs and staff of public health facilities were also interviewed from the sampled rural clusters for necessary information.

2.1.1 *Estimation of Sample Size*

Although the purpose of this study is to evaluate the efforts made in PPH prevention through provision of oxytocin at institutional deliveries, and provision of Misoprostol at home births, the primary focus was laid on misoprostol intervention. Hence for determination of sample size, the indicator of Misoprostol coverage (received by RDW) has been considered. The coverage has been defined as “the percentage of women receiving misoprostol tablets during their most recent pregnancy who delivered in the last 12 months”. Those women who had delivered in the last 12 months preceding the survey are defined as Recently Delivered Women (RDW).

There have been several district level surveys in Nepal which provided estimation on Misoprostol coverage, as high as 73 percent in Banke to 37 percent in Bajhang and Jumla. Thus, the lowest coverage being in Jumla and Bajhang whose characteristics is closer to the present evaluation districts (See table 2.1), this survey used 37 percent coverage rate of Misoprostol for estimation of sample size of RDW—the lowest coverage rate among all the estimation made by the various surveys.

Table 2.1: Coverage of Misoprostol in Various Districts

Survey	District	Ecological Zone	Sample Size	Coverage (Received Misoprostol) %
Coverage and Compliance of Chlorhexidine (CHX), 2011	Banke	Terai	600 RDW	56
	Jumla	Mountain	600 RDW	37.2
	Bajhang	Mountain	600 RDW	37
MNH baseline and end line survey in Sindhuli, 2011	Sindhuli	Hill	900 RDW	43
Follow-up survey of CB-MNC Program, 2007	Banke	Terai	900 RDW	73.2

Given that this evaluation aimed to answer whether misoprostol coverage differs by ecological zone, sample size requirements for the RDW are based on this question. The three main ecological zones are mountain, hill and terai, and coverage estimates for each zone (stratum) is based on the data presented from prior studies presented in Table 2.1. The coverage for each ecological zone was considered to be 37 percent in mountain, 47 percent in hill and 57 percent in terai.

Bonferroni correction was used to calculate an adjusted alpha for the three groups/stratums, assuming an inter-group correlation of 0.50. The adjusted alpha was 0.0289. Then the sample requirements for binomial differences in proportions were calculated (see <http://statpages.org/proppowr.html>) between groups (group 1 versus 2, group 2 versus 3, and group 1 versus 3). We desired equal sample sizes in each of the three groups, so ultimately selected the highest sample requirements among these various comparisons. A design effect of 1.50 was assumed, which increased the sample requirement by 50 percent. The final sample size was 684 per stratum, accounting for a total sample size of 2,052 RDWs from the three stratums.

Table 2.2: Sample size determination		
Sample calculations for detecting group proportion differences	Assuming alpha=0.0289 and 80% power	Assuming design effect of 1.50
Group 1 vs. Group 2	445	668
Group 2 vs. Group 3	456	684
Group 1 vs. Group 3	113	170

The details of these calculations are provided in the Table 2.2.

2.1.2 Selection of Districts, Clusters, and Respondents

i. Selection of Districts

The survey was conducted in 9 districts which were selected purposively on the basis of representation of three ecological regions (mountain, hill and terai). Moreover, consideration was also made of misoprostol program maturity while selecting the districts in each stratum. As the primary purpose of this evaluation is to estimate PPH prevention through the combined efforts (Misoprostol and oxytocin) only those districts where the Misoprostol program is in place for at least one year was considered so that population level coverage can be estimated. The selected nine districts are Bajura, Darchula and Mugu from mountain; Ramechhap, Udayapur and Doti from hill; and Banke, Kailali and Dang from terai region. These nine districts represent three ecological regions and four development regions of the country (Table 2.3).

ii. Selection of Clusters

The primary sampling unit (PSU) was a cluster in this study. Only the rural clusters were considered for sampling as Misoprostol program is mainly focused in the rural areas of the districts. A cluster for this survey was defined as "a ward or combination of more than one ward located in a Village Development Committee (VDC)". A ward is the lowest peripheral administrative unit in Nepal. In selecting the clusters, all the VDCs of the study districts in each stratum were listed separately together with the households in each ward from the 2011 Population Census. Then cumulative number of households was calculated and from each stratum, 30 clusters were selected following probability proportional to size

(PPS) method. Subsequently, twenty-three RDWs from each stratum were recruited to make total of 2,052 RDW from the 90 clusters of three stratum. Selection of the clusters was performed at New ERA office in Kathmandu.

In order to obtain a sample size of 23 RDW in each cluster there should sufficient number of households in each cluster. Past experience has shown that on an average, one RDW is available in every 7-8 household. Therefore, in order to recruit 23 RDW in each cluster, the cluster should have a minimum of 170 households. However, on an average a rural ward of Nepal consist of approximately 90 households which could make shortfall in the sample. In order to avoid such a shortfall or to obtain desired number of RDW (23) in each cluster, those wards which had less than 170 households were combined to adjoined ward to make a sizeable cluster.

iii. Selection of Household, RDW and CPW

The field teams, in consultation with the local community leaders and key informants of the sampled cluster, prepared a sketch map of each sampled cluster (ward/s) delineating mainly the public places, villages/settlements, forests, rivers, temples, trails etc prior to proceeding for the data collection activity. The purpose of preparing such sketch map was to locate the settlements within the cluster to begin the recruitment of RDW and to familiarize the survey team with the geography of the cluster. Then the sample cluster was further segmented into 3-5 areas with the estimated number of households in each segment. Upon adding up the households of each segment, the field team chose one segment randomly to start with identification and interview of RDW.

The first starting house for interview within the selected segment was identified using the “spin the bottle” method. From the centre of the selected segment a stick/pen was spun on the ground. Then the field researcher walked in the direction that the stick/pen pointed until they reached the edge of the segment, counting all the households of that direction. Within the total households of that direction, an index household was randomly selected.

Starting from the index household, a screening questionnaire was administered to the head of the household or a knowledgeable person of the household to identify women in the households between the ages 15-49 years, whether the women had delivered in the past two years, and the current pregnancy status. If such women were available, a second set of screening questionnaire was administered to each eligible women present in the house. From those eligible women, women who had given birth in the past one year (i.e. RDW) were chosen, and a structured questionnaire was administered, making RDW the main respondent. In cases where there were more than one eligible RDW in a household, only one RDW was randomly selected for the interview. After the completion of interview in an index household, the remaining households in the cluster were approached consecutively until 23 RDW were recruited from each cluster.

In addition to interview with the former clients (RDW) of Misoprostol, interview with current clients of Misoprostol was also done. The currently pregnant women (CPW) were recruited during the recruitment of 23 RDW in each cluster. While recruiting RDW if the household also contained a CPW, then she was also interviewed. If a woman was a RDW as well as a CPW, in that case RDW questionnaire was administered to her.

iv. Selection of Health Facilities and FCHVs

The health facility located in the VDC of sample cluster was considered for gathering necessary information from the health facility. In addition to the health facilities located in the sample clusters, district hospital of each sample district was also visited for gathering necessary information.

The estimated sample size of FCHVs was approximately 270 (i.e. 90 in each stratum), and were recruited from the same clusters where the RDW were recruited. For this, three FCHVs were recruited for an

interview from each sample cluster. If a cluster had more than three FCHVs, in that case only three were selected randomly.

Table 2.3: Summary- sample stratum, districts and actual sample size

Stratum	Ecological Region	Development Regions	District	Actual Sample Size				
				Clusters	RDW	CPW	FCHVs	HF's
1	Mountain	Far-western	Bajura	30	690	215	90	33
		Far-western	Darchula					
		Mid-western	Mugu					
2	Hill	Central	Ramechhap	30	690	206	90	33
		Eastern	Udayapur					
		Far-western	Doti					
3	Terai	Mid-western	Banke	30	690	270	90	33
		Far-western	Kailali					
		Mid-western	Dang					
Total			9	90	2,070	691	270	99

2.2 Instrumentation and Pre-Testing

2.2.1 Instruments

Different types of questionnaires were developed keeping in mind the type of respondents and the information to be collected. The draft version of the instruments was finalized with input from officials of FHD, members of Technical Working Group and officials of Gynuity Health Projects. Brief descriptions of each of the instrument are given below:

i. Screening Questionnaire

The purpose of the screening questionnaire was to identify RDW and CPW in the households. The screening questionnaire had two parts. The first part was administered to the head of the household in order to identify women aged 15-49 in the household, whether or not they have given birth in the last two years, and women who are currently pregnant. The second part of this questionnaire was administered to all possible RDW and CPW in order to determine their eligibility for interview.

ii. RDW Questionnaire

This questionnaire was administered to the women who had given birth within a year prior to date of interview. In addition to socio-economic background of RDW, this questionnaire assessed RDW's contact with a FCHV, use of ante-natal and delivery care services, knowledge and use of Misoprostol, reasons for not taking Misoprostol, any side-effects, referral for complications or side-effects, return of unused Misoprostol, etc.

iii. CPW Questionnaire

This questionnaire was administered to the women who were pregnant at the time of survey. This questionnaire was similar to the RDW questionnaire and contained information on antenatal and delivery services, knowledge of and intention to use Misoprostol etc.

iv. Health Facility Questionnaire

This questionnaire was administered to the focal person of the PPH prevention program in the respective health facility. Questions relating to drugs that are used for prevention of PPH; availability, supply and storage of uterotonic drugs; and suggestions to alleviate supply constraints and increase distribution and coverage of Misoprostol were collected.

This questionnaire was administered to FCHVs of the sampled clusters. This questionnaire collected information on FCHV's knowledge about the Misoprostol, current stock and supply of MSC, their perception about the MSC training and supervision on Misoprostol, constraints faced in distributing Misoprostol, referral, and some data on pregnant women of their catchment population served with Misoprostol etc.

2.2.2 Pre-testing

The draft version of the questionnaires was translated into Nepali and pre-tested among the RDW, CPW, health facilities and FCHVs. The pre-testing was done in a non-sample district (i.e., Sindhuli) where Misoprostol has been introduced at least one year ago. The pre-testing was helpful in detecting the adequacy of questions, problems in wording/clarity, flow of questions, developing codes for the open-ended questions, skip patterns, questionnaire administration techniques and better understanding about the program. Based on the results of the pre-testing the draft survey questionnaires were modified.

2.3 Implementation of Survey

2.3.1 Training for Field Researchers

The field work for this survey was carried out by 10 Supervisors and 30 Interviewers. These field researchers were selected from the pool of New ERA field researchers who had prior experience in similar research. They were selected on the basis of their education, previous work experience, experience in working in remote areas, and language ability etc.

Once field staffs were recruited, a weeklong training was organized for them developing a training schedule which was followed throughout the training. The training included introduction to the PPH prevention efforts in Nepal; study objectives and methodology; general interviewing techniques; field procedure of the survey; and detailed review of each question of the questionnaires. A variety of methodologies such as lectures, group discussions, questions and answers, demonstration interviews and role play was utilized to train these field staff. Resource persons from Family Health Division (FHD) of DoHS were also invited to orient them about the PPH prevention efforts in Nepal including Misoprostol. Moreover, a Nepal-based consultant of Gynuity Health Projects also provided input in most of the training sessions.

2.3.2 Fieldwork

Ten teams, each comprising one field supervisor (male/ female) and 3 female enumerators were formed for the survey. The field supervisor was responsible for briefing evaluation objectives to the DPHO, segmentation of sample cluster, selection of index household, assigning households to the team members, rapport building with the community people and health facility staffs, arrangements of travel logistics and more importantly maintaining quality of information collected by the enumerators. In addition, the supervisors also interviewed FCHVs and health facility staff. The three enumerators of the team were responsible for administering screening, RDW and CPW questionnaires.

Of the 9 study districts, survey in eight districts was done earlier (i.e. during May-June 2013) while in remaining one district (Dang) it was done in July-August 2013. The reason for delayed survey in Dang was because the program had not reached one year maturity before mid-July 2013. Therefore, the entire field work commenced from mid-April, 2013 and ended in mid-August, 2013.

The fieldwork was monitored by all the core members of the study team. In addition, the field teams were also supervised by the officials of Family Health Division (FHD) of DoHS, and the representative of Gynuity Health Projects.

As the study involved the human subjects, the need for obtaining informed consent with the respondents was integral, and therefore proper measures were taken to ensure that the informed consent is gained from each of the survey respondents. A detailed statement for obtaining the informed consent was included in the study questionnaire. Once the eligible respondent has been identified, the interviewer introduced him/herself and the representing organization and clearly explained the purpose of the study, time duration and compensation for participating in the survey. The interviewers stated that the confidentiality will be strictly maintained and respondent may either not participate in the survey or withdraw from the interview at any time. The interviewers initiated the interview, only if the respondent agreed to participate in the survey.

2.4 Quality Control

In-order to ensure that the data/information gathered as part of survey are reliable and valid, the following measures were taken:

- The field team selected the segment from the sampled clusters through random procedure and a systematic procedure was applied to correctly identify eligible respondents using the household screening questionnaire.
- Each researcher checked the filled questionnaire thoroughly on the spot, immediately after the end of each interview to identify missing and invalid responses.
- At the end of each day, the field supervisor checked the questionnaires filled by the team and ensure that the information gathered are complete and correct.
- Once the completed questionnaires were brought to the central office, the filled questionnaires were reviewed meticulously by the quality controllers, and coders for consistencies and completeness.
- Besides the efforts of the field teams in ensuring data quality, field visits were made by the core study team members along with representatives from Family Health Division and Gynuity Health Project in the study districts. The purpose were to guide field researchers to resolve any data quality issues that may have arised during the field work; gain better insights about the misoprostol distribution as well as oxytocin in the district and ensure that the field researchers embraced adequate quality control measures to gather reliable and valid data/information.

2.5 Data Entry, Cleaning, Processing and Analysis

All the completed questionnaires were brought to New ERA office for data entry. Prior to entering data into the computer, the completed questionnaires were thoroughly checked. Codes for the open ended questions were also developed during the review process.

After the development of draft instruments a software package for data entry was developed. Later the package was revised based on the experience of data entry of the pre-tested questionnaires. The data entry program had several quality-check measures such as range check and skip instructions to minimize the errors that may arise during data entry. Moreover, there was double entry of the data which also helped to minimize errors during data entry.

Data was computerized using SPSS statistical package and descriptive statistics have been used. The chi-square test was used to compare differences in case of background variables of RDW and a 95 percent confidence interval was calculated for some of the estimates. As there was equal number of clusters selected from each stratum, weighting of the sample data was necessary for aggregate level estimation. Firstly, the population weights for each of the ecological zone were calculated by taking into account the total number of rural households of the 31 districts reached by Misoprostol program to date. Subsequently, the sample weights were determined based upon the sub-sample size of RDW for the respective ecological zones. The final weightage values were then applied to the RDW dataset. Therefore, the aggregate figures used in estimation derived from the survey of RDW are weighted figures while figures obtained from the survey of CPW, FCHVs and health facilities are unweighted.

CHAPTER 3: FINDINGS FROM RECENTLY DELIVERED WOMEN AND CURRENTLY PREGNANT WOMEN

This Chapter discusses findings from interview of recently delivered women (RDW) and currently pregnant women (CPW). RDW are defined as those who had delivered within one year preceding the survey, while CPW are those who were currently pregnant at the time of the survey. The findings discussed are socio-demographic and economic characteristics of RDW and CPW, contact with Female Community Health Volunteers (FCHV) during their last/current pregnancy, antenatal care services, delivery services and knowledge and use of Misoprostol known as Matri-Surakshya Chakki (MSC). These findings are presented in different sections of this chapter. The interview was conducted with 2,070 RDW and 691 CPW of nine districts. Throughout this report, the numbers and percentages shown in the tables for RDW reflect weighted values while for the CPW they are unweighted.

3.1 Background Characteristics of the Respondents

Table 3.1 presents background characteristics of both RDW and CPW. As mentioned above the sample included 2,070 RDW and 691 CPW. A higher proportion of both RDW and CPW belonged to the age group 20-24 years (41% RDW and 39% CPW) followed by the age group 25-29 years in case of RDW (25%) and 15-19 years in case of CPW (28%). The proportion of RDW and CPW that were above 29 years was less than one-fifth. Their median age indicates that CPW were one year younger (22 years) than RDW (23 years).

As mentioned in the methodology section of this report although an equal number of RDW were selected from each ecological region (690 each) because of sampling weight their distribution varies. Hill constitutes the largest sample size of RDW (61%) while 39 percent CPW were from the terai region. Eleven percent of RDW and 31 percent of CPW were from mountain region.

Slightly less than four in ten RDW (38%) and CPW (36%) had no education while about 27 percent of RDW and 32 percent of CPW had some secondary level of education. About 16 percent of both type of respondents had School Leaving Certificate (SLC) and above level of education. About 16 percent of both type of respondents had School Leaving Certificate (SLC) and above level of education.

Both RDW and CPW of Brahmin/Chhetri group were the prominent ethnic group in the study areas as four in ten RDW and 46 percent of CPW represented this ethnic group. The second major ethnic group the respondents came from was from Janjati (34% RDW and 27% CPW). Muslim constituted less than five percent of the respondents.

Information required to construct wealth quintile was collected only in case of RDW. The information collected were ownership of a number of consumer items, housing characteristics, drinking water and sanitation facilities. More than one-fourth of the RDW were from third quintile while the proportion of RDW in second and highest quintile was almost equal (18% and 20% respectively).

Table 3.1: Percent distribution of RDW and CPW by their background characteristics

Characteristics	RDW			CPW	
	Unweighted number	Weighted number	Weighted percent	Number	Percent
Age					
15-19	394	374	18.0	195	28.2
20-24	854	840	40.6	271	39.2
25-29	488	519	25.1	139	20.1
30-34	212	208	10.1	51	7.4
35+	122	129	6.2	35	5.1
Median Age		23.0		22.0	
Ecological region					
Mountain	690	237	11.4	215	31.1
Hill	690	1267	61.2	206	29.8
Terai	690	566	27.4	270	39.1
Educational level					
No education	824	786	38.0	247	35.7
Primary	394	401	19.4	117	16.9
Some secondary	546	552	26.6	220	31.8
SLC and above	306	331	16.0	107	15.5
Caste/ethnicity					
Brahmin/Chhetri	973	817	39.5	317	45.9
Terai Madhesi other caste	53	25	1.2	18	2.6
Dalits	371	379	18.3	123	17.8
Newar	60	105	5.1	19	2.7
Janjati	554	702	33.9	183	26.5
Muslim	45	37	1.8	22	3.2
Others	14	5	0.2	9	1.3
Wealth quintile					
Lowest	414	294	14.2		
Second	411	376	18.2		
Third	417	556	26.9		
Fourth	414	440	21.3		
Highest	414	404	19.5		
Total (n)	2,070	2,070	100.0	691	100.0

3.2 Contact with FCHV during Pregnancy

Female Community Health Volunteers (FCHV) in Nepal, among others, provide health education and counseling to women during their pregnancy, delivery and postpartum period. In addition they distribute iron/folic tablets to pregnant and postpartum women and also distribute Misoprostol to pregnant women where the program is in place. In this context all RDW and CPW were asked whether they had contacted a FCHV during their last pregnancy for antenatal counseling and services. Nearly two-thirds of the RDW and one-half of the CPW reported that they had made a contact with a FCHV (Table 3.2). The lower level of contact with a FCHV by CPW is expected as some of these CPW are in their early stage of pregnancy hence they may not have consulted them. A majority of RDW (51%) and CPW (47%) had contacted first time at their four month of gestation and more than one-fifth of RDW and CPW contacted FCHV first time at their third

Table 3.2: Percent distribution of RDW and currently pregnant women who had met FCHV during their last/current pregnancy		
Contact with FCHV	Type of Respondent	
	RDW	CPW
Met FCHV		
Yes	65.2	50.4
No	34.8	49.6
Total (n)	2,070	691
Month of pregnancy when met FCHV first time		
< 3	6.7	13.5
3	24.1	21.6
4	50.5	46.8
5	7.6	9.2
6+	11.2	8.9
Total (n)	1,350	348
Number of times met FCHV during pregnancy		
1-2	26.3	60.6
3-4	66.9	36.8
5+	6.6	2.6
Don't know	0.2	0.0
Total (n)	1,350	348

month of gestation. While two-thirds of the RDW had contacted a FCHV for 3-4 times the proportion of CPW contacting 3-4 times was 37 percent. A majority of CPW (61%) had contacted a FCHV 1-2 times during their current pregnancy.

3.3 Antenatal Care Service

3.3.1 Knowledge of Danger Signs during Pregnancy and Place to be Consulted

Table 3.3 presents knowledge of RDW and CPW about the danger signs and symptoms during pregnancy that requires immediate attention and knowledge about the places to be visited in case of experience of these danger signs/symptoms. Information on knowledge was solicited from all 2,070 RDW and 691 CPW. As shown in Table 3.3 about seven in ten RDW and CPW were aware that 'severe lower abdominal pain' is one of the danger signs during pregnancy that requires immediate attention, followed by 'vaginal bleeding' (45% RDW and 40% CPW). A quarter of RDW and 22 percent CPW also recognized 'severe headache' as another danger sign during pregnancy. The knowledge about danger signs such as 'convulsion', and 'blurred vision and swelling of hands and legs' was poor as only less than 15 percent of both RDW and CPW recognized them as danger signs. In addition to the danger signs discussed above respondents also provided various other signs and symptoms as danger signs during pregnancy requiring immediate attention.

Government hospital was identified by one-half of both types of respondents as the place a pregnant woman should visit in case of experience of danger signs.

Between 40 percent to 45 percent of RDW and CPW also mentioned health post and sub health post to be visited in case a danger sign occurs (Table 3.3). About one-fourth of RDW and one-fifth of CPW also mentioned private hospital/clinic/nursing home to be visited for consultation of danger signs.

Danger signs and place to be visited	Type of Respondent	
	RDW	CPW
Signs during pregnancy that require attention*		
Vaginal bleeding	45.2	40.4
Severe lower abdominal pain	68.2	70.6
Severe headache	25.9	21.7
Convulsion	8.9	9.7
Blurred vision and swelling of hands and mouth	11.3	11.3
No movement of fetus inside womb	8.5	6.8
White vaginal discharge	8.4	6.9
Fever	2.4	1.7
Dizziness/weakness	2.5	1.9
Breach presentation of fetus	1.9	0.9
Other	5.5	4.1
Don't know	14.0	13.7
Total (n)	2,070	691
Places to be visited in case of danger signs*		
Govt. hospital	50.7	49.6
PHCC	15.6	14.0
Health post	46.2	42.4
Sub health post	42.0	41.2
Outreach clinic	2.5	2.9
Private hospital/clinic/nursing home	26.2	21.1
Others	0.5	0.1
Don't know	2.3	1.2
Total (n)	2,070	691

Note: * Percentages exceed more than 100 due to multiple response

3.3.2 Utilization of Antenatal Care Service

While the information on utilization of antenatal care service has been analyzed for all 2,070 RDW, in case of CPW it has been analyzed only of those who had completed at least three months of gestation. This is because the program encourages first antenatal service from the fourth of the pregnancy. As shown in Table 3.4 eight percent of RDW and 16 percent of CPW had not received antenatal service during their last/current pregnancy. A great majority of them sought antenatal service from a Nurse or an ANM (82% RDW and 72% CPW). Those seeking antenatal service from a doctor or from a health assistant/AHW was less than one-fifth. However, a considerable proportion of RDW (35%) and CPW (31%) also consulted FCHVs for antenatal service.

Three in ten respondents took antenatal care service from a sub health post and slightly less than that (about one-fourth) visited health post (Table 3.4). Government hospital was visited by 14 percent of the RDW and 11 percent of the CPW. The other places were visited by less than 10 percent of the respondents.

Those RDW and CPW who had visited a health worker during their last/current pregnancy were enquired about specific information that they received from the health worker at any of the visit they had made to them. Each of the information presented in Table 3.5 were prompted. Nearly nine in ten RDW and three quarters of CPW mentioned that they were suggested by the health worker to deliver their baby in a health facility and slightly less were informed that they get financial incentive when delivered at a health facility (Table 3.5).

These data indicates emphasis given by the health workers for institutional deliveries. Two-thirds of the RDW were also informed about danger signs and symptoms during pregnancy. Similar to RDW these information were also more frequently received by CPW but with a lesser extent. It should be noted that information in using Misoprostol (MSC) if they deliver at home was least informed by the health workers. Moreover, CPW were less likely to get information from a health worker on use of MSC than the RDW (6% vs. 20%).

Table 3.4: Percent distribution of RDW and CPW by type of health provider consulted and place of ANC visit during their last/current ANC check up

Health worker and place for antenatal care	Type of Respondent	
	RDW	CPW ⁺
Type of health worker consulted for ANC service*		
No ANC visit	8.3	15.5
Doctor	11.2	8.3
Nurse/ANM	82.0	71.7
HA/AHW	16.1	10.3
FCHV	35.1	30.5
TBA	0.1	0.0
Other	0.6	1.3
Total (n)	2,070	555
Source of last ANC service*		
No ANC visit	8.3	15.5
Govt. hospital	13.6	10.8
PHCC	8.5	7.2
Health post	26.3	24.1
Sub health post	30.2	29.5
Outreach clinic	2.3	2.0
Pvt. Hospital/nursing home/clinic	6.7	5.8
Only FCHV or TBA	3.4	4.7
Other	0.3	0.0
Don't know/missing	0.3	0.4
Total (n)	2,070	555

Note: * Percentages exceed more than 100 due to multiple response
⁺ Among CPW who were at 4th or more months of pregnancy

visited health post (Table 3.4). Government hospital was visited by 14 percent of the RDW and 11 percent of the CPW. The other places were visited by less than 10 percent of the respondents.

Table 3.5: Percent distribution of RDW and CPW by counselling received from a health worker during their pregnancy among those who had consulted a health worker

Type of counselling during ANC visit*	Type of Respondent	
	RDW	CPW ⁺
Financial arrangement	49.7	36.5
Arrange transport	39.1	28.4
Arrangement of blood	31.9	23.9
Possible signs/symptoms during pregnancy	64.8	52.4
Delivery in a health facility	87.9	75.2
Financial incentive when delivered in a health facility	83.4	66.8
Use of MSC when delivered at home	19.5	6.3
Use of clean delivery kit	42.4	26.6
Total (n)	1,829	443

Note: * Percentages exceed more than 100 due to multiple responses.
⁺ Among CPW who were at 4th or more months of pregnancy.

3.4 Delivery Service

Information discussed in this section related to delivery service include knowledge of danger signs during labour, recognition of heavy bleeding during delivery, place planned to deliver the baby, person assisting during delivery, place of delivery, and experience of complications during delivery. While the information on planning the place of delivery beforehand was asked to both RDW and CPW, the other information was solicited only from the RDW.

3.4.1 Knowledge of Danger Signs during Delivery

All RDW (2,070) were asked about their knowledge of danger signs during delivery that requires immediate attention and is presented in Table 3.6. The most common knowledge of danger sign during labour was excessive bleeding before or after delivery as it was mentioned by more than one-half of the RDW (54%). More than two in four RDW (43%) recognized labour longer than 12 hours as another danger sign. The other danger signs during delivery were known less commonly because only 16 percent of RDW

Signs during labour that require attention	RDW (n=2,070)	
	Number	Percent
Labour longer than 12 hours	897	43.3
Appearance of baby's hand or leg first	339	16.4
Appearance of placenta first	193	9.3
Excessive bleeding before or after delivery	1,115	53.9
Convulsion	162	8.1
White/odorous vaginal discharge	49	2.3
Breech presentation of fetus	48	2.4
Other	156	7.5
Don't know	429	20.7

Note: Percentages exceed more than 100 due to multiple responses.

recognized appearance of baby's hands or legs first while the appearance of placenta first and convulsion were mentioned by less than one in ten RDW. About eight percent of the RDW were unaware about the danger signs during labour that require immediate attention.

3.4.2 Assistance during Delivery

Person assisting last delivery of RDW is presented in Table 3.7. This information is presented only of those RDW whose last delivery terminated in a live birth. Normally a skilled birth attendant (SBA) such as a doctor or a nurse or an auxiliary mid-wife (ANM) is recommended for safe delivery as these health workers are trained to provide safe delivery services. Overall, 54 percent of the deliveries were assisted by a SBA. Among the skilled birth attendant, ANMs were most common (38%) to assist last delivery of RDW followed by a staff nurse

Person assisting delivery	RDW (n=2,065)	
	Number	Percent
Doctor	240	11.6
Staff nurse	517	25.0
ANM	786	38.0
HA	47	2.3
AHW/VHW	84	4.1
TBA	128	6.2
FCHV	318	15.4
Relatives/friends	1,439	69.5
Others	3	0.1
None	44	2.1

Note: Percentages exceed more than 100 due to multiple responses.

(25%) and a doctor (12%). A considerable proportion of RDW (70%) also reported that their last birth was assisted by their relatives and friends. FCHVs assisted 15 percent deliveries of the RDW.

Person assisting last delivery of RDW is further categorized into two- whether or not a SBA and analyzed by characteristics of RDW. Use of SBA is more common among younger cohort of women than the older cohort. For example, while only 38 percent of RDW aged 35 or over had received delivery services from a SBA the proportion receiving delivery services from them among RDW aged 15 to 19 years was 56 percent (Table 3.8).

SBA assisted deliveries was more common in terai than in other ecological regions. Two-thirds deliveries of RDW belonging to terai region were assisted by a SBA compared to 51 percent deliveries in hill and 45 percent in mountain regions.

Women's education has positive correlation with person assisting during delivery. Higher the education level of RDW higher is the utilization of delivery services from a SBA. For example, 44 percent of RDW with no education and 45 percent of RDW with primary level of education mentioned their deliveries were assisted by a SBA. The figures for those with some secondary level of education and those with SLC and above are 61 percent and 82 percent, respectively.

RDW belonging to Brahmin/Chhetri ethnic group were more likely to receive delivery services (62%) from a SBA followed by Dalits (59%). Utilization of SBA services from remaining ethnic groups ranged from 45 percent to 55 percent (Table 3.8).

Use of SBA during delivery was lowest among RDW who belonged to lowest quintile (42%) and highest among RDW who belonged to highest wealth quintile (72%). Similarly, almost same proportion of RDW who belonged to second and fourth quintile received their last delivery services from a SBA (58%).

3.4.3 Place of Delivery

In order to prevent maternal and neonatal deaths the government of Nepal has been emphasizing institutional delivery where skilled birth attendants are available. In recent years the government has established birthing centres in order to increase access to delivery services. Moreover, there is a maternal incentive scheme already in place under which if a woman delivers in a government health institution she is provided cash incentive as transportation allowance.

In the above context both RDW as well as CPW were asked if they had made any plan beforehand regarding a place where their delivery should take place. Nearly three in five respondents of both types had made a plan to deliver their baby in a health facility while three in ten had planned to deliver at home (Table 3.9). One in ten respondents had not made any such plan or the currently pregnant women were still undecided where they should be delivering their baby.

Table 3.8: Percent distribution of RDW with live birth who received assistance from SBA during delivery by background characteristics

Characteristics	Number	Person Assisting during Delivery	
		SBA	Other
Age		‡	
15-19	373	56.3	43.7
20-24	837	60.5	39.5
25-29	519	52.0	48.0
30-34	208	45.4	54.6
35+	129	37.9	62.1
Ecological region		‡	
Mountain	234	44.8	55.2
Hill	1,265	51.2	48.8
Terai	565	66.5	33.5
Educational level		‡	
No education	785	43.5	56.5
Primary	399	45.4	54.6
Some secondary	549	60.8	39.2
SLC and above	331	82.1	17.9
Caste/ethnicity		‡	
Brahmin/Chhetri	815	61.6	38.4
Terai Madhesi other caste	25	48.4	51.6
Dalits	378	58.6	41.4
Newar	105	47.6	52.4
Janjati	700	45.7	54.3
Muslim	37	53.3	46.7
Others	5	NA	NA
Wealth quintile		‡	
Lowest	294	41.9	58.1
Second	375	57.8	42.2
Third	555	44.7	55.3
Fourth	438	57.6	42.4
Highest	403	71.7	28.3
Total (n)	2,065	54.7	45.3
Confidence Interval		48.3-60.9	39.1-51.7

‡ Significant at 0.05 level.
NA= not shown due to small number of n.

Table 3.9: Percent distribution of RDW and CPW by place of delivery planned beforehand

Place of delivery planned	Type of Respondent	
	RDW	CPW
Own/others home	31.6	29.4
Health facility	58.3	59.3
Did not think of a place/Undecided/Don't know	10.1	11.3
Total (n)	2,070	691

Those RDW whose last pregnancy resulted in a live birth were asked about the place of delivery of their last child. More than one-half of the RDW (54%) had delivered their last baby in a health institution which is very encouraging (Table 3.10). This is slightly lower than the percentages of RDW who had planned to deliver in a health institution (Table 3.9). Institutional delivery among RDW is quite high as compared to national average of 35 percent as revealed by 2011 Nepal Demographic and Health Survey (Ministry of Health and Population et al., 2012). The increased proportion of institutional delivery could be due to availability of its services in more accessible areas. Among the institutional deliveries a highest proportion of RDW took delivery service from a government hospital (17%) followed by a health post (16%). Private sector contributed about six percent of the last deliveries of RDW. Although institutional delivery was high among RDW but still home deliveries constituted 46 percent.

Table 3.10: Percent distribution of RDW by place of delivery among RDW with live birth

Place of Delivery	RDW (n=2,065)	
	Number	Percent
Government hospital	347	16.8
PHCC	109	5.3
Health post	322	15.6
Sub health post	219	10.6
Pvt. hospital/clinic/nursing home	119	5.8
Own home	902	43.7
Others home	17	0.8
Others*	31	1.5

Note: * On the way to a health institution/farm

Place of a delivery categorized into two - whether or not institutional, has been cross-examined by respondents' background characteristics and is presented in Table 3.11. Respondents' age is significantly associated with place of delivery. As shown in the Table younger women are more likely to deliver their baby in a health institution than the older women. This is evidenced by the fact that in comparison to 37 percent RDW aged 35 or more, 56 percent of RDW aged 15-19 had delivered their last baby in a health institution. Delivery of a baby in a health institution is more pronounced among the RDW residing in terai region (66%) than the RDW residing in hill (51%) or mountain region (45%). Increased educational level is significantly associated with place of delivery. RDW with higher level of education are more likely to deliver their baby in a health institution than the RDW who are less educated. For example, while institutional delivery was 44 percent among RDW with no education the corresponding figure for RDW with SLC or above level of education was 80 percent. Brahmin/Chhetris are more likely to deliver their baby in a health institution (61%) followed by Dalits (59%). Institutional delivery was reported lowest among the Newars (44%). Table 3.11 also indicates that RDW belonging to higher wealth quintile are more likely to deliver in a health institution than the RDW belonging to lower wealth quintile. Forty-four percent of RDW of lowest wealth quintile delivered their last baby in a health institution as against 70 percent who represented highest wealth quintile.

Table 3.11: Percent distribution of RDW with live birth by place of delivery by background characteristics

Characteristics	Number	Place of delivery	
		Health Facility	Home/Other
Age		‡	
15-19	373	55.5	44.5
20-24	837	59.4	40.6
25-29	519	52.4	47.6
30-34	208	44.2	55.8
35+	129	37.2	62.8
Ecological region		‡	
Mountain	234	45.3	54.7
Hill	1265	50.5	49.5
Terai	565	65.5	34.5
Educational level		‡	
No education	785	43.7	56.3
Primary	399	44.9	55.1
Some secondary	549	59.6	40.4
SLC and above	331	80.4	19.6
Caste/ethnicity		‡	
Brahmin/Chhetri	815	61.1	38.9
Terai Madhesi other caste	25	48.0	52.0
Dalits	378	58.5	41.5
Newar	105	43.8	56.2
Janjati	700	45.1	54.9
Muslim	37	48.6	51.4
Others	5	NA	NA
Wealth quintile		‡	
Lowest	294	43.9	56.1
Second	375	57.3	42.7
Third	555	44.0	56.0
Fourth	438	56.4	43.6
Highest	403	69.5	30.5
Total (n)	2,065	54.1	45.9
Confidence Interval		47.6-60.3	39.7-52.4

‡ Significant at <05 level.
NA= not shown due to small number of n.

As discussed above RDW delivering in a health institution are more likely to be protected from the risk of PPH as they are supposed to receive oxytocin injection by a health worker. Therefore, those RDW who delivered in a health institution were asked whether they were given an injection in their thigh or buttock immediately after the birth of the baby. Out of 1,116 RDW who delivered their last baby in a health institution nearly eight in ten (78%) responded that they were given an injection. About seven percent of RDW were unsure about the injection given to them (data table not shown).

All RDW (2,070) were prompted with regard to their experience of four danger signs during the delivery of their last baby. The prompted danger signs included:

- Excessive bleeding to the extent that RDW feared death
- Convulsion
- Prolonged labour for more than 12 hours, and
- The baby's hand, leg or cord coming out first

The results show that a highest percentage of RDW (31%) had experienced 'prolonged labour that lasted for more than 12 hours'. One-fourth of the RDW experienced 'heavy bleeding/bleeding more than normal delivery', and also experienced 'convulsion'. Only two percent of the RDW reported that during last delivery their 'baby's hand, leg or cord came out first' (Table 3.12).

Those RDW who experienced any of the four symptoms (1,020) were further asked whom they consulted or what did they do when they experienced any of the above four danger signs. Six in ten RDW had consulted a health worker or treated at a health facility (Table 3.12). Three in ten RDW relied upon their relatives/neighbours or friends, and nearly one in ten consulted to a FCHV. A few RDW consulted Dhami/Jhankri or relied upon the traditional treatment at home.

Table 3.12: Percent distribution of RDW experiencing complications during the delivery of their last child and source of care sought for management of complications		
Complications and their management	RDW	
	Number	Percent
Type of complications experienced*		
Excessive bleeding /bleeding more than normal delivery	516	24.9
Convulsion	471	22.7
Prolonged labour more than 12 hours	641	31.0
The baby's hand, leg or cord coming out first	35	1.7
Total (n)	2,070	
Places visited or person consulted*		
Consulted/treated at health facility/health worker	614	60.2
Went to a Pharmacy	18	1.8
Consulted FCHV	94	9.2
Consulted relatives/neighbors/friends	312	30.6
Traditional treatment at home	61	6.0
Consulted/treated by Dhami/Jhankri	24	2.4
Others	8	0.8
Did nothing	189	18.5
Total (n)	1,020	
Note:* Percentages exceed more than 100 due to multiple responses.		

The same RDW who had experienced any of the above four symptoms during delivery were further enquired how they recognize that a woman has experienced heavy bleeding. Nearly half of the RDW (49%) reported 'prolonged bleeding' is one of the sign of excessive bleeding while four in ten stated that 'bleeding more than a normal delivery' is another sign of excessive bleeding (Table 3.13). They also mentioned that if there is 'appearance of blood clots' or when the 'cloth or pad they have been using wets completely or within half an hour' that can be regarded as a sign of heavy bleeding. One-fifth of the RDW had no idea how

Table 3.13: Percent distribution of RDW by their knowledge on recognition of excessive bleeding		
Signs of excessive bleeding	RDW (n=1,020)	
	Number	Percent
Heavy bleeding/bleeding more than normal delivery	403	39.5
Prolonged bleeding	501	49.1
Complete wet of cloth/pad within half an hour of delivery	189	18.5
Appearance of blood clots/ excessive bleeding	202	19.8
Other	9	0.9
Don't know	206	20.2
Note: Percentages exceed more than 100 due to multiple responses.		

to recognize the signs of heavy bleeding during delivery.

3.5 Knowledge and Use of Misoprostol

Postpartum hemorrhage (PPH) is one of the major cause of maternal death in Nepal. In order to reduce the risk of PPH government of Nepal has emphasized for institutional delivery. Since many women in Nepal deliver at home due to lack of access to an institution where delivery services is available the government introduced feasibility of distribution of Misoprostol also known as ‘Matri Surakshya Chakki’ at community level. WHO also recommends that if a skilled birth attendant is not present at birth and oxytocin is not available, lay health workers should administer 600 mcg of oral Misoprostol (World Health Organization,2012). Community distribution of MSC was first piloted in Nepal in 2005 and it was scaled up after its evaluation. Female Community Health Volunteers (FCHV) has been trained to counsel pregnant women on MSC and its distribution. Along with counseling FCHVs distribute three tablets of MSC to the pregnant women when they are at eighth month of gestation. The unused MSC are retrieved by the FCHVs after the delivery of the baby.

Information on MSC was asked to both RDW and CPW. While knowledge related to information about heavy bleeding after delivery, knowledge related to MSC, receive of MSC were asked to both categories of respondents, the use related questions were asked only to the RDW as CPW have yet to take MSC since they are currently pregnant.

3.5.1 Knowledge on Postpartum Hemorrhage

There have been efforts in raising community awareness about PPH such as their recognition, consequences, precautions to be made, and their management. In this context all the RDW and CPW were asked whether they had received any information about bleeding after birth. Only about half of the RDW (51%) and CPW (46%) had received information about excessive bleeding after the delivery (Table 3.14). This indicates low level of information dissemination about PPH among both types of respondents. Respondents who had received information about excessive bleeding after delivery were further asked about the type of information they had received. Among those who had received information about bleeding (1,061), more than nine in ten respondents of both types had received information that they should immediately go to a health facility. Slightly more than one-third were aware that excessive bleeding after delivery can result in a death of the mother (Table 3.14)

Information on excessive bleeding	Type of Respondent	
	RDW	CPW
Received information about excessive bleeding		
Yes	51.4	46.0
No	46.5	51.8
Don't remember	2.2	2.2
Total (n)	2,065	691
Type of information received *		
Need to go immediately to a health facility if bleeding after birth	94.1	92.8
Get help of a health worker	14.8	14.5
Bleeding can result death of a mother	35.1	36.5
Other	2.2	6.6
Total (n)	1,061	318

Note: *Percentages exceed more than 100 due to multiple responses.

3.5.2 Awareness of Misoprostol

Results of the survey indicate that among the women surveyed very few of the RDW and CPW had received information about MSC during their last/current pregnancy. The proportion of RDW and CPW who received information on MSC was 17 percent and five percent, respectively (Table 3.15). Of those who had received information on MSC about 45 percent of both RDW and CPW had received information first time when they were

Information on MSC	Type of Respondent	
	RDW	CPW
Received information about MSC		
Yes	17.1	4.5
No	82.2	94.8
Don't know/don't remember	0.7	0.7
Total (n)	2,065	691
Months of pregnancy when received information first time		
1-3 months	4.8	3.2
4-7 months	44.2	45.2
8 months	36.0	12.9
9 months	14.7	0.0
Don't know	0.6	0.0
Prior to current pregnancy	0.0	6.5
Total (n)	353	31

four to seven months of pregnancy. Slightly more than one-third RDW (36%) and 13 percent of CPW had received information on MSC at their eighth month of gestation which is the recommended time a FCHV has to distribute MSC to a pregnant women along with proper counselling services.

Respondents' knowledge about purpose of taking MSC, when MSC should be taken and number of MSC tablets to be taken was also solicited. Information presented in Table 3.16 reveals that eight in ten respondents had correct knowledge about purpose of taking MSC as they mentioned that it is for prevention of postpartum hemorrhage. Discharge of placenta was mentioned by 38 percent of RDW and over half of CPW (52%), while contraction of uterus was mentioned by nearly one-fourth of RDW and over one-third of CPW (36%) as the purpose of taking MSC. Almost all respondents were also knowledgeable that they should consult a health worker or a health facility if bleeding continues even after taking the MSC.

Respondents' knowledge on right time of taking MSC was high as 83 percent of RDW and 87 percent of CPW correctly mentioned that it should be taken immediately after the birth of the baby but before placenta is out (Table 3.16). With regard to the number of MSC tablets to be taken similar to the knowledge on timing of MSC taken, it was also high because 83 percent of the RDW and 90 percent of the CPW were knowledgeable that three MSC tablets should be taken (Table 3.16).

Pregnant women are also supposed to receive information about conditions during which MSC should not be taken. Nearly two-thirds of the respondents were aware that MSC should not be taken during pregnancy. However, a considerable proportion of both type of respondents (30%) were unknown in what conditions MSC should be avoided (Table 3.17). This suggests that program should emphasize in

Table 3.16: Percent distribution of RDW among live birth and CPW who had knowledge on why and when MSC should be taken

Knowledge about MSC	Type of Respondent	
	RDW	CPW
Purpose of taking MSC*		
Prevention of postpartum hemorrhage	77.6	80.6
Contraction of uterus	23.5	35.5
Discharge of placenta	37.7	51.6
To prevent from risk of death	12.7	16.1
Other	0.6	0.0
Don't know	5.9	3.2
Total (n)	353	31
When MSC should be taken		
Before labour begins	0.3	0.0
During labour but before birth of the baby	1.1	0.0
Immediately after birth but before placenta is out	83.0	87.1
Immediately after placenta is out	4.5	3.2
Other	4.0	3.2
Don't know	7.1	6.5
Total (n)	353	31
Number of MSC tablets to be taken		
One	2.0	3.2
Two	2.0	0.0
Three	83.0	90.3
Don't know	13.0	6.5
Total (n)	352**	31
Action to be taken if bleeding continues even after taking MSC*		
Go to a health facility	92.9	87.1
Consult with a health worker	7.4	12.9
Other	0.6	0.0
Don't know	3.1	0.0
Total (n)	353	31

Note: * Percentage exceeds more than 100 due to multiple response.

Table 3.17: Percent distribution of RDW with live birth and CPW by their knowledge about conditions when a woman should not take MSC

Conditions to avoid MSC	Type of Respondent	
	RDW	CPW
During pregnancy	64.3	64.5
During labour but before delivery of baby	16.4	16.1
After 2 hours of child birth	2.8	6.5
Without confirming presence of multiple babies	10.2	3.2
After delivery of placenta	5.7	3.2
Don't know	30.0	29.0
Total (n)	353	31

Note: Percentage exceeds more than 100 due to multiple response.

Table 3.18: Percent distribution of RDW with live birth and CPW who had knowledge of side-effects of MSC, and actions to be taken when experienced side-effects

Type of side-effects	Type of Respondent	
	RDW	CPW
Shivering	2.0	9.7
Nausea	11.6	32.3
Diarrhoea	2.5	3.2
Fever	2.5	9.7
Headache	10.8	12.9
Dizziness	2.0	0.0
Other	1.1	3.2
Don't know	80.7	67.7
Total (n)	353	31

Note: Percentage exceeds more than 100 due to multiple response.

dissemination of proper information in order to avoid misuse of MSC that arise due to lack of knowledge.

A great majority of the respondents (81% RDW and 68% CPW) were not aware about the possible side-effects of MSC (Table 3.18). Awareness of possible side-effects such as nausea and headache was less than 15 percent among RDW while awareness among CPW of these side-effects was 32 percent and 13 percent, respectively. The other side-effects were mentioned by less than 10 percent of the respondents.

Those respondents who received MSC from a FCHV were asked whether or not they received eight specific information related to MSC from the FCHV. Each of the eight information given in Table 3.19 was prompted. Although both RDW and CPW were asked this question however, since only six CPW had received MSC therefore their data is not presented in the Table (detail discussion follows in the next section). As seen in Table 3.19, information such as purpose of taking MSC, place to be consulted in case of excessive bleeding, when to take MSC and how many MSC to take were more commonly provided (above 90%) by the FCHVs. Information on possible side-effects of MSC was to be least likely provided by them (21%).

Table 3.19: Percent distribution of RDW with live birth who reported FCHV counselled them on various aspects of MSC

Information given by FCHV	RDW (n= 236)	
	Number	Percent
Purpose of taking MSC	227	96.2
How to recognize signs of excessive bleeding	150	63.6
What to do in case of excessive bleeding	188	79.7
Where to seek help in case of excessive bleeding	211	89.4
When to take MSC	231	97.9
How many MSC to take	224	94.9
Conditions when MSC should not be taken	170	72.0
Side-effects of MSC	49	20.8

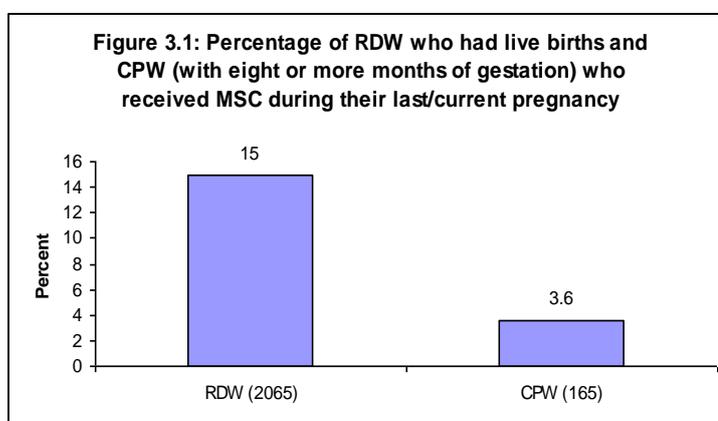
Most of the RDW were satisfied from the information received on MSC from a FCHV (Table 3.20). While one-fifth said that they were very satisfied, six in ten were satisfied.

Table 3.20: Percent distribution of RDW with live birth and CPW who were satisfied with the information/counselling received from FCHV

Level of satisfaction	RDW (n=235)	
	Number	Percent
Very satisfied	46	19.7
Satisfied	141	60.00
Somewhat satisfied	40	16.9
Not satisfied	6	2.6
Don't know/can't say	2	0.8
Missing	1	0.4

3.5.3 Coverage and compliance of Misoprostol

All pregnant women are supposed to receive MSC regardless of place they had planned for delivery. RDW whose outcome of their last pregnancy was a live birth were asked whether or not they had received MSC during their last pregnancy. Similarly, in case of CPW this question was asked only to those who were eight or more months of pregnant at the time of survey on the assumption that they are not eligible to receive MSC before eight month of pregnancy. Data indicates



Data indicates that MSC program is not reaching to a great majority of pregnant women because only 15 percent of RDW and nearly four percent of CPW had received MSC during their last/current pregnancy (Figure 3.1). These figures are very much low when compared to previous surveys (Nepal Family Health Program II et al.,2011).

The program emphasizes delivery in a health facility therefore in recent years institutions with birthing center have increased considerably. During data collection it was reported that FCHVs advise

to pregnant women to deliver her baby in a health facility without distributing MSC to them assuming that all of them will deliver their baby in a health facility. Some FCHVs also reported that health workers also do not emphasize in MSC distribution. This survey also showed low level of stock situation of MSC with the FCHVs although there was some stock of MSC at the health facilities (See Chapter 5). As a result of this a great majority of women who deliver at home without the help of a skilled provider are at greater risk of PPH.

Receiving of MSC has been cross examined by background characteristics of RDW. Younger women than that of older women, women residing in hill region, those with lower level of education and those with highest and lowest quintile are less likely to get MSC as compared to their counterparts (Table 3.21). Variation across the ecological region is large since receiving of MSC is more than double among RDW residing in hill than those who reside in the mountain region. Nonetheless, the coverage of Misoprostol across the ecological zones was found to be non-significant.

Majority of the RDW had received MSC from a FCHV (82%) while a few also had received from a health worker/health facility (17%) (Table 3.22). In case of six CPW, five of them had got from a FCHV and one from a health worker/health facility (data not shown in the Table). According to the protocol pregnant women are supposed to receive MSC at their 8th month of gestation. As against the protocol eight percent of RDW reported they had received MSC before eight month. Six in ten had received during eight months of pregnancy while nearly one-third (31%) had received after eight month (Table 3.22). Of the six CPW who received MSC all of them had received at their 8th month of pregnancy (data not shown in the table).

Among all those RDW who received MSC (309) 42 percent had consumed MSC. Women delivering at a health institution are not required to consume MSC as they are given oxytocin injection to protect them from the risk of PPH. Therefore, further analysis revealed that among the RDW who had received MSC and also delivered at home (145), 88 percent (128) consumed MSC (data table not shown).

Table 3.21: Percent distribution of RDW with live birth who received MSC by background characteristics

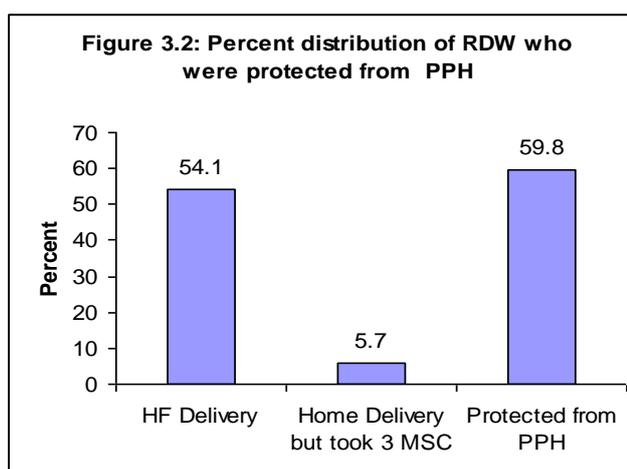
Characteristics	RDW	
	Number	Percent
Age		ns
15-19	372	10.2
20-24	837	15.3
25-29	519	16.4
30-34	208	16.8
35+	129	17.8
Ecological region		ns
Mountain	234	7.7
Hill	1,265	17.2
Terai	566	12.9
Educational level		ns
No education	785	13.1
Primary	400	14.5
Some secondary	548	16.6
SLC and above	331	17.2
Caste/ethnicity		ns
Brahmin/Chhetri	815	13.9
Terai Madhesi other caste	25	8.0
Dalits	378	15.9
Newar	105	6.7
Janjati	700	17.9
Muslim	37	5.4
Others	5	0.0
Wealth quintile		ns
Lowest	293	13.3
Second	375	17.1
Third	556	16.9
Fourth	439	15.3
Highest	403	11.4
Total (n)	2,065	15.0
Confidence Interval		10.5-20.9

ns= not significant

Table 3.22: Percent distribution of RDW with live birth by source of Misoprostol received

Characteristics	RDW	
	Number	Percent
Source of receiving MSC		
Health worker/health facility	53	17.2
Pharmacy	0	0
FCHV	254	82.2
Relatives/neighbor/friend	2	0.6
Other	0	0
Total (n)	309	
Month of pregnancy when received MSC		
< 8 months	26	8.4
8 months	183	59.2
9 or more months	96	31.1
Don't know	4	1.3
Total (n)	309	
Consumed MSC among those who received		
Consumed	131	42.2
Did not consume	179	57.8
Total (n)	309	

Data has been also analyzed to estimate the proportion of RDW that were protected from the risk of PPH. The risk of PPH can be minimized either by delivering in a health facility where all women are supposed to receive oxytocin, or by consuming all three MSC tablets at home delivery without the help of a SBA. As shown in Figure 3.2, 54 percent of the RDW had their last delivery in a health institution. Similarly, among delivering at home only six percent had consumed all three tablets of MSC. Therefore combining these figures indicates that six in ten RDW are estimated to be protected from the risk of PPH (Figure 3.2).



Nearly three-quarters (74%) of the RDW had followed correct timing for consumption of MSC as they had taken it immediately after the delivery of the baby but before the delivery of placenta. One-fifth of the RDW had used MSC immediately after the placenta was out (Table 3.23). Nine in ten RDW had eaten three tablets of MSC while rest had taken less than that. Of those RDW who had received MSC but did not consume at all or consumed less than three tablets were further asked what did they do with the unused tablets. Seven in ten had returned the unused tablets either to a FCHV or to a health worker or to a health institution. Fourteen percent of the RDW had kept unused tablets with them at the time of the survey and a few had thrown away (Table 3.23).

Table 3.23: Percent distribution of RDW with live birth by timing of MSC taken and number of MSC taken

	RDW	
	Number	Percent
Timing of MSC taken		
During labour but before the delivery of baby	1	0.8
Immediately after delivery but before placenta was out	97	74.0
Immediately after the placenta was out	28	21.4
Others	5	3.8
Total (n)	131	
Number of MSC tables taken		
Less than 3	12	9.2
Three	119	90.8
Total (n)	131	
What did you do with unused MSC		
Threw away	14	7.3
Still with me	26	13.6
Returned to FCHV/health worker/facility	135	70.7
Gave to others	2	1.0
Lost/misplaced	9	4.7
Other	3	1.6
Data missing due to non-response	3	1.6
Total (n)	191	

Those RDW who received MSC but did not consume at all or consumed less than the prescribed dose i.e. three tablets, were asked for the reasons for not taking any or all tablets. Nearly eight in ten (77%) did not feel necessary to take as they delivered in a health facility or delivery supported by a health worker (Table 3.24). Similarly, 38 percent responded that health worker had given them injection after the delivery therefore consumption of MSC was felt unnecessary. Each four percent of RDW did not use because they forgot to take the tablets after the delivery of the baby or feared from possible side-effects of MSC. Three percent of the RDW did not consume because they received less than three tablets.

Table 3.24: Percent distribution of RDW among live birth who gave reasons for not taking any or all MSC

Reasons for not taking any or all MSC	RDW	
	Number	Percent
Delivered in a health facility/health worker assisted for delivery	147	77.0
Health worker gave an Injection after the delivery	73	38.2
Family members did not allow to take MSC	0	0.0
Forgot to take MSC	7	3.7
Fear of side-effects of MSC	7	3.7
MSC was not available during delivery	1	0.5
Lost or misplaced MSC	1	0.5
Placenta was out before to take MSC	4	2.1
Gave still birth/baby died immediately after birth	0	0.0
Received less than 3 tablets	5	2.6
Other	6	3.1
Data missing due to non-response	3	1.6
Total (n)	191	

CHAPTER 4: FINDINGS FROM FCHVS

A total of 270 Female Community Health Volunteers (FCHVs) - 90 from Mountain 90 from Hill and 90 from Terai region were interviewed to gather information relevant to Misoprostol distribution programme from the sampled clusters of the 9 study districts. This chapter entails the findings on demographic profile of the FCHVs, knowledge about the Misoprostol, Counselling services they provide to women in the community, provisions and availability of Misoprostol and the training and supervision they have received in the last 12 months preceding the survey.

4.1 Background Characteristics of FCHVs

The mean age of FCHVs was found to be 38.8 years. In regard to the educational attainment, 34 percent of the FCHVs had never attended school while those who completed primary (Grade 1 to 5), some secondary (Grade 6 to 10), and SLC & above were 25 percent, 31 percent and 10 percent respectively. Moreover, majority (59%) of FCHVs belonged to Brahmin/Chhetri ethnic group followed by Janajati (28%), Dalits (7%), Newar (3%), Terai/Madhese other castes (1%), Muslim (0.7%) and other unidentified ethnic groups (0.7%) (Table 4.1).

4.2 Knowledge on Misoprostol among FCHVs

Respondents were asked questions in order to assess their knowledge about the purpose, timing of consumption, contradictions, dosage, side-effects of Misoprostol. In addition, they were also asked about the symptoms to recognize Postpartum Hemorrhage (PPH) and where to seek emergency care should the problem arises.

As shown in Table 4.2, 93% of the respondents stated prevention of PPH as the major purpose of Misoprostol intake, while nearly 58% of respondents cited that the tablet is primarily used for uterus contraction and discharge of placenta.

Table 4.1: Percentage distribution of FCHVs by background characteristics

Background characteristics	Number	Percent
Age		
20-24	18	6.7
25-29	41	15.2
30-34	37	13.7
35 and above	174	64.4
Total (n)	270	100.0
Mean Age (yrs)	38.8	
Educational attainment		
No Education	93	34.4
Primary	68	25.2
Some Secondary	83	30.7
SLC and above	26	9.6
Total (n)	270	100.0
Caste/Ethnicity		
Brahmin/Chhetri	159	58.9
Tarai/Madhese Other Castes	3	1.1
Dalits	20	7.4
Newar	9	3.3
Janajati	75	27.8
Muslim	2	0.7
Other	2	0.7
Total (n)	270	100.0

Table 4.2: Percentage distribution of FCHVs by knowledge on Misoprostol

Main Purpose of taking Misoprostol*	Number	Percent
Prevention of PPH	250	92.6
Contraction of Uterus	155	57.4
Discharge of placenta	156	57.8
Prevent from risk of death	56	20.7
Others	2	0.7
Don't know	3	1.1
Total (n)	270	
When to intake Misoprostol		
During labour but before delivery of baby	1	0.4
Immediately after delivery of baby but before delivery of placenta	248	91.9
After delivery of placenta	6	2.2
Within an hour of delivery	10	3.7
Others	1	.4
Don't know	4	1.5
Total (n)	270	100.0
When/Which conditions women shouldn't take misoprostol *		
During pregnancy	252	93.3
During labour but before delivery of child	33	12.2
After 2 hours of delivery of child	20	7.4
Without confirming presence of twin babies	105	38.9
After delivery of placenta	16	5.9
Don't know	11	4.1
Total (n)	270	
No. of tablets women should intake		
less or more than three tablets	15	5.6
three tablets	254	94.1
Don't know	1	0.4
Total (n)	270	100.0

Note: * Percentage adds up to above 100% due to multiple response

When asked about the timing of consumption, huge majority (92%) of FCHVs correctly stated that the tablets be taken immediately after delivery of baby but before delivery of placenta, which is in accordance to the guideline.

Similarly, 93 percent of respondents told that Misoprostol shouldn't be taken during pregnancy, and nearly 39 percent mentioned that the tablet should not be administered without confirming the presence of twin babies inside the womb. Nearly 94 percent of FCHVs stated the correct dosage (i.e., 3 tablets) of Misoprostol to be consumed at time of delivery.

In regard to their knowledge on possible side-effects, nausea, headache and dizziness were the common adverse effects cited by 60 percent, 34 percent and 29 percent of respondents respectively (Table 4.2).

For majorities of the respondents, excessive bleeding/bleeding more than normal delivery (58%) and wet of two or more pads within ½ an hour of delivery (56%) are the key symptoms to identify that a women is suffering from post-partum hemorrhage.

According to the respondents, if a women experiences excessive bleeding during delivery, she should seek emergency care from hospital (78%), health post (51%), sub-health post (47%), private hospital/clinic/ nursing home (29%), and so on.

4.3 Counselling Provided by FCHVs

The proper counselling is an important medium to transfer knowledge and information on misoprostol through community health workers. This study intends to understand FCHV's counselling practices towards educating pregnant women and encouraging them to intake misoprostol, if they deliver at home.

Possible problem/side-effects*	Number	Percent
Shivering	48	17.8
Nausea	161	59.6
Watery stool	42	15.6
Fever	58	21.5
Headache	93	34.4
Dizziness	79	29.3
Stomach pain	8	3.0
Others	2	0.7
Don't know	34	12.6
Total (n)	270	
How to recognize PPH*		
Excessive bleeding/bleeding more than normal delivery	157	58.1
Bleeding for longer duration	45	16.7
Wet of more than two pads/clothes within half an hour of delivery	150	55.6
Appearance of blood clots	117	43.3
Others	1	0.4
Don't Know	9	3.3
Total (n)	270	
Place to seek emergency help if PPH occurs*		
Govt. Hospital	211	78.1
PHCC	42	15.6
Health post	138	51.1
Sub-health post	127	47.0
Outreach Clinic	3	1.1
Private Hospital/Clinic/N.Home	78	28.9
Pharmacy	20	7.4
FCHV	7	2.6
Others	1	0.4
Total (n)	270	

Note: * Percentage adds up to above 100% due to multiple response

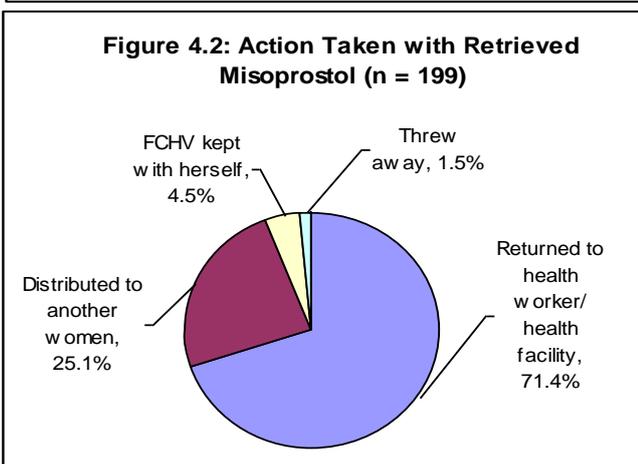
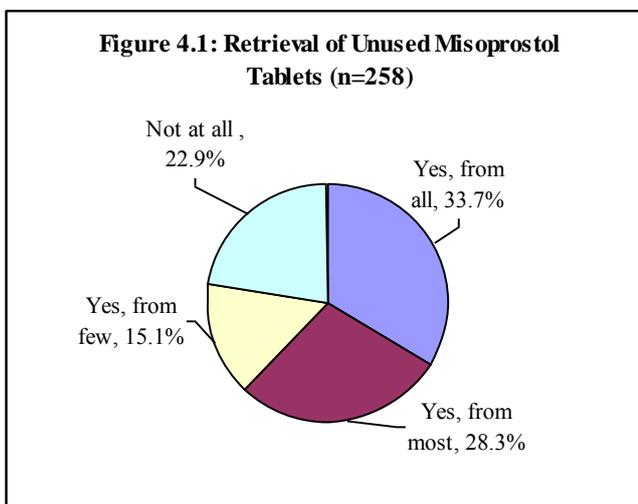
As illustrated by the figures in Table no. 4.3, nearly 72 percent of the FCHVs told that they would visit a pregnant woman for the first time at 4th month of pregnancy, while about a quarter of them would visit even before the 4th month of pregnancy. Furthermore, nearly three-fourth of respondents would distribute misoprostol tablets at 8th month of pregnancy, as directed by the protocol/guideline. Surprisingly, 4 percent of the respondents were found to have never distributed misoprostol even after receiving the training on the same. The anecdotal information from the field indicated that FCHVs didn't distribute either because of not receiving any tablets for distribution from the health facility or didn't feel importance to do so but rather encourage women to visit the health facility for antenatal care and obstetric services. Moreover, the most common information provided to pregnant women included purpose of misoprostol (77%), when to administer (72%), how many misoprostol tablets to take (54%), actions to take if PPH occurs (39%) and so on. These data indicate that many FCHVs do not provide adequate information to the pregnant women related to MSC.

Among the respondents who had ever distributed misoprostol, only a third of them were able to retrieve all the unused tablets, while nearly 23 percent expressed that they are unable to retrieve the unused tablets from none of the women they distributed (Figure 4.1). These findings indicate that less attention is given for the need of retrieval of unused MSC tablets to whom it was distributed.

Those respondents who had ever distributed misoprostol and were able to retrieve unused tablets from all or few of the service clients, were further asked about the action they take with those tablets. Nearly 71 percent of them stated that they usually return it to the health worker/health facility, as directed by the misoprostol distribution guideline, while one-fourth of them would distribute to another women — a practice discouraged by the revised Misoprostol guideline-2012 (Figure 4.2).

Make first visit to a pregnant women	Number	Percent
Before 4th month of pregnancy	70	25.9
At 4th month of pregnancy	194	71.9
After 4th month of pregnancy	6	2.2
Total (n)	270	100.0
Median month of pregnancy for first visit		4
Month of pregnancy when misoprostol is given		
7th	11	4.1
8th	209	77.4
9th	31	11.5
Never distributed Misoprostol	12	4.4
Don't know	7	2.6
Total (n)	270	100.0
Information typically provided relating to PPH/Misoprostol by FCHVs *		
Purpose of taking MSC	209	77.4
How to recognize PPH	61	22.6
What to do if PPH occurs	106	39.3
Where to go for help for PPH	72	26.7
When to take MSC	194	71.9
How many MSC to take	147	54.4
When should MSC be not administered	82	30.4
Possible side-effects	67	24.8
Others	1	0.4
Total (n)	270	

Note: * Percentage adds up to above 100 percent due to multiple response



4.4 Provision and availability of Misoprostol among FCHVs

The practice of distributing Misoprostol in the community is largely influenced by the fact that weather there has been timely supply and adequate stocks are maintained by the FCHVs who are assigned to distribute the tablets in the community. Bearing this in consideration, we had asked the respondents about the recent supply, stock situation, adequacy of available stock, stock-out problem encountered and actions they took when they ran out-of-stock for Misoprostol in the 12 months preceding the survey.

As shown in Table 4.4, nearly half (48%) of the respondents received the recent Misoprostol supply within the last 6 months, whereas nearly 6 percent had received the Misoprostol more than 3 years ago. In contrast, 5 percent of respondents were found to have never received Misoprostol for distribution but may have received one or two packets as a demonstration sample during the training. Among the total respondents, nearly 65 percent of them were observed to have no Misoprostol tablets in stock at all during the time of interview. Moreover, amongst the respondents with certain Misoprostol tablets in stock, nearly 43 percent stated that the available stock is adequate for less than a month, while similar proportion mentioned that their current stock is sufficient for the next 1-2 months only.

When all of the respondent (n= 270) were asked about the stock-out problem in the last 12 months, nearly 77 percent reported to have encountered stock-out for Misoprostol at least once, while 4 percent had never received any misoprostol for distribution in the period (Figure 4.3). Amongst those who faced the stock-out problem in 12 months preceding the survey, 7 percent of respondent encountered the stock-out situation for less than a month, while the remaining 46 percent and 48 percent of respondent experienced the problem for duration of 1 to 6 months and 7 to 12 months respectively (Table 4.5).

Table 4.4: Percentage distribution of FCHVs by Provision and availability of Misoprostol

Last misoprostol supply received	Number	Percent
within the last 6 months	130	48.3
7-12 months ago	32	11.9
13 to 24 months ago	29	10.8
25 to 36 months ago	49	18.2
37 months ago or earlier	17	6.3
Never received misoprostol for distribution	12	4.5
Total (n)	269**	100.0
**Note: 1 case has missing information		
Number of Misoprostol packet in stock		
No tablets in stock	174	64.7
1 packet	35	13.0
2 packets	19	7.1
3 or more packets	29	10.8
Never received misoprostol for distribution	12	4.5
Total (n)	269**	100.0
**Note: 1 case has missing information		
Adequacy of current stock		
<1 month	36	42.9
1-2 months	36	42.9
3-4 months	9	10.7
4-8 months	3	3.6
Total (n)	84	100.0

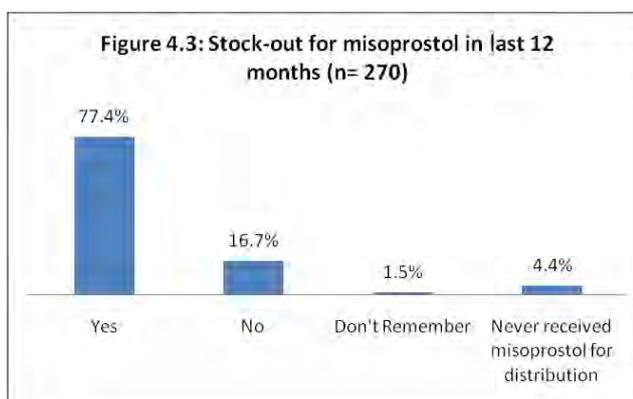


Table 4.5: Percentage distribution of FCHVs by duration of stock-out and action taken when out-of stock for misoprostol

Duration of stock-out for Misoprostol in last 12 months	Number	Percent
<1 month	14	6.7
1-6 months	95	45.5
7-12 months	100	47.8
Total (n)	209	100.0
Action taken when out-of-stock for Misoprostol *		
Advised to go to health facility for delivery	145	69.4
Borrowed from other FCHVs and distributed	2	1.0
Didn't distribute MSC	113	54.1
Advice to purchase from private clinics/visit to health facility	3	1.4
Total (n)	209	
Note: * Percentage adds up to above 100% due to multiple response		

Those respondents experiencing stock-out within the last 12 months were further asked about the action they embraced in such circumstances. Nearly 70 percent of them told that they advised the pregnant women to visit health facility for delivery while 54 percent didn't distribute any tablets due to having none stocks for distribution.

4.5 Training, Supervision to FCHVs and their Participation in Periodic Meetings

The quality of the training provided on Misoprostol distribution along with the frequency of monitoring and supervision visits to FCHV's may have influential role in FCHVs attitude and practices towards Misoprostol distribution in the community. Also, their involvement in periodic meetings organized by the health staffs may serve as an opportunity to exchange information and share progresses and bottlenecks relating to Misoprostol distribution in their catchment area.

In this survey, just above the majority (53%) of respondents received training on Misoprostol about 2 to 3 years ago, whereas nearly 9 percent had received the training more than 4 years ago (Table 4.6). Furthermore, when asked about their perception about the training, nearly 97 percent stated the training being adequate. Nearly 2/3rd of the respondent rated the misoprostol training they had received as good.

Majority (54%) of the respondents suggested to conduct refresher training at appropriate intervals or to increase the training duration or to organize trainings in the form of small groups to enable interactive learning experience. However, nearly one-fourth of the respondents had no suggestions for improvement in the training provided on Misoprostol.

All of the respondents were asked about their most recent monitoring and supervision visit from the health

facility staff. A large proportion of FCHVs (56%) expressed that they hadn't received any monitoring or supervision visit to date, while 13 percent were being visited for monitoring and supervision purposes within the month preceding the interview date (Table 4.7).

Time since misoprostol training was first received	Number	Percent
<12 months ago	3	1.1
1-2 years ago	72	27.1
2-3 years ago	142	53.4
3-4 years ago	26	9.8
4 years or earlier	23	8.6
Total (n)	266**	100.0
** Note: 4 respondents couldn't remember.		
Perception about adequacy of training to prepare for distributing misoprostol		
Adequate	261	96.7
Inadequate	9	3.3
Total (n)	270	100.0
Rate given to quality of Misoprostol training		
Very good	37	13.7
Good	183	67.8
Average	49	18.1
Don't Know/Can't Say	1	0.4
Total (n)	270	100.0
Suggestions to improve Misoprostol training *		
None	70	25.9
Training & coaching from skilled trainers/technicians	9	3.3
Refresher training/elongate training duration/training in smaller groups	147	54.4
More practical exercises, pictorials displays & demonstrations	9	3.3
Provision of observational trip following training	3	1.1
Routine monitoring & supervision by health staff	3	1.1
Training on local language	3	1.1
Others	7	2.6
Don't Know	36	13.3
Total (n)	270	
Note: * Percentage adds up to above 100% due to multiple response		

Most recent monitoring and supervision visit received	Number	Percent
<1 month ago	35	13.0
1 month ago	50	18.5
2-24 month ago	34	12.6
No supervision visit so far	151	55.9
Total (n)	270	100.0
Discussion about Misoprostol during Supervision Visit		
Yes	68	57.1
No	50	42.0
Don't Remember	1	0.8
Total (n)	119	100.0

Amongst those who ever received monitoring and supervision visit from the health facility, a majority of them (57%) have discussed on Misoprostol progresses during the visit.

Likewise, almost 89 percent of the total respondents reported to have participated in their most recent monthly meeting and during the same meeting, 54 percent of them had discussed about the progress on misoprostol distribution (Table 4.8). Similarly, almost 3/4th of the total respondents mentioned to have attended the recent biannual FCHVs meeting and two-thirds of those attending the meeting cited that the discussion on misoprostol distribution progress was made during the meeting.

In addition to this, the possession of job aids (action charts and birth preparedness flip chart) was also observed. Slightly above 2/3rd of total respondents had action chart and 83.3 percent of the respondents also possessed BPP flip chart which are used for counseling pregnant women (Table 4.9).

Participation in the last monthly FCHV meeting	Number	Percent
Yes	240	88.9
No	23	8.5
No provision of monthly meeting	7	2.6
Total (n)	270	100.0
Misoprostol distribution progress discussed during the meeting		
Yes	130	54.2
No	110	45.8
Total (n)	240	100.0
Attended recent FCHV bi-annual meeting		
Yes	200	74.1
No	70	25.9
Total (n)	270	100.0
Misoprostol distribution progress discussed during the bi-annual meeting		
Yes	134	67.0
No	63	31.5
Don't Remember	3	1.5
Total (n)	200	100.0

Possession of job aids *	Number	Percent
Action Chart	183	67.8
Birth Preparedness Flip Chart	225	83.3
Total (n)	270	151.1
Note: * Percentage adds up to above 100 percent due to multiple response		

CHAPTER 5: FINDINGS FROM HEALTH FACILITIES

A total of 99 public health facilities including district or higher level hospital from each of the 9 study districts, were surveyed as part of this evaluation study. In-order to gather relevant information/data, those health facility staff who provide delivery services were interviewed from each of the sampled health facility. Additionally, health staff who oversees the logistics and drug supply in that particular facility were also interviewed to gather information on availability, stock-situation and storage of uterotonics.

This chapter presents the findings on the characteristics of health facilities surveyed; the provision of uterotonics (oxytocin, misoprostol) in the health facilities; Active Management of Third Stage of Labour (AMTSL) practices; treatment and intervention for PPH cases and availability and storage of key uterotonics in the sampled health facilities from the study districts.

5.1 Characteristics of Health Facilities

The sample of health facilities included in this evaluation study comprised of 10 District hospital or higher level facilities, 8 PHCCs, 33 HPs and 48 SHPs (Table 5.1).

Among them, the number of Comprehensive Emergency Obstetric and Neonatal Care (CEONC) sites, Basic Emergency Obstetric and Neonatal Care (BEONC) sites, Birthing Centres (B.Cs) and Non-Birthing Centres (Non-B.Cs) were 4, 7, 64 and 24 respectively.

Level of the health facility	Number	Percent
District hospital or above	10	10.1
Primary Health Care Centre	8	8.1
Health Post	33	33.3
Sub-Health Post	48	48.5
Total (n)	99	100.0
Type of health facility		
CEONC	4	4.0
BEONC	7	7.1
Birthing centre	64	64.6
Non-birthing Centre	24	24.2
Total (n)	99	100.0

5.2 Provision of Uterotonics for PPH Prevention

As illustrated in Table 5.2, Oxytocin was found to be the prime uterotonic used for Prevention of Post-partum Hemorrhage in all of the health facilities provisioned with delivery services (i.e., Birthing Centres, BEONC and CEONC sites).

Uterotonic/s*	Number	Percent
Oxytocin	75	100.0
Methergine/Ergometrine	18	24.0
Misoprostol	21	28.0
Other	1	1.3
Total (n)	75	
Note: * Percentage adds up to above 100% due to multiple response		

Likewise, nearly 28 percent of the health facilities with delivery services reported to have used Misoprostol through oral/vaginal/rectal route, besides oxytocin.

Nearly a quarter of health facilities (24%) were also found to have used Methergine in certain cases. It should be noted that Methergine do not fall under the 'list of essential drugs' supplied through government's logistics and drug supply system but some facilities may purchase it locally and use it besides Oxytocin.

Staffs of health facilities which offer delivery services were further asked about the stage when the uterotonic is usually administered. Almost all of them (97%) correctly stated that the uterotonic were administered just after birth of baby but before delivery of placenta (Table 5.3).

Besides Skilled Birth Attendants (Obstetrician/ Gynecologist, Doctor, Nurse and ANMs), other health professionals such as Senior Auxiliary Health Worker/Auxiliary Health Worker/Health Assistant were also mentioned to have administered Uterotonic in one-fifth of the health facilities with delivery services.

Note: Undoubtely, all Obstetrician/ Gynecologist/Doctor/Nurse are trained and authorized to administer uterotonic, despite that the percentage appears low (Table 5.3) owing to fewer proportion of BEOC/CEOC sites in the total sample of health facilities.

Table 5.3: Percentage distribution of health facilities by stage of administering uterotonic and authorized personnel

Stage of uterotonic administration	Number	Percent
During labour but before delivery of baby	1	1.3
Just after birth of baby but before delivery of placenta	73	97.3
After placental delivery	1	1.3
Total (n)	75	100.0
Authorised health worker/s to administer uterotonic*		
Obstetrician/Gynecologist	4	5.3
Doctor	8	10.7
Nurse	14	18.7
A.N.M	72	96.0
Sr. AHW/AHW/HA	15	20.0
MCHW	2	2.7
Total (n)	75	153.3

Note: * Percentage adds up to above 100% due to multiple response

5.3 Active Management of Third Stage of Labour (AMTSL) Practices for PPH Prevention

Active Management of Third Stage of Labour (AMTSL) is a highly effective procedure to prevent postpartum hemorrhage among facility-based deliveries and has been widely promoted. It constitutes (Ministry of Health & Population,2009):

- Injection of oxytocin 10 units IM immediately after the delivery of baby.
- Controlled cord traction (Never apply cord traction without applying counter-traction above the pubic bone with the other hand).
- and Uterine Massage - immediately after delivery of placenta massage the fundus of the uterus through the woman's abdomen until the uterus is contracted.
- Examining general condition, pulse, BP, and bleeding after the delivery of placenta.
- Examining the woman carefully and repair any tears to the cervix or vagina or repair episiotomy.
- Examining the placenta and cord.

Table 5.4: Percentage distribution of health facilities by AMTSL Practices for PPH Prevention

Availability of written protocol/guideline for AMTSL	Number	Percent
Yes	58	77.3
No	17	22.7
Total (n)	75	100.0
Guideline/protocol followed		
Yes	57	98.3
No	1	1.7
Total (n)	58	100.0
Practice of Controlled Cord Traction (CCT) method		
Yes	74	98.7
Don't know	1	1.3
Total (n)	75	100.0
Practice of Uterine massage method		
Yes	74	98.7
Don't know	1	1.3
Total (n)	75	100.0

Questions relating to Controlled Cord Traction, Uterine Massage along with use of oxytocin during delivery were included in this study with a purpose to understand AMTSL practices adopted in the sampled health facilities. The use of Oxytocin (a component of AMTSL) immediately after delivery has been discussed in the former section (i.e. Section 5.2) of this chapter.

Furthermore, slightly above 2/3rd of the health facilities with delivery services (i.e., BCs, BEOCs and CEOCs) cited of having written protocol guideline for AMTSL (Table 5.4). As stated by the respondents interviewed, almost all of those health facilities followed the guideline routinely. Almost all of the sampled health facilities provisioned with delivery services were reported to have practiced Controlled Cord Traction (99%) as well as Uterine Massage (99%) method to prevent PPH.

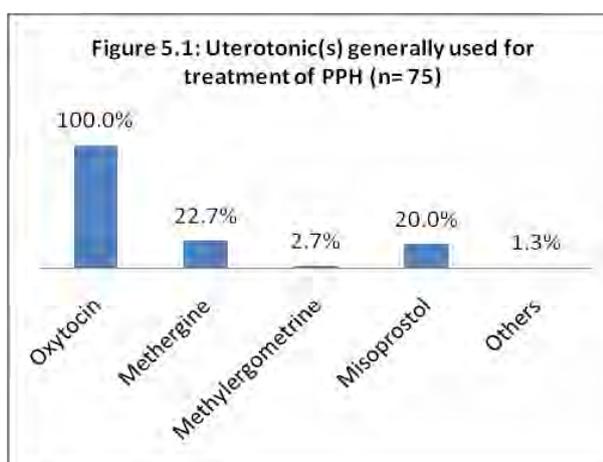
5.4 Treatment and Intervention for PPH Cases

An effective management of Postpartum Hemorrhage cases demands an appropriate guideline and treatment procedures to be followed along with the availability of uterotonics at all times. A total of 40 out of 75 health facilities provisioned with delivery services have dealt with at least one postpartum hemorrhage cases in the last 12 months. Uterine massage (95%), Therapeutic uterotonic administration (63%) and therapeutic repair of tears (58%) were the most common treatment measures adopted to treat PPH cases by those facilities in the 12 months preceding the survey (Table 5.5).

Similarly, the use of Oxytocin was universal to treat PPH cases in all of the facilities provisioned with delivery services (Figure 5.1). In addition to oxytocin, methergine and Misoprostol were also the alternative forms of uterotonics brought into practice for Postpartum Hemorrhage Treatment in 23 percent and 20 percent of the facilities respectively. Even though methergine is not distributed through the government logistics and commodities system, some health facilities were found to have purchased it locally and used it in certain circumstances, apart from oxytocin.

Treatment generally provided for PPH Cases reported in last 12 months*	Number	Percent
Uterine massage	38	95.0
Repair of tears (Therapeutic)	23	57.5
Therapeutic Uterotonic	25	62.5
Aortic or bimanual compression	9	22.5
Others	3	7.5
Total (n)	40	245.0
Availability of written protocol/guideline for PPH Treatment	Number	Percent
Yes	46	61.3
No	29	38.7
Total (n)	75	100.0

Note: * Percentage adds up to above 100% due to multiple response



5.5 Availability, Storage and stock situation of Uterotonics in Health Facilities

5.5.1 Availability of Different Uterotonics

As shown in Table 5.6, oxytocin was available in almost all of the facilities provisioned with delivery services. On the other hand, it is surprising to note that 62.5 percent of non-birthing centres also maintained oxytocin stock, which could have been utilized by health workers during at-home births. In addition to Oxytocin, few stock of methergine were also found to be available in nearly 19 percent of the facilities provisioned with delivery

Uterotonics currently in stock*	Birthing Centres and Higher Level Facilities		Non-Birthing Centres	
	Number	Percent	Number	Percent
Oxytocin				
Yes	74	98.7	15	62.5
No	1	1.3	9	37.5
Methergine/Ergometrine			n/a	n/a
Yes	14	18.7		
No / No provision of this uterotonic through government's supply	61	81.3		
Methylergometrine			n/a	n/a
Yes	3	4.0		
No / No provision of this uterotonic through government's supply	72	96.0		
Misoprostol				
Yes	55	73.3	12	50.0
No	20	26.7	12	50.0
Total (n)	75		24	

Note: * Percentage adds up to above 100% due to multiple response

services, primarily in BEONC and CEONC sites. According to the interviewed staffs, such few amount of methergine is purchased locally as it is not supplied through government's logistics and commodities supply system under its 'list of essential drugs'. Besides injectable forms of uterotonics, misoprostol was observed in almost 73 percent of B.Cs & upper-level facilities and 50 percent of the non-birthing centres at time of visit.

5.5.2 Availability, Storage and Adequacy of Oxytocin

Table 5.6 reveals the variation in average amount of oxytocin available across different types of health facility. Amongst the health facilities with certain stocks for oxytocin, CEONC and BEONC facilities were observed to have possessed an average of 1,538 and 1,254 ampules at time of visit. On the other hand, Birthing Centres had an average stock of 128 ampules and non-birthing centres with the lowest of 60 ampules on an average.

Type of health facility	No. of health facilities with oxytocin stock	Average oxytocin ampules in stock
CEONC	4	1,538
BEONC	7	1,254
Birthing centre	63	128
Non-birthing Centre	15	60
Total (n)	89	
Oxytocin refrigeration status		
None refrigerated	69	93.2
Refrigerated	5	6.8
Total (n)	74	100.0
Adequacy of oxytocin in-stock to meet current demand		
Adequate	71	95.9
Inadequate	3	4.1
Total (n)	74	100.0

The birthing centres and upper-level facilities were further observed for oxytocin refrigeration status and asked about its duration of adequacy. High majority (93%) of those facilities were found to have kept the oxytocin out of refrigeration. Furthermore, the amount of oxytocins available in stock was found to be adequate for nearly 96 percent of those facilities to meet its current demand.

5.5.3 Availability and Adequacy of Misoprostol

67 out of total 99 (i.e., 68%) health facilities surveyed had certain stocks of misoprostol at time of interview. Among them, CEONC facilities were observed to have possessed an average of nearly 6 misoprostol packets (Table 5.8). (Note: Each packet contains 3 tablets of misoprostol). This could be attributed to the fact that CEONC facilities (ie, hospitals) provide more effective injectable forms of uterotonics and they do not either act as a distribution

Type of health facility	No. of health facilities with misoprostol in stock	Average no. of misoprostol packets in stock ⁺
CEONC	3	6
BEONC	6	85
Birthing centre	46	52
Non-birthing Centre	12	68
Total (n)	67	
Adequacy of Misoprostol-in-stock to meet current demand		
Yes	49	74.2
No	17	25.8
Total (n)	66**	100.0
**Note: 1 case has missing information. + Each packet contain 3 tablets		

point for misoprostol in peripheral facilities (i.e., PHCC, HP, SHPs) and FCHVs. However, BEONC sites, Birthing Centres and non-birthing centres had maintained greater amount of Misoprostol—an average of 85, 52 and 68 packets respectively.

Facilities with certain stock of misoprostol were further asked about its duration of adequacy. Almost 3/4th of those facilities stated that the currently available stock was adequate to meet its current demand.

5.5.4 Stock-out Situation and its Duration for Key Uterotonics

The health facilities provisioned with delivery services were asked about whether they had experienced stock out for oxytocin and misoprostol in the previous 12 months from the interview date. Nearly one-fifth (i.e., 14 out of 75) of those facilities reported to have encountered stock-out for oxytocin at least once in the last 12 months preceding the survey, which last for an average of 1.81 months (Table 5.9).

Similarly, out of total 99 health facilities surveyed, 70 health facilities (71%) reported to have encountered stock-out for Misoprostol at least once in the last 12 months preceding the survey, which lasted for an average of 5.8 month. Amongst them, nearly 47 percent health facilities experienced stock out for 1 to 6 months while approximately 43 percent ran out of stock for 7 to 12 months within the recent 12 months period in question.

Stock-out problem in the last 12 months*	Birthing Centres and higher level health facilities		Non-Birthing Centres	
	Number	Percent	Number	Percent
Oxytocin			n/a	n/a
Yes	14	18.7	-	-
No	61	81.3	-	-
Misoprostol				
Yes	52	69.3	18	75.0
No	23	30.7	6	25.0
Total (n)	75			
Duration of Misoprostol stockout in last 12 months				
		< 1 month	7	10.0
		1-6 months	33	47.1
		7-12 months	30	42.9
		Total (n)	70	100.0
		Average stock-out duration within 12 months	5.8 months	
Note: * Percentage adds up to above 100% due to multiple response				

5.6 Suggestions to Improve Supply, Storage and Coverage of Misoprostol at District Level

In-order to understand the possible areas for improvement in misoprostol distribution at peripheral level, an importance of gathering suggestions from the local health facility staffs have been realized as part of this evaluation study. Therefore, few open-ended questions were incorporated in the survey instrument with a view to seek suggestions on how to improve supply, storage, coverage and overall improvement in misoprostol programme at district level. Once the bulk of suggestions were gathered during the fieldwork, the study team analyzed them and summarized the suggestions in logical categories. The most common and frequently expressed suggestions are presented in the tabular form

As shown in Table 5.10, the most common suggestions to improve the procurement or supply of misoprostol at the district level were timely trimester supply of misoprostol (61%); demand-based misoprostol supply (23%), and ensure longer 'shelf-life' duration of misoprostol tablets when received at peripheral facilities (20%).

Suggestion*	Number	Percent
Timely trimester supply of Misoprostol	60	60.6
Supply of Misoprostol as per the demand	23	23.2
Longer/shelf-life of Misoprostol when received at health facility	20	20.2
Regular monitoring and supervision	8	8.1
Smooth supply of Misoprostol from the District Public/Health Office	5	5.1
Procurement & supply of Misoprostol through government's own delivery system	4	4.0
Local procurement authority to peripheral health facilities	2	2.0
Don't know/Can't say/no suggestions	14	14.1
Others	12	12.1
Total (n)	99	
Note: * Percentage adds up to above 100% due to multiple response		

Similarly, some of the key suggestions to improve misoprostol storage in the health facilities were to make provision of shelves (29%), proper ventilated or dry store room (19%). However, nearly one-third of the respondents from the sampled health facility had no suggestions for storage improvements (Table 5.11).

Furthermore, when asked about the suggestions to improve misoprostol coverage during at-home births, some of the frequent suggestions expressed by the respondents were to actively mobilize FCHVs and strengthen capacity (44%); awareness creation through community awareness campaigns or mother's group meetings or school health education programs (41%) and regular and timely supply of misoprostol (22%) (Table 5.12).

At the end, respondents from the sampled health facilities were asked about their views/suggestions to bring about overall improvement in the misoprostol distribution program. The most common suggestions expressed were to ensure regular and timely misoprostol supply or demand based supply (42%); educate family members of the target groups and increase community awareness about misoprostol tablets (30%) and improve the program monitoring, supervision of staffs and maintain effective feedback mechanism (27%) at district level (Table 5.13).

Suggestion*	Number	Percent
Provision of shelves	29	29.3
Provision of proper/ventilated/dry store room	19	19.2
No need for improvement in storage	6	6.1
Need for a focal person	6	6.1
Need regular supervision of store room	3	3.0
Don't know/Can't say/no suggestions	32	32.3
Others	16	16.2
Total (n)	99	112.2

Note: * Percentage adds up to above 100% due to multiple response

Suggestion*	Number	Percent
Active mobilization & capacity building of FCHVs	44	44.4
Awareness via community awareness campaign/Mother's group meeting/school health education	41	41.4
Regular and timely supply of Misoprostol	22	22.2
Regular monitoring/supervision to FCHVs/health staff/strengthening record-keeping and reporting system/refresher training to FCHVs at appropriate intervals	15	15.2
Adequate counseling to pregnant women about importance, time and dosage for consumption, possible side-effects, etc	5	5.1
Peripheral health facilities should emphasize distribution of misoprostol at community-level	2	2.0
Don't know/Can't say/no suggestions	10	10.1
Total (n)	99	140.4

Note: * Percentage adds up to above 100% due to multiple response

Suggestion*	Number	Percent
Regular & timely supply / demand-based supply of Misoprostol	42	42.4
Educate family members & increase community awareness about misoprostol	30	30.3
Improve program monitoring, supervision & feedback mechanism	27	27.3
Mobilize mother's group	17	17.2
Improved counselling & distribution from FCHVs	10	10.1
Supply Misoprostol tablets with longer/shelf-life when received at health facility	4	4.0
Strengthen proper record-keeping & timely reporting of data on misoprostol by FCHVs	4	4.0
Others	16	16.2
Total (n)	99	

Note: * Percentage adds up to above 100% due to multiple response

CHAPTER 6.0: STUDY LIMITATIONS

Although the research has reached its specified objectives, there were some unavoidable limitations and shortcomings, worthwhile for acknowledging are documented as follows:

- a) One of the major criteria for selection of study districts was the 1-year maturity of Misoprostol distribution program. This study covers only 9 out of 31 districts with Misoprostol Program– a representative selection across 3 ecological zones (Please refer to “Methodology Section” for details). Considering that each district are distinctive to each other in terms of demographic, socio-economic and geographical characteristics, caution should be taken while generalizing the findings of this study as a nationally representative scenario.
- b) The low coverage and compliance as revealed by this study resulted fewer number of cases who received Misoprostol and/or those who administered it during delivery (than assumed during sample size determination to allow disaggregation by eco-zones for certain key variables). This limits the comparative analysis amongst ecological zones for key variables such as compliance to Misoprostol during home delivery; adequate knowledge on misoprostol; month of gestation when the tablet was received.
- c) There were chances of recall biases especially among RDWs who had delivered more than 6 months prior to date of interview and attempted to gather information relating to her last pregnancy.

CHAPTER 7.0: CONCLUSION AND RECOMMENDATIONS

In conclusion, the coverage of misoprostol was found to be relatively low at 15 percent, compared to the previous surveys[†], while the compliance of misoprostol was still higher at 88 percent amongst those women who had delivered at home. Though the study design aimed to explore any significant differences on coverage across the ecological zones, the findings however suggested no significant difference in terms of Misoprostol coverage across the ecological zones - mountain, hill and terai. The low awareness about the misoprostol among the service clients (RDW, CPW), implicates the need for community-based awareness programs, besides relying upon community health volunteers as reiterated from the findings that more than one-third of RDWs didn't met FCHVs during their last pregnancy. Also, interventions to actively mobilize FCHVs might be crucial to reach greater portion of the target population. The 54 percent of births being taken place in health institution appear to be encouraging, as the country has been making sustained progresses towards achieving MDG 5. Despite this, the importance of misoprostol to target the remaining 46 percent of births that are still taking place in home shouldn't be undermined. These community interventions may however prove to be more cost-effective, if targeted in rural areas with high proportion of home births and poor physical accessibility to birthing facilities.

Despite being well-aware about the key components of Misoprostol, noticeable proportion of FCHVs found it challenging to retrieve the unused tablets and the practice of distributing the retrieved tablets to another pregnant woman was also noticed among certain FCHVs, which is not in compliance to the misoprostol distribution guideline. The stock-out for misoprostol among high majority of FCHVs; longer duration of receipt of last supply by FCHVs; and stock-out problem encountered by nearly a third of health facilities for misoprostol implies that formidable challenges lies ahead in terms of improving coverage and preventing post-partum hemorrhage at community-level. Therefore, the smooth supply of misoprostol to FCHVs should be ensured by minimizing the delay in procurement/supply at central level and timely supply to peripheral health facilities and advise FCHVs to maintain few packets in stock at all times.

As majority of FCHVs cited of not receiving monitoring and supervision visits, despite of their claim to have participated in recent periodic FCHV meetings, the regular supervision to FCHVs and monitoring along with effective feedback mechanism could be instrumental to mobilize FCHVs and providing guidance to maintaining proper records/information on services delivered at community level.

Given that nearly 23 percent health facilities mentioned of not having guideline/protocol for AMTSL, it is imperative to make universal provision/availability of guideline/protocol for AMTSL in all of birthing facilities and displayed in the labour room/maternity ward of those facilities with a view to guide health professionals in effective management of labour.

While 19 percent of birthing facilities encountered stock-out for oxytocin at least once during the last 12 months, steps need to be taken to ensure uninterrupted supply of oxytocin across all birthing facilities for timely prevention and treatment of PPH cases. Furthermore, given that 71 percent of the sampled facilities also experienced stock-out for misoprostol at least once in the same period, the uninterrupted and timely supply of misoprostol to the health facilities remain vital to cater the current demand for PPH prevention amongst at-home births.

[†] a. *Nepal Family Health Programm-II, & Valley Research Group. (2011). Maternal and Newborn Health (MNH) Activities at Community Level Baseline and Endline Survey in Sindhuli.*
b. *Nepal Family Health Programme-I, & Valley Research Group. (2007). Baseline and Follow-up Surveys of Community-based Maternal Neonatal Care Work in Jhapa, Banke and Kanchanpur Districts.*
c. *Nepal Family Health Program II, & New ERA. (2011). Coverage and Compliance of Chlorhexidine (Kawach) Use and other Components of Community-based Program in Banke, Jumla and Bajhang districts. Kathmandu: Nepal Family Health Programme II.*

Recommendations

- RDW lacked adequate knowledge regarding recognition of danger signs and symptoms during pregnancy and delivery, and were also not informed adequately about excessive bleeding during birth. Recognition of danger signs is important for timely management of these danger signs to avoid complications during pregnancy and delivery. Therefore, program should make additional effort to disseminate these information to the pregnant women including community people.
- The survey estimated that about six in ten women were protected from the risk of PPH largely through delivering their baby in a health facility (54%) and only a few by using complete dose of MSC who had delivered their baby at home without the assistance of a health provider. Yet 40 percent of the pregnant women were at risk of PPH which could have been minimized through high coverage of MSC. Given this fact, there is a need to make effective coverage of MSC.
- The community-based MSC distribution program was piloted and scaled up in Nepal when the institutional delivery was very low. Now because of increased number of birthing centres resulting in increased access to delivery services, there is likelihood that women delivering at health institutions will further increase. Given this fact, there is a need for contextual planning of MSC program such as implementing it in more remote areas or within some selected areas of the districts where the access to institutional delivery is low.
- About one in ten RDW did not return unused MSC. Some have kept unused MSC with them, some threw away, and some lost/misplaced. This finding is further supported with the reporting of FCHVs that nearly one-fourth of them do not retrieve unused MSC from all to whom they have distributed. This suggests that FCHVs do not feel the need to retrieve unused tablets. Therefore, there should be program effort to retrieve unused MSC in order to minimize the wastage.
- FCHVs have been assuming that because of opening of birthing center, women will use health facility for delivery services. Because of this assumption, a great proportion of FCHVs do not keep stock of MSC with them nor do they distribute to pregnant women. Because of this, women delivering at home without the help of a health worker are at higher risk of PPH. Health workers are also least likely to provide information on MSC to women during their ANC visits. There should be strong program effort that all FCHVs keep MSC in stock and distribute to all pregnant women within their catchment areas regardless wherever they plan to deliver their baby.
- There is a risk of lapse of knowledge of FCHVs when they do not counsel and distribute MSC to the pregnant women for a longer duration. The opportunities to update their knowledge and skill also lies during when supervision is made to them and also during periodic and review meetings FCHVs attend. However, many of the FCHVs were not supervised and of those who were supervised 42 percent were not asked about progress relating to MSC. In addition, there is missed opportunity to enhance knowledge and skills of FCHVs about MSC during FCHV monthly meetings and also at their review meetings, and ensuring the supply of job aids. Therefore, there is need for regular supervision and monitoring of their progress on MSC and focus on meetings that FCHVs attend.
- Oytocin was available in all the health facilities provisioned for delivery services, however MSC was not available in all the health facilities and the stock was stated to be inadequate. Moreover, health facilities had experienced out of stock of MSC in the last 12 preceding the survey therefore many health facility staff expressed concern regarding timely and adequate supply of MSC. Moreover, all FCHVs did not have MSC in stock and also had encountered supply problem in the past. Therefore, procurement and supply system should be made more efficient to ensure timely, regular and adequate supply of misoprostol to the district and peripheral facilities. This is important also keeping in mind the shorter shelf- life of MSC.

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ANNEX

STUDY DESIGN SUMMARY

Ecological Zone	Districts	No. of Clusters	RDW Sample Size	CPW Sample Size*	No. of FCHVs [^]	No. of HFs [#]
Mountain	Darchula	12	276	94	36	13
	Bajura	13	299	85	39	14
	Mugu	5	115	36	15	6
Sub-total		30	690	215	90	33
Hill	Doti	9	207	50	27	10
	Ramechhap	10	230	62	30	11
	Udayapur	11	253	94	33	12
Sub-total		30	690	206	90	33
Terai	Kailali	12	276	120	36	13
	Banke	8	184	77	24	9
	Dang	10	230	73	30	11
Sub-total		30	690	270	90	33
Total		90	2070	691	270	99

* Actual CPW sample size was not pre-determined prior to fieldwork. As the primary respondent for this survey were RDWs, the sample size for CPW varied by clusters given that the criteria was to interview eligible CPWs identified in the screened household until the required sample size of 23 RDWs are met for that particular cluster.

[^] The sample of FCHVs comprised of: 3 FCHVs selected randomly from each cluster who have received training on Misoprostol distribution.

[#] The sample of health facilities includes: 1 health facility from the each of the sampled cluster, as well as the district-level hospital (or zonal or regional hospital as applicable) from each of the study district.