

Exploring Birth Planning and Responses to Delivery Complication: A Qualitative investigation to Supplement the Bangladesh Maternal Mortality and Health Care Survey, 2010



Rasheda Khan
Lauren S. Blum
Sayeda Bilkis Shelly
Marzia Sultana
Quamrun Nahar
Peter Kim Streatfield

Exploring Birth Planning and Responses to Delivery Complication: A Qualitative investigation to Supplement the Bangladesh Maternal Mortality and Health Care Survey, 2010

**Rasheda Khan
Lauren S. Blum
Sayeda Bilkis Shelly
Marzia Sultana
Quamrun Nahar
Peter Kim Streatfield**

May 2014



icddr,b, Scientific Report No. 123
May 2014

ISBN978-984-551-344-9

Corresponding Author :

Rasheda Khan
icddr,b
GPO Box 128, Dhaka-1000
Mohakhali, Dhaka 1212
Bangladesh

Phone : 880-2-9827001 to 10 (ext-2235)
e-mail : rkhan@icddrb.org
Web : <http://www.icddrb.org>

Cover Design

Rasheda Khan

Photo Courtesy

Tariq Aman

©International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b)

Suggested citation: R. Khan, L. Blum, S.B. Shelly, M. Sultana, Q. Nahar, P.K. Streatfield.
2014. *Exploring Birth Planning and Responses to Delivery Complications: A Qualitative investigation to supplement the Bangladesh Maternal Mortality and Health Care Survey 2010*, MEASURE Evaluation and icddr,b.

Printing :

Dynamic Printers, Dhaka, Tel: 880-2-7192771

Acknowledgement

The successful completion of the study titled “Examining birth planning and responses to delivery complications: A Qualitative Investigation to supplement the Bangladesh Maternal Mortality Survey (BMMS), 2010” and publication of this report was made possible by the contributions of a number of organizations and people.

This research activity was an extension of the Bangladesh Maternal Mortality Survey (BMMS) 2010 study. This research endeavor was funded by United Nations Population Fund (UNFPA) while the Government of Bangladesh, United States Agency for International development (USAID), Australian Agency for International Development (AusAID), funded the main BMMS 2010 study which was carried out by National Institute of Population Research and Training (NIPORT) with technical assistance from icddr,b, MEASURE Evaluation and USAID/Bangladesh. icddr,b acknowledges with gratitude the commitment of UNFPA to its’ research efforts, and the support of USAID and AusAID.

icddr,b also acknowledges the support of USAID and Department for International Development (DIFD) for completing this report. USAID through its MEASURE Evaluation project provided funding writing this report from the final study report, and DIFD provided funding for the publication of this report.

The study team also gratefully acknowledges the support of the Ministry of Health and Family Welfare (MoHFW), Government of the People’s Republic of Bangladesh for its’ constant support to carry out the study. icddr,b also acknowledges the governments of Australia, Bangladesh, Canada, Great Britain, and Sweden for providing unrestricted/core support to the centre.

Special thanks to Dr. Kanta Jamil, Monitoring and Evaluation Advisor, Office of Population, Health, Nutrition and Education, USAID, Bangladesh for her guidance to all steps of study implementation and report generation.

We are grateful to the researchers and the members of the qualitative and quantitative team of the BMMS 2010 study for their unabated diligence and efforts. We also acknowledge the commitment of ACPR and Mitra and Associates for guiding us in finding the informants in the study communities.

Finally, we would like to dedicate this report to those women who died and suffered from various life threatening complications while giving birth.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1. INTRODUCTION	5
2. RESEARCH METHODS.....	8
2.1. SITE DESCRIPTION	8
2.2. METHODS AND STUDY POPULATION	8
2.2.1. <i>In-depth Interviews</i>	8
2.2.1.1. Maternal Death and Near-Miss Cases	8
2.2.1.2. Pregnant Women in the Third Trimester.....	9
2.2.1.3. Community Skilled Birth Attendants	10
2.2.2. <i>Focus Group Discussions</i>	10
2.2.3. <i>Key Informant Interviews</i>	10
2.3. DATA COLLECTION PROCEDURES	10
2.4. DATA ANALYSIS	11
2.5. ETHICAL ISSUES	11
3. RESULTS	12
3.1. IDENTIFICATION OF INFORMANTS	12
3.1.1. Maternal Death and Near-miss Cases.....	12
3.1.2. Pregnant Women in the Third Trimester	12
3.1.3. CSBAs	12
3.1.4. Focus Group Discussions.....	14
3.1.5. Key Informants.....	14
3.2. RESULTS ON MATERNAL DEATHS AND NEAR-MISS	14
3.2.1. <i>Maternal Deaths: Hemorrhage</i>	15
3.2.1.1. Background.....	15
3.2.1.2. Antenatal Care	15
3.2.1.3. Physical Activities During Pregnancy	16
3.2.1.4. Restrictions	16
3.2.1.5. Risk Perceptions of Delivery	16
3.2.1.6. Birth Planning	17
3.2.1.7. Delivery.....	17
3.2.1.7.1. Onset of Labor and Identification of Complications	17
3.2.1.7.1.1. Antepartum Hemorrhage	17
3.2.1.7.1.2. Postpartum Hemorrhage.....	17
3.2.1.7.2. Care seeking	20
3.2.1.7.2.1. Antepartum Hemorrhage	20
3.2.1.7.2.2. Postpartum Hemorrhage.....	21
3.2.1.7.3. Hospital Care	22
3.2.1.8. Condition of the Baby.....	23
3.2.1.9. Causal Explanations of the Condition	23
3.2.1.10. Perceptions of Home and Hospital Deliveries	23
3.2.1.11. Cost	24
3.2.2. <i>Maternal Deaths: Eclampsia</i>	24
3.2.2.1. Background Information.....	24
3.2.2.2. Antenatal Care	25
3.2.2.3. Physical Condition during Pregnancy.....	25

3.2.2.4. Physical Activities during Pregnancy.....	25
3.2.2.5. Birth Planning	26
3.2.2.6. Delivery.	27
3.2.2.6.1. Onset of Labor and Identification of Complications	27
3.2.2.6.2. Care seeking	28
3.2.2.6.3. Hospital Care	30
3.2.2.7. Condition of the Baby.....	31
3.2.2.8. Causal Explanations of the Condition	31
3.2.2.9. Cost.....	31
3.2.3. <i>Maternal Deaths: Obstructed Labor</i>	32
3.2.3.1. Background Information.....	32
3.2.3.2. Antenatal Care	32
3.2.3.3. Physical Activities During Pregnancy	32
3.2.3.4. Birth Planning	33
3.2.3.5. Delivery	33
3.2.3.5.1. Onset of Labor and Identification of Complications	33
3.2.3.5.2. Care seeking	33
3.2.3.5.3. Hospital Care	34
3.2.3.6. Condition of the Baby.....	35
3.2.3.7. Causal Explanations of the Condition	35
3.2.3.8. Cost.....	35
3.2.4. <i>Maternal Deaths: Sepsis</i>	36
3.2.4.1. Background Information.....	36
3.2.4.2. Antenatal Care	36
3.2.4.3. Physical Activities During Pregnancy	36
3.2.4.4. Birth Planning	36
3.2.4.5. Delivery.	37
3.2.4.5.1. Onset of Labor and Identification of Complications	37
3.2.4.5.2. Care seeking	37
3.2.4.5.3. Hospital Care	38
3.2.4.6. Causal Explanations of the Condition	38
3.2.4.7. Cost.....	39
3.2.5. <i>Near-Miss: Hemorrhage</i>	39
3.2.5.1. Background Information.....	39
3.2.5.2. Antenatal Care	39
3.2.5.3. Physical Activities During Pregnancy	40
3.2.5.4. Restrictions.....	40
3.2.5.5. Risk Perceptions of Delivery	40
3.2.5.6. Birth Planning	41
3.2.5.7. Delivery.....	41
3.2.5.7.1. Onset of Labor and Identification of Complications	41
3.2.5.7.2. Care seeking	44
3.2.5.7.3. Hospital Care	45
3.2.5.8. Condition of the Baby.....	46
3.2.5.9. Causal Explanations of the Condition	47
3.2.5.10. Perceptions of Home and Hospital Delivery.....	47
3.2.5.11. Cost	48
3.2.6. <i>Near-Miss: Eclampsia</i>	48
3.2.6.1. Background Information.....	48
3.2.6.2. Antenatal Care	48
3.2.6.3. Physical Condition During Pregnancy	50
3.2.6.4. Physical Activities During Pregnancy	50

3.2.6.5. Restrictions	50
3.2.6.6. Risk Perceptions of Delivery	51
3.2.6.7. Birth Planning	51
3.2.6.8. Delivery.	52
3.2.6.8.1. Onset of Labor and Identification of Complications	52
3.2.6.8.2. Care seeking	54
3.2.6.8.3. Hospital Care	55
3.2.6.9. Condition of the Baby.....	57
3.2.6.10. Causal Explanations of the Condition	58
3.2.6.11. Perceptions of Home and Hospital Delivery.....	58
3.2.6.12. Cost.....	59
3.2.7. <i>Near-Miss: Obstructed Labor</i>	59
3.2.7.1. Background Information.....	59
3.2.7.2. Antenatal Care	59
3.2.7.3. Physical Activities During Pregnancy	59
3.2.7.4. Birth Planning	60
3.2.7.5. Delivery.....	60
3.2.7.5.1. Onset of Labor and Identification of Complications	60
3.2.7.5.2. Care seeking	61
3.2.7.5.3. Hospital Care	62
3.2.7.6. Condition of the Baby.....	63
3.2.7.7. Causal Explanations of the Condition	63
3.2.7.8. Cost.....	63
3.3. RESULTS ON PREGNANT WOMEN OF THIRD TRIMESTER	64
3.3.1. Background Information	64
3.3.2. Antenatal Care	64
3.3.3. Physical Condition and Additional Care seeking	66
3.3.4. Physical Activities During Pregnancy	66
3.3.5. Knowledge of and Preparation for Delivery Complications	67
3.3.6. Perceptions of Risk During Childbirth	67
3.3.7. Perceptions of Home and Hospital Deliveries.....	68
3.3.7.1. Home Delivery.....	68
3.3.7.2. Hospital Delivery	69
3.3.8. <i>Birth Planning</i>	71
3.4. COMMUNITY SKILLED BIRTH ATTENDANTS (CSBAs)	73
3.4.1. Background Information	73
3.4.2. Roles and Responsibilities.....	73
3.4.2.1. As Family Welfare Assistants (FWAs) and Health Assistants (HAs)	73
3.4.2.2. As Community Skilled Birth Attendants.....	74
3.4.3. Training	74
3.4.4. Perceptions of the Training	75
3.4.5. Supplies	76
3.4.6. Performance as CSBAs	76
3.4.7. Perceptions of and Experiences in Their Role	77
3.4.8. Incentives, Compensation and Benefits.....	78
3.4.9. Community Acceptance.....	79
3.4.10. Constraints Faced as CSBAs	80
3.4.11. Supervision	81
4. DISCUSSION	83
5. RECOMMENDATIONS	98
6. REFERENCES	101

EXECUTIVE SUMMARY

Bangladesh has had a history of high rates of maternal mortality, with several small scale studies carried out in the 1990s suggesting levels above 600 maternal deaths per 100,000 live births. The first national estimate of maternal mortality was 322 per 100,000 live births for the period of 1999-2001. The nationwide survey also showed a high percentage of women delivering in home settings with unskilled birth attendants. As part of its effort to reduce maternal mortality, the Government of Bangladesh (GOB) adopted a national strategy to upgrade health facilities and services to make emergency obstetric care (EmOC) available to all women, with a special focus on early detection of complications and appropriate referral and improved quality of care. In addition to the availability of EmOC services at District Hospitals, upgrading of 60 of the existing 90 Maternal and Child Welfare Centers (MCWC) began in 1994. Then in 2002, the government embarked on strategies to ensure basic obstetric care at the community level, and by 2004 a program to create a cadre of community skilled birth attendants (CSBAs) for home deliveries was launched. In addition, a maternal voucher system designed to increase rates of delivery with skilled attendants among poor populations was introduced in 2007.

The major objective of the 2010 Bangladesh Maternal Mortality Survey (BMMS) was to provide a maternal mortality estimate for the period 2008-2010 and to determine whether the maternal mortality ratio has significantly declined since the last BMMS was carried out in 2001, which provide estimates for the reference period between 1999-2001. As part of the maternal mortality survey, a qualitative study was carried out to examine in detail the barriers in accessing EmOC faced by women who died from maternal complications, as well as information from women who experienced similar pregnancy complications but who obtained EmOC (near-miss cases) and survived. Pertinent information related to birth planning, household decision-making regarding birthing care, and care seeking behaviors was gathered.

The study was carried out between March 2010 and February 2011 in districts spanning the country of Bangladesh. The overall sampling was guided by the BMMS quantitative survey, which had teams of data collectors sweeping the country to identify households where a maternal death had occurred. Study components involved in-depth assessments of selected maternal deaths and near-miss cases, birth planning by women in their third trimester of pregnancy, and the role of CSBAs in community level maternal health services. Once a maternal death was identified, informants meeting the criteria for the other study components were selected in proximity to the maternal death household. The research methods were qualitative in nature and entailed key informant and in-depth interviews and focus group discussions.

Key Study Findings

Seven key informants were interviewed, including policy makers at the national level and health professionals working in districts where informants were sampled. Maternal death and near-miss interviews took place in 10 districts in the east and 6 districts in the west of Bangladesh. The maternal death samples included women who had died of haemorrhage (11), eclampsia (4), obstructed labor (2), and sepsis (2), while the near-miss women had experienced haemorrhage (7), eclampsia (9), and obstructed labor (4). Twenty pregnant women (12 from the east and 8 from the west of the country) in their third trimester of pregnancy were identified and interviewed. Interviews were carried out with 12 CSBAs.

In the various groups sampled, women on average participated in 2-3 antenatal care (ANC) consultations, with the vast majority failing to meet the 4-plus recommended visits. In virtually all of the sub-samples, there were 1 to 3 women who did not attend ANC consultations. ANC visits appeared generally to adhere to very basic procedures. Informants rarely mentioned receiving information on pregnancy-related danger signs or complications during ANC or advice regarding the importance of planning for an emergency and the arrangements that need to be made; this suggests that either the information was not provided, or the women did not consider it important.

Data on whether or not formal discussions related to birthing preparations took place were mixed and varied according to the different types of informants. Whether formally discussed or not, plans virtually always involved delivering at home with a TBA and were made under the assumption that the delivery would take place without complications. The selected birth attendant was generally either somebody the woman had successfully delivered with in the past or an experienced traditional attendant who assisted most family births. Birth attendants were typically family members who lived in proximity to the woman's household. Despite the fact that childbirth was typically viewed as highly risky, and that a surprisingly high number of women knew of at least one woman who had died during delivery, discussions and plans regarding emergency preparedness rarely took place. However, about 42% of the maternal death families and 50% of the near-miss families had put aside some money for the birth, with most families saving from 2000-3000 taka. Having money available clearly facilitated more rapid care seeking.

Comparisons between the death and near-miss haemorrhage and eclampsia cases show that those attending the women who died were less likely to recognize the severity of the condition and the need for prompt medical treatment. Correspondingly, women who died were often initially cared for by traditional birth attendants (TBAs) and informal providers, who commonly appeared to use harmful practices such as inserting their hands multiple times in the birth canal or applying pressure to the abdomen, which likely aggravated the women's condition. Conversely, most women in the near-miss group sought initial care in a health care facility and never received treatment from informal providers. Overall, eclampsia was more frequently viewed as a serious condition that required medical treatment, whereas informants generally had difficulties recognizing the severity and danger of haemorrhage. Attempts to obtain treatment with informal providers often caused long delays before care was sought in health facilities, with several women suffering from haemorrhage dying at home without receiving biomedical treatment. When professional treatment was sought, women in both the maternal death and near-miss samples were often first taken to non-EmOC facilities, once again delaying emergency treatment. The study results illuminate many problems with the treatment offered in the EmOC facilities, often resulting in prolonged delays before treatment was provided. These include the fact that the doctors were often not available, prescribed medications could not be acquired in the hospital or shops nearby or, in haemorrhage cases, blood could not be rapidly obtained. Overall, only half of women who died eventually reached an EmOC facility. In comparison, all of the women in the near-miss group were successfully treated in an emergency care facility.

Only 3 of the 12 CSBA informants interviewed were able to meet the program goal of assisting 10 births per month. Study results highlight multiple obstacles the CSBAs face in successfully carrying out their role. The majority of CSBAs indicated that they had not been adequately trained to fulfil their functions as birth attendants. Informants also recounted ongoing conflicts between

work responsibilities and time obligations that the birth attendants face in their other roles as Family Welfare Assistants (FWAs) and Health Assistants (HA). The designated supervisors of the CSBAs appeared to be unwilling to recognize the challenges confronted in performing two positions at once and failed to provide adequate support and technical assistance. One of the biggest challenges was dealing with TBAs, who generally have longstanding reputations as being experienced and knowledgeable about traditional childbirth practices and are the preferred birth attendant. As a result, the CSBAs were often only requested to assist when deliveries became complicated, and families became disillusioned and viewed them as unskilled when they made a referral to a health facility. Moreover, it was difficult for the CSBAs to convince families to accept the need for a referral. Other challenges included the fact that the CSBAs were frequently required to travel long distances and often at night. Informants reported that doctors in health centers where women with complications were referred often did not provide the necessary support to the CSBAs when they accompanied women to the facilities.

The findings generated policy and program related recommendations designed to increase awareness of pregnancy-related complications and to encourage rapid care seeking to EmOC centers when women experience an obstetric emergency. The recommendations also highlight the need to improve the quality of care offered in facilities so that when women experiencing complications reach an EmOC center, qualified personnel, materials and supplies are readily available to provide rapid life-saving treatment. Other recommendations associated with ANC, birth planning and preparedness and the CSBA program is delineated in the report.

Since the launch of the Safe Motherhood initiative in 1987, substantial efforts have been made to reduce maternal mortality. There is more awareness of the extent of maternal morbidity and mortality, and more evidence-based information on interventions that can be effective in reducing both. While programs successful in reducing maternal mortality have used a variety of strategies to organize delivery care, all have required an effective network of referral systems to functioning essential obstetric care (EOC) facilities (1-3). Efforts to upgrade referral hospitals are underway in many countries and ensuring quality obstetric care at the referral level has become a key component of safe motherhood programs. However, ensuring access to functioning facilities is not enough. Safe motherhood involves the entire health sector, from care provided to all women of reproductive age at the community level to ensuring admission to hospitals for the few women who need it. While there is now general agreement that all births should be overseen by a skilled attendant, the crucial question of where deliveries should take place and who qualifies as a skilled attendant has remained a matter of debate (1, 4-6).

Reproductive behaviour is shaped by societal norms, reflecting core values and structural principles within a sociocultural system (7). The cultural patterning of reproduction includes beliefs and behaviours associated with reproductive processes, including maternal roles during pregnancy, prenatal care and the childbirth event. Socially and culturally constructed forces shape the planning and management of obstetrical events, such as where the birth should take place, preferences for birthing assistance, procedures during delivery, and the circumstances under which an intervention is warranted and the form it may take. The hierarchy of authority and processes of decision-making prior to and during childbirth can provide insights into patterns of stratification and gender roles within the family group and larger society.

Safe Motherhood in Bangladesh

Bangladesh has a history of high rates of maternal mortality, estimated at 322 per 100,000 live births between 1999-2001, and a high percentage of women delivering at home with unskilled birth attendants (8,9). Socioeconomic inequities in the use of maternal health care services have also historically been high. In an effort to reduce maternal mortality, the Government of Bangladesh (GOB) implemented a program in 1994 to upgrade health facilities and services to make EOC available to all women. The program involved upgrading emergency obstetric care (EmOC) facilities in a phased manner with a target to provide comprehensive EOC services in all District Hospitals (DHs), all Maternal and Child Welfare Centres (MCWCs) and selected Upazilla Health Complexes (UHCs). As of 2009, EmOC was available in all of the 59 DHs, 70 out of 90 MCWCs, 132 out of 407 THCs, 17 Medical College Hospitals, (MCHs), 1 Medical University (Bangabondhu Sheikh Mujib Medical University) and 2 specialized private hospitals. In addition, private clinics offering EmOC are widely available throughout the country.

Other strategies to address maternal health include efforts initiated in 2002 to ensure basic obstetric care at the community level and, in 2004, to create a cadre of skilled birth attendants for

home deliveries. The core of these efforts has focused on training existing paramedics (Family Welfare Assistants (FWAs) and female Health Assistants (HAs)) to become community skilled birth attendants (CSBAs). The overall goal was to train 13,500 CSBAs by 2015 so that 2-3 CSBAs are posted in each union (lowest level rural administrative unit). In addition, a maternal voucher system was introduced in 2007 in selected Upazilas nationwide to increase rates of delivery with skilled attendants among poor populations. Several years into the start of the program, no comprehensive evaluations had been carried out to determine how the CSBAs and the services they offer at the community level are perceived or the impact these initiatives have on maternal health.¹ Moreover, literature highlights the contextual difficulties confronted by skilled birth attendants attending home births in Bangladesh, calling into question the appropriateness of this approach (10). It was therefore important to assess to what extent CSBAs are able to provide services as envisioned in the skilled birth attendant programme and to understand barriers they face in performing activities at the community level.

Historically, it has often been argued that most women in Bangladesh would not deliver in a health facility due to social and cultural factors that prevents them from accessing maternal care outside their homes (11-14). However, little effort has been made to understand the set of conditions responsible for preventing women who are experiencing complications from using safe motherhood services and to ascertain how to overcome these barriers and thus enable women to reach EmOC. Given the changes in the safe motherhood program implemented over the past 15 years, this information is needed to comprehend how to adopt programmatic initiatives to improve utilization of services.

The main objective of the 2010 Bangladesh Maternal Mortality Survey (BMMS) was to provide a maternal mortality estimate for the period 2008-2010. Survey results showed a 40% reduction in maternal mortality from 322 per 100,000 live births between 1998-2001 to 194 between 2008-2010, with cause-specific mortality data indicating that haemorrhage and eclampsia continue to be the two leading causes of maternal death (15). Since the last survey, officials working in maternal health have expressed a need to gain a more in-depth understanding of different aspects of delivery including household circumstances guiding birth planning, household decision-making related to the timing and selection of a birthing attendant, occurrences in households during labor and delivery, and care seeking during delivery complications. In addition, significant questions regarding the effectiveness and sustainability of the CSBA programme have been raised. Such additional, more detailed information, will serve to supplement the survey data and provide insights into why maternal mortality has significantly decreased in Bangladesh.

The aim of the qualitative study was to provide detailed and contextually relevant information that would enhance the development of policies and programmes designed to reduce maternal death. The qualitative investigation examined the barriers women who died from maternal complications faced in obtaining EmOC, as well as information from women who experienced similar pregnancy complications but who obtained EmOC (near-miss cases) and survived. Other pertinent information related to birth planning, decision-making regarding birthing care, and careseeking behaviours were compared. Additionally, a sub-set of women in their third trimester of pregnancy

was included in the study to explore birth planning during pregnancy. Finally, interviews were carried out with CSBAs to understand their role in improving maternal health services and acceptance by community members. Based on the study results, and in conjunction with investigators working on the umbrella study, the report provides recommendations to the Ministry of Health and Family Welfare (MOH&FW) and other partners working in maternal health.

¹ Although the 2007 DHS reported that 0.6% of births were attended by CSBAs, since the DHS only records the presence of the most skilled attendant this may be an underestimate. Furthermore, the role the CSBAs have in referring women to higher levels is not taken into account in the DHS, thus potentially underestimating their impact in maternal health care.

2.1. SITE DESCRIPTION

The BMMS qualitative investigation was carried out between March 2010 and February 2011 in districts spanning the country. The initial goal was to include 10 districts in the east and 10 districts in the west of Bangladesh in order to examine cultural and social factors that may contribute to differences in maternal health indicators in these 2 regions of the country.

2.2. METHODS AND STUDY POPULATION

The research methods were qualitative in nature and entailed key informants, in-depth interviews and focus group discussions. Study components involved assessments of maternal deaths and near-miss, birth planning, and the CSBA program, and included separate sub-samples of informants. Sampling of study informants was guided by the BMMS quantitative survey, which had teams of data collectors sweeping the country to identify maternal deaths. Maternal deaths were identified by reviewing verbal autopsy forms of female death cases that occurred between 2008-2010. Maternal deaths associated with haemorrhage, eclampsia, obstructed labor and sepsis that happened within the last 12 months were included in the study. Once a death case was selected for investigation, other cases including near-miss and women in their third trimester of pregnancy who were identified for the study component on birth planning were selected from the same area. Interviews were carried out with household members most knowledgeable about the topic under study; for the maternal death cases, this included the woman's mother, mother-in-law, husband, or other female members. Informants for the maternal near-miss and birth planning sample included the women and their family members. Interviews for the CSBA component were carried out with women working as CSBAs.

2.2.1. In-depth Interviews

2.2.1.1 Maternal Death and Near-Miss Cases

The objective was to collect a detailed description of the history of the pregnancy, birth planning, and childbirth event from 20 households where a maternal death occurred and 20 households that experienced a maternal near-miss.² Cases included maternal deaths of women who had experienced eclampsia, haemorrhage, obstructed labor, and sepsis during childbirth. Information collected includes the following: beliefs related to and physical activities during pregnancy; understandings of ANC; perceptions of pregnancy-related complications and appropriate care; birth planning; household decision-making related to care at the time of childbirth; care seeking behavior; perceptions of advantages and disadvantages of home- and facility-based maternity care; and the perceived quality of services provided by practitioners. Including death and near-miss cases allowed us to examine differences in regard to perceptions of life-threatening complications, as well as constraints and facilitators in accessing skilled birthing care. Through these comparisons, we were better able to understand why and how women who experienced similar, life-threatening pregnancy complications were able to obtain EmOC.

² An event in which a pregnant woman comes close to maternal death, but does not die

Maternal death cases were identified by data collectors carrying out structured interviews in different regions of the country as part of the umbrella quantitative study. Once the interview was finished, completed verbal autopsy forms were reviewed by physicians at icddr, Dhaka to determine the cause of death using International Classification of Diseases (ICD) 10. If the cause was eclampsia, haemorrhage, obstructed labor or sepsis and the woman had died within the last 12 months, the information was shared with the qualitative team for review. A field manager traveled to the site to locate the household where the woman died and to confirm that members of the household were available and willing to be interviewed. In the households, researchers first determined who was most knowledgeable of the circumstances under which the woman died and therefore should be interviewed. While some basic background information was provided from the verbal autopsy forms, the qualitative interviews were open-ended and detailed, allowing us to understand key events which took place prior to the maternal death. All efforts were made to avoid repeating questions carried out during the verbal autopsy, and interviews were terminated if family members expressed any resistance.

In the same geographical area where a maternal death was identified, efforts were made to interview women who had experienced a maternal near-miss event related to eclampsia, haemorrhage, obstructed labor or sepsis within the last 6 months in a district level hospital, UHC or a private clinic. The researchers went to these facilities, and with permission from the facility authority, checked the hospital records to identify cases admitted with one of the 4 pregnancy-related complications. Once they identified probable cases, researchers had conversations with hospital authorities and the clinician who filled out the recording form to validate the accuracy of the information. If the information matched the study criteria regarding the type of maternal complication the woman suffered from and when the event took place, researchers questioned family members of the near-miss cases, either in the hospital, or if the woman had already been discharged, in the household to validate the type of complications the woman had experienced. After this information was gathered, researchers consulted the study coordinator in Dhaka who has a background in medicine to confirm that the case fit our study criteria. Informants were primarily the women themselves, and if they were unable to respond to some questions, a family member or other accompanying person present in the household during the pregnancy, labor and childbirth and who could provide complementary information was interviewed.

2.2.1.2. Pregnant Women in the Third Trimester

Twenty women in their third trimester of pregnancy and living in proximity to the homes of the maternal deaths were identified. Women were also sampled according to parity, with the goal to include half of informants experiencing their first delivery and the others already having delivered a child. Questioning on birth planning concentrated on ANC, the woman's physical condition during pregnancy, and delivery preparations. Specifically, we examined whether discussions related to birth preparations had taken place, when they took place, who participated, and the content of discussions. The objective was to learn whether and when plans had been made regarding the birthing attendant and place of delivery and if any arrangements had been made to support a household delivery or to get women who chose to receive skilled assistance to a health facility or, if an emergency arose, ensure that the woman had access to emergency care. Often more than one informant involved in birth preparation, such as the pregnant woman's mother-in-law, mother or husband, were interviewed to understand decision making.

2.2.1.3. Community Skilled Birth Attendants

We aimed to carry out interviews with 12 CSBAs who had been working for at least 6 months, with the initial goal to identify 2 CSBAs in each division and near to the place where the sampled maternal deaths occurred. The objective was to examine their activities at the community level. Information collected focused on the formal training received and the extent to which they were employing activities encouraged during classroom training to the field level, the number of deliveries they attended a month and their role, conditions under which they assisted deliveries, their degree of confidence in feeling adequately trained and equipped to assist safe deliveries, and their understanding of what supervision entails and whether supervision is adequate.

2.2.2. Focus Group Discussions

Eight focus group discussions were carried out in communities where the maternal deaths occurred with attendance comprised of groups of married young men, married senior men living in households where births had occurred, women of reproductive age with one child or more, and senior women also living in households where births had occurred. Groups were homogeneous and consisted of 8 to 10 people. The purpose of the group discussions was to validate the main study findings and to assess potential programmatic recommendations.

2.2.3. Key Informant Interviews

The goal was to carry out key informant interviews with 6-8 experts knowledgeable about maternal health programs, able to be objective or even critical about safe motherhood programs, and willing to be interviewed on several occasions. Key informants were both people identified at the sites where the research was being carried out and national level policy makers located in Dhaka. They included government officials, non-governmental organization (NGO) representatives, physicians, and formal and informal community leaders. The purpose of these open-ended interviews was to validate information collected through the in-depth interviews, to identify additional areas of research that needed to be explored further and to examine potential programmatic strategies.

2.3. DATA COLLECTION PROCEDURES

One senior research investigator oversaw the daily study activities. Two senior research officers with extensive experience in safe motherhood projects and 4 research officers were involved in data collection. All junior researchers had a degree in anthropology. Before the start of the study, the senior and the junior researchers received 2 weeks training on qualitative research methods from the senior research investigator and a medical anthropologist serving as a consultant on the study. A field manager also assisted the team by helping to set up the field sites and scheduling interviews with respondents.

Key informants identified in the research sites were contacted by the senior research officers; before being interviewed, they were given official letters introducing the study. Most national level key informants were involved in policy and program development and implementation related to maternal health. They were requested by the principal investigators of the BMMS survey to participate in the study. Most interviews took place in the key informants' work place. The duration of interviews varied from 1 to 3 hours.

All attempts were made to administer the in-depth interviews in private settings, generally either inside the household or in the family yard. Researchers carried out the interviews in Bengali. Most in-depth interviews took between 60 to 90 minutes, while informal discussions took between 15 to 30 minutes. Interview transcriptions were reviewed by the lead researchers and gaps or missing information was often subsequently gathered over the phone.

Focus group discussions were conducted after completion of the in-depth interviews and took approximately an hour. Discussions were carried out in a spacious but quiet place such as a yard or household veranda. Each discussion was carried out by 4 researchers, including a facilitator, a note taker, an observer who also took notes, and a gate keeper who ensured that there were no interruptions during the sessions. Members formed a circle and were given a number, which helped the note taker and observer document information on the participants. When the main facilitator missed questions, the other researchers probed for additional information.

The researchers used an audio recorder to record the interviews or focus group discussions; hand-written notes of additional information that might help data interpretation were also taken. Researchers transcribed and translated the data word-for-word into English shortly after the interview or when the group discussion was completed. Each researcher maintained separate text files in Word, and back-up files were given to the team leaders as soon as the transcriptions were completed. Transcripts generated through the interviews and group discussions were reviewed by the Senior Research Investigator and medical anthropologist on an ongoing basis as the data was collected, and subsequent feedback was given to the data collector. Instruments were modified as needed.

2.4. DATA ANALYSIS

Once the qualitative data collection was completed, a coding system was developed, capturing the main research themes and concepts generated through the data. Interviews were coded on Atlas.ti, a text-organizing software, and the data were organized according to codes or super codes developed by the research team. Content analysis was used to identify trends of key concepts in the coded data and to delineate behaviors related to health care seeking. Data triangulation was employed to identify only those concepts that could be validated through a combination of data sources, such as in-depth interviews, key informant interviews and group discussions. Quantitative analysis was done in SPSS.

2.5. ETHICAL ISSUES

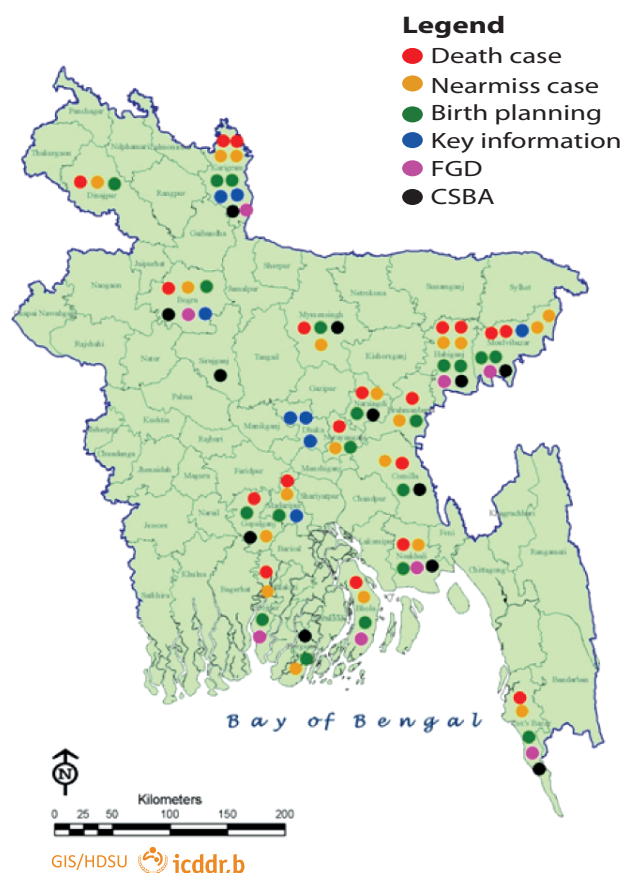
Ethical clearance was obtained from the icddr,b ethical review committee which follows international ethical standards. A field manager generally visited the household the day before the interview to set up an appointment and explain the purpose of the study. Upon arrival at the household, the consent form was read, and informants were subsequently requested to sign the form. Interviews were conducted only after informed consent was obtained; a signed form was left with all participants. All efforts were made to conduct the interviews in a private location and to maintain confidentiality of the data. If privacy was not adequately maintained, the location of the interview was changed or the interview was postponed for a later time. Informants were told that they could refuse to answer questions or terminate interviews at any time if they had reservations about responding to questions.

3.1. IDENTIFICATION OF INFORMANTS

3.1.1. Maternal Death and Near-miss Cases

Figure 1 shows the location of the study informants, illustrating that most maternal deaths from the east of the country met the study criteria. The sampling took place in 9 districts in the east and 8 districts in the west, with 11 women from the eastern region and 9 women from the western region identified. Eastern districts included Moulvibazar, Norshindi, Mymensing, Hobiganj, Comilla, Brahmin Baria, Chittagang, Dhaka, and Noakhali; 2 maternal deaths were identified in both Moulvibazar and Hobiganj districts. Western districts included Kurigram, Pirojpur, Bhola, Madaripur, Gopalganj, Bogra, Borguna and Dinajpur; 2 maternal death cases were selected from Kurigram. Unfortunately, one maternal death case (From Borguna – Eastern site) had to be dropped from the sample after we discovered that the husband, who was most knowledgeable about the circumstances of the death, was not available to be interviewed. All near-miss cases were identified in proximity to the home of the maternal death. Half of the informants were interviewed in the hospital and the others were interviewed in their homes. Facilities where near-miss cases were identified included the DH (7), MCH (6), THC (5), MCWC (1) and a private clinic (1).

Figure 1: Informants in different districts



3.1.2. Pregnant Women of the Third Trimester

Twenty pregnant women (9 from the east and 11 from the west of the country) in their third trimester of pregnancy were selected. Women were identified by community members who lived in proximity to the maternal death household.

3.1.3. CSBAs

Because the CSBA program was still confined to limited districts during the study period, equal number of CSBAs were not found in the 2 regions of the country. We carried out 7 CSBA interviews in eastern districts including Hobiganj, Noakhali, Moulvibazar, Chittagang,

Table 1. Type and number of interviews carried out for each research component

Type of Interview	Complication/Issue	No. of Cases	Informants	No. of Interviews	Total Interviews
Key Informant	Policies and Programs	8	National	3	8
			Local	5	
Pregnant Women	Birth Planning	20	Woman	20	28
			Husband	3	
			Mother-in-law	2	
			Mother	2	
			health worker	1	
Maternal Deaths	Haemorrhage	11	Husband	7	32
			Mother	6	
			Mother-in-law	1	
			Sister-in-law	5	
			TBA	2	
			Sister	3	
			Aunt of husband	7	
			Brother	1	
	Eclampsia	4	Husband	2	14
			Mother	2	
			Mother-in-law	1	
			Sister-in-law	2	
			TBA	1	
			Aunt of husband	1	
			Father	1	
			Brother	1	
			Village doctor	1	
			Government nurse	2	
	Obstructed Labor	2	Husband	1	5
			Mother	1	
			Mother-in-law	1	
			Sister	1	
			Brother	1	
	Sepsis	2	Mother	2	3
			Aunt of husband	1	
Maternal Near-miss	Haemorrhage	7	Women	6	13
			Husband	2	
			Mother-in-law	1	
			Sister-in-law	1	
			Son	1	
			Aunt of husband	2	
	Eclampsia	9	Woman	8	21
			Husband	1	
			Mother	2	
			Mother-in-law	2	
			Sister	3	
			Sister-in-law	2	
			Neighbour	2	
			Aunt of husband	1	
	Obstructed Labor	4	Woman	2	7
			Husband	4	
			Mother-in-law	1	
Group Discussions	Community Perceptions	10	Young females	3	8
			Young males	3	
			Older females	1	
			Older males	1	
CSBAs	Community Birth Assistance	12	Female welfare assistant	9	12
			Health assistant	3	

Mymensingh, Norshindhi and Comilla and 4 interviews in western districts including Borguna, Bogra, Kurigram and Gopalganj. While Rajshahi was not part of our sample area of maternal death cases, in order to meet our study sample size of 12, we included an informant from Rajshahi.

3.1.4. Focus Group Discussions

Eight focus group discussions were carried out in 8 districts, namely Bogra, Noakhali, Kurigram, Bhola, Pirojpur, Hobigonj, Moulvibazar, Chittagonaj with 5 discussions in the west and 3 discussions conducted in the east of the country. Discussions were carried out in communities where the maternal deaths occurred and included groups of young married men (3), married senior men (1) living in households where a birth had occurred, women of reproductive age with at least one child (3), and senior women (1) living in households where a birth had occurred.

3.1.5. Key Informants

Seven key informants were interviewed, including 2 government officials working on maternal health at the national level, 1 international NGO representative working on safe motherhood programs in Moulvibazar, 1 paramedic working as an NGO coordinator of maternal health programs in Kurigram, and 3 medical officers posted in UHCs in Kurigram, Bogra, and Madaripur. The government officials were based in Dhaka and play a critical role in establishing policy and strategies related to maternal health.

Table 1 presents information on the types of informants and numbers of interviews carried out for each study component. The table shows that a wide range of informants were interviewed for the maternal death, near-miss and birth planning samples. The large sample size, diversity of informants and variety of methods allowed us to triangulate the data. Triangulation is a powerful technique used in the social sciences to cross check and thus validate data coming from more than one source of information examining the same topic or phenomenon, thus enriching the overall analysis and presentation of the findings.

3.2. RESULTS ON MATERNAL DEATHS AND NEAR-MISS

Table 2 presents background information on all of the maternal death and near-miss cases. Maternal death samples included women who had died of haemorrhage (11), eclampsia (4), obstructed labor (2), and sepsis (2), while the near-miss women had experienced haemorrhage (7), eclampsia (9), and obstructed labor (4). The data show that women who had died were older and had lower levels of education and higher parity than women in the near-miss samples. The husbands of women who died were also older than the husbands of the women in the near-miss group; the educational levels of the husbands were extremely low in both samples. Overall, households in both samples relied on sources of income that were irregular and low paying, and families in general were poor. Interviews with the maternal death informants were carried out on average between 9 and 10 months after the death, while the interviews with informants in the near-miss sample were carried out on average 32 days after the maternal complication and birth occurred.

It is important to note that there was some variation in the degree to which certain research themes were investigated during the death and near-miss interviews. As a result, there are slight differences in the presentation of topics in the death and near-miss result sections.

Table 2: Background Information on Maternal Death and Near-miss Sample

Variables		Death case (19)					Near-miss case (20)			
		Eclampsia (4)	PPH (11)	Obs. Labor (2)	Sepsis (2)	All Death Cases	Eclampsia (9)	PPH (7)	Obs. Labor (4)	All Near-miss Cases
Age of women in years (mean)		32	31	25	23	29	22	28	28	25
Education	No formal education	2	6	1	1	10	0	4	3	7
	Average schooling (years)	2.8	2.9	2.5	3	2.8	6.8	2.6	2.3	4.4
Occupation	House wife	3	10	2	2	17	9	7	4	20
	Other	1	1	0	0	2	0	0	0	0
Parity (Mean)		2.5	4.3	1.0	1.5	3.5	1.6	3.1	2.3	2.3
Mean number living children		0.8	3.4	0	0.5	2.3	1.3	2.4	0.8	1.6
Type of Family	Extended	2	4	1	1	8	5	3	0	8
	Nuclear	2	7	1	1	11	4	4	4	12
Age of husband in years (mean)		47	38	40	35	40	27	36	4	34
Religion	Islam	4	9	2	2	17	8	7	4	19
	Hindu	2	0	0	0	2	1	0	0	1
When interview conducted (in months)		8.3	9.3	12.5	9.5	9.4	1.2	1.3	0.4	1.1

3.2.1. Maternal Deaths: Haemorrhage

3.2.1.1. Background

Eleven (11) women who had died of haemorrhage were identified; their average age was 31 years. Six did not have any formal education; the average years of education of those who attended school was 2.9. Most women were housewives, with 3 involved in wage labor. Husbands were on average 38 years old. Six of 11 husbands did not have any formal education, and the average years of schooling for the rest of the sample was 3.3. Most families relied on occupations that rendered limited and unreliable earnings such as day labor, small business and auto rickshaw driver; one husband was unemployed.

Ten (10) women had had previous pregnancies and one (1) woman was pregnant for the first time. Eight (8) of the Ten (10) multiparous women had previously delivered at home. Two (2) women had experienced bleeding or spotting during the pregnancy. One of these women sought care from a *kobiraj* (herbalist) while the other woman, who experienced periodic bleeding from her third month of pregnancy onward, sought treatment from village doctors and community health workers (CHWs), who advised her to go to the THC but never followed up with the woman.

3.2.1.2. Antenatal Care

All eleven (11) women had attended ANC consultations. While three (3) families were unable to recall the number of visits, the other eight (8) women attended on average 2.25 ANC consultations. The most common providers seen included medical providers in a facility (45%), followed by health workers in a satellite clinic (36%), and CHWs visiting women at their homes (18%). Four (4) women had also consulted informal providers including *kobiraj* and village doctors. Approximately half of the families (5 of 11) said that the women did not share information about the ANC visits. The remaining families mentioned knowing that ANC services offered, from most to least common, included tetanus vaccinations, checking the position of the baby, measuring the blood pressure, giving iron tablets, counselling the women on dietary needs and testing the urine or blood. About half

of the women were referred for an ultrasound, with all but one woman going through the procedure. Family members did not know whether there was counseling on dangers signs during pregnancy or obstetric complications. Only one (1) family member of a woman who was a demand-side financing (DSF) card holder stated that the woman was encouraged to deliver in a facility.

3.2.1.3. Physical Activities During Pregnancy

Data suggested women performed all household chores in the first and second trimester of pregnancy. During the last trimester, they avoided more arduous chores such as washing clothes and transporting heavy items. One woman was disabled and generally not responsible for any household chores. Three (3) of the women were also involved in wage labor; one worked on road construction, one farmed and the other woman was a housemaid. The housemaid left her job in the sixth month of pregnancy, and the other two (2) women worked until the day of delivery.

3.2.1.4. Restrictions

Although older female family members tried to place restrictions on the woman's mobility, apparently only three (3) of the eleven (11) women followed these cultural tenets aimed to avoid exposure to evil spirits which were believed capable of harming the baby or causing a miscarriage. Food restrictions were also rarely followed, with some informants explaining that these women were poor and simply ate whatever food they could manage to get.

3.2.1.5. Risk Perceptions of Delivery

Childbirth was considered risky by the family members interviewed, with many mentioning that the entire pregnancy is risky, asserting that, as the woman goes through different physical changes she has to make adaptations to protect her health. One family member said,

Isn't it risky? When a woman conceives, she should be careful. We should keep an eye on her to make sure that she doesn't go here and there and follows practices important during pregnancy. When the delivery approaches, she should be even more careful.

Another family member said,

It (childbirth) is risky for a woman. Everything becomes difficult when a fetus comes into the womb. She cannot sit, sleep or move easily, she needs to change her lifestyle... During the ninth month, the baby is ready to come into world and it feels joy. It kicks inside the womb, which is difficult for a woman to tolerate. During delivery, a woman does not know what will happen to her, which makes her feel helpless.

When talking about the fears associated with delivery, informants often expressed a lack of control and sense of fatalism. One informant said,

Giving birth to a child is obviously risky. When a woman is going to give birth, she prays to God to have a safe delivery. It is all up to God's will, if He wishes only then she will have a safe delivery, otherwise she will not.

While only four (4) of 11 families were asked if they knew a woman who died during childbirth, all four (4) cases responded affirmatively, referring to six local maternal deaths caused by eclampsia (2) and haemorrhage (4).

3.2.1.6. Birth Planning

Discussions between the women and their family members regarding the place and with whom to deliver rarely occurred. In eight (8) of the eleven (11) families, informants indicated that the implicit understanding was that the delivery would take place at home with a TBA. Reasons for preferring a home delivery were that previous deliveries had occurred at home without complications, family members would be available to assist post-delivery, women were shy about delivering in the hospital, and other women in the community deliver at home without complications. TBAs identified to assist were mostly family members or neighbours who had attended the women's previous deliveries. In most cases, informal interactions took place with the TBAs to let them know they would be called when labor pain occurred. The remaining three (3) cases who had formulated a plan included one (1) woman who had decided to deliver at home on her own as she had done during previous pregnancies, one (1) couple who decided to have the delivery at home with a TBA, and one (1) woman who decided to deliver with a village doctor. In the last case, the husband had wanted her to have the delivery in the hospital, but his wife refused. When asked why hospital delivery was not considered, informants mentioned that it is only necessary to go to a facility when a complication arises, and none of the families envisioned that a complication would occur. Virtually, no discussions about maternal complications and possible actions to deal with an emergency such as obtaining transport, took place prior to the delivery. Three (3) of the eleven (11) families had saved some money, either in case of an emergency or for the postpartum period, with informants saving from 500 to 6000 taka. Two families who were better off indicated that they knew money would be available if needed. The remaining six (6) of eleven (11) families did not save any money under the assumption that no costs would be needed for a home delivery.

3.2.1.7. Delivery

3.2.1.7.1. Onset of Labor and Identification of Complications

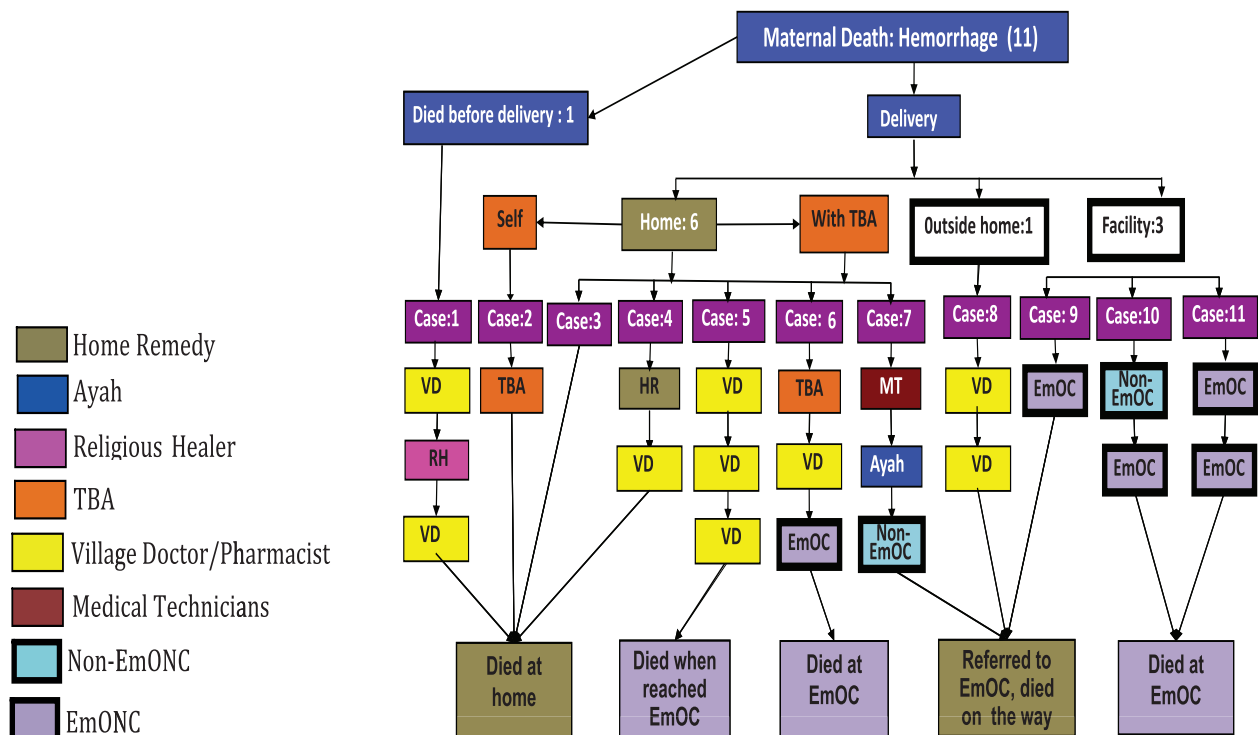
3.2.1.7.1.1. Ante partum Haemorrhage

Two (2) women experienced ante-partum haemorrhage (APH) (cases 1 and 8) and both started bleeding at night without first experiencing labor pain. Neither family called a TBA, with both deciding to wait until morning to take any action; in one instance, older female family members, and in the second case, the pregnant woman guided decision making. In both cases, treatment was sought with a village doctor the following morning when families felt that bleeding was excessive. In one case, the village doctor delivered the baby later in the afternoon with the help of a TBA. Although the bleeding increased after delivery, the woman returned home because family members did not consider her condition to be serious.

3.2.1.7.1.2. Postpartum Haemorrhage

Of the nine (9) women who developed postpartum haemorrhage (PPH), six (6) started bleeding at home. Five (5) of these six (6) families (cases 3-7) called a TBA once delivery pain started, with one TBA administering medicines she received from a homeopathic doctor to increase contractions. After childbirth, two (2) women (cases 3 and 5) were reported to develop severe

Figure 2 : Careseeking for complications - Homorrhage Maternal Death Cases



lower abdominal pain and three (3) cases (case 4, 6 and 7) had a retained placenta. Of the three (3) women who had a retained placenta, in one case (case 4) the placenta was delivered by a TBA after applying pressure to the woman's lower abdomen. The woman started bleeding shortly afterwards; the family was concerned and immediately considered care seeking with a village doctor. In the other two (2) cases (case 6 and 7), more than one TBA was called to deliver the placenta, and in one instance (case 7), a hospital *ayah* (cleaner) was also contacted to assist. Informants reported that the TBAs spent several hours trying to force the delivery of the placenta, inserting their bare hands multiple times in the vaginal canal, applying pressure to the lower abdomen and putting hair in the mouth of the mother. Although both women bled excessively while these procedures took place, the bleeding was not considered as dangerous as the retained placenta. In both cases, the umbilical cord was not cut due to the belief that if the cord was severed from the baby, the placenta would move up in the woman's body, touching the liver and killing the woman. Both women eventually sought care with formal health providers for the retained placenta.

One (case 5) of the two (2) women with lower abdominal pain started bleeding shortly after the delivery; the family recognized the danger and immediately sought care with village doctors. At the same time, they applied such home remedies as applying a hot cloth to the abdomen and dousing the head with water. Female family members of the second woman (case 3) mentioned that it was the severe lower abdominal pain that the family considered dangerous and requiring additional care, while bleeding was not recognized as serious. A sister-in-law explained,

We thought it was normal bleeding after delivery. It was not a huge quantity. She had abdominal pain. We didn't send him (her brother) to get care for bleeding, we sent him

because of the abdominal pain... Bleeding is not the same in every woman. Some women have more bleeding, some have less. It is more in quantity than menstrual blood. She (death case) didn't have excessive blood.

The brother of the woman who died said,

Usually village women are not knowledgeable about bleeding. They think the bleeding is normal after delivery and in this case it was also considered normal. They did not think that there was a complication. At night I was informed that she had bleeding and immediately I understood it was a problem and I went to get a CNG (auto rickshaw).

This woman died in the early morning as her brother was getting a vehicle to take her to the hospital. Over time, all five (5) of these women (cases 3, 4, 5, 6, 7) developed other danger signs including lethargy, inability to talk, convulsions, and rolling of their eyes.

The last woman (case 2) who developed PPH at home, had delivered her previous four children by herself and wanted to give birth the same way. However, nobody was aware that she was carrying twins. After delivering her first child, she failed to deliver the placenta and the family called a TBA who applied different methods, such as putting hair in the woman's mouth and applying pressure on the lower abdomen to deliver the placenta, and the woman delivered the second child and a placenta. Believing there should be a second placenta, the family waited for it to be delivered. Recognizing a complication, the TBA recommended that the family call a nurse to assist. Although this woman had saved money for the delivery, because she did not trust her husband to keep the money, it was left with a neighbor; the husband got angry that his wife kept money with somebody he did not know, and refused to seek care. Other informants suggested that the husband did not want to spend his own money on care seeking. Although the woman was apparently bleeding excessively, once again bleeding was not considered a danger sign. Over time, the woman became lethargic and stopped talking, and within three hours of delivering the second baby, she died. In this case, no health care providers were called because it was nighttime, and family members did not consider the condition serious enough to seek care. Therefore, two (2) women died at home without receiving any formal or informal treatment other than that provided by the TBAs.

What was clear from all these cases was that the degree and severity of bleeding was difficult to recognize, particularly at night when most of the conditions developed. In some cases, once the severity of the condition was identified, it was too late to take action. Comprehension about the significance of bleeding postpartum together with its onset and severity generally guided the timing of care seeking and where treatment should be obtained. A mother of a death case said,

There was a wave of blood after the delivery...there was a big bed sheet and a katha (thin quilt), two maxis (gown) and two petticoats (skirt worn under the sari) and all became wet with blood... I wanted to take her to the hospital. My son could not comprehend the severity of her condition. He thought she would be alright after getting saline (IV drip provided by a village doctor) at home.

In some cases, while both family members and TBAs considered the condition as life-threatening, they did not view treatment with professional health providers as essential due to their faith in the

care provided by TBAs and village doctors who had long standing reputations in providing maternal care. In other cases, TBAs did not consider bleeding as life-threatening, and therefore treatment with formal providers was not considered until other symptoms become evident. In other instances, TBAs considered the condition life-threatening but family members or the woman herself did not want to seek outside care due to the distance to the health facility, the potential costs involved, the hassle in transporting the woman and the attention it would draw to her condition, and confidence that local providers could address the complications. One TBA said,

When the head of the baby was delivered, I inserted my hand and realized that I would not be able to handle the birth. Then I told her aunt to take her to the hospital and not to blame me if anything goes wrong. But they didn't take her to the hospital... I haven't experienced such a delivery before. Two clots of blood came during the delivery, which were black in color. I was worried to see her condition...

In all of these haemorrhage cases that developed at home, it was older female family members or the TBAs who made most of the decisions. While male members were present, they were typically removed from the delivery scene and excluded from treatment decisions. Although three (3) husbands apparently wanted to seek outside care when bleeding was identified, TBAs and female family members overruled, explaining that they would be able to handle the situation at home.

The remaining three (3) of nine (9) PPH cases developed bleeding in the hospital. These women went to the facility before the delivery; one (1) went due to mal presentation of the child, one woman's leaking membrane fluid seemed excessive, and the last woman (case 10, a DSF card holder), did not have any problems, but when labor pain started at night, the family made a decision to take her to the facility where the DSF card was issued which was a non-EmOC facility. Bleeding started a couple of hours after she delivered normally, and she was transferred to an EmOC facility for a blood transfusion. In the other two (2) cases (case 9 and 11), a TBA was called to the home after the woman developed labor pain; these providers suggested that the families take the women to a health facility, but a doctor was not present when they arrived at an EmOC center. They were both placed in a general ward, and told the delivery would not take place immediately. In one case, the woman delivered with a doctor late the following morning; the second woman delivered late in the afternoon with an *ayah* (cleaner). In this second case, family members claimed that a nurse refused to help the cleaner. Both of these women started bleeding after the delivery, and initial attempts were made to manage the situation in the facility. In all three (3) cases, it was the health providers who recognized the significance of the bleeding and made decisions regarding treatment.

3.2.1.7.2. Care seeking

3.2.1.7.2.1. Antepartum Haemorrhage

Figure 2 presents care seeking patterns, showing that the antepartum women (cases 1 and 8), both of whom developed the condition at night, never received care from formal providers. One family sought care with two (2) village doctors and a religious healer; however, once the providers were informed about the condition, they refused to go to the household, asserting that nothing could be done for the woman. None of these providers suggested that the woman seek facility care, and she died 4 hours after developing the condition. The second woman was taken to a village doctor who,

after assessing her condition, referred her to a facility. The woman refused, stating that she did not have the clothes needed to stay in the hospital. Furthermore, at the time the family did not consider her condition to be serious. They returned home, and the woman died the next morning after the same village doctor came to the home and referred her a second time to an EmOC facility. The village doctor said,

All of her clothes were wet with blood. I told her to go to the hospital but she refused, explaining that she didn't have clothes with her...in the meantime, I pushed saline to stop the bleeding. I felt if the patient survived, I would be well accepted by the community, but if she died, I would lose respect. So I told her to go to the hospital...but they did not.

3.2.1.7.2.2. Postpartum Haemorrhage

As Figure 2 shows, 2 (cases 2 and 3) of six (6) PPH cases who delivered at home did not seek additional care and died at home. Among the remaining four (4) cases, the next stages of care seeking were mostly guided by the TBAs attending the delivery. In two (2) cases (case 6 and 7), TBAs called more TBAs to the home, and when they were unsuccessful, in one instance an *ayah* was asked to remove the retained placenta. In the second case, a clinic technician was requested to treat the woman; he refused, advising the husband to take the woman to the hospital. Since they were unable to deliver the placenta manually, TBAs finally suggested that the woman be taken to a facility, and family members complied. One woman was taken to an EmOC facility and the other went to a non-EmOC facility.

In the remaining two (2) cases (case 4 and 5), immediately after learning that the woman was bleeding, family members contacted village doctors known to manage bleeding postpartum. However, after hearing about the condition, the village doctors once again refused to assist. One village doctor recommended that the family takes the woman (case 4) to a hospital, but the family did not follow the referral because it was night time and no males were available to locate a vehicle. This woman died at home three hours after developing the bleeding. Her mother said,

Money was not a problem, I had the money and I could manage the payment. However, if I could only have managed a rickshaw, I would be consoled that I had tried my best....

In the second case (case 5), the husband went to three different village doctors who all refused to provide treatment. It was night, and the neighbours decided to take her to the hospital in a man-pulled van; however, the tire punctured, and the family had to push the van several miles before reaching the EmOC hours after the bleeding started. Upon arrival, the woman was dead. Her husband said,

I could have saved my wife if she had been taken to the hospital a few minutes earlier. Going to the village doctors and searching for the van made the delay...the baby was delivered safely without complications, the placenta came out normally. We never could have imagined that she developed severe bleeding. I could not see what was going on as I did not enter the delivery room (because he is male and it is shameful).

Figure 2 also includes care seeking for the last three (3) cases who delivered in and developed their conditions in a facility (one in a non-EmOC and two in an EmOC). As mentioned earlier, these

women were referred to other facilities by the health providers; two (2) women (cases 9 and 11) were referred from a DH to a MCH and one woman (case 10) was referred from a NGO clinic to a DH. In both instances, when the woman was referred from an EmOC facility, an ambulance was provided; however, costs were borne by the families. One (1) of these women was also accompanied by a hospital staff who helped the family obtain blood after the woman was admitted to the hospital. The woman who delivered in a non-EmOC facility was transported by van to the EmOC facility.

Overall, six (6) women reached a health facility at some point; this includes the three (3) women who had delivered in the facility and three (3) women who delivered at home. Of the women who delivered at home (cases 5, 6 and 7), in addition to severe bleeding, two (2) suffered from a retained placenta (cases 6 and 7). As mentioned earlier, one woman (case 5) was declared dead once she reached the EmOC facility. Of the two (2) women with a retained placenta, one went first to a non-EmOC (case 7) and the other to an EmOC facility (case 6). In the case of the woman (case 7) who first went to a non-EmOC facility, hospital providers tried to deliver the placenta before referring her to an EmOC facility. Subsequently, it took time to locate a vehicle, delaying their departure to the facility, and the woman died on the way to the EmOC. Four (4) women eventually received care in an EmOC facility; One woman had a retained placenta (case 6), two (2) women (cases 9 and 11) delivered in an EmOC where they started haemorrhaging, and the last woman (case 10) delivered and developed the condition in a non-EmOC and was referred to an EmOC facility for treatment.

3.2.1.7.3. Hospital Care

Case six (6), who had a retained placenta, first had her placenta removed by hospital workers; subsequently, they recommended a blood transfusion. Family members tried to obtain blood from another EmOC facility and private blood banks, and by the time they located the blood, the woman was dead. Case 10, who was referred from a non-EmOC center, died one hour after reaching the facility; informants explained that it was night time and no medicines were available because pharmacies were closed. A third woman (case 9) was treated and given a blood transfusion in a private clinic, but later died in the clinic. In the fourth case (case 11), family members explained that she started bleeding just after the delivery; however, doctors were unavailable, and she was treated by nurses. On two occasions, the nurses requested that family members obtain blood outside the hospital. Although the family had money, the woman had a rare blood group, and because they were unable to obtain the appropriate blood, the woman was referred to another EmOC facility. The blood was once again unavailable in the medical college hospital, and the family was asked again to collect blood. After 12 hours, the husband finally located the appropriate blood; however, by this time the woman had died.

Three (3) women started haemorrhaging in a health facility and therefore should have been treated appropriately and survived. Overall, six (6) families who reached health facilities (4 EmOC facilities) faced many obstacles in receiving care. Often doctors were not available or did not take immediate charge, leaving patients in severe condition unattended or attended by support staff or nurses. Family members had difficulty purchasing prescribed medications, particularly at night. Even in EmOC facilities, blood was not available. Some family members first had to have their

blood groups assessed, which was a lengthy process. Referrals to higher level facilities were often delayed, with transport provided by the facility in only two (2) cases; however, the family still had to pay for the costs. In other cases, the women were transported by rickshaw van, which was often difficult to locate at night, causing additional delays. These delays likely contributed to the maternal death.

In all cases, family members of women who sought care in facilities complained about the treatment, emphasizing that the staff did not attend to patients promptly, women were delivered by such support staff as cleaners despite the fact that nurses were present, doctors were unavailable even when the woman's condition was critical, doctors did not explain the woman's condition to family members, and there were long delays referring women to higher level facilities. Obtaining the blood was the responsibility of the family, particularly in the public facility, and family attendants were generally confused about how and where to obtain blood, or if their blood matched, whether they should give it, with some refusing due to fear. In one facility, the doctor reportedly slapped the mother-in-law and husband for bringing the woman late and not being able to provide blood. The husband said,

I requested the doctor to get the blood, no matter how big the cost, I would repay the money even by begging. They slapped my mother-in-law when she was not ready to give the blood. She is a very old woman and was afraid. How would she give blood?

3.2.1.8. Condition of the Baby

One woman died before the delivery. Nine (9) of the remaining eleven (11) children (with one twin delivery) were alive at the time of the interview, and the other two (2) children had died.

3.2.1.9. Causal Explanations of the Condition

Four (4) of the eight (8) families of women who had developed haemorrhage at home believed the women died due to bleeding. Of the two (2) families of women with retained placenta, some members understood she died due to haemorrhage, and others thought it was due to retained placenta. The remaining two (2) families attributed the death to destiny or that the woman's life span had ended, with some speculating that severe abdominal pain contributed to the death. Of the three (3) cases who developed bleeding in the hospital, two (2) families refused to respond, and the final family believed the doctor failed to manage the bleeding properly.

When asked about treatment, family members of women who received care from village doctors thought she would have survived if they had gone to a facility.

Family members who tried but failed or did not attempt to get care from village doctors believed their treatment could have saved her life. Those who went to facilities felt they should have gone to higher level facilities, blaming the hospital doctors for failing to provide appropriate care.

3.2.1.10. Perceptions of Home and Hospital Deliveries

Even after experiencing a maternal death in the household, when asked about the preferred place of delivery, most people mentioned the home, suggesting that the hospital is needed only when complications arise. Reasons for preferring home deliveries were that the woman feels more

comfortable with family members, fewer people know about the delivery, and there is no cost. In contrast, hospital deliveries are expensive, people in the community learn about the labor, nobody is available to take on the household responsibilities, and it is hard to transport a pregnant woman to a hospital. Many believed that C-sections are inevitable, pushing families into serious debt. This informant said,

I don't find any positive side (of hospital delivery). You need money to seek treatment, even for transportation. You need to buy medicines from outside. They provide food only for the patient. ...if we had gone to the hospital, we might have needed 3 to 4 thousand taka. But we didn't have this amount with us.

Only three (3) informants indicated that they now appreciate facility care, explaining that obstetric emergencies can only be managed by trained providers.

3.2.1.11. Cost

Costs for those families who reached a hospital varied from 500 to 13,500 taka, with the lowest cost incurred by the family of the woman with a DSF card who sought treatment in a non-EmOC facility and the highest costs occurring in a private EmOC facility where treatment for the newborn was also provided. All were vaginal deliveries, and while they all needed blood, only one woman received a blood transfusion. The others either died before the family was able to get blood or before reaching the EmOC facility. Expenditures included payment for medicines, transport to the facility, or moving the dead body back to the village. Four (4) of five (5) families of women who received facility care did not face problems managing payment. The fifth family had to face numerous hurdles collecting money, which mostly involved borrowing from neighbours, causing long-term debt.

Among the six (6) cases who received care only from informal providers, three (3) spent 200 to 500 taka for services provided by village doctors. The remaining three (3) families did not have to spend anything because the delivery was assisted by a TBA or the woman gave birth without assistance.

3.2.2. Maternal Deaths: Eclampsia

3.2.2.1. Background Information

Table 2 shows that four (4) women who had died of eclampsia were identified; their average age was 32 years at the time of death. Two of four women had no formal schooling, and those who attended school had on average three (3) years of education. One (1) woman worked as a housemaid, and the rest were housewives. The average age of their husbands was 47 years; one (1) husband had not attended school, and the others had gone to school for an average of five (5) years. Three (3) of the families were extremely poor, and the final woman's husband was in the military and had a steady income.

One woman was pregnant for the first time, and two had never taken a pregnancy to term, with one experiencing one miscarriage and the second woman miscarrying on two occasions. After miscarrying, both of these women had problems conceiving; one woman received fertility treatment from a clinician in Dhaka and the other went to a *kobiraj*. The fourth woman had two living children and also had a stillbirth.

3.2.2.2. Antenatal Care

Three (3) of the four (4) women had attended ANC consultations more than once a month from the first trimester of pregnancy. Two (2) women saw a clinician in a private clinic twice a month, and the third woman was visited monthly by CHWs and also attended the community nutrition program once a month. One woman also visited a kobiraj who gave her an amulet to protect her and the baby from harmful spirits.

In two (2) cases ANC visits adhered to basic procedures, including the following: the blood pressure was measured, the woman was weighed, the baby's position was assessed and the abdomen measured, the woman was vaccinated, the woman was given vitamins/iron tablets, and the woman was given dietary advice. In both cases, no information was provided regarding danger signs and pregnancy-related complications. One of these women had ultrasound 1.5 months before the delivery; the family was told that the baby's position was good, and she would not have any problems during the delivery. This woman was enrolled in a program to allow poor people access to a range of delivery care services, and she was in part attending ANC so she could deliver in the health clinic free of charge. The second woman discontinued ANC visits in the third trimester when she moved to her natal home. In her case, there was no advice given during ANC visits regarding place of delivery or birth attendance.

The third woman received ANC from a private physician in Dhaka twice a month. Due to a history of miscarriages and because she experienced bleeding the first trimester of pregnancy, she was instructed to have bed rest and follow a special dietary regimen. She also took medications throughout her pregnancy, including medication for edema, which was detected after 6 months, and she had ultrasound on a monthly basis. This woman had also gone through a battery of tests (e.g. for kidney function, diabetes), all of which were pronounced normal. She had been informed about danger signs associated with preeclampsia and complications including eclampsia. Her physician had recommended she have a C-section 15 days prior to her due date.

The fourth woman did not attend ANC consultations; her husband explained that during her first pregnancy, household visits were made by health workers, but those services had been discontinued. He indicated that during the pregnancy they did not know where to go for ANC, nor did they understand the reason for antenatal care.

3.2.2.3. Physical Condition during Pregnancy

Three (3) of four (4) women developed what was described as severe edema, particularly in their legs and feet, in the last trimester of pregnancy. In one case, the woman took medication for edema. This woman's blood pressure was actually low; however, she gained 18 kilos during her pregnancy. In another case the woman's lower abdomen was apparently swollen and causing her a lot of pain. Both a health worker and female family members said that the swelling was normal during pregnancy. While she and her husband felt she should get tested for the condition, the cost was 500 taka, which they were unable to afford. We were told that the fourth woman was affected by spirits and was mentally ill. She was treated by a *kobiraj*.

3.2.2.4. Physical Activities during Pregnancy

Three (3) of four (4) women performed all regular household chores during pregnancy, including

strenuous work, with one woman curtailing chores once she returned to her natal home when she was 8 months pregnant. One woman worked as a maid up to a few days before she experienced the seizures. The final woman, who was advised to take bed rest, was totally cared for by family members. No restrictions regarding activities and mobility were placed on these women.

3.2.2.5. Birth Planning

Three (3) of four (4) women had firm plans, which they had formulated based on discussions with their husbands, about the impending delivery. In two (2) cases, they were planning on delivering in a private health clinic; one was the woman who participated in a program offering free delivery services to poor women, and the second was scheduled to have a C-section prior to her due date. This second woman visited her family when she was 7 months pregnant; during this visit, she and family members made plans for transport and where to deliver in case she went into labor early. The third woman had planned on delivering in her nuclear home with an aunt who lived nearby and had delivered her three (3) other children. They did not consider it necessary to inform the aunt about their plan in advance. This couple had not considered the possibility of pregnancy-related complications or that assistance from a trained provider might be required. The husband said,

We never expected any complications. We thought the other deliveries had occurred at home without complications, and that this one would happen the same way... You do not need to think about complications beforehand. Why do so? If she had had a problem before, then we could have thought that way. We would have been careful.

The fourth woman who was young and pregnant for the first time went to her natal home during the eighth month of pregnancy. While her husband had wanted her to stay with him in his extended family, her female family members convinced him that they would be better able to provide delivery care. The woman also wanted to be with her family. This couple did not discuss how she would deliver, but it was assumed she would have a home delivery with a TBA.

Three (3) of the four (4) families had savings in case an emergency occurred or to buy necessities for the newborn. In 2 instances, savings were 1,000 taka or less. The husband who worked in the military gave part of his salary to his wife each month; she had put aside thousands of taka for the delivery, which she hid in her bedroom. Her husband also had kept money for the C-section scheduled prior to her due date. The fourth family did not put aside savings; the husband and sister-in-law both said that they prayed to Allah that the delivery would be normal. This family had purchased some items including a new blade, some cloth and thread considered essential for a home delivery.

In regard to transport, one woman who planned on a facility delivery was in walking distance to the clinic. There were no arrangements for transport if a complication occurred. The second woman, who was from a high socioeconomic status, had made specific plans regarding transport to the hospital. The two (2) women who planned on home deliveries had not considered what to do if a complication occurred, including arrangements for transport. In the case of the woman who stayed at her natal home, the husband had left his phone number with his wife but failed to give it to his in-laws; he also neglected to tell his in-laws to contact him if a problem arose.

3.2.2.6. Delivery

3.2.2.6.1. Onset of Labor and Identification of Complications

In two (2) cases, the women went into labor before exhibiting clear signs of eclampsia. The first woman (Case 1) had a headache the night before her death. The following morning, she started having pain in her lower abdomen; labor pain was not suspected because she was in her eighth month of pregnancy. Rather, her husband and sister-in-law believed the household was cursed, and the pain was caused by wind “*dosh*” or “*asar*,” known to inflict ill health or by spirits “*laga*,” with the family explaining that the woman had had a similar affliction previously. The woman experienced pain off and on all day and was described as restless. The family contacted a religious healer who came to the house in the early afternoon and gave her an amulet to wear, stating that if it was delivery pain, the birth would take place immediately. He also applied blessed water and blessed the woman with qoranic verses. A traditional healer was also called; she treated the woman by tying a blessed thread on the woman’s wrist. The pain did not decrease so the family called a village doctor who prescribed medications to induce the delivery.

Because the pain continued, later in the evening a homeopathic doctor was called to the household who prescribed more medicines. The sister-in-law and husband believed that by giving different treatments they were more likely to treat the source of the pain; moreover, they believed that the mix of medicines addressed both spiritual and biomedical causes. The husband’s sister and aunt assisted the birth, which finally took place at 10 or 11 pm without complications. Approximately two (2) hours after the delivery the woman started having seizures, which the husband referred to as *khichuni*. The sister-in-law responded by dousing the head of the woman with water.

The second woman (Case 2), who was staying in her parent’s home, started having contractions in the early evening. A TBA was called, but the woman continued having labor pain throughout the night. As the pain increased, three (3) other TBAs arrived in the night. All TBAs were family members, including the woman’s mother, with some described as extremely elderly. Early in the morning the woman started having seizures, referred to in this case as *inka*, which is apparently a local way to refer to *khichuni*, and was biting her tongue. The TBAs were primarily concerned the fact that the delivery was not taking place, indicating that the seizures would stop once the baby was born.

The final two (2) women did not have labor pain before experiencing signs of eclampsia. In one case (Case 3), the woman suddenly fainted around 10 am; when she regained consciousness, she was extremely dizzy. Her husband was confused about what to do, believing the condition was linked to the pregnancy and he feared she might deliver any time or require medical assistance. He knew that the health workers providing ANC had encouraged her to go to the clinic if she experienced any problems. However, it was Friday and prayer day, and he debated whether he should go to the clinic. Finally, the husband followed the recommendation of neighbours to get advice from health providers working in the clinic. The other woman (Case 4) woke early in the morning with a severe headache and requested medication to relieve the pain. The sister-in-law indicated that the woman’s eyes were red, she was hot, and her legs were swollen, and the sister-in-law massaged the pregnant woman with an ointment to give her comfort. Rapidly, the woman’s vision became hazy and gradually she lost her eyesight. Female family members had seen warnings about blurred vision during pregnancy on posters, which they recognized as a danger sign that required hospital care.

3.2.2.6.2. Care seeking

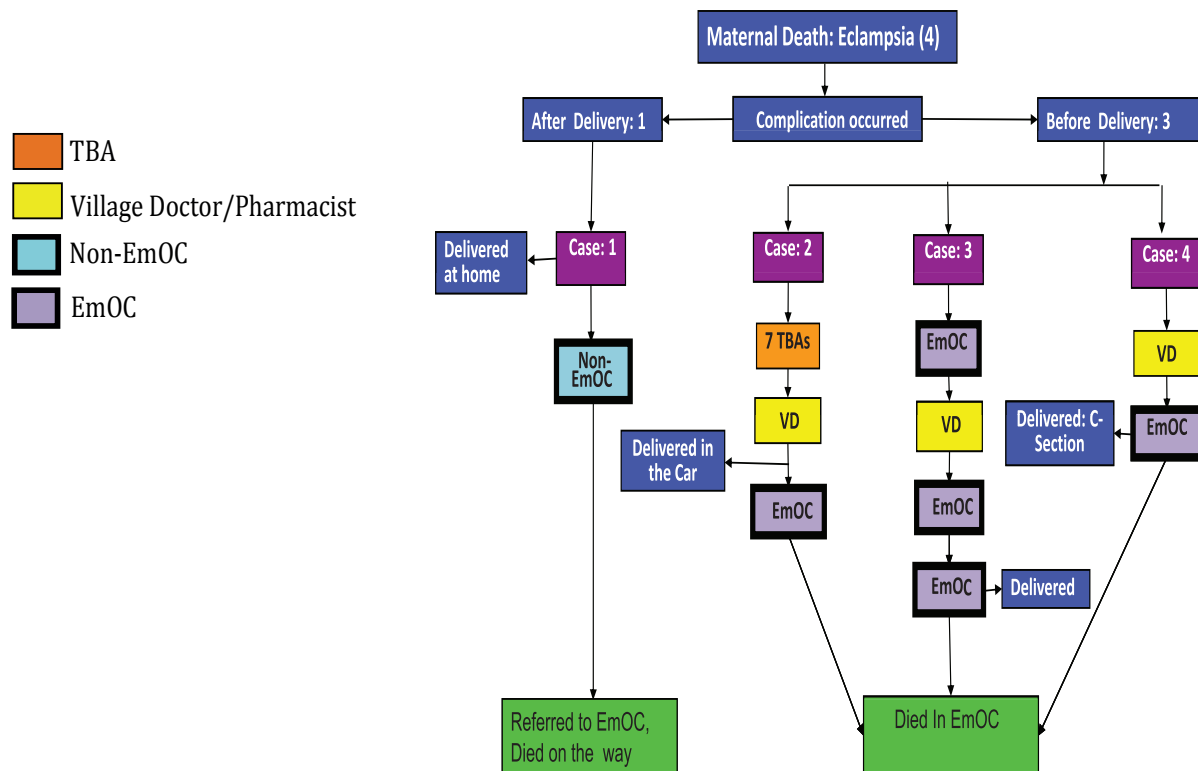
Figure 3 shows care seeking of women who died of eclampsia. In the first case (Case 1), after the onset of seizures, the husband consulted a homeopathic doctor known to be an expert on delivery. He prescribed medications for *khichuni* (seizures), which were administered to the woman. At the time, the family believed that the seizures were linked to mental illness and did not warrant care from a “big” doctor. A few hours later, the woman had seizures again; her sister-in-law massaged her body with mustard oil and doused her head with water. When the seizures subsided, they gave her more medication. In the morning, the woman was in severe pain, sweating profusely, biting her clothes and speaking incoherently, and by late morning her natal family members decided to take her to the THC, explaining that her symptoms necessitated medical care. A further delay ensued as the husband gathered money; subsequently, she was transported by CNG only a few minutes away. However, the facility providers said that they could not treat her condition and referred her to the district hospital. The woman was described as pale, speechless, and restless. Although some family members suggested she be transported by ambulance, a sister-in-law said an ambulance was too expensive. They hired another CNG, and the woman died in the CNG 5-10 minutes after leaving the health facility.

The second woman (Case 2) was eventually assisted by seven TBAs, and a large crowd of female family members also gathered in the delivery room. In the morning, the lead TBA advised the family to call a village doctor to administer medication to increase the contractions. Immediately after the village doctor applied the medication, the woman’s condition deteriorated, and she started shaking (*seizures*) and lost consciousness. The village doctor measured her blood pressure, which was very high. He discontinued administering the medication and recommended that the woman be taken to a facility. They called a CNG, but in the meantime the woman gave birth. The family told the CNG driver to return home, believing the crisis was over. By the time the placenta was delivered, the woman was having severe seizures, foaming at the mouth, and biting her tongue. Another CNG was called, but when it arrived, there was no fuel in the CNG. After fuel was obtained, the woman was finally taken to a medical college facility; travel time was about an hour, and she arrived in the late morning. The husband, who was at his parents’ home, was not informed until after his wife was taken to the hospital.

When the third woman (Case 4) complained of blurred vision, the family called a pharmacist to the house. He measured her blood pressure, which was dangerously high, and instructed the family to take her to the hospital. After the pharmacist departed, the woman started having seizures and blood came from her nose and mouth. Family members decided to take her to the hospital. It took 30 minutes to locate a taxi, and another 30 minutes to travel to the EmOC hospital. The woman had convulsions in the taxi cab and lost consciousness; she arrived at the health center around 1 ½ hours after the onset of seizures.

In only one instance (Case 3) was initial care seeking attempted with trained providers; when the husband went to the EmOC clinic to inform the health workers that his wife needed care, a cleaner indicated that doctors did not work during the day on Friday and recommended they come in the evening when doctors would be on duty. The husband returned home. Before sunset, the woman

Figure 3 : Careseeking for complications - Eciampsia Death Cases



started having seizures, described as *khichuni*. The husband consulted a shopkeeper, who suggested she be taken to the district hospital. In the husband's absence, neighbours decided to transport the woman to the nearby EmOC clinic, but health workers were unable to treat the condition due to the severity of the seizures and referred her to the district hospital. The woman was taken home where she continued to have seizures and was foaming at the mouth. The husband suggested that they observe her condition at home; neighbours explained that he did not have money and was therefore reluctant to take her to a facility. Due to her deteriorating condition, early in the morning (around 12:30 am) a neighbour insisted she be taken to the hospital, declaring that the woman was dying from tetanus and that only a C-section could save her. After some delay, they were able to identify a CNG to transport her to the medical college hospital.

Making the decision to seek facility-based care was quite varied; in two (2) instances, it was the village doctor who recommended the women be taken to a health center because their blood pressure was dangerously high. In one instance, the village doctor measured the blood pressure before administering treatment, and in the second case, the village doctor realized the blood pressure was high after applying medication to increase contractions, which appeared to aggravate the condition. In another instance, decision making was guided by a mix of family members dominated by the woman's relatives who felt her condition warranted medical care and took charge after the woman's husband and sister-in-law had delayed seeking professional care for over 12 hours. In the final case, decision making to seek hospital care was directed by neighbours, who referred to the condition as tetanus, which they believed could lead to death.

3.2.2.6.3. Hospital Care

Descriptions of hospital care were also wide ranging. We were told that two (2) women (Cases 2 and 4) were examined and treated immediately upon admission. Due to the urgency, in one instance hospital authorities did not go through the lengthy admission procedures and provided hospital drugs rather than requiring that the family purchase medications. In one case (Case 2), the seizures persisted, and the woman, who had experienced long delays before seeking medical care, died a few hours later. In the second case (Case 4), the seizures were controlled, and the family was asked to purchase the necessary medications so that a C-section could be performed. While both the mother and baby survived, the woman's blood pressure remained high. Several hours later, the woman had another seizure; there was no doctor in the post-delivery operating room and when the emergency doctor arrived, the woman was already dead. In both cases, informants were generally positive about the behaviour and treatment of the hospital staff, with one family emphasizing that the doctors appeared to do whatever was needed to save the mother and child. The second family suggested that the home care had aggravated the severity of the condition to a point where hospital care could no longer be effective.

In another case (Case 1), the health providers in a non-EmOC facility realized they were unable to provide care and referred her to an EmOC center. As indicated, she died in a CNG. The husband believed the health providers refused to provide treatment because the family was poor, and they did not want to take responsibility for treating such a serious case. He expressed anger by calling the health workers "cows" and accusing them of stealing medicines. This husband suggested that hospital treatment is for the rich, and he will never again seek care in a health facility. When describing hospital treatment, he said,

There is treatment, but not for the poor. Those are for the rich. For rich people, they have Moulivibazaar, Sylhet and Dhaka and for the poor there is nothing.... They could have made her survive. They did nothing, they did not want to keep her there. They referred her. She would have survived if she had been given treatment.

The fourth woman (Case 3) was examined by doctors who prescribed medications upon her arrival in the hospital. The neighbours accompanying her were instructed to purchase the medications in shops outside the hospital. However, they were unable to find one medication and were chastised by the nurses who told them again to purchase the medicine. After a long delay spent obtaining the medication, the hospital workers administered saline and an injection, and the seizures and vomiting decreased. The woman was also given oxygen. Because it was early Saturday morning, no senior doctors were in the hospital; the woman was treated by a young doctor (probably a resident or intern) and a nurse. The informant indicated that they did not monitor her condition closely, explaining that the nurse stayed in a separate room and the doctor only visited the patient periodically. The neighbour described the doctor as reluctant to take action, explaining that he only observed the patient and periodically conversed with another doctor over the phone who appeared to be making treatment decisions. When the neighbour asked whether a C-section would be performed, the nurses chastised her for suggesting she knew the appropriate treatment. Shortly after this, the woman started having severe seizures; realizing the baby was dead, hospital workers used a machine to extract the baby. The oxygen tank stopped working, and the woman died shortly thereafter.

3.2.2.7. Condition of the Baby

One baby died in the womb while the woman was treated in the hospital. Two babies died within 2 days of the delivery. In one case, the father said that the baby did not move after the birth; he purchased medications from a homeopath, but the baby died the following morning. A second baby developed convulsions and was taken to the hospital 2 days after the birth, where he died while waiting for treatment. The final baby was delivered by C-section and survived.

3.2.2.8. Causal Explanations of the Condition

Family members of one woman explained that she had *bayu*, a disease affecting women after childbirth causing restlessness and pain. They also referred to the condition as *hysteria*, a term used to signify loss of intelligence, explaining that a lot of women die from this disease. The husband explained his wife was destined to die, claiming that medical care could not have saved her. He said,

This was the order of Allah. The hospital could not have helped; she would have died even if I had taken her to America.

In the case of the woman attended by 7 TBAs, the husband believed that the TBAs used harmful practices, injuring the mother and baby. He felt that the TBAs prolonged the decision to seek medical care until it was too late and that the injection administered by the village doctor induced the seizures by adding liquid to her already swollen body. In another instance, informants believed that the woman died due to the fact that she did not receive prompt and appropriate care because it was nighttime, senior doctors were not on duty, and because they are poor, they were unable to give a bribe needed to get proper treatment. The neighbour said,

They could do a C-section at night! They could get medication if needed. Are they doctors? You don't know about the doctors! They are not human beings. That's why I don't go to any doctor. They are looking for any opportunity; if they could, they would plant a tree of money in your body and then kill you to get the money. They can do anything for money. If you want to get service from a doctor then go to a private clinic, but you have to have lots of money. Give them 10,000 taka and your patient will be okay.

The woman's husband also believed that she died due to lack of money. He said,

She finally became pregnant but who would have known that this pregnancy would take her life! If I had had enough money, if I were a rich man, then I could have gotten treatment for her and she would have survived. But I had no money... Listen, money can save and money can destroy. If you have money doctors will serve you. If you have money not only the doctor but also the doctor's father will serve you. And if you don't have money, then nobody will come.

The fourth family felt that if a doctor had been in the emergency room after she had a C-section and started having seizures, she might have survived.

3.2.2.9. Cost

Payment for care in the facilities ranged from 200 to 1400 taka and included costs for the medications administered, as well as informal payments to remove the body. In one case, the

family had to pay an *ayah* a bribe to clean the blood and other discharge post delivery. Cost information was not collected from the family of the woman who had a C-section. Informants also mentioned costs, ranging from 200 to 800 taka, for transport of the dead body from the hospital to the home of the informants.

3.2.3. Maternal Deaths: Obstructed Labor

3.2.3.1. Background Information

Table 2 shows that two women who had died of obstructed labor were identified with the average age 25 years. Only one woman had formal education, attending school for 3 years, and both women were housewives. The average age of their husbands was 40 years, and the husbands had on average 6 years of schooling. The first woman stayed with her mother-in-law and husband, who was a van puller. Her natal family was very poor; her father had died and her mother lived alone, surviving on money she received from begging. The second woman also stayed with her mother-in-law and husband, who was a shopkeeper. Both women were pregnant for the first time. They moved to their natal homes in the seventh month of pregnancy so they could rest before the delivery and get assistance from family members during and after the childbirth.

3.2.3.2. Antenatal Care

The first woman had 3 or 4 antenatal consultations in her home with a health care provider who measured her weight, took blood, and provided pills (likely iron tablets), which the woman apparently refused, claiming that she was in good health and did not understand the necessity. In the seventh month of her pregnancy, during an ANC visit the health care provider reported that the baby would be bigger than normal. The provider reassured the family that the baby could be delivered normally and that further tests like ultrasound were unnecessary. The second woman had her first antenatal visit after moving to her natal home in her seventh month of pregnancy. ANC consultations involved weighing and she was given vitamins. Her mother and sister advised her to have an ultrasound so that medical personnel could assess her physical condition; after the ultrasound, the doctor reassured her that both she and the baby were in good health.

3.2.3.3. Physical Activities During Pregnancy

While staying with their in-laws, both women had to do all the household chores, including carrying heavy containers of water. Each woman was victim to different forms of abuse perpetrated by their mothers-in-law. In one instance, the woman's own mother was aware that her daughter was mistreated, and she insisted that her daughter return home in the seventh month of pregnancy to avoid the verbal insults by her mother-in-law. In her natal home, this woman was not permitted to do chores. In the second case, in addition to forcing her daughter-in-law to do all the household chores, the mother-in-law restricted her pregnant daughter-in-law's food intake. As a result, the daughter-in-law became weak, making it difficult for her to work. While her husband was concerned and tried to assist his wife, this only annoyed the mother-in-law. Finally, in her seventh month of pregnancy this woman called her sister and explained that she wanted to come at her natal house. Shortly afterwards, she moved to her sister's home. The sister explained,

Her in-law's house was in a remote area. There were no doctors (not even village doctors) within 2 miles of their house. Her mother-in-law wasn't good, and she suffered in her in-

law's house. We loved her very much. We don't know why we feared for her. That is why we told our mother to bring her here. We didn't care about the money, but we did care about her life.

3.2.3.4. Birth Planning

While there were no formal discussions regarding the place of delivery, the underlying assumption was to deliver with a local birth attendant, believing it unlikely any problems would arise. A TBA made regular visits to the household where the second woman was staying during her last trimester; the TBA checked the pregnant woman's abdomen, reassuring the woman that her condition was good, and she would have a normal delivery.

In regard to savings, in one instance the mother-in-law had saved 1000 taka to pay for sweets in celebration of the delivery. The husband of the second woman said he had not considered saving for the delivery, stating,

When we fell into difficulties, then I have to think about money. As we had planned on a home delivery, I knew that I could provide for that. We didn't have any additional savings. But when the accident occurred, the amount of money needed increased. Then I realized that I had to take loans from others.

3.2.3.5. Delivery

3.2.3.5.1. Onset of Labor and Identification of Complications

In the first case (Case 1), the mother was worried when her daughter's expected delivery date passed, believing that if any problem occurred, she would be blamed for taking her daughter from her in-laws home. Finally, the labor pain started in the morning, though it was not strong or regular. Subsequently, her water broke, and she emitted a reddish discharge. The family called a TBA who was an aunt and a neighbour. In regard to the second woman (Case 2), she felt the fetus was no longer moving during the ninth month of pregnancy after having sex with her husband. Three days later she told her natal family members that the baby had stopped moving; they called a TBA who declared that the baby was in a breech position and advised the woman be taken to a facility.

3.2.3.5.2. Care seeking

Figure 4 shows the care seeking patterns. In the first case (Case 1), labor pain continued to fluctuate until the next morning, but delivery did not take place. After staying by her side throughout the day and night, the following morning the TBA told the family to call a doctor. They contacted a village doctor who came to their home and administered saline, waiting a couple of hours to see whether the contractions became stronger. Later in the evening, the family members called the village doctor to inform him that the woman's condition remained generally unchanged. He was unable to return to the household, and advised the family to take the woman to the hospital. The family members were unable to follow his instructions at that time because it was close to evening, and a storm had started and it would be difficult to get transport. Moreover, they did not understand the condition and were not clear what type of care she needed. Subsequently, a neighbour advised the family to call a nurse who worked in a nearby private clinic. When the nurse

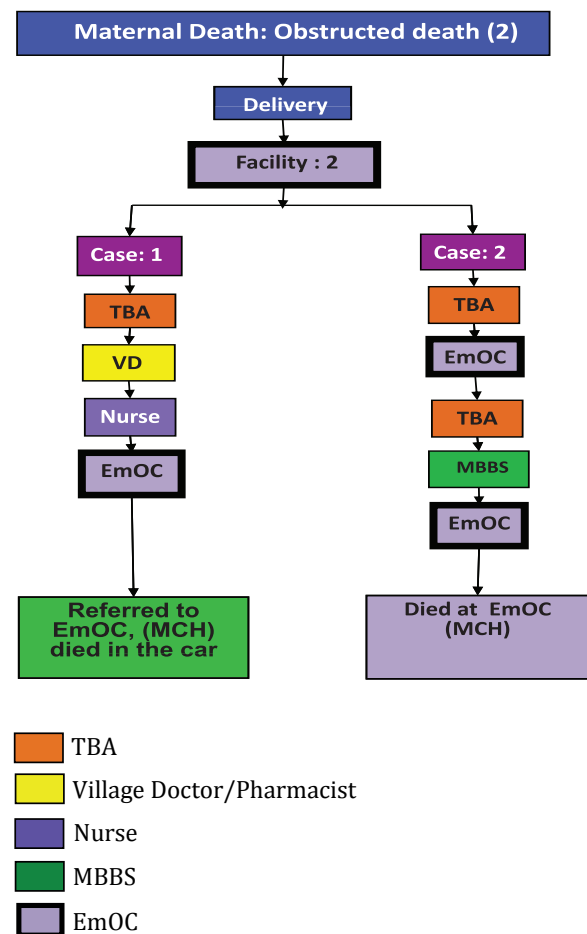
arrived a few hours later, the pregnant woman's condition had seriously deteriorated, and she was semi-conscious and sweating profusely. The nurse administered saline and told the family the baby would be delivered normally. However, there was no change in the woman's condition, and in the late afternoon the mother purchased medication from a shopkeeper to increase the contractions. Throughout the night, the woman in labor was writhing in pain. Towards the end of the night, the mother told other family members that she would take her daughter to a health facility. They started for the facility in the morning, 2 days after the labor had begun. The woman was in extreme pain and needed assistance walking to the river where they took a boat. On the other side of the river, they transported the woman in a van to the facility. The second woman (Case 2) was taken by rickshaw to a private clinic only 15 minutes from their home.

3.2.3.5.3. Hospital Care

The first woman (Case 1), accompanied by her husband, mother-in-law and other family members, reached the private clinic early in the morning and found no doctors available. An hour later, a doctor arrived and examined the woman. An ultrasound was done, which showed the baby was dead, and the doctor recommended a C-section. There was an argument amongst the family members and hospital authorities regarding the cost of the C-section. The husband and mother-in-law refused to pay, stating that the woman's family members would cover the costs, and they were chastised by the health providers for delaying the procedure. Then the pregnant woman's brother requested that the doctors perform the C-section as soon as possible, stating he would bear the cost. Shortly after the C-section was performed, the woman started experiencing vaginal bleeding, but there was no blood bank or facility in the clinic to assess her blood group. The doctors referred her to Faridpur MCH, which was about 1 ½ hours distance drive from the clinic. At noon, they started for the MCH in a microbus provided by clinic authorities; the woman was accompanied by family members and a nurse who gave her oxygen and saline. The woman was groaning in pain, telling her mother she was going to die. Fifteen minutes after leaving the clinic, a tire was punctured, and while they were repairing the tire, the woman died.

The second woman (Case 2) was also taken to a private clinic; upon arrival, she was immediately examined by health providers. Subsequently, an ultrasound was done, and the baby was pronounced dead. A doctor administered medication to induce contractions, and the dead fetus was

Figure 4 : Careseeking for complications - Obstructed Labour Death Cases



delivered vaginally. The woman spent the night in the clinic, and the next day she had another ultrasound, which according to the family, showed that everything was normal, and she was discharged. Several hours after returning from the clinic, she started to experience severe abdominal pain and swelling, causing her to scream. The family believed her discomfort was due to gastric pain, and her brother called a doctor who worked in the clinic for advice; the doctor prescribed medication for the pain, which the family purchased locally. The woman's condition did not improve, and the next day a village doctor was called to the home; he administered "saline," which did not change the woman's condition. Subsequently, the family decided to return to the clinic where her delivery took place; upon arrival, she was immediately referred to Dhaka MCH, where she was admitted and told she needed three units of blood. Her blood did not match any of family members, and they had to purchase blood from outside the hospital. After a long delay, they finally obtained the blood, but while receiving blood she died.

In both cases, the women were staying in the natal family when labor began and a complication was detected; therefore, the woman's family members, including her mother, brother and sisters, were actively involved with decision making and the care seeking process. Their husbands became involved once the women reached the health facilities and were hospitalized.

3.2.3.6. Condition of the Baby

In both cases the baby was found dead after the women reached the health facilities.

3.2.3.7. Causal Explanations of the Condition

In the first case, the family blamed the doctors who did the C-section for causing the bleeding and the woman's death. The woman's mother said,

We tried our best. I tried at home and then I took my daughter to the trained doctors. I cannot understand why the health providers caused this terrible event, they have destroyed me. I went to them to save her. Could I ever imagine they would take her life?

The mother added that if her daughter had been given blood promptly, she could have been saved. However, the clinic did not have a blood bank, and she was referred to another facility. Family members of the second case attributed the death to the fact that the health providers inserted a sanitary pad in the vagina, which was discovered after her death. They believed this caused her to stop urinating and defecating, and as a result, her liver got damaged and burst. They believed the baby died because the couple had intercourse days before the delivery date.

3.2.3.8. Cost

The family of the woman who had a C-section was able to give only 500 taka to cover costs, which the hospital authorities accepted because the baby was a stillbirth, and the health workers were unable to provide treatment when the woman started bleeding. The second family had to spend 40 to 45 thousand taka for treatment. Most of the money was borrowed by the woman's family on interest. The husband's contribution was only 10,000 taka, which he borrowed from his wife's family members. At the time of the interview he still had not repaid the loan.

3.2.4. Maternal Deaths: Sepsis

3.2.4.1. Background Information

We identified two (2) women who died of sepsis; one woman experienced a spontaneous abortion and the second woman had an induced abortion. Table 2 shows that the average age of these women was 24 years; one woman had no formal education and the second had 3 years of schooling. Both women were second wives of their husbands who resided with their first wives, and in each case, the husbands were approximately 30 years older. One husband had no education, and the second husband had 3 years of schooling. Both families were extremely poor. The first woman's husband was a rickshaw puller who died when she was 2 ½ months pregnant; after his death, she started working as a housemaid. She experienced health problems after miscarrying and moved to her natal household to get assistance. Her mother was also a second wife and had 6 children. The second woman lived with her 2 other children and her mother. Her mother obtained money by begging, and she herself collected and sold waste, earning between 200 to 250 taka per day. Her husband, who worked for the Bangladeshi Railway, provided little financial support. Both interviews were carried out primarily with the mothers of the women who died, and in one instance a neighbour was also interviewed.

The first woman became pregnant for the second time after 4 years of marriage. In the second case, this was the woman's fifth pregnancy; she had 2 living children and 2 other children had died during infancy. Her mother was not informed about her daughter's pregnancy or consulted when the daughter opted for an induced abortion, and she only learned about the pregnancy when complications related to the induced abortion became evident.

3.2.4.2. Antenatal Care

Neither woman attended ANC consultations. Both mothers of the women who died appeared to have a limited understanding of the purpose of ANC consultations and pregnancy-related complications, relating danger signs during pregnancy to inappropriate activity of the women which might have exposed them to evil spirits.

3.2.4.3. Physical Activities During Pregnancy

In addition to taking care of all household chores and caring for their children, both women worked outside the household, so that they could support basic needs for themselves and their children. The woman who worked as a housemaid had to travel long distances in hilly countryside daily to get to work.

3.2.4.4. Birth Planning

The woman who had the spontaneous abortion was only in her fifth month of pregnancy and did not appear to have made any birth plans. The economic situation of this family prohibited them from saving money for any unexpected emergencies. The mother of the woman who had the induced abortion was unable to explain what discussions had taken place relating to the procedure, and whether the husband, who was not willing to be interviewed, had been involved in the decision-making. The daughter had 6,000 taka set aside for unexpected needs.

3.2.4.5. Delivery

3.2.4.5.1. Onset of Labor and Identification of Complications

The woman who had a spontaneous abortion (Case 1) started bleeding one morning when she was 5 months pregnant. Alarmed and suspecting that she had lost the baby, she called her parents by telephone. Five days later, her father travelled about 2 hours by bus to assess her condition and assist her.

A health worker arrived early one morning at the household of the woman who had an induced abortion (Case 2) and requested that her mother leave the room. The mother, who recognized the health provider as someone who assists with maternal health issues, left assuming the health provider was there to administer contraceptives. The health worker locked herself in the room with the daughter and departed shortly after. Several hours later, the woman started experiencing severe pain in her abdomen. The mother contacted the health worker who returned to the household and administered medication. However, the pain did not subside. The mother only understood after the health worker returned that an induced abortion had been performed.

3.2.4.5.2. Care seeking

Due to the apparent severity of the bleeding, the father of the woman who miscarried (Case 1) decided to take her to a district hospital where she was administered injections and saline, and the bleeding subsided. She stayed for 3 days, and when her physical condition improved, the woman was discharged. Her father returned home, leaving her alone in her home. Subsequently her physical condition deteriorated, and a month later she decided to travel to her natal home where she could get assistance from her family. Her mother indicated that when her daughter arrived, she looked close to death, explaining that she was extremely weak, had lost her appetite, and was in pain, adding that sometimes her body shook. She also experienced periodic vaginal bleeding, which was black in color, and complained about a burning sensation, which was likely associated with a high fever, and had developed a cough. After arriving in her natal house, the woman was taken to several village doctors; all prescribed medications, but after taking a variety of drug treatments her condition remained. Finally, a neighbour suggested that her condition was serious, and she needed to be treated by trained medical providers; she was taken to a UHC where she was admitted and treated. Her health improved, and she was discharged after 2 or 3 days. However, several days later her condition once again deteriorated. Her mother called a village doctor, and he recommended she get a blood transfusion. However, her mother only had 500 taka and was unable to afford purchasing blood. Her cough also became more severe; neighbours suggested she be taken to the BRAC center, where she was diagnosed with tuberculosis and for 4 days given treatment. During the initial stages of treatment, and 3 months after the abortion, she died.

The second woman (Case 2) continued to experience severe abdominal pain the day after she had the induced abortion, and her abdomen also became swollen. The mother called 2 different village doctors to provide treatment, with the second village doctor visiting her 2 to 3 times a day over an 8 to 9 day period. After 9 days, the village doctor advised she be taken to a district hospital, where the woman was hospitalized for 9 days. After she returned home, she lost weight, her abdomen swelled up, and she experienced bleeding. A bad odor emanated from her body and she experienced extreme pain. She gradually stopped talking and was unable to eat. A neighbour who

was concerned about her deteriorating condition tried to convince an MBBS doctor to provide treatment, but the doctor refused, apparently due to concern that his reputation would be damaged if she died while he provided treatment. The neighbour then requested that a village doctor treat the woman, but there was no change in her condition. The woman died one month after having the induced abortion. In both cases, the family financial situation was the main constraint that prevented them from rapidly seeking medical treatment. Rather, both women primarily sought care from village doctors who were known to the families and willing to adjust their fees. Even when they did seek professional care, these women were unable to continue the treatment or to follow a referral to a higher level facility due to financial limitations.

3.2.4.5.3. Hospital Care

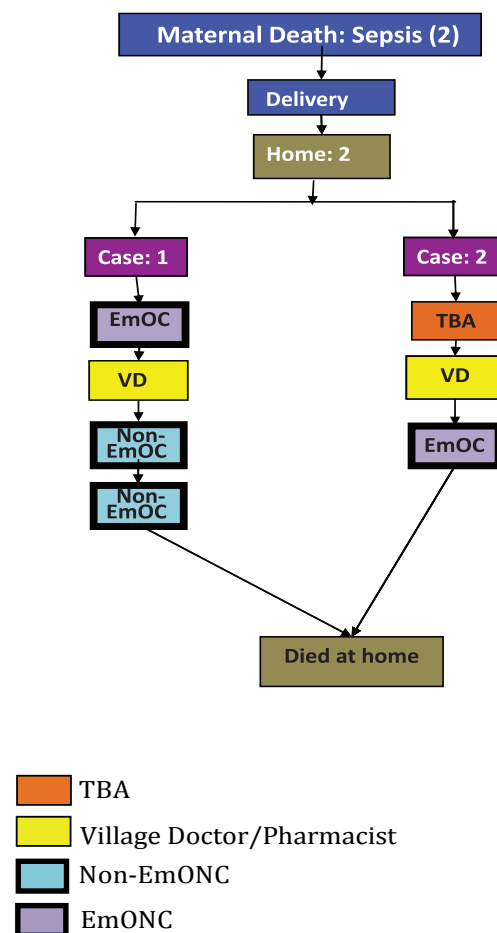
In the THC, the doctors said that the woman who had a spontaneous miscarriage (Case 1) needed blood, which family members could not afford to purchase. No additional information was given about the care or medication provided. The woman was discharged after 3 days in the facility.

The second woman (Case 2) was admitted in a district hospital where she stayed for nine days. When the doctors initially examined her, they indicated that they would not be able to provide effective treatment, suggesting she be taken to the medical college hospital. However, she and her mother refused, saying they could not afford costs in a higher level facility. The doctors administered saline and injections, and she was given two bags of blood. However, the abdominal pain continued, and her stomach remained swollen. When after 9 days there was no improvement, the doctors once again referred her to Sylhet Medical College. However, they failed to explain to family members why she needed more advanced care. Due to financial constraints, the family was unable to take her to Sylhet, and she was discharged and later died.

3.2.4.6. Causal Explanations of the Condition

Neither of the mothers of the women attributed the death to an infection. The mother of the woman who had a spontaneous abortion ascribed the miscarriage to evil spirits who had preyed on her daughter during the pregnancy. She believed that the death was linked to tuberculosis and lack of appropriate medical care, particularly the fact they could not afford a blood transfusion. While in the second case the mother could not say why her daughter died, she felt that her life could have been saved if further treatment had been sought from the Sylhet medical college hospital.

Figure 5: Careseeking for complications - Sepsis Maternal Death Cases



3.2.4.7. Cost

Natal family members of each woman spent between 10,000 to 14,000 taka for treatment. Due to financial constraints, treatment was only sought periodically when money was available. This mother of the woman who died explained,

A total of 9 to 10 thousand taka was spent. Whenever we managed to get 200 to 500 taka we sought treatment with village doctors. In the facility you have to spend a large amount at once, which was not possible for us. If we had had a large amount of money I would have taken her to Cox's Bazar (where she believed facilities are better) and managed blood for a transfusion.

In both cases, the husbands were absent, with one husband dying before the miscarriage took place. The second husband, who stayed with his first wife, had limited involvement in decisions pertaining to the health care of the second wife and failed to pay for her treatment. A neighbour explained,

Uncle (the woman's husband) didn't show interest to get involved. Her condition might not have ended like this; if he had wished, he could have helped to ensure that she got better treatment, it could have been possible to save her.

The mother of this woman, who was a beggar, borrowed money with interest to pay for health costs. At the time of the interview, 3 thousand taka still remained unpaid. In addition, the woman who died had 6 thousand taka saved, which was also used for treatment purposes.

3.2.5. Near-Miss: Haemorrhage

3.2.5.1. Background Information

The average age of the women identified was 28 years old. Four (4) of seven (7) women did not have any formal education and the average years of education of the three (3) women who attended school was 2.6. All seven (7) women were housewives. The average age of their husbands was 36 years. Four (4) of seven (7) husbands did not attend school, while the average years of schooling of those men who went to school was 3.3. Most of the families were poor and relied on irregular sources of income involving such work as day labor, small business, and waste collection.

Three (3) women were pregnant for the first time. Of the women who had given birth previously, three (3) had delivered at home and the fourth had had both a home and hospital delivery.

3.2.5.2. Antenatal Care

Five (5) of the seven (7) women had attended ANC consultations, and the average number was 3.6 visits. The most common health practitioners seen included trained providers in a facility, health workers in a satellite clinic, and CHWs are visiting women at their homes; one woman also consulted a village doctor, and another, whose mother-in-law explained she was affected by *alga* (spirits) during the pregnancy, received treatment from a spiritual healer. Formal ANC services offered, from most to least common, included checking the baby's position, doing an ultrasound, measuring the blood pressure, weighing the women, and providing immunizations and iron tablets.

Reasons for not attending ANC were that the woman was feeling well and did not experience problems during her previous pregnancy or she did not know when to go for consultations. One woman said,

I was scared about what month I should go and whether it would be the right month or not. I did not know how many months pregnant I was so that I could go there at the right time. I did not know how they would know how many months I was, and if they did not know, I wondered if it would be alright to get vaccinated.

Overall, only one woman mentioned that ANC is important, stating that it is critical to understand about the child's condition while in the womb. The other women did not share their views on whether or not ANC is important.

3.2.5.3. Physical Activities During Pregnancy

All informants indicated that they were restricted from the beginning of the pregnancy from performing such heavy chores as washing clothes and carrying heavy items and that they were involved only in less strenuous activities involving cooking and caring for family members.

3.2.5.4. Restrictions

Women stated that they followed different rules enforced by older female members relating to their freedom to move about the environs; for example, they were not to leave the house during certain times of the day, particularly at night or prayer time, when evil spirits circulate and harm pregnant women. Women were also advised to avoid behaviors that might allure spirits, such as wearing their hair down when they are out-of-doors. Informants mentioned that evil spirits can cause a mother to bleed during pregnancy, kill the fetus or, if the baby survives, retard physical development during childhood. One mother-in-law said,

We advised her to complete everything that would require her to go outside before Ashr (afternoon) prayer, including going to the toilet, and she should not go out after evening... We told her that evil spirits can attack the mother, and the child can die.

One woman explained,

The elder women forbid that we go to certain places outside the house. Most of the young women don't know these things well...female elders teach the new mothers about this.

3.2.5.5. Risk Perceptions of Delivery

Informants described childbirth is a highly risky time, indicating that anything, including death, can happen. One informant said,

Delivery is a very difficult time for a woman. Sometimes the birth can be delayed; 2 or 3 days go by, and there is nothing to do but withstand the pain. If there is a complication the woman will die, otherwise the birth is normal but extremely painful.

All families asked if they knew of a woman who had died during childbirth responded positively.

3.2.5.6. Birth Planning

Discussions regarding where and with whom delivery should take place occurred in six (6) of the seven (7) families, with all choosing to have home deliveries. Only one (1) family member, namely a husband, wanted the delivery take place in a hospital; however, he was unable to convince his wife, who was concerned about the cost and influenced by older female family members to deliver at home. The last woman was disabled; her mother-in-law indicated that, while no family discussions had occurred, the underlying assumption was that she would deliver at home. In regard to birth attendance, four (4) families decided the woman would deliver with a TBA, two (2) families identified skilled providers in proximity to their homes, and in the final case the family had not considered who would attend the birth. This woman actually delivered on her own without assistance. TBAs selected were family members or neighbours who had generally assisted previous deliveries of women in the sample without any complications or who had extensive experience assisting births. Three (3) of four (4) families informed the TBA they would require assistance prior to the delivery, while the fourth family said that TBAs are available at any time. The two (2) families who decided to have the delivery at home with a skilled birth attendant indicated that the birth attendants had good reputations for delivering without complications, and they would accompany the woman to the hospital if needed. These providers were not consulted in advance.

Three (3) of seven (7) families saved money in case a complication occurred and the woman needed to be taken to the hospital. Three families had not considered saving money, stating that home deliveries are free or that obtaining money would not be a problem. Although the final family recognized that money might be needed if complications occurred, they explained that poverty prevented them from saving money. Of the three (3) families who saved money, two (2) put aside 10,000 taka, with one husband explaining,

This (complications during delivery) was the reason I saved money, I thought that I might need money. I had wondered where I would get money if there was problem.

The other family, whose economic situation was poor, saved gradually during the pregnancy period, accumulating between 2000 to 3000 taka. The mother-in-law said,

We thought that if her labor pain started at night, and if she had any problems, we might not get financial support from others. We could only take her to the facility if we had money. However, if we had to collect money from others at night, it might delay taking her to the hospital. It is important to have some savings so that we could go to the facility immediately.

Six (6) families did not consider planning for transport in advance, stating that the delivery would take place at home. The exception was one family who had their own van.

3.2.5.7. Delivery

3.2.5.7.1. Onset of Labor and Identification of Complications

All seven (7) women experienced PPH; four (4) women developed the condition at home, and three (3) developed the condition in the facility. In 3 instances where the woman started

haemorrhaging at home, two (2) families (Cases 1 and 4) called a TBA and a third family (Case 2) contacted a nurse to assist the delivery once the labor pain started. In two (2) instances (Cases 2 and 4), medications were used to increase contractions, with one TBA applying homeopathic medicine and the nurse administering two injections. Once the delivery took place, one woman (Case 1) developed lower abdominal pain and bleeding for which the family sought care from an MBBS doctor. Another woman (Case 2) became unconscious, whereupon she was taken to a non-EmOC facility. Hospital attendants stated that she had lost a huge amount of blood, which caused her to lose consciousness. A third woman (Case 4) had a retained placenta, which the TBA tried to deliver for two (2) hours. This woman had been advised by doctors to have a C-section because during an ultrasound, they detected that the cord was wrapped around the neck of the fetus. While the woman's husband had encouraged her to go through the procedure, other family members, particularly a sister-in-law, argued that a C-section would be too expensive, suggesting it would cost the family 40-50 thousand taka. The woman herself refused out of concern about the expense and instruments used in the hospital. When the delivery became complicated, family members tried to convince the TBA to allow them to take her to the hospital. The TBA refused, requesting that the family call a village doctor to administer "saline" to deliver the placenta. The woman was finally taken to the hospital after becoming unconscious subsequent to receiving an injection from a village doctor.

The final informant (Case 3) developed the bleeding at home after delivering on her own; this woman was mentally impaired and therefore unable to inform her family members when she had contractions. The woman had experienced an excess of discharge postpartum, which the woman's aunt and sister-in-law claimed came through her anus and was blackish in color. While blood was seeping through her clothes, her family members felt it was normal, explaining that bleeding after birth varies from person to person. After she bled for 4 days, family members decided to take her to a health facility because she appeared to be weak.

The other three (3) women started haemorrhaging while in the hospital. Two (2) of these women were pregnant for the first time; both experienced danger signs, which they did not understand and thus did not share with family members. In one case (Case 7), the fetus stopped moving several days before the onset of labor; in the second case (Case 6), the woman's water broke 2 days before she experienced labor pain. Once the delivery pain started, one family (Case 6) called a BRAC health worker; a second family (Case 5) first gave the woman blessed water known to increase contractions and later called a nurse from a private clinic. These providers tried to deliver the respective babies for 5-6 hours, with both administering saline and injections to increase the contractions. In one case (Case 5), the nurse suggested that the woman be taken to a private clinic; the health worker accompanied the woman, who was a DSF card holder, to the facility. After travelling for 25 km with severe pain, she arrived at the clinic to find that no doctor was available. An hour later, a doctor arrived and gave her more medication to induce delivery; she gave birth 2 hours later. The hospital doctor reprimanded the home delivery attendant for not bringing the woman to the facility just after the onset of labor and for administering injections and saline too early. The child of this woman was transferred to a district hospital; the baby died 4 days later. This woman stayed 2 days in the facility, where she developed a urinary tract infection and became weak. She was referred to another non-EmOC hospital, and 2 days after arriving, developed bleeding. The woman expressed concern to the attending health providers that she was changing

her sanitary napkins too frequently. Initially, the health providers did not want to refer the woman; however, the husband and other family members insisted after they understood that the bleeding was not controlled.

In the second case (Case 6), after inserting her hands several times, the health care provider (BRAC nurse) failed to deliver the baby. The mother-in-law and sister-in-law in attendance requested that the woman be taken to the hospital. However, the birth attendant refused, and finally the husband took charge and transported his wife to the hospital. The husband said,

...Most probably it was 1:30 am to 2:00 am. I couldn't tolerate her suffering that time. Then I called my sister's husband to come with his rickshaw van. Within a few minutes he came and we placed her on-to the van and took her to the hospital.

When they reached the facility (THC), it was late at night, and she did not receive care immediately. The woman delivered and subsequently started bleeding; however, no doctors were available in the facility.

Family members of the last woman (Case 7), who gave birth and started bleeding in the hospital, waited more than 12 hours after the start of labor pain before calling a skilled health worker to their home to examine the woman who was experiencing contractions. Because the fetus had not been moving for 4 days, the health worker referred the woman to a MCWC where the pregnant woman participated in a demand side financing program. From this facility, she was referred to the medical college hospital where she had an ultrasound; health providers sent her home, saying the delivery would take place three weeks later. However, her pain continued, and a day later, an older woman in the household said that the signs and symptoms the woman was experiencing suggested she was ready to deliver, and family members took her to the MCWC in the afternoon. Once they reached the EmOC facility, the woman delivered and started bleeding about 6 hours after the birth. Once again, it was the family members who identified the excessive bleeding. The mother-in-law said,

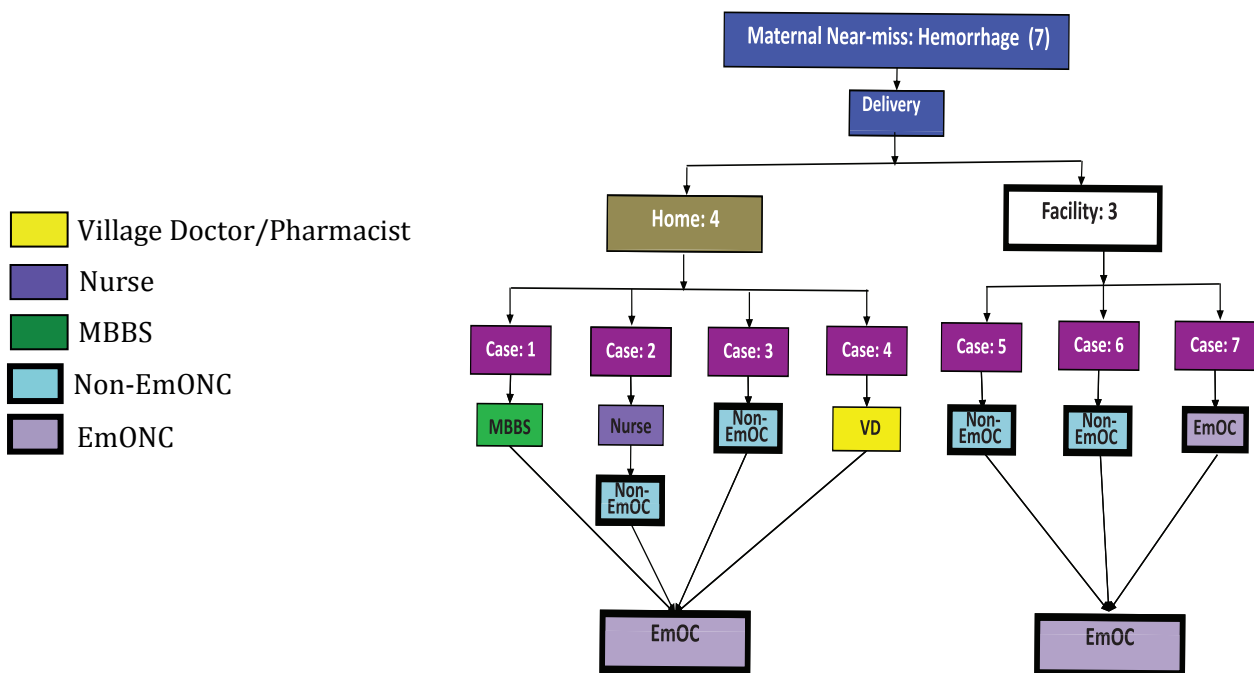
...it was a normal delivery, and everything was normal after the delivery... After cleaning everything the doctor put cotton (a sanitary pad) into her birth canal and she was told to take out it during urination. We followed the instructions and changed the napkins when she urinated. It is normal to have bleeding after delivery and her bleeding seemed normal. That's why we were not concerned. However, when she got down from the bed all of a sudden a huge amount of blood was flowing.

In regard to decision making in the home setting, in one case (Case 5) the husband was actively involved, supporting the BRAC health provider's decision to seek care outside the home when the complication was identified. While other husbands were present, in these cases decisions were guided by TBAs, the formal health care providers, and older female family members. Even when husbands wanted to take their wives to the hospital, they were often excluded from making decisions, with females attending the delivery often explaining that they would be able to handle the situation at home. In regard to the 3 women who delivered in the hospital, decisions were mostly made by the health care providers who subsequently referred the women to higher level facilities. Initial decisions to take the women to the facilities for delivery were primarily guided by mothers-in-law based on the conclusion that the woman required additional delivery assistance.

3.2.5.7.2. Care seeking

Figure 6 depicts the care seeking pattern, showing that all seven (7) women reached EmOC facilities at some point of the care seeking sequence. Four (4) cases delivered and started bleeding at home; 2 of them were taken to a facility 4 to 15 days after the bleeding started. One of these women (Case 3) was taken to a non-EmOC after 4 days of bleeding at home; family members did not consider the condition dangerous until the woman refused to eat and became extremely weak. The woman was in the facility for four days before she was referred to an EmOC facility. The second woman (Case 1) was taken to the hospital after 15 days of being treated for bleeding at home; treatment was recommended over the phone by a MBBS doctor working in an EmOC facility, and medication was administered by a pharmacist. When the MBBS doctor finally went to the home to see her, he immediately referred her to the EmOC hospital. Of the remaining two (2) cases who delivered and developed their condition at home, one (Case 2) was first taken to a non-EmOC facility; she arrived unconscious, and was immediately referred to an EmOC hospital. The last woman (Case 4) had a retained placenta after delivering with a TBA; the TBA suggested that care be sought with a village doctor. The woman became semi-conscious after the village doctor administered an injection, and family members decided to take her to an EmOC facility, ignoring the advice of the TBA to continue treatment at home.

Figure 6 : Careseeking for complications - Haemorrhage Near-miss cases



The remaining three (3) women delivered and developed their condition in a facility. One woman (Case 5) developed bleeding in a non-EmOC facility 2 days after giving birth in another non-EmOC facility. She was referred to an EmOC facility. Another woman (Case 6) gave birth shortly after reaching the THC and immediately started bleeding. It was night time, and doctors were not available; the nurses tried to manage the situation by administering different medicines which the husband was asked to purchase. The husband said,

...the nurses gave me one slip after another to buy medicines. I bought all of those medicines. I didn't ask why. I was very scared to see my wife's condition

Even after the medicines were administered, the bleeding continued, and the husband suggested that his wife be transferred to a hospital. The nurses refused, indicating that any decision should wait until the doctor arrived at 8 am. Later, when it was clear that the bleeding could not be controlled, the health workers recommended she be transferred to the higher level hospital. The husband hired a car, and his wife was transported to the district hospital. In the last case (case 7), the woman was first taken to the MCWC where she delivered and subsequently started bleeding 6 hours after the birth. The providers took her to the operating room where, according to our informants, the bleeding became excessive and the doctors became concerned and called an ambulance to transport her to another facility. The doctors at the MCWC explained that since they did not know her blood group, they had to send the woman to the district hospital for a blood transfusion.

None of the non-EmOC facilities arranged for vehicles or provided a health worker to accompany the women when the referral was made to the EmOC facilities. The woman who was transferred from one EmOC to another was transported in a facility ambulance.

3.2.5.7.3. Hospital Care

Data suggest that family members often faced severe difficulties in both the non-EmOC and EmOC facilities. As indicated, four (4) families first reached a non-EmOC; in one case, it was nighttime, and the woman was never seen by a doctor. In two (2) other cases, the providers delayed referral to an EmOC facility even when the women were bleeding severely; finally, it was the family members who took initiatives to transport the women to the higher level facilities. The final case was immediately referred to an EmOC facility.

In all cases, informants indicated that the woman was treated immediately upon arrival at the EmOC facility. Three (3) of the seven (7) women had to go through surgical procedures; one woman (Case 5) had dilatation and curettage (D&C). This woman had had an episiotomy in the non-EmOC facility; in the EmOC facility the stitches had to be removed and redone. Once that was completed, the woman was given a blood transfusion. In the case of one woman (Case 4) who had a retained placenta, nurses first tried to remove the placenta manually by inserting their hands repeatedly, but were only able to remove some of the placenta. Subsequently, doctors who were called in from the Medical College Hospital also tried to deliver the placenta manually, but when that failed they performed surgery. Our informants explained that during these procedures “the mouth of the uterus” was cut, and the woman would no longer be able to have children. After the surgery, she was given 3 units of blood provided by some medical students. The third case (Case 2) had a D&C 4 days after receiving a blood transfusion. Women received hospital treatment for 5 to 14 days.

A blood transfusion was recommended for all seven (7) women. Families were told that if their blood group matched, they could donate their blood, and if not, they could give their blood to the blood bank located in the facility and get in return blood that matched the woman's blood group. Five (5) of the seven (7) families subsequently were able to identify their blood group. In three (3)

cases, no family member's blood group matched that of the woman; they therefore collected blood from the blood bank in the facility by either donating blood or purchased blood from outside the hospital. Collecting blood was often a lengthy process, delaying treatment. For instance, when one woman reached the hospital, the family was told that she might die if a blood transfusion was not done immediately. However, the family was unable to do anything until the father-in-law and husband arrived the following morning with the money needed for payment at the facility; they had to purchase 1 unit of blood from the Medical College Hospital and collect 2 units from family members. These 3 units of blood were then given to the hospital blood bank in return for blood that matched the blood group of the hemorrhaging woman. The blood transfusion started 15 hours after they arrived at the EmOC. Two (2) other families who identified their blood group found that a family member's blood matched the woman's; however, in one case, woman's mother-in-law claimed she was weak and did not want to donate blood. Subsequently, the family purchased blood from donors selling blood outside the hospital. In the other case, family members gave their own blood to the woman, with the woman's sons accelerating the process by going to 2 diagnostic centers outside the hospital to identify the blood group rather than having it done in the hospital. One (1) family purchased blood from a broker selling blood outside the hospital. We were unable to collect information from the final case.

Several families complained that the hospital workers failed to provide adequate guidance in regard to how many units of blood were needed or where they should obtain the blood. In one case, the blood bank was closed during the night, and the family had to wait until the following morning to collect the blood. In all but one case, delays occurred because of problems in collecting blood.

Overall, informants generally were positive about the behavior of the health workers. A neighbour who accompanied the woman said,

They were good. The doctors checked her every once in a while. Whenever our patient was in danger, we ran to the nurses who would attend her immediately ...she got immediate care when we reached there. She was in a serious condition. The nurses tried initially to treat her, and when they were unsuccessful, they told us to take her immediately to the surgery section.

Complaints about the EmOC facilities included insufficient information regarding the timing of treatment or discharge of the woman, unavailability of electricity and water, lack of blood supply, and the fact that doctors have been often unavailable to perform scheduled procedures. This husband said,

There is no blood supply here at the hospital. One has to waste time looking for required blood here. She was referred to have an ultra sonogram 2 days back, but I am not finding a doctor to do that. Doctors of this hospital have gone to another place to offer their services. My wife is not well, I don't have an option to take her to another place to get treatment.

3.2.5.8. Condition of the Baby

One baby, who had breathing problems, died 4 days after the birth; another was stillborn. All of the other babies were in good health at the time of the interview.

3.2.5.9. Causal Explanations of the Condition

None of the families or the women interviewed mentioned bleeding as the cause of the condition or the reason the woman was hospitalized. One husband said,

How can I say what the cause of her illness is? Only Allah knows it. I do not do any sinful activity for which I should be punished by going through this process and spending so much money.

Women suffering from a retained placenta attributed the problem with the placenta as the cause of the recent hospital treatment and not bleeding. Some informants said that the women had been anemic during the pregnancy, and for this reason they needed treatment. Almost all the women and their family members considered the condition from which the woman had suffered as life-threatening and believed that care seeking to the higher level facility had saved her life. One woman said,

I thought I wouldn't survive. After getting treatment I didn't die by the grace of almighty Allah. I think I received proper medicine and I was saved. If we didn't have the money to continue the medicine, it would not have been possible to save me.

Some families believed that if they had followed instructions that health providers gave during pregnancy, such as going for a facility delivery, blood test or ultrasound, they might have avoided the condition.

3.2.5.10. Perceptions of Home and Hospital Delivery

Preference for home deliveries was still strong, with most informants indicating that home delivery is preferable. In particular, women who had previously delivered safely at home emphasized the benefits of home delivery. One woman said,

There are many advantages to home delivery, money is not needed, and there is not the problem of taking the woman here and there. If it is a normal delivery, what is the need of going to the hospital? My first delivery was a normal delivery (at home).

Privacy, and the fact that the delivery is attended only by females, were also mentioned as advantageous. This mother-in-law said,

No money is needed and that is why we prefer home deliveries... In our area, we usually deliver the baby at home. It is good to avoid having others see the delivery or observe the woman's abdomen.

When asked about the disadvantages of hospital delivery, informants mentioned the cost, concerns about having a C-section, which some mentioned as inevitable in the hospital and represented huge costs, and trepidation about the instruments used. Another reason for not choosing a hospital delivery related to concerns about who would take on the household responsibilities in the woman's absence. Particularly older women stated that hospital deliveries may be assisted by men, and exposure of the woman's private parts to a man is considered a sin.

Three (3) out of seven (7) families admitted that they should have opted for a hospital delivery.

These informants emphasized that the hospital offers life-saving services to deal with complications, stating that without the intervention, the women would have died. A woman said,

People have different perceptions about the hospital...they say that the doctor usually does a C-section in the hospital. Now I think hospital delivery is good. The doctors tried for me to have a normal delivery. Only when it is not manageable they do a C-section.

The husband of this woman, who spent a huge amount of money on emergency hospital care, explained that he would have spent far less money if he had convinced his wife and elder female family members to go to the hospital in the first place.

3.2.5.11. Cost

In two (2) cases, we interviewed female family members who were unaware of the treatment costs. Among the remaining five (5) families, one spent 2,500 taka (this woman was enrolled in an assistance program), three (3) spent between 10,000 and 20,000 taka, and one family spent 40,000 taka. Of the three (3) families who paid 10,000-20,000 taka, one was a DSF card holder. Costs were high due to the fact that the woman stayed a long time in the hospital receiving treatment.

Of the three (3) families who spent 10,000-20,000 taka, one husband had just returned from working abroad and money was not a problem, one family had savings to pay for the entire cost and the other family borrowed the entire amount. The family of the woman in the DSF program had adequate money to pay when the emergency occurred. The last family used money from the family business and borrowed the rest from neighbours.

3.2.6. Near-Miss: Eclampsia

3.2.6.1. Background Information

The nine (9) near-miss eclampsia cases were young, averaging 22 years in age. All had formal education, with a mean of 7 years of schooling. All of the women were housewives. Their husbands were on average 28 years old and less educated than their wives, with two (2) husbands not having attended school and the rest having on average 5 years of formal education. Informants were generally poor, with five (5) of the nine (9) primary household occupations involving either day labor or farming. Six (6) of the women were pregnant for the first time. The final three (3) women, all of whom were multipara, had husbands who were opposed to the pregnancy, stating that they wanted to focus on raising their living children. In two (2) of these cases, the women insisted on having the baby so that they could have a son.

3.2.6.2. Antenatal Care

Women had attended on average 3.4 ANC consultations, with one woman not having any ANC. While timing of the first ANC visit was not always determined, several women indicated that they had attended the first consultation in the last trimester, explaining that their health was good and there was no need to go earlier. One (1) of these women admitted that her sole reason to attend ANC was to obtain a DSF card, which she received when she was nine months pregnant.

The most frequent provider seen was either a medical doctor or nurse in a health facility (44%) or a health worker at a satellite clinic (33%). Other providers mentioned included community

nutrition providers (CNP), homeopaths, CHWs conducting home visits, health workers in a BRAC clinic, medical shopkeepers or *kobiraj* (herbalist). The most frequently provided services, according to four (4) of the nine (9) women (44%), included the fact that their blood pressure was measured, they were vaccinated, and they were given dietary advice. The second most common service offered to three (3) of the women (33%) was that they were given medicine, iron or vitamin tablets, advised about their workload and were asked about the place of delivery. Other less frequent ANC activities mentioned included that they were given the expected date of delivery, a blood or urine test was done, they had an ultrasound, the woman was weighed, her abdomen was measured, or the baby's position was checked. Most women did not share with family members what was done during the ANC.

Little or no information was provided about pregnancy-related complications, birth planning and preparation including savings and transport, and where to go if an emergency occurred. Only 2 women appeared to be knowledgeable about pregnancy-related complications; one woman had attended monthly courtyard meetings during her pregnancy. Her mother who attended the same sessions claimed that the information she gained allowed her to recognize the signs of eclampsia and make an immediate decision to seek facility-based care, stating that this is likely what saved her daughter's life. A second woman had heard on TV about obstetric complications, learning that seizures caused by eclampsia can lead to death.

It is important to note that several women did not attend ANC consultations with qualified providers or only visited a trained provider to get vaccinated. These women were generally not permitted by family members, particularly a mother-in-law or husband, to participate in ANC. Reasons for not allowing the woman to attend ANC included assertions that the woman did not have any physical problems, she had previously had a normal delivery at home, and the family placed restrictions on her movement due to concerns about exposure to supernatural powers. We also found that once a woman moved to her natal home during the last trimester, she often did not know where to go for ANC visits and felt that she would not be accepted by the health workers at this late stage in her pregnancy. Therefore, ANC visits were typically discontinued.

The woman who did not have any ANC consultations explained that she had a conflict with her husband who was angry about the pregnancy and told her to abort the baby. They already had a daughter and also a mentally disabled son, and the husband questioned how they could support a third child. The woman, however, was determined to have a healthy son. She also claimed that they could not afford the fee for an abortion, which was 1000 taka. This woman explained that during her pregnancy she felt ashamed to be pregnant with a third child, which inhibited her from venturing outside the household, including for ANC. While this woman experienced pre-eclampsia danger signs and was in general bad health during the pregnancy, she claimed that she could not afford treatment.

Two women in the sample lived in CSBA areas. In one case, the only contact the woman had with the CSBA was when, based on a recommendation from her mother-in-law, the pregnant woman went to the home of the birth attendant to indicate that she might need assistance during the delivery. The second woman had an ANC check-up with the CSBA, which revealed that the pregnant woman had high blood pressure. Ironically, the CSBA did not inform the woman about

the danger of high blood pressure or explain pregnancy-related complications. After falling during pregnancy, the same woman went to the CSBA for advice, asking whether she might experience complications as a result of the fall. The CSBA responded by saying,

“How should I know , only the doctor will know after doing a medical exam, you should go to him.”

Later, when this woman experienced pre-eclampsia symptoms in the form of a severe headache and vomiting, and her mother called the CSBA to their home, the CSBA refused to respond even though she lived nearby. We also learned that the family did not know that the CSBA assisted home deliveries.

Two (2) of the women had DSF cards; both women were encouraged during ANC visits to deliver in the health facility. The first woman, who had attended three ANC visits and received 2500 taka, said that she and her family were not informed about what services were available with the card. In the second case, the woman admitted that she obtained the card for the money and so that she would have access to medical services in case a complication occurred.

3.2.6.3. Physical Condition During Pregnancy

Five (5) of nine (9) women appeared to experience danger signs possibly associated with pre-eclampsia and which caused them much discomfort during pregnancy. These conditions included high blood pressure, a burning sensation or constant feeling of restlessness, headaches, vomiting, dizziness, an inability to maintain their balance causing them to fall frequently, mini convulsions, blurred vision and severe abdominal pain. Only one (1) of these women received medical care from a trained provider.

One other woman complained of severe edema in her hands and feet at the last stage of pregnancy; she sought treatment with a homeopathic provider and also had an ultrasound to determine why she had edema. The other three (3) women did not experience any signs or symptoms that appeared to be related to pre-eclampsia.

3.2.6.4. Physical Activities During Pregnancy

Three women carried out all of their routine household work throughout the pregnancy, including arduous chores such as lifting and carrying pitchers of water. While two of these women had nobody in the household to assist them, the third was living with her in-laws' family. Another two women had difficulties performing chores during the last trimester and were instructed by family members to reduce heavy work. Two other women were restricted from carrying out heavy work throughout the pregnancy; even so, one of these women chose to move to her natal home the last trimester so that she would be free of work. The remaining two women had mothers-in-law who were able and concerned about the pregnant women's health and therefore took on most of the household work while the women were pregnant.

3.2.6.5. Restrictions

Most women were advised by elder female family members not to go to certain places at certain times of the day for fear that they would be attacked by evil spirits known to prey on pregnant

women and to harm or kill both the woman and fetus. Restrictions included not venturing outside at noontime, in the late afternoon, at night, and before any prayer, and to refrain from walking on river banks or in high or open areas where evil spirits were known to roam. Women generally took these warnings seriously and followed the advice. Warnings were also given about carrying heavy pots of water, which was believed to cause the baby to become breech, and avoiding contact with cold water due to concerns about making the baby cold.

3.2.6.6. Risk Perceptions of Delivery

Most informants maintained that delivery is highly risky and potentially life-threatening, with the majority of women stating that they knew a local woman who had died during childbirth. Women admitted that they had been fearful during the pregnancy about problems they might face during labor and delivery, with some indicating that they had thought of the women they had known who had died during childbirth. Interestingly, two (2) of the nine (9) women claimed that they had sisters-in-law who had died while having seizures during delivery, and both women were fearful that they would experience the same condition. Women were most troubled about how their families would respond if a physical problem occurred, particularly in households where money was scarce. Some expressed anxiety that decisions pertaining to care seeking would be out of their control, and that even if a problem arises, families often try to have the delivery at home and delay transporting the woman to the hospital. Several informants insisted that it is ultimately up to Allah whether or not the woman will survive.

3.2.6.7. Birth Planning

Four (4) women planned on delivering in the in-laws' home, explaining reasons such as woman's parents were dead, woman did not want her older brothers to see her pregnant and women were older and well-established in their in-law's household. Three (3) women went to their natal home for the delivery, explaining that nobody in the in-laws' home was available to help post-delivery, and in their mothers' households, they would be free of work and could rest. The final two (2) women planned on delivering in the nuclear home, with one stating that she was embarrassed to give birth in her natal home where she had unmarried brothers.

Five (5) women had planned on delivering in the household; all but one of these families had contacted a TBA, in each case a family relative, to request she assist with the birth. While one of these women had a DSF card, the family felt they would not have to spend money if she delivered at home. The other four (4) women had no formal delivery plans; three (3) of these women had husbands opposed to the pregnancy, and they were concerned that a conflict would arise if they talked about the pregnancy. All three (3) women had already delivered children at home and assumed they would either have a normal delivery assisted by a TBA or delivery on their own. This is despite the fact that two (2) of these women experienced danger signs during the pregnancy. The final woman, a DSF cardholder, stated that everything is in God's hands, and that the family would decide what to do at the onset of labor. Overall, the strong preference for home deliveries was generally related to the fact that family members are available to assist, the environment is familiar, it is free, and invasive procedures are not used.

Five (5) families saved money in case special needs arose or an emergency occurred during the delivery. Money saved ranged from 2,000 to 10,000 taka; in two (2) cases, husbands saved money

from their monthly salary, in two (2) cases women saved small amounts of the money allocated for daily household expenditures, and in the final case, the husband and wife combined savings from his salary and the tailoring she was doing. In this last case, the husband's sister had died from eclampsia during delivery, and the circumstances of her death had encouraged them to put aside savings. Three (3) families did not have any savings set aside, and the final informant, whose husband was angry and unwilling to discuss the impending birth, did not know whether her husband had saved any money. Although over half of the families had saved money for the childbirth, only the two (2) women with the DSF card had made some preparations, albeit vague, about going to a facility if a complication occurred. Several informants suggested that complications are unpredictable, and therefore it does not make sense to plan in advance. This husband explained,

No one can think in such a way, I never thought that I might need a large amount of money in case I get a disease. Nobody can anticipate that a complication will take place and for this reason, a particular amount of money will be needed.

Paradoxically, one (1) of the women with a DSF card indicated that, if a complication arose, the family would first contact a village doctor and would only go to a facility if the condition could not be resolved. Nonetheless, both women stated that the greatest advantage to the DSF card was that if needed, they could be admitted to the hospital. As indicated earlier, they were generally unclear about what the program cost would cover.

3.2.6.8. Delivery

3.2.6.8.1. Onset of Labor and Identification of Complications

Eight (8) of the nine (cases 2-9) women experienced eclampsia before the delivery, with only two (2) women appearing to have labor pain before experiencing eclampsia. The most common first symptom of eclampsia was severe headache, which in some cases immediately preceded seizures and in other instances lasted several hours before seizures began. In a couple of instances, a female family member tried to relieve the pain by massaging and dousing the head with water or tying a cloth to the head. Other symptoms included mini seizures, vomiting, fever, a shooting pain in the abdomen, eyelids becoming heavy, pain in the hands and legs, and blurred vision which often occurred right before the seizures started. A couple of informants also indicated that they had fallen the day the seizures began. The final woman (Case 1), who did not report other symptoms, gave birth before experiencing seizures; about an hour after the birth, she started having seizures.

In only one case TBAs were involved; this is because the seizures began before there were contractions or shortly after contractions started. The one woman who delivered prior to the onset of eclampsia had received assistance from a TBA and CHW, and the CHW had already departed by the time the seizures began. Interestingly, two (2) informants insisted that they had experienced similar pre-eclampsia symptoms and seizures during a previous home delivery.

Several women referred to the condition as *hysteria* (meaning to shake) and called the seizures *khichuni*. Informants described the seizures as extremely violent and uncontrollable and often accompanied by other such alarming behaviors on the part of the woman as biting her tongue,

foaming at the mouth, pulling off her clothes, biting and hitting people, cursing and shouting at people, urinating uncontrollably and generally resisting any sort of assistance. Three (3) women lost consciousness shortly after the onset of the seizures when they were still in their homes.

Strikingly, the frightening symptoms the women displayed indicated that the condition was serious and required medical care, prompting family members to act quickly, with most families appearing to prepare to seek medical care immediately by arranging for money and transport to the facility. This was despite the fact that in several instances, the onset occurred in the night or early morning when it was still dark. In most cases, one or two people dictated decision making; this often involved a female including a sister, sister-in-law or mother who took control and insisted that the symptoms the woman was exhibiting warranted quick action and immediate medical care. In most cases those taking charge and making preparations to transport the woman to a facility were natal family members. One (1) woman explained that her mother's presence saved her life, suggesting that she would not have been taken to the hospital immediately if it had been up to her in-laws. In a couple of instances, there was a short delay in seeking care either because the family wanted to wait for daylight or it took time getting transport. Interestingly, in each case except one, the husband was not involved in decision making or his advice, which would delay care seeking, was overruled by other family members.

Other circumstances guiding decision making to seek professional care are worth noting. In one case, the mother-in-law and her nephew who worked as auxiliary workers in the hospital immediately recognized the danger of the symptoms; in another case, a medical shopkeeper who had been called to the household insisted that the woman's condition was dangerous, and she should be transported to the hospital immediately. In another instance, the family claimed they had already lost a family member to the same condition, and one of the female members recognized the danger and took immediate charge. When talking about her family member who had died of eclampsia, the sister-in-law said,

She didn't have any medical check-up. We did nothing for her. That is why she died. When she (the near-miss case) had hysteria, we thought we have lost one sister-in-law, we have to save this one. That is why we went for medical treatment.

This woman insisted that the costs were not considered, and she was determined to save the woman's life. She accompanied her sister-in-law to the hospital, where she agreed that C-section be performed. In another instance, the woman's sister-in-law also took charge, and despite the fact that the family was poor, she once again overlooked the costs, stating,

"She needed to go to the doctor and I thought money would be managed by the grace of God."

In another instance, the mother had learned about eclampsia during courtyard meetings and understood the danger. She made an immediate decision that her daughter be taken to the facility, dismissing suggestions made by other family members that the woman was possessed by spirits and needed care from the *fokir* (traditional healer). The near-miss case explained,

"If my parents had not known about khichuni (convulsions), if they had been persuaded by other people to call the traditional healer for treatment, I would have died at home."

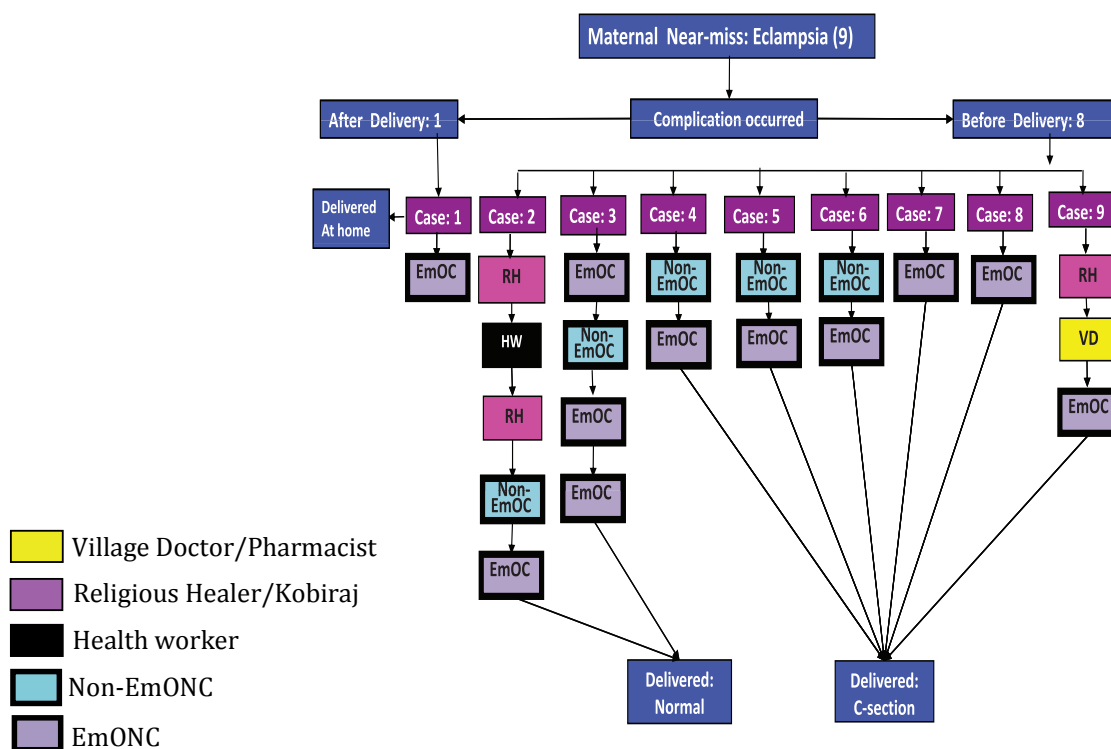
Most women were transported to the facility in a three-wheel flatbed van generally used to transport large goods. Many informants mentioned that when the woman had seizures the van became unstable; in one instance the van tipped over on the way to the hospital, and a second woman was transferred to a microbus because the van could not support the shaking caused by the seizures. Transport to the first facility took from a few minutes to 2 hours, with many woman having seizures during the trip.

3.2.6.8.2. Care seeking

Figure 7 shows that most women sought care in more than one facility, with only three (3) women (Cases 1,7, and 8) first going to an EmOC facility which could administer appropriate treatment. Three women (Cases 4-6) were first taken to non-EmOC facilities that were unable to treat for eclampsia or perform a C-section and were subsequently referred to an EmOC hospital. In two (2) cases, it took many hours to arrange for the money and the transport needed to reach the higher level facility.

One (1) woman (Case 3) went to four different facilities before she delivered the baby. This woman first went to a Thana Health Complex (THC) that was supposed to provide EmOC; however, the medical personnel indicated that they were unable to treat her condition, and she was referred to a higher level hospital. Rather than following the referral, the family went to a local diagnostic center, and waited a few hours to see the doctor. They were subsequently referred to a district hospital, where the woman was given medication for three days so that her condition would stabilize. Once she regained consciousness, she was referred to Dhaka Medical Hospital.

Figure 7: Care seeking for Complications – Eclampsia Near-miss cases



The final two cases (case 2 and 9) first sought traditional treatment, with both families believing that the woman had been attacked by evil spirits and needed local healers to exorcise their powers. One (1) family (Case 9) first obtained blessed water from a religious healer and also rubbed mustard oil and garlic on the woman's face as treatment. As the convulsions continued, they requested that a shopkeeper come to the home to treat the woman; the shopkeeper, who administered an injection, advised that she be taken to the government hospital immediately. Shortly after, the family transported her to an EmOC facility, having delayed care seeking to a facility about four hours. The final woman's husband (Case 2), who also believed she had been attacked by evil spirits, called a *kobiraj* who massaged her body with mustard oil and burned chili all night so that the smoke would rid her of any supernatural forces. A primary concern was that she would bite her tongue off, which the family claimed they had seen in other people suffering from the same disease and that this could kill her. Her husband explained,

At that time it (the seizure) was happening slowly. I was trying to feed her but she was totally unconscious. Suddenly I saw her neck was bent and I made sure that she lay down. I had never seen such a condition before. I thought it might be evil spirits (shoytaner ason). I called my maternal uncle who was a kobiraj. He was helpful because when she had seizures she bit her tongue. As he prevented her from biting her tongue I thought that she will survive this disease.

In the morning, a trained health provider was called to the home by neighbours. He recommended that she be taken to the health facility immediately in order to have a C-section, stating that otherwise she would die. Her husband became angry that the health provider suggested she seek care in a health facility; the woman later explained that her husband and mother-in-law did not trust trained providers. The husband was also angry by the way the health provider examined his wife, suggesting that he had examined her private body parts. Therefore, rather than following the health provider's advice, in the morning they called another *kobiraj* who once again gave the woman blessed water. In the late morning family members from her natal household, who had been called over the phone by neighbours to let them know that the woman was in a serious condition and that her husband and mother-in-law had no intention of taking her for medical care, arrived. They insisted that no matter what the cost, she be transported to the health facility, stating that she had a condition that could only be cared for by trained providers. They first transported her to a non-EmOC facility, which referred her to the Thana Helath Complex (THC) where she was finally admitted. When asked why they failed to seek medical care earlier, the husband said they did not recognize the illness. The delay at home before care seeking was over 15 hours.

Strikingly, in eight (8) of nine (9) instances a phone call was made which in some way facilitated access to emergency care. Calls were made to get medical advice from trained providers, arrange for transport, encourage natal family members to travel to see the woman so that they could make a decision regarding medical care, influence health care providers to admit the woman in an EmOC facility, and to get the husband's approval to transport the woman to a medical facility.

3.2.6.8.3. Hospital Care

Eight (8) out of nine (9) families complained about delays during the admission process or before receiving treatment after they had reached a facility where eclampsia could be treated and a

C-section performed. In several instances, the hospital staff apparently did not want to admit the eclampsia cases, suggesting that the family had delayed care seeking and the woman's condition was too serious for them to treat and recommending the woman be transferred to a higher level facility. In a few occasions, the hospital staff admitted that they were concerned that if the woman died under their care, the hospital's reputation would be damaged. In these cases, informants described a long period while the family pleaded for the woman to be admitted and treated. At four times, the delay in admitting the woman also had to do with the fact that a physician was not present when the woman arrived at the facility. In two (2) of these cases, the woman arrived in the middle of the night or early in the morning, and in one of these, the facility door was actually locked. In another instance it was Friday, the Muslim holy day, and no doctors were on duty. In the last instance, it was the middle of the day, and it was not clear why a doctor was unavailable. In two (2) of these cases, the women had a DSF card; once the health providers realized this, the doctor, who was contacted by phone, travelled to the health facility, arriving several hours later to treat the woman. Once admitted, most families complained about other delays in receiving treatment. The longest delay occurred at Dhaka Medical Hospital, where the family claimed that the nurses on the ward did not provide assistance or summon a physician until two days after the woman was admitted.

Finally, an uncle of the woman got a doctor's attention when he complained loudly that the patient had been ignored, and if she died, the family would publicize the fact that the patient had been left physicians in shops located outside hospital. In one instance, the woman needed blood and a long delay occurred while obtaining blood from family members. In several instances, there was also a long delay before the C-section was performed. Although it is difficult to assess whether such delays occurred because the health providers were first trying to control the seizures and deemed it too dangerous to perform the C-section, in three (3) instances the wait was prolonged because appropriate medical personnel were not available. This family member explained,

We requested them to do the C-section as early as possible, but they were telling us, if you are in such a hurry do the operation yourself. We will do it whenever we find time...Already we were late and if there was more delay, the condition of the patient would become more severe. However, no one paid attention to us. They said, 'Why are you in such hurry?' There was no point in talking with them. They were supposed to make us understand about her condition, but they did not. We were helpless. I would have liked to have said goodbye forever to this slaughter-house (she meant hospital) and I prayed to God that I would never come back again.

Overall, many families lamented about the behavior of the hospital staff, who often assumed that the family had been slow at home to respond to the woman's condition, and thus chastised them for causing a dangerous long delay in accessing hospital care. Families complained that the hospital staff were often unwilling to explain hospital procedures related to admission or payment for treatment or tests, and subsequently the staff got angry. In three instances, the families complained about the constant onslaught of requests for money made by the health workers and the general unwillingness of nurses and auxiliary staff to provide care without receiving payment. One husband explained,

It was their duty but they did not come to the patient, they didn't want to touch her before I paid. I gave the nurses money so that they would take care of her. The patient was going to die, no one was present at the right time, so what could I do? We had to pay 20-50 or 100 taka for them to touch the patient.... Without money they did not even want to move. My opinion is the government facility should take care of us. We are poor people. Now it has become a normal trend to give money (bribes) to them.

Another informant described the constant requests made by the auxiliary staff, explaining,

If someone touches the trolley he or she demands 100 taka. After the C-section we went to take the baby and before giving it to us they demanded 200 taka..... If someone touches you they demand money.... Moving the patient from the emergency room to the ward by trolley they demanded 40 taka, from the bed to the operating theater they demanded 50 taka. Another time when she was taken to the bed they demanded 20 taka, and now they are demanding 30 taka. Now calculate and tell me how much we had to pay?

In Dhaka, the ongoing request for money appeared to be more extreme, with the family explaining that they had to pay a bribe at the gate to enter the hospital and daily bribes to enter the ward where the woman was hospitalized. The woman's uncle finally decided to give the nurses a lump sum of money (300 taka) so that they would stop harassing the family for small sums of money. It was also reported that the nurses often refused to work and slept on the job. Describing the frustration with the nurses expressed by a doctor, this uncle said,

The doctor asked the nurses whether they were there to treat patients or for sleeping. She asked the nurses why they didn't say anything about the patient to us (the doctors)? I also observed that they only sat on the chair and kept their head on the table for sleeping and they left the hospital early in the morning.

Shortly after the baby was born, this family decided to return home, indicating that they left the hospital early because they could not afford the constant onslaught of requests for payment.

At the time of the interviews, informants, several of whom were still being treated, had stayed anywhere from three to eleven days in the hospital, with most women unconscious for several days. Most families indicated that the women had their own bed, and there was electricity and running water in the facility. Despite all of the problems mentioned, informants were generally appreciative, explaining the woman received lifesaving care. This woman said,

We have benefited. As there were no such opportunities, mothers used to die. Now they are not dying. Anyone can be taken to the hospital immediately. This is good. If I had not been taken, I would have died at home.

3.2.6.9. Condition of the Baby

Six (6) babies were born through C-section and two (2) were born vaginally in the hospital. The final baby was born vaginally at home. One baby was a stillbirth, and the rest of the babies survived. While four (4) of the living babies seemed to be in good health at birth, the other four (4) were described as extremely small, with a couple of mothers indicating they were pre-term. Two babies were put in an incubator after birth, which we learned from informants was very costly.

3.2.6.10. Causal Explanations of the Condition

Causal explanations were varied, with the most common being that the woman had been attacked by evil spirits (e.g. *shoitan*, *kalerdrishti*) that harm pregnant women. In a few cases, the fact that the women had fallen several times during pregnancy was proof that evil spirits were involved. Several informants associated the danger signs experienced during pregnancy, such as severe headaches and high blood pressure, as the causal agents. Other causal explanations were related to happenstances during pregnancy such as the fact that the woman had cut her hands while cutting fish, causing severe bleeding; she had been exposed to cold things; she failed to get vaccinated; she had not eaten properly during pregnancy; or she was short in stature and too young to be having children. One woman indicated that she had experienced the same complications during a previous pregnancy and childbirth. Several informants felt that if the women had attended ANC consultations regularly or consulted a doctor or had an ultrasound, they could have taken appropriate precautions or gotten treatment during the pregnancy, thus averting the condition and the huge costs involved. Despite the general lack of understanding of the cause, most informants believed that they survived because they received hospital treatment.

3.2.6.11. Perceptions of Home and Hospital Delivery

All families still suggested that home deliveries are preferable to giving birth in the hospital. Most justified their preference by explaining that they are poor and delivering at home does not require money, while a hospital delivery involves huge costs, particularly when a C-section is performed. Other negative perceptions of hospital care included the belief that the doctors frequently cut the abdomen; the equipment used is foreign and alarming in appearance; the doctors do not provide care to the patient immediately upon admission; it is difficult dealing with the different health staff; nobody is available to help with the patient's basic needs; and the doctors employ practices that are viewed as inappropriate. This mother-in-law said,

The hospital is a bad place, it is for complications. It is far away and often they don't understand the complications. Health workers check the vagina with their hand which is covered by plastic. Home is better because the delivery takes place without pressure.

Home deliveries were preferred because female family members can assist, the baby is born vaginally, medications are not required, and it is free. Another mother-in-law said,

Home delivery is better, in the hospital they have big doctors who check with their hand again and again whether it is time for the delivery. But at home that doesn't happen. At home if the mother's delivery time comes, but the pain doesn't increase she can receive an injection to increase the delivery pain.... Another problem is that the hospital requires money. If we go to any government hospital we also need money to buy the medication from outside. And in the private clinic, a huge amount of money is needed. No money is needed for a home delivery.

Some people referred to the social pressure in rural communities to delivery at home. Despite this, several informants admitted that complications cannot be handled properly at home, and that when complications occur, lack of money forces poor families to wait too long before going to the facility, placing the woman and baby at risk for dying. This woman said,

They are concerned about the cost and that's why they don't want to take the mother to the hospital....This is a poor area. There are not many crops grown. That's why people stay at home no matter whether the mother will survive or not. Only when there is a complication and no way to save the mother's life will they decide to go to the hospital.

3.2.6.12. Cost

Of the six (6) women who had C-sections, costs ranged from 7,000 to 24,000 taka. The two (2) DSF cardholders did not have to pay for the C-section and the associated doctor's fees and therefore had fewer expenses, paying 7,000 to 8,000 taka. Costs for these women involved payment for medications, bribes to the health workers, accommodations and transport. Hospital costs for women who had vaginal deliveries ranged from 6,000-30,000 taka, with the woman who went to three different facilities before finally being referred to Dhaka paying 30,000 taka. Payments were made for medicine, food, accommodation, transport, and bribes to hospital workers, particularly nurses and ayahs, which significantly increased the overall costs.

In all but one case, the family had to take out loans on interest to cover the costs, with one woman putting her gold jewelry down as collateral. Payment was often made both by the natal family and the husband, with the natal family members often paying a larger portion. While five (5) families had put aside money for the delivery, all but one had enough savings to cover the costs. Despite this, families confirmed that the savings helped, enabling them to seek more rapid treatment. In two instances, the woman had hidden the savings in secret places (e.g. in the pillow case), and the family was unable to locate it when the emergency occurred.

3.2.7. Near-Miss: Obstructed Labor

3.2.7.1. Background Information

We interviewed four (4) women who had experienced obstructed labor and survived. Table 2 shows that the average age of these women was 28 years. Only one of these women had formal education, having attended school for four (4) years. All of the women interviewed were housewives. Their husbands' mean age was 44 years; two husbands had no formal education, and the other three had on average 2 years of schooling. Three (3) women had been pregnant once before, with the last woman was pregnant for the first time.

3.2.7.2. Antenatal Care

All four (4) women had received ANC, with an average of two visits during the pregnancy. ANC consultations were provided by both government and BRAC CHWs, a trained provider working privately and a homeopath. Their services included administering a urine test, measuring the blood pressure, weighing the women and giving vaccines. Two (2) women were advised to deliver with a trained provider; one woman had previously had a C-section, and the second woman was told that she had a physical condition that required skilled assistance. However, the provider failed to explain what her condition was. None of the women received information on pregnancy-related complications.

3.2.7.3. Physical Activities During Pregnancy

Three (3) women performed all types of household chores, with two (2) women mentioning that they received some assistance from their husband and in-law family members. The final woman claimed that she did not engage in any heavy work but performed lighter, less arduous chores.

3.2.7.4. Birth Planning

All 4 women had planned on having a home delivery; two (2) women had formal discussions with their husbands, one woman held discussions with her extended family members and the fourth woman claimed to have decided on her own. Only one woman made prior arrangements with a TBA to assist her when labor pain began. Reasons for choosing a home delivery included financial constraints, lack of facilities offering maternity care in the area, and the fact that her in-laws insisted the women give birth at home. Two (2) informants indicated that they would only consider going to a health facility if a complication occurred.

Only one husband had saved money, amounting to 3000 taka, for the delivery. This was the husband of the woman who had been told during ANC that the delivery might be complicated. This man also asked friends to lend him money if his wife experienced complications and needed to go to a facility. His wife had planned on selling some of her gold and silver jewelry, as well as saris, if she needed money to pay for the delivery. The other families had not made prior arrangements to deal with a health problem if it arose. However, two (2) women had obtained the telephone numbers of the health providers so that they could contact them if needed.

3.2.7.5. Delivery

3.2.7.5.1. Onset of Labor and Identification of Complications

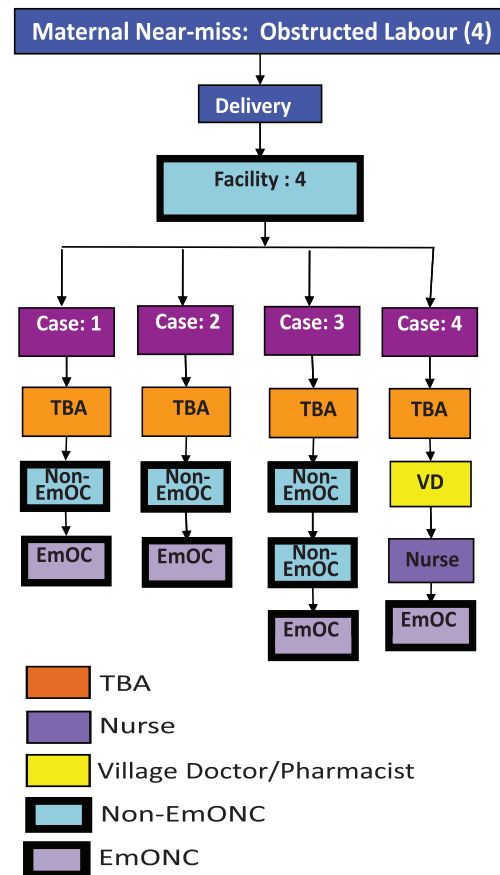
After the onset of contractions, all four (4) families first called TBAs to assist with the birth. In one instance, the TBA was not available, and after calling several TBAs, the family contacted a CHW who performed deliveries. The birth attendants all tried to deliver the baby for several hours before acknowledging that there was a complication they were unable to resolve and informing the families that the woman required additional assistance. Complications were described as follows: in two (2) cases the birth canal became dry, one baby was in a breech position, and in another case the baby's head was reported to be stuck in the birth canal. Even after families were informed that the woman needed alternative care and was in danger, long delays occurred before the women obtained treatment from trained providers. In one instance (Case 1), the TBA informed the family at midnight that she must be taken to a facility; the husband decided it was not possible to transport her in the night and waited until morning. In another instance (Case 2), the TBA tried to deliver the baby the entire night before referring her to a facility; even when his wife was referred, the husband delayed making a decision to take her out of concern regarding treatment costs. Finally, an aunt intervened and told the woman's husband that she would pay for treatment and that he should transport her to a facility as soon as possible. In another case (Case 3), after trying to deliver the baby, the CHW decided that because the woman had previously had a C-section, this delivery would also require surgical intervention, and the woman was taken to a facility. In the final case (Case 4), after several hours trying to deliver the baby, the TBA requested that a doctor who could administer "saline" to increase contractions be called to the house.

3.2.7.5.2. Care seeking

Figure 8 illustrates care seeking. In one case (Case 1), the first line of care seeking was with a physician working in a private office, who administered saline and injections to increase the contractions. From early in the morning until later afternoon he tried to deliver the baby vaginally, eventually resorting to using forceps. The doctor finally understood that the woman needed a C-section and recommended she be taken to a district hospital. Two women (Cases 2 and 3) were first taken to non-EmOC facilities several hours after labor started. In both instances, the health care providers indicated that she needed a C-section, a procedure they were unable to perform in the facility. In one instance (Case 2), the family subsequently travelled to a Medical College hospital, arriving there two hours later at 1 am. The woman had to wait an hour before a health provider examined her; the clinician indicated that the baby was dead and that the woman would need a C-section to remove

the fetus. However, doctors were not available in the night, and the procedure was not performed until the next morning. In the other instance (Case 3), the health providers in the non-EmOC provided an ambulance to transport the woman to a district level hospital. The family arrived at the hospital at 9 pm, by which time the woman's condition was serious and her pain intolerable. Despite this, the woman was made to wait several hours before she was referred to a Medical College Hospital. The family was not informed why the referral was made, and due to money constraints, concerns about the time involved, and whether she would receive good care in the government hospital, the family deliberated about whether they should transport her to the higher level facility. A nurse in the facility intervened, advising them to take her to a nearby private clinic. The family immediately took her to the clinic. In the final case (Case 4), the TBA had recommended that the family get medication from a local provider to increase the contractions. The husband first sought care with an MBBS doctor who refused to come to the household because it was midnight. The husband next contacted a village doctor, who administered four injections to increase the labor pain. However, the woman's condition remained unchanged. He left the household, advising the family to call a local nurse who arrived the next morning. The nurse advised that an episiotomy was needed, recommending that the woman be taken to a health facility. Due to money constraints, the family waited the entire night before transporting the woman the following morning to an MCH. A C-section was performed 1.5 hours after arriving in the hospital.

Figure 8: Care seeking for Complications – Obstructed Labor: Maternal Near-miss cases



3.2.7.5.3. Hospital Care

In three instances, the women faced long delays before receiving treatment in the facility. In one case (Case 1), the woman arrived in the late afternoon shortly after leaving the private doctor's office. Upon arrival, they were told that the birth canal and umbilical cord were torn. By this time, the woman was experiencing extreme pain. The health workers initially administered saline and injections, presumably to induce contractions, and gave her medicine to relieve the pain. While the medication helped with the pain, she was unable to deliver the baby. Later the health care providers concluded the fetus had died, stating that it had severe injuries to the head, and a normal delivery would not be possible. The health providers wanted to refer her to the Medical College Hospital, stating that her condition was very severe. Her husband refused, claiming that he had no money. A C-section was finally performed in the district hospital, which was closer in distance than the Medical College Hospital, the next morning when doctors were available.

A second woman (Case 2) who was referred from the non-EmOC to a Medical College Hospital received saline and injections as soon as she reached the hospital. However, it was midnight and the doctor who performed C-sections was not available, and she had to wait until the following morning before the procedure was performed. She had a stillbirth and required four units of blood after the procedure; the hospital provided one unit, and the other units of blood had to be purchased by the family outside the hospital. The family indicated that it was difficult for them to locate and purchase the blood. At the time of the interview, the woman had been in the hospital for eight days, and her family were unclear when she would be discharged. The woman's husband complained that the care was unsatisfactory, claiming that the doctors were never available to examine the patient and that the authorities said they were unable to make decisions until her condition was assessed by the doctors. The family felt that she was being kept in the hospital for no reason.

The third woman (Case 3) was not treated for a prolonged period after she arrived in the district hospital, with health workers claiming they were busy with other patients. When family members requested that she be given care, they were chastised and ridiculed by the health providers. Finally, after an extended period, a doctor came and indicated that they were unable to treat the woman, and she must be referred to a Medical College Hospital. The family could not understand why she was being referred and concluded it was because they were poor and had no power to influence the health care providers. The husband explained that a female health provider insulted them by saying,

"You are poor and you have no money, so why are you having a child?"

The near-miss case also had complaints, explaining that a nurse tried to examine her in a location where there was no privacy, and when she hesitated, the nurse yelled at her. Due to distance to the Medical College Hospital and money constraints, the family decided to take the woman to a nearby private clinic. When they reached the clinic, the doctor initially refused to provide care, stating that her condition was too severe. Finally, after the doctor was assured payment, a C-section was performed. Although the family claimed that care in the private clinic was more expensive, they praised the behavior of the health providers and the treatment provider. The woman explained,

When I heard I was being referred to Sylhet medical college I became afraid. I was thinking what would happen to me. I was suffering in the district hospital and I assumed

that I would suffer more if I went to Sylhet medical college (another government facility). Moreover, it was far and I was scared that I might die on the way. If I had gotten better treatment, if the doctors had behaved well in the district hospital, I would have felt comfortable. In the private hospital doctors came to visit me, they also visited my child. If my child needed medicine they prescribed it. They didn't charge for visiting my baby. I am happy about the way the doctors in the private clinic treated me. Sometimes the patient feels cured by the doctor's good behavior. I wasn't treated well in the district hospital, my condition only got worse. My husband is a day laborer. If I had been given treatment in the district hospital, I wouldn't have fallen into this bad economic situation.

The final woman (Case 4), who had experienced long delays at home where she had been cared for by a village doctor, was examined immediately as soon as she reached the MCH and a C-section was performed without delay.

When asked about the conditions in the medical facilities, informants indicated that there were toilets and electricity. A couple of women did not get a bed until after the C-section was performed, having to lie on the floor an entire night when they were initially admitted. In all four (4) cases, the husband appeared to be the primary decision maker about home care and care seeking. In two instances, family members intervened when husbands hesitated to take their wives to a facility due to financial constraints. Both formal and informal health providers seen during the initial stages of care seeking also influenced decisions about obtaining care in a health facility.

3.2.7.6. Condition of the Baby

Three women had a stillbirth and the final woman had a live birth.

3.2.7.7. Causal Explanations of the Condition

None of the family members related the complication to prolonged, obstructed labor. One husband attributed his wife's complication two months before her pregnancy. In another case, the woman and family blamed the doctor working in the private office where she was first taken for care, claiming that the doctor caused head injuries that killed the fetus, as well as an infection the woman developed in her birth canal. In two cases informants believed that hospital care, specifically a C-section, saved the women's lives. The final two families were unable to explain what saved her and why a C-section was needed.

3.2.7.8. Cost

Costs for treatment ranged from 1,500 to 20,000 taka, with care in the private clinic far more expensive. Two women were hospitalized for prolonged periods (8 to 13 days) due to the severity of their condition. While the woman treated in the private clinic complained about the higher price, she also praised the treatment and fact that authorities were willing to negotiate the price. Three of the 4 families, including the family who had set aside savings, fell into debt because they had to take loans to pay the hospital bill. Money was borrowed from family members, and in one case, the family took a loan from BRAC. The final case paid a small fee because they got support from the hospital authorities due to their poor financial situation.

3.3. RESULTS ON PREGNANT WOMEN OF THIRD TRIMESTER

3.3.1. Background Information

Table 3 presents the background information on the 20 women in their third trimester of pregnancy. Women were on average 23 years of age. Five had no formal education; among those who had formal schooling, the median years of education was six years. Six women were pregnant for the first time. All informants were housewives. Their husband's average age was 30; 6 husbands did not have formal schooling, and among those who did attend school, the median years of education was 7.5 years. Most husbands were engaged in low income jobs.

3.3.2. Antenatal Care

17 of the 20 women attended ANC visits, with the median number of consultations two and the median number of months pregnant at the time of the first visit three. Of the 17 women, only five (5) had attended the recommended 4 ANC consultations. Most of the other women had only attended 1 consultation.

One woman in the sample had received a DSF card, and in this case the woman attended four ANC visits. She received 300 taka during the first ANC visit and was promised 2,000 taka after delivery. Another woman applied for a DSF card, indicating that her aim was to have a tubectomy. However, she was refused the card because she had already delivered 5 children. While a third woman knew the card was available in her area, she stated that it was distributed by Christians and she was therefore not interested.

In regard to the ANC provider, a nurse or medical doctor was most common at 47%, followed by an NGO worker (24%), and a CHW (18%). A variety of other providers visited by only one woman included a community nutrition worker, a pharmacist, homeopath, and a local "nurse" working from her home. Places where women obtained ANC services were as follows: a public health facility (35%), the informants home (29%), a private clinic (18%), a local pharmacy (18%), an NGO facility (12%), a nutrition center (6%), and a satellite clinic (6%).

Table 3. Background information of the women interviewed

Pregnant Women		Response (n=20)
Mean age in years		23
Months of pregnancy	7	7
	8	5
	9	7
	10	1
Education	0	5
	median*	6
Average duration of marriage		7
Parity	1	6
	2	10
	>2	4
Hasband's mean age in years		30
Hasband's education	0	6
	median*	7.5

* Only those who attended

Information collected on the types of services provided was open-ended and therefore more likely to reflect what women considered most important. Responses included dietary advice (65%), the blood pressure was taken (59%), the baby's position was assessed and the abdomen measured (59%), the woman was weighed (53%), the woman was given medicines or a prescription to purchase medicines to address a condition (e.g. gastric pain, fatigue) associated with the pregnancy (53%), vitamins or minerals were offered (41%), the woman was advised about her workload, mobility or rest (41%), and her urine was tested (35%). Less frequent services included the fact that she was asked about physical problems (24%), she was told the expected delivery date (18%), ultrasound was done (18%), she received a vaccine (12%), her temperature was taken (12%), her blood was tested (12%), and she was asked where she planned to deliver (6%). While ultrasound was often recommended, several women did not want to have ultrasound for reasons as follows: men would touch the woman's body, the machine exposes all of the woman's body parts, it can damage the baby's brain, or they were opposed to learning about the sex.

Strikingly, virtually no information was provided on danger signs during pregnancy, complications during childbirth, and necessary arrangements to make prior to delivery, including in the case of complications that might require hospital delivery, nor were questions generally asked or advice given regarding the place of delivery. In addition, several informants mentioned that they had reservations about sharing current health problems, asking questions or raising concerns about the pregnancy, particularly if the provider was male. The health providers failed to question women about complications during previous births or their present health, and even if the woman suffered from a potentially dangerous condition such as high blood pressure or edema, they failed to give advice. Therefore, one woman who had had a C-section and another who had previously suffered from eclampsia never shared this information. In another instance, although the informants edema was so bad that she had difficulty walking, the health provider did not offer any medical advice. In several instances women with problems such as edema or headaches seemed to be given assurances that the condition was normal, and she would not experience complications during delivery.

In regard to explanations given by the three (3) women who had not attended ANC, in one instance the woman had lost her first child when the child was six months, and for two years subsequent to the death she could not get pregnant. She visited a *kobiraj* who gave her amulets and subsequently got pregnant. Once pregnant, the *kobiraj* placed restrictions on her mobility, and her husband and mother-in-law also prohibited her from going to ANC visits so that she could adhere to the *kobiraj* treatment. In the second case, the woman's husband and mother-in-law adamantly disapproved of her attending ANC visits. Another woman who moved to her natal home at five months assumed that she was not eligible to participate in ANC because she did not have an enrollment card. In her natal household community, she was unwilling to ask about ANC, stating that childbirth is a matter of shame. She had not had any ANC during her first five months of pregnancy because her husband had not suggested it.

Reasons given by the six (6) women for only having one ANC visit included the following: the woman was in good health and the baby was moving well, and it was therefore unnecessary to have a check-up; distance and travel to the facility, which could harm her health; the inconvenience; she could rely on the TBA for advice; and the fact the doctor was male. Several women terminated

ANC visits after moving to their natal households prior to delivery because they believed they were no longer eligible, they were shy about making the new contact, or their husband was no longer available to accompany them, and this was even true when women experienced a health problem. Other obstacles included that the husband or mother-in-law disapproved of the woman visiting a health provider or mixing with other people, or the woman herself believed there was no value in visiting doctors. Several women indicated that their number of ANC visits decreased during this pregnancy because door-to-door services were no longer offered.

Overall, most women indicated that it is important to attend ANC so that a woman can understand her physical condition and the baby's position. This was even true of women who did not attend ANC, who were generally restricted by other family members from participating in consultations. A few women pregnant for the first time said that they were shy about going, explaining that childbirth is a matter of shame.

3.3.3. Physical Condition and Additional Care seeking

The most common conditions women experienced during pregnancy included weakness, pain in the legs, hips and joints, lack of appetite, and nausea, which was more frequently mentioned as a problem during the first trimester of pregnancy. Care seeking depended upon the condition, with treatment for symptoms believed to be associated with pregnancy such as lack of appetite and edema sought with pharmacists or facility-based health workers where women expected to receive medicines. Care for conditions affecting the sexual organs such as white discharge and itching sensation in the vagina was sought with a homeopathic doctor. Five women visited a *kobiraj*, with two (2) of these women claiming to have seen an apparition sent by *alga batash* (evil spirits) to scare the woman and harm the fetus. Another woman who fell in the pond assumed she had been attacked by evil spirits. Treatment involved amulets, massaging the body with blessed oil, and ingesting blessed water, with the aim to protect the women from further attacks. One woman sought treatment for jaundice with the *kobiraj*, and the final woman was the one who received fertility treatment with a *kobiraj*.

It is important to note that four (4) women indicated that family members prohibited them from seeking health treatment, either because they viewed the problem as normal or unimportant; one woman indicated that she did not have the courage to ask family members to pay for treatment for pregnancy-related problems. As a result, women felt that their conditions were not adequately addressed, causing them to suffer during the pregnancy.

3.3.4. Physical Activities During Pregnancy

Most women were warned by older female members, with instructions often reinforced by husbands, to follow specific behaviors to protect them from evil spirits, bad air or *noyorlaga* (evil eye). Most informants subscribed to these regulations, stating that evil spirits are known to attack pregnant women and cause bleeding and miscarriages, harm or kill fetuses and make for complications during delivery. Women who had already experienced miscarriages, difficult deliveries, or some sort of tragedy like the loss of a child, were particularly concerned about following these proscriptions. Restrictions included limiting mobility at times when evil spirits are known to attack or scare pregnant women including early morning, at noontime, during evening prayer and at night. Other prohibitions included leaving the home on Saturday and Tuesdays,

being present near a graveyard, standing, sitting or eating under a tree, traveling in a wooded area, or simply going outside the household alone. Most women expressed a firm belief in the power of evil spirits, with some visiting traditional healers such as *kobiraj* or *pir* (religious healers) to obtain such protection as amulets, blessed oil or water against spirits. Other protective measures included carrying cow bones or a lamp or match at night to scare the spirits.

Women were given other advice from family members about their physical activities, which included moving with caution to avoid slipping or falling, avoiding lifting heavy items such as vessels of water or sacks of paddy, and restricting arduous work. Health workers also recommended avoiding heavy work. The vast majority of women interviewed indicated that they had stopped doing such heavy work such as pumping water from the tube well, carrying water, chopping wood, washing clothes, and smearing the house with mud, with several moving to their natal household where they knew they would not be permitted to work. Informants emphasized that moving cautiously and avoiding heavy work helped ensure that they would not suffer from complications during delivery, and thus make certain that they would not require medical assistance, which would entail spending money. A small number of women who lived in nuclear households stated that their workload remained unchanged.

While women generally received dietary information from health workers, most women were unable to afford the special foods recommended such as milk, eggs, and meat, with most indicating that they had to follow their regular diet. Only two (2) women mentioned traditional food restrictions enforced by elderly women involving avoidance of certain luxury foods.

3.3.5. Knowledge of and Preparation for Delivery Complications

The most commonly mentioned delivery complications included eclampsia, with informants generally describing signs and symptoms such as seizures, foaming at the mouth and blurred vision, and several referring to it as *hapani*. Some informants called the condition tetanus “*tongor*,” indicating that this is the reason that women get immunized. Other frequently mentioned complications included excessive bleeding, obstructed labor, with informants explaining that the baby’s head can be too big, and problems expulsing the placenta, with some maintaining that if the cord is cut before the placenta is delivered, it can rise to the chest or liver and kill the woman. The water breaking early, the hands or legs delivered first, and prolonged labor or erratic contractions were also commonly cited. Three women were unable to name any complications.

When informants were asked where they had learned about complications, the most frequent response was from female neighbors. Other common responses were that a community member or they themselves had experienced the condition, or they learned about it through the television, posters, or elderly female family members. Strikingly, none of the informants mentioned that they had been informed about complications by health workers.

3.3.6. Perceptions of Risk During Childbirth

Of the 14 women asked whether they knew of a woman who had died during childbirth, only one did not know anybody. Most women referred by name to the woman (a couple of women knew more than one case) who had died, and in a few instances, the maternal death involved a family member. Most attributed the reason for the death to the fact that the family waited too long at home

to seek professional treatment, with many explaining that they did not have adequate funds and took a long time collecting money. Some informants stated that, as they approached childbirth, they often thought about the circumstances that led to maternal death. When asked about the death of her sister-in-law, this informant said,

I am scared. I think what if such a thing happens to me. You need money to deliver in the hospital. A lot of money. How would we manage the money?

Women categorically indicated that childbirth is highly risky, with many emphasizing it is the greatest risk women face because it can lead to death. This woman said,

Men face many problems. They have to face the world. But women have only one problem. Women stay at home and have babies....this is their life.

Several women actually predicted that they were going to die during delivery, and most informants admitted that they get very fearful thinking about the impending childbirth. When this woman was asked how she perceived her life at this stage, she said,

I don't know whether I will die or live. I know that I am physically okay. But none can say what will happen. I just get afraid whenever I think about the delivery. I said to my husband, 'If I die during delivery, please forgive me.'

Women also suggested that their physical condition during childbirth was highly unpredictable and determined by outside forces. This woman said,

During this time women are at the risk for death. No one can say about the future. It may happen that the baby is delivered but the mother dies. Sometimes the size of the baby's head is too big, staying inside for days. Even though there is delivery pain, the baby is not delivered. In this way both the baby and mother die. That is determined by Allah.

This mother-in-law said,

We will die at the time written in our lot. It is desired by Almighty. We 4-5 women are present here. If anyone of us die now, can anyone (doctor) help to save us? A man can die by a road accident or a woman can die while she is delivering a baby; these all are desired by Almighty.

Ultimately, informants emphasized that the household response to a complication and subsequent events were in the hands of family members and essentially out of their control.

3.3.7. Perceptions of Home and Hospital Deliveries

3.3.7.1. Home Delivery

Despite the acknowledged risks involved, the vast majority of women preferred home deliveries, with many women referring to the cultural and economic pressure to deliver at home. Only two (2) informants indicated that hospital delivery is better. A common advantage to home delivery mentioned was related to the fact that only women are present and fewer people witness and know about the birth. A number of women indicated that delivering at home will allow them to protect purdah, and some women suggested that they gain respect by delivering at home. When explaining the advantages of home delivery, this woman said,

I may die. Is it not risky? Is there anything as risky as childbirth?.... But people prefer a home delivery so that they can hide the delivery. Childbirth is a matter of shame..... Home delivery is good because people will not get informed. In the village, people laugh if anybody goes to the hospital for delivery because they think it is unnecessary.

Another woman explained,

Home delivery is preferred to maintain prestige and dignity of a man. To deliver in the hospital is a shameful matter. In the hospital male doctors conduct deliveries. We are not willing to deliver with a male doctor because it is shameful for us. Male doctor checks whether the baby has come down or not, isn't it a matter of shame? Also, money is needed for a hospital delivery....

Overall, feeling ashamed to discuss pregnancy (many mentioned with older females) and to circulate in front of males while pregnant was mentioned repeatedly in the interviews, and the ability to avoid both was mentioned as an advantage of home delivery. Other common advantages to home delivery were that little or no money was required and that only family members, who provide mental strength, are present. Women were able to name only a few disadvantages to home delivery, the most common being that if a woman experiences a complication, there are no doctors or medicines available to address the condition, and it may be difficult to reach a facility. Another disadvantage mentioned was that the TBA can use harmful practices that can injure the woman.

3.3.7.2. Hospital Delivery

In regard to facility deliveries, the most common advantage cited was that the hospital personnel have the knowledge and experience that allows them to treat a variety of potentially life-threatening complications, and if needed, take decisions to transfer the woman to another facility. Other frequent responses included that hospitals have medicines, the condition of patients is closely monitored and care is provided regularly. Several women indicated that there are no advantages to hospital delivery.

The most common disadvantage mentioned was that hospital care requires a lot of money, with some indicating that costs make it beyond the means of poor people. Hospital expenses cited included treatment fees, as well as other unofficial costs involving bribes to the doctors and other staff in order to get their attention, charges for services rendered by nurses and aides that should normally fall under treatment costs, or bribes to discharge the patient. When talking about the cost, this informant said,

People are not willing to go to the hospital because of money problems. In the hospital there is a need for money. Poor people can't provide it. That's why they want to deliver at home. At home money is not needed.

This husband explained,

If there is no need for hospital delivery then our money will be spent in vain. They will only profit by getting money. Government workers only think about how they can take money from us. They will prescribe medicines that we don't even need. They only consider people they know, they don't give good service to the people they don't know.

The second most frequently cited disadvantage related to the presence of male personnel in health facilities, with many indicating that the patient cannot control whether a male or female doctor provides care, and some suggesting that female doctors are not allowed to perform deliveries alone. Women expressed concerns that male doctors would check the delivery canal with their hands and have the woman remove her clothes in their presence. This informant said,

At the hospital, there are many male doctors. They come and check with their hands. It is a matter of shame to us. But at home there are only female family members. There isn't any shame...

One husband was adamantly opposed to having his wife deliver in the hospital due to the potential exposure to other men. When talking about his aversion to hospital care, he said

"If almighty wants my wife to die, I cannot help that."

The third most common response related to the fear of procedures performed in the hospital, especially C-section, which some women indicated are performed even if there is no medical need. A common belief is that if a woman has a C-section, all subsequent deliveries will also be through C-section, thus ensuring large costs. C-sections are associated with other complications, including difficulty breastfeeding, problems with the wound area, and an inability to work for long periods following the procedure. Fewer informants indicated that they fear episiotomies, which are believed to be frequent in hospitals.

Other disadvantages to hospital care mentioned in order of importance included: the fact that family members are not permitted to stay with the woman; nurses use harmful practices such as checking the vaginal canal multiple times with their hands; the shame involved in people being aware of the impending delivery; transport costs for the woman and family members who must carry food to the woman daily; the hospital staff can be very rude; the hospital does not provide basic needs like water or even a bed; the environment is overcrowded and dirty; and the fact that during the woman's absence nobody will be available to maintain the daily chores. One woman mentioned that Christians provide care in the hospital. This woman said,

In the hospital, nurses make the mother weak by inserting their hands. When a pregnant woman is admitted to the hospital, three/four nurses come to her again and again, but at home, there is only one assistant. In the hospital, they don't permit any relatives to stay bedside the pregnant woman.... They don't give any importance to others but themselves. They don't want to listen to anyone.

Another informant explained,

At home I have my mother and sister to assist me. They will do all household chores and everything for me. But in the hospital I have to do everything by myself, I have to collect water and food since I have nobody to attend to me. If I can be with my mother during birth it will increase my mental strength. At home my mother, sisters, husband will be there, but at the hospital I will be alone. Moreover, I will have to have a C-section if I go to hospital. It (C-section) might happen without any reason; it also might end my life.

3.3.8. Birth Planning

Of the 17 women asked whether discussions had taken place regarding delivery plans, all indicated positively. Discussions most frequently involved the woman's mother-in-law, her husband and her mother, and the woman herself was often excluded or, even if present, did not contribute. Of the 20 women interviewed, 18 indicated that they planned to deliver at home, with many assuming they would have a normal delivery. Several based their expectations on the fact that they had previously given birth at home and had had a normal delivery. In several instances, the desire to deliver at home was intense, with some indicating they would rather die than go to the hospital. A frequent explanation for preferring a home delivery was related to the cost, indicating that they could not afford a facility delivery or would save money by delivering at home. Other reasons related to the desire to avoid surgery; to recover faster; to avoid the hospital environment and the fear it connotes; to adhere to social pressure; to deliver with family members; to die at home if a complication occurs; to hide the delivery; and to avoid exposure to male providers.

Families of the other two (2) women had made firm plans for a hospital delivery; in one instance the woman had received a DSF card and was expecting to have a normal delivery in a health complex, with all services provided for free. This woman emphasized that she had faith in services offered in a health structure and would avoid the potential dangers of home deliveries. While her in-laws had made the decision for her deliver in the hospital, they had not made financial or other arrangements in case complications occurred, stating they are poor and rely on Allah. The second woman had previously had a C-section and anticipated a C-section during this delivery. She stressed the potential danger in delivering with a TBA. Her husband was highly concerned, and she and her husband were the primary decision makers.

Among the 18 women planning a home delivery, nine (9) expected to deliver in their natal home and nine (9) expected to deliver at their in-laws' household. The most common reason for delivering at the natal household related to the woman's desire to be near family members, particularly the woman's mother who informants stated would take good care of her and give her strength during childbirth. Other reasons were related to the fact that the woman was no longer able to fulfill work expectations in her in-law's home, there was nobody to care for her at the in-law's home, the natal home was closer to a health facility or village doctors in case problems occurred, and the woman's parents would pay for emergency care if needed.

Of the women who indicated they would deliver at their in-laws, many suggested that their mother-in-law insisted it was better to deliver in her home and dictated the decision, with firm support from the woman's husband. In almost all cases, the pregnant woman was not consulted regarding her preferences, with several women suggesting they must obey whatever is decided. The exception was those women who had been married a long time and considered the in-law's home their home and thus the preferred place of delivery. When the place of delivery was the natal home, the woman's mother typically guided decision-making, generally eliciting the support of the pregnant woman's husband who often convinced his parents that the natal home was a better choice. In these cases, the woman more often expressed her preferences and guided the decision making process. These informants appeared to have more communication with their husbands, and the husbands were more engaged and concerned that their wife received safe delivery care.

Overall, we can see that with age and experience in having children, the women themselves have more control over the delivery environment.

Of the 18 women who anticipated a home delivery, 14 planned to delivery with a TBA. Virtually all TBAs were family members and included the woman's aunt, mother-in-law, sister-in-law, or grandmother. Informants often stated that these women had vast experience assisting deliveries and in some cases had attended the informants' previous births. Several women emphasized that it is less stressful delivering with family members because they live nearby, are familiar, and are always available. Three women planned to call a local nurse, highlighting the benefits of delivering with a trained provider because they do not employ harmful practices often used by the TBAs, they offer more sophisticated methods such as administering saline or performing an episiotomy, and they will take the woman to a facility if needed. The final woman was in her seventh month of pregnancy and indicated that the choice of birth assistant had not been made yet.

Most families had not notified the birth attendant in advance, suggesting that she lived nearby and would be available, and that they would contact her once labor pain began. Several women suggested that they were too embarrassed to talk to the birth attendant, particularly an elder family member, about delivery preparations. In fewer cases, the attendant had been contacted by the mother or mother-in-law and told that they expected her to assist the delivery. When questioned about other arrangements, women generally suggested that female family members are in charge of gathering the essentials such as a blade, thread, soap and antiseptic directly before the delivery, and most said that it was not necessary to prepare in advance. Informants did not know their blood group and had not considered making advance preparations if the need occurred. When asked whether anybody is available to give her blood if needed, a woman said,

"What will I do? I will die then."

Fewer indicated that family members could donate blood if needed. However, even in these cases the blood groups were not known.

While the vast majority (18 of 20) of the women indicated that they would go the hospital if a complication occurred, most women had not discussed the possibility of requiring emergency care with family members and therefore were not aware whether any formal plans had been made. Five of the women indicated that their preference would be to first call a village doctor, nurse or homeopath to the household to assess the situation and administer care, or even call another TBA, with two (2) of the women determined to avoid the hospital under any circumstances. Women had a variety of reasons for not discussing the possibility of complications and making firm plans in advance, with the most to the least common explanation as follows: complications are unpredictable and it does not make sense to assume in advance that they may occur; they were relying on family members who, they emphasized, are knowledgeable and can make all decisions and arrangements related to the delivery; they depend on Allah to take care of them; they cannot afford to deliver in a facility. When asked about emergency care, this informant said,

We are living hand to mouth. We have no savings. It is better to die. Nobody will help financially if anything goes wrong.

Women often indicated that despite the danger and fear involved, they lacked control of the process. This woman said,

No, I did not plan anything. My only thought about advanced planning is that I may not survive. Is there any sense to plan in advance!

In regard to savings for emergency care, 15 of 20 informants indicated that they had none or were not aware of any savings set aside for delivery, with 11 of the 15 women emphasizing that their families were poor and unable to save money. Others said that they would manage to obtain money either from relatives or a credit program if the need arose. Two women affirmed that they had savings in case of complications, with one setting aside money she earned through construction work. The second was the woman who had previously had a C-section; she assumed that this delivery might also involve emergency care. Two women indicated that their husbands had sufficient money to pay for an emergency, and the final woman did not respond.

When we interviewed other family members such as mothers-in-law and husbands, virtually all confirmed that no formal plans pertaining to transport and money to pay for medical costs had been made, with many suggesting that they were relying on Allah to have a safe delivery at home. This mother-in-law explained,

“Why would we arrange in advance? Allah is with us.”

The expenses potentially involved, particularly related to emergency procedures such as a C-section and prescribed medicines, which informants often perceived as excessive, were cited as the main deterrent for not making formal plans to use hospital facilities. However, most indicated that if an emergency occurred, they would obtain money and hire a rickshaw or van.

Overall, informants made continual reference to the role of Allah in determining whether the woman would experience complications or not and where the delivery would take place, emphasizing that the childbirth event was out of their control. This lack of control seems to relate to the perception that childbirth is unpredictable and guided by external powers, as well as the inferior role that women play in determining the circumstances of giving birth.

3.4. COMMUNITY SKILLED BIRTH ATTENDANTS (CSBAS)

3.4.1. Background Information

Of the 12 CSBAs interviewed the mean age was 39 years, with women having completed on average 12 years of schooling. Nine of the CSBAs were married and the mean number of years the CSBAs had lived in the area where they were working was 27. Nine of the women had been working as FWAs and three were HAs, with the average time serving in these positions 9 years. Their average monthly salary working as FWAs and HAs was close to 11,000 taka. Two women had assisted deliveries before becoming CSBAs. On average, women had been working as a CSBA for 3 years.

3.4.2. Roles and Responsibilities

3.4.2.1. As Family Welfare Assistants (FWAs) and Health Assistants (HAs)

FWAs are responsible for carrying out visits to households once every 2 months in a catchment area where some 4,000 women of reproductive age live. During visits, the FWAs distribute family

planning methods, such as oral pills and condoms, and make referrals to health facilities for other contraceptives. In collaboration with the HAs, they also provide tetanus toxoid (TT) vaccination to women and adolescent girls. HAs are responsible for the delivery of primary health care in a catchment area of 4,000-5,000 people, with their principal role focused on immunization of mothers and children. In actuality, the 2 positions involve many similar activities such as carrying out household visits to tally the number of male and female inhabitants, monitoring the health of pregnant women and children less than 5 years old and maintaining a register book to document this information. FWAs and HAs also serve in satellite clinics where they assist Family Welfare Visitors (FWVs) provide ANC consultations and treatment for common illnesses. Counselling is another activity, involving educating mothers, pregnant women and adolescent girls about different diseases, hygiene, and appropriate care during pregnancy, as well as informing women about a variety of reproductive health issues. As part of this, they are responsible for organizing courtyard meetings where they bring women together to talk about these topics. For each position, work hours are officially from 9 am to 4 pm.

3.4.2.2. As Community Skilled Birth Attendants

CSBAs are responsible for covering a population of 4,000-5,000 people, with approximately 120-200 women pregnant annually in a CSBA catchment area. Work responsibilities entail assisting deliveries referring mothers with danger signs during pregnancy and obstetric-related complications to appropriate health facilities, and providing ANC and postnatal care (PNC) at home or in the satellite clinics.

3.4.3. Training

Key informants indicated that the aim was to train female HAs and FWAs on key components related to maternal health care, particularly on how to assist normal births at the household level. CSBAs explained that the training course was divided into three sections as follows:

- 1) A one-month training concentrated on theoretical knowledge related to pregnancy and childbirth, with a focus on assisting normal deliveries and providing ANC and PNC.
- 2) A four-month training course when CSBAs worked in hospitals to gain practical experience observing and conducting deliveries with assistance from nurses and doctors. Women performed at least 20 deliveries under the supervision of their trainers.
- 3) For one more month, CSBAs worked in their catchment areas assisting deliveries.

The CSBA informants mentioned specific components of the CSBA training included the following:

- 1) **ANC:** Measuring the blood pressure and weight; assessing the position and size of the fetus; counseling women on danger signs, complications, and where to go if pregnancy-related complications occurred; and administering TT vaccination.
- 2) **Conducting Deliveries:** Assisting normal deliveries at home with special attention given to maintaining cleanliness, inserting a catheter, and administering saline and intravenous injections to prevent heavy bleeding or discharge of birthing fluids postpartum.

- 3) **Complications:** Identifying danger signs during pregnancy (e.g. edema, high blood pressure, frequent urination) and pregnancy-related complications (e.g. eclampsia, hemorrhage, obstructed labor), as well as learning about how complications develop, their signs and symptoms, and appropriate treatment. Training was also given on identifying complications in the newborn and appropriate care.
- 4) **Referrals:** Based on pregnancy-related danger signs or complications, selecting appropriate referral facilities (e.g. non-EmOC or EmOC) and referring women accordingly. CSBAs were instructed to accompany women to the facility when needed.
- 5) **PNC:** Checking for complications such as excessive bleeding, infections or suspicious vaginal discharge and assessing the condition of the newborn within 42 days of the birth.
- 6) **Role as CSBAs:** Informing communities of their role as CSBAs during courtyard meetings organized as part of their activities as FWAs and HAs.
- 7) **Ties with TBAs:** Establishing relationships based on trust and reciprocity with the TBAs performing deliveries in their perspective communities.

3.4.4. Perceptions of the Training

Most CSBAs indicated that the training was instructive, particularly as it was related to assisting deliveries, which for 10 informants was a new experience. Though enthusiastic, informants also indicated that they were taught too many topics in a short time period. One CSBA said,

I think the duration should be 2 years. Trainers fed us too much information in 6 months and therefore we could not learn in detail. As a result, they overlooked many issues.

While the CSBAs were told that the training was intended to be divided into three major phases, including a six-month basic training course, a nine month work experience in the CSBA designated communities, and a three-month follow-up course designed to allow trainees to have the opportunity to rectify any shortcomings in their work, only three (3) of the 12 informants had received refresher training, which lasted 30 days and took place on average 1.5 years after completion of the original course. The refresher session focused on revisions of the original training materials and not on what women were experiencing at the field level. The remaining nine (9) women indicated that they needed additional training, particularly to improve their delivery skills. Overall, informants recommended that training be offered to address inadequacies, with many emphasizing that after extensive field experience, they were better able to assess their weaknesses. Several suggested that they be taught to do episiotomies and to repair perineal tears, indicating that without these skills, they have to refer many women to health facilities. One CSBA said,

When we received the training for six months, we didn't know anything about our new role. Now we need various clarifications, otherwise we face different problems performing our work. I also want to learn how to address other problems we confront in the field for which we have to refer mothers to the hospital.

3.4.5. Supplies

During the training, the CSBAs were provided some essential instruments and supplies including a blood pressure cuff, a kidney tray to hold instruments, forceps, bleaching powder, scissors, a scale, a cord clamp, gloves, a catheter bag, saline and injections, and magnesium sulphate. Many informants indicated that the medicines had run out, and therefore they had to ask families for drugs needed for delivery. Some instruments were also not working, and in these cases they had to purchase new supplies with their own money. Most CSBAs indicated that they understood that they would not be given additional medicines or supplies to carry out the work.

3.4.6. Performance as CSBAs

Eight of the 12 CSBAs stated that they were the only source of ANC in their catchment areas. The others indicated that NGOs offered ANC, and that women can also get care for pregnancy-related problems at the THC or with private doctors. CSBAs typically provided ANC during satellite clinics, from their homes, or during home visits. Services mentioned included administering TT vaccine, checking for anemia and edema, measuring the abdomen, weighing women, and measuring the blood pressure.

The number of assisted births varied, with seven (7) CSBAs assisting 1-5 deliveries, two (2) assisting 6-10 deliveries and three (3) assisting 11-15 deliveries. The three (3) women who assisted 11-15 births a month, along with another CSBA who carried out 7-8 deliveries a month, considered assisting births as a main source of income and wanted to increase the number of deliveries they assisted. While they did not officially receive extra payment from the government, either the CSBA charged families or family members willingly paid them for assisting deliveries, thus supplementing their monthly salary. Overall, these four (4) CSBAs attributed their popularity as birth assistants to the fact that they were able to manage difficult deliveries and so had garnered respect for their role as skilled providers. The remaining eight (8) women indicated that they never considered assisting births as their main task, and due to constraints described below, often refused when they were called for a delivery.

It was not clear how the CSBAs decided to refer women to facilities and what referral practices were followed, with most informants stating that they implemented what was learned during the training, which entailed referring women with severe complications such as obstructed labor or excessive bleeding during or before delivery. While three (3) CSBAs working in DSF areas had referral slips which they used for women suffering from severe complications who required facility-based treatment, the others did not, resorting to using plain paper as referral slips or accompanying the patient to the facility. In the referral slips, CSBAs would indicate the type of complication the woman suffered from and what, if any, treatment the CSBA had provided at the village level. Families were recommended to take the woman to a facility immediately and to present the referral slip, which in theory was meant to accelerate treatment upon arrival in the health facility. Although most informants claimed they were successful in convincing families to take a woman to the hospital when the condition became serious, the interviews did not disclose to what extent referrals of women experiencing complications were followed.

Postnatal care services were usually provided in the immunization centers where new mothers go to have newborns vaccinated. The services provided included checking the woman's blood pressure, evaluating postpartum bleeding and checking for infections. CSBAs indicated that women are often disinterested in availing PNC services until they face problems perceived to be serious, such as bleeding, headaches, and edema, suggesting that women are more willing to seek care if the newborn has a problem.

3.4.7. Perceptions of and Experiences in Their Role

Most (eight out of 12) informants said that they considered their activities as CSBAs as additional work which was difficult to fulfill, particularly given their already demanding duties as FWAs and HAs. The majority indicated that they prioritized their work as FWAs or HAs and placed less importance on the CSBA activities. They explained, for example, that they offer their newly acquired birthing skills as an adjunct to their other duties.

Most CSBAs mentioned that when they perform a delivery, they are always assisted by TBAs, acknowledging that community members recognize the TBAs as more experienced and knowledgeable about childbirth. In addition, they explained that most TBAs are a family member or neighbor living in proximity to the delivering woman's home, thus making the TBAs both trustworthy and available to assist any time of the day. In contrast, CSBAs have other obligations related to their work as HA/FWAs and with their own families at home and are therefore not always available. Our informants also indicated that community members are often reluctant to call the CSBA if she lives far from their home in fear that the news of the delivery may become public, and in accordance with local beliefs, cause the women to have a more prolonged labor.

Seven of twelve CSBAs said that although they were not usually called to assist a normal delivery, they were often contacted by family members or TBAs when a complication arose. These women claimed that over time people witnessed that the involvement of the CSBA during complicated births appeared to save the life of the mother. In general, when a CSBA was called to assist a delivery, and a TBA was also called, informants said that primary activities were performed by the CSBA, with the TBA responding to the CSBA's instructions. However, two (2) CSBAs were unwilling to assist deliveries while a TBA was present, with one woman stating,

I don't assist births with TBAs because they create problems. For instance, they may try to conduct the delivery even though the uterus mouth is not fully open or want to push an injection with the help of a village doctor to increase the pain.

The CSBAs indicated that they tried to maintain positive relations with TBAs, recognizing that it was in the CSBAs best interest to integrate them into their field activities rather than ignore or compete with TBAs and potentially alienate community members. When the CSBAs encountered contrasting approaches related to providing care, they generally tried to resolve the differences in a polite way and convince the TBA to follow their methods. Overall nine (9) of the 12 CSBAs indicated that they have a cordial relationship with local TBAs, with some saying that TBAs turn

to them to conduct a delivery when they themselves were sick or too tired to assist. One CSBA provided her phone number to a TBA so that she could contact her. She said,

It is not that the TBA informs me regarding any delivery. She goes to assist the birth and tries to deliver the baby at her level best. But when she fails or faces complications she calls me... family members often give me money for doing this and if I get 500 taka, I give 100 taka to the TBA. She is happy with this since usually she does not get paid in cash.

3.4.8. Incentives, Compensation and Benefits

Most CBSAs stated that there was little incentive to conduct the target of 10 deliveries each month, with informants emphasizing that assisting births was both time consuming and stressful. National policy makers explained that when designing the CSBA program, the work of the HAs and FWAs was restructured to accommodate the new activities, thus justifying the fact that no additional compensation was added. They also mentioned that in their roles as birth attendants, the women would generate extra income. In reality, our data suggest that only four (4) CSBAs considered their new roles as a source of additional income, while the others felt they deserved additional compensation for these activities, which they said would motivate them to assist more deliveries. The four (4) women who earned additional income tried to carry out as many deliveries as possible, believing that the CSBA training was a great opportunity, giving them the chance to generate a handsome income and enhance their reputation. One of the CSBAs said,

I have fame as a skilled birth attendant. Everybody knows me well. This happened because I tried my best after the training....Before I was a general HA, now the situation is different... if I walk alone on the path, I don't have to carry my umbrella, bag, or anything. Wherever I go, people know me because I went to their house to assist a birth.

Another CSBA said,

Though delivery is additional work, it is beneficial because I can earn extra money.

The average monthly income of three (3) of four (4) CSBAs who delivered at least eight births a month was 4,000-6,000 taka, with two (2) women earning 10,000-16,000 taka the month prior to the interviews. The remaining woman, who said that her area is generally poor, earned about 2,000 taka a month. The CSBAs with higher income admitted that they preferred assisting deliveries at the homes of wealthy families where they could charge 300-1,000 per delivery, and these women also assisted deliveries for wealthy families living outside their service area. Six of the 12 CSBAs did not demand any money for assisting deliveries, accepting whatever the family gave, which varied from 200-500 taka, or payment in kind such as a *sari*. One said,

There is a ritual that women who conduct deliveries receive a sari. At the beginning some families gave me a sari for conducting the delivery. But I don't wear saris and the saris they give are very cheap. That is why I suggested they provide money. Now they give me money. The amount depends on the family's economic condition.

The two (2) remaining CSBAs who performed the fewest deliveries refused to accept any compensation. They worked in their native communities and were concerned that negative rumours might circulate if they accepted payment. These women mentioned that people in their area were poor and could not provide more than 100 to 200 taka.

3.4.9. Community Acceptance

As HAs or FWAs, women were usually referred to as ‘*apa*,’ ‘doctor *apa*,’ and ‘family planning *apa*,’ indicating that they had gained respect and were known even in far reaching areas for the activities they performed. However, despite the training received, most indicated that their new roles had little impact on their reputations and status in communities. This may in part have to do with the fact that community leaders never formally introduced their functions as CSBAs to community members, and the CSBAs failed to describe their additional activities during courtyard meetings. The failure to introduce formally their role as CSBAs likely had negative effects on their acceptance, especially at the initial stages when they were not recognized as trained for assisting deliveries. Over time, and once they proved their skills, particularly when the TBA was unable and the delivery only occurred with the assistance of the CSBA, they gained more acceptance and respect. However, most CSBAs admitted that community members continued to prefer TBAs for deliveries, and generally still followed recommendations from the TBA regarding referrals. The fact that TBAs are available all the time, are generally family members, and live close by makes it difficult for the CSBAs to gain widespread acceptance. Community members also often question the skills of the CSBA in comparison to the extensive experience and local knowledge that they credit TBAs with possessing.

As a result, while women may obtain ANC and PNC services provided by the CSBA, for delivery they continue to rely on TBAs. This frustrates the CSBAs, who claim that they are more skilled and state that TBAs often employ harmful practices. Most CSBAs indicated that community members call them only after the TBA is unable to deliver the baby. As a result, they often arrive when the situation is critical and are forced to refer the woman to a health facility. The CSBAs are subsequently criticized for referring too many patients to health facilities, raising questions about their skills. One of the CSBAs explained,

Sometimes the situation becomes shameful when I have to refer complicated cases. People say that a normal delivery can be handled by anyone. We call you when the complication arises and you can't assist. What type of training did you get if you cannot resolve the problem?

The situation appeared different for the four (4) more active CSBAs, who stated that they were widely recognized as trained delivery assistants.

3.4.10. Constraints Faced as CSBAs

CSBAs mentioned many constraints that often prevented them from carrying out their roles as originally envisioned. These included time restrictions related to other obligations in their work as FWAs and HAs, which entailed daily field visits to communities they had served over long periods. Women indicated that they often felt exhausted after working seven hours in the field and were therefore unable to carry out additional activities after office hours. Household responsibilities also often forced them to refuse additional requests. One CSBA explained,

I don't get enough rest, sometimes I have to go to a distant field just after getting back from visiting communities (serving as a HA). I also have a family, I have my children.

Travelling to distant places to assist deliveries was often mentioned as a problem, particularly during the night. Informants indicated that most deliveries occur at night, and that travelling at night requires that the woman be accompanied by a male. The travel cost also poses a problem. As a result, most of the time CSBAs refused calls at night. One CSBA said,

When I go for delivery at late night, I have to keep a rickshaw waiting until my work is finished. The rickshaw puller charges me more, like 300 or 400 taka. If I could get money for transport from the office it would be better. Not only that, I have to request someone to accompany me and sometimes my companion gets irritated waiting. During the rainy season rickshaws are not available and I have to walk long distances to reach households. So sometimes I don't go at night or during the rainy season.

One key informant, who was the director for an international NGO, confirmed the problems CSBAs faced, saying,

Suppose a CSBA is called to attend a delivery at 12 am in the night, how will she return at 2 am. Her sleeping is also disturbed and it is difficult if she has to work the next morning. If she does not attend these other activities the supervisor will reprimand her, cut off part of her salary or give her the yellow slip. The yellow slip is a punishment for those in the government service and she is expected to explain in a letter why she was unable to carry out her activities. However, if she does not assist the delivery, nobody is going to question her role since there is no one who checks her.

Another challenge impacting on their performance related to the lack of understanding, particularly among older community members, about modern maternity care. One CSBA said,

Elderly women sometimes don't allow their daughters-in-law to attend ANC visits. They say that during their time they did not need such check-ups. Then I have to counsel them; sometimes I fail to make them understand. They do not want women to go to the hospital where they are examined by male doctors or the delivery takes place without maintaining purdah. Until complications become severe, they do not want to go to the health facility.

While the CSBAs were trained to identify high risk women and danger signs during pregnancy and to refer such cases for hospital delivery, they indicated that it is difficult to convince families to

accept referrals. Barriers included strong cultural preferences for home deliveries, concerns that facility-based health providers will behave inappropriately, fears of having a C-section, and the cost involved in going to a health facility. In addition, some CSBAs mentioned that the medical staff did not always give priority to the referred patients. One CSBA said,

Sometimes the health workers get angry with me when I refer a mother to a facility. They say, please apa, try to do something by yourself, do not refer mothers to the facility all the time. The families also say that if she dies, it would better to die at home than in the facility.

Distances also hindered the referral process, with many CSBAs explaining that there were no facilities nearby. This appeared to affect their confidence, leading them to refer more often. At the same time, families were often unwilling to travel with a pregnant or newly delivered woman either due to the long distances or a general reluctance to go to a facility. One CSBA said,

The health facility is far, I don't know what I will do if a complication arises. Transport is not available from the village to the health facility... If it is a complicated case, I don't take any risk...I could take a risk if there was a small clinic in my area with a doctor who can manage complications. With this backup, I would have more confidence.

The four (4) CSBAs carrying out more deliveries said that they received a great deal of support from their husbands, who accompanied them at night or in their absence looked after their children. At the same time, three (3) of these women mentioned that they face a lot of pressure from their supervisors for spending much time assisting deliveries. One of them said,

Last month I went to conduct a delivery early in the morning. It was immunization day. I thought the work would be completed by 10 am, but it took 3 hours longer. Three of my bosses came to the EPI center... By 1 o'clock the baby was delivered. I called one of my colleagues to inform them. Later they called inquiring about my whereabouts. They said that they will be filing a negative report against me. I rushed there just after cutting the umbilical cord. It was not right to leave immediately after the delivery. The mother might have bleeding or other complications. When I arrived at the office, the mother-in-law called to say that the woman started bleeding. I had to return to that household. I also had to promise my supervisors that I would not miss such meetings again.

3.4.11. Supervision

While the Family Welfare Visitor (FWV), who supervises HA and FWA activities, is also responsible for supervising the activities of the CSBAs, our informants indicated that this rarely happens. As already indicated, some CSBAs were instead blamed if they missed other activities because they were assisting a delivery. This woman said,

Sometimes they complain that because there are economic benefits in conducting deliveries, we are giving more attention to deliveries rather than family planning work. Yes, of course we have our own benefit. But it doesn't mean that we are ignoring our other work. Sometimes I refuse to assist a delivery so that I can attend a meeting. They don't seem to understand that assisting deliveries is also my duty.

Describing the poor monitoring of the program, one key informant said,

There is no documentation of the CSBAs work being done. There are no registration records--some claim to do 10 ANC's in three months, some claim 20. Some claim conducting 10 deliveries and some claim 20. You will not find any household name, area name, husband's name or any addresses on record. Nothing is available.

Most CSBAs suggested that oversight of their activities should be strengthened, emphasizing that their supervisors should recognize their new duties as important as the original ones. Some CSBAs recommended that their work be evaluated by separate supervisors, suggesting this would enable them to learn more and rectify mistakes made during deliveries.

4.1. Introduction

The qualitative nature of this study allowed us to examine in depth key issues related to maternal health in Bangladesh, including birth planning and preparation, recognition of pregnancy-related complications, decision making regarding treatment, and care seeking at emergency obstetric facilities. By including a range of methods and types of informants, we were able to explore from different perspectives the main study themes and determine key barriers and facilitating factors to obtaining emergency care when women experience life-threatening maternal complications. In particular, the comparisons of maternal deaths and near-miss cases allowed us to identify factors that influenced survival. Including women in their third trimester of pregnancy also gave a current, and perhaps more accurate, understanding of risk perceptions and actual preparations for the impending birth. Overall, the large sample size, diversity of informants, and variety of methods facilitated data triangulation, thus enriching the overall analysis and presentation of the findings. Key findings from this report are presented below.

4.2. Antenatal Care

Information on ANC and birth planning was collected from different types of study informants, including women in their third trimester of pregnancy, women who had experienced a near-miss, and family members of women who had died. In the various groups sampled, women on average participated in 2-3 ANC consultations, with the vast majority failing to meet the 4-plus recommended visits. An exception was the sample of women who died due to eclampsia; three (3) of four (4) of these women had participated in two ANC visits per month. In addition, women who were DSF cardholders and had an incentive to attend ANC sessions generally participated in at least four consultations. In virtually all of the sub-samples of maternal death and near-miss cases, there were one or two women who did not attend ANC consultations, and in the larger sample of 20 women in their third trimester of pregnancy, three women did not participate in ANC.

Across the samples, the most frequent providers consulted were either a medical doctor or a health care professional, followed by trained workers providing services at the community level and CHWs. Places where services were most frequently obtained included a health facility, a satellite clinic, and at home. ANC visits appeared generally to adhere to very basic procedures, including the following: the blood pressure was measured, the woman was weighed, the baby's position was assessed and the abdomen measured, the woman was vaccinated, she was given vitamins/iron tablets, she was given advice about her diet or physical activity, and she was given medicines or a prescription to address a condition (e.g. gastric pain, fatigue) associated with the pregnancy. Fewer women mentioned seeing informal providers such as homeopaths, village doctors or *kobiraj*; these visits were generally carried out for treatment of conditions not necessarily perceived to be associated with the pregnancy, or in the case of the *kobiraj*, to protect the woman and fetus against evil spirits believed to attack women during pregnancy. Notably, CSBAs were almost never mentioned as ANC providers.

Explanations for not attending ANC or only visiting informal providers were somewhat varied, and included the fact that family members disapproved of the woman mixing with other people;

family members opposed particular components of the sessions; the woman and family members did not understand the importance of ANC; the woman did not know where to go; the woman was older and embarrassed to be having another child, thus inhibiting her from venturing outside the household; the woman was in good health, and ANC was not perceived to be necessary; the woman had previously had normal deliveries; the family placed restrictions on her physical movement due to concerns about exposure to supernatural powers; or the woman moved to her natal home and assumed that she was not eligible to continue to participate in ANC. In general, moving to the natal household disrupted ANC, with most women terminating consultations once they left their habitual residence because they did not know where to obtain care or whether they would be eligible to participate. A few women had received ANC during home visits made by CHWs during previous pregnancies; they had expected to receive the same services during the most recent pregnancy, and when that did not occur, they did not know where to go for ANC.

Notably, informants rarely mentioned receiving information on pregnancy-related danger signs or complications during ANC or advice regarding the importance of planning for an emergency and the arrangements that need to be made, suggesting that either the information was not provided or the women did not consider it important. Moreover, even when a danger sign was detected during ANC, women were generally not informed about the risk. We also learned that women typically failed to share with family members what took place during the ANC visits. Traditionally, and even in present day, older female family members are viewed as experts on pregnancy and childbirth and are frequently the main decision makers regarding delivery care. Younger women of reproductive age, who hold an inferior status in the household, are generally perceived to be inexperienced regarding reproductive health issues. These socially mandated roles evoke a feeling of shame in the younger women and appear to prohibit them from sharing pregnancy-related information with family members, particularly with older women, whose decision making is generally guided by traditional knowledge. As a result, key household decision makers were not aware of the woman's health condition or informed about potentially valuable information that could influence home care and care seeking during emergencies. There were, however, some exceptions, especially in the eclampsia near-miss sample, when the data illuminated that female family members had attended counseling sessions on obstetric complications and were thus better able to recognize the seriousness of eclampsia signs and symptoms such as blurred vision, headaches and seizures and to understand the need for rapid care seeking and treatment in a health facility. These episodes underscored the importance of informing family members about maternal complications and the urgency of appropriate emergency treatment.

Overall, women and family members did not seem to appreciate the purpose of ANC consultations; this is likely in part due to the incongruence of modern biomedical knowledge and procedures and traditional beliefs and practices. Traditionally, women are required to follow a range of cultural tenets and behaviors during pregnancy which are taught and enforced by older female family members. These principles are generally related to their physical movement, workload, rest and food intake; our data showed that many of these prescribed behaviours are still being enforced, with some, especially related to workload, medically appropriate. In addition, during ANC visits women were not typically told why procedures are done, nor were they provided information that made the services seem relevant to their personal health and pregnancy. The exception was ultrasound, which families wrongfully believed could confirm that the delivery

would be normal. Such false assurances, often coming towards the end of the pregnancy when birth planning occurs, seemed to obviate the need to plan or make arrangements in case of an emergency.

The recognition that many obstetric complications arise without warning signs has shifted the focus in safe motherhood programs from antenatal care to ensuring that EmOC is accessible to women experiencing complications. However, ANC provides an opportunity to increase the likelihood that women in need will access EmOC services. Our results highlight many missed opportunities during ANC visits, such as the provision of basic information related to pregnancy danger signs, the importance of planning for an emergency, obstetric complications and rapid care seeking, and where to go during an emergency. For example, the data showed that women suffering from life-threatening complications and seeking treatment often went first to health centers ill-equipped to provide care, highlighting the need to explain during ANC which facilities offer obstetric emergency treatment. Future efforts should focus on improving the quality and relevance of ANC and ensuring that a range of family members, particularly women of different ages, are exposed to information about maternal complications and where and with whom to obtain appropriate care. Husbands, who play a key role in financial matters, seeking advice from health providers and obtaining transport during emergency situations, should also be informed so that they are in a better position to dictate appropriate decision making during emergencies.

4.4. Birth Planning

Responses across the different study components highlighted the economic, cultural and practical reasons for the continued strong preference for home births in village settings in Bangladesh. Data on whether or not formal discussions related to birthing preparations took place were mixed according to the different types of informants. Strikingly, in the majority of families where a maternal death occurred, discussions about the place of delivery and the designated birth attendant generally did not transpire and formal plans were not made. In these cases, there was an implicit understanding that the delivery would be at home with a local attendant. On the other hand, the vast majority of the near-miss families had had discussions regarding the place of delivery prior to the onset of labor; however, these discussions appear to have focused on where and with whom to have a home delivery and therefore probably did not promote care seeking at a health facility or influence the fact that these women did receive emergency care and survived. The data also suggest that older, multipara women more often made decisions on their own or with their husbands about the place of birth and the attendant; in the case of younger, first time mothers, discussions more often involved other family members, including senior females.

All women in the sample of women in their third trimester of pregnancy asked whether they had had discussions about the birth plan indicated that formal talks had taken place, with mother-in-laws and mothers generally dictating the decision making; the pregnant women, who were comparatively younger and had lower parity than the maternal death and near-miss cases, were often excluded or their opinions were not considered, with many simply stating that they had to obey whatever was decided. Moreover, these women often expressed reservations about talking to older female members about the pregnancy and impending delivery due to the strong sense of shame attached. The theme of shame came up repeatedly in this sample of women; shame appears to be related to the fact that the pregnancy confirms, and almost publicizes, the sexual relations that

occurred to conceive and that childbirth involves the woman's private body parts. As discussed earlier, it also reflects the inferior status of women of reproductive age, and the cultural perception that their knowledge of matters related to reproductive health and childbirth is limited, thus obviating their role in decision making. Shame also was frequently mentioned by some of the older or higher parity women in the maternal death and near-miss samples who felt embarrassed and wanted to hide the pregnancy due to societal norms which held that they had already surpassed the prescribed time for giving birth or the socially acceptable number of offspring, which typically was no more than 3 children, but in some cases only 2 children. In both examples, the feeling of shame appeared to inhibit women from engaging in discussions regarding birth planning. In addition, when husbands opposed the pregnancy, generally on the grounds that they were not in a position to provide adequate economic support for another child, the women avoided interactions about the birth; these situations often occurred in more established marital unions where the couple already had at least 2 children at home.

Whether formally discussed or not, virtually almost all plans involved delivering at home with a TBA and were made under the assumption that the delivery would take place without problems. The selected birth attendant was generally either somebody the woman had successfully delivered with in the past, or an experienced attendant who assisted most family births. These attendants were typically family members who lived in proximity to the woman's household. More often than not, the TBAs were not contacted in advance, with respondents often explaining that they lived nearby and would be available at any time and there was an implicit understanding that the birth attendant would be requested to assist the delivery. A few respondents planned to deliver with a trained provider who offered services in the community. Advantages stated were that these providers did not use harmful practices employed by the TBAs, they were able to perform modern birth procedures such as using medications to increase contractions and episiotomies, and they would accompany the woman to a facility if needed.

The desire to move to the natal household during the last trimester was strong among younger informants, who described many advantages of their natal home environment, mentioning that there they would not be permitted to work and could rest, that they preferred delivering with family members and that they wished to be near their mothers. However, the ultimate decision as to whether or not they travelled to their natal homes was generally determined by their mothers-in-law, often with support from their husbands, whose primary consideration included whether, in the absence of the pregnant woman, there would be adequate help to manage the household chores. Sometimes mothers of the pregnant women also gave persuasive justifications for having their daughters give birth in the natal household, generally presenting arguments that the environment would better ensure the health of the woman. Older pregnant women, who were more established in the in-law household, often viewed the in-laws' home as their home and expressed less desire to travel to the natal home. Overall, the tradition to return to the natal household for delivery appears to be declining; this may in part be due to the rise of nuclear households, which constituted at least half of the households in all three of our samples. This change in family structure should decrease the influence of senior females and impact on birth planning and place of delivery in the future.

When asked why a hospital delivery was not considered, informants generally mentioned that it is only necessary to go to a facility if a complication occurs. Even women enrolled in DSF programs typically did not intend on giving birth in a hospital setting. The most common explanation for preferring a home delivery had to do with the free cost, with many informants rationalizing that the woman had previously given birth at home without any problems. Other common reasons included the desire to be in a familiar environment with family members to assist; to avoid the hospital environment and invasive procedures, particularly C-section; and to maintain privacy during the delivery. In the sample of women in their third trimester of pregnancy, there were a few husbands and mothers-in-law who adamantly rejected a hospital delivery; their opposition was generally religiously based and related to maintaining purdah and avoiding exposure to men.

Despite the fact that childbirth was consistently viewed as highly risky and potentially life-threatening and that a surprisingly high number of women knew of at least one woman who had died during delivery, discussions and plans regarding emergency preparedness rarely took place. This may in part reflect the fact that women were generally not informed during ANC about maternal complications or the need to make arrangements for money or transport to an appropriate health facility in advance should problems arise. In fact, informants were often surprised by questions about emergency preparedness, often stating that it was unnecessary to prepare for an emergency and emphasizing that complications are unpredictable. Some informants compared this to planning for an unexpected illness, thus alluding to the perceived irrationality of preparing for a maternal complication. An exception was the DSF holders, who generally had made some plans in case a problem arose and professed that the greatest advantage to holding the card was the fact that they would be admitted to the hospital if a complication occurred. However, these women and their family members were generally unclear about what costs would be covered if the woman were hospitalized.

Women in the samples indicated that during the last trimester they were preoccupied with thoughts about the impending childbirth, often contemplating the circumstances under which women they had known had died and how their own family members might respond if a complication occurred. Many admitted that given their inferior status in the household and the unpredictability of childbirth, decisions would be out of their control. In general, Muslim informants commonly referred to the role of external forces in determining whether complications would occur, where the birth would take place and whether the woman would survive, suggesting that as with many other factors in their lives, external forces had already predetermined the childbirth event and thus concluding that preparations were futile.

About 42% of the maternal death families and 50% of the near-miss families had put aside some savings for the birth either in case an emergency occurred or to pay for necessities for the baby postpartum; amounts ranged from 400 to 10,000 taka, with most families saving from 2000-3000 taka. While this is a small amount in relation to costs for emergency care, having money available clearly facilitated more rapid care seeking as family members did not need to go through the often lengthy process of collecting money for transport and the hospital admission fees. Savings most often came from the husband's monthly salary, small amounts of money allocated for daily expenditures that were regularly put aside by the pregnant woman, or from the women's salaries; in the latter case, earnings were small and the amounts saved were generally minimal. We found

that women were often in charge of these savings, and in some cases, they hid the money, which, as a result, was not available when the emergency occurred. The majority (15 of 19) of women in their third trimester of pregnancy indicated that they had no savings or were not aware of savings, with most women explaining that their families were poor and many suggesting that they were relying on Allah to have a safe delivery at home. This may also reflect the fact that many of these women were still weeks away from delivery. Overall, very few informants mentioned making arrangements for transport to the facility, reflecting the fact that they planned on a home delivery and the general perception that transport is readily available.

A critical intervention in the future is once again to educate community members about maternal complications and the importance of planning in advance before the complication occurs. Data from the recent BMMS, 2010 illuminated encouraging changes in treatment seeking for maternal complications, indicating that utilization of emergency services is increasing and more women are surviving obstetric complications (15). At the community level, these examples should be used to encourage families to prepare for unexpected emergencies. As more women survive pregnancy-related complications, judgements regarding the benefits of medical care, and thus the need for appropriate planning, should change.

4.5. Comparisons of the Samples of Maternal Death and Near-Miss Cases

4.5.1. Haemorrhage

Background information on the women who died and the women who experienced a near-miss event due to haemorrhage was very similar, with both samples on average in their late 20s or early 30s. Over half of the women in each sample had not attended any formal schooling, and those who had gone to school had only a few years of education. Husbands were in their mid to late 30s; once again, over half of the husbands had no formal schooling. Most of the families in both groups relied on irregular sources of income and were poor.

All of the women who died had attended ANC visits, but typically did not fulfil the number of recommended consultations, with women averaging two visits during the pregnancy. Comparatively, those in the near-miss sample who did attend ANC consultations (5 of 7 women) averaged close to four visits. However, it appears that women who attended ANC had not received information on maternal complications or where to seek emergency care, a gross oversight.

Most families of the women who died had not held discussions or made formal plans regarding the delivery, with informants suggesting that there was an implicit understanding that the delivery would take place at home with a TBA. The few families who had formulated a plan had decided to deliver in a home setting, either on their own or with an unskilled birth attendant. In contrast, the majority of families in the near-miss sample did have discussions involving preparations for the delivery; however, the plan once again was for the delivery to take place at home, either with a TBA or skilled health provider. Selected TBAs for both types of informants were typically family members who had attended previous deliveries of the women or had reputations for their skill in assisting childbirth.

The majority of informants from both samples indicated that they had not envisioned that a complication would occur and therefore had generally not made prior arrangements in regard to emergency care. Even the two women in the maternal death sample who had experienced bleeding during pregnancy had not made plans in case a complication arose. One preparation that was frequently made relates to savings, with 27% of the families of the women who died having saved money compared to 43% of the near-miss families. The amount of money saved by the near-miss families was significantly higher and specifically set aside to ease care seeking in case of a complication; in reality, the money facilitated access to a health center during the emergency and may be one of the reasons these women survived.

These data raise questions about why families, even when they viewed childbirth as potentially life-threatening, failed to prepare for the possibility of complications. The findings suggest that lack of planning relates to the assumption that because the woman was in good health during the pregnancy, or since the woman had previously delivered without complications, the delivery would be normal. In addition, there is the widespread conviction that Allah determines the lifespan, and the timing of death is out of human control. It is important to note that the availability of life-saving EmOC in Bangladesh is relatively recent and that these belief systems have likely prevailed for generations, serving as a mechanism to get through the dangerous period of pregnancy and childbirth. Moreover, our data confirm that knowledge of pregnancy-related complications and emergency care is limited, particularly among older family members, who are also the decision makers. These results once again highlight the need to inform a diverse range of the population about obstetric complications and treatment and to encourage planning for unexpected emergencies; educational efforts should emphasize the fact that signs of complications are difficult to identify in advance of the crisis and therefore unpredictable.

We can see many differences between the two samples in regard to birth assistance, onset of bleeding, and treatment seeking. In the maternal death sample, two women who died experienced bleeding before the delivery, and the other women started haemorrhaging after they gave birth. Six of these women began haemorrhaging at home, with all initially attended by at least one TBA. In four of these cases, the TBAs appeared to use dangerous methods to force delivery of the placenta, which likely induced the bleeding. The other three women developed haemorrhage in the facility, with two of three of these women first assisted by an unskilled birth attendant before seeking care in a health center. In comparison, all seven of the near-miss women experienced postpartum haemorrhage; four women developed the condition at home and three developed the condition in the facility. Only in two cases were TBAs involved in the birth.

Perceptions about the onset and severity and comprehension of the significance of pregnancy-related bleeding guided the timing of care seeking and where treatment should be obtained. Of the women who started bleeding before the delivery, both families appeared to recognize bleeding as a danger sign. Despite this, care seeking was delayed because bleeding occurred at night; eventually, these women were taken to village doctors known to have expertise in treating bleeding in women postpartum. Strikingly, two different village doctors refused to treat one of the women, apparently recognizing the danger and difficulty in providing care, and the woman died at home. The second woman died after receiving care from a village doctor. We

suspect that village doctors have developed a reputation for using misoprostol to treat haemorrhage associated with childbirth and are thus viewed as skilled in managing bleeding.

Women in the maternal death group who started bleeding postpartum in a home setting were all attended by one or more TBAs when haemorrhaging was identified, thus putting the traditional attendants in a position of power to make decisions regarding the type and timing of treatment. In these instances we found that the TBAs often did not recognize that the bleeding was excessive and were focused on other symptoms viewed as more serious. Furthermore, most of the conditions developed at night, and it was likely difficult to assess the degree of bleeding. Subsequent care seeking involved a variety of informal providers, with some employing harmful practices over a prolonged period. Several village doctors once again refused to treat the women, apparently due to the concern that if they got involved and could not stem the bleeding, their reputation could be damaged. Signs such as lethargy, cessation of speech, or convulsions did ultimately convey the danger and need for biomedical care, but only after a prolonged delay. In several instances the fact it was night time caused further challenges in making travel arrangements. Overall, three women who developed postpartum haemorrhage died at home after undergoing TBA treatment and home remedies. While the other three eventually sought care in a facility, one of these women died when she reached the facility and never received treatment. In sharp contrast, in the near-miss cases far fewer TBAs were involved. Furthermore, when the bleeding was identified, the presiding birth attendants or family members recognized the danger and recommended facility care, with subsequent treatment sought only once with another informal provider. Thus women were exposed to fewer harmful practices and reached health facilities faster.

The data from the maternal deaths highlight the important role that TBAs continue to play in childbirth, raising questions about how to educate traditional attendants in recognizing pregnancy-related danger signs and complications and making prompt referrals to emergency care facilities. The findings also illuminated the strict gender roles still respected during birth; specifically, male members were relegated to the role of obtaining money, contacting informal health providers and making travel arrangements but were removed from the birthing scene and excluded from treatment decisions. In several instances husbands were forced to follow the instructions of the TBAs and female family members even if they understood the situation was dire and wanted to seek outside care.

Ironically, three women in the death sample developed haemorrhage in a health facility, one in a non-EmOC and two in EmOC facilities, and therefore should have been treated and survived. In total, only six of 11 women eventually got to a health facility, with one first going to a non-EmOC center. Only four women eventually received treatment in an EmOC facility. In contrast, all seven women in the near-miss sample reached EmOC facilities; however, four women first went to non-EmOC facilities, requiring subsequent referrals to the EmOC, with some experiencing long delays during the process. None of the non-EmOC facilities arranged for vehicles or health workers to accompany the women to the EmOC facility. The findings highlight the need to raise awareness about EOC services and where emergency care is offered.

An examination of the facility-based care also highlights major differences between the two samples. All families of the maternal death cases who reached health facilities complained about

the medical treatment of the doctors and the support staff, often involving long delays before emergency care was provided. Doctors were often not available, and even if they were, they did not take immediate charge of the patients, leaving women who were in a severe condition unattended or cared for by support staff or nurses. Incredibly, one woman was delivered by a female cleaner even though nurses were present. In sharp contrast, all near-miss family informants indicated that the women were examined immediately upon arrival at the EmOC facility, with three of the seven women going through surgical procedures. Informants from both samples complained that blood for transfusion was not readily available, particularly in public facilities. Delays occurred in the process of procuring blood, which was generally the responsibility of family members. Family members had to check their own blood group, blood banks were not open or did not have the appropriate type of blood, hospital workers failed to provide adequate guidance in regard to how many units were needed or where to obtain blood, or family members refused to give their own blood.

Eventually, three of the four women who reached an EmOC died in the facility, and one woman died while being referred to another facility. While initial treatment seeking with informal health providers likely made their condition less treatable, the significantly longer delays experienced in the facility prevented all but one of these women from receiving a blood transfusion. Even basic medicines were not provided by the hospital, and particularly at night, prescribed drugs could not be purchased. In some instances, health care providers delayed referring the woman to higher level facilities and did not provide a vehicle. Overall, the inability of families to get blood and obtain medicines quickly together with the lack of provision of rapid care appeared to contribute to the death. Informants also complained about the behaviour of the health providers, with one doctor slapping the mother-in-law and husband for delaying care seeking and not being able to obtain the blood. Overall, the inappropriate behaviour of some of the health workers may in part be attributed to frustrations for the risks incurred by the delays of the women who died. In contrast, most of the near-miss women bypassed informal providers and all eventually arrived at EmOC facilities and were able to benefit from life-saving treatment. Near-miss informants were generally positive about the behaviour of the health providers and, with the exception of difficulties faced obtaining blood, the treatment given.

Basic measures must be taken to ensure that all EmOC facilities can offer immediate treatment to women experiencing haemorrhage. EmOC facilities should have functioning blood banks with a range of blood groups available. During ANC visits women and their family members should be tested to determine their blood group and identify who can donate blood if needed. Medications prescribed should be readily available in either the hospital or nearby. Emergency care physicians should be available to provide care 24 hours a day in all emergency facilities.

Interestingly, several informants from the near-miss sample stated that after this recent experience, they recognized the benefits of hospital treatment for complications. As the number of women receiving life-saving treatment in EmOC facilities increase, attitudes about the value of EmOC treatment will likely change and more women will opt for delivery assistance in health facilities. The recent BMMS results suggest that this process has started, with data from 2001 and 2010 showing that facility deliveries increased from 9% to 23%, treatment seeking to facilities by women experiencing obstetric complications increased from 16% to 29%, and C-section rates rose

from 2.7% to 12.2%, with care seeking even among the poor rising from 2.5% in 2001 to 7.5% in 2010 (15). To accelerate this process, women who survive pregnancy-related complications should be used as “ambassadors” to share their experiences and promote the importance of preparing for birthing complications and seeking emergency care.

4.5.2. Eclampsia

Background information shows that women who died were older and less educated than women in the near-miss sample. The husbands of the women who died were also significantly older than the husbands of the women who survived; levels of education across both samples of husbands were low. Informants in both groups were generally from low income households, with three of four in the death sample and five of nine families in the near-miss group extremely poor. Two of four women in the death sample had had a history of miscarriages.

The sample of women who died had a far higher number of ANC visits, with three women having attended ANC at least twice monthly from the first trimester of pregnancy. Near-miss women had on average over three ANC visits, with several starting ANC in their last trimester. Families of women who died also held more regular discussions about the delivery and generally made firmer and what appeared to be safer preparations for the impending birth, with two of four families planning for the delivery to take place in a private clinic. In comparison, five of nine of the near-miss families had planned a home delivery with a TBA, and the other four women, three of whom had husbands opposed to the pregnancy, had not made plans. Women in both samples had generally not planned on what to do in case an emergency occurred, with many informants stating that the complication was unexpected and it had not made sense to plan in advance. This is despite the fact that more than half of the near-miss women appear to have experienced severe and often debilitating danger signs in all likelihood associated with pre-eclampsia during pregnancy. The need for money, however, was frequently considered with 75% and 56% of informants in the death and near-miss samples, respectively, having put aside money in case of an emergency or for the baby postpartum. Savings from two of the death case families were minimal, ranging from 400–1,000 taka, and reflected their impoverished state.

It is indeed ironic that the sample of women who died had far more ANC and exposure to trained health workers and appeared to make safer preparations than those who lived. These results once again raise questions about the content and overall effectiveness of ANC in Bangladesh, which data from this study repeatedly suggest do not prepare women and families for complications and unexpected death-threatening emergencies.

The data point to several factors that appear to have influenced the timing of emergency care seeking by women in the two samples. The first relates to physical differences in the onset of signs of eclampsia. While virtually all women in both samples experienced seizures prior to the delivery, two of four of the women in the death sample had labor pain before experiencing eclampsia and therefore first sought traditional birth assistance. In one case, the woman was assisted by seven TBAs who tried to force the home delivery and may have contributed to the woman’s death. In contrast, only two of nine of the near-miss cases had labor pain before the seizures, and as a result,

TBAs were not involved in the care or decision making regarding subsequent treatment. In addition, pre-eclampsia symptoms such as headaches or blurred vision, which often started several hours before the seizures, were in several instances recognized as dangerous by family members of the near-miss cases, giving them adequate time to seek emergency care.

When we examine perceptions of seizures, we can see major differences between the two groups. Specifically, in two of four cases the people attending women who died did not initially consider the condition to be serious, with one husband attributing the seizures to “bad air”; in the second instance, TBAs insisted that her condition would stabilize once the woman delivered. In sharp contrast, all informants attending the near-miss cases described the seizures as violent and uncontrollable and often accompanied by alarming behaviors that indicated danger and in most cases required medical care. In the majority of these cases, one or two people, often a female family member, took charge. In two instances, the decision makers had previously witnessed a woman suffering from eclampsia, which had instilled fear and enforced the importance of obtaining rapid treatment. Strikingly, women guiding decision making were often of reproductive age and would probably not have dictated careseeking in the past. This may point to recent changes in the social and economic structure in Bangladesh, which over time should alter the hierarchy of authority and household decision making during labor and delivery.

Differences in perceptions of the severity of signs and symptoms associated with eclampsia influenced treatment-seeking practices. Specifically, only in the case of one of the death cases did family members seek initial care with a trained provider; in this instance, while the condition was perceived to be severe, the family only had 400 taka in savings, and there was a delay in careseeking due to concerns that they could not afford professional care. All women in the death sample received some sort of treatment from one or more informal providers, which often significantly delayed reaching a health facility. In two cases, the informal providers were reported to use practices that likely aggravated the condition such as administering drugs (likely oxytocin) to increase contractions. When the women’s condition was considered critical and in need of medical care, in two instances lack of resources contributed to a further delay to seeking facility care. Obtaining transport and the fact that it was night time also postponed care seeking at a health facility in the case of two women who died. In contrast, most (seven of nine) women in the near-miss group first sought care in a health facility and never received treatment from informal providers, thus avoiding potentially harmful practices and obtaining medical care faster. Despite the fact that in several instances the onset occurred in the night or early morning when it was still dark, the perceived seriousness prompted these families to seek immediate medical care. It is also important to note that in all of these cases a phone call was made which facilitated obtaining money or transport and faster access to emergency care. These findings underscore the impact of socioeconomic and structural changes that have recently occurred across Bangladesh, allowing diverse sectors of the population access to telecommunication. The final two near-miss cases first sought traditional treatment, with families believing the woman had been attacked by evil spirits and needed local healers to exorcise their powers, illustrating the power of belief systems in guiding the choice of care. These findings underscore the need for programs to ensure that impoverished families do not face financial barriers that prevent them from obtaining EmOC.

When professional care was finally sought, the women who died were not necessarily taken to facilities that could provide treatment. Families of the near-miss women also experienced difficulties reaching a facility that provided the needed care, with only three women first taken to an EmOC facility that could administer appropriate treatment. As a result, the majority of near-miss women sought care in more than one facility, with several women first taken to non-EmOC facilities unable to treat eclampsia or perform a C-section. Ironically, this included the two women with a DSF card who first sought care in the clinic where the card had been issued. Even when they did reach EmOC facilities, in a few cases the EmOC facilities were ill-equipped to treat the condition or the health staff refused to admit the woman. When a referral was needed, it sometimes took hours to arrange for money and transport to reach the next facility. Nonetheless, getting more rapidly into a facility where medical personnel provided care and medications were often administered, appeared to improve or at least stabilize the woman's condition.

The survival rate of the babies also confirms the importance of rapid care seeking to a facility offering emergency care. Only one baby delivered by C-section in the death group survived. This was the only family that sought rapid treatment to an EmOC facility after the onset of seizures. In contrast, six of the babies in the near-miss sample were born through C-sections, and two were born vaginally in the hospital, with all but one baby surviving. Overall, these data emphasize the need to inform women and a range of family members in advance of the delivery about the cause and danger of eclampsia, both to the woman and the baby, and where to seek emergency care.

Data on hospital care were mixed, with two of the women who died appearing to receive immediate care once they reached a facility and only one of nine of the near-miss families suggesting that rapid treatment was provided. Delays getting treatment included delays being admitted; the doctors were not available because it was Friday, night time, or they simply were absent; there were delays in finding and purchasing prescribed medications in shops outside the hospital; or delays occurred while waiting to have a C-section because other patients were already scheduled for surgery. In several instances, near-miss informants suggested that the delay was caused because hospital staff did not want to admit the eclampsia case, suggesting the condition was too serious to treat; families concluded that the staffs was concerned that if the woman died, the hospital reputation would be damaged. Other complaints included the fact that senior doctors were not on duty weekends or at night, the woman was attended to only periodically by the doctor on call, or the attending physician appeared to be inexperienced in treating eclampsia. Overall, many families lamented the behaviour of the hospital staff, who often assumed that the family had been slow to respond to the woman's condition and thus chastised them for causing a dangerously long delay in reaching hospital care. Families also complained that the hospital staff was often unwilling to explain procedures, and the nurses and auxiliary staff harassed families with a barrage of requests for money, refusing to provide care without receiving informal payments. These findings point to some potentially life-saving changes that need to be made in EOC facilities, with the most basic being that doctors trained in treatment of eclampsia and C-section deliveries should be available 24 hours, seven days a week. Information on prescribed medications should be clearly conveyed to family members, and drugs should be readily available in proximity to the hospital. Hospitals should institute procedures ensuring that personnel treat all types of patients with respect and refrain from collecting bribes in return for services they are required to provide.

4.5.3. Obstructed Labor

Women in both the maternal death and near-miss groups were on average in their mid to late 20s and had limited formal education. Their husbands were in the early or mid-40s; husbands of women who died had attained more years of schooling. In both samples, families generally came from lower socioeconomic groups.

All women in both samples participated in ANC consultations, with an average of 2-3 visits in each group. Two of four women in the near-miss group had been advised to deliver with a trained provider; in one case, the woman had previously had a C-section, and the second woman was told she had a physical condition that required trained assistance. Despite this, all women in both groups had planned on having a home delivery with a TBA. In each group, only one family had saved money, amounting to 1,000 to 3,000 taka, for the delivery or postpartum expenditures.

The near-miss women all experienced long delays while a TBA attempted to deliver the baby and families deliberated about careseeking, and in two cases, care was first sought from local providers; one of these women received what were potentially dangerous injections to induce contractions. All but one of these women went to more than one facility before obtaining care, experiencing long delays before receiving life-saving treatment in the form of a C-section. In comparison, one of the women who died was taken to a health facility immediately when it was suspected that the fetus was dead. It appears that after the delivery, she was discharged too soon and developed a serious medical condition at home. The family failed to understand the seriousness and sought care from informal providers. By the time she reached an appropriate EmOC facility, she needed blood, but after a long delay assessing the blood group and obtaining blood, she died. The other woman experienced longer delays at home (over two days) receiving treatment from TBAs, a village doctor, and a nurse; when she finally was taken to a facility, it was too late.

The reason that one group of women survived and the other two women died from the same condition is not totally evident, with women in both groups facing a series of delays in receiving medical treatment. Data from both samples once again highlight the dangerous use of oxytocin at the community level. Contributing factors to the deaths appear to be the failure of both formal and informal community-based providers to recognize the danger of prolonged labor and the need for facility-based care, the failure to determine the blood group prior to delivery, and the lack of blood available even in EmOC facilities. In comparison, the near-miss cases experienced shorter delays before reaching an EmOC facility and arrived at facilities when they all were still in good enough health to receive life-saving care in the form of a C-section. The case histories illuminate the importance of educating families and informal providers about danger signs of prolonged labor, a condition that should be relatively easy to ascertain, and the importance of prompt careseeking to appropriate facilities. Another critical intervention is to discourage the dangerous use of drugs by informal providers to induce or increase contractions. Village doctors in particular have a reputation for administering medications that will facilitate a quicker birth, and they use these drugs even when there is an obvious obstruction.

4.5.4. Community Skilled Birth Attendants

The BMMS 2010 survey showed that the majority of births were still taking place with unskilled providers in household settings, with the CSBAs attending only 0.3% of live births in the three

years preceding the survey, suggesting that the program contributed very little to skilled birth attendance and is failing to meet expectations (15). The information collected through the qualitative study highlights various deficiencies in program implementation, as well as the cultural and medical constraints women working as CSBAs face in attaining program objectives.

The findings suggest that while the initial training was valued by informants, some maintained that too many topics were introduced over a short time frame, preventing participants from acquiring adequate skills to perform as skilled birth attendants. In most cases, their newly attained skills and functions as CSBAs were never formally introduced, as was initially planned in the program, once they returned to their respective communities. A failure to have local officials publically endorse their new responsibilities, which automatically put the CSBAs in competition with experienced TBAs, undermined their position and the respect needed to succeed as birth attendants. In addition, refresher trainings to address weaknesses in their skills or shortcomings in their work, have generally not been offered, and all the CSBAs interviewed indicated that they have not received additional supplies essential for their work since the initial training.

Another major weakness relates to the fact that the program has not addressed the ongoing conflicts in work responsibilities and time obligations that the CSBAs face in their other functions as FWAs and HAs. Given the fact that the time involved in delivering a baby is highly unpredictable, these conflicts should have been anticipated in the original program planning. The findings illuminate the way in which the various responsibilities of the two positions often coincide, and suggest that fulfilling both duties at once is neither practical nor feasible. Furthermore, the CSBA supervisors, who are the same people who monitor the activities of FWAs and HAs, appear to be unwilling to recognize the challenges faced by the CSBAs in performing two kinds of responsibilities and thus fail to give them the adequate support and technical assistance needed. Rather, they appear to minimize the new role of birth attendant and favor the original positions as FWAs and HAs. As a result, the CSBAs are often torn about how to prioritize work, with most preferring their functions as FWAs and HAs. This is not at all surprising given the fact that the hours of these latter positions are regular and set, they are paid a monthly salary, and there are few pressures attached. The work involved in delivery attendance is both physically and mentally demanding. The hours are uncertain, they are frequently required to travel long distances, and they often have to deal with highly challenging births and interactions with family members. Although they have been given additional responsibilities, their official salary remains the same. We also learned that the CSBAs are not given monetary assistance for transport, and that doctors in health centers where women with complications are referred frequently do not provide adequate support to the CSBAs.

In regard to their actual performance, we found that only three of 12 CSBA informants were able to meet the program goal of assisting ten births per month. These women appeared to be highly motivated by the fact they were earning sizeable complementary incomes delivering babies. They also received assistance from their husbands to overcome challenges faced in performing their dual roles, such as caring for their children at night or accompanying and transporting the CSBAs (particularly at night) to the homes of women in labor. The fact that these women were assisting more deliveries regularly appeared to increase their skills and booster their confidence as birth attendants, which they prioritized over their other jobs. Eight of 12 women in our sample seemed

unable or indifferent to overcoming the multiple obstacles they faced and never considered delivery assistance their main task. Most of these women did not request money for their services, with two women mentioning that they grew up in the communities where they served and would be criticized for requesting compensation to assist deliveries.

In addition to some of the structural problems faced, these CSBAs faced other barriers related to the sociocultural system in which they worked. One of the biggest challenges was dealing with the TBAs, who generally have reputations as being experienced and knowledgeable about traditional childbirth practices. Many informants suggested that they were unable to compete with the TBAs, who are often family members living in proximity to the woman's home and available any time of the day, and thus, in accordance with local beliefs, can respond to calls secretly so that women can have a "silent" delivery at home. As a result, the CSBAs were often only requested to assist when deliveries became complicated, and thus families, who have a strong preference for home births, became disillusioned and viewed them as unskilled when they made a referral to a health facility. For a variety of reasons, it was difficult for these CSBAs to convince families to accept a referral; challenges cited included the fact that villagers esteemed traditional birthing practices and held negative views of the trained providers and procedures performed in facilities; the costs involved; and travel to the health centers. In reality, their lack of experience and confidence likely made the CSBAs anxious and encouraged them to make a quick referral, thus undermining their position in the eyes of both community members and health workers in referral facilities.

A major barrier cited included night travel, which in this sociocultural system is unacceptable for women, particularly if they are unmarried. When required to travel at night, it is imperative that women be accompanied by an adult male, which informants indicated was not always possible. As a result, the skilled attendants were often forced to refuse calls at night. In 2004, research examining barriers to assisting deliveries in households in Matlab, Bangladesh illuminated many of the same obstacles found in this study, including lack of transportation, inadequate training and supervision, pressure from families to adhere to traditional childbirth norms, and difficulties convincing families to accept referrals to health facilities (10). Paradoxically, the results of this study were available in 2004 and should have been considered when developing the CSBA program. Furthermore, there is little empirical evidence from the region to suggest that home-based care is safe or effective.

Completing the recommended four ANC visits: Few women had attended all 4 ANC consultations, with many starting late in the pregnancy or discontinuing ANC in the last trimester. It is important to encourage women to start ANC earlier in the pregnancy and to stress the continuation of ANC during the last trimester even though many then move to their natal home and thus would be compelled to find and attend a different ANC center.

Counseling on danger signs and pregnancy complications: Little information is provided during ANC about danger signs during pregnancy and signs and symptoms of pregnancy-related complications. Rather, the services provided appear to give false assurances to families that the woman is in good health, discouraging the need to make emergency plans. Counseling on specific danger signs during pregnancy and delivery is needed, as is information on EmOC facilities. Health workers should also emphasize that complications are unpredictable and may arise even if the woman's physical condition appears to be good during pregnancy.

Emergency birthing preparedness: Health workers should promote birth preparations from the outset of pregnancy, including plans in case of an emergency. This should involve asking about the place and competence of the delivery assistant, and possibly encouraging the chosen delivery assistant to attend at least one ANC visit. Families should also be encouraged to save money and plan for transport and have made arrangements with a designated person to accompany the woman in case an emergency occurs.

Incorporating family members into the ANC counseling: Family members involved in decision making including elderly females and husbands should be encouraged to attend ANC. Specific messages could be developed for their benefit, such as the importance of ANC and their role in encouraging pregnant women to attend ANC, danger signs during pregnancy, the importance of birth planning, and pregnancy-related complications and appropriate and rapid careseeking.

Set up a mechanism for blood availability within the family: It is important that the blood group of the pregnant woman and her family members be determined during ANC visits, with the results explained and given to the woman or her family members. Having information on the blood group should facilitate the speed in getting blood if needed.

Identifying high risk women and monitoring them over the course of pregnancy: Health workers should identify high risk women and monitor them over the course of pregnancy. Women and their families need to be educated about danger signs and appropriate treatment. Women at high risk should especially be encouraged to make emergency birth plans.

Raising community awareness: Information regarding dangers signs, pregnancy-related complications and appropriate treatment should be conveyed at the community level, including the dangers of accessing emergency care with such informal providers as village doctors. Culturally appropriate and innovative approaches to target family members involved in decision making and careseeking should be identified. Visual images conveyed through billboards and posters should be displayed to raise awareness throughout the community, and special efforts should be made to position messages in locations frequented by decision makers such as husbands and elder females.

Setting up community help groups: Community help groups could be established to assist families of women experiencing complications collect money and obtain a vehicle so that they can seek rapid emergency care even during odd times such as at night.

Availability and access to EmOC facilities: It is important to ensure that health facilities with EmOC are within a reasonable distance of communities. Communities should be informed about the services provided and be aware about the differences between EmOC and non-EmOC facilities so that members go to the appropriate health structure when seeking emergency obstetric services. Demand side financing (DSF) should be more widely available to poor and hard-to-reach populations, and card holders should be better informed about services offered.

Availability of physicians and support staff: Physicians and support staff must be available to provide emergency care 24 hours, 7 days a week, including weekdays and holidays. Initiatives, such as hiring retired physicians as consultants, or providing training opportunities abroad to physicians after serving a certain period of time in rural areas may serve as incentives.

Availability of logistics (medicines, blood supply and ambulance): To ensure proper and timely care to emergency obstetric complications, certain life-saving drugs should be readily available in or near facilities. Setting up well equipped pharmacies within hospital compounds should be considered to accelerate the process of emergency drug administration. Blood banks should be functional 24 hours, 7 days a week to ensure immediate and timely blood transfusion. Family members should be clearly informed about how and where to obtain blood if the responsibility is given to them. Ambulances should be available in all EOC and EmOC facilities to ensure immediate referral of emergency obstetric complications.

Developing chain in referral mechanism: When referring patients from one facility to another, physicians should contact the referral facility to ensure that appropriate and immediate treatment of women suffering from emergency complications will be provided. Patients should be accompanied by health professionals to the referral facility.

Sharing information with family members about the condition of the women with emergency obstetric complications: Information about a life threatening condition and appropriate treatment should be shared clearly with family members by the health providers in the facility so that they can understand that it is critical for the woman's survival that they take immediate action to procure blood, obtain drugs and follow referrals.

For the CSBA Program

The study highlighted a variety of what appear to be insurmountable problems (see discussion section) that made it exceedingly difficult for women trained as CSBAs to fulfil the role as birth attendants. Moreover, since the study was carried out, the focus of the government program has shifted to developing a cadre of midwives based primarily at Thana Health Complexes. Training of the midwives is presently underway. During the interim period as the new midwife program is getting established, a limited CSBA program may be needed to serve pockets of hard-to-reach populations.

HAs and FWAs with CSBA training: The HAs and FWAs with CSBA training can be involved in encouraging pregnant women to attend ANC visits. During their field activities, they can also identify and monitor high risk pregnant mothers, inform these women and their families about pregnancy-related complications and appropriate facilities for emergency obstetric care, and refer them to health facilities for care. They should also be involved in disseminating health messages to different sectors of communities (e.g. young women, older women, men) related to the importance of ANC, appropriate care during pregnancy, the risks always inherent in home delivery, the importance of birth planning and preparedness, pregnancy-related danger signs and complications, and care seeking during emergencies. They can also continue to refer women suffering from pregnancy-related complications to EmOC facilities.

1. Koblinsky MA, Campbell O, Heichelheim J. Organising delivery care: what works for safe motherhood? *B World Health Organ* 1999,77:399-406
2. Maine D, Rosenfield A, McCarthy J, Kamara A, Luca AO (1991). Safe Motherhood: options and issues. Columbia University, New York
3. Van Lerberghe and De Brouwere (2000). Of blind alleys and things that have worked: history's lessons on reducing maternal mortality. Paper prepared for EU round table on 'Mother's health and health services', Brussels 27-28 November 2000
4. De Brouwere V, Tonglet R, Van Lerberghe W. Strategies for reducing maternal mortality in developing countries: what can we learn from the history of the industrialised West? *Trop Med Intern Health* 1998,3:771-782
5. Walraven G, Weeks A. The role of (traditional) birth attendants with midwifery skills in the reduction of maternal mortality. *Trop Med Intern Health* 1999,4:527-529
6. Graham WJ, Bell JS, Bullough CHW (2000). Can skilled attendance at delivery reduce maternal mortality in developing countries? Paper prepared for EU round table on 'Mother's health and health services', Brussels 27-28 November 2000
7. Browner, C. and C. Sargent 1990. Anthropology and Studies of Human Reproduction. In: Johnson T. and C. Sargent, eds. *Medical Anthropology: Contemporary Theory and Method*. New York: Praeger
8. National Institute of Population Research and Training (NIPORT), ORC Macro, Johns Hopkins University, and ICDDR,B 2003. Bangladesh Maternal Health Services and Maternal Mortality Survey 2001. Dhaka, Bangladesh and Calverton, Maryland (USA): NIPORT, ORC Macro, Johns Hopkins University, and ICDDR,B
9. National Institute of Population Research and Training (NIPORT), Mitra and Associates, and Macro International 2009. Bangladesh Demographic and Health Survey 2007. Dhaka, Bangladesh and Calverton, Maryland, USA: National Institute of Population Research and Training. Mitra and Associates, and Macro International
10. Blum LS, Sharmin T, Ronsmans C. Attending Home vs. Clinic-Based Deliveries: Perspectives of Skilled Birth Attendants in Matlab, Bangladesh. *Reprod Health Matters* 2006;14(27):51-60
11. Afsana, K. and S. F. Rashid 2000. Discoursing Birthing Care: Experiences from Bangladesh. Dhaka: The University Press Limited
12. Blanchet, T. 1984. Meanings and Rituals of Birth in Rural Bangladesh. Dhaka: University Press Limited
13. Goodburn L. Bangladesh women report postpartum problems. *Safe Mother* 1994,13:3
14. Rozario, S. 1993. The Dai and the Doctor: Discourses on Women's Reproductive Health in Rural Bangladesh. In: Ram K. and M. Jolly, eds. *Maternities and Modernities: Colonial and Post Colonial Experiences in Asia and Pacific*. London: Cambridge University Press
15. National Institute of Population Research and Training. Bangladesh maternal mortality and health care survey 2010: preliminary results. Dhaka: National Institute of Population Research and Training, 2010.

