Safe Motherhood Promotion Project in Narsingdi District

Baseline Survey 2006

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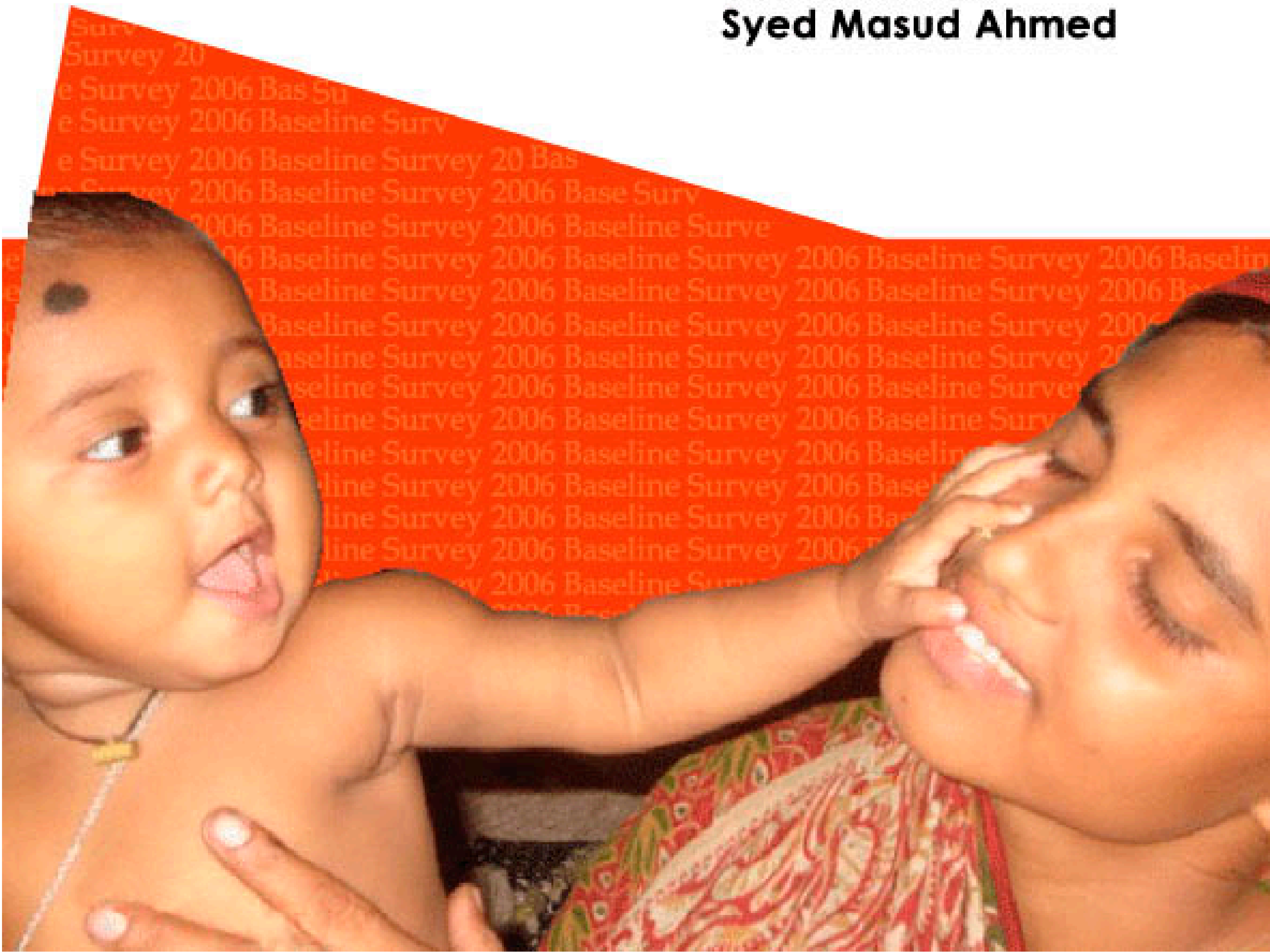

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March 2006

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Contents

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Abbreviations

ANC	Ante-natal Care
BHC	BRAC Health Centre
CHW	Community Health Worker
CNC	Community Nutrition Centre
CNP	Community Nutrition Promoter
DALY	Disability Adjusted Life Year
D&C	Desidual Clearance
DH	District Hospital
DD-FP	Deputy Director-Family Planning
DMCH	Dhaka Medical College Hospital
DPT	Diphtheria Pertussis Tetanus
EOC	Emergency Obstetric Care
EPI	Expanded Programme on Immunization
FGD	Focus Group Discussion
FP	Family Planning
FWA	Family Welfare Assistant
FWV	Family Welfare Visitor
FWC	Family Welfare Centre
HA	Health Assistant
ICMH	Institute of Child and Mother Health
ICPD	International Conference on Population and Development
IEC	Information, Education and Communication
JICA	Japan International Cooperation Agency
KMC	Kangaroo Mother Care
MCWC	Maternal and Child Welfare Centre
MSCS	Marie Stopes Clinic Society
MCH-FP	Maternal and Child Health- Family Planning
MDG	Millennium Development Goals
MIS	Management Information System
MOHFW	Ministry of Health and Family Welfare
MO-MCH	Medical Officer (Maternal and Child Health)
PNC	Post-natal Care
RMO	Resident Medical Officer
SACMO	Sub-Assistant Community Medical Officer
SBA	Skilled Birth Attendants
SC	Satellite Clinic
SS	Shasthya Shebika
SK	Shasthya Karmi
TBA	Traditional Birth Attendants
TT	Tetanus Toxoid
UHC	Upazila Health Complex
UHFWC	Union Health and Family Welfare Centre

Glossary

BRAC member an individual enrolled in BRAC programme through credit and development group (called Village Organization, VO). Ninety-nine percent of BRAC members are women.

Existing system is the currently practiced referral system.

Safe motherhood is defined in this study as proper antenatal, natal and postnatal care. Proper antenatal, natal and postnatal care meant mothers received antenatal care, delivered by skilled birth attendants and received postnatal care.

Systematic referral system means a referral system functioning by referral card or referral slip and not verbally, under which the referred patients would be taken care of according to the given capacity of the persons/places where the patients are referred to.

Standard referral system means a referral system that is supposed to be according to the policy guideline.

Skilled birth attendants is defined in this study as medically trained providers attending births including doctors, nurses, midwives, FWVs and trained TBAs.

Union is an administrative unit covering about 25,000 populations. An upazila usually have 8 to 10 unions.

Upazila is a sub-district, an administrative unit covering about 250,000 population.

Executive summary

Introduction

Keeping pace with the national strategies for improving maternal, neonatal and child health, the Japan International Cooperation Agency (JICA) is going to initiate a 4-year Safe Motherhood Promotion Project in collaboration with the Ministry of Health and Family Welfare (MOHFW) in the Narsingdi district since July 2006. The project aims to improve the health status of reproductive aged women and neonates through instituting necessary system and measures. Prior to the commencement of the intervention programme, a baseline survey was done to record benchmark information on different aspects of safe motherhood situation in the area. This report presents key findings from this baseline survey.

Materials and methods

This population-based descriptive study collected data from three randomly selected upazilas of Narsingdi district (Sadar, Raipura and Monohordi) using both quantitative (for socio-demographic and knowledge/practice related information) and qualitative (for information on knowledge and practices of various service providers, referral networks, utilization and satisfaction with services) methods. A total of 1,049 respondents, comprising currently pregnant women (n= 545) and mothers of under-one children (n=554), were sampled. To get this number of respondents approximately 7,000 households were surveyed (50 households each from 140 villages). The sample size for the survey was determined using formula for the cross-sectional descriptive study.

Key findings

Knowledge and practices of clients

The mean age of the study population was 23 years, with 10% of the women involved in income-earning activities, mostly in poultry-rearing. Study women on average had seven years of schooling compared to eight years for their husbands. Around 31% of the pregnant women were primigravida. Majority of the women from the two groups had one to two children while 4 to 10% (pregnant mother and mother of child ≤ 1 year respectively) had more than five children. Around 25% of the women had experienced child death, and 1-2% had experienced death of more than two children. Thirty-nine percent of the mothers of children under one year were using any family planning method at the time of survey. Pill (58%) and injection (14%) were the two most common methods used by them. Only 16% of these mothers received counseling on family planning, mostly from community health

workers (69% and 43% respectively for currently pregnant women and mothers of under-one children).

The respondents were to some extent aware about the common pregnancy complications requiring medical attention such as severe nausea (around 45%), anorexia (around 54%) and severe pain in lower abdomen (around 42%). But they were less aware about the more severe life-threatening complications such as bleeding per vagina (around 20%), convulsion (around 12%) and headache (around 20%). This low level of knowledge was also seen when the women were probed about the signs of risky pregnancy.

The respondents stated that they are aware about where to go if there is ante-partum haemorrhage (around 74%) or post-partum haemorrhage (around 90%), and also the places to visit for its management. The Upazila Health Complex (UHC) and the District hospital were the two most frequently mentioned facilities for management of ante-partum haemorrhage (around 46% and 41% respectively) while MBBS doctors were most frequently (around 67%) mentioned for managing post-partum haemorrhage. They have some awareness about the important delivery complications requiring immediate therapeutic attention such as delayed labour (around 75%), mal-presentation (35%), hand/leg prolapse (around 32%), convulsion (around 18%), absence of pain/contraction (15%), etc.

Regarding complications of neonates requiring treatment they mentioned about important conditions like difficulty in breathing (around 60%), fever (around 65%), stoppage of defecation/urination (around 9%), difficulty in breastfeeding (around 15%) and convulsion (around 5%), besides other less important conditions. Knowledge on colostrums feeding was found to be quite high (around 77%) as also the knowledge on immunization. However, a negligible proportion of mothers were found to be aware about the total number of vaccines to be given (7%).

Around 40% of the currently pregnant women had at least one Ante-natal check-up (ANC) visit and 23% had three or more visits. Private hospital/clinic/chamber (25%), Community Nutrition Centre (20%), UHC (10%) and Union Health and Family Welfare Centre (UHFWC) (16%) were some of the places visited by the pregnant women for ANC other than home visits by various community health workers (19%). The ANC was done most commonly by the MBBS doctors (43%), BRAC health workers (34%), and family welfare visitors (20%).

The majority of the delivery of mothers having under-one child was attended by either untrained TBA (43%) or trained TBA (26%). About 36% of the attendants possessed delivery kit. Around 21% of the mothers having under-one child experienced delay in delivery of placenta during last delivery. In majority of the cases, the attendant either herself manually removed the placenta (38%) or advised to call in a doctor (35%). In around 21% cases, the bleeding was substantial but surprisingly no action was taken in 69% of the cases. Similarly, though 22% of these mothers experienced excessive bleeding in the post-partum period, no action was taken in most cases (56%). Only 10% women went for a post-natal check-up (PNC), mostly to an MBBS doctor (54%). Only 13% of these women visited three times or more for PNC.

Majority of the mothers (74%) could not tell the birth weight of the babies. Though colostrum feeding was found to be almost universal, in 42% of the cases some liquid (such as water or honey, etc.) was given before colostrums feeding. Breast milk was given within one hour of birth (52%) and in around 5% of births, it was delayed for as long as three to four days. Exclusive breastfeeding was practiced in 64% of cases while additional feed was given before five months in 41% of the cases. Powdered milk (41%), Cow/goat's milk (46%) or Barley/rice powder (36%) was given as additional feed.

Around 60% of the neonates suffered from illnesses within the first month of birth. Common cold (43%), fever (39%), diarrhea and dysentery (6%), cessation of urination (4%), etc. were some of different illnesses mentioned. Treatment was sought most commonly from MBBS doctors (30%), village doctors/drug sellers (27%), and homeopaths (31%).

Sixty-five per cent of the mothers of under-one child said that they were satisfied with the services received. Suggestions given for improvement of the situation were increasing the number of health facilities (58%), responsiveness of health manpower (64%), free or subsidized medicine or health services (70%), etc.

Knowledge and practices of health care providers

Practice of medical doctors

The government medical doctors are not always available in the government hospitals; instead they do prefer to treat patients in private clinics to supplement their low remuneration. Those who provide services at the hospital are not being able to meet quality standards because of shortage of staff. In hospitals, they usually provide services to the complicated and high-risk pregnant women, complicated delivery cases, mothers with post-natal complications and sick neonates, and perform cesarean section. Sometimes it is not possible to perform cesarean operation because of absence of EOC trained medical doctor. Voices from the community are critical about the government health facilities and doctor-patient interaction. The policy planners should think about the issues of 'doctors' absenteeism' and 'doctor-patient relationship' before indulging in any new initiative.

Knowledge and practice of community health workers

The level of knowledge and practice on safe motherhood and neonatal care among the health professionals was found to be reasonable but there is still room for improvement in areas such as immunization, risk assessment, poly pharmacy, regular household visit, referral and follow-up of clients. As experiences in other countries of South-Asia show, regular monthly visits by FWVs and FWAs will have significant effect on service utilization. The concerned medical doctors and FWVs in district hospital, MCWC and UHC should be trained in EOC to provide effective services in managing obstetric complications.

Knowledge and practices of TBAs

TBAs play a significant role in offering cultural competence, consolation and psychological support to women during childbirth in many cultures including Bangladesh. Though there are many controversies on training of TBA for reducing maternal mortality, in the context of Bangladesh TBA training may be a major part of the proposed safe motherhood initiatives

as this study reveals that they attended most of the deliveries in the community. The TBAs have partial knowledge regarding ante-natal, natal, post-natal and neonatal care, bear misconceptions and carry out harmful practices in managing complications. In order to fill in these gaps, the new TBA training programme should include both trained and untrained TBAs. To make effective use of these human resources, programme need to improve TBA training curriculum, better prepare the trainers, provide supervision of the TBAs post-training, help TBAs publicize their improved skills, and receive compensation for their services. It is also necessary to train the community members on obstetric first aid including prompt recognition of complications, safe and effective response to complications and arrangement to access referral system.

State of maternal, neonatal and child health services

The study reveals that there is little difference in staffing, equipment and services among government health facilities at different level. None, even the district hospital, is able to provide emergency obstetric care (EOC). In general, the quality of maternal and child health services in government hospital is poor. The major problems encountered at the service delivery points include vacant posts; staff absenteeism; shortage of competent staff trained to manage obstetric complication, lack of furniture, equipment and supplies; lack of good record-keeping system; lack of commitment of health providers; and absence of systematic referral system. Experience demonstrate that the community and facility-based approaches need to be linked and should be equipped with adequate logistics, drugs, supplies and human resources. A few issues are of immediate concern, e.g., upgrading UHC with basic obstetric care, and district hospital and MCWC with comprehensive obstetric care; establishing functional referral networks; cost involved in service utilization; and improving doctor-patient relationship and quality of services.

Barriers in services utilization

The major barriers identified in using government health facilities are health brokers, unavailability of medical doctors and very high out-of-pocket expenditure for getting services. To maintain an enabling environment, we should consider brokers as programme advocates and train them as counselors and as media in referral system.

Despite government policy that the public services are provided free of charge, the study revealed that the expenditure for the normal delivery and cesarean operation are similar in public and private facilities. This pattern was found to follow national trend. The median costs of delivery vary considerably by whether there were complications associated with pregnancy and by the type of treatment sought. The median expenditure for deliveries with complications is actually higher in public facilities than in private facilities. This provides part of the explanation why a significant percentage of women opt for the private sector instead of the public sector services. However, innovation of community revolving fund may play a greater role to overcome this barrier. Establishing community revolving fund requires substantial mobilization effort, but where communities are motivated to establish community loan funds, utilization of health facilities for EOC may increase.

Conclusion

The most efficient action for decreasing maternal and neonatal mortality is the implementation of EOC at the primary and secondary level of health system, skilled care at delivery, and effective referral system (WHO, 2003; Piaggioet et. al., 2000; Vanneste et. al., 2000). To reduce maternal mortality and improve the health and well-being of mothers and neonates, the policy makers and health planners need to recognize that the objectives of safe motherhood initiative cannot be realized by existing state of services. Therefore, the provision of EOC services, upgrading existing health facilities, building functional network, deployment and retention of adequate number of trained health professionals, reducing know-do gap among the community people, and strengthening collaboration between government, NGO and private sector health facilities will be essential to bring out a sizeable decline in maternal mortality and morbidity in rural Bangladesh.

1

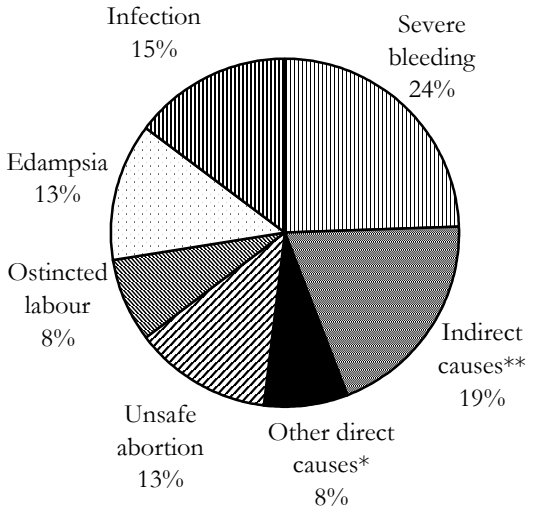
Introduction

"Preventable death and disability among mothers and expectant mothers is an all-encompassing tragedy: for families, for communities, for societies, and for children"

- Carol Bellamy, 1998

Safe motherhood means ensuring that all women receive the care they need to be safe and healthy throughout pregnancy and childbirth (Safe Motherhood 2006). Most maternal deaths are due to five major medical causes such as severe bleeding, infection, unsafe abortion complications, hypertensive disorder of pregnancy, and obstructed labor (Fig. A).

Figure A. Causes of maternal deaths



* Other direct causes including, for example: entopic pregnancy, embolism, anesthesia related
** Indirect Causes including, for example: anemia, malaria, heart disease
Source: "Maternal Health around the World" poster. World Health Organization and the World Bank 1997.

Every year, 200 million women become pregnant worldwide. Although most pregnancies of healthy mothers end with the birth of a live baby, on many occasions childbirth is a time of pain, fear, suffering, and even death (Khoum et al. 2000). It is estimated that annually 529,000 women die globally from complications of pregnancy and childbirth - about one woman every minute. More than 60% of maternal deaths take place immediately after delivery, with more than half occurring within a day of delivery (Safe Motherhood 2006). An estimated 40% or more pregnant women – 50 million each year – experience pregnancy related morbidities during and after child birth. Fifteen percent of these women often suffer from long-term morbidities, such as uterine prolapse, fistula, pelvic inflammatory disease, and infertility (Safe Motherhood 2006).

Maternal death and disability are the leading cause of healthy life years lost for women of reproductive age in developing countries, accounting for more than 28 million disability-adjusted life years (Daly's) lost and at least 18% of the burden of disease in these women (Reproductive Health Outlook 2006). Approximately 99% of the said maternal mortality and morbidities occur in developing countries. The risk of dying from pregnancy-related complications is highest in sub-Saharan Africa and in South-central Asia. A mother's death carries profound consequences on child survival. In some developing countries, if the mother dies, the risk of death for her under-5 children is doubled or tripled.

1.1 Barriers to care

Millions of women do not have access to good quality health services during pregnancy and childbirth – especially women who are poor, uneducated, or who live in rural areas especially developing countries.

- Almost 35% of women in developing countries receive no ante-natal care during pregnancy; in some countries, ante-natal coverage is as low as 26%;
- Approximately half of all deliveries in developing countries take place without a skilled attendant, with rates in some countries as high as 85%;
- 70% of women receive no post-partum care in the six weeks following delivery;
- Distance from formal health facilities, lack of transport, hidden costs (transport, drugs, medical supplies, food and lodging), interaction with providers, and socio-cultural factors (lacking decision making power, tradition, family role, law) often limit women's access to receive care for safe motherhood.

(Safe Motherhood 2006).

1.2 Safe motherhood initiative

The international "Safe motherhood initiative" launched in 1987 to improve maternal health and cut the number of maternal deaths by half by the year 2000. However, centered around high risk screening and traditional birth attendant training, the initiative proved to be futile in reducing the high level of maternal mortality in the poor developing countries (Graham 1998). It happened because it ignored two crucial aspects of pregnancy-related complications: their frequently unpredictable and unpreventable nature, and their requirement for prompt medical interventions. It has been shown that maternal mortality is effectively addressed only by institutionally-based medical interventions (Maine and Rosenfield 1999). The importance of a functioning health system for addressing issues related to the mother and child health is also emphasized by the Task Force on Child Health and Maternal Health of the UN Millennium project (Freedman et al. 2005). This is to be achieved through building a functioning primary health care system from first referral facilities to the community level, and would ensure equitable access to safe delivery and essential neonatal/child health care services (Freedman et al. 2005).

With respect to the health of women and children, especial emphasis is given on the safe motherhood while addressing reproductive health issues from a rights-based perspective following International Conference on population and Development in 1993 (ICPD) and Women's Conference in Beijing in 1994. International commitment to reducing maternal

mortality was reaffirmed in December 2000 when 149 government leaders from 191 United Nations member states committed themselves to achieving a set of Millennium Development Goals (MDG, see www.un.org/millennium goals/) by 2015. Reducing maternal mortality by three-quarters from its 1990 level is one of these key goals.

In January 2004, the Partnership for Safe Motherhood and Newborn Health was established to promote the health of women and newborns, especially those who are most vulnerable. This group is expanding the scope of the global Safe Motherhood Initiative and aims to strengthen global, regional, and national maternal and newborn health efforts, in the context of equity, poverty reduction, and human rights. The high level meeting at Delhi aimed to mobilize national and international commitments to an integrated maternal, neonatal and child health agenda (Delhi Declaration 2005).

1.3 Safe motherhood: the Bangladesh scenario

Bangladesh has experienced remarkable improvements in maternal, neonatal and child health status over the last three decades (Table A).

Table A. Infant, neonatal and maternal mortality in historical perspective, Bangladesh

	1972-'73	1993-'94	2004
Maternal Mortality Ratio (MMR) (/1000 live births)	30	6	3.2
Neonatal Mortality Rate (NMR) (/1000 live births)	---	52	41
Infant Mortality Rate (IMR) (/1000 live births)	150	87.4	65
Under-five Mortality Rate (U-5 MR) (/1000 live births)	---	133.1	88

Source: First Five-year plan (1972-'73); NIPORT, Mitra and Associates and ORC Macro (2005 and 1993-'94); NIPORT, ORC Macro, JHU, ICDDR,B (2003)

Despite this progress, the state of maternal, neonatal and child health is still poor in Bangladesh. At present, about 12,000 women die each year from maternal causes and the MMR is unacceptably high compared to other developing countries (NIPORT, Mitra and Associates, & Macro International Inc. 2003). The following conceptual framework outlines that maternal death is caused by a complex interplay of direct, indirect and other related factors (Fig. B).

Causes of maternal mortality per 1000

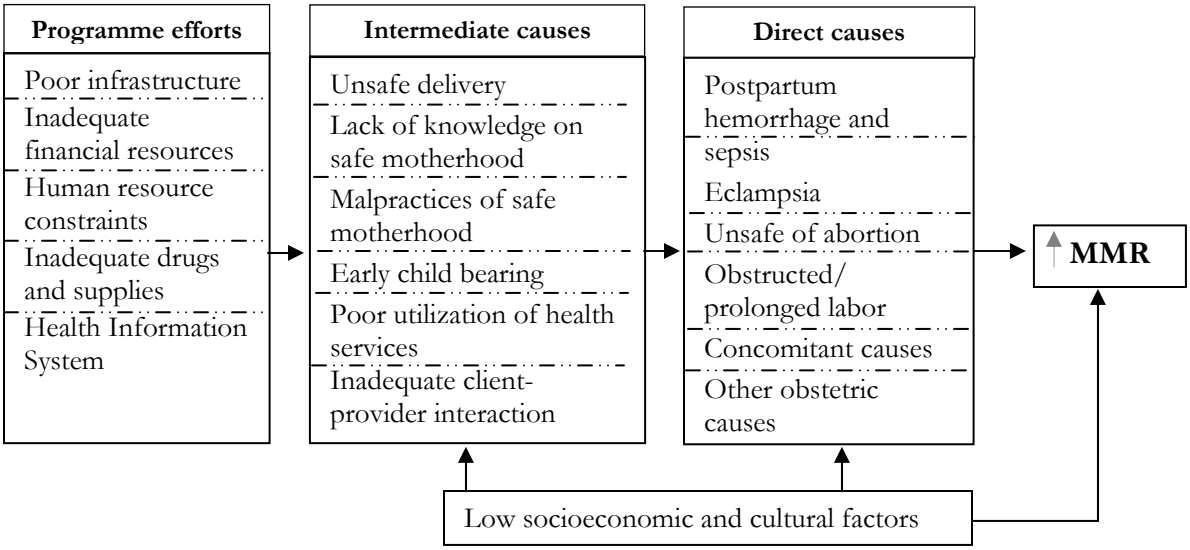
▪ Haemorrhage	0.105
▪ Eclampsia	0.088
▪ Abortion	0.018
▪ Sepsis	0.013
▪ Obstructed labor	0.019
▪ Other obstetric Causes	0.11
▪ Anemia	0.014
▪ Cardiovascular cause	0.002
▪ Respirator causes	0.013
▪ Unspecified	0.026

Source: BMMS, 2001

Direct causes

Over three quarters of all maternal deaths in Bangladesh are due to direct obstetric complications which needs timely and adequate medical intervention. About one-sixth of the total maternal death in rural Bangladesh is due to unsafe abortion and related complications (Alauddin 1986). Signs of sepsis accompanied 85% of all abortions. Unmarried women accounted for 36% of all complications of induced abortion (Fauveau et al. 1988). Percentages of maternal death from eclampsia vary from 12 to 53% in different studies. The proportion of death caused by eclampsia decreases with age (Fauveau et al. 1988).

Figure B. Conceptual framework for maternal death



Source: Fauveau et al., 1988; NIPORT, Khan et al., 1985; Mitra and Associates, & Macro International Inc, 2003; Streatfield et al, 2003; World Bank 2003; Chaudhury and Hammer 2003.

Haemorrhage comprises 20 to 29% of all direct obstetric causes (Fauveau et al. 1988; NIPORT, Mitra and Associates, & Macro International Inc. 2003). Death due to obstructed labor varies from 6.5 to 17% which comprises complications of malpresentation, cephalopelvic disproportion, inability to expel fetus, retained placenta (Fauveau et al. 1988; Khan et al. 1985).

Intermediate causes

A number of intermediate causes were identified that enhance the direct causes. Eighty percent of all maternal deaths occur as a result of unsafe delivery. Unsafe delivery means delivery by untrained personnel as home. In Bangladesh more than 90% of the deliveries take place at home by traditional birth attendants (75.6%) and relatives (10.8%) (Akhter 1996). Use of service facilities for maternal, neonatal and child health care is low. Despite having infrastructure to reach antenatal care to the grassroots, only 41% of the pregnant women seek antenatal care (Streatfield et al, 2003). Only 8% of births take place at hospitals and 4.8% of pregnant women are reported to receive a total package of obstetric care, namely, ante-natal, delivery and post-natal care. Doctors, trained nurses or midwives assist only 13% of births. Sometimes distance of the health service facility from home and lack of transportation facilities in rural area act as obstacles to seeking care (NIPORT, Mitra and Associates, and Macro International Inc. 2003). Inadequate interaction between clients and providers also act as a barrier of seeking care. Too often health care providers are rude, unsympathetic, and uncaring. They often do not respect women's culture preference.

Although awareness of the benefits of ante-natal care is high among pregnant women (85%), this knowledge has not been translated into care-seeking behaviour. Early Childbearing is another important risk factor for maternal death. About 22% of women give births before reaching the age of 20 (NIPORT, Mitra and Associates and ORC Macro 2005). In rural areas 35% of the adolescents are childbearing.

Lacking program efforts aggravates the direct causes of maternal mortality through intermediate causes. The role of the state is crucial to improve health service provision and utilization. However, serious problems affect the capacity of the health sector to deliver appropriate, affordable services which correspond to people's need. This include financial allocation, lack of political commitment of the state, over-centralised decision making, transfer of health personnel, political interference in recruitment process, failure of supervisory and regulatory system, and illegal payment extracted from clients.

The health sector suffers from a combination of insufficient trained health care professionals and an imbalance of trained professionals in the areas where they are most needed. The overall health service consumption (from any source) in Bangladesh is low compared to other developing countries as well as level of need (World Bank 2003, Mercer et al. 2005). Also, the number of qualified physicians and nurses in Bangladesh is quite low, compared to other low-income countries. For example, in 1998 Bangladesh had 19 physicians and 11 nurses per 100,000 population compared to 73 and 132 respectively for low-income countries and 286 and 750 respectively for high-income countries (Cockcroft et al. 2004, p25). Around 26% of professional posts in rural areas remain vacant (Chaudhury and Hammer 2003). Ensor et al. (2002) found that overall levels of per capita consumption of essential service package (ESP) would have to increase by 40% in order to achieve the higher average level of other developing countries.

Inadequate financial resource is a prominent barrier in meeting the MDGs. Only 6.9% of the total budget is allocated for the health sector. In 1998 the total government health expenditure per capita was $4 only (NIPORT, Mitra and Associates, and ORC Macro 2005). The maternal health services are at present inadequate. Referral systems for obstetric emergencies are week and non-existent due to lack of second level facilities and trained staff to handle them. The GoB has a maternal health strategy which is rolling out nationally. The suggested strategy for developing comprehensive emergency obstetric care in public facilities is still lower than the actual need. The most functional health facilities do not have sufficient essential drugs to meet their actual needs, since the budgetary allocation for the procurement of drugs was very small. In 1997, a sample of remote health facilities revealed that 8% of essential drugs needed at those levels were available (WHO 1997). In some unions[1], the qualified medical doctors (having MBBS degree) are posted, but obstetric first aid is virtually absent at union level (WHO 1996).

1.4 Socioeconomic and cultural factors

Besides a functioning and responsive health system, poverty, lack of education and low status of women are the basis of high maternal mortality and morbidity in the country. Women are lacking power to make choices about their health and lives, with negative consequences for maternal health. Even when women recognized life-threatening complications, they did not utilize a facility because of "too much cost" (NIPORT, Mitra and Associates, and Macro International Inc. 2003). In Bangladesh, this may be due to the prevailing patriarchal norms which discourage women to be treated by male providers (Schuler et al. 2002) in a scenario where available healthcare providers are predominantly males. In rural Bangladesh, women also require to take permission from husbands or in-laws, and also find someone to accompany them, before seeking out care from qualified providers (Levin et al. 2001, Streatfield 2001).

[1] An administrative unit covering about 25,000 populations. An upazila usually have 8 to 10 unions.

2

The baseline survey

In response to the prevailing state of maternal, neonatal and child mortality in the country, the government of Bangladesh has taken a sector-wide approach together with poverty reduction strategies, focusing on maternal and child health to attain the MDGs (Ministry of Health and Family Welfare 2005). Keeping pace with the national strategies, the Japan International Cooperation Agency (JICA) plans to provide technical support to the Ministry of Health and Family Welfare (MOHFW) to initiate a 4-year Safe Motherhood Promotion Project in Narsingdi district. The project will commence from July 2006. The project aims to improve the availability and utilization of quality services for women during their pregnancy and delivery which can be realized by the strategies of public-private partnership, capacity development of the MOHFW and community empowerment.

Before starting the intervention programme, a baseline survey was done to record benchmark information on different aspects of safe motherhood situation in the area. These will help programme develop informed intervention components, approaches and strategies for safe motherhood initiatives, and provide necessary data for future evaluation of the project.

2.1 Objectives

The objective of the baseline survey is to analyze situation of safe motherhood at Narsingdi district before starting the proposed project. To achieve this objective the following activities were undertaken.

1. Study the knowledge, skills and practices of maternal, child health and family planning (MCH-FP) officers on management of safe motherhood in connection with local level planning;
2. Study villagers' (women, husbands and in-laws) knowledge, perception and practices with respect to safe motherhood (pregnancy identification, high-risk pregnancy, when and where to refer and safe delivery) and neonatal care;
3. Assess community needs/demands for safe motherhood services;
4. Examine the state of ante-natal, natal and post-natal care services at the satellite clinics, upazila health complexes and district hospitals;
5. An inventory of private health services on safe motherhood, especially the services provided by TBAs, village doctors and sales person at drug retail outlets;
6. Analyze relationship between family planning and health wings, and between the government and the NGOs at local level;
7. Identify current referral networks and supervisory system for safe delivery and neonatal care; and
8. Study current management information system (MIS) of local government and NGO health services.

3

Materials and methods

This is a population-based descriptive study where data were collected using both quantitative and qualitative methods. The quantitative survey collected information on socio-demographic characteristics of the households having pregnant women/mothers of under-one children and their knowledge and practice on family planning, ante-natal, delivery, neonatal and post-natal care and other related issues such as breastfeeding and weaning food for infants. Besides, qualitative methods such as informal group discussion, observation and in-depth interview were done with various cadres of service providers to elicit their knowledge and practices related to maternal, neonatal and child health.

3.1 Study site

The study was conducted in the three out of six *upazilas* (Narsingdi sadar, Raipura and Monohordi) of Narsingdi district where JICA will initiate the new project 'Safe motherhood promotion' project. During 1999-2004 JICA has already completed a pilot project on 'human resource development in reproductive health and strengthening services for emergency obstetric care' in Sadar and Palash *upazilas*. In these areas, all the three core programmes (micro-finance, health and education) of BRAC are in place and there is a sense of trust and rapport already established in the community vis-à-vis BRAC.

3.2 Study population

The baseline survey primarily addressed the community-based married women of reproductive age (15-49 years) who were currently pregnant or mothers of under-1 children. The baseline survey also included the service providers who were involved in the safe motherhood service delivery system including maternal, child health and family planning officers, *Shasthya shebika* (community health volunteer of BRAC health programme), skilled/ traditional birth attendants (TBA), family welfare visitors (FWV), village doctors (*Palli Chikitsok)* and sales person at drug retail outlets. Moreover, the survey included stakeholders such as husbands and in-laws, who play important roles in the decision-making process for safe motherhood.

3.3 Sampling

This is a multi-stage cross-sectional study where the study areas were selected randomly from Narsingdi district**.** A total of 1080 respondents (comprising currently pregnant women and mothers of under-one children) were sampled and to get this number of respondents, approximately 7,000 households were surveyed (50 households each from 140 villages). The households were surveyed anticlock-wise from the entry point in the village until 4-5 pregnant women and 4-5 mothers were found.

The sample size for the survey was determined using formula of the cross-sectional descriptive study. The sample size $n_0 = (Za+Zb)pq/a^2$ or $n=n_0/1+n_0/N$. According to Bangladesh Demographic and Health Survey (2004), the rates of pregnancy and under-1 children were 3.1% and 2.5% respectively. However, in sampling calculation we used a rate of 5% for both groups of respondents as we assumed that there may be some error in selection procedure of pregnancy cases. We considered the level of significance Za= 95%, power Zb= 80%, admissible error a = 2%, and non-response rate of 10%. Accordingly, the sample size was 540 each for pregnant women and mothers of under-1 children. Thus, the total sample size was 1,080.

3.4 Qualitative interviews

This consisted of in-depth interviews to elicit views, perception and practice of stakeholders towards safe motherhood promotion and involved 5/6 concerned medical officers of local government health system and BRAC, 5 family welfare visitors and 5 health assistants, selected by strategic sampling techniques (Table B). The strategic technique means that informal discussion with the community people help to find out the appropriate persons to interview with. Focus Group Discussion (FGD)/informal group discussion with 7 women, 7 husbands, 7 mothers-in-law, 12 TBAs and 12 SSs were conducted to get their knowledge, views and perception towards safe motherhood, and recommendations about the designing and implementation of user-friendly safe motherhood services.

We also observed the health facilities to assess the process of service delivery, status of ANC and PNC, status of neonatal care, physical facilities, adequacy and competency of staff, and service availability and quality of care provided at those facilities.

Table B. Type and category of health providers to be interviewed

Types of respondents	Institution/ organization	Methods	# of respondents
Medical doctor	District Hospital	In depth-interview	2
	MCWC		1
	UHC		2
	Marie Stopes Clinic		1
	BRAC shushasthya		1
	Private clinic		1
Family Welfare Visitor (FWV)	Family welfare centre (5 Union)	In-depth interview	5
Family welfare Assistant (FWA)	Family welfare centre	In-depth interview	2
Health Assistant (HA)	Family welfare centre	In-depth interview	2
Community health worker (Shasthya Shebika)	BRAC	2 Group discussions	12
Untrained TBA	Private sector	2 FGD	11
Trained TBA	Private sector	1 FGD	4
Village women	Community	1 FGD	7
Mothers-in-law	Community	1 FGD	7
Husband	Community	1 FGD	7

3.5 Study variables

The dependent variables included mothers aware about safe motherhood, mothers who have received ANC/PNC, and delivery attended by skilled birth attendants. The independent variables encompassed socioeconomic status (SES) of the respondents, their knowledge on safe motherhood services and neonatal care, complications arose during pregnancy and delivery, when and where to refer (people and places), utilization of existing maternal (antenatal, natal and postnatal care) and neonatal health service facilities, quality of care, current health management and information system, community needs for safe motherhood services, respondents' suggestions for designing user-friendly safe motherhood services, and relationship between family planning and health wing, and government and NGO health system.

The utilization of health facilities was measured by number of pregnant women who have received ante-natal care, number of ante-natal visits, number of high-risk mothers identified and services provided for them, number of facility-based delivery, number of mothers referred to for any complications, number of mothers who have received post-natal care, and number of neonatal infections treated.

The quality of care offered at the existing health care facilities was measured by providers' competency, provider-patient relationship, and clients' satisfaction.

3.6 Data collection and quality control

A structured questionnaire was developed encompassing the said variables. The questionnaire was thoroughly pre-tested, modified and edited on the basis of feedback received before finalization. Twenty-four enumerators collected quantitative data within one month.

A guideline was developed for qualitative data collection. One anthropologist, one field researcher and three data collectors were responsible for qualitative data collection which required three months.

In order to ensure quality a four-layered monitoring system was developed. The first layer was composed of three team leaders who monitored activities of their respective teams. Their work in turn was cross-checked by three rotating monitors who interchanged their places at an interval of three days. The whole field activities were controlled and monitored by a field supervisor. Lastly, the researchers at the head-office monitored field activities through field visits at regular intervals.

3.7 Data analysis

Data were stored and analyzed using SPSS version 11. Analysis was done in two stages. Firstly, bi-variate analysis was done to analyze the situation with regard to knowledge, practice, community demands and quality of care provided at the existing facilities. Secondly, a log regression was run to see the effect of any third variables on it.

The qualitative interviews were coded and categories were identified. The analysis provided an overview of knowledge, perceptions, and attitudes of both primary and secondary study population on safe motherhood and provided possible explanations of the quantitative findings.

4

Knowledge and practice of clients

Results are presented according to the two groups of study women: the pregnant mother group and the mother of child under one year group.

4.1 Socio-demographic characteristics

Table 1 shows the socio-demographic characteristics of the study population. The study population was at the prime of their reproductive age (mean age 23 years for both groups of women). Plausibly, pregnancy and motherhood peaked in the age group 19-35 years. Majority of the women were literate and had on average seven years of schooling. Around 10% of the women were involved in income-earning activities, mostly in poultry rearing (44% and 28% respectively among the pregnant and mother of child under-one year groups).

Table 1. Socio-demographic characteristics of the study population (%)

	Pregnant mother	Mother of child < 1 year
Age (years)		
< 18	23.1	13.9
19 – 35	74.3	81.9
>35	2.6	4.2
Mean	23.0	24.1
Religion		
Muslim	96.3	93.9
Non-Muslim	4.9	6.1
Literacy		
Literate	70.1	69.0
Illiterate	29.9	31.0
Educational status		
Primary	36.6	43.2
Secondary	51.3	42.4
SSC pass	7.9	9.9
HSC pass	4.2	4.2
Mean years of schooling	6.8	6.9
Involved in income-earning	9.2	11.7
Type of income-earning work		
Household based work (e.g., knitting, basket making etc.)	12.0	26.2
Poultry rearing	44.0	27.7
Tailoring	20.0	23.1
Others	24.0	23.1
BRAC member	15.2	13.0
N	545	554

4.2 Literacy and occupation of the husbands

Majority of the husbands of these women were literate (around 63%) and had on average eight years of schooling (Table 2). Wage-labour (around 39%), followed by small trade (22%) were the main economic activities pursued by them.

Table 2. Characteristics of the husbands of the study population (%)

	Pregnant mother	Mother of child < 1 year
Husband's literacy		
Literate	63.9	62.5
Illiterate	36.1	37.5
Husband's educational status		
Primary	37.9	37.0
Secondary	40.2	38.4
SSC pass	8.9	11.3
HSC pass	5.5	6.6
BA pass	6.9	5.2
Literate, but did not attend school	0.6	1.4
Mean years of schooling	8.0	8.7
Husband's main occupation		
Wage-labor	38.2	40.2
Farming	17.6	17.7
Small trade	23.7	22.6
Service	10.5	10.1
Other(s)	10.0	9.4
N	545	554

4.3 Reproductive history and family planning

4.3.1 Reproductive history

Findings reveal that around 31% of the pregnant women were primigravida (Table 3). Majority of the women from the two groups had one to two children while 4 to 10% (pregnant mother and mother of child ≤1 year respectively) had more than five children. Around 25% of the women had experienced child death and 1-2% had experienced death of more than two children. Around 40 to 46% of the women expressed their desire for more children, and majority of them (around 72%) would like to wait for 3-5 years for the next child. This period is also expressed as the ideal birth interval by majority of the women (>80%).

Table 3. Reproductive history of and perception of family making of the study population %

	Pregnant mother	Mother of child < 1 year
Reproductive History		
Children ever born		
None	30.8	---
1 – 2	45.3	51.8
3 – 5	20.0	38.1
≥ 6	3.9	9.6
Children dead		
None	76.3	72.7
1	17.4	19.1
2	4.8	5.2
≥ 3	1.5	2.9
Wants more children	45.9	39.5
Expected birth interval for that child in years (from the birth of the last child)		
1 – 2	9.6	9.6
3 – 5	75.2	70.3
≥ 6	11.6	16.4
Don't know	3.6	3.7
Reason(s) for not wanting more children*		
Have enough children	33.9	40.9
Can't provide subsistence	35.3	34.6
One/two child(ren) is/are sufficient	39.0	31.9
Other(s)	3.7	3.3
Perceived ideal birth interval between two children		
1 – 2	3.1	4.0
3 – 5	80.9	80.7
≥ 6	14.5	14.1
Don't know	1.5	1.3
N	545	554

*multiple responses considered

4.3.2 Family planning

Women from both groups were highly receptive to the idea of family planning and they also expressed the desire to use family planning methods in future (Table 4). Thirty-nine percent of the mother of child under one year was using any family planning method at the time of survey. Pill (58%) followed by injection (14%) were the two most common methods used by them (Fig 1). Only 16% of these mothers received counseling on family planning, mostly from community health workers (69% and 43% respectively for the two groups) (Table 4).

Table 4. Family planning practices of the study population (%)

	Pregnant mother	Mother of child < 1 year
Attitude towards Family Planning (FP)		
Good	95.8	94.6
Not good	4.2	5.4
Currently using any FP method	0.0	38.6
Plan to use FP in future	95.8	96.0
N	545	554
Received counseling on FP in last three months	9.9	16.2
Person counseling		
Relative/neighbor	6.3	16.0
SS/CNP	68.8	42.7
FWV/FWA	25.0	42.7
Don't remember	0.0	1.3
N	48	75

Figure 1. FP methods used by mothers of child <1 year (%)

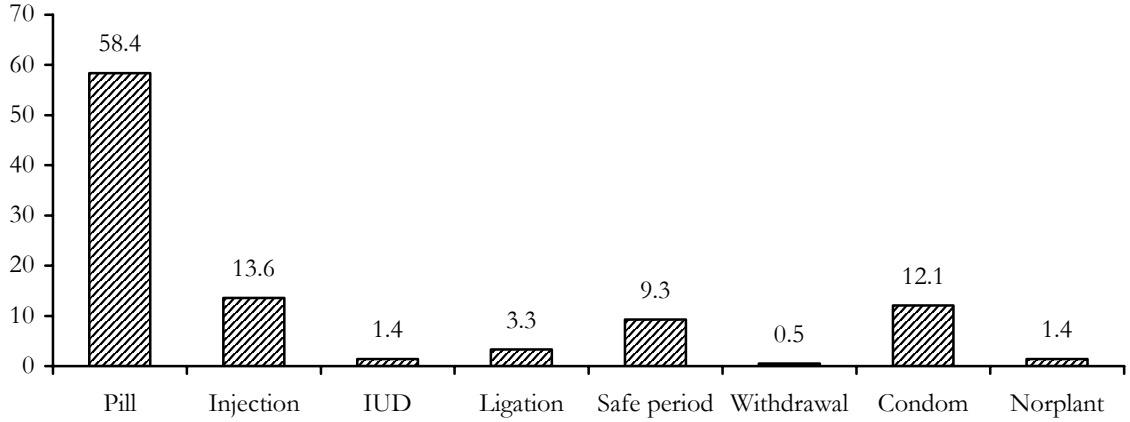
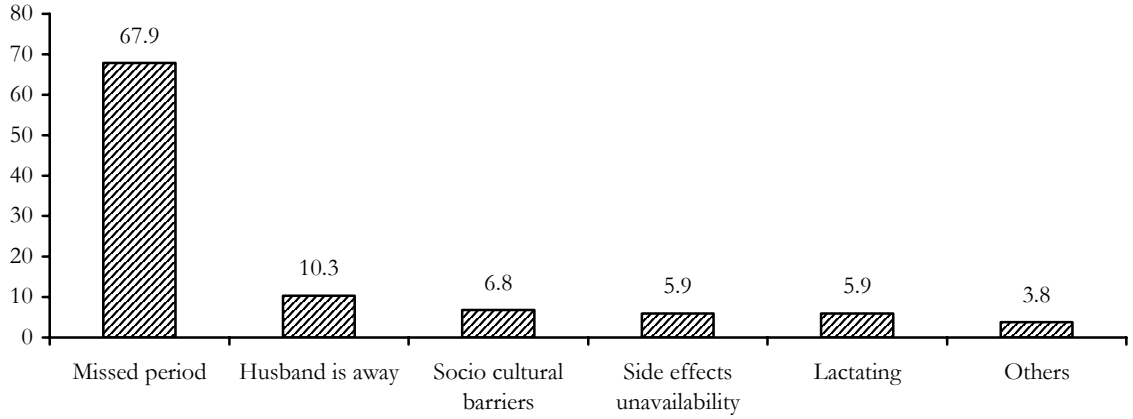


Table 5. Knowledge of the study population on use of oral Pill (%)

	Pregnant mother	Mother of child < 1 year
Total no. of pills to be taken in a month		
Twenty-eight (correct)	18.2	22.6
Thirty	34.5	32.3
Other	9.2	10.8
Don't know	38.2	34.3
If misses two pills consecutively, the woman should		
Take extra pill(s)	41.3	47.1
Use another method till next cycle (correct)	7.2	8.1
Take the remaining pills regularly (correct)	6.1	5.6
No action to be taken	1.3	1.1
Advice from health care providers	1.3	1.4
Other(s)	3.1	4.3
Don't know	39.8	32.3
N	545	554

Figure 2. Reasons for not using any FP method(s) currently by mothers of child <1 year (%)



4.3.3 Use of oral pill

While investigating the knowledge on the most common family planning method, more than one-third of the study population did not know about the total number of pills to be taken (Table 5). This was also true for action to be taken when one missed two pills consecutively. Figure 2 shows reasons for not using any FP methods currently by mothers of under-one child.

4.4 Mother's knowledge on pregnancy, delivery, post-partum and neonatal care

4.4.1 Immunization

The knowledge on taking tetanus toxoid (TT) vaccine during pregnancy was almost universal (Table 6). However, approximately 60% could correctly mention the number of TT doses. Similarly, 60% could correctly state the type of immunization to be given during pregnancy.

Table 6. Knowledge of study population on immunization during pregnancy (%)

	Pregnant mother	Mother of child < 1 year
Knows about Tetanus Toxoid (TT) Injection during pregnancy	98.5	99.5
No. of times TT should be taken		
Once	5.4	6.0
Twice	24.4	26.0
Three or more	60.7	61.9
Don't know	9.5	6.2
Types of immunization to be given		
Tetanus Toxoid (TT)	58.8	59.9
Don't know	38.7	38.8
Others	4.8	3.3
N	541	552

4.4.2 Food during pregnancy

When asked about the type of food to be taken during pregnancy, the mothers gave varied responses (Table 7). Most commonly mentioned items were milk (56%), Vegetable (93%), Fruits (68%) and eggs (63%).

Table 7. Knowledge of study population on immunization during pregnancy (%)

	Pregnant mother	Mother of child < 1 year
Knows about the type of food to be taken during pregnancy	99.3	99.6
Types of food to be taken (multiple responses)		
Milk	55.9	57.2
Water	4.6	3.8
Meat	31.6	33.2
Vegetable	92.8	93.8
Fruits	70.6	66.7
Eggs	64.5	63.0
Fish	33.6	34.2
Other (rice, lentils, tea, liver, Horlicks etc.)	16.5	21.6
N	541	552

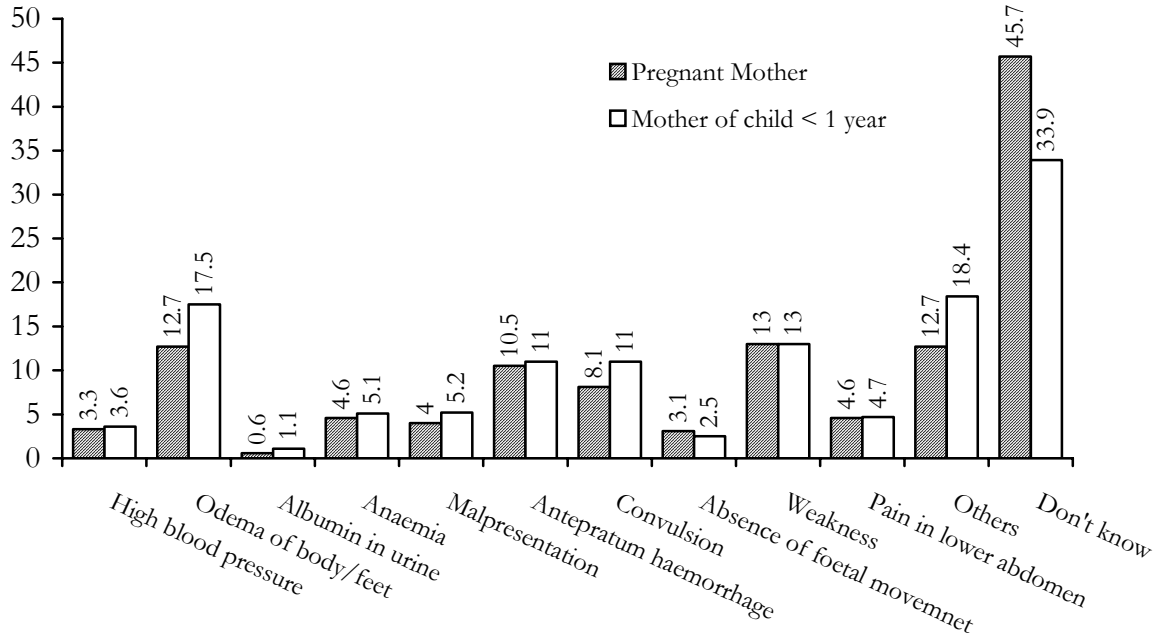
4.4.3 Illnesses during pregnancy and signs of risky pregnancy

The respondents were somewhat aware about the common, less severe, pregnancy complications requiring medical attention such as severe nausea (45%), anorexia (54%), and severe pain in lower abdomen (42%) (Table 8). However, they were much less aware about the more severe, life-threatening complications such as bleeding per vagina (20%), convulsion (12%), and headache (20%).

Table 8. Knowledge of the study population on illnesses during pregnancy (%)

	Pregnant mother	Mother of child < 1 year
Illnesses during pregnancy which may need medical treatment (multiple responses)		
Fever	15.6	14.8
Suffocation	4.2	2.2
Bleeding per vagina	18.0	22.4
Swelling of hands/feet	9.0	14.4
Convulsion	10.5	15.0
Pale eyes/weakness/anemia	51.9	48.7
Headache	22.4	16.8
Severe pain in lower abdomen	54.3	50.5
Vertigo/dizziness	27.0	27.8
Severe nausea	43.7	46.2
Anorexia	55.0	52.3
Excess/absence of foetal movement	2.9	7.0
Malpresentation	3.5	5.2
Other(s)	22.4	16.4
Don't know	3.5	2.2
N	545	554

Figure 3. Signs for identifying a risky pregnancy (%)



This low level of knowledge was also seen when the women were probed about the signs of risky pregnancy such as oedema of body/feet (15%), albumen in urine (0.6%), breech presentation (2.5%), ante-partum haemorrhage (10%), convulsion (9%) (Fig. 3).

4.4.4 Intra-partum and post-partum haemorrhage

The respondents were quite knowledgeable about where to go in case of bleeding during pregnancy (Table 9). Only a negligible few (4%) stated that they either did not know what to do or thought that no action was necessary.

Table 9. Knowledge of study population on bleeding during pregnancy (%)

	Pregnant mother	Mother of child < 1 year
Knows about places to visit if bleeding occurs during pregnancy (multiple responses)		
District hospital	40.7	41.9
Maternity centre	5.5	5.5
Upazila Health Complex (UHC)	45.2	47.6
Private hospital/Gynecologist	22.1	18.5
BRAC Health Centre (*Susasthya*)	6.8	7.3
Family Health Clinic	13.6	11.6
Informal health care providers	10.8	11.8
Visit others (SK, CNP, FWV etc.)	5.0	4.0
No action to be taken/Don't know	4.8	2.6
N	398	422

Majority of the respondents (65-70%) stated that they would go to an MBBS doctor if bleeding occured following delivery (post-partum haemorrhage) while around 35% stated their ignorance

about the places to go for help (Fig 4). They were also quite aware about important delivery complications requiring immediate therapeutic attention such as delayed labour (75%), mal-presentation (35%), hand/leg prolapse (32%), convulsion (18%), absence of pain/contraction (15%), etc. (Table 10).

Figure 4. Knowledge about places to visit if bleeding occurs following delivery (%)

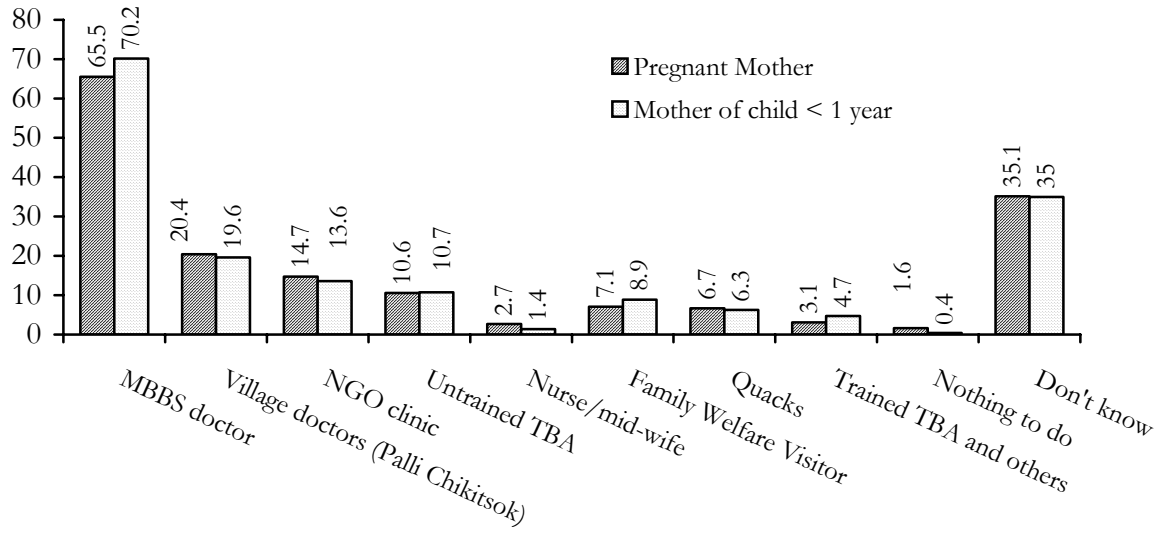


Table 10. Knowledge of the study population on complications during pregnancy which require urgent medical treatment (Multiple responses considered) (%)

	Pregnant mother	Mother of child < 1 year
Complications during pregnancy which may need medical treatment		
Excessive bleeding	16.1	20.0
Hand/leg prolapse	30.6	33.0
Mal-presentation	35.6	35.2
Delayed labor (>12 hours)	74.3	76.0
Retained placenta	9.9	10.5
Convulsion	17.1	19.0
Uterine os is small/not open	3.9	5.1
Absence of pain/contraction	17.4	14.3
Ruptured/leaking membrane	2.8	6.0
Others (high fever, foul discharge, cord prolapse, cord strangulation etc.)	20.9	21.1
Don't know	5.1	1.8
N	545	554

4.4.5 Complications of the neonates

Knowledge of the respondents on complications of neonates requiring treatment was found to be quite exhaustive (Table 11). They mentioned about important conditions like difficulty in breathing (60%), fever (65%), stoppage of defecation/urination (9%), difficulty in breastfeeding (15%) and convulsion (5%), besides other less important conditions. The respondents stated that they would visit MBBS doctors mostly (62%), beside others like government hospital (30%), village doctors (27%), and traditional healers (12%) (Fig. 5).

Table 11. Knowledge of study population on neonatal complications requiring treatment (Multiple responses) **(%)**

	Pregnant mother	Mother of child < 1 year
Perceived knowledge about complications of a neonate which require treatment		
Can't have breastfeed/decrease in breastfeeding	13.4	15.9
Diarrhoea	22.2	21.5
Red eye with discharge	2.6	5.1
Difficulty in breathing	64.4	57.8
Jaundice	23.5	21.7
Decrease in body temperature/shivering	10.3	16.4
Blisters/infection in skin	7.5	8.3
Fever	66.6	67.1
Suction of chest cage	7.5	7.8
Stoppage of defecation/urination	10.3	7.8
Measles	25.3	27.8
Convulsion	6.4	5.1
Common cold	55.8	49.1
Others	27.3	31.8
Don't know	1.7	0.5
N	545	554

4.4.6 Care of mother following delivery

Mother's care following delivery such as providing nutritious food (90%) and maintaining cleanliness (99%) was well known but other care like taking adequate rest (17%) and avoiding heavy work (13%) was less known to the respondents (Table 12). They were also aware about the kind of food that was necessary to increase breast milk (98%). They named some of these food - vegetable (77%), fish (79%), milk (60%), fruits (38%) meat (35%) and so on.

Figure 5. Places to visit for management of neonatal complications (%)

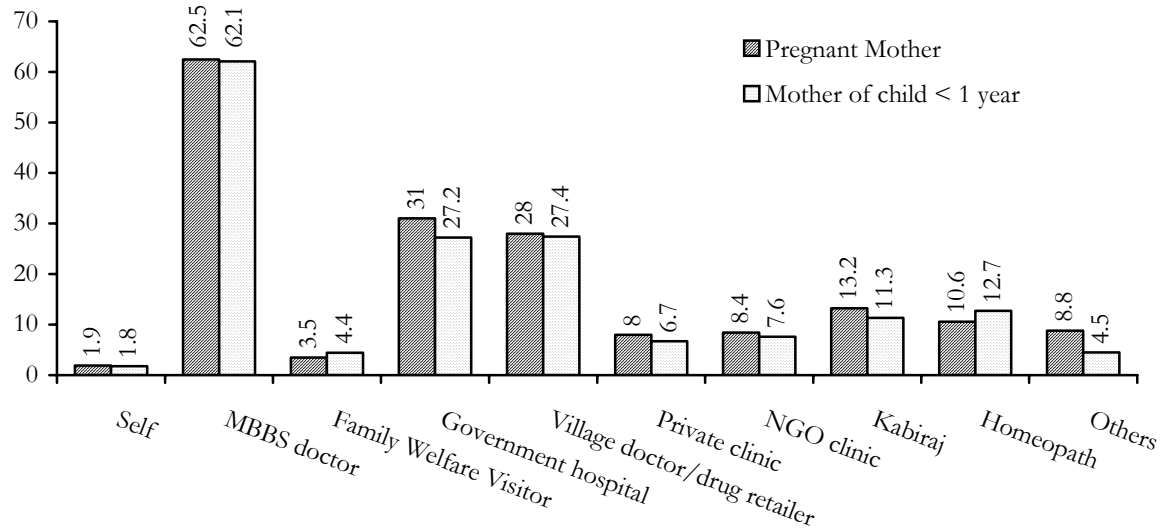


Table 12. Knowledge of the study population on maternal care following delivery (%)

	Pregnant mother	Mother of child < 1 year
Care of mother to be taken after delivery (multiple responses)		
Intake of nutritious food	89.4	91.9
Use of clean clothes	15.6	15.5
Maintain cleanliness	65.1	64.1
Adequate rest	16.7	18.4
Avoid heavy works	14.3	11.6
Other	19.6	19.7
Don't know	4.4	2.3
Knows about kind of food necessary for increasing breast milk	98.0	99.1
Kinds of food necessary for increasing breast milk (multiple responses)		
Vegetable	76.2	78.3
Fish	77.9	80.5
Milk	61.2	60.5
Fruits	38.6	36.6
Meat	31.5	39.2
Egg	37.5	37.9
Water	2.6	3.8
Lentil	3.7	3.5
Rice	5.2	4.7
Other(s)	11.0	9.8
N	545	554

4.4.7 Maintenance of body temperature and immunization of neonates

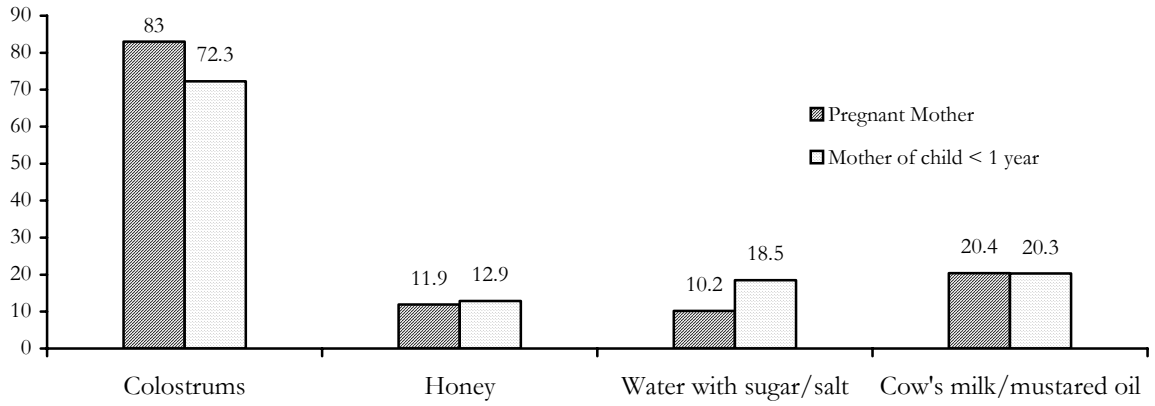
The knowledge of maintaining body temperature of the neonate is also almost universal (96%) (Table 13). Majority of the respondents said that body temperature could be maintained by wrapping in warm clothes (77%). Knowledge on colostrum feeding to the newborn was found to be quite high (77%) (Fig. 6) while the knowledge on immunization was universal (not shown). However, a negligible proportion of the mothers were found to be aware about the total number of vaccines to be given (7%). Their knowledge on different vaccines to be given to the child was not satisfactory. The knowledge on timing of different vaccines was worse even (Table 13).

Table 13. Knowledge of the study population on care of newborn and immunization (%)

	Pregnant mother	Mother of child < 1 year
Knows about the importance of maintaining body temperature of the new born	93.8	97.7
Procedure to maintain body temperature of the new born (multiple responses)		
Wrap the new born with warm clothes	83.0	72.3
Heating up the body	11.9	12.9
By KMC method (close contact with mother's chest)*	9.6	18.1
Massage with mustard oil	11.7	12.6
Other(s)	4.1	5.4
Don't know	5.1	2.8
Knows about vaccination for child	99.6	99.8
Knows correctly the no. of vaccines to be given	8.3	6.7
Types of vaccine to be given (multiple responses)		
Tuberculosis (TB)	23.0	27.5
Polio	37.0	36.7
Diphtheria	13.8	17.9
Tetanus	32.8	37.4
Whooping cough	12.3	13.4
Measles	37.9	46.5
Other(s)	6.4	26.2
Don't know	40.1	31.8
Time of vaccination (correct responses only)		
Tuberculosis (TB)	2.3	-
Polio	2.6	-
Diphtheria	0.4	-
Tetanus	1.5	-
Whooping cough	2.1	-
Measles	4.8	-
N	545	554

*Quasem et al. 2003

Figure 6. Feed to be given to the new born immediately after birth (%)



4.5 Mothers' Practices during pregnancy, delivery, post-partum period and neonatal care

4.5.1 Ante-natal check-up (ANC)

About 40% of the currently pregnant mothers have undergone at least one ANC visit (Table 14). The number of ANC visits is shown in Figure 7. Lack of knowledge regarding the importance of ANC (55%) and lack of money (22%) were cited as important reasons for not undergoing ANC. Of those who have had an ANC, 29% had some problems and 55% went to check whether everything was alright. Private hospital/clinic/chamber (25%), Community Nutrition Centre (20%), UHC (10%) and UHFWC (16%) were some of the places visited by the pregnant women for ANC other than home visits (19%) (Fig. 8). The ANC was done most commonly by the MBBS doctors (43%), BRAC health workers (34%) and family welfare visitors (20%). At ANC visits, most common tests/measurements done were weight measurement (56%), blood pressure measurement (45%), urine tests (43%), and assessment of foetal position (40%) (Table 14).

Table 14. Ante-natal check-up of the pregnant mothers (multiple responses) **(%)**

	Pregnant mother
At least one ANC visit during current pregnancy	40.4
Reason(s) for not undergoing ANC	
Do not know about ANC and the place for ANC	5.2
Thought ANC was not necessary	55.4
Husband/Mother-in-law disapprove	8.0
Lack of money	22.5
Other(s)	16.3
Reason(s) for undergoing ANC	
Having problems	29.5
To check whether everything was alright	55.5
For both of the above	10.0
Other(s)	12.3
Person performing the ANC	
MBBS doctor	43.2
BRAC health worker (SK, CNP)	33.6
Family welfare visitor	20.5
Nurse/midwife	8.2
NGO paramedic	7.3
Other(s)	5.9
Tests done during ANC visit	
Blood	18.2
Blood pressure	45.5
Urine	43.2
Weight measurement	56.4
Height measurement	17.7
Anemia	11.8
Ultra sonogram	22.3
Pulse examination	26.8
Foetal position	40.5
Other(s)	0.9
N	554

Figure 7. No. of visits for ante-natal check-up of the pregnant mothers (%)

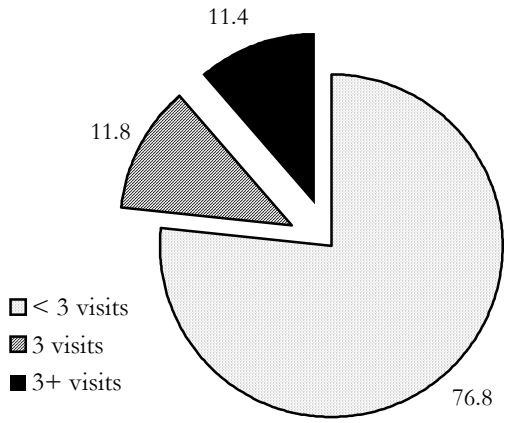
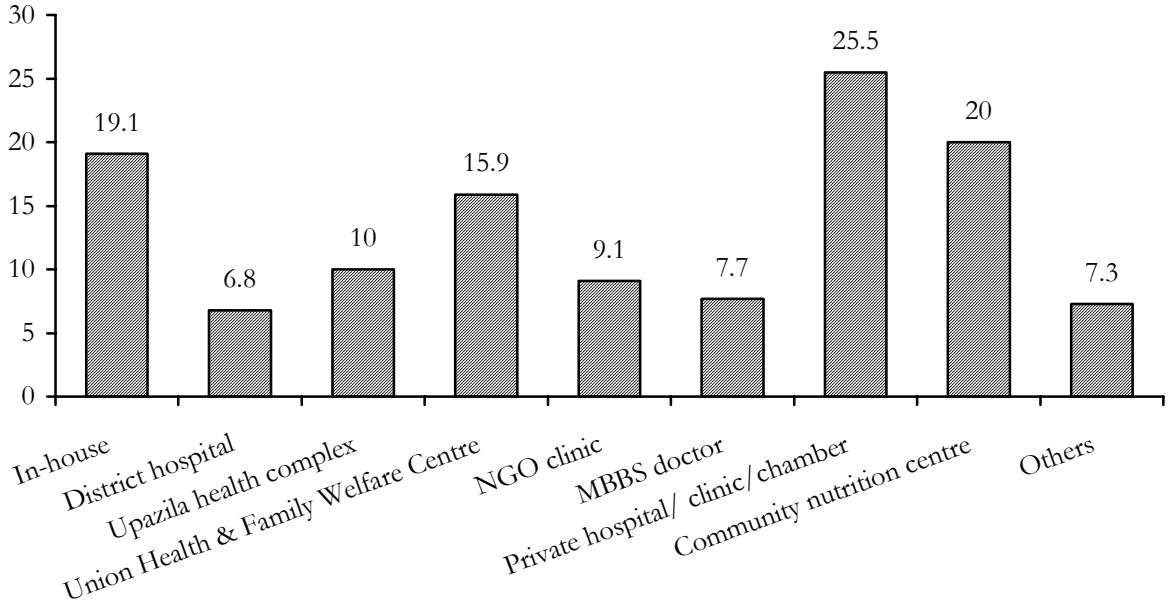


Figure 8. Places/persons visited for ante-natal check-up by the pregnant mothers (%)



The pregnant women were advised to take rest or refrain from heavy household works (72%), and take adequate food and nutrition (77%) and iron tablets (28%) during ANC visits (Table 15). The NNP workers (61%) and the SS of BRAC (34%) were the major source of such advices.

TT immunization for currently pregnant women was 52% while 70% of the women received TT immunization during previous pregnancy (Table 16). The pregnant mothers were found to receive TT immunization up to six times in their life time. Majority of the pregnant women planned to have the delivery in their own (husband's) home. Only 2% planned to have their delivery in a clinic or hospital (Table 17). They could state approximate date of delivery as well (89%). They were most frequently advised to take rest (84%), take nutritious diet (37%), and refrain from lifting heavy weight (22%).

Table 15. Advice received by the pregnant mothers during ANC (Multiple responses) **(%)**

	Pregnant mother
Advised on the followings during ANC	
Taking rest or refrain from heavy work	71.8
Food and nutrition	76.8
Breastfeeding practices	3.6
Signs of risk during pregnancy	2.7
TT immunization	24.1
Iron Tabs	41.4
Advice received from health worker of BRAC or other organizations	28.1
Person who advised	
NNP worker	61.4
Community health volunteer (BRAC)	34.0
FWV	14.4
Other(s)	5.9
N	554

Table 16. Tetanus toxoid (TT) vaccine taken by pregnant women (%)

	Pregnant mother
TT immunization received during current pregnancy (n=554)	52.5
TT immunization received during previous pregnancy (n=384)	70.5
No. of times TT immunization received during previous pregnancy	
Once	12.2
Twice	21.4
Thrice	24.7
Four times	15.1
Five times	15.6
Six to Fourteen times	9.6
Don't know	1.3
N	384

Table 17. Birth planning for the current pregnancy (multiple responses) **(%)**

	Pregnant mother
Knows expected date of delivery	88.6
Probable place of delivery	
At home (n=380)	69.7
At other's home (e.g., parental home)(n=152)	27.9
Hospital/Clinic/BRAC *Susasthya* (n=13)	2.4
Identified as risky pregnancy	5.9
Advice given for high-risk mothers	
Rest	84.4
Lying with foot up position	3.1
Regular check-up of pressure	18.8
Can't remember	3.1
Nutritious diet intake	37.5
Not to lift heavy weight	21.9
Ultra sonogram	3.1
No advice given	3.1
N	554

4.5.2 Delivery care

The majority of the delivery of mothers having under-one child was attended by either untrained TBA (43%) or trained TBA (26%) (Fig. 9). Jute bag (39%), plastic or paper sheet (20%), and *kantha* (20%) were most frequently used as spread sheet for lying down during delivery. About 36% of the attendants possessed delivery kit. Soap (62%), blade (84%) and thread (84%) were used by them during delivery (Table 18).

Figure 9. Birth attendants at last delivery (%)

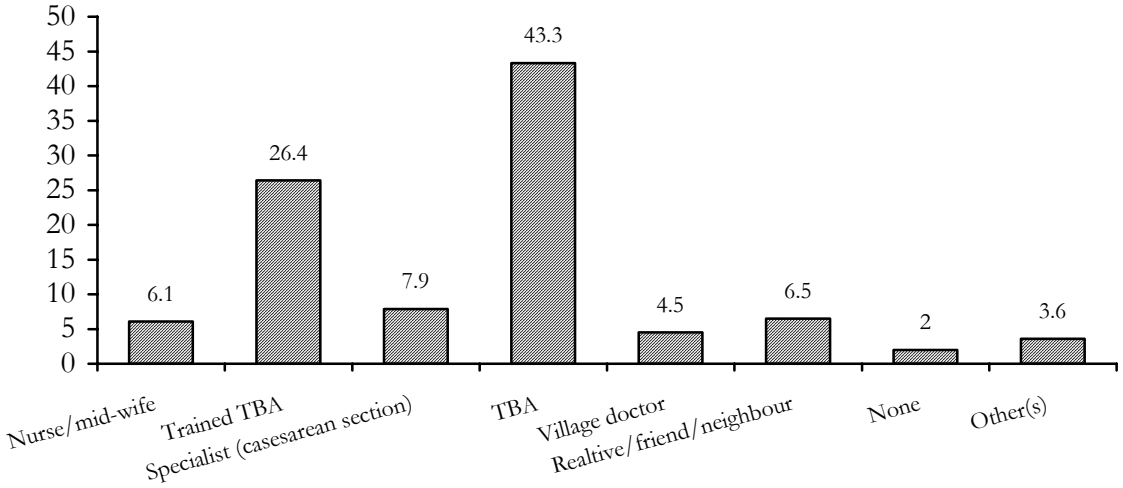


Table 18. Practices followed during delivery of last child (%)

	Mother of child < 1 year
Material used as spread sheet for lying	
Plastic/paper	19.8
Kantha/Clothes	19.8
Jute bag (*chhala*)	39.4
Over floor	16.9
Hospital bed	2.0
Stacks of straw	2.2
The attendant possessed delivery kit	36.3
Use of the followings during delivery	
Plastic sheet for conducting delivery	22.7
Soap for washing hands of the attendant	61.6
Blade for cutting umbilical cord	84.3
Thread for tying umbilical cord	84.3
Other(s)	35.1
Don't know	8.6
N	549

Table 19. Practices followed for cutting cord and delivery of placenta of the last child (%)

	Mother of child < 1 year
Person who cut the cord	
Relatives/neighbors	15.3
Doctors/Nurses/FWVs	9.2
Trained TBA	26.3
TBA	48.2
Don't know	1.0
Two clumps used during cutting of cord	25.1
Instrument used to cut cord (*multiple response*)	
Blade	64.9
Scissors	3.7
New blade, not boiled	20.6
Old blade, not boiled	1.0
New blade, washed in Savlon/heated in fire	5.1
Don't know/remember	4.7
Delay in delivery of placenta	21.4
Action taken by the attendant (*multiple response*)	
No action taken	22.0
Make the mother vomit (by hair /kerosene in mouth)	17.4
Applied pressure over abdomen by feet and pulled out placenta by hand	38.5
Faith healer	10.1
Advised to call in a doctor/nurse	34.9
Bleeding during delivery was substantial	21.3
Action taken by the attendant	
Advised to visit a doctor	12.7
No action taken	68.6
Medicine, saline and Injection given	16.9
Other(s)	5.1
N	549

The umbilical cord was mostly cut by the untrained TBA (48%) followed by the trained TBA (26%) (Table 19). Only 25% used the correct number of clumps (two) to cut the cord. Blades were mostly used for cutting the cord, which was not necessarily sterilized always. About 21% of mothers having under-one child experienced delay in delivery of placenta during last delivery (Table 19). In majority of cases, the attendant either herself manually removed the placenta (38%) or advised to call in a doctor (35%). In around 21% cases, the bleeding was substantial but surprisingly in most of the time no action was taken (69%).

4.5.3 Post-partum haemorrhage and post-natal check-up (PNC)

Twenty-two percent of these mothers experienced excessive bleeding in the post-partum period (Table 20). However, as observed in case of bleeding during delivery, no action was also taken for post-partum haemorrhage usually (56%). In the post-partum period intake of nutritious food (84%), maintenance of cleanliness (73%), etc. was practiced. However, only 10% women went

for a post-natal check-up (PNC), mostly by an MBBS doctor (54%) (Fig 10). Only 13% women visited three times or more for PNC (Fig. 11).

Table 20. Practices followed after delivery of the last child (%)

	Mother of child < 1 year
Excessive bleeding following delivery	22.4
Management of excessive post-partum bleeding	
No action taken	55.6
MBBS doctor/ nurse/mid-wife	16.1
Village doctor/drug seller/quacks	22.6
Other(s)	6.5
Care taken following delivery (multiple response)	
Intake of nutritious food	84.3
Use of sanitary napkin	4.2
Use of clean clothe	20.2
Maintenance of cleanliness	72.9
Adequate physical rest	18.1
Medicine	4.5
Avoid weight bearing activities	9.0
Others	11.6
Post-natal check-up (PNC) done	9.9
N	549

Figure 10. Places/persons visited for post-natal check-up by mother of child <1 year (%)

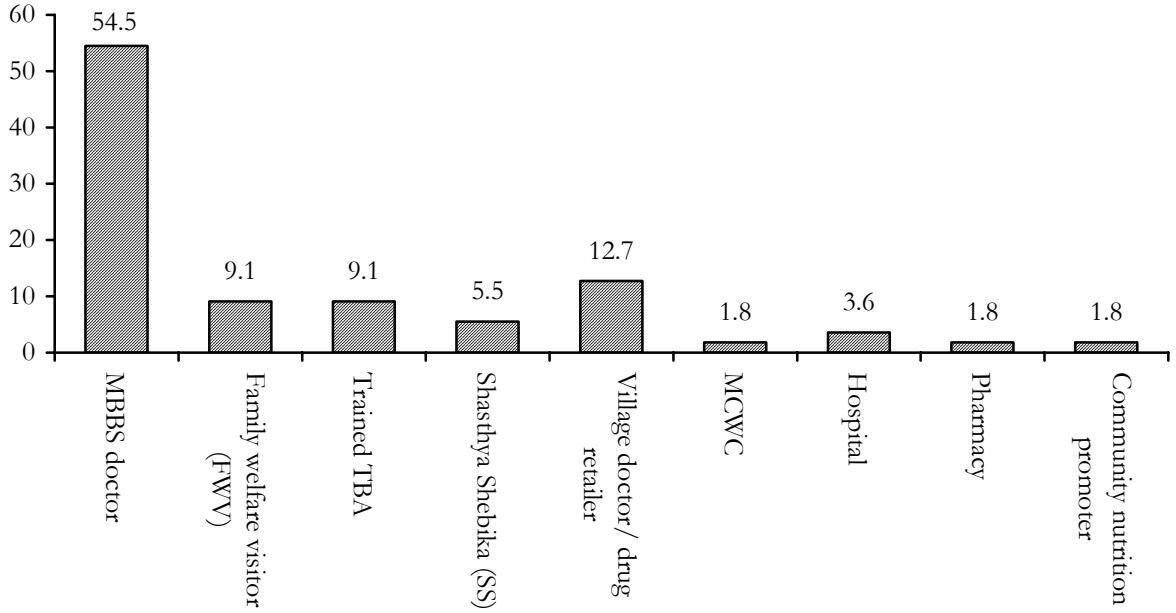
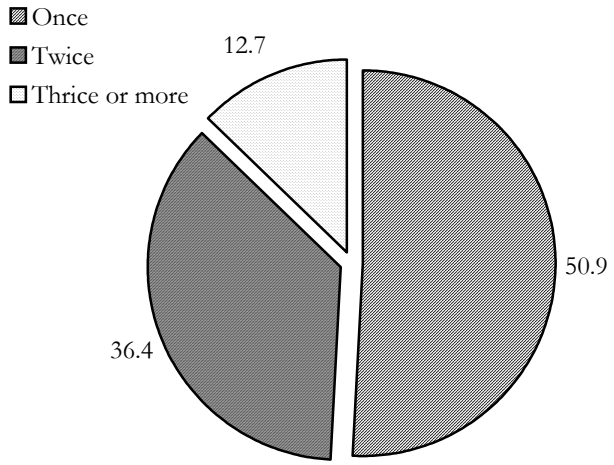


Figure 11. Number of visits for post natal check-up (PNC) of mother of child < 1 year (%)



4.5.4 Neonatal care and neonatal feeding

Majority of the mothers (74%) could not tell the birth weight of the babies (Table 21). Those who could usually kept written record of the weight taken by the community health workers. The first act that was done to a neonate was the cutting of the cord (73%). In most instances, the neonate was removed from the mother after delivery (73%).

Table 21. Information on the neonatal period of the last child (%)

	Mother of child < 1 year
Birth weight	
<2.5 Kg	6.1
≥2.5 Kg	20.2
Don't know	73.6
Activities undertaken immediately after birth	
Cutting of cord	72.9
Wrapping with clothes	2.0
Bathing the baby	4.5
Other(s)	7.8
Don't know/remember	13.5
Place where the newborn was laid	
On the floor	5.1
On the wooden cot	4.5
With the mother	11.7
With somebody else	72.6
Other(s)	2.3
Don't know	3.8
N	554

Colostrum feeding was almost universal (Table 22). However, in 42% of the cases, some liquid (such as water, honey, etc.) was given to the neonate before colostrums feeding. In most instances, breast milk was given within one hour of birth (52%). In around 5% of the births, breastfeeding was delayed for as long as three to four days. Exclusive breastfeeding was done in

only 64% of cases and 97% was currently breastfeeding. Additional feed was given before five months in 41% of the instances (Table 23). Powdered milk (41%), cow/goat's milk (46%) or barley/rice powder (36%) was given as additional feed.

Table 22. Feeding of the newborn (%)

	Mother of child < 1 year
Newborn was fed colostrum	95.5
Feeding given before colostrum	
Honey	13.6
Plain water	3.4
Sugar water	18.7
Water mixed with palm juice	5.3
Nothing	57.7
Other(s)	6.0
Don't know	0.2
Time since birth when breastmilk was given	
≤ 1 hour	51.8
1-2 hour	13.5
3-24 hour	23.1
25-48 hour	4.3
72-96 hour	4.9
Don't know	2.3
Beside breast milk, other feeding given, if any	
Honey	3.2
Plain water	2.9
Sugar water	14.1
Baby food/powder milk	10.8
Only breast milk	63.4
Cow/goat's milk	9.7
Other(s)	3.1
Currently breastfeeding	96.8
N	554

Table 23. Feeding of the child aged more than five months (%)

	Mother of child < 1 year
Additional feed given beside breast-feeding before five months	41
Type of feed given	
Baby food/powder milk	41.4
Water	12.8
Cow/goat milk	46.3
Barley/rice powder	36.1
Fruits	11.9
Rice powder	7.0
Other(s)	12.8
N	382

Around 60% of the neonates suffered some illness as reported by mothers within one month of birth (Table 24). Common cold (43%), fever (39%), diarrhoea and dysentery (6%), cessation of urination (4%), etc. were some of the different illnesses they suffered. Treatment was sought from MBBS doctors (30%), village doctors/drug sellers (27%), and homeopath (31%) most commonly.

Table 24. Reported illnesses of the new born (%)

	Mother of child < 1 year
Newborn suffered illness within one month	60.3
Types of illness	
Fever	39.5
Pneumonia	13.8
Jaundice	10.5
Common cold	42.8
Measles	19.2
Cessation of urination	4.2
Diarrhoea/dysentery	6.3
Other(s)	15.9
Management of illness	
Self-treatment	6.0
MBBS doctor	29.6
Family welfare visitor (FWV)	1.2
Village doctor/drug sellers	27.2
Quacks/kabiraj	6.9
Homeopath	30.8
Other(s)	6.9
N	334

Table 25. Satisfaction of mothers with maternal and child health (MCH) services (%)

	Mother of child < 1 year
Satisfied with available MCH services	64.8
Suggestions for improvement (multiple response)	
Door step service (immunization, health education, family planning materials)	35.1
Static health facilities (MCH services, FP methods)	58.0
Health manpower responsive to the clients	64.0
Free/subsidized medicine/services	70.2
Provision of sanitary latrines	2.5
CNCs with food supplementation	6.4
Treatment and counseling by medical doctor	4.1
Door step services by doctor for mother and children	5.0
Well trained CHWs	4.3
Female doctor at MCH centres	3.4
Other(s)	12.6
N	265

4.5.5 Satisfaction and suggestions for improvement

Finally, the mothers were asked whether they were satisfied with the existing MCH services availed. Sixty-five percent responded affirmatively (Table 25). Suggestions given for improvement of the situation were increasing health facilities (58%), responsiveness of health manpower (64%), free or subsidized medicine or health services (70%), etc.

4.6 Summary findings from quantitative survey

Table 26 summarizes the key findings below.

Table 26. Summary of key findings

DOMAIN	KEY FINDINGS	COMMENTS
Socio-demographic information		
Study women	The study population was at the prime of their reproductive age (mean age 23 years).Pregnancy and motherhood peaked in the age group 19-35 years. Majority of the women were literate, and had on average seven years of schooling. Around 10% of the women were involved in income-earning activities, mostly in poultry-rearing. around 31% of the pregnant women were primigravida	Table 1
	Majority of the women from the two groups had one to two children while 4 to 10% (pregnant mother and mother of child ≤ 1 year respectively) had more than five children. Around 25% of the women had experienced child death, and 1-2% had experienced death of more than two children. 40 to 46% of the women expressed their desire for more children, and majority of them (around 72%) would like to wait for 3-5 years for the next child. This period is also expressed as the ideal birth interval by majority of the women (>80%).	Table 3
Husbands	Majority of the husbands of these women were literate (around 63%), and had on average eight years of schooling. Wage-labor (around 39%), followed by small trade (22%) were the main economic activities pursued by them.	Table 2
Knowledge		
Family Planning	39% of the mother of child under one year were using any family planning method at the time of survey. Pill (58%) followed by Injection (14%) were the two most common methods used by them. Only 16% of these mothers received counseling on Family Planning, mostly from community health workers (69% and 43% respectively for the two groups). more than one-third of the study population did not know about the total number of pills to be taken	Tables 4, 5 Figs. 1, 2
Ante-natal care	The knowledge on taking Tetanus Toxoid (TT) injection during pregnancy was almost universal. However, only 60% could correctly mention the number of TT doses. Most commonly mentioned items to take during pregnancy were: milk (around 56%), Vegetable (around 93%), Fruits (around 68%) and eggs (around 63%).	Tables 6, 7, 8

[Continued...]

DOMAIN	KEY FINDINGS	COMMENTS
	The respondents were somewhat aware about the common, less severe, pregnancy complications requiring medical attention such as severe nausea (around 45%), anorexia (around 54%) and severe pain in lower abdomen (around 42%). However, they were much less aware about the more severe, life-threatening complications such as bleeding per vagina (around 20%), convulsion (around 12%) and headache (around 20%). This low level of knowledge was also seen when the women were probed about the signs of risky pregnancy.	Fig. 3
Delivery and Post-natal care	The respondents were knowledgeable about where to go in case of bleeding during pregnancy. The respondents were also knowledgeable about post-partum haemorrhage (around 90%) and the places to visit for its management. They were also quite aware about important delivery complications requiring immediate therapeutic attention such as delayed labor (around 75%), mal-presentation (35%), hand/leg prolapse (around 32%), convulsion (around 18%), absence of pain/contraction (15%) etc.	Tables 9, 10 Fig. 4
	Mother's care following delivery such as providing nutritious food (90%) and maintaining cleanliness (99%) is well known but other care like taking adequate rest (17%) and avoiding heavy work (13%) is less known to the respondents	Table 12
Neonatal care	The respondents knowledge of complications of neonates requiring treatment was quite exhaustive. They mentioned about important conditions like difficulty in breathing (around 60%), fever (around 65%), stoppage of defecation/urination (around 9%), difficulty in breast-feeding (around 15%) and convulsion (around 5%), besides other less important conditions.	Table 11 Fig. 5.
	The knowledge of maintaining body temperature of the neonate is also almost universal (around 96%). Majority of the respondents said that body temp. could be maintained by wrapping in warm clothes (around 77%). Knowledge on colostrums feeding to the new born was found to be quite high (around 77%) while the knowledge on immunization was universal. However, a negligible proportion of mothers were found to be aware about the total no. of vaccines to be given (7%). Their knowledge on different vaccines to be given to the child was not satisfactory. The knowledge on timing of different vaccines was worse even.	Table 13 Fig. 6
Practice		
Ante-natal check-up (ANC)	About 40% of the currently pregnant mothers have undergone at least one ANC visit. Lack of knowledge regarding the importance of ANC (55%) and lack of money (22%) were cited as important reasons for not undergoing ANC. Of those who have had an ANC, 29% had some problems and 55% went to check whether everything was alright. Private hospital/clinic/chamber (25%), Community Nutrition Centre (20%), UHC (10%) and UHFWC	Table 14 Figs. 7, 8

[Continued...]

DOMAIN	KEY FINDINGS	COMMENTS
	(16%) were some of the places visited by the pregnant women for ANC other than home visits (19%). The ANC was done most commonly by the MBBS doctors (43%), BRAC health workers (34%) and family welfare visitors (20%). The pregnant women were advised to take rest or refrain from heavy household works (72%), and take adequate food and nutrition (77%) and iron tabs (28%) during ANC visits. The NNP workers (61%) and the SS of BRAC (34%) were the major source of such advices.	Table 15
Delivery period	The majority of the delivery of mothers having under-one child was attended by either untrained TBA (43%) or trained TBA (26%). Jute bag (39%), Plastic or paper sheet (20%) and *kantha* (20%) were most frequently used as spread sheet for lying down during delivery. About 36% of the attendants possessed delivery kit. Soap (62%), blade (84%) and thread (84%) were used by them during delivery. About 21% of mothers having under-one child experienced delay in delivery of placenta during last delivery. In majority of cases, the attendant either herself manually removed the placenta (38%) or advised to call in a doctor (35%). In around 21% cases, the bleeding was substantial but surprisingly, in most of the time, no action was taken (69%).	Fig. 9 Tables 18, 19
Post-partum period	Twenty-two percent of these mothers experienced excessive bleeding in the post-partum period. However, as observed in case of bleeding during delivery, mostly no action was also taken for post-partum haemorrhage (56%). Only 10% women went for a post-natal check-up (PNC), mostly by an MBBS doctor (54%). Only 13% women visited three times or more for PNC.	Table 20 Figs. 10, 11
Neonatal care	Only 6% of the neonates of these mothers was under-weight. Majority of the mothers (74%) could not tell the birth weight of the babies. Colostrums feeding was almost universal. However, in 42% of cases, some liquid (such as water, honey etc.) was given to the neonate before colostrums feeding. In most instances, breast milk was given within one hour of birth (52%). In around 5% of the births, breast-feeding was delayed for as long as three to four days. Exclusive breast-feeding was done in only 64% of cases Additional feed was given before five months in 41% of the instances. Powdered milk (41%), Cow/goat's milk (46%) or Barley/rice powder (36%) was given as additional feed.	Tables 21, 22, 23 Table 24

[Continued...]

DOMAIN	KEY FINDINGS	COMMENTS
	Around 60% of the neonates suffered some illness within one month of birth. Common cold (43%), fever (39%), diarrhea and dysentery (6%), cessation of urination (4%) etc. were some of the different illnesses they suffered. Treatment was sought from MBBS doctor (30%), village doctors/drug sellers (27%) and 12 (31%) most commonly.	
Client satisfaction and suggestions for improvement		
	65% responded said that they were satisfied with the services received. The most common reasons stated for dissatisfaction was unavailability of MCH or any health services available (39%) and non-visit of the SSs (39%). Suggestions given for improvement of the situation were increasing health facilities (58%), responsiveness of health manpower (64%), free or subsidized medicine or health services (70%) etc.	Table 25

5

Knowledge and practice of healthcare providers

This section explores the knowledge and practice of healthcare providers on safe motherhood promotion, who are providing maternal, child and family planning services in connection with local level planning including government, NGO and private sectors.

5.1 Respondents' profile

Government health providers

a) At the district level

Three government medical doctors were interviewed including MO-MCH, Maternal and Child Welfare Centre (MCWC); Resident Medical Officer (RMO), district hospital and gynecologist, district hospital. The MO-MCH has training on EOC and the gynecologist has a post-graduation training on gynecology. We assumed that the doctors are quite knowledgeable on the issues of safe motherhood. We, therefore, tried to focus on their practice regarding safe motherhood, and on the existing maternal and child health system in Narsingdi district.

b) At the upazila level

We interviewed a gynaedoctor who have an MBBS degree with a post-graduation training in gynecology in Monohordi Upazila Health Complex. He provided consultation on mother and child health.

c) At the community level

We interviewed five FWVs from five unions (Shoukadi, Chalakchar and Charmandalia in Monohordi Upazila, and Shilmandi and Duarerchar union of Sadar Upazila), two FWAs from Chalakchar and Noadia union of Monohordi, and two Health Assistants (HA) from Narsingdi Sadar. One FWV had a six month-midwifery-training, one had training for 18 months, and three got six months training from JICA. All of them received once-a-year FWV-TI training in Dhaka. FWAs received six-month skilled birth attendants (SBA) training. One of them also received Kangaroo Mother Care (KMC) training twice. One of the HA was female and another was male. They essentially work for the EPI programme and provide health education on diarrhoea and sanitation to the community, high schools, and wards.

NGO health providers

a) At the district and thana level

Several health related NGOs are working in Narsingdi district. We interviewed two female medical doctors from BRAC Health Centre (BHC) and Marie Stopes Clinic Society (MSCS) who dealt with the patients having gynecological and obstetrical problems. The MO-BHC (Medical Officer, BHC) was working in BHC for less than a year and the MO-MSCS (Medical Officer, MSCS) for about two years in MSCS. MSCS is providing services in Narsingdi district for enhancing reproductive health of urban poor since 2000 through facility based approach. On the contrary, BRAC is giving health services including maternal and child health through a combination of facility and domiciliary approaches both at upazila and community level.

b) At the community level

We did two FGDs, one in Narsingdi and the other in Monohordi, with the BRAC community health workers (CHW) who are providing services voluntarily in the community known as *Shasthya Shebika* (SS). Five to six SS were present in each group discussion. The participants were between 30 to 50 years of age and were from small income group. There are about 1,103 SSs in Narsingdi district. We only conducted FGDs with BRAC community health workers as MSCS do not have any CHWs.

Private health providers

a) At the district level

We interviewed a medical doctor of a local clinic (Prime clinic) in Narsingdi Sadar who was the chairman of the clinic. Though the doctor is not a gynecologist, but he sometimes treats pregnant mothers, delivery cases, and sick children. The only gynecologist of that clinic comes from Dhaka every Friday for five hours. The clinic has two residential medical officers and a number of part-time doctors who have specialization in different areas.

b) At the community level

Two FGDs were conducted with untrained TBAs in two different villages in Monohordi with around five to six TBAs in each group. We also conducted an informal group discussion with four trained TBAs in Narsingdi Sadar. Two got their training from government hospital 18 years back, one had training from CCDB 15 years back and the other received training from KARITAS eight years back. The participants were between 45 to 65 years of age and belonged to the lower income group. Apart from the regular work, two of the TBAs also sell delivery kits and vitamins to the villagers for a profit of one or two taka. They buy these things from BRAC SS. None of them were literate.

Family caregivers

Three FGDs were carried out with seven women, seven mothers-in-law and seven husbands in Monohordi and Narsingdi Sadar. The village women were aged between 16 to 28 years,

husbands were between 25 to 50 years, and mothers-in-law were between 40 to 60 years. Most women and mothers-in law were not literate except two. One women and one mother-in-law have had eight and five years of schooling respectively. In contrary, except one most of the husbands were educated. One had primary and one had secondary school of education, two passed SSC and two passed BA. All of them belonged to the lower to lower middle class. All husbands were agricultural labourers, except two who were small shop owners.

5.2 Knowledge and practice of government service providers

5.2.1 Medical doctors, MCWC (*Ma o Shishu Kalyan Kendro*) and district hospital

Ante-natal care

The MO-MCH, MCWC said that they recommend patients to do every thing that is necessary to maintain a safe ante-natal phase like food, vaccine, relaxation, etc. They do not provide all the laboratory diagnosis needed because of lacking facilities. In such cases, they have to send the patients to private clinics or to the district hospital.

He also said that if the patient suffers from fever, convulsion or if she is of short stature and over-weight, they send the patients to the district hospital.

> "MCWC do not have enough facilities to deal with the high-risk mothers."
> (MO-MCH, MCWC)

The RMO of the District Hospital, Narsingdi said that women who are aware of antenatal care didn't face any problem during pregnancy. Age and height of the mother and many other reasons determine whether a mother was at risk or not, he said. The gynae ward takes care of these patients and if there is no space there, the patients are referred to the DMCH in Dhaka. The gynaecology consultant of the district hospital said that the symptoms of high-risk pregnancy include high blood pressure, diabetes, convulsion, haemorrhage and whether the mother is of short stature. "Usually women would not like to come to hospital for antenatal check-up but when they have these problems, they come to us," she said.

> "Patients with convulsion and haemorrhage are usually sent to DMCH as the Sadar hospital doesn't have the capability to treat these patients."
> (RMO, District Hospital)

Childbirth

The MO-MCH, MCWC said that the villagers brought patients to them when the patients' condition was complicated. They performed 50 deliveries per month. Sometimes the delivery patients come with convulsion and excessive haemorrhage. In such cases they referred patients to the Gynaecology consultant of the district hospital or to Azimpur Maternity Hospital. He said that if the patient was financially well off, they preferred to go to the private clinics. The lower and middle class people prefer to go to DMCH or to Azimpur Maternity Hospital to get free treatment.

The RMO of district hospital, Narsingdi said that they had the facilities for caesarean operation which was free of cost. Patients have to pay very little for the medicines. They keep caesarean patients for seven days in the hospital.

The gynaecology consultant stated that if a pregnant mother suffered from labour pain for more than 12 hours and haemorrhage, convulsion, vomiting occured, or if the baby's hand or leg came out first, they were provided emergency treatment. They referred such patients to MCWC if the operation theater is not free and to DMCH if she could not provide beds. She never delivered baby on the floor.

Post-natal care

The MO-MCH said they recommended the patients to take proper food, to stay clean and to walk regularly during post natal period to keep them well. In the cases of excessive bleeding, he examined patients thoroughly to see whether there were any remnants of placenta inside the uterus. In such cases, they arranged for D&C (desidual clearing). However, if blood transfusion is needed, they referred patients to the district hospital as there was no such facilities in MCWC. The RMO of district hospital said that many patients with uterine prolapse came to them which required surgery. The gynaecology consultant said that many women come to her with excessive bleeding and post-partum infection. These complications generally arose if women deliver child with the help of unskilled birth attendants in unhygienic condition. It is possible to manage these cases at district hospital by D&C, and antibiotics. If blood transfusion is needed they send them to DMCH.

Neonatal care

The MO-MCH said that a newborn baby had to be kept warm and should not be given bath until it is three to four days old. They motivated mothers to feed the baby colostrum, to measure birth weight and to vaccinate the baby as early as possible. If a baby stops sucking milk, if it becomes cold and if it suffers from convulsion, mothers are asked to bring the neonate immediately to the hospital for proper treatment. But mothers did not come always unless the condition of neonates become grave.

Summary

MO-MCH, MCWC and gynaecology consultant, DH conduct normal delivery and cesarean operation, and attend complicated ante-natal cases and neonatal illnesses. They refer high-risk mothers and cases with hemorrhage and convulsion during delivery and post-natal period to private clinics or DMCH as DH & MCWC do not have facilities to manage them. He does D&C to manage retained placenta. They do not need to provide any PNC services as mothers do not come to MCWC unless complication arises. The gynaecology consultant in DH does manage post-partum infection by antibiotics.

5.2.2 Medical doctor of UHC

Ante-natal care

The MO of Monohordi UHC said that patients usually come to the medical officer of maternal and child health (MO-MCH) for pregnancy related care. They do regular physical check-up and give them iron and vitamin tablets. They ask them to come for regular check-ups for three times during the pregnancy period. They advise them to take proper food and rest. They ask patients to go to the private clinics for ultra sonogram to confirm pregnancy in early trimester and to know the duration of pregnancy as UHC does not have the facility. They did not give them any pregnancy/ante-natal card. Pregnant mothers who suffer from oedema, high blood pressure, haemorrhage or who have any past history of high-risk pregnancy or complicated child birth are

asked for regular medical care and also to go to a 'well equipped place' such as district hospital or private clinic for delivery.

Childbirth

In Monohordi UHC, they used to do seven to eight caesarean operations a month. Only one MO has training on EOC. As a result, they cannot do any caesarean operation during his absence and have to send the patients to district hospital or private clinics according to patients' preferences. However, now they have two nurses having EOC training who usually do the normal deliveries. In case of any complications, like haemorrhage and prolonged labour, they would refer patients to the district hospital or private clinics as UHC has no facilities to handle these complications.

Post-natal care

They recommend the mothers to stay clean and breast-feed the baby adequately and frequently. Caesarean patients are asked to come twice or thrice a week to the hospital and normal delivery patients are asked to come twice a month for post-natal check-ups until 42 days after child birth. However, women usually visit them if they have any complications. If a patient comes with hemorrhage due to retained placenta, the MOs diagnose it and the nurses do the washing (D&C) of the uterus. Many women come with cracked nipple and thus the baby doesn't suck/get milk. They teach mothers how to take care of it.

> "They teach the mother at the beginning about how to breast-feed babies. They asked mothers to eat the fruits of cucurbitaceous plant (Jingo) as it increases breast milk." (MO, Monohordi UHC)

Neonatal care

The MO of Monohordi UHC said they checked neonates' birth weight, whether it was breathing and all organs were working properly.

> "A child should not be given bath right after birth and should be kept in a 'Kangaroo mother position' to maintain proper temperature." (MO, Monohordi UHC)

He said that if a baby stopped eating, moved less, became blue or red (pneumonia) or suffered from fever, it should be taken to the doctor immediately.

Summary

As MO-MCH, Monohordi UHC was on training in Dhaka, the gynaecology consultant provided services including ANC, normal delivery and neonatal check-up. He advised pregnant women to do ultra sonogram routinely from the private diagnostic centre to confirm pregnancy and to know the duration of it. He does not use any ante-natal card. He refers high-risk pregnant women, and complicated delivery and post-natal mothers to the private clinics or DH as the Monohordi UHC does not have facilities to manage them. In case of hemorrhage due to retained placenta, the doctor diagnoses it and the nurses do the D&C.

5.2.3 Family Welfare Visitors (FWV)

Defining safe motherhood

"Safe motherhood means safety of a mother and child during pregnancy, and safe delivery of a healthy child in a proper way," the FWVs said.

Ante-natal care

"When a woman is four months pregnant, we give her a pregnancy card." In the first visit, the FWVs usually do the pregnancy test to confirm the state of pregnancy. Thereafter they do the routine check-up like measuring blood pressure, weight and height, and then take the history of the patients. They counsel on what a mother should do during antenatal period including not to lift anything heavy, not to walk in slippery path, not to pump tubewells, to take rest at least two hours a day, to take extra amount of good food (vegetable, fruits) according to their ability in a small quantity but frequently, and to drink plenty of water.

FWVs ask the pregnant mothers to visit the FWC for regular check-up once a month during 5th to 7th month of pregnancy, twice a month during 8th to 9th month of pregnancy and then once a week till delivery.

> "But usually only the educated and the conscious women come for regular check-ups. Those who don't come to the FWC are checked up at the satellite clinic once a month." (A FWV)

If the pregnant women haven't taken any anti tetanus (TT) vaccine before, FWV advises them to take three doses of vaccine in the subsequent three months from fifth month onward from the EPI centres. They also advise women to take two more doses in the second pregnancy. Women who have had five doses of TT vaccine before, are asked to take one dose of vaccine during current pregnancy.

> "We arrange satellite clinics twice a week at the community level to provide maternal and neonatal treatment." (A FWV)

Complications during ante-natal period

Many complications may arise during antenatal period including oedema in hands and legs, high rate of albumin in urine, convulsion, severe anaemia, excessive bleeding, excessive headache, high blood pressure, breathing problem, lower abdominal pain, back pain, pre-eclampsia, vomiting tendency, high temperature (>100^{o}C), and if there is no fetal heart sound.

If the baby is suspected in wrong positions, they ask mothers for ultra sonogram to confirm the position of the fetus. In case of hemorrhage, the FWVs first ask patients to take rest and then give saline with injection to stop bleeding. If it fails, then they send the patient to the UHC. In any antenatal complications, they provide some primary care first and then send the patients to the UHC.

High-risk pregnancy

FWVs said that a mother should be identified as high-risk if she had severe headache, excessive bleeding, short statured, constant high blood pressure, diabetes, etc. Apart from these symptoms, if the baby is in abnormal position, if the mother had previous caesarean operation, if there is twin babies, if the mother is below 18 or above 35 years of age, if mother has heart disease, if she has five or more children, any previous stillbirth, if she had any major operation, the pregnancy should be considered as high-risk.

"We asked high-risk mothers to go to a trained medical doctor for regular check-ups." They also asked mothers to go immediately to a hospital if they face any problem. FWVs asked mothers to

arrange money and blood donor before hand to tackle any emergency situation. They advised high-risk mothers to go to UHC or to any trained birth attendants or nurse for delivery.

Childbirth

FWVs said, "We have all arrangements for delivery, but we do not have the authority to do that at FWC. If we have permission from authority we could definitely do it." The FWVs sometimes go to the patients' home to assist normal delivery. The patient's family buys the delivery kit and arrange other necessary things beforehand. The FWVs get Tk. 200-500 for each delivery. "We don't ask for money. They give us willingly."

Management of complication during delivery

Many complications may arise during child birth, such as convulsion, high fever, headache, ruptured uterus, excessive bleeding, hand or leg prolapse, prolonged (more than 1 day, 12 hours) labour, mal-presentation of placenta when it is near the cervix, and retained placenta. Some of them explained how to handle the delivery process if the cervical os is not open or narrow (less than 2.5 fingers). In such cases, birth attendants should wait up to 12 hour, they should then massage with four fingers over mothers' umbilicus. This process sometimes helps to open up the cervical os. But if it doesn't open, the mother has to go to the hospital for caesarean operation. In case of other complications, FWVs refer patients to the MCWC.

Postnatal care

When they come to know of any childbirth in the community, they visit the house and ask about the well-being of the mother and the child. They check blood pressure and ask about excessive bleeding, whether they have taken ATS and vitamin A capsule. If they have had clotted bleeding, the FWVs wear gloves and then bring out the blood clots manually.

FWVs advised mothers for at least one postnatal check-up from the FWC. But they never come to the FWC for this unless facing any problem. "In that case we try to know about their well-being by visiting their homes or by sending the FWAs." They advise mothers for breastfeeding, to eat nutritious food (vegetable, fish, meat, milk), stay clean and use disposable sanitary napkins or a piece of clothe that should be washed and dried up every time after use. They also advised mothers not to do any heavy work like pumping tube-well and having sex carefully for six months because it might cause uterine prolapse. They asked women to use contraceptives after 45 days of delivery. "If a mother breast-feeds exclusively for six months, there is least possibility of conceiving during that period," they said.

Many complications may arise during post-natal period like excessive bleeding, infection, headache, blurred vision, weakness, fever and less production of breast milk. "In some cases, TBAs try to bring out the placenta forcefully. As a result the placenta may be torn and some part of it may be left inside. It causes excessive bleeding and later infection. Then the blood smells bad and it looks greenish or blackish red." In case of any post-natal complications, they sent patients to UHC.

Neonatal care

The FWVs asked mothers to feed only breast milk to a baby until six months of age. If a baby sucks colostrum right after birth, it helps the placenta to come out fast and increase resistance

power of the neonate. One FWV said, "Right after birth, I clear out a baby's respiratory track with my hands wrapped up with clean cloths."

FWV advise mothers to keep babies in clean, warm and airy places; to give bath until the baby is five to seven days old or until its umbilical cords get dried; to keep the umbilical cord clean and dry; not to feed any artificial food, and start immunization from six weeks of age. It is noted that the FWVs in Monohordi mentioned about Kangaroo mother care (KMC) by which they meant keeping babies close to the mothers' skin right after birth in order to maintain body temperature properly. Regarding immunization, they suggested for six (some said seven including hepatitis B) vaccines include BCG, measles, polio, and DPT. Measles vaccine has to be given in the 9th month.

Management of neonatal complication

A neonate may suffer from jaundice, breathing problem, common cold or pneumonia (it becomes bluish red) and umbilical cord infection. Sometimes the neonate cannot suck breast milk and cries too much. If a baby gets hurt during birth, it might cause breathing problem.

If a neonate suffers from jaundice, FWVs suggested mothers to keep the baby in morning sun. In case of other neonatal illnesses, they refer neonates to the UHC or to private practitioners according to the preference of mothers.

Summary

FWVs have considerable knowledge on safe motherhood issues. However, shortcomings exist in the area of immunization, delivery and post-natal complications, and neonatal illnesses. They carry out harmful practices while managing prolong labour, clotted post-partum haemorrhage, and breathing problems of neonates.

5.2.4 Family Welfare Assistant

Defining safe motherhood

FWAs knew safe motherhood as "Safety of a mother and a child at every stage of pregnancy, and safe delivery."

Ante-natal care

They first make a list of suspected pregnant mothers at the field level and then tell them to come to the FWC for check-ups. While they visit households (once a month) they also do ante-natal check-ups like blood pressure, baby's position, fetal heart sound, movement, etc. They distribute iron tablets to pregnant mothers. They recommend them to sleep for two hours in daytime and eight hours at night, not to wear high hill shoes, not to do any heavy work and to take extra amount of food (fish, meat, egg, green leafy vegetables, banana and potato as they contain iron), to drink plenty of water, and to take TT vaccine.

High-risk pregnancy/ante-natal complications

FWAs said they considered mothers as high-risk if they had symptoms like excessive bleeding, severe headache, high blood pressure (higher than 140/90), convulsion, fever (more than 104^{o}F),

oedema in hands and legs, if mother's height was less than four feet, if baby becomes too big, if it moves less than 10 times a day after 35 weeks of pregnancy, if baby is in wrong position, twin pregnancy, diabetes, jaundice, if the mother did not gain weight at least one kg per month, and if the mother has haemoglobin level less than 7dl.

"If mothers have severe headache, vomiting and abdominal pain, we refer them to FWC." In case of ante-partum hemorrhage, FWAs ask pregnant women to lie straight and take rest, give her saline and make arrangements to send them to UHC or a district hospital. If mothers have oedema, they ask patients to lie straight with raised feet. If it doesn't work then they send patients to MCWC. In case of blurred vision, convulsion, high blood pressure (>140/90), eclampsia, if baby stops moving, if baby is in wrong position, if the baby's head doesn't come down after 36 weeks of pregnancy, they immediately send mothers to the district hospital or MCWC. One FWA said "they give magnesium sulphate injection to cure convulsion. If it doesn't work, then they send the patient to FWC."

Childbirth

FWAs stated they sometimes work as birth attendant in case of normal deliveries and do not demand any money. Usually patient's family gives them *sari*. After a delivery they stay for five to six hours in that house to observe mother whether she is in stable condition or not.

> "I do not have any training on SBA though we have worked as birth attendants sometimes." (A FWA)

Management of complications during childbirth

If any organ of the baby except head and placenta comes out first, in case of ruptured membrane, if placenta doesn't come out within half an hour of the delivery, if patients have severe bleeding, headache, convulsion, high blood pressure and vomiting they ask the patients' family to make contact with the FWV. "Sometimes we accompany patients to the FWC or to hospital."

Post-natal care

"We recommend mothers to manage vitamin A capsule from community nutrition promoter (CNP) and take it during post-natal period." FWAs stated that they ask mothers to stay clean, take bath every day, take extra amount of food so that the baby can get enough breast milk, move carefully and not to lift anything heavy. They said, "We check the piece of cloth used by mothers for menstruation to see whether the mother has excessive bleeding. If the mother has excessive bleeding, initially we tell them to take rest, and give her saline and Piton-S tablet." If that doesn't work, they ask the patient to go to the doctor. In case of high blood pressure, convulsion, fever, severe abdominal pain and headache, FWAs asked mothers to go to the FWC or UHC immediately.

Neonatal care

The FWAs said, "We ask to keep the baby close to the mother's breast (skin to skin) to maintain proper body temperature. We learned it from the providers of the KMC project and in the SBA training." They also solicit mothers to contact with the CNP for measuring the baby's

weight, give colostrum and continue exclusive breast milk till six months of age, keep umbilical cord clean, and not to give bath or shave head until three to four days as it may catch cold.

> "We asked mothers to give polio vaccine right after birth and another 5 vaccines within 45 days of birth." (A FWA)

Management of neonatal complications

If the neonates have jaundice, the FWAs advise mothers to keep the baby in morning sun for three days. "If it does not get cured, we solicit mothers to consult a doctor." FWAs also recommend mothers to take neonates to a doctor if the baby refuses to suck breast milk, becomes blue or red, cries too much, and suffer from convulsion, fever or umbilical cord infection.

Summary

FWAs have reasonable knowledge on ante-natal check-up except immunization. Through domiciliary service delivery, they screen pregnant woman in the community, check them up and counsel them. They manage ante natal convulsion by magnesium sulphate injection. In case of other ante-natal, delivery and post-natal complications and neonatal illnesses, they send patients to the FWV or DH or MCWC. Sometimes they attended normal delivery at home. None of them have received training on SBA.

5.2.5 Health Assistant (HA)

The HAs do not give any ante-natal care except vaccination. They give TT injection to the pregnant women. They said, "We give two doses of ATS to mothers, who have not taken it before pregnancy and advise them to take another three doses later. Those who have had taken all five doses before pregnancy, do not have to take any during pregnancy."

However, HA have some knowledge on safe motherhood. A female HA informed, "To secure a safe motherhood, a pregnant mother has to be aware and has to go to an 'experienced' person for delivery." The male HA mentioned that a high-risk mother would have following symptoms: bleeding, ruptured membrane before the expected date, high blood pressure, diabetes, oedema in hands and legs, convulsion, if the baby moved less and if baby was not in the right position. Regarding identification of high-risk pregnancy, the female HA added three more points: short stature (less than 4 feet 10 inches tall), multiparity (who have more than five children) or multiple pregnancy (twin pregnancy). Though they won't provide any care, in such cases they recommend patients to consult a doctor and to be in constant check-up and have hospital delivery.

The male HA said that during post-natal period they basically tell mothers to take nutritious food so that the baby gets enough breast milk and continue breastfeeding until six months of age. In addition to breastfeeding, the female HA advised mothers to regularly wash and dry up the piece of cloth they use as sanitary napkin, take rest and not to do any heavy work as it may cause uterine prolapse. They ask mothers to start giving vaccines to the baby from six months of age. A baby has to be given a total of seven vaccines in 28 days interval. The BCG vaccine should be given right after birth. The vaccine for measles is given in the ninth month. They also advise mothers to be careful of cold as it might cause breathing problem or pneumonia. If the baby suffers from pneumonia, breathing problem and cannot suck milk, the HAs recommend

patients to go to FWVs. But if the condition is grave they recommend them to take the baby to hospital.

Summary

Though HAs are only responsible for immunization of mother and child, they have some knowledge on ANC and PNC. They have incorrect knowledge on time of initiation of vaccine to a child. If they found any ante-natal, post-natal and neonatal complications, they ask mothers to go to FWV and in serious cases to hospital.

5.3 Knowledge and practice of NGO health providers

5.3.1 Medical officers of MSCS and BRAC Health Centre (BHC)

The doctors defined safe motherhood as something include ante-natal, delivery and post-natal care which is necessary to keep both the mother and child well physically and mentally.

Ante-natal care

"We ask pregnant mothers for at least 3 ante-natal visits, one in each trimester." They said that a pregnant woman must take medical assistance if she had sudden and severe abdominal pain, bleeding, blurred vision, palpitation, absence of foetal movement and leaking membrane. In such cases, the patient must stay at the hospital for at least four to five days or till the patient get cured.

When a pregnant woman comes to the clinic for ante-natal check-up first time, they take history, do physical examination, and according to the indication they do advise for lab test including routine blood test, urine for sugar and albumin, and VDRL. Thereafter, they counsel on how the pregnant mothers should take care of themselves; to drink plenty of water; to eat vegetable, fish and meat, milk, egg, and fruits in increased quantity; to take rest at daytime and sleep at least eight hours at night; avoid heavy work, long journey and high heal shoes; and to take TT injection. They also ask patients to do blood grouping of themselves and also of the adult members of the family as sometimes it becomes very difficult to find rare negative group bloods in case of emergency. In the subsequent visits, they do follow-up the mothers.

High-risk pregnancy

The MO, BHC stated, "a mother should be considered as high-risk if her height is 4 feet and 10 inches or less, if she has oedema, if she has albumin in urine, if her placenta is up-side down (*ulta*), if she is anaemic, and if her uterus is less functional (less ability to contract)."

If a patient is identified as high-risk, the MO, BHC suggests her to get admitted at BHC during or before the expected date of delivery. She said, "Hospitalization is necessary in these cases so that doctors can keep the patient in constant watch." The MO, MSCS mentioned, "I managed a high-risk case by asking her for regular ante-natal check-up to follow-up her condition and advised her for delivery at MCWC." "But in reality, rarely a high-risk mother gets admitted to MCWC unless life threatening condition arises."

Childbirth

The MO, BHC stated that she assisted normal delivery at the clinic, and hired obstetrician and anaesthetist from government and private clinics for cesarean operation. If any complication such as convulsion occurred, she referred the patient to the Sadar hospital. In case of normal delivery, she keeps the patient under observation for 24 hours and in case of caesarean operation the patient is kept for seven days post-operative care. As MSCS does not have any delivery facilities, she referred delivery patients to MCWC.

Post-natal care

"In case of any post-natal and post-operative complications, I do check-ups and treat the patient accordingly," said the doctor at BHC. But in practice, it was observed that usually they did not do any check-up unless the patient faces any complication like excessive haemorrhage or infection at the place of surgery. In case of excessive haemorrhage, the MO, BHC does ultra-sonogram first and then treats the patient accordingly. However she advises mothers to avoid heavy work for three months in case of normal delivery and for six months in case of caesarean delivery, and to avoid sexual intercourse for one and half months. Mothers are asked to use contraceptives since then.

The MO, MSCS said, "Though they have the facilities for PNC, mothers seldom come to our clinic for PNC unless they have any complications."

Neonatal care

The MO, BHC mentioned, "At BHC, we provide treatment and care of neonates having fever, cold, eye infection, umbilical cord infection, and if the baby cannot sleep or eat." They also stated that they counsel parents on how to take care of the neonate, to keep the neonate wrapped in clothes to maintain its normal body temperature, to breastfeed, to take care of umbilical cord, burp after feeding and to give EPI vaccines according to schedule.

The MO, MCSC told that they provided treatment for common cold, fever and ARI. "If baby suffer from ARI, we use sucker machine to keep the respiratory tract clear." According to her EPI services are also available at MCSC.

Summary

They advise mothers for at least 3 ante-natal visits, take history and do physical examination. Depending upon the results of clinical investigation, they advise mothers for laboratory tests. If any mother is identified as high-risk, they advise them to get admitted at BHC (MO, BRAC) and at MCWC (MO, MSCS) during or before the expected date of delivery. MO, BHC attends normal delivery at BHC and hire obstetrician for cesarean operation. As MSCS does not have any delivery facilities, MO, MSCS refer delivery patients to MCWC. Seldom mothers come to BHC or MSCS for post-natal check-up unless complications arise. They do manage common neonatal illnesses like common cold, fever, ARI, eye infection, umbilical cord infection, etc.

5.3.2 Community health workers of BRAC (SS)

SS defined safe motherhood as having good food and staying clean for securing a good health of both mother and child.

Antenatal care

SSs provide homestead service delivery and visit every pregnant mother at least once a month, sell vitamins and iron tablets to them, inquire about their health and well-being and inform it to the ***Shasthya Kormi*** (SK). They do not give any medicine to the pregnant mothers, but advise them to go for ante-natal check-up once in a month to SKs or to the satellite clinics or to CNCs.

> "After identifying a suspected pregnant mother we asked her for urine test with the help of SKs to confirm her pregnancy." (A SS)

They stated that they recommended the pregnant mothers to eat small quantity of quality food like vegetable, fruits, fish and meat, etc. four to five times a day, and to drink plenty of water. Some of them said, "It is good to take food in this way because it prevents vomiting tendency. It is also bad to eat too much at a time as it creates pressure on the baby and hampers its free movement." They said that they asked malnourished mothers to go to the CNC for supplementary diet. They advised mothers to stay happy, not to wear high hill shoes, to sleep at least eight hours at night and two hours at daytime, and not to do heavy work like pressing on tube-well or ***dheki*** as it may cause haemorrhage. Regarding TT vaccine, SS said, "If pregnant mothers have not taken five doses of ATS before, we ask her to take two doses TT during pregnancy, one at fifth month and the other at sixth month."

Management of ante-natal complications

SS said that a pregnant mother might suffer from complications like excessive vomiting tendency, dizziness, blurred vision, excessive haemorrhage, severe abdominal pain, high temperature and absence of fetal movement. In such cases, SS advise them to see a doctor. SS told that in most cases mothers could not afford to go to doctors and go to traditional healers (***kabiraj)*** or faith healer for incantations or amulets and tie it in pregnant mother's waist or arms. According to SS, sometimes it works as they believe in it.

High-risk pregnancy

The SS Narsingdi Sadar and Monohordi perceived high-risk pregnancy in different ways. The SS in Narsingdi Sadar considered pregnant mothers were at high-risk who were of short stature, who conceives after 35 years of age, whose birth spacing is eight to ten years or more, and if mothers had oedema, ruptured membrane or mal-position of fetus. But in Monohordi, the SSs perceived that if mothers suffer from dizziness, high fever, urine infection (irritation while urinating), haemorrhage, malnutrition, oedema and abdominal pain are considered as high-risk pregnancy.

When a mother is identified as high-risk pregnancy, SS stated that they tried to motivate their husbands and mothers-in-law to send her to BHC or to government hospitals.

Childbirth

The SS said that they sold delivery kits to pregnant mothers before the EDD and taught them and their elderly family members about how to use it.

> "When we go to sell delivery kits, sometimes the husbands or mothers-in-law show their unwillingness to buy it. They said that they did not use it before and their children did not die either."(A SS in Monohordi)

The SSs in Monohordi said that they sometimes work as birth attendants when the condition of the pregnant mother is normal, even though none of them had any training on skilled birth attendants (SBA). They said that they delivered child using delivery kits. Right after delivery they ask mothers to have a glass of warm milk and tell others to clean her with water and lay her on bed. "But if the delivery takes place at night, they wait until morning to wash her. It is not good to bring out the mother at night as in the dark she might get contaminated with evil wind." "If the placenta comes out late, we let the neonate to suck colostrum as it helps the placenta coming out fast."

Management of complications during childbirth

The SS in Narshingdi Sadar mentioned about different childbirth complications including prolonged labour (if labour pain is more than 12 hours), hand or leg prolapse and retained placenta. In these cases, they said, delivery becomes very risky and they send patients to doctors.

In Monohrodi, the SSs mentioned about convulsion, high temperature, vomiting, excessive weakness and excess discharge of liquor. They said that they did not do delivery of these patients and send them to BHC.

Post-natal care

They visit the neonate and the mother at this stage once a week. They only counsel them and do not do any check-ups, which is done by SKs. They said that they counsel mothers to eat anything they want like small fish, meat, milk, egg, and watery vegetable. They also advised mothers not to do any heavy work but to do some light work or to walk slowly. "Walking is good because it helps to dry up the vaginal ulcer fast. But it takes time for those who are fat."

They also solicit mothers to stay clean and sell BRAC sanitary napkins to those who can afford. But those who do not have the ability to buy it use cloth. "We ask them to wash these clothes with soap and dry up in sun."

Management of post-natal complications

SS said that many complications may arise during postnatal period including excessive and stinky haemorrhage, abdominal pain, less appetite, jaundice, convulsion or uterine ulcer. In such cases, SS advise them to go to a doctor or SK.

Neonatal care

SS mentioned "They visit the neonate and the mother once a week during postnatal period and register the weight, name and date of birth of the neonate." They do not do any physical check-up, which is done by SKs. According to them, they inform CNPs about the birth of a new baby in the community so that they can take the birth weight within one or two days. They also take regular update about how the child is doing and whether its umbilical cord has dried up or not.

The SS in Narsingdi Sadar said that they told mothers to keep their babies in close contact with their breasts right after birth to maintain the body temperature. Thy ask to keep the baby clean, not to wash until it is seven days old and not to clean the dead skin (*jaali chamra*) as "Babies get nutrition from the jaali chamra." In addition, SS advised mothers for exclusive breastfeeding,

give vaccines for immunization and keep the child in morning sun to get cure from jaundice. The SS in Monohordi specially mentioned about the 'Kangaroo mother care' technique.

Management of neonatal complications

The SS in Narsingdi Sadar said it becomes essential to take the child to a doctor immediately when it felt any breathing problem and turned blue. Regarding neonatal complications, the Monohordi SS added few other points such as if the babies did not cry enough, if it doesn't take breast milk, if it turned blue, red or white, and if it became cold; in such cases they asked mothers to take babies to a doctor immediately.

Summary

SS are only voluntary CHWs of BRAC. They are responsible for providing domiciliary services, screening pregnancy, visit mothers once a month, sell vitamin and iron tablets, and refer mothers to the SK or SC for ante-natal check-up. SS has considerable knowledge on ante-natal check-up, high-risk pregnancy, complications during ante-natal, delivery and post-natal period. Shortcoming identified in the area of ante-natal feeding practices, management of complications and neonatal illness.

5.4 Knowledge and practices of private sector health providers

5.4.1 Medical doctor of a private clinic at Narsingdi Sadar

He defined safe motherhood as the assurance of proper diet, medical care and mental relaxation during ante- and post-natal period.

Ante-natal care

"We advise pregnant women to come once a month to the clinic for ante-natal check-up." But in practice, patients do not come always according to that. He said that doctors of his clinic give 'good' advice to patients. They advise pregnant mothers to take nutritious food like vegetable, fish, meat, egg, etc., to take vaccines timely and to stay in a relaxed mood.

He said in cases of abdominal pain, haemorrhage, headache or weakness, pregnant mothers should seek medical care. In responding to the question about what they do if patients have ante-natal haemorrhage, he said,

> "We have a pathology lab having all kinds of tests facilities. So, we do diagnosis of the disease first and then give medicine accordingly. If we think we admit the patient here." (A medical doctor of a private clinic)

High-risk pregnancy

A pregnant woman should be considered as high-risk if she has high blood sugar, high blood pressure, and excessive bleeding. They usually do not admit any high-risk pregnant women. They refer those patients to the Narsingdi Sadar hospital or to Bhagolpur hospital.

Childbirth

"Normal delivery regularly and cesarean section occasionally take place in our clinic." As they do not have gynaecologist, they hire gynaecologist every Friday from Dhaka in order to do the

gynaecological operations. For a normal delivery they charge around Tk. 900 to Tk. 1,000 and for a caesarean operation they charge around Tk. 8,000 to Tk. 9,000. They usually do not handle any complications during childbirth. They refer complicated cases to the Narsingdi Sadar hospital.

Post-natal care

While discharged, the delivery patients are advised to come for post-natal check-up. They also advise patients to eat more and breastfeed the neonate. Mothers usually do not come unless face any severe problem. Sometimes patients with different problems like retained placenta and uterine prolapse come to the clinic and they then do surgery after doing necessary lab test.

Neonatal care

The doctor said that right after birth a neonate is sponged with Detol-water and then its weight is measured. The doctors at their clinic asked mothers to give colostrums to the child and for exclusive breastfeeding until six months of its age. They also recommend for giving vaccines timely to the child.

5.4.2 Untrained TBA

> "To ensure safe motherhood a pregnant mother should stay safe and follow the instructions of the elderly people." (An untrained TBA)

Ante-natal care

The untrained TBAs tell pregnant mothers in their community to move carefully, to take nutritious food like vegetable, egg and fish and drink plenty of water. They also ask mothers to go to the CNC to measure weight, to take health education from CNPs, to go to the immunization centres for tetanus vaccine, not to pump tube-well or not to do any heavy work. Both groups said, "Bath is forbidden at night as the child may catch cold."

Management of ante-natal complications

"If they face any problem we tell them to go to the visitor apa (FWV)…." However, in most cases they follow traditional practices and try to manage by themselves.

> "It is good to take food in a large quantity but not always as it helps the baby to grow larger and would make the delivery more painful."

> "In the case of back pain, dizziness and mal-position of the baby we give faith healer's water (pani pora). In most cases it works. If the pregnant mother suffers from loss of appetite, oedema in hands and legs and watery blood discharge, we wipe up the mother's abdomen with the verses from the Holy Quran. If a pregnant mother suffers from abdominal pain, we tie a piece of cloth tightly in the upper part of their back. It gives them some relief and makes no harm to the baby."

The TBA in Monohordi mentioned about haemorrhage and said, "We do not know how to stop haemorrhage…." The TBA in Narsingdi Sadar said that in case of excessive bleeding they told the patients to lie straight and to consult the FWVs.

High-risk pregnancy

The TBAs in Narsingdi Sadar identify mother as high-risk pregnancy if she has excessive vomiting, loss of appetite, haemorrhage, back pain, eye irritation, weakness, lose weight and have breathing problems, etc. The TBA in Monohordi mentioned about anaemia, headache, convulsion and oedema as symptoms of high-risk. "When a mother is identified as high-risk, we advise them to take rest and provide them amulet and faith healer's water to get rid of it."

Childbirth

> "In case of normal labour pain we wait for three days and then deliver the child. But if water breaks but the baby is not coming out, we should not wait even for a day. If labour pain is very severe but the baby is not coming out, village doctors give injection to open up the cervix. If it is failed, then we take mothers to hospital." (An untrained TBA)

All TBA said, "We do not use any delivery kit but we bring gloves from the FWC." They mentioned that they use one glove to deliver three to four child. They said they wash the gloves after every use and keep it for next use until it is torn. They also said they sometimes wrap their hands with white-soft cloths while delivering a child. They said they use new thread and blade to cut the umbilical cord and boil it before use. They mentioned that they used to use bamboo flake about five to six years back, but now they did not use it.

Management of birthing complications

The TBAs gave a few examples of birthing complications. In one FGD they said that if the uterus came out during childbirth and if the baby's head got stuck in the anal canal, they put pressure with their thumb in the anal canal. It helps to replace the uterus and the baby is repositioned to the right place and then the baby comes out easily. They also mentioned about their practices in management of hand or leg prolapse:

> "If the baby is in wrong position and if its hands or legs come out first, they put their hand inside the uterus to try to bring out the baby in the precise way." (An untrained TBA)

However, they stated that in such cases babies usually were born dead. Some said that they managed to deliver the breech presentation (buttock coming first instead of head) by massaging over abdomen very slowly. It helps to expel the baby easily. If their attempts fail, they call the FWV. "But the visitor apa is not available at night as she lives in town. So we call village doctors, they send the patient to the Upazila Health Complex or to the district hospital or to the private clinic."

In another FGD, the TBAs said about their practices in managing the retained placenta.

> "If placenta doesn't come out right after delivery, they put a bundle of hair in mother's mouth so that the mothers would vomit and placenta would come out fast with that pressure." (untrained TBA)

Post-natal care

All the TBAs said that they recommend mothers to eat supplementary food (***pushti*** packet) from CNP and to stay clean. They also advise mothers to eat black cumin curry ***(Kaalijirar torkari)*** as it

helps increase breast milk. In one FGD TBAs said, "The piece of cloth they use as sanitary napkin should be washed regularly. If the clothes are kept clean, the chance of attacking by diseases would less."

The other group said that they forbid mothers to lift anything heavy and to speak loudly as it may cause uterine prolapse. They also ask mothers to sit against the wind while urinating. Otherwise she may get attacked with '*talunama*' disease. *Talunama* disease is something where the patient would suffer from abdominal pain, and excessive and long lasting menstrual bleeding. "In case of heavy bleeding, we ask mothers to take vitamin as vitamin makes blood in the body," – said an untrained TBA.

Neonatal care

The untrained TBAs do not give any direct service to the neonates. They advised mothers to give colostrum to neonates right after birth and should continue breastfeeding until the baby is six months. Some said "We also feed warm water with the help of a piece of wet cloth to make its body warm." But the other group said they forbid mothers to give honey and goat milk as they cause running nose.

Both the groups said a neonate should not be given bath until it is four to five days old and should be kept in skin-to-skin contact with the mother's body, which helps keep the child warm. They said that babies should be given a total of nine vaccines.

> "We used to paste feaces of cockroach and spread it over the baby's stomach if the child fails/refuses to urinate after birth. We used to paste leaves of marmelos and put on the baby's head curing common cold. Sometimes these techniques would work. If a child suffers from respiratory distress or fever, we advise to take them to doctor." (Untrained TBA)

5.4.3 Trained TBA (TTBA)

"Safe motherhood means safety of mother and child irrespective of the delivery takes place whether at home or hospital." They think proper rest and regular medical check-up is necessary for making motherhood safe.

Ante-natal care

They told that they recommend pregnant mothers to eat more than normal quantity. A trained TBA said, "One should not to eat much at a time. It is better to eat in small quantity so that the stomach would not stay empty." They advise mothers to eat vegetable, take iron tablets, stay clean and not to lift anything heavy. Pregnant mothers should also take three anti tetanus vaccines, one each in 5th, 7th and 8th month. If a girl is given all doses before marriage, she won't have to be given ATS for the next five years. They said that they also ask mothers to do check-ups from the BRAC SKs. One TTBA who took training from CARITAS said that she measures weight, blood pressure and the baby's heartbeat too. For this service she takes fee, ranging between Tk. 5-20.

> "If the baby's heart beat is found four fingers below the mother's umbilicus, then it can be said that the baby is in normal position." (trained TBA)

They said they recommend mothers to go for ultrasonogram at 5th or 6th month of pregnancy to know the position of the foetus. If a mother suffers from headache, dizziness, haemorrhage and blurred vision, they suggested them to go to the district hospital or to BHC.

High-risk pregnancy

They said fever, headache, oedema in hands and legs, blurred vision, haemorrhage, diabetes, etc. are the common symptoms of high-risk pregnancy. "If a mother has diabetes, the baby becomes big, which causes trouble in delivery. In case of early child bearing, the uterus channel remains narrow and makes delivery risky too." They said that they refer high-risk patients to the district hospital or to BHC.

Childbirth

They said they cut their nails, wash hands, and wear clean clothes and gloves before delivering a child. They use delivery kit. They boil the blade and the piece of thread for half an hour and then use them. They said a delivery kit has two pieces of white cloths, which they use for wiping the baby. They keep the baby on the plastic sheet right after birth.

Management of complications during childbirth

All the participants except one said that if the placenta comes out late, if patient has convulsion, and if the patient bleeds, they do not 'touch' the patient anymore and send her to hospital. But the TTBA who took training from CARITAS said that she has training to handle this situation. If the placenta takes time to come out, she waits until the baby's umbilical cord becomes white. Then she wears gloves and put her hands inside the uterus and tries to bring out the placenta. Then she put the placenta into a pot full of water. If the placenta floats like a flower, it means it is completely out and there is no danger. But if it sinks, it means some part of it is still inside. It causes haemorrhage, which might lead to death. In that case the patients are always sent to doctors. Other TTBAs also mentioned about the technique of putting placenta in a pot full of water to check whether it has come out fully or not.

Post-natal care

They said that they visit every mother once a week during post-natal period. Sometimes they take BRAC's SK along with them for physical check-up if needed. They said it is important to take extra amount of food in the first 14 days and drink plenty of water, especially before every breastfeeding. They ask mothers to stay clean and use sanitary napkins. "Those who are educated use pads, but the village people do not want to spend Tk. 20 for it. They prefer using cloth." A few use straws made pad (***khorer bira***). Those who use piece of cloth are recommended to wash and dry it up well before use. Otherwise, it might cause ulcer in the vagina, they said. They also advised mothers to take vitamin A capsule and not to do any heavy work. They give contraceptive pills to mothers so that they do not conceive again early.

They mentioned about a few problems which they think require medical care. These are fever, excessive and discontinued bleeding (in that case the abdomen is felt heavy, they said), abdominal pain, etc. In these cases they recommend patients to see doctors immediately.

Neonatal care

They asked mothers to give colostrum to babies right after birth and give only breast milk till the child is six months old. They forbid mothers to make fire in the delivery room, as the smoke would cause breathing problem for the child. They said that they advised mothers not to give a bath until the baby is three days old (as it might cause pneumonia), should keep clean always, and to clean their hands and nipples before breastfeeding the child. The TTBA who took training from CARITAS added a few more things like a neonate's birth weight should be taken within 24 hours of birth and its eyes should be massaged four times a day. She also takes temperature of the baby with a thermometer. Neonates should be kept in sunray for half an hour every day in the morning in order to maintain the normal body temperature and to prevent/cure jaundice. They also said that all vaccines including measles, polio, diphtheria and whooping cough should be given within nine months. If a neonate suffer from fever, cold, breathing problem, loose motion and vomiting, TTBA ask mothers to take the child to a doctor.

Summary: The difference between trained and untrained TBAs in knowledge and practices.

	Trained TBA	Untrained TBA
Knowledge on immunization	No correct knowledge	No correct knowledge
Knowledge on ANC/PNC	Partial	Partial
Knowledge on neonatal care	More knowledge than untrained TBA	Very little knowledge
Use of delivery kit	Yes	No
Safe delivery	Yes	No

5.5 Knowledge and practice of family care givers

5.5.1 The mothers

Ante-natal care

To stay well at this stage one should eat more, take vitamin, supplementary diet (*pushti* pack), and take rest. They said, however, it is difficult to stay well in the face of poverty, husband's misbehaviour and workload of the family. They heard about TT vaccines from CNP and TV and tried to take the vaccines accordingly. "The BRAC SK visits us once in a month. They told us not to do heavy work, have sexual intercourse with caution, and not to take medicine in fever or any other disease." Sometimes we can not follow the instructions of the SK apa due to many problems in the family. They said that they have to do heavy works even before giving birth.

Mothers said that village women usually did not go to any doctor or FWV or even TBA for ante-natal check-ups. They learnt from TV, radio and from BRAC SK that in case of haemorrhage, convulsion, fever or excessive vomiting, the pregnant mothers should go to doctors or to SK. When pregnant mothers have such complications, they try treatment by themselves firstly and then go to the traditional healers (kobiraj). Sometimes they send husbands to the FWVs. Mothers reported that FWVs then gave medicines to those who were poor and came to visit patients who were rich so that they could earn some money. They said that sometimes mothers went to doctors in 'pharmacies' and they then treated or referred the patient to somewhere else.

High-risk pregnancy

> "The village women considered pregnancy as high-risk if she suffers from convulsion. They believe that evil wind cause convulsion which is incurable." (A mother)

Mothers said that if a pregnant woman had convulsion, she should be taken to a doctors at the hospitals or to the FWV immediately. But the problem is they are not available all the time. "If a pregnant mother gets sick at night, we cannot do anything." In that case the husband and other elderly members of the family bring religious water (*paani pora)* from faith healer and feed mothers for cure.

Childbirth

> "Usually our family members and relatives work as birth attendants, and we prefer it. We do not feel any problem. We have Allah with us." (A mother)

None of them said that their birth attendants used delivery kits and gloves while they gave birth. In summer the mother is kept lying on a coarse mat made of bamboo slips (*chaut)* and in winter hay bundles are put underneath the *chaut*. They said that their birth attendants used thread and new blade to cut the umbilical cord and boil them before use. The mothers are given bath right after delivering the child.

They also said that they could not afford to go to doctors even they wish to do so. Only 2 to 3% mothers go to doctors at MCWC. It cost them around Tk. 500 to Tk. 1000 for a normal delivery at hospital. If they go at night, they have to wait in hospital veranda for hours. Then they have to give Tk. 10 to 15 to the hospital guards to call doctors.

Birthing complications

They have identified excessive bleeding, ruptured uterus and retained placenta as examples of childbirth complications.

> "It becomes very painful then. The birth attendant then stands over the abdomen and put pressure. Even when this technique fails, they put bundle of hair in the mother's mouth. Then the mother feels vomiting and with that pressure the placenta comes out." (A mother)

Post-natal care

"The CNP and the SK tell us many things but we cannot follow that. We take care of the child but couldn't take care of ourselves." They said they started doing all the household chores when the baby is six days old. They would not get involved in sexual intercourse till the postnatal menstruation stops.

> "It is recommended by the *pushti* apas to eat more. But our mothers-in-law. Do not allow us to eat fish for six days. They let us eat only rice with smashed potato and turmeric. Milk gives strength but the elderly village women forbid us to drink milk." (A mother)

Most mothers who were interviewed said that they felt very week and dizzy at this stage as they breastfeed child. They know they need more food to feel good. But they could not do that due to restrictions and poverty as well. They said if excessive and clotted blood came out in the post-

natal stage and if it did not stop in 40 days, they went to the doctors in pharmacies who gave medicines. They came to know from radio and TV that excessive bleeding may cause convulsion and mothers may die of that.

They said it was also needed to consult doctors in case of vaginal ulcer, loss of appetite, fever, vomiting tendency, abdominal pain for more than three days after childbirth, and convulsion. However, they prefer to visit the CNP, who sometimes refer them to FWVs. Sometimes they also go to the traditional healers *(Kabiraj*).

Neonatal care

Mothers in Narsingdi who received KMC services said that right after cutting the umbilical cord, the babies were given colostrum and kept with the mothers in 'skin-to-skin' contact. The others said that the child has to be kept warm to prevent cold related illnesses. They used to wipe breast nipple and drink a glass of water before feeding the child.

> "Colostrum works as medicines and keeps the child warm. It is a blessing of Allah. If the mother's breast milk is not enough, the child could also be given goat milk as it keeps the body warm too." (A mother)

They said they give breast milk as long as they can. But if breast milk is not enough, the child is given boiled flour or course flour of wheat since from 2 months of age. The child could be given any food after 6 months. The mothers in Monohordi received vaccines for the child from CNC. They also stated that child should also be cleaned after defecation, otherwise it might suffer from skin infection.

They said they would go to doctor if the child suffers from fever, cough, frequent vomiting, diarrhoea, if it refuses to eat, and if it becomes white. They usually go to doctors in pharmacies and if they find the patient serious, they refer to the UHC or to private clinics. The mothers said that if proper treatment/care was not provided, neonates might die from cold, convulsion, and pneumonia.

5.5.2 The mothers-in-law

Ante-natal care

The mothers-in-law said that pregnant mothers should take nutritious food like vegetable, milk, fish, and egg, depending on their ability and should not lift anything heavy as it might cause prolapse of uterus. They said that pregnant mothers should also take anti-tetanus vaccine.

> "In older days when we gave birth to children, our mothers-in-law and others told us to do more work during pregnancy…it used to help making the delivery easier and quicker. Now it is advised by all not to do any heavy work. Brides of today do not do any heavy work even if they are asked to do that. They want to take rest. In earlier days women could stay healthy even after doing hard work during pregnancy as they used to get enough nutritious food then. Now there is no fish in the pond and no fruit in trees. So, now women do not have the strength to do hard work during pregnancy." (A mother-in-law)

The mothers-in-law said that now-a-days their daughters and daughters-in-law underwent ante-natal check-ups once a month by the FWVs at FWC or at satellite clinics or by the BRAC SK at

home. They stated that their daughters and daughters-in-law also went to the CNC where CNP measures their weight, blood pressure, and examines the position of the baby, and gave nutrition packs and iron tablets to the malnourished pregnant mothers. Some also go to doctors in private clinics. "Those who realize that it is good to do regular check-up, do it and those who do not realize it, do not do it."

When a pregnant mother suffers from headache, convulsion, excessive bleeding, oedema in hand or leg, they should go to doctors.

> "Those who have money and who are conscious go to doctors immediately. But those who are not conscious go to *Kabiraj* first, bring amulet and tie it in the mothers' waist. When it does not work and when the situation worsen, they take the patient to hospitals. Those who have money go to private hospitals and those who do not have money go to government hospitals." (A mother-in-law)

High-risk pregnancy

The mothers-in-law mentioned that a mother should be considered as high-risk if she was of short stature, carrying twin babies, the foetus mal-position and less movement of fetus. In such cases, the child should be delivered by trained birth attendants or at hospitals.

Childbirth

The mothers-in-law told that nowadays they preferred to deliver a child with the help of trained birth attendants. Untrained birth attendants sometimes do harm to the mother and the child. According to the mothers-in-law, TTBAs use delivery kits. They use a plastic sheet for the mothers to lie on it and use new blades to cut the cord. If the baby's hands or legs come out first during delivery or if a mother suffers from labour pain for more than a day or in case of twin birth, child delivery becomes risky. In such cases the mother should be taken to the hospital. They think maternal death during child delivery is now very rare because of availability of many facilities.

Post-natal care

The mothers-in-law stated that they learnt from BRAC SK that in post-natal period a mother should not do any heavy work, but in reality, it is not possible to do because a woman must run her family. However, they advise the mother to take good food so that the child get enough milk. But there are many mothers-in-law who still prefer to feed their daughters lau *bhorta* (anything smashed) and dry foods. It is believed that the dry food would parch the breast milk.
They mentioned if a mother suffers from loss of appetite, fever, weakness, and excessive bleeding, she must see a doctor. People of this area usually go to the MCWC. But those who have money prefer to go the private hospitals. According to them, they serve better. In case of excessive bleeding, women also go to the birth attendant or traditional healers *(Kabiraj*) to bring amulet to tie in the mothers' waist.

Neonatal care

Right after birth they wrap the baby with thick clothes to keep warm as babies catch cold easily, which lead to pneumonia. They said that they told mothers to feed colostrum to the baby. If colostrum does not come out they feed the baby *misrir paani* (sugar water) to stop it crying. But usually they do not feed the baby anything else rather than breast milk till the baby is six months

old. They mentioned that when a child was born, BRAC-CNP came to measure birth weight. They said that they went to satellite clinics for giving six vaccines to the child. They only mentioned that if a neonate suffered from breathing problems or pneumonia, they prefer to take the neonate to the MCWC or to any private clinic.

5.5.3 The husbands

Ante-natal care

For being healthy in this stage a pregnant mother should take nutritious food like fish, meat, milk, egg and vegetable in larger quantity, should stay clean and should take proper rest. They should not do any heavy work as it may cause infection. The husbands said that they took care of their pregnant wives by helping them in household chores and by taking them to doctors in case of any problem.

Pregnant women go to *Pushti apas* (CNP) to measure weight. They usually go to doctors in UHC if they get hurt and have ante-natal haemorrhage. The husbands said that they liked UHC as it is less expensive compared to MBBS doctors of other places. But women prefer to go to FWVs as there they can express different personal/delicate problems.

Apart from financial inability, sometimes it becomes difficult to follow the health providers' advice in extended families. "In extended families traditionally women eat at the end, after all the male members and children have their food. So, in the end in many cases pregnant mothers are left with inadequate food. Moreover, they have to work hard too and do not get any time to take rest."

High-risk pregnancy

The husbands identified malnutrition and convulsion as the symptoms of high-risk mothers. They said that the malnourished mothers should take iron tablets. In case of convulsion, pregnant mothers should be taken to doctors immediately.

Childbirth

The husbands' preferred hospital as birthing place as doctors and nurses take care of the patients over there. They also said that even if a child is delivered at home, trained birth attendants or nurses should be appointed for that. They said that many complications may arise during child birth such as delayed labour, less labour pain, haemorrhage, early rupture of membrane, mal-position of fetus, etc. Husbands thought that in such cases doctors should be consulted immediately.

Post-natal care

Husbands believed that mothers at this stage should take nutritious food like milk, egg, fruits, fish, meat and iron tablet, and should stay clean. They said that mothers may suffer from severe white discharge (*shutika*) and excessive bleeding when they should be taken to doctor. Husbands usually prefer to go to the UHC first as it is comparatively cheaper and secondly to the doctors in pharmacies.

Neonatal care

"A neonate should be given colostrum right after cutting the umbilical cord and pursue exclusive breastfeeding till six months of age." Fathers in Monohordi area mentioned about skin-to-skin contact of neonates with the mothers in order to maintain the right body temperature. They said that birth weight should also be measured and vaccines should be given in time. If neonates suffer from pneumonia, fever, cold and measles, the husbands preferred to take neonates to UHC.

Summary

According to mothers, pregnant women do not go to anywhere else for ante-natal check-up. They could not follow the instructions they learned from radio, TV, SK (provided doorstep services) during ante- and post-natal period because of family problems. They bore misconception with regard to high-risk pregnancy and its management. Their birth was attended by the family members who did not use delivery kits. They do harmful practices while managing birthing complication. They will not go to the govt. hospitals because of cost involvement.

Mothers-in-law and husbands are positive towards ante-natal and delivery care. However, still many mothers-in-law feed their draughts-in-law anything smashed and dry food during post-natal period. In case of complications, some prefer to go to the private clinics and some to the traditional healers. However, husbands prefer the UHC as it is cheaper. Both have considerable knowledge on neonatal care. Some mothers-in-law feed the neonate sugar water if colostrum do not come in order to stop crying.

6

Maternal and child health system

This section explore the state of existing MCH service facilities, referral system and barriers in service utilization in connection with local level planning including government, NGO and private sectors.

6.1 Facilities available in Narsingdi district

In Narsingdi district, 85 services delivery points (SDPs) under public sector are delivering services on reproductive health including maternal, child and neonatal health (JICA 2003). Among these SDPs, one district hospital with 50 beds, one MCWC with 10 beds, six UHCs with 31 beds, 59 union health and family welfare center (UHFCWC) and 17 health sub-centers are delivering services. Besides these SDPs, health and family planning field workers (360 FWA and 164 HA) are working as community based distribution outlets. A number of NGOs like CoRHP (Japanese Project), BRAC, Marie Stopes, BAVS and Paribarik Shasthya Clinic under NSDP are providing reproductive health services through facility and domiciliary-based approaches at district, upazila, union and community level. These NGOs are working partially and their working area is demarcated by the FP authority. Several commercial units under private sectors such as private clinics, private physicians, drug sellers, village doctors, traditional/faith healers and traditional birth attendants also exist. Table 26 summarizes the existing MCH facilities together with available services in Narsingdi Sadar, Raipura and Monohordi upazila. To facilitate the situation of the existing SDPs in Sadar, Monohordi and Raipura upazila, this chapter highlights the following areas to review and analyze the questions set out in the TOR.

1. Situation of government, non-government and private health facilities
2. Partnership between government, NGOs and private sectors
3. Barriers to utilize services
4. Management information system

6.2 Situation of existing health facilities

6.2.1 The government health facilities

The government is offering health services at district, upazila and community level through facility and domiciliary approaches. The government has district or Sadar hospital and MCWC at the district level, UHC and UHFWC at the upazila level and sub-centre at the community level. The MCWC works under the Directorate of Family Planning and the district hospital works under the Directorate of Health.

The District (Sadar) Hospital

About the staff. There are 15 posts of medical doctors along with nine specialists in gynecology, medicine, surgery, orthopedic, paediatrics, cardiology, ophthalmology, ENT and anaesthesia. The medical officers offer outdoor services following roster. There are 20 senior staff nurses, one nursing supervisors, five assistant nurses, three pharmacists and a health educator posts in the district hospital. Two nurses and three brothers are appointed for operation theater (OT). However, posts for three medical doctors, nursing supervisors and health educators are lying vacant.

Staffing
Specialist doctor – 9
Consultant (radiology) – 1 (vacant)
RMO – 1
Medical Officer – 3 (1 vacant)
Dental surgeon – 1
Nursing supervisor – 1 (vacant)
Sr. Staff nurse – 20
Asstt. Nurse – 5
Pharmacist – 3
Health educator – 1 (vacant)
Pathologist – 1
Radiologist – 1
Administrative e staff – 3
Support staff – 21 (1 vacant)

Though their duty hour is from 8 a.m. to 3 p.m., it was observed that the staff started coming to the hospital from 9.30 a.m. and all of them were not present during the observation period

Physical structure, medicine and equipments. The hospital has the facilities for normal delivery, cesarean operation, and some gynaecological operations. But it does not have any facility for blood transfusion. The delivery room is very small and dusty. The delivery tables are broken and rusted. Though they were given two new tables, they are not in use due to lack of garbage pots. Since autoclave machine is broken, delivery instrument was sterilized in boiling water or spirit. Operations are not performed because the OT light got broken and the oxygen supply was not enough. It was found that though the hospital does have facilities for pathology tests including pregnancy test, the patients have to do the lab tests from outside. Regarding X-ray, a mother told, "After getting admission into a government hospital why do I have to do X-ray from outside for my child?" Except paracetamol and some antibiotics, patients have to buy almost all medicines from outside. A patient said, "The hospital does not give us medicine as all medicines are stolen by the staff."

In the district hospital, there are two beds for children. After getting admission, some mothers are carrying their children into lap due to lack of bed. There is lack of ventilation and the room is too congested to see a patient by a doctor.

Available safe motherhood services. Ante-natal check-up**:** Patients coming for ante-natal check-up were asked about relevant history of pregnancy and were examined by the gynaecologist. He then sent patients for counseling to the nurse or FWA. Only five patients came for ANC on the observation day. As the register was not maintained it was not possible to follow up the pregnant women retrospectively. The gynaecologist said "The patients who are educated and conscious about their health do come for regular check-up."

Delivery care: Delivery care of the hospital is awful. As the condition of delivery table was not good, delivery used to take place on a small flat wooden seat *(piri)*. The gynaecologist said, "We do cesarean operation but for a couple of days we are not able to do that because of non-functional OT."

Post-natal care: There is no separate ward or post-operative room for delivery or cesarean patients. All types of female patients are kept together in the female ward. Hospital staff said that once a patient was discharged she did not come again for follow-up.

Maternal and Child Welfare Center (MCWC)

About the staff. There are only two doctors (one clinical medical officer and one anaesthetist), five FWV (three for indoor patient and two for outdoor patients) and three cleaners in the hospital. There are no nurses (three posts vacant) and even no *ayah* in the hospital. The clinical doctor has to maintain both indoor and outdoor services. Since there is no nurse, the doctors have to conduct deliveries with the help of cleaners. Staff started to come to hospital during 10.30 to 11.30 a.m. and the doctor came to the hospital at 11.30 a.m. whereas they are supposed to come at 8 a.m. Concerning availability of doctors, one patient said, 'If you come here after 1 o'clock you will not find any doctor.'

Staffing
Medical officer (clinic) – 1
Medical officer (anesthetist) – 1
FWV – 5
Dai nurse - 1 (vacant)
Nurse (Midwife) – 2 (vacant)
Administrative staff – 3 (1 vacant)
Cleaner - 3
Ayah - 1 (vacant)
Driver – 1
Night guard - 3

> "I came late as I got a phone call to do cesarean operation in a private clinic." (MO-MCH)

Physical set-up, delivery equipments and medicines. The hospital has a modern OT for cesarean operation and has all types of delivery instruments but no facility for blood transfusion. It does not have any pathology facility, so patients are sent to the sadar hospital for pathology tests. The doctor said that they have got funding but only for staff shortage they could not work properly. Regarding medicine, the doctor said, "They give free medicines (all types) to the patient." However, the patients said that except FP methods, they have to pay for all medicines, even the operation charges are different for different patients."

The beds were also in a good condition. The ward was not clean enough and the doctor said that it is not possible to keep it clean due to visitors. He said that it is very hard for a cleaner to work in delivery room and general ward together. The cleaners also have to work in OT and post-operative room. Within the observation period, two health assistants (HA) were found to give vaccination in a room, which was very small and overcrowded.

Available MCH services. Antenatal care: After confirming the pregnancy, patients are counseled for regular check-up. Two FWV was supposed to give services to pregnant women, whereas only one was working and the other have been transferred about a month ago. The existing FWV said, "I know everything, but could not counsel them properly due to staff shortage, still 20 mothers are waiting outside." It was found that patients were not happy to see a FWV. A patient said, "I came here only to see the doctor, not the FWV."

Delivery care: MCWC do around 50 deliveries a month Due to staff shortage one FWV is doing delivery with the help of a cleaner. The delivery room was neat and clean and at a time two deliveries are possible. The doctor only does cesarean operation and attends patients with difficulties.

Post-natal care: After delivery the patients are kept into a post-operative room for a while, then send them back to the ward. Patients undergoing caesarean section are kept in hospital for a week whereas normal delivery is for 24 hours. Mothers come hardly to follow-up unless having any complication after getting discharged from the hospital.

Doctor-patient relationship. The doctors said due to staff shortage he could not give enough time to the delivery patients. If the patient has got complication then he examines her and provide counseling, otherwise FWV used to see them. On the contrary, patients complained "Though doctors are free, they never see us, they refer us to FWV."

Monohordi Upazila Health Complex (UHC)

About the staff. According to a medical officer there is one UHFPO, one UFPO, one RMO, one gyanecologist, one dental surgeon, one anaesthetist, one MO-MCH, six other medical officers, seven staff nurses, three junior nurses, one ward boy, one junior and two senior brothers, two pharmacists and one FWV are working in the Monohordi UHC. In the MCH unit, there are two posts for doctors but only one is appointed who is trained in EOC. However, he did not come to the UHC since last three to four months as he is on training in Dhaka. As a result, they cannot perform any caesarean operation at present. They used to do seven to eight caesareans a month before. Though there is one post for nurse supervisor but it is lying vacant. Now they have two nurses who have EOC training and conduct normal deliveries.

Staffing
UHFPO – 1
UFPO – 1
RMO – 1
Gynecologist - 1
MO (MCH) – 1
Anesthetist – 1
Dental surgeon – 1
Other MO – 6
Nurse – 10
Ward boy – 1
Pharmacist – 2
FWV – 1

The hospital hour is from 8 a.m. to 2.30 p.m., however, it was observed that the staff and doctors were coming around 10:00 a.m. At 10.30 a.m. a doctor replied very uncouthly about the doctor of MCH-FP, "I won't tell you where he is and what time he will be available." Regarding the number of staff, some hospital staff said, "The hospital has enough staff if they do their job properly." It was observed that some doctors were chatting with medical representatives outside the hospital instead of doing their jobs. Since the gynaecologist in the hospital was a male, patients were not generally happy to see him.

Physical set-up, delivery kits and equipment. The Monohordi UHC has the facility for both cesarean operation and normal delivery. However, it seemed during observation that the operation theatre was not functional. There was no OT light and autoclave machine. Except some very simple tests like urine test, all pathological tests have to be done from outside. "Though there are two X-ray technicians appointed and an X-ray machine, they are not in use." One staff said that except paracetamol and antacid, patients have to buy all medicines from outside. FWV said that they do not have enough temporary contraceptive method. The hospital has the arrangement for immunization.

The delivery room was not big enough and at a time two deliveries are possible. There were heavy dusts everywhere and the room was very humid. Before using the delivery kit they sterile them using spirit. The condition of hospital building was not good. There was leaked roof, broken toilet and shortage of beds. A nurse mentioned that they have 31 beds but sometimes they got more than 40-45 patients.

Available safe motherhood services. Ante-natal care: Usually nurses provide ANC services, do physical examination and inform them about next visit and vaccination. If the nurses identify any patients as high-risk they send them to the doctor but patients do not want to see the doctor as he is a male. The gynaecologist said that each day 4/5 pregnant women come to him, if MCH doctors are not present, he sends them to nurses.

Delivery care: If there are more than two delivery patients, two deliveries take place on the delivery table and the others need to take position in the dusty and damp floor., if any patient need caesarean operation, doctors send them either to the district (sadar) hospital or to the private clinics though the hospital is supposed to do the operation.

Post-natal care: The patients only come for post-natal check-up if they got trouble, for instances such as severe bleeding, problem with breast feeding, fever, etc. Patients said that until they faced problem, they did not like to come to this hospital.

Doctor-patient relationship. During observation it seemed doctor-patient relationship in this hospital was not good. Hospital staff did not care about their patients and did not see them regularly. Some patients said, "Doctors do not listen to us, if we ask them anything doctors became angry, but they only do care for us if we buy services from them."

6.2.2 The NGO health service facilities

A number of NGOs are offering services in Narsingdi at district, upazila and community level. However, this section addresses the situation at BRAC Health Centre, known as *Shushasthya* with regard to promoting safe motherhood services in the upazila and community levels.

BRAC Health Centre (Shushasthya)

About the staff. There are two doctors, seven FWVs, four nurses, four *ayahs* and one lab technician in this hospital. Doctor's duty hours are from 9 a.m. to 6 p.m. However, in case of emergency the doctor has to stay at night. FWVs have to do roster duty and are available for 24 hours. Amongst the four nurses, one is to conduct delivery, one has to do front desk duty, and one has to be on charge of cabin and ward, and the others is to handle the emergency. Amongst *ayahs*, two do their job during day and two at night. Besides hospital duty, the nurses have to do front desk duty as well.

Staffing
Medical officer – 2
Nurse – 4
FWV – 7
Ayah – 4
Lab technician - 1

During the observation day, the FWVs and nurses came to the hospital in time but the doctors did not come as they had duty in the previous night.

Physical set-up, delivery equipment and medicines. The hospital has facilities for doing both normal and cesarean deliveries. The hospital does have all sorts of delivery instruments which are sterilized before use. The condition of the furniture was not good. Some of them were broken, some were useless and some of them got rusted. The distance between the toilet and the cabin was long which seemed difficult for a post-operative patient to cover. The doors of the toilet are broken and grimy. The center has the facilities for few pathological tests. Almost all sorts of medicine for normal delivery and caesarean operation are available.

The delivery room was just like a mess and was too small to conduct more than one delivery. However, two to three deliveries are going on when necessary. The hospital doesn't have any post-operative room.

Available safe motherhood services. BRAC Health Centre offer clinical services for complicated cases identified in the community. The BHC at Narsingdi has the facilities of ANC/PNC, normal delivery and cesarean section, EOC, MR, neonatal care, RTI/STI care, and general health treatment. In addition, BHC is equipped with out- and in-patient services, laboratory facilities, essential drugs, and behaviour change communications materials and equipments. These services are given against fees with a subsidy for the poor BRAC members (service charge – Tk. 15 for BRAC members and Tk. 25 for others, normal delivery package- Tk. 500, cesarean section package- Tk. 7,000 for BRAC members and 8,000 for others, MR- Tk. 250).

Ante-natal care: The doctors provide ante-natal care package including patient's history taking, physical examination (pulse, blood pressure, height, weight) and counseling. He asked patients about the date of her next visit and to bring her husband.

Delivery care: It was found that patients were very confident and comfortable with the given delivery services of the hospital. One patient came to the hospital with delivery pain said to the doctor confidently, "Whatever you say I will do. If it is not possible to do the delivery here then you refer me wherever you want." Another patient said, "I have taken all treatment from private clinic during pregnancy but I want to deliver in *Shushasthya* as my first baby was delivered here." They keep post-caesarean patients in the hospital for seven days and normal delivery patients for 24 hours.

Post-natal care: They ask patients to come to the hospital at least once for post-natal check-up, which does not happen usually. They only come if faced difficulties. If necessary, they do counseling husbands and mothers-in-law.

Doctor-patient relationship. During observation, it seemed that doctor-patient and nurse-patient relationships were good and cordial. The doctor spent 10/15 minutes with each patient, and listened to them carefully. Some patients said, "If they keep continuing the given services then we will definitely come to this hospital."

6.2.3 The private sector MCH facilities

There are many private clinics, diagnostic centers, general practitioners, drug sellers, village doctors, traditional healers, and TBAs offering safe motherhood services in the Narsingdi district. There is no private clinic in the upazila level where drug sellers are the main private health service providers. TBAs, village doctors, *Kabiraj*, etc., are the major private health service providers at the community level. This section describes the situation of a private clinic in promoting safe motherhood services in the Narsingdi district.

A private clinic

About the staff. There are six medical doctors attached to this clinic, each of them provides services twice a week. These doctors are from different government hospitals of Narsingdi and

Dhaka who are supposed to come to the clinic whenever they are asked for. All the time two doctors are available in the clinic. There are four junior nurses, five staff nurses and one brother. None of the nurses have any diploma. They had only training from different clinics. Three nurses do their duties together and maintained two wards, 20 cabins, and the emergency. The emergency is open from 8 a.m. to 2 p.m. One junior nurse and one brother together do 24 hours OT services.

Staffing
Medical doctor – 6
Staff nurse – 5
Junior nurse – 4
Brother - 1

Equipments and medicine. There are two operation theatres and they have two sets of surgical and other necessary instruments. The clinic does all kinds of operations except cardiac surgery. They sterilize all instruments in an autoclave. The delivery room and delivery equipments were very neat and clean. A nurse said, "All the time we have to be ready with two sets of instruments as there is no specific time for the emergency to arise.' The clinic has no post-operative room. The clinic does have its own pharmacy where all kinds of drugs are available, which gives patient relief that they don't need to be worried about medicine. The diagnostic facility is really good where almost all sorts of diagnosis are done and open for 24 hours.

Ante-natal care: Usually people do not come to the clinic for regular ante-natal care until they have any problems. The high-risk mothers come for regular check-up and if necessary they get admitted at the hospital. They do not have the facility to give vaccines in their clinic.

Delivery care: According to a doctor they conduct about 30-35 cesarean operation per month. The nurses usually attended normal deliveries. If any complication arises, then they call the emergency doctors and if necessary, the gynaecologist. Since the clinic does not have any post-operative room, all types of patients are kept together. If patients want they can hire a cabin.

Post-natal care: They keep normal delivery patients for 24 hours and post-operative patients for 7 days. During this period, patients are counseled on breastfeeding, cleanliness, use of sanitary napkin, taking nutritious food, etc. When they are released from the hospital is asked for post-natal check-up though it does not happen. They said that they give only primary health care to a neonate in his clinic. The hospital does not have any FP facilities.

The existing MCH facilities along with available services in survey areas of Narsingdi district is described in Table 27.

Table 27. Existing MCH facilities along with available services in three upazilas of Narsingdi district

Upazila	Type of facilities	Existing MCH facilities	Services available
Sadar	Government	District hospital	ANC, PNC and neonatal care Normal delivery and cesarean operation Gynaecological operation MR and D&C No C-EOC services though have facilities No blood bank Temporary and permanent FP services Diagnostic facilities (functional+non-functional) No x-ray/pregnancy test though have facilities
		MCWC	ANC, PNC and neonatal care Normal delivery and cesarean operation MR and D&C No C-EOC services though have facilities No blood bank Temporary and permanent FP services
		FWC+UHFWC	No diagnostic facilities Satellite clinics do not held regularly
	NGO	MSCS	ANC, PNC and neonatal care No delivery care facilities MR Diagnostic facilities Temporary FP facilities RTI/STI services
		BRAC health programme.	ANC, PNC and neonatal care Normal delivery and cesarean operation MR C-EOC services No blood bank Routine diagnostic facilities RTI/STI services
	Private	Private clinics	ANC, PNC and neonatal care Normal delivery and cesarean operation Gynaecological operation MR and D&C Few have C-EOC services Some have diagnostic facilities
		Private practitioners, village doctor, drug seller & traditional healers TBAs	Complicated antenatal, delivery and postnatal cases, and neonatal illness ANC, PNC and neonatal care Delivery care
Monohordi	Government	UHC	ANC, PNC and neonatal care Normal delivery No cesarean operation since last couple of months though have facilities No C-EOC services though have facilities MR and D & C Only few routine diagnostic facilities No X-ray though have facilities No blood bank and screening facilities Temporary and permanent FP services

[Continued....]

Upazila	Type of facilities	Existing MCH facilities	Services available
		FWC+UHFWC	Satellite clinics do not held regularly FWCs won't open regularly ANC and PNC services Do not conduct delivery Temporary FP methods FP services have priority rather than ANC/PNC services
	NGO	Palli shishu	ANC and PNC services
	Private	Private practitioners, village doctor, drug seller and traditional healers	Complicated antenatal, delivery and postnatal cases, and neonatal illness
		TBAs	ANC, PNC and neonatal care Delivery care
Raipura	Government	UHC	ANC, PNC and neonatal care Normal delivery EOC services are not available MR Only routine diagnostic facilities No blood transfusion facilities Temporary and permanent FP services
		FWC+UHFWC	Satellite clinics do not held regularly FWCs would not open regularly ANC and PNC Do not conduct delivery Temporary FP methods FP services have priority rather than ANC/PNC services
	NGO	FDSR	RH and FP services
	Private	Private practitioners, village doctor, drug seller and traditional healers	Complicated antenatal, delivery and postnatal cases, and neonatal illness
		TBAs	ANC, PNC and neonatal care Delivery care

6.3 Partnership between government, NGO and private sector

6.3.1 Collaboration between different sectors

A functional collaboration has been found between the government and the private sector, and between the government and the NGO sector. However, no systematic networking has been established. The collaboration among NGO clinics is limited within referral and information exchange. It is understood that there is a competition among the NGOs at the local level for offering services. The NGO representative stated that they participate in government programme whenever they are invited and maintain communication through monthly report and monthly meeting. The MO of an NGO clinic reported that they have good relationship with the government but not with the private health providers as they only give importance to their business.

The community service providers of the government said that they met the NNP, '*Shurjer Hashi*' clinic staff, and other NGO workers in different training programmes and in different meetings.

They also send patients to the CNCs and to private clinics as well. So they are in good terms. But we found a tension between the government health department staff (like HAs) and govt family planning department staff (like FWVs). Even though both of these sectors belong to the same ministry, their line of management is different. As a result they do not always cooperate with each other.

> "FWVs used to come to help us on EPI days. We used to do the work together. But now we have to do it all alone. For the last three years nobody helps us to do this task." (A HA)

A BHC staff said that there was no communication between the government., NGO and private sector health providers. She did not know any MO of the other two groups of the area even though she was working there for the last 1 year.

6.3.2 Referral network

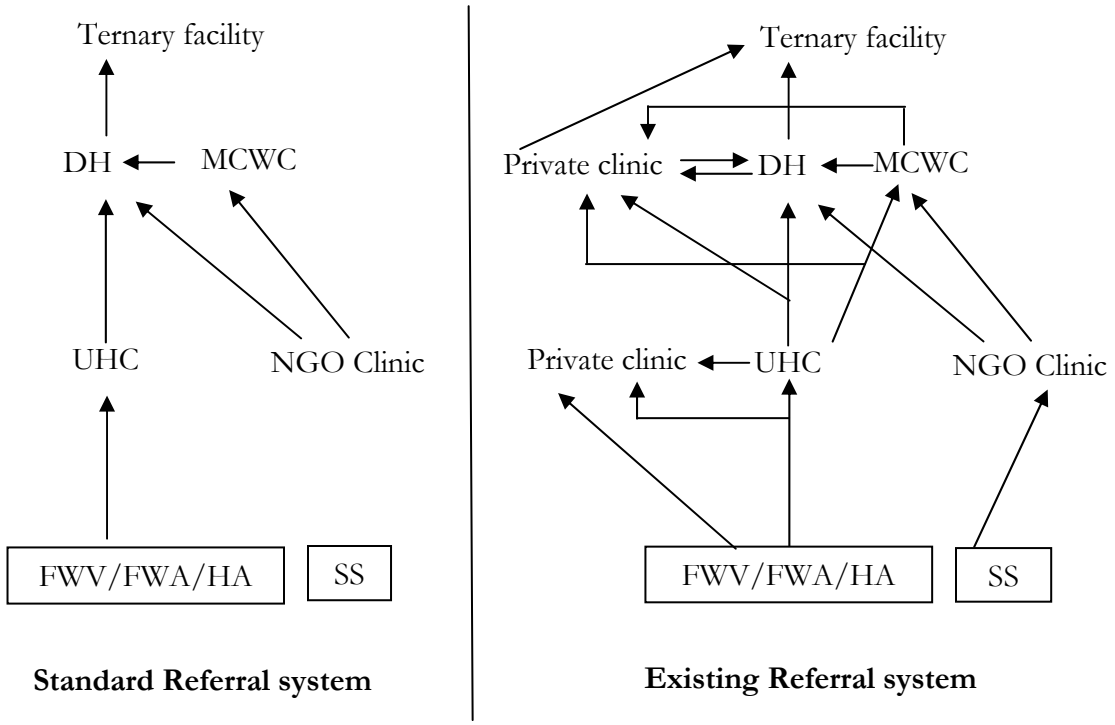
No systematic referral system[2] was found in the study area in promoting safe motherhood initiative. This section explores the current system in referring patients from one facility to another. The following figure displays the existing health and referral system for promoting safe motherhood in Narsingdi district. The government hospital never refers patients to the NGO clinics. In most cases the government medical doctor including other staff referred patients to the private clinics and in few cases when patients' conditions were critical, they referred patients to the tertiary level government hospital. The government hospitals do not use referral card while referring patients to private clinics. However, they seldom use referral card when referring patients to other government hospital. A comparison of standard and existing referral system for maternal and child health has been drawn in figure 12. The 'standard' referral system meant that the referral system that was supposed to be in place according to the policy guideline, and the existing system is the currently practiced referral system. As the private clinic was not included in the standard system, private clinic is not shown in the figure under standard referral system.

Referral network at the district hospital

The Narsingdi district hospital refers patients to different private clinics, Dhaka Medical College Hospital (DMCH) or Institute of Child and Mother Health (ICMH). They sometimes refer emergency caesarean cases to MCWC if their OT is not free. A staff nurse of the district hospital stated, "In most cases the doctors of this hospital who work for private clinics refer patients to private clinics for money, both at local and tertiary levels. The doctors (very few) who do not work for private clinics refer complicated patients to other government hospitals like DMCH." As the district hospital always has shortage of medicine, they refer patients to medicine shops or pharmacies to buy medicines. The district hospital receives patients from local medical practitioners and UHCs. The RMO said, "Private clinics hardly refer patients to them, as that would damage their business." They could not make any follow-up of the patients until they came back with complications.

[2] A referral system functioning by referral card or referral slip and not verbally, under which the referred patients would be taken care of according to the given capacity of the persons/places where the patients are referred to.

Figure 12. MCH referral system in Narsingdi District



Referral network at the MCWC

The MCWC refers complicated patients who are in critical condition to the gynaecology consultant in district hospital or Azimpur Maternity Hospital or DMCH or Dhaka Child Hospital (Dhaka Shishu Hospital). For pathology tests they do send patients to Sadar hospital, 2nd and 3rd time caesarean patients to the DMCH, and for neonatal problem to the Dhaka Child Hospital. According to the MO-MCH, it depends on the patient's preference as well, because poor and middle class patients always prefer to go to DMCH, and if the patient is financially well off, they send her to a private clinic. For medicines they refer patients to local drug shops as the hospital always have dearth of medicines. The FWVs, FWAs, TBAs and other non-formal practitioners refer patients from the grassroots to the MCWC. They also receive patients from MSCS for both normal delivery and cesarean operation. The district hospital never sends patients to MCWC. Like district hospital, they also do not make any follow-up of the patients.

Referral network at the UHC

The UHC also refers patients to the district hospital and to private clinics both at local and tertiary levels considering patients' physical and financial condition. The HAs, FWC and BRAC CNP refer patients to the UHC. A medical doctor in Monohordi UHC said that generally they referred patients to other private clinics and patients were happy with this. Some patients in Monohordi UHC whispered, "Why should we get referred to a government hospital like this one, it is better to be referred to a private hospital to get better service."

Referral network at the NGO clinic

The BHC and Marie Stopes Clinic do have a good referral network with other hospitals. If the pregnant women are at high-risk, usually doctors refer them to the district hospital, MCWC, DMCH, etc. The doctors of both clinics complained that the government hospital never sends patients to them. BRAC community health workers like SKs and SSs refer patients to the BHC. The NGO clinics do not make any follow-up of the patients who are referred elsewhere.

Referral network at the private clinic

The Prime Clinic maintains a good referral network with DMCH, Bhagolpur Medical College Hospital (Pvt.) and Suhrawardy Hospital as specialist doctors are not available all the time in the hospital. The private clinics never refer patients to the NGO clinics. The doctors at Prime Clinic said that the referral mostly depended on the persons and places the patients preferred to go. They do not make any follow-up of the referred patients. Non-formal practitioners like village doctor, TBAs, general practitioners, UHC and Marie Stopes Clinic refer patients to them. It is reported that BRAC never sends patients to them. A clinic doctor stated, "We cannot force people to go to government hospitals. They come to us willingly. Sometimes doctors from government hospitals send patients to us."

Referral network at the community level

At the community level FWAs refer patients to the FWVs and to satellite clinics. Depending upon patients' condition, FWVs refer patients to the MCWC and district hospital. But after 3 p.m. as gynae specialist or MO-MCH are not available and OT is kept closed, they refer patients to private clinics. FWVs get a good amount of referral money from the private clinics. One FWA said, "If they refer patients to private clinics they get sari and if they send a patient to any diagnostic centre they get Tk. 70 per patient."

> "But patients who have money prefer to go to private clinics because of quality treatment and availability of doctors." (A FWV)

Both FWVs and FWAs also refer patients to HA for immunization and to CNPs for weight measurement and nutrition supplementation. HA also refer complicated cases to MCWC or to any other hospital.

> "But those who have money prefer to go to private clinics, as quality of service at government hospitals is not good. The doctors and nurses in government hospital behave very badly with patients." (A SS of BRAC)

6.4 Barriers of service utilization

There are many factors that inhibit clients to utilize government health facilities. This section discusses some significant barriers of health service utilization in Narsingdi district.

6.4.1 Health broker

One of the major barriers found was the brokers. It was observed that there were many brokers within and outside the hospitals. Brokers are the local dominant people who convince people not to get admitted in the government hospital and insist on visiting private hospital. A ward

boy said, "In the hospital brokers and representatives are more than the patients." Another staff stated, "Brokers are the dealers of medical doctors. They get a good percentage of money to propel patients from government hospital to private clinics. This is their profession." According to the FWAs brokers discourage patient to receive services from the government hospital and motivate them to go to private clinics. Broker used to tell patients, "Services offered here will worsen patients' condition. Even the doctors and nurses feel threatened due to their activity."

6.4.2 Unavailability of doctors and nurses

It was observed that when some patients came at 1:00 p.m. at the district hospital, they were referred to the Prime Clinic or to DMCH due to unavailability of doctors and nurses. Some patients in MCWC said, "The doctors do not stay in the hospital for long time, even sometimes they do not come."

Sometimes the hospital environment insists patients to go to private clinic. Describing hospital environment a staff in Monohordi UHC said, "My wife got admitted here but could not eat properly being seen the mess, unhealthy and smelly environment of the hospital, and there was no doctor, no medicine, only nurse come to see them. Thereafter my wife got admitted to the Prime clinic for delivery."

> "Government hospitals do not give any importance to patients. No doctor is found in Government hospitals after 3 p.m. So, patients have to go to private clinics. There they can get doctors when they need." (A FWV form the community)
>
> "In government hospitals, health services are not always available. They do not give us medicine. They do not care for anything because government doctors would get their salaries even if they do not treat people." (A Mother-in-law)
>
> "The hospital doctors and FWVs are not available all the time. If a pregnant mother gets sick at night, we cannot do anything." (A village woman)

We visited three times the Monohordi UHC to interview the MO-MCH but could not meet him. The MO-MCH would live in Dhaka and he does not come to the workplace regularly. The other doctors at the hospital said, "We do not know when he would come. He usually comes once a week but that is not fixed." The FWV who is working for UHFPO in Monohordi UHC, did not come to the hospital as she was practicing at home privately."

6.4.3 Costs involvement

Though the government hospital is supposed to provide free services, patients' out-of-pocket expenditure is high in utilizing services. Patients in the district hospital said, "Doctors do not see patients without money. They take fees and give 5/6 medicines, which does not work." Some village women said, "The government always says they give free treatment. They never do that. Allah takes care of the poor. Doctors are butchers."

In Monohordi UHC, a ward boy said, "Doctors in hospital see a patient by using their own (private) pad instead of using hospital pad and patient has to pay to see a doctor." Some patients stated, "It is possible to get services from doctors if we pay then." If they wanted to pay small amount then the doctors misbehave with them. But some patients said that they did not give them any medicine and they have to buy saline, antibiotics, etc from outside.

"We give them all treatment free of cost. But when we run out of medicines, they have to buy medicines from outside. Sometimes we cannot give proper service to poor patients due to corruption. We have to spend more than what we earn to maintain our families. So, we have to look for other income sources like working in private clinics." (The MO MCWC)

"Even though government hospitals are supposed to be free, one has to spend Tk. 7,000 to Tk. 8,000 for a caesarean operation which is similar to the costs involved in a private clinic." (A FWV form the community)

6.5 Management information system (MIS)

All hospitals have registers to maintain the records of the patients, their disease profile, treatment and cure, referral and follow-up. This section would focus the status of hospital-wise MIS and how do they use it.

In district hospital each doctor maintains their records separately. The RMO of district hospital said they keep regular record of all the demand and supplies of the hospital so that they can make next years budget on the basis of these records. The gynae consultant keeps detail record of patients who comes to her. In examining the records, in most cases the record is incomplete. The civil surgeon office never asks them for this record-keeping system.

MCWC maintains MIS for family planning and pregnant women who comes regularly. The FWV said that if a mother comes for regular check-up then they would maintain records of the patients' particulars and their disease status. In MCWC, their record-keeping system is also incomplete. The DD-FP office never asks them for their MIS. They prepare report and presented in monthly meeting with DD-FP.

In Monohordi UHC, staff nurse said they did not maintain MIS for the follow up of the pregnant women. The hospital does have two registers to write down information about medicine distribution, and date of patients' admission and discharge. A medical doctor said that they keep record of the name, address, age, sex of the patient, names of diseases, and the treatment given. They make a report on the basis of this information and submit it to the civil surgeon's office.

At the FWC, the FWVs need to maintain 'health education register', 'injection register', 'family planning method register', 'child register', 'couple (*dompoti*) register' and 'pregnant women register', etc. to keep record of what services they are giving in these sectors. They make a report based on these registers and then submit the report to the *upazila* health office in their monthly meeting. The FWAs do not have any register to keep record. They take the work plan from FWC and work accordingly. They submit a report of their work every month to the FWC and the SACMO submit that report to the TFPO.

When the HAs give vaccine to a child they keep record on the identity of the patient and name and date of next doses of the vaccine in two different registers. They make report on the basis of this record and send it to UHC.

In BHC, FWVs keep the record of name, age and addresses of patients, suspected disease, treatment offered, and recommended date for follow-up visits. As they do not make any follow-up of patients, the follow-up column remains blank in their record-keeping. They maintain the record locally and do not send information to the upward management level.

The Prime Clinic did not maintain the MIS and they only write down the name and address of the patient, the name of disease, and treatment provided. A doctor stated, "These records are used for the year-end balance sheet. Records are also kept to avoid any hassle in future regarding any patient."

7

Discussion

This report presents baseline data on different aspects of safe motherhood in three *upazilas* of Narsingdi district. These data are expected to inform the designing of the Safe Motherhood Promotion Project to be undertaken by JICA in cooperation with the GoB and be used as benchmark for later evaluation at the end of the intervention.

7.1 Knowledge and practice of women

Findings reveal general level of awareness about key safe motherhood issues (such as intra-partum and post-partum haemorrhage), but its reflection in practice was minimal and there is ample scope for improvement in both awareness and practices.

The use of any family planning method among the study population (mothers of under-one children) was less than the national average of 58% (NIPORT, Mitra and Associates, ORC Macro 2005). However, use pattern (e.g., pills and injection) was found to be similar to national trends. Practices related to ANC and PNC visits among the study women (40% and 10% respectively) was lower than the national average (49% and 18% respectively), though the level of awareness on these issues was much higher. The primary source of care for the ANC and PNC visits was found to be a qualified (MBBS) doctor which is similar to what was seen in the BMHSMM survey (NIPORT, ORC Macro, JHU, and ICDDR,B 2003). The awareness level was higher for less severe pregnancy complications {e.g., anorexia (55% among pregnant mother and 52% among mother of under-one child)} but much lower for severe, life-threatening complications {e.g., bleeding per vagina (18% among pregnant mother and 22% among mother of under-one child)}. Identical observations were also made in the BMMS survey (NIPORT, ORC Macro, JHU, and ICDDR,B 2003).

Birth of last child among the study mothers (of under-one child) conducted by skilled attendants (doctors, trained nurses/midwives and trained TBAs) was around 40% which is greater than national average of 13% (NIPORT, Mitra and Associates, ORC Macro 2005). Majority of the intra-partum and post-partum bleeding remained unattended (most of these haemorrhage cases were attended by unqualified providers at home, not unlike findings in the above surveys though reported awareness among the study women about places to visit in case of such complications was high. Similar differences were also observed with respect to the awareness about complications of neonatal period and the actual practices followed. These points to the 'know-do' gaps with respect to the life-threatening complications of pregnancy, child birth and neonatal period, and the importance of health education interventions to raise awareness and appropriate actions. Clients' suggestions for improving the MNCH-related services such as increasing facilities within reasonable distance, responsiveness of the health care providers, free/subsidized services, etc. are plausible and essential if we want to reduce the maternal and neonatal mortality

in the country and achieve the relevant MDGs. In order to increase the use of safe delivery care, services need to be placed within a context acceptable to women and their families in addition to the availability of methods for raising awareness about the benefits of safe delivery (Bloom et al. 2000).

7.2 Knowledge and practice of health care providers

7.2.1 Practices of medical doctors

The government medical doctors are not always available in the government hospitals. Instead they prefer to treat patients in private clinics because of their low salary. Those who provide services at the hospital could not deliver quality services because of shortage of duty staff. Usually in hospitals they provide services to the complicated and high-risk pregnant women, complicated delivery cases, mothers with post-natal complications and sick neonates, and perform cesarean section. Sometime it is not possible to perform cesarean operation because of absence of EOC trained medical doctor. Voices from the community are critical about the government health facilities and doctor-patient interaction. The policy planners should think about the issues of 'doctors' absenteeism' before implanting any new initiative. Considering doctors' absenteeism, unavailability and involvement with private hospital for monetary gain, the programme planners may think about the provision of referral charge to be paid to the concerned doctors/nurses by the private clinic under functional referral system. In order to improve doctor-patient relationship in hospitals, the doctors should be trained on deprofessionalization of medical profession. Interpersonal relationship between doctor and rural people can be improved by continuing tolerant, sympathetic conservation, and using local dialects as much as possible.

7.2.2 Knowledge and practices of community health workers

The level of knowledge and practice on safe motherhood and neonatal care among the health professionals was found to be reasonable but there is still room for improvement in the area of immunization, risk assessment, malpractices of medicine, regular household visit, referral and follow-up of clients. Taking the experiences of outreach workers in Nepal into account (Acharya et al., 2000), the regular monthly visit by FWVs and FWAs will have significant effect on service utilization. The concerned medical doctors and FWVs in district hospital, MCWC and UHC should be trained in EOC to provide effective services. Potential strategies to improve the situation outlined include continuing education of health staff, logistical support, and community education, integrating of services, supervision and monitoring, and evaluation of progress.

7.2.3 Knowledge and practices of TBAs

TBAa plays a significant role in offering cultural competence, consolation and psychological support to women during childbirth in many cultures including Bangladesh. Though there are many controversies on training of TBA for reducing maternal mortality, considering Bangladesh context in ensuring SBA during delivery, TBA training may be a major part of the proposed safe motherhood initiatives as this study reveals that they attended most of the deliveries in the community. The TBAs have partial knowledge regarding ante-natal, natal, post-natal and neonatal care, bear some and carry out harmful practices in managing complications. Considering these, the new TBA training programme should include both trained and untrained TBAs in order to nullify these gaps. To make effective use of these human resources,

programme need to improve TBA training curriculum, better prepare the trainers, provide supervision of the TBAs post-training, ensure accessibility of EOC, help TBAs publicize their improved skills and receive compensation for their services (Kamal, 1998).

It is also necessary to train the community members on obstetric first aid including prompt recognition of complications, safe and effective response to complications and arrangement to access referral system.

7.3 State of maternal, neonatal and child health services

The study reveals that there is little difference in staffing, equipment and services among government health facilities at different level. None, even the district hospital is able to provide EOC. In general, the quality of MCH services in government hospital is poor. The major problems encountered at the service delivery points include vacant posts, staff absenteeism; shortage of competent staff trained to manage obstetric complication, lack of furniture, equipment and supplies; lack of good record-keeping system; lack of commitment of health providers; and absence of systematic referral system. Studies carried out in African countries show that shortage of essential supplies and equipments, absence or inadequate provision of blood supply, lack of adequate operating theater space, shortage of staff, lack of appropriately trained staff, lack of supervision, complacency attitude among staff, and inappropriate hospital management contribute significantly to the high maternal mortality ratio (PMM network, 1992; Fawcus et al., 1996). Taking safe motherhood initiative experiences in other resource setting like Nigeria and Tanzania into account (Tinker, et al., 1993), upgrading the quality and coverage of safe motherhood services will have the largest payoff in averting deaths and reducing disability in women and children in the study area.

Experiences demonstrate that the community and facility-based approaches need to be linked and should be equipped with adequate logistic, drugs, supplies and human resources. A few issues are of immediate concern, e.g., upgrading UHC with basic obstetric care, and district hospital and MCWC with comprehensive obstetric care; establishing functional referral networks; cost involved in service utilization; and improving doctor-patient relationship and quality of services. The most efficient action for decreasing maternal and neonatal mortality is the implementation of EOC at the primary and secondary level of health system, skilled care at delivery and effective referral system (WHO, 2003; Piaggioet al., 2000; Vanneste et. al., 2000). The effective referral system in this connection may be developed through signing MOU between the organizations under referral system, introducing referral card, and developing a follow-up system. The CHWs may accompany the referred patients in order to introduce them to the referred places/persons. Moreover, the government, donors, NGOs and private sector should work together in a coordinated way to build local capacity to manage the health sector.

7.4 Barriers to services utilization

The major barriers identified in utilizing government health facilities are the brokers, unavailability of doctors and the very high out-of-pocket expenditure. To maintain an enabling environment, we should consider brokers as programme advocates and train them as counselors and as media in referral system. Moreover, strengthening the referral system may minimize the problem associated with brokers.

Despite government policy that the public services are free of charge, the study revealed that the expenditure for the normal delivery and cesarean operation are similar in public and private facilities. This pattern was similar to the national trend. The median costs of delivery varied considerably by whether there were complications associated with pregnancy and by the type of treatment sought. The median expenditure for deliveries with complications are actually higher in public facilities than in private facilities (NIPORT, ORC Macro, JHU, and ICDDR,B 2003). The expenditure data provide part of the explanation why a significant percentage of women opt for the private sector instead of the public sector services. However, innovation of community revolving fund may play a greater role to overcome this barrier. Establishing community revolving fund requires substantial mobilization effort, but where communities are motivated, use of health facilities for EOC may increase.

To reduce maternal mortality ratio and to improve health and well-being of mothers and neonates, the policy makers and health planners need to recognize the fact that the objectives of the safe motherhood initiative cannot be realized by existing services alone. Therefore, the provision of EOC services, upgrading existing health facilities, building functional network, provision of adequate number of health professionals, reducing gap between knowledge and practices of the community people, and strengthening collaboration between the government, NGO and private sector health facilities, etc. will be essential to bring out a sizeable decline in maternal mortality and morbidity in rural Bangladesh.

8

Programmatic implications

The future response to the safe motherhood initiative will require a multi- and cross-sectional approach. The response will have to encompass all levels of government, donors, NGOs, religious leaders and communities. Some of the key elements of a future response will be as follows.

Community people

1. The study population have superficial level of awareness on some aspects of safe motherhood (such as ANC, APH and PPH, pregnancy complications, etc.) but lacks more in-depth knowledge. The same can also be said about practices related to pregnancy and newborn care. The programme needs to raise their knowledge level for motivation and informed decision-making about the right practices. This process should also involve the relevant members of the families and community and train them in obstetric first aid.

Health provider

2. Health providers (from grassroots to the central level) should be aware on the safe motherhood issues as well as the concerned programme. They should be responsive to the needs of the clients and deliver services through culturally sensitive, user- friendly approaches. The community health providers should be trained on the safe motherhood issues, how to communicate theses issues to mothers and family care givers, risk assessment, and when and how to refer patients to appropriate places. In order to improve doctor-patient relationship in hospitals, the doctors should be trained on de-professionalization of medical profession. All TBAs (both trained and untrained) should be included in the new TBA training programme.

Health system

3. The new initiative should give emphasis on ANC and PNC that should be regularly held in the community satellite clinic as in Narsingdi ANC and PNC utilization rate is lower than the national rate. The ANC has the potential to identify high-risks and to help women select a trained birth attendant. The PNC provides opportunity to identify and treat delivery complications and to counsel mothers on how to care for themselves and their newborns. NGOs can play an important role in community mobilization. Community health workers should follow-up every case of pregnant and lactating women through home visits every month.

4. Programme quality requires training, supervision and logistic support system. During planning and implementation of safe motherhood programmes, it is important to recognize that the components of safe motherhood services are inter-related. Programme strategies need to ensure that the health care system has the capacity to provide maternity care services and that health staff are appropriately trained and supported to provide these services. The health facilities at every level, from community to district, should be equipped and upgraded with adequate number of proposed human resources, furniture, equipments, and drugs and supplies.

5. Upazila health complexes, and MCWCs/district hospitals should be upgraded with basic and comprehensive obstetric care. These facilities should be equipped with necessary human resources, supplies and instruments to perform caesarean section, assisted vaginal delivery, and screened blood transfusion. Doctors and nurses need to be proficient and skilled in managing it and should be trained on EOC. In case of grave complications where further skills are required, an arrangement should be made to seek assistance from the senior consultant of district hospital or any other tertiary level facilities. If these facilities would provide comprehensive obstetric care, it will reduce the cost of treatment, problem of distance and spatial configuration of larger hospital.

6. Collaboration and networking between government, donors, NGOs, community-based organizations and private sector should be strengthened and make functional. Safe motherhood services in the community level should be delivered through facility-based approaches, satellite clinics (SC), and doorstep services.

7. It is not important to deliver every birth at hospital/static health facilities but every birth should be attended by skilled birth attendants with provision for transferring to the nearest facility offering comprehensive emergency obstetric care. All birth attendants in the community should be identified, listed, trained on safe delivery, and continuously followed-up.

8. A strong referral system needs to be initiated from the community level up beginning with trained TBAs/FWAs/HAs/SSs at the community level, provision of emergency transportation, FWVs/ midwives posted at the FWC and UHC level, MCWC and the district hospitals level to the medical college hospitals at the tertiary level. The referral system should be functional through signing MOU and introducing referral card. The CHWs should accompany the referred patients in order to get connected with the appropriate persons/places. Health brokers may be trained as programme advocates and intermediaries of referral system, and there may be a provision of service charge in referring appropriate patient to appropriate place(s).

9. A functional MIS needs to be formed for upward flow of information to the planners and decision makers at regular intervals in order to let them know whether the programme is in the right track and to take decision according to the running state of process and achievement. A good MIS also helps form the longitudinal data-base for research purpose.

Monitoring and supervision

10. A supervisory system needs to be developed and followed up to ensure the quality of service delivery and to develop functional MIS at different level. JICA may play an important role through monitoring changes in policies, programme implementation and outcome at the national level. The monitoring team should have linkages with community women's health organizations to acknowledge their knowledge and practices and also should do research for its further development and share this with local, national and global stakeholders.

9

References

ACPR (2003). *The situation analysis of reproductive health services from community up to district level in Narsingdi, Bangladesh.* A project of JICA Human Resource Development in Reproductive Health. Dhaka: JICA.

Acharya LB and Clealand J (2000). Maternal and child health services in rural Nepal: Does access and quality matter more? *Health Policy Plann* 15(2):223-9.

Akhter HH, Chowdhury MI, Sen A (1996). *A cross-sectional study on maternal morbidity in Bangladesh.* Dhaka: BIRPERHT.

Alauddin M. (1986). Maternal mortality in rural Bangladesh: The Tangail district. *Stud Fam Plann* 17(1):13-21.

Bellami C (1998). Reproductive Health Outlook. http://www.rho.org/html/safe_motherhood.htm Accessed 14 March 2006.

Bergstrom S and Goodburn E (2001). The role of traditional birth attendants in the reduction of maternal mortality. In: De Brouwere Vand Van Lrberghe W eds. *Safe motherhood strategies: a review of the evidence. Stud Health Services Organ and Policy.* 17:1-450.

Bloom S, Lippiveld T, Wypij D. (1999). Does antenatal care make a difference to safe delivery? A study in urban Uttar Pradesh, India. *Health Policy Plann* 14(1):38-48.

Chaudhury N and Hammer JS (2003). *Ghost doctors: absenteeism in Bangladesh health facilities*. Washington DC: Development Research Group, World Bank. World Bank policy research working paper no. 3065.

Cockcroft A, Milne D, Anderson N (2004). *The third service delivery survey 2003: final report*. Dhaka: CIET Canada and Ministry of Health and Family Welfare, Government of Bangladesh. http://www.ciet.org/www/image/country/ bangladesh.html#1 Accessed 5 May 2005.

Delhi Declaration on Maternal, Newborn and Child Health, 2005. Lives in the Balance. The Partnership Meeting on Maternal, Newborn and Child Health. 7-9 April, 2005, New Delhi, India.

Fauveau V (1994). *Matlab*: w*omen, children and health.* Dhaka: International Centre for Diarrhoeal Disease Research (ICDDR,B), Bangladesh.

Freedman LP, Waldman RJ, de Pinho H, Wirth MF, Chowdhury AMR, Rosenfield A. (2005). Transforming health systems to improve the lives of women and children. *Lancet* 365:997-1000.

Graham W (1998). The scandal of the century. *Br J Obstet Gynaecol* 105:375-6.

Kamal IT (1998). The traditional birth attendant: a reality and a challenge. *Int J Gynecol Obstet* 63(suppl.1): S43-S52.

Khan AR, Jahan FA, Begum SF.(1985). Maternal mortality in rural Bangladesh: The Jamalpur District. *Stud Fam Plann* 17(1):7-12.

Khan MSH, Kanam ST, Nahar S, Nasrin T, Rahman APMS. (2000). *Review of availability and use of emergency obstetric care (EOC) services in Bangladesh.* Dhaka: Associates for Community and Population Research.

Levin A, Rahman MA, Quyyum Z, Routh S, Khuda B. (2001). The demand for child curative care in two rural thanas of Bangladesh: effect of income and women's employment. *Int J Health Plann Management* 16:179-94.

Maine D and Rosenfield A (1999). The safe motherhood initiative: why has it stalled? *Am J Public Health* 89(4):480-2.

Mercer AJ, Hossain S, Khatun J, Kabir H, Saha N, Uddin J, Hassan Y (2005). Screening for service needs in primary health care clinics: an evaluation in Bangladesh. *J Health Popul Dev Countries.* http://www.jhpdc.unc.edu Accessed 3 July 2005.

Ministry of Health and Family Welfare. (2004). *Preliminary report. Bangladesh Demographic and Health Survey, 2004.* Dhaka: NIPORT, Mitra and Associates and Measure DHS+ORC Macro.

Ministry of Health and Family Welfare. (2005). *HNPSP-RPIP July 2003-June 2005.* Dhaka: Government of People's Republic in Bangladesh.

Kumud N. (1997). *Concept of Safe Motherhood in Ayurved. Fam Welfare* 43(2):53-7. http://www.gendwaar.gen.in/MaternalMorbility /MM21.htm Accessed 4 February 2006.

NIPORT (National Institute of Population Research and Training), Mitra and Associates, ORC Macro (2005). *Bangladesh Demographic and Health Survey 2004.* Dhaka and Claverton: NIPORT, Mitra and Associates, and ORC Macro.

NIPORT (National Institute of Population Research and Training), ORC Macro, John Hopkins University, ICDDR,B (2003). *Bangladesh Maternal Health Services and Mortality Survey 2001.* Dhaka and Claverton: National Institute of Population Research and Training (NIPORT), ORC Macro, John Hopkins University and ICDDR,B.

NIPORT (National Institute of Population Research and Training), Mitra and Associates, ORC Macro (1994). *Bangladesh Demographic and Health Survey 1993-'94.* Dhaka and Claverton: NIPORT, Mitra and Associates, and ORC Macro.

Quasem I, Sloan NL, Chowdhury A, Ahmed S, Winikoff B, Chowdhury AMR (2003). Adaptation of Kangaroo Mother Care for community-based application. *J Perinatology,* 23:646-651.

Rahman F, Whittaker M, Hossain MB. (1991) *Maternal mortality in rural Bangladesh,* 1982-1990: Data from Verbal Autopsies. (unpublished).

Reproductive Health Outlook. (2006). Safe Motherhood: Overview and Lessons Learned. http://www.rho.org/html /sm_overview.htm Accessed 1 February 2006.

Safe Motherhood (2006). http://www.safemotherhood.org Accessed 2 February 2006.

Schuler SR, Bates LM, Islam K (2002). Paying for reproductive health service in Bangladesh: intersections between cost, quality and culture. *Health Policy Plann* 17:273-80.

Streatfield K, Hadley M, Chakraborty N. (2001). Status of program indicators: annual program review 2001 of Health and Population Sector Review 1998-2003. Dhaka: World Bank.

Streatfield K et al. (2003). *Health and Population Sector Program 1998-2003, Bangladesh.* Status of performance indicators 2002. ICDDR, B: Dhaka.

World Bank. (2003). *Private sector assessment for Health, Nutrition and Population (HNP) in Bangladesh.* Report No. 27005-BD. World Bank. http://siteresources.worldbank.org/INTBANGLADESH/Data%20and%20Reference/20206318/Bangladesh_PSA_for_HNP-Full%20report.pdf Accessed 7 June 2005.

World Health Organization (1996). *Reproductive health care in Bangladesh.* A review of recent data and some proposals for future strategies and activities. Dhaka: WHO.

World Health Organization (1997). Coverage of maternal care: a listing of available information. Fourth edition Geneva: World Health Organization.

Annex

Questionnaire for the baseline survey on safe motherhood promotion

ID:

Name of the respondent…… Husband name……

Upazila…….. Union…….

Village……. Para…….

House number……. Date: Day Month

House name……

Respondent: Pregnant women 1 Mother of ≤ 1 year children 2

INFORMED CONSENT

Assalamo Alikum/Adab,

I am …… a staff of BRAC. At present BRAC and JICA are working together to do a baseline survey to gather information on maternal and child health. I will ask some questions about the health of you and your children. I do assure you that what you will say will be kept confidential and will be using only for survey. Its up to you whether you would like to participate or not and if you wish you leave out some questions. I hope that you would kindly give me some time (30 to 35 minutes), which is very important. If you do agree then I can start interviewing.

Has agreed 1 Has not agreed 2

Interviewer name…….. Date

SCRUTINIZED BY ---------- SPOT CHECKED BY ----------
CROSS CHECKED BY ----------
EDITED BY ---------- CODED BY ----------

Socioeconomic

SI No	Questions	Answer	Code	Skip to
1	Age	……..year		
2	Religion	Islam Hindu Others	1 2	
3	Martial status	Married Unmarried Divorced Separate Widow	1 2 3 4 5	
4	Do you know how to read and write If yes, then which class	Yes No Class Did not go to school	1 2 99	
5	Do you do any other work for earnings	Yes No	1 2	
	If yes, what do you do	Job (employer) Job (employee) Business (big) Business (small) Service holder (doctor, lawyer,	1 2 3 4	

		teacher, engineer) Farmer Porter Dairy firm Constructor Skilled labour Driver Rickshaw puller Daily labour Others	 5 6 7 8 9 10 11 12 13	
6	Husband's education	Yes No	1 2	
	If yes, then which class	Class Did not go to school	 99	
7	BRAC member?	Yes No	1 2	
8	Husband's main occupation	Jobless Retired Job (employer) Job (employee) Business (big) Business (small) Service holder (doctor, lawyer, teacher, engineer) Farmer Porter Dairy firm Constructor Skilled labour Driver Rickshaw puller Daily labour Others…… (Specify please)	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	
9	Household toilet types	Sanitary with flash Sanitary without flash Pit Open/ bush/mud maid/hanging Field Others…… (Specify please)	1 2 3 4 5 6	
10	Amount of land including household (If no land then put 00)	……Decimal Don't know	 99	
11	Does anybody else sale labour in the family	Yes No	1 2	
12	BRAC eligible?	Yes No	1 2	

Reproductive history

13	Number of children given birth	…….Number (total)		
14	How many children died	…….		
15	Do you want any more children?	Yes No	1 2 →	 17
16	How long you want to wait for that children (after your last baby)	……..year……..month Don't know		
17	Why don't you want any more children	They are lots in number Couldn't meet basic needs 2/1 children is enough Others…… (Specify please)	1 2 3	
18	Between 2 children how long the birth space needs to be taken	……..Year Don't know		

Section A: knowledge of respondents

Family planning

SI No	Questions	Answer	Code	Skip to
19	What do you think about the family planning method	Good Bad Don't know	1 2 99	
20	Do you use any of the family planning method?	Yes No	1 → 2	23
21	Is no, why not?	Wants baby Lack of knowledge Husband disagrees Expensive Side effect Not having period Not available Religious problem Doesn't like family planning Uncomfortable Don't know		
22	Do you have any plan to use method in future	Yes No Don't know	1 2 → 3 →	 24 24
23	Which method	Pill Injection IUD Ligation of women Safe time Condom Withdrawal Vasectomy Not decided Others……..(specify please)	1 2 3 4 5 6 7 8 9	
24	Did anybody say you anything about family planning method since last 3 months	Yes No	1 2 →	 26
25	Who said			
26	How many pill need to be taken in a month	…….Number of pill Don't know	 99	
27	What needs to do if anybody forgets of having two immediate pill	Need to take extra pill Have to use another method until next period Need to keep continuing other pill regularly Nothing need to be done Don't know Others……..(specify please)	1 2 3 4 99	

Antenatal care

28	Do you know which injections you need to take during pregnancy	Yes No	1 2 →	 31
29	How many times	…….Number Don't know	 99	
30	Which injections	T T Don't know Others……..(specify please)	1 99	
31	Do you know which food you need to have plenty during pregnancy Which food	Yes No Milk Water Meat Vegetables Fruits	1 2 → 1 2 3 4 5	

		Egg Don't know Others……..(specify please)	6 99	
32	Do you know what need to do if anybody gets bleeding during pregnancy	Yes No	1 2 →	34
33	Where to go during bleeding in pregnancy	District hospital Mother care Upazila health complex Nothing need to do Don't know Others……..(specify please)	1 2 3 4 99	
34	During pregnancy a women can have severeal complications when she needs to see a doctor, do you know what complications they are	Fever Stuck breathing Bleeding through vagina Edema Convulsion Pale/weakness Headache Abdominal ache Tingling sensation in the head Severe vomiting Blurriness of eye site Anorexia in food Don't know Others……..(specify please)	1 2 3 4 5 6 7 8 9 10 11 12 99	
35	Which symptoms place a pregnant women as a high risk mother	High blood pressure Edema Albumin secretion through urine Don't know Others……..(specify please)	1 2 3 99	

Post-natal care

36	Do you know what to do if a mother having serious bleeding after delivery	Yes No	1 2 →	38
37		MBBS doctor Nurse/midwife Family welfare visitor Trained TBA Untrained TBA Village doctor Quake Mother in law Other family members Nothing need to do Don't know Others……..(specify please)	1 2 3 4 5 6 7 8 9 10 99	
38	What post natal care need to take for a lactating mother	Having nutritious food Using sanitary napkin Using cleaned cloths Stay neat and clean Don't know Others……..(specify please)	1 2 3 4 99	
39	Do you know about delivery complications when you need to see a doctor	Severe haemorrhage Offensive discharge High temperature Breach delivery Mal position Prolong labour Retain placenta Rapture uterus Cord prolapsed Getting umbilical cord in throat	1 2 3 4 5 6 7 8 9 10	

		Convulsion Don't know Others……..(specify please)	11 99	

Neonatal care

40	To see a doctor which complications need to arise for a neonatal	Breast milk/whatever cannot eat properly Diarrhea Being radish around naval Red eye/dust/fungus in eye Problematic breathing Jaundice Getting cold body Skin infection Baby not crying Fever Unconscious Breathing problem Deep ribs Stop secreting urine and Stoll Don't know Others……..(specify please)	 1 2 3 4 5 6 7 8 9 10 11 12 13 14 99	
41	Where to get treat for these complications	MBBS doctor Nurse/midwife Family welfare visitor Trained TBA Untrained TBA Village doctor Quake Mother in law Other family members Nothing need to do Don't know Others……..(specify please)	1 2 3 4 5 6 7 8 9 10 99	
42	Do you know how important it is of having accurate temperature of you baby after giving birth?	Yes No	1 2 →	44
43	What to do to maintain the body temperature of your baby after birth	Need to wrap with warm cloths Hit him/her up Nothing needs to do Don't know Others……..(specify please)	1 2 3 99	
44	Immediate after birth what needs to feed the baby	Colostrums Honey Water Don't know Others……..(specify please)	1 2 3 99	
45	Do you know how necessary it is to be neat cleaned for you and your baby's health	Very necessary Necessary Don't know	1 2 99	
46	Do you know what to eat to increase breast milk of a mother	Yes No	1 2 →	48
47	What to eat to increase breast milk	Milk Water Meat Vegetables Fruits Egg Don't know Others……..(specify please)	1 2 3 4 5 6 99	
48	After birth does the baby need to get vaccinations	Yes No	1 2 →	52
49	How many vaccines	……. Number don't know	99	

50	Which vaccines	Tuberculosis Polio Diphtheria Tetanus Hoping cough Missals Don't know Others……..(specify please	1 2 3 4 5 6 → 99	
51	When to give these vaccines	Tuberculosis Polio Diphtheria Tetanus Hoping cough Missals Don't know Others……..(specify please	1 2 3 4 5 6 99	

Section B: Practices of respondents
(Only for pregnant women)

SI No	Questions	Answer	Code	Skip to
52	Did you go through check-up	Yes No	1 → 2	54
53	If no, why not (Go to 60)	Didn't know the necessity of checkup Didn't know where to do Very busy Do not need it Husband doesn't like it Mother in law doesn't like it Need accompany Lack of money Don't know Others……..(specify please	 1 2 3 4 5 6 7 8 99	
54	Where did you go for checkup	At home District hospital Upazila health complex Family welfare center Community clinic Government satellite clinic NGO clinic NGO satellite clinic MBBS doctor Private hospital/clinic/chamber Village doctor Trained TBA kobiraj Don't know Others……..(specify please		
55	Who did you checkup from	MBBS doctor Nurse/midwife Family welfare visitor NGO paramedic Medical assistant Trained TBA TBA Village doctor Traditional healer Relatives/friends/neighbor Nothing need to do Don't know Others……..(specify please	1 2 3 4 5 6 7 8 9 10 11 99	

56	The check-up was for	No diagnosis Blood Blood pressure Urine Body weight Height Anemia Ultra sonogram Pulse Don't know Others……..(specify please	1 2 3 4 5 6 7 8 9 99	
57	How many times you went for check-up during this pregnancy	……. Times Don't know	99	
58	Why did you go for checkup during this pregnancy	Faced problem To see whether everything is alright Both Don't know	1 2 3 99	
59	During checkup did anybody give you the following advises			
	Having rest & not to doing hard work	Yes No	1 2	
	Nutrition advice	Yes No	1 2	
	Breast milk	Yes No	1 2	
	Danger symptom during pregnancy	Yes No	1 2	
	Having tetanus injections	Yes No	1 2	
	Having iron tablets	Yes No	1 2	
60	Have you taken any TT injection during this pregnancy	Yes No	1 2	
61	During pregnancy did anybody from BRAC or other health worker give you any advice regarding health Who gave you suggestions?	Yes No Nurse Nutrition (NGO) Health provider FWV Others……..(specify please	1 2	
62	Expecting data of your delivery	…. Day …… Month……. Year Don't know	99	
63	Expecting place of delivery	Here Others……..(specify please		
64	Have you ever taken TT injections before	Yes No	1 2 →	66
65	If yes, then how many times?	……Times Can't remember	2	
66	Have you been identified as a high-risk mother?	Yes No	1 2 →	68
67	What suggestions they gave you	Having rest Lying down with the leg in air Checking blood pressure regularly Don't know Others……..(specify please	1 2 3 4 99	

Delivery care (Only for mothers of under 1 children)

68	Who helped you during your delivery	MBBS doctor Nurse/midwife Family welfare visitor NGO paramedic Medical assistant Trained TBA TBA Village doctor Traditional healer Relatives/friends/neighbor Nothing need to do Don't know Others……..(specify please	1 2 3 4 5 6 7 8 9 10 11 99	
69	During delivery where you were lying down	Plastic paper Cloths/stitched cloths Jute made bag Traditional caught On the floor upon bamboo made mat On the floor	1 2 3 4 5 6 99	
70	During delivery had the service provider had delivery kit	Yes No Don't know Others……..(specify please	1 2 → 99 →	 72 72
71	Which purpose she used those kits	Plastic paper for delivery Soap for hand wash Bleed for cutting the umbilical cord Thread for binding umbilical cord Don't know Others……..(specify please		
72	Who cutted the umbilical cord	Mother herself MBBS doctor Nurse/midwife Family welfare visitor Trained TBA Untrained TBA Village doctor Quack Mother in law Relatives/friends/neighbor Don't know Others……..(specify please	1 2 3 4 5 6 7 8 9 10 99	
73	How many clamps were used during separating the umbilical cord	……..Number Don't know	 99	
74	What were used to cut off the umbilical cord	Bleed Skin of Bamboo tree Scissor Don't know Others……..(specify please		
75	Did it take time get off the placenta	Yes No	1 2 →	 77
76	If yes then what did the service provider do	…….. ……		
77	Have you faced severe bleeding during delivery	Yes No	1 2 →	 79
78	If yes, then what did the service provider do?	…… ……		

Post-natal care

79	Have you faced severe bleeding during your last delivery	Yes No Don't know	1 2 → 99	 81
80	If yes then what did you do	Did treatment on her own Did nothing MBBS doctor Nurse/midwife Family welfare visitor Trained TBA Untrained TBA Village doctor Quack Don't know Others……..(specify please	1 2 3 4 5 6 7 8 9 99	
81	How did you take care of yourself after delivery	Had nutritious food Used sanitary napkin Used clean cloths Neat and clean Others……..(specify please		
82	Did you go for check-up before delivery	Yes No	1 2 →	 85
83	Whom did you go to	MBBS doctor Family welfare visitor Trained TBA Untrained TBA Health service provider Village doctor Quack Others……..(specify please	1 2 3 4 5 6 7	
84	How many time you seen them	…….. Number Cannot remember	 2	

Neonatal care (only about last children)

85	Date of birth of the baby	… Day…. Month ……Year		
86	Body weight during birth	…… kg Don't know	 99	
87	After giving birth which job was initially done	Separating umbilical cord Putting in touch with mother Leave him/her alone Cleaning the body Wrapping the body with cloths Bathing the baby Let it to sleep Let the baby to eat sugary water/others Don't know Others……..(specify please	1 2 3 4 5 6 7 8 9 99	
88	Where the baby was left after splitting umbilical cord	On the floor Traditional bed With mother With others Don't know Others……..(specify please	1 2 3 4 99	
89	Was the baby given colostrums?	Yes No Cannot remember	1 2 3	
90	Was the baby given anything else before colostrums feeding	Honey Only water Water with sugar Banana Fruit juice Tinned milk/baby food	1 2 3 4 5 6	

		Don't know Others……..(specify please	99	
91	The baby were given breast milk after how long of the delivery	… Minutes …….. Hour Don't know	 99	
92	After starting breast milk what else were given to the baby to eat within first month of it age	Honey Only water Water with sugar Banana Fruit juice Tinned milk/baby food Nothing else except breast milk Don't know Others……..(specify please	1 2 3 4 5 6 7 99	
93	Are you giving breast milk to the baby	Yes No	1 2	
94	Has the baby faced any diseases within one month of his/her age	Yes No	1 2 →	 97
95	If yes, what was it?	Fever Pneumonia Tetanus Asthma Jaundice Severe under weight Others……..(specify please	1 2 3 4 5 6	
96	Where did you go then	Mother own MBBS doctor Nurse/midwife Family welfare visitor Trained TBA Untrained TBA Village doctor Quack Pharmacists Don't know Others……..(specify please	1 2 3 4 5 6 7 8 9 99	

Only for over-5 months children

97	Within 5 months age was the baby given any other complementary food with breast milk?	Yes No	1 2 →	 99
98	If yes, what else were given	Milk Water Cow/goat milk Sagu/barly/rice grain Others……..(specify please	1 2 3 4	

Clients' satisfaction with the Service

99	Are you happy about the provided services regarding mother and child care	Yes No	1 → 2	101
100	If no, why not	……. ……(Specify please)		

Clients' suggestions to improve services

101	If we take any initiative regarding maternal and child health, what steps you think need to be taken	1……... 2……... 3…… …….		