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Health Systems Development

**Maternal Health Review  
Bangladesh**

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## List of Acronyms

ADB	Asian Development Bank
ANC	Antenatal Care
BAPSA	Bangladesh Association for Prevention of Septic Abortion
BBS	Bangladesh Bureau of Statistics
BCC	Behaviour Change Communication
BIRDEM	Bangladesh Institute of Rehabilitation for Diabetic Endocrine Metabolic disorder
BIRPERHT	Bangladesh Institute for Promotion of Essential and Reproductive Health Technologies
BMI	Body Mass Index
BRAC	Bangladesh Rural Advancement Committee
CC	Community Clinic
DFID	Department for International Development
DGHS	Directorate General of Health Services
DGFP	Directorate General of Family Planning
DH	District Hospital
DHS	Demographic and Health Survey
EOC	Emergency Obstetric Care
FP	Family Planning
FPAB	Family Planning Association of Bangladesh
FWV	Family Welfare Visitor
HPSP	Health and Population Sector Programme
HPSS	Health and Population Sector Strategy
HSD	Health System Development
ICDDRDB	International Centre for Diarrhoeal Disease Research, Bangladesh
LSHTM	London School of Hygiene and Tropical Medicine
MC	Medical College
MCH	Maternal and Child Health
MCWC	Maternal and Child Welfare Centre
MMR	Maternal Mortality Ratio
MOHFW	Ministry of Health and Family Welfare
MR	Menstrual Regulation
NGO	Non-government Organisation
NIPORT	National Institute of Population Research and Training
UHC	Upazila Health Complex
TBA	Traditional Birth Attendant
TT	Tetanus Toxoid
UHFWC	Union Health and Family Welfare Centre
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commission for Refugees
UNICEF	United Nations Children's Fund
WHO	World Health Organization

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## **EXECUTIVE SUMMARY**

### **Introduction**

The state of maternal health in a nation can be characterised by numerous factors, such as outcome measures like maternal mortality and morbidity rates, or maternal nutrition status, as well as process indicators of service availability and use. These indicators include: the levels of antenatal and postnatal care, contraceptive prevalence rate (CPR), coverage of tetanus toxoid (TT) vaccination, proportion of deliveries conducted in health facilities by trained birth attendants, or proportion of unwanted pregnancies. Unfortunately, according to many of these measures, the maternal health situation in Bangladesh appears to be poor.

### **Progress in the Health and Family Planning Sector**

Nevertheless, there are some signs of success in the country. The government of Bangladesh has made considerable efforts to provide health and family planning services in the years since the country's independence in 1971, which has resulted in progress in some indicators.

For example, the national infant mortality rate (IMR) declined from 150 per 1000 live births in 1975 to 87 in 1999. The annual crude death rate has also fallen from 19 per 1000 in 1975 to just 5 in 2000. The annual birth rate declined from 43 per 1000 population in 1980 to 36 in 2000, giving a population growth rate of 1.7% in 2000, compared to 2.4% in 1980. This lowering of fertility is largely due to increases in the contraceptive prevalence rate (CPR), standing at 53.8% in 2000 (NIPORT, 2000).

However, achievement in the field of maternal mortality has not matched that seen in these other related fields. Although the Maternal Mortality Ratio (MMR) did fall from 620 per 1000 live births in 1982 to 440 in 2000 (World Bank, 2001), this level is still considered unacceptably high, with around 20,000 Bangladeshi mothers dying each year due to causes related to pregnancy and child birth (World Bank, 2001) (with a crude birth rate of 30.2 births per 1000 population (NIPORT, 2001)). Official government reports, however, estimate a lower MMR, usually around 300 per 100,000 live births.

### **Maternal Mortality**

According to UNFPA (2002), The estimated lifetime risk of dying from pregnancy and childbirth related causes in Bangladesh is 1 in 21, compared to 1 in over 4,000 in

industrialized countries. Of the total maternal deaths, 69% are due to direct obstetric causes, 14% are reported as due to injury and violence, leaving 17% due to indirect causes. The most common obstetric causes of maternal deaths are postpartum haemorrhage, eclampsia, complications of abortion, obstructed labour, and postpartum sepsis. The high reported incidence of injuries and violence as causes of maternal mortality indicate social issues that must also be addressed to improve maternal health in Bangladesh.

### **Maternal Morbidity**

Like maternal mortality, the situation of maternal morbidity in Bangladesh is considered unacceptable. In general, there appears to be a higher prevalence of morbidity and malnutrition among women than their male counterparts. The common complications observed for maternal cases specifically include abdominal pain, swelling of the leg or body, anaemia, urinary problems, eclampsia and haemorrhage.

High rates of maternal morbidity and mortality continue to be important challenges for Bangladesh health systems as three million mothers become pregnant each year in Bangladesh, out of which 600,000 are expected to develop complications. About nine million women suffer from lasting complications such as fistulae, prolepses, inability in controlling urination, or painful intercourse (Bangladesh Ministry of Health and Family Welfare, 2002).

### **Maternal Nutrition**

Another important concern in the health sector is maternal nutrition, as measures indicate around 50% of Bangladeshi women suffer from chronic energy deficiency. Low birth weight incidence is estimated at 45%, and micronutrient deficiencies are common. Over 43% of pregnant women are iodine deficient and more than 2.7% develop night blindness during pregnancy (Bangladesh Ministry of Health and Family Welfare, 2000). Anaemia in pregnancy contributes to intra-uterine growth retardation leading to low birth weight babies and increased MMR.

### **Antenatal Care**

One factor potentially influencing the high MMR is that nearly two thirds (63%) of mothers do not receive antenatal care. Difference in the coverage by division is minimal although the

rural-urban difference is very high. 59% of urban mothers receive antenatal care, while in rural areas the rate is only 28% (NIPORT *et al.*, 2001).

### **Child Delivery**

It is widely agreed that one of the most important health interventions useful in reducing maternal mortality is to have mothers deliver with a skilled birth attendant<sup>1</sup> (Safe Motherhood, 2001). However, in Bangladesh, skilled attendants assist only 12% of births (doctors 7% and nurses, midwives, or family welfare visitors<sup>2</sup> 5%). Furthermore, almost 92% births are delivered at home, often in unsafe and unhygienic conditions. Traditional birth attendants (TBAs, locally called dais) assist 64% births. Again there are significant rural-urban differences, as professionally trained personnel attend 33% of births in urban areas, compared to only 8% in rural areas (NIPORT *et al.*, 2001).

### **Tetanus Toxoid Vaccination**

Interestingly, despite these very low levels of use of antenatal and skilled delivery services, the situation in respect of TT vaccination among women is more or less satisfactory, with 81% of mothers who gave births during 1995-1999 given this vaccination (NIPORT *et al.*, 2000).

### **Postnatal Care**

Postnatal care, however, is another area where Bangladesh struggles. The proportion of mothers seeking postnatal care from professionally trained personnel is very low, both in rural and urban areas of Bangladesh (Barkat *et al.*, 1995). On the whole, only 7% of women who delivered at home sought postnatal care from medically trained personnel, despite the postnatal period being one of the most risky periods for occurrence of life threatening complications. Data was not found indicating the use of postnatal care by place of delivery.

### **Unmet Demand for Emergency Obstetric Care (EOC) Services**

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<sup>1</sup> Commonly seen as a doctor or nurse/midwife.

<sup>2</sup> Family Welfare Visitors are trained to conduct delivery and are counted as skilled attendants in Demographic and Health Surveys.

Considering the present population size and birth rates, about 2.9 million mothers are expected to give birth annually. The recent demographic and health survey shows that only 7.9% of the total deliveries are conducted in health facilities (NIPORT et.al. 2001). Assuming a 15% rate of obstetric complications in the process of pregnancy and birth, 438,368 (Barkat A. *et. al* 1998) mothers would be in need of EOC services annually. Against this situation it was found that only 21.50% cases were managed at the EOC facilities in the six divisions both from the public and private facilities (ACPR 2000).

### **Family Planning**

According to the most recent Demographic and Health Survey (DHS) (NIPORT, 2001), the proportion of currently married women using a family planning method increased from under 8% in 1975 to over 53% in 2000. 43% of women reported use of modern methods while around 10% use traditional methods. The rural-urban division shows that 60% of the urban women and 52% of the rural women use contraceptive methods.

Of those women not using family planning, an estimated 5 million couples are seen as not having their contraceptive needs met, either wanting to space births, or wishing to limit numbers of children. Therefore, in spite of achieving a high CPR, unplanned pregnancies are still common in Bangladesh.

### **Illegal and Unsafe Abortion**

While abortion complications contribute significantly to maternal mortality, abortion rates in Bangladesh have been increasing over the last two decades, and a large proportion of women seek the service from untrained providers. The use of untrained providers can be due to greater familiarity with village practitioners, inadequate information, perceived low quality of government services and concerns over informal costs of government services. Some pregnancy termination is legal in Bangladesh, called 'menstrual regulation', allowed up to 10 weeks of pregnancy. But 'abortion' itself (i.e. abortion after that time) is not allowed.

### **Access and Health Seeking**

One of the underlying factors leading to poor maternal situation in Bangladesh is that a very low percentage of women actually seek professional medical assistance for pregnancy related care, deliveries and complications. Only 7.9% deliveries take place in the health facilities and

only 5% of the expected complications seek services of static health facilities (Ahmed et al. 1995).

Survey results show that only 26.8% mothers prefer to receive antenatal services from a government facility. More than 58% mothers prefer to use the services of an untrained provider at home. A wide range of factors have been identified as influencing these decisions, including: lack of information and education about services, superstitions, fear of losing family prestige, financial crisis, negligence of service providers, insufficient supplies (lack of adequate drugs or medicine), shortages of skilled doctors, and predominance of male doctors in the government hospitals (Haider et al., 2000).

Many of these barriers will lead to delays in seeking all forms of maternal care, even when life-threatening emergencies arise, which may be a major factor behind the high level of maternal mortality. In Bangladesh, a 2001 survey found only 61% of women who sought medical care decided to do so within 6 hours of recognising the need, with delays of 3 days or more in some cases (NIPORT *et. al*, 2002).

### **Quality of Care and Patient-Provider Interaction**

Quality of care and patient-provider interaction greatly affects the overall maternal health situation in Bangladesh. It has been found that the quality of maternal health services provided by the government institutions is poorer than desired. Facilities suffer from a large number of problems, such as shortage of medical equipment, dearth of doctors, nurses, and technicians, an unhygienic physical environment, scarcity of power and water, pilferage of drugs and medicines and irregularities in the management system (Bangladesh Ministry of Health and Family Welfare, 2000).

### **Conclusions**

Progress has been achieved in many health and family planning indicators in Bangladesh, but the pace of progress for maternal health problems remains slow. The maternal mortality ratio remains unacceptably high, despite the continued development of the health infrastructure in the country. The maternal health situation continues to be a high priority area in designing future programmes and projects in Bangladesh.

## **1. Introduction**

This document provides an overview of the existing situation of reproductive and maternal health care in Bangladesh. It is one of a series of country reports being undertaken within the framework of the Department for International Development (DFID) funded Health Systems Development (HSD) programme. The HSD programme attempts to understand and investigate factors that hinder national health systems from meeting the needs of their populations, in particular the poor. Maternal health has been identified as one particular ‘probe’ condition to use in this goal, as it is believed that by understanding the factors that constrain maternal health service provision, the HSD programme can also help to understand larger health systems issues. During the first year of this programme, similar analyses have also been undertaken in three other partner countries (South Africa, Russia, and Uganda). These situational analyses will be followed by further primary research in each country by partners in the HSD programme.

### **1.1 Country**

Bangladesh is located in South Asia comprising a 147,570 square kilometres area with a population of around 130 million people (881 persons per square kilometre). It gained its independence on March 26, 1971 following a nine month war of liberation with Pakistan. It is almost completely surrounded by India, except for its southern coastline on the Bay of Bengal and a short south-eastern frontier with Myanmar. The country is divided into 6 divisions, 64 districts, 496 Upazilas (formerly called Thanas), 4,451 unions and 13,500 wards for administrative purposes (Bangladesh Bureau of Statistics, 2000).

### **1.2 Population**

Almost 90% of the population is Muslim, with nearly 10% Hindu, and Buddhists and Christians constituting less than one percent. A small fraction of the population (1.3%) consists of what is locally termed ‘tribal’ groups, due to their distinct languages, religion and customs (Bangladesh Bureau of Statistics, 2000). A majority of these ethnic groups live in the hilly areas of the country and their pattern of life is different from others in many respects including their health seeking behaviour (Bangladesh Centre for Development Research, 1992). Like other countries in the region, life expectancy at birth in Bangladesh is higher for

females (59 years) compared to that of males (58 years). The ratio of men-women is almost even (1.06:1) (Bangladesh Ministry of Health and Family Welfare, 2000).

Almost 77% of the population live in rural areas, around 60% of whom live below the poverty line (consuming less than 2122 kilocalories per day). The sanitation conditions in many areas are very poor, as only 7% of rural households and 33% of urban households use sanitary latrines (Bangladesh Bureau of Statistics, 2000). 48% of Bangladesh's children under five are malnourished with the situation worse among girls (49.6 %). Around 50% of women fall below the Body Mass Index (BMI) cut-off point 18.5 and are considered at nutritional risk (NIPORT, *et al.*, 2000). The economy of the country is mainly dependent on agriculture, with 65% of the rural population is engaged in the agriculture sector. 7% work in forestry and fishery, 11.5% in production and transport, and the remaining are engaged in other activities including professional and technical services (Bangladesh Bureau of Statistics, 2000). Per capita income calculated on the basis of Gross Domestic Product is US \$373 and the poorest 20% of the population share only 8.7% of the national income (World Bank, 2001).

Among the female population, 45% fall within the reproductive age group of 15-49 years. 9% are over 49, and 46% are aged 14 and under (BBS, 2000). The level of education attainment is still very low in Bangladesh and there is a distinct gender bias. One third of men and 44% of women aged 6 years or above have not received any formal education (Bangladesh Bureau of Statistics, 2000).

### **1.3 Status of women in Bangladesh:**

As is the case in many other parts of the world, women in Bangladesh are relatively disadvantaged in terms of their economic, social and health conditions. Although the infant mortality rate for female children is better than that of male children, survival probability of females beyond the age of 30 years is significantly lower than males. The excess female mortality begins at childbearing age and there are wide disparities in fertility and mortality between rural and urban areas. The strong patriarchal structure of society has resulted in poor status of women in family and society. This is reflected in restrictions on women's movements, low self esteem, a culture of acceptance, early marriage, lack of effective community support structure, and inappropriate allocation and utilisation of resources which

is further aggravated by conservatism and prejudices (UNICEF, 2000). The employment opportunities for women also remain quite restricted in the country (Bangladesh Bureau of Statistics, 1999).

However due to some proactive policies adopted by the government, such as incentives given to families for female education, female literacy rates and life expectancy has increased over the past few decades. The adult female literacy rate is 42.5%, while the corresponding figure for males is 59.4% (Bangladesh Bureau of Statistics, 2000).

#### **1.4 Structure of the Health System**

The Ministry of Health and Family Welfare (MOHFW) is responsible for health policy formulation, planning and decision making at the macro level. Under MOHFW, there are two implementation arms: the Directorate General of Health Services (DGHS) and Directorate General of Family Planning (DGFP). The DGHS is responsible for implementation of all health programmes and providing technical guidance to the ministry. The DGFP is responsible for implementing Family Planning (FP) programmes and providing FP related technical assistance to the ministry.

The lion's share of the country's health infrastructure and health service system has been established under the government's management and control. At the local level, 3275 Union Health and Family Welfare Centres (UHFWCs) exist to serve the 4,470 unions. Additionally there are Upazila Health Complexes with 31 beds in 391 rural Upazilas, 64 district hospitals, 13 government medical college (MC) hospitals, 6 postgraduate hospitals and 25 specialised hospitals. There are also a further 54 Maternal and Child Welfare Centers (MCWCs) established to provide maternal services at the district and Upazila level. Most recently the government has taken another initiative to construct a Community Clinic (CC) at the village level for every six thousand population. The total number of registered doctors in the country is around 27,546, and there are 15,804 registered nurses. There are 40,773 hospital beds, out of which 29,402 are located in government hospitals (Bangladesh Ministry of Health and Family Welfare, 2000).

The health service delivery system in the public sector is divided into primary, secondary and tertiary levels. The following table provides the summary of the level of care and type of facilities available at every level of public administration in the country.

Table-1: Level of care and type of health facility

Level of care	Administrative unit	Health facility
Tertiary level	Division or national/capital	Teaching hospital/institute (16), 250-1050 beds each
Secondary level	District	District Hospital (59), 50-150 beds each
Primary level	Upazila	Upazila Health Complex (397), 31 beds each
Primary level	Union	Union Health and Family Welfare Centres (3275)
Primary level	Ward	Community Clinics (6000 +)

Besides the public sector, the private for-profit providers and private not-for-profit groups (or non-government organizations - NGOs), also play large roles in the Bangladesh health sector. NGOs are mostly involved in the provision of primary health care in both rural and urban areas, but a significant number of tertiary hospitals are also run on a not-for profit basis. Examples of these are: the Holy Family Hospital of Bangladesh Red Crescent Society, the Eye Hospital of Lions Club, the Leprosy Hospital of Damien Foundation, Bangladesh Institute of Research & Rehabilitation on Diabetes Endocrine & Metabolic Disorder (BIRDEM), Ganashyasthya Hospital of Ganashyasthya Kendra, the Cholera Hospital of the International Centre for Diaphoreal Disease Research - Bangladesh (ICDDRDB), Kumudini Hospital of Kumudini Trust, Dhaka Community Hospital, and Marie Stopes Clinic Society.

### 1.5 Financial Allocation for the Health Sector

The government has allocated around 3% of the total national budget to the health sector. Per capita allocation of the government is only US \$3.6 (Bangladesh Ministry of Health and Family Welfare, 2000). In total government health sector expenditure during 1995-96 stood at US \$374 million, up from US \$102.0 million in 1985-86<sup>3</sup> (Bangladesh Director General of Health Services, 1990; Bangladesh Health Economics Unit, 1995). The amount of total expenditure of the Ministry of Health and Family Welfare during the 1998-2003 period has been estimated at \$3,373.20 million (including development assistance) of which \$455.88

<sup>3</sup> In the source documents, these figures appear to be given in absolute (unadjusted) terms.

million was allocated for the first year (Bangladesh Ministry of Health and Family Welfare, 2002).

### **1.6 Maternal Health Care Delivery System**

Maternal and child health (MCH) services have been given highest priority in the health system. The services are provided through the countrywide facility network as described in table-1. At the community level the services are provided by the Family Welfare Assistants and Health Assistants from the Community Clinics (CC). At the union level a Family Welfare Visitor (FWV) and a Sub-Assistant Community Medical Officer or Medical Assistants are mainly responsible for providing the services. There are also 250 Graduate Medical Officers posted in 3,275 UHFWCs for providing MCH services. At the Upazila level, the MCH unit of the Upazila Health Complex (UHC) headed by a Graduate Medical Officer is responsible for providing MCH services. Trained support personnel such as FWV and Ayas (female ward assistants) assist as well. There is also a position of junior Consultant (Gynaecological) who provides services in case of emergencies, attending all deliveries at the UHC and all referred maternal patients. The activities of the MCH unit and other maternal health care services are supervised by the Upazila Health and Family Planning Officer in the UHC.

The MCWCs established mainly at the district level (with some also at the Upazila level) provide only the maternal and child health services under the direct control of Directorate of Family Planning. These facilities are expected to be equipped to provide basic EOC and obstetric first aid (Ahmed *et al.*, 1995). The district hospitals (DHs) in the district headquarters provide maternal services through an outpatient consultation centre and a labour ward. Between 25-40% hospital beds are reserved for maternal patients in every hospital.

### **1.7 History and Policy: Maternal Health Care**

The population program in Bangladesh has grown from a small clinic-based initiative to a multi-sectoral nationwide effort. In 1953 with the initiative of professionals and social workers an organisation called Family Planning Association of Bangladesh (FPAB) was founded. The voluntary activities of FPAB received government support in 1958 and the first national FP program began in 1960 when the government established the Directorate of

Family Planning. In 1965 the government set a target that 25% of eligible couples would be practising FP by 1970 (Bangladesh Ministry of Health and Family Welfare, 1993).

Since independence, the government's population policy was based on the need to curb population growth and the programme was treated as a model whereby development goals were achieved through an assertive maternal and child health based family planning programme. NGOs have played a vital role behind the success in the population sector as they provided specific policy recommendations based on their research based intervention programmes. As a result of these efforts, the country has experienced a remarkable demographic transition over the last three decades with a population growth rate of only 1.48% between the 1991 and 2001 censuses (Bangladesh Ministry of Health and Family Welfare, June 2002), and a total fertility rate of only 3.3 (NIPORT *et al.*, 2001).

In the health sector, the government has seen other successes in areas such as the control of diarrhoea, malaria and tuberculosis, and improvement of immunisation coverage. However these success stories are limited when compared to the expectations of the people and in light of the continued health problems in the country.

In 1997, the Health and Population Sector Strategy (HPSS) was developed to guide government's future programmes. The HPSS aims at provision of one-stop full-range of essential reproductive health and family planning services through an integrated service delivery mechanism. As a result of this, there has been a significant shift from the existing domiciliary-based services delivered by visiting health workers to the fixed-centre based services from community clinics. The Health and Population Sector Programme (HPSP) consists of a series of interventions to be undertaken between 1998 and 2003, which are expected to reduce maternal mortality and morbidity. The following seven strategies are included in the HPSP:

- 1) Focus on Emergency Obstetric Care for reducing maternal mortality,
- 2) Provision of Essential Obstetric Care/Basic maternity care services for promotion of "good practices" including early detection and appropriate referral of complications
- 3) Addressing the needs of women through a woman friendly hospital initiative
- 4) Communication for behaviour change and development
- 5) Involvement of professional bodies
- 6) Stakeholder participation
- 7) Promotion of innovation [other new approaches].

As of yet it is unclear what the impact of this new strategy will actually be.

In October 2001, the government also released the Bangladesh National Strategy for Maternal Health. In many ways the document lays down a theoretical framework of what is needed and desired to improve maternal health in the country. The main Principles overlap to some extent with the HPSP listed above, although they include promoting women's access to resources and assurance of quality maternal health services. The document discusses essential maternal services as: emergency obstetric care, antenatal care, skilled attendance, postnatal care, family planning, and services for women and girls subject to violence. It also discusses necessary referral systems and human resource requirements to achieve the targets set. However little is discussed about specific implementation of these initiatives. A budget of US \$181 million is proposed, but there is no discussion of where those funds are to come from, and when.

Finally, while the Strategy covers many of the areas that current literature recommends for the reduction of maternal mortality, it also raises a number of systems related questions. In relation to human resources, the Strategy estimates the number of each type of service provider required, their training needs, and estimates the cost of this, but does not consider the capacity in local institutions to train these people or the willingness in the labour force to take up these positions. In particular, many placements in rural or remote areas may not be desirable for health workers. In relation to quality assurance by supervisory systems and monitoring, it is important to understand what factors lead to low quality in spite of existing regulations – for example, the private practice of (publicly employed) doctors has been cited as a problem in some health centres (Afsana and Rashid, 2001). It is necessary to investigate the reasons for this dual practice, and understand the incentives driving it, before calling for further regulation or monitoring.

### **1.8 Institutions involved in maternal health improvement, research and development**

In Bangladesh, many institutions are involved in maternal health improvement, research and development. Apart from those agencies within the Ministry of Health and Family Welfare, there are many government and non-government organisations, which are involved in maternal health research and development. These organisations include the National Institute of Population Research and Training (NIPORT), the Bangladesh Association for Prevention

of Septic Abortion (BAPSA), the Bangladesh Institute for Promotion of Essential and Reproductive Health Technologies (BIRPERHT), and the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDRDB). Most of these carry out their activities with financial assistance from donors. International and bilateral organisations including WHO, UNFPA, UNICEF, UNDP, UNHCR, World Bank, ADB, and DFID are also playing a vital role providing policy guidelines, implementation support and infrastructure development for improvement of the health sector.

### **1.9 Progress in the Health and Family Planning Sector**

Despite overall low health status in the country, particularly for women and children, Bangladesh has experienced a significant demographic transition over the last three decades. The total fertility rate has declined from 6.3 in 1970s to 3.3 in 2000 (NIPORT *et al.* 2000), and crude death rate has fallen from 19 per 1,000 populations in 1975 to just 5 in 2000 (Bangladesh Bureau of Statistics, 2000). The infant mortality rate has also nearly halved, falling from 150 deaths per 1,000 live births in 1975 to 87 between 1994-1999 (NIPORT *et al.* 2000). A large factor behind the lowered fertility rate has been an increase in contraception, with the contraceptive prevalence rate rising from 7.7 % in 1975 to 53.8 % in 2000 (NIPORT *et al.* 2000). The maternal mortality ratio has also declined, although this decline has not been as dramatic as other indicators, falling from 620 deaths per 100,000 live births in 1982 to 440 in 2000 (World Bank, 2001).

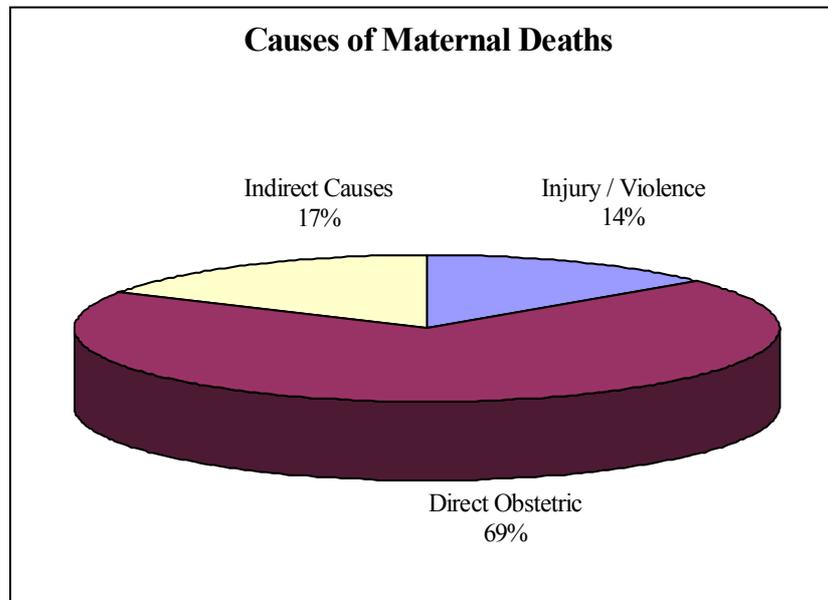
### **1.10 Scope of this report**

This study reviewed the country's maternal health care delivery system in the public sector through an extensive literature search, including a large number of unpublished reports and 'grey' literature, as well as data available from nationally representative surveys. Specifically, the study focuses on providers of services, quality of services, resource allocation, accessibility, and user's views on the services provided by the government health facilities at different levels. Services considered include antenatal care, TT vaccination to women, child delivery, and postnatal care.

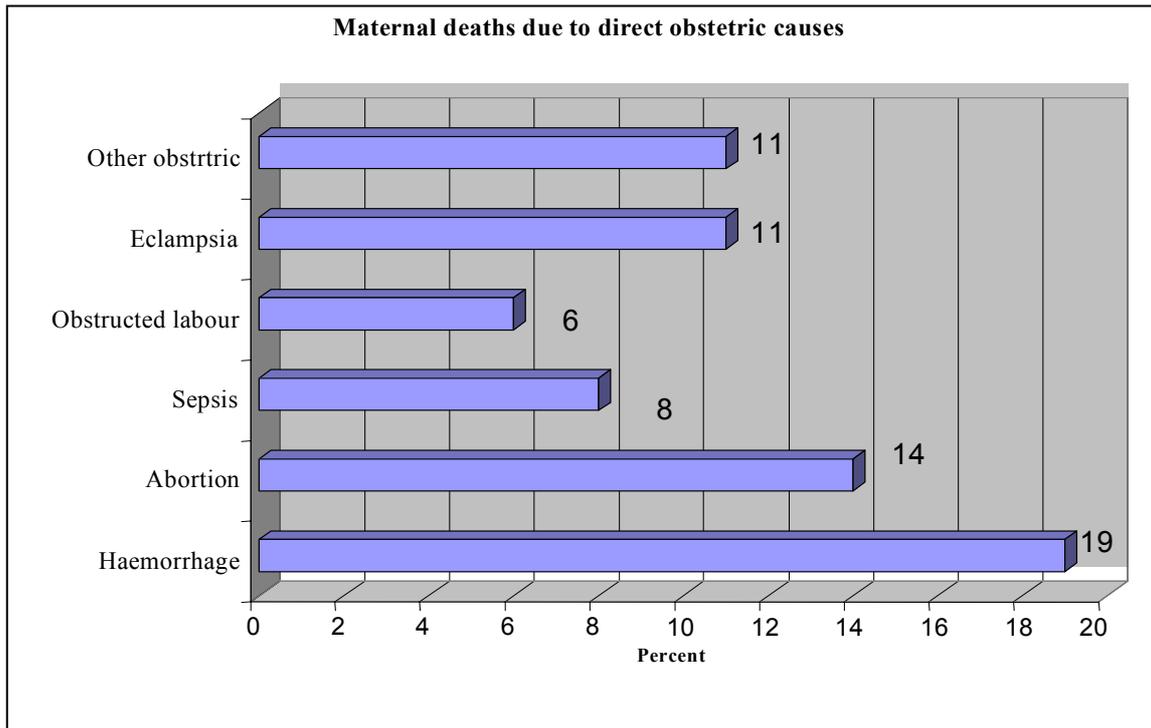
## 2. Maternal Health Situation

A nation's maternal mortality ratio is now widely considered to be an important indicator of the overall health status of women. High MMR represents failure of a health system to effectively provide services and care for women, and the failure of society to keep women in good health. The services most often linked to reduction of maternal mortality include antenatal care during pregnancy, tetanus toxoid vaccination, professional child delivery (including emergency services access), postnatal care and family planning services (UNICEF, 1999).

According to official statistics, 69% of maternal deaths were due to direct obstetric causes, with the following breakdown seen (Bangladesh Ministry of Health and Family Welfare, 1998):



Source: UNICEF, 1999



Source: UNICEF ,1999

Official government estimates of the Maternal Mortality Ratio tend to vary around 300 per 100 live births (Bangladesh Ministry of Health and Family Welfare, 2001). The World Bank, however, currently estimates the national MMR at 440 per 100,000 live births (World Bank, 2001). UNFPA has estimated lifetime risk of dying from pregnancy and childbirth related causes in Bangladesh as 1 woman in 21, which compares to 1 woman in over 4,000 in industrialised countries (UNFPA, 2002)<sup>4</sup>. While the MMR tends to be considerably higher in low income countries, there are some examples of other regional low-income countries which have shown the ability to greatly reduce their MMR, such as Sri Lanka which has an MMR of 80 (UNICEF, 1999). According to the Ministry of Health and Family Welfare, another tragic consequence of the continued high number of maternal deaths is that about 75% of babies born to women who have died in childbirth will also die within the first year of life (Bangladesh Ministry of Health and Family Welfare, 2001).

<sup>4</sup> It is unclear what figures UNFPA uses, however, as by using the World Bank estimate of 440 for MMR and a TFR of 3.3, this would calculate a lifetime risk of death of nearly 1 in 70, not 1 in 21.

It is clear that a number of important social and health system issues underlie the poor maternal health situation in Bangladesh. Common causes of maternal deaths include postpartum haemorrhage, eclampsia, and complications of abortion; obstructed labour, and postpartum sepsis (Ahmed *et al.*, 1995). Yet among the social factors underlying mortality, injuries (often from domestic violence) have been identified as one of the major causes of mortality. It is estimated that 14% of pregnant women's deaths are associated with injury and violence (UNICEF, 1999), although a broad definition of violence is used, ranging from physical abuse on one end, to denial of adequate nutrition, education and care, and an undefined category of 'psychosocial oppression to physical abuse'. Indeed, it has been found that the proportion of deaths of all women due to violence is even greater than those related to pregnancy in Bangladesh (*ibid.*). One study on domestic violence against women in rural areas indicates that 22.4% women are victims of physical assaults, 27.8% mental torture and 34% of verbal abuse. Younger women are more likely to be victims of such violence (BRAC, 1997).

## **2.1 Maternal Morbidity**

Like maternal mortality, the situation of maternal morbidity in Bangladesh is considered unacceptable (Bangladesh Ministry of Health and Family Welfare, 2001). Reliable data of health problems during pregnancy are scarce in Bangladesh, making morbidity difficult to estimate. The limited information available from the Demographic and Health Survey (DHS) reports a higher prevalence of morbidity and malnutrition among girls and women than men. Emerging evidence indicates that the prevalence of reproductive tract infections is high and that the spread of HIV/AIDS is of concern. Iron-deficiency anaemia is widespread among Bangladeshi girls, especially in rural areas and affects 50 to 90 % of pregnant women in the country. The DHS of 2000 reported that 13.8% of women developed complications during their last pregnancy. The most common complications were abdominal pain (25.31%) swelling of leg or body (23.33%), anaemia (19.94%), urinary problems (16.76%), eclampsia (1.99%) and haemorrhage (3.51%).

The high rate of maternal mortality continues to be a challenge for the Bangladesh health system as four million women became pregnant each year in Bangladesh, out of which 600,000 are expected to develop complications (MOHFW 2000). There are about 9 million women in the country who have survived the rigours of pregnancy and childbirth but suffer

from lasting complications such as fistulae, uterine prolapse, inability to control urination and painful intercourse. These reproductive morbidities diminish women's fertility, productivity and quality of life. In some cases, women with such chronic problems may also become social outcasts, turned out of homes and rejected by their husbands and families (Bangladesh Ministry of Health and Family Welfare, 1998).

A national survey on reproductive age women who had experienced at least one pregnancy estimated that prevalence of 'life threatening' antepartum morbidity is 5.7% (2.7% for bleeding and 3.0% for fits/convulsion)<sup>5</sup> and prevalence of high risk antepartum morbidity is 22.7% for oedema, 3.6% for hypertension, 16.9% for fever more than 3 days and 19.3% for excessive vomiting (Akhter *et al.*, 1996).

Among those who suffered from life threatening convulsions, only 21.9% sought health care from a doctor, nurse, or government health facilities. Almost half of women (48%) who suffered from bleeding did not seek care from anyone. The percentage of women who did not seek care from any sources included 61.4% in cases of oedema, 56% for vomiting, 35.0% for fever more than 3 days and 19.6% for hypertension (Akhter *et al.*, 1996).

It is clear that one of the major underlying factors leading to poor maternal outcomes in Bangladesh is the low percentage of women who obtain professional medical care for deliveries and complications. Only 7.9% of expected deliveries are taking place in the health facilities and only 5.0% of the expected complications sought services of the facilities (Ahmed *et al.* 1995). Later sections will discuss findings on health seeking behaviour and barriers to access for maternal services.

## **2.2 Maternal Nutrition:**

Maternal nutrition is another problematic issue in Bangladesh that may underlie some of these problematic outcomes. Around 45% of women in Bangladesh suffer from a chronic energy deficiency.<sup>6</sup> Low birth weight incidence is estimated at 45%, and micronutrient deficiencies are rampant (as mentioned, over 50 % pregnant women are anaemic). Over 43%

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<sup>5</sup> No other sources of 'life threatening' morbidity (e.g. sepsis) were given.

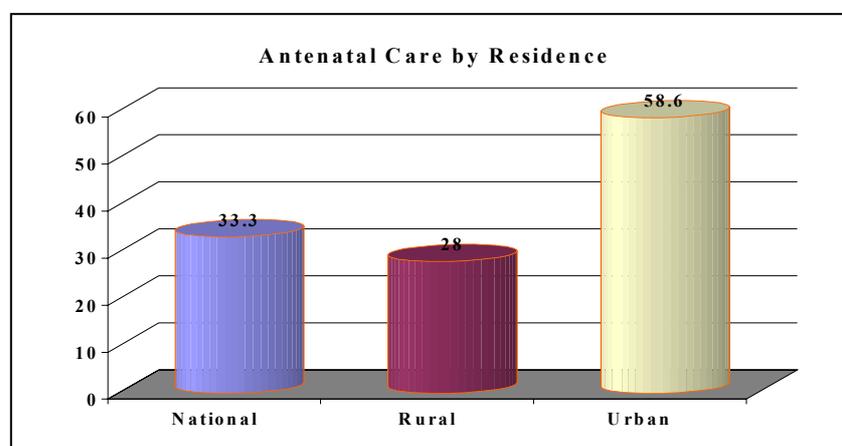
<sup>6</sup> A steady state of energy intake and expenditure for a low body size, affecting activity levels and metabolism - often simply indicated by a body mass index of under 18.5 (Shetty *et al.*, 1995).

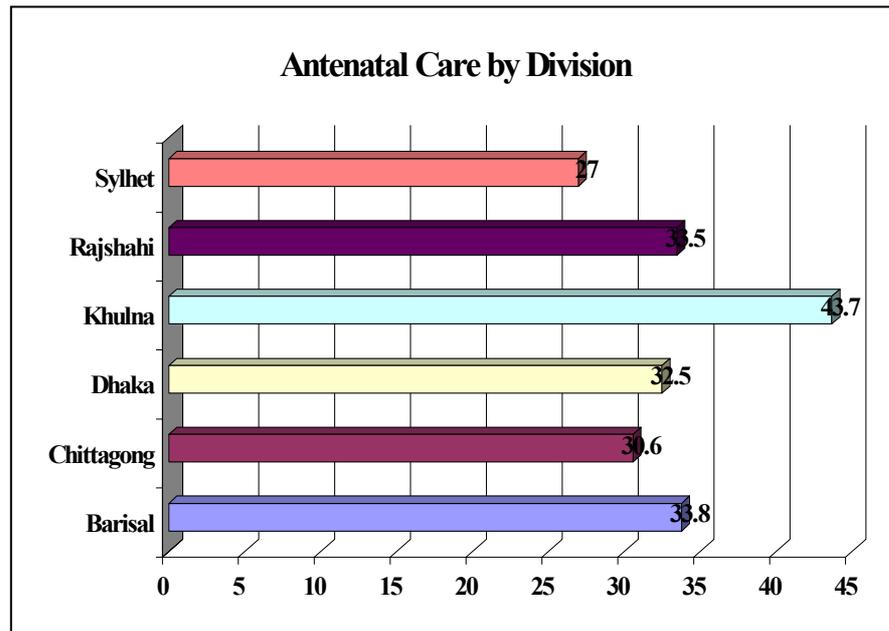
of women in the country are iodine deficient and more than 2.7% are night blind during pregnancy (Bangladesh Ministry of Health and Family Welfare, 2000).

Anaemia in pregnancy contributes to intra-uterine growth retardation, leading to low birth weight babies and can increase the risk of maternal death. In addition, malnutrition of women and adolescent girls exacts heavy costs from the health care system through excess morbidity and increased premature delivery. (Bangladesh Ministry of Health and Family Welfare, 2000).

### 2.3 Antenatal Care

The 1999-2000 DHS indicates that many mothers in Bangladesh do not receive antenatal care. For births that occurred in the five years before the survey, nearly two-thirds (63%) of mothers received no antenatal care (ANC) during pregnancy. Those who do receive care tend to receive it from doctors (24%), or nurses, midwives or family planning visitors (10%). Among the women who do obtain care, the median number of antenatal visits is only 1.8 (NIPORT *et al.*, 2001), far less than the WHO recommended minimum 4 visits (WHO, 1994). ANC visits are much more common for younger women and for those of lower birth parity. There are also regional variations in use of antenatal services, as 59% of urban births had received antenatal care compared to only 28% in rural areas. Difference in antenatal coverage by division is minimal. Mothers in Sylhet division are least likely to receive antenatal care, for only 27% of births the mothers in this division have at least one antenatal care visit (NIPORT *et al.*, 2001). It has also been found that older, poor and less educated women are less likely to seek ANC in Bangladesh (Rahman, *et al.*, 1997).





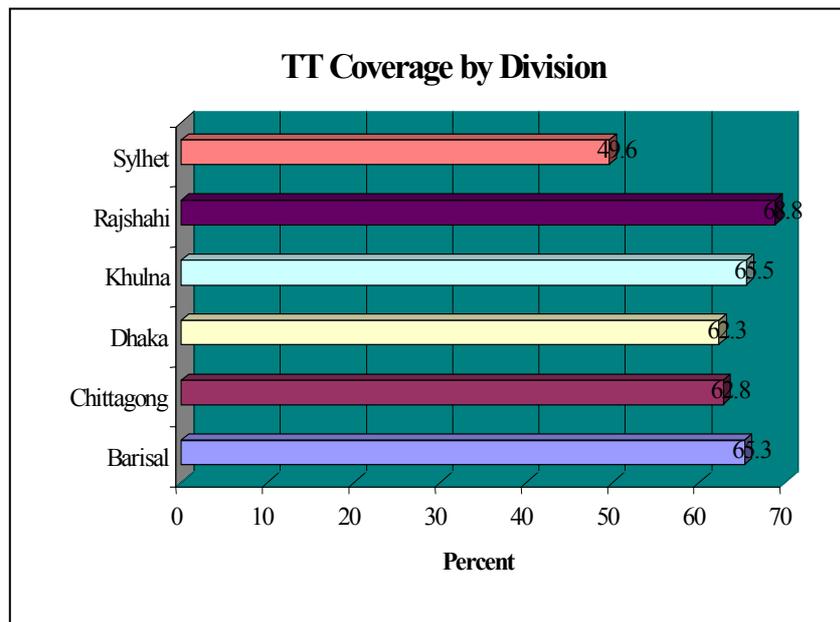
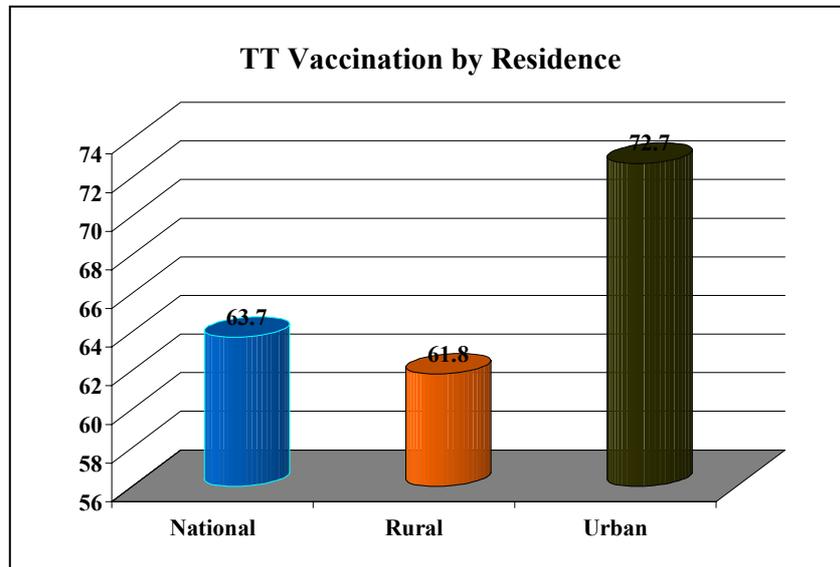
Source: NIPORT *et al.* 2001

The low level of ANC use in Bangladesh has remained virtually unchanged during the last five years. According to the DHS, use was 25.7% in 1993-94 and 26.4% in 1996-97. This low coverage is one of the most significant factors responsible for the high level of maternal mortality in Bangladesh (Bangladesh Ministry of Health and Family Welfare, 1999). In response to a question in the 1996-97 DHS, the vast majority of women responded that they felt ANC was beneficial (85%). This may imply that some other factors - perhaps cost or accessibility of services - accounts for the low ANC use, although a lack of women's decision-making power, multiple demands on women's time, and restrictions on women's movements during pregnancy have also been held as responsible (Mitra *et al.*, 1997; Rahman, 2000).

#### 2.4 Tetanus Toxoid Vaccination

Tetanus Toxoid (TT) vaccines are given during pregnancy for prevention of tetanus among newborns. Although there has been no change in recent years in ANC coverage, the proportion of pregnant women receiving TT injections has risen substantially. For births occurring between 1992-96, 75% of mothers received at least one TT injection during pregnancy (Mitra *et al.*, 1997: 113), while by 1995-99, the proportion had increased to 81% (NIPORT *et al.*, 2000). TT vaccinations are given to mothers through immunisation centres and satellite clinics, and are therefore often given without a full antenatal visit, leading to the

much higher levels of TT compared to ANC. Still, the variations of TT coverage are similar to variations of antenatal care. Women giving birth in rural areas and Sylhet division in particular were found to be less likely to have had a tetanus vaccination (NIPORT *et al*, 2001).

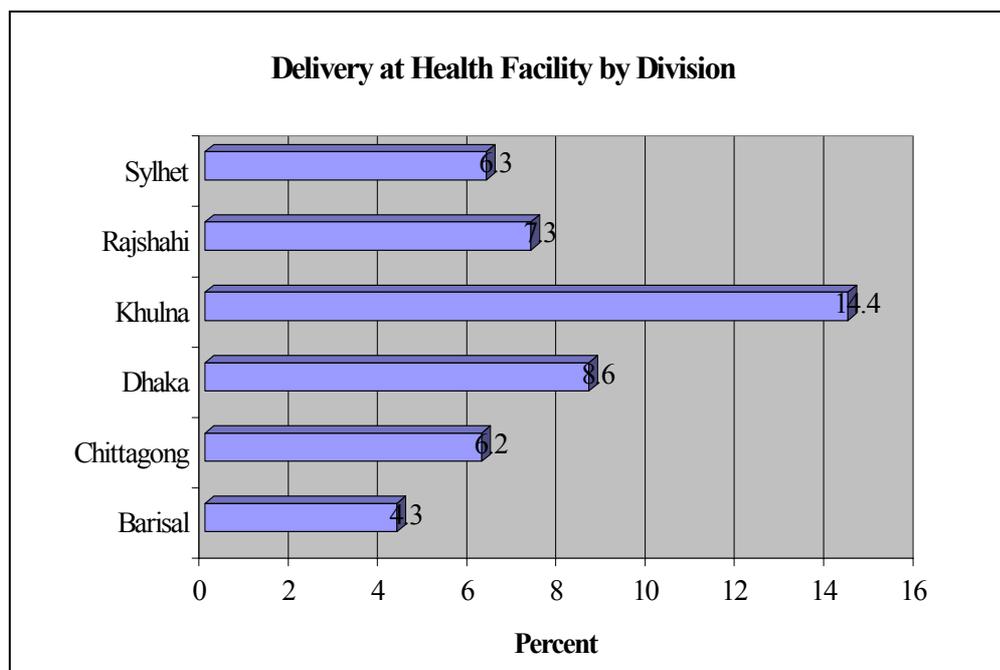
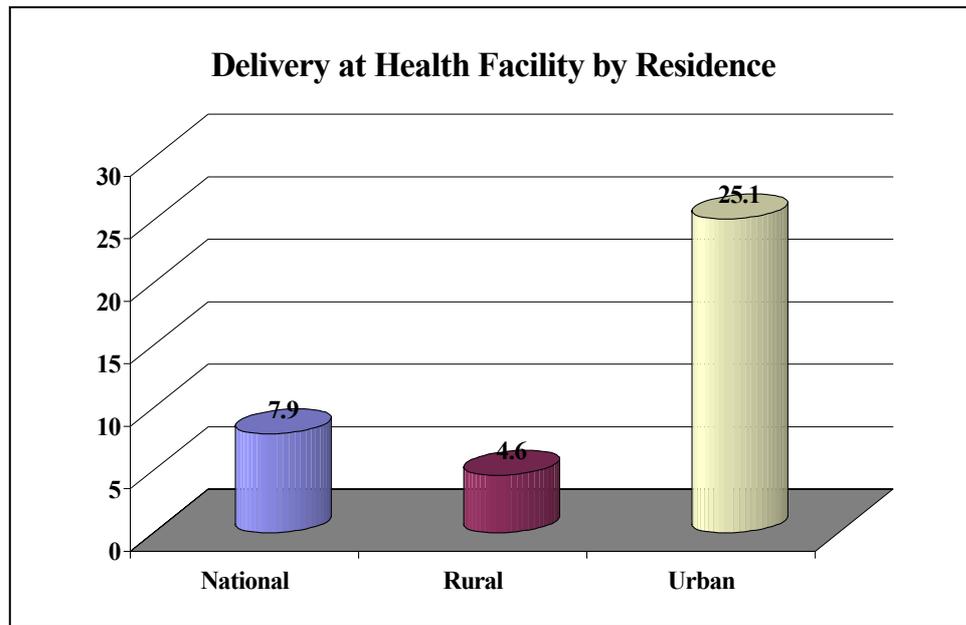


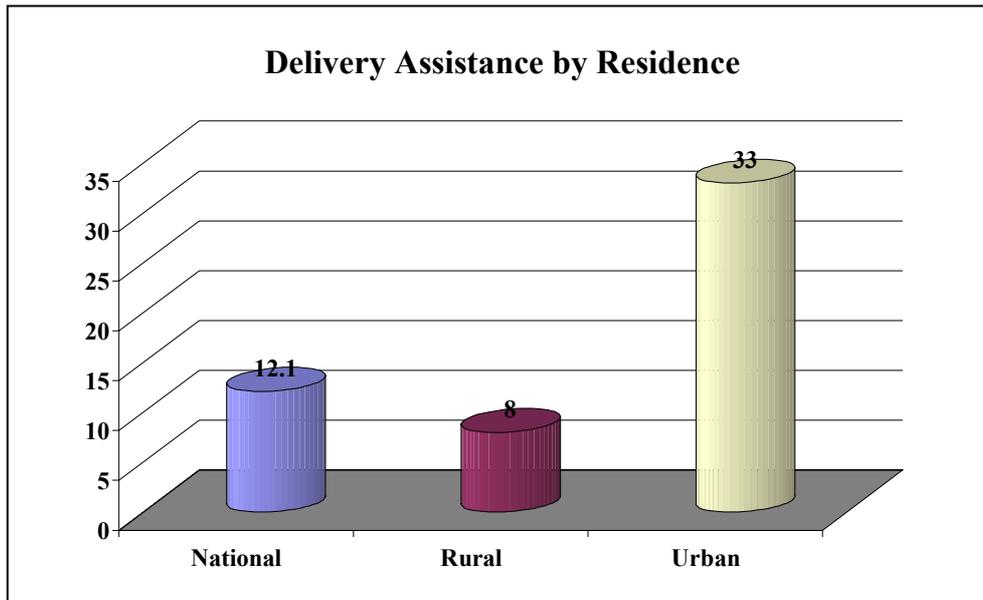
Source: NIPORT *et al.*, 2001

## 2.5 Child Delivery

Safe motherhood programmes have repeatedly called for deliveries under the supervision of qualified medical professionals in order to reduce the risk of infections and to manage complications that may otherwise lead to death or serious illness of the mother and neonate

(Safe Motherhood, 2001). However, in Bangladesh, almost all births (92%) are delivered at home, often under unsafe and unhygienic conditions. 64% of births are assisted by TBAs, with 10% being assisted by trained dais and 54% by untrained dais. Relatives and friends assist another 22.4% of births. Medically trained personnel - either doctors (7.1%) or nurses, midwives and family welfare visitors (5.0%), assist only 12% of births. Again, there is a great difference regionally, with higher proportions of professionally attended deliveries in urban areas (33% compared to 8% in rural areas) (NIPORT *et al.*, 2001).





Source: NIPORT *et al.*, 2001

## 2.6 Postnatal Care

Bangladeshi women seek medical care in the postnatal period from a wide range of sources, ranging from traditional/religious healers to consultant obstetricians and gynaecologists. The proportion of women seeking postnatal care from a ‘medically competent person’ is very low, both in the rural and urban areas (Barkat *et al.*, 1995). On the whole, only 7% of the women who delivered at home sought postnatal care from medically trained persons, although prevalence of life threatening postpartum morbidities has been 17.5% for excessive bleeding and 1.5% for fits/convulsion. Among the women who suffered from such postpartum morbidities, 49.1 % did not seek care for excessive bleeding and 23.2% for convulsion (UNICEF, 2000).

## 2.7 Unmet demand for EOC services

The annual expected number of deliveries in Bangladesh is 2.9 million, using the most recent estimates of birth rate and population size. According to the most recent DHS, only 7.9% of all deliveries are conducted in health facilities. Assuming a 15% rate of obstetric complications, the physical demand for EOC services would be 438,368 annually. However, only 29,600 cases were admitted for EOC in 1997 (Table-3). Thus, the met demand for both the EOC services and caesarean sections constitute only 6.7% of the total and the unmet demand (need), 93.3% (Barkat *et al.*, 1998).

**Table-2 - Demand for and supply of EOC services: 1997**

<b>Demand and supply</b>		<b>Value</b>
1.	Annual Expected Delivery (number) (a)	29,22,456
2.	Estimated deliveries conducted at health facilities (number)	1,19,820
3.	Minimum expected complicated cases (b)	4,38,368
4.	Minimum expected caesarean section (number)	1,46,123
5.	Actual cases managed at EOC facility	29,600
	EOC: Met demand (%)	6.7
	<b>Unmet demand (%)</b>	<b>93.3</b>
6.	Caesarean section performed	9,600
	Caesarean section: Met demand (%)	6.6
	<b>Unmet demand (%)</b>	<b>93.4</b>

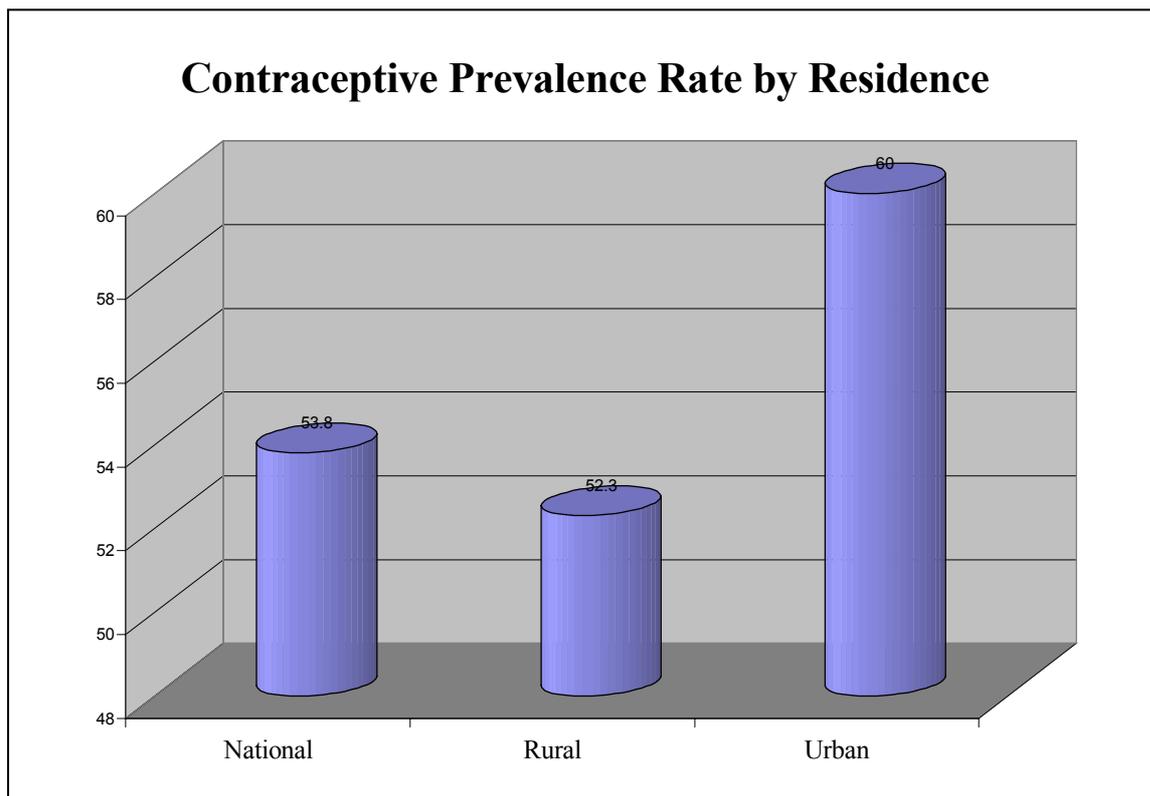
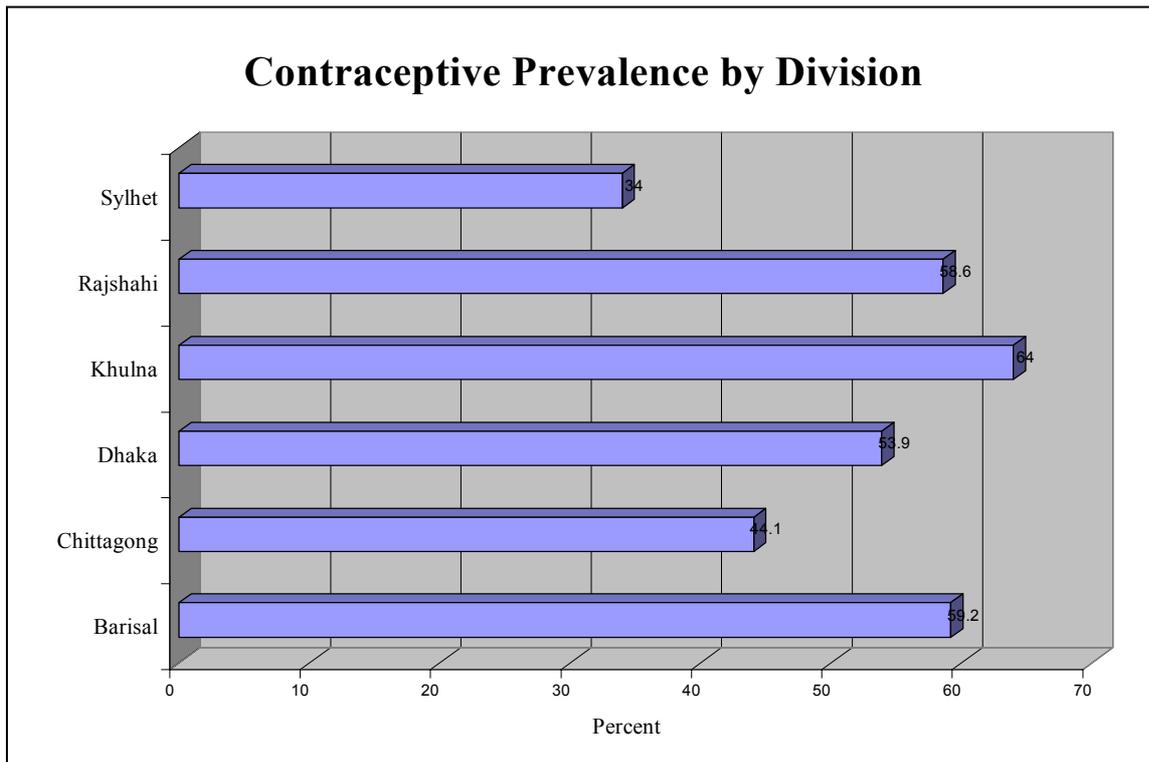
Source: Barkat A. *et al.*, 1998.

(a) Calculated on CBR of 23.6 per 1000 populations and population size of 123.8 million in 1997.

(b) Assumed a 15% rate. Estimated based on information in DHS 1997, BBS, GOB.

## **2.8 Family Planning**

The proportion of currently married women using a family planning method to avoid pregnancy increased from only 8% in 1975 to 53.8% in the 1999-2000 DHS survey. 43.4% of married women are using modern contraceptive methods and 10.3% traditional methods. Oral pills, injections, female sterilisation and condoms are the common modern methods, with 23.0, 7.2, 6.7 and 4.3% respectively (with the remainder consisting of other methods such as IUD and sterilisation). Women in urban areas are more likely to use contraception (60.0% versus 52.3% in rural areas). Women from Sylhet and Chittagong divisions are less likely to use any method of FP, with contraceptive prevalence rates of 34% and 44.1% respectively (NIPORT *et al.*, 2001).

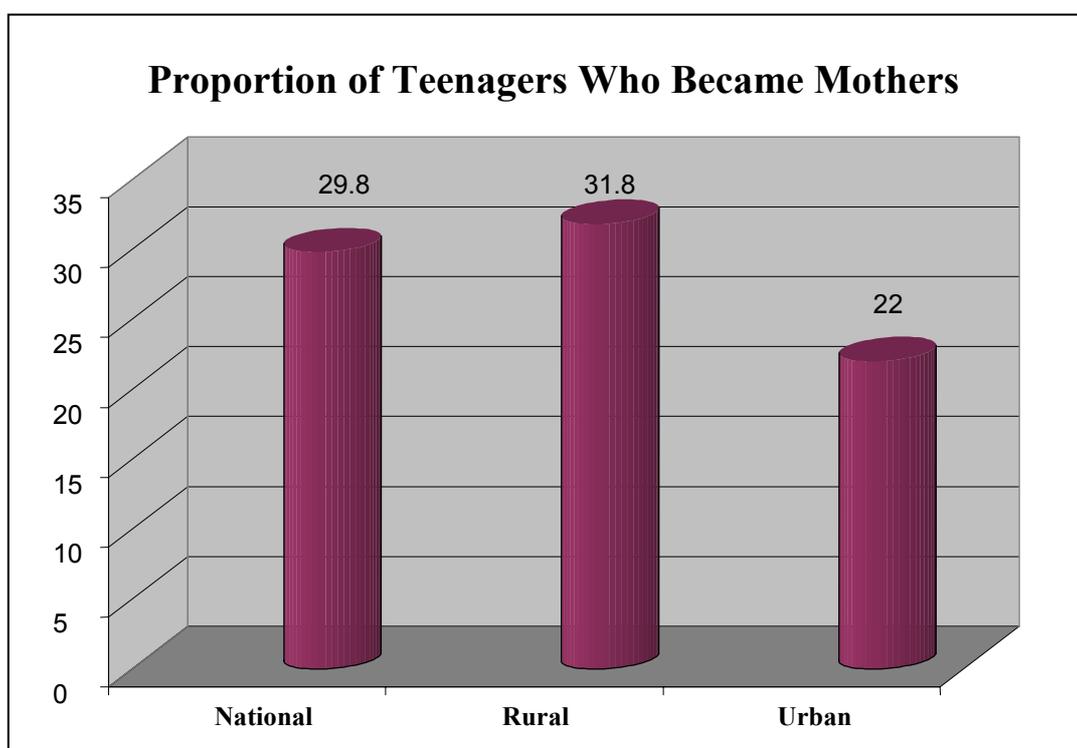


Source: NIPORT *et al.*, 2001

There has been some evidence of a lack of adherence to contraceptive regimes, however. According to one study by ICDDR, about half of the pill and injectable users discontinue use during the first year, and the majority discontinue due to side effects and health reasons.

The tendency to switch between methods is also prevalent, with about half of the married women of reproductive age switching, one third of whom switch multiple times. Switching was most common between the oral pill and injectables. Side effects and the need for more appropriate methods are the main reasons given for switching methods, although the husband's objection was an important factor as well (Kane *et al.*, 1997b).

Adolescent women in particular seem to be lacking in FP services. There are more than 5 million adolescent females (15-19 years) in the country. 50% of these women are married, 30% are already mothers and another 6% are pregnant with their first child. Despite the substantial increase in the contraceptive prevalence rate, the majority of adolescent women do not use FP methods. About 65% of these women never used any FP methods (Bangladesh Ministry of Health and Family Welfare, 2000), although the 1996-97 DHS data shows that the modern contraceptive use rate increased from 21% to 28% among teen married women. The knowledge of health and family planning field workers is lowest among teen married women and newly-weds. This situation seems to indicate a need for greater emphasis on the reproductive health needs of the young and the newly married (Kane *et al.*, 1997b).



Source: NIPORT *et al.*, 2001

## **2.9 Unmet need for family planning**

Around 15% of women want to space (8%) or want to limit their number of children (7%) but are not currently using a contraceptive method. The numbers of couples in these two categories are estimated at five million, and it has been estimated that Bangladesh would achieve the replacement level of fertility if this unmet need could be met (NIPORT *et al.*, 2000). Improving family planning services can also reduce the lifetime risk of maternal death in Bangladesh; by reducing the number of times women become pregnant (NIPORT *et al.*, 2000).

## **2.10 Unwanted Pregnancies**

Despite the relatively high and increasing level of contraceptive use, data indicate that unplanned pregnancies are still common in Bangladesh. According to one survey, one-third of births in Bangladesh were considered as unplanned, 19% were mistimed (wanted later) and 14% were unwanted. A total of 5% of women also reported that they had used ‘menstrual regulation’, a term used to refer to early term termination of pregnancy (Jamil *et al.* 1995).

## **2.11 Illegal and unsafe abortion**

The rate of abortion in Bangladesh has been increasing over the last two decades. The probability of having an induced abortion has been correlated with mother’s age, number of living children and education. Illiterate women are twice as likely as educated women to have their induced abortions at home. A large proportion of women having induced abortions sought treatment services from untrained providers, despite the availability of trained government providers. According to ICDDR, use of untrained providers for abortion in Bangladesh is due to greater familiarity with village practitioners, inadequate information about safer alternatives, perceived low quality of government services and concerns over high charges in the government system for services intended to be free. 15% of women having induced abortions had multiple or repeated induced abortions. This high proportion of women having repeat abortions highlights the importance of, and missed opportunities for, post-abortion contraceptive counselling (Kane *et al.*, 1997b).

Abortion complications contribute significantly to maternal mortality, with one study by Kamal *et al.* (1993) finding abortion complications responsible for nearly a quarter of deaths of mothers, estimating the annual number of induced abortions at 262,130, although official

statistics estimate only 14% of maternal deaths due to abortion. It is also estimated that 730,000 pregnancies are terminated each year in Bangladesh. 262,000 are induced abortions, while 468,000 are through so-called 'menstrual regulation' (MR). MR involves an induced abortion performed in the first 10 weeks of pregnancy. MR is conducted by medical staff in health facilities and is legal in Bangladesh. MR is seen as socially acceptable, while 'abortions' themselves (i.e. abortions after 10 weeks) are illegal in the country. The rate of termination of pregnancy is approximately 28 per 1,000 women aged 15-44. If, indeed, abortions contribute to between 14-25% of maternal deaths, then this represents a substantial unmet need for safe abortion and family planning services among women.

### **3. Access, Health Seeking Behaviour, and Quality of Maternal Care**

It can be assumed that the low percentage of trained attendance or institution based delivery in Bangladesh will have played a large role in the poor health outcomes highlighted above, in particular the high maternal mortality rate. It is important, however, to attempt to understand the reasons behind the low utilisation levels of facilities and professional attendants. There have been a number of published and unpublished works that have explored women's experiences, views, and beliefs in relation to delivery in Bangladesh. These studies have found a wide range of factors that may contribute to low levels of use of professional services, to delays in the decision to seek care, or to refusal of referrals for service.

#### **3.1 Social Views of Pregnancy and Health**

Women's health seeking behaviour will be shaped by individual beliefs and views, as well as commonly accepted cultural understandings on the nature of disease and illness. There has been a great deal of descriptive work discussing local belief systems.

One study jointly conducted by the Bangladesh Rural Advancement Committee (BRAC) and LSHTM attempted to identify beliefs about causes and prevention of diseases through a qualitative investigation that included focus group discussions. Findings indicated that common explanations for illness included attack by evil spirits or as a result of food eaten, in addition to physical causes. As a result, it was found that many mothers during their pregnancy took precautionary measures against evil spirits. Younger mothers seemed less likely to believe these explanations, at times ignoring their elder's advice about correct behaviour, which could lead to restrictions placed on women's movements by relatives.

The study found a number of activities that women in Bangladesh are supposed to avoid during pregnancy, including going outside at night or in the afternoon, going out with one's hair down, or allowing the end of one's sari to trail on the ground (Goodburn *et al.*, 1995). Food taboos were also common during pregnancy and the puerperium in Bangladesh. For example, pineapples were said to cause abortion, coconuts were believed to make a baby blind (a condition described as white eye), and duck's eggs were thought to cause asthma in the baby. Although there is some regional variation, one belief found to be common is that certain 'hot' foods should be avoided during pregnancy, and encouraged in the early postpartum period (although specific restricted foods vary by region). In addition, after

childbirth Hindu women are not allowed to eat any meat or fish for one month, although for Muslim women this was for only seven days (Goodburn *et al.*, 1995).

Afsana and Rashid also discuss common beliefs and views of childbirth in a separate work (2000). Similar to Goodburn *et al.* they find that supernatural phenomena may often be viewed as the cause of complications or difficulties during pregnancy. They further describe many of the social norms and expectations that may affect delivery behaviour, explaining how rural women may be ostracised for not delivering at least their first child in their natal home (presumably where they were born themselves). This feeling was so strong that female workers from NGO providing delivery services were found to still choose to deliver their own children at home, most of them mentioning factors such as “family pressure, sudden onset of labour, distance from the clinic, and transport as the reasons for giving birth at home” (Afsana and Rashid 2000: 31).

According to UNICEF, as many as 27 different types of superstitions have been identified in Bangladesh which are harmful to achieving healthy and safe motherhood. Mostly these practices involved restriction of mobility, consumption of adequate food and growth of the foetus (such as the belief that eating more will lead to dangerously large babies) (UNICEF, 2000).

There are many more social practices which take place during the actual time of child delivery. Some of these delivery-period practices are potentially harmful and are likely to contribute to the development of postpartum morbidity. So, for example, outsiders (including health service providers) are not supposed to visit the pregnant woman out of fear of losing family prestige. However, some traditional practices have been judged to be beneficial and therefore could be encouraged. UNICEF has provided the following recommendations for Bangladesh specifically:

Common harmful practices during pregnancy or child delivery include:

- Internal manipulations and massage,
- Introduction of oils into the vagina,
- Use of fundal pressure or tight abdominal bands during labour,
- Pulling on the umbilical cord,
- Choking or inducing vomiting in the mother to expedite placental delivery,
- Not using uterine massage to prevent and treat postpartum haemorrhage.

### Useful practices during pregnancy or child delivery:

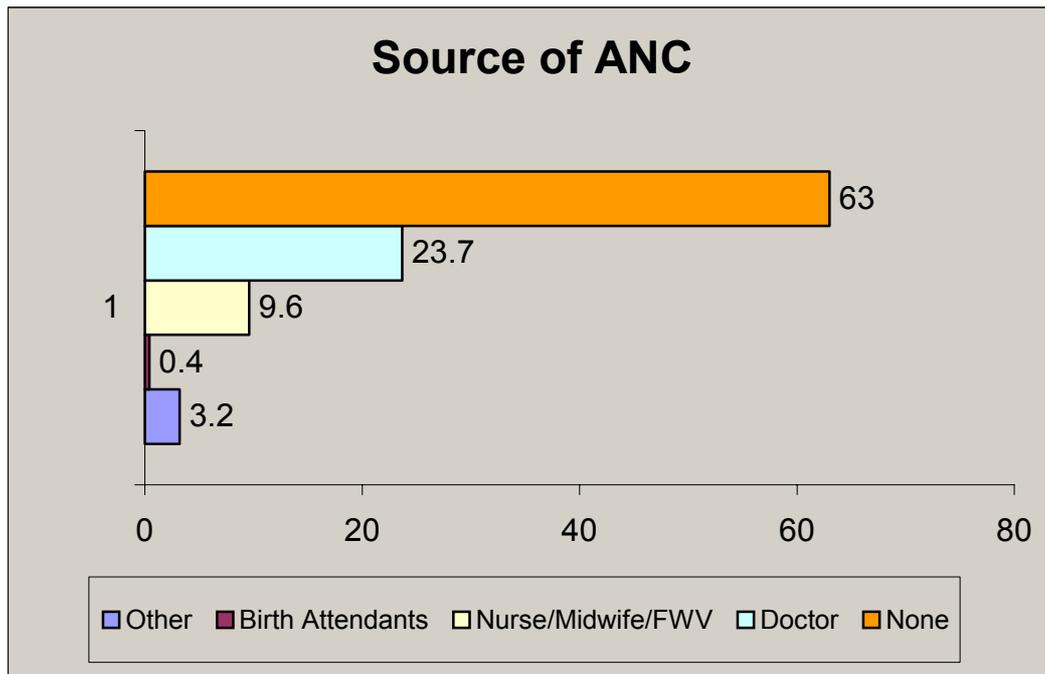
- Adopting an upright position and walking during labour,
- Adopting the squatting position for delivery,
- Non-interference with the membranes,
- Having psychological support from attendants and being in familiar surroundings.

Overall, focus group discussion sessions undertaken in the study by BRAC and LSHTM revealed that pregnancy was not considered to be a risky event in Bangladeshi communities, and, therefore, hospitalisation was not considered routine. However, there was recognition that pregnancies could face complications that would eventually lead to the need for expert services. Decisions to seek hospital care were taken mostly by males, and were seen to rest to a great extent on the reputation of the clinic.

### **3.2 Selection of health services**

Despite an established public health system network, the Bangladesh DHS has found that people obtain medical services from private doctors or clinics, unqualified practitioners and pharmacies/shops as well as through the public health service (Mitra *et al.*, 1997). Respondents were asked whether anyone from their household had been to a health facility, a doctor or a nurse in the two weeks prior to the survey. It was found that people visit the government health facilities in only 20% of cases.

Most mothers were found to not receive any antenatal care, with doctors providing the bulk of care for those seeking it, as illustrated in the following:



Source: NIPORT et al 2001

A study conducted by BIRPERHT in 1993 estimated the mean number of obstetric cases admitted per month to various facilities was approximately 300 in the MCs, 40 in the DHs, 25 in the MCWCs, 6 in the UHCs and 4 in FWCs. A little above half of all admissions were due to complications during the full term of pregnancy and about one fifth were due to abortion. Haemorrhage, Pre-eclamptic toxemia/eclampsia and mal-presentation (transverse lie) accounted for a small (but similar proportion) of admissions. The mean number of abortion cases admitted per month was about 80 in the MCs, 10 in the DHs, 1 in the MCWCs and 3 in the UHCs (Akther, 1993).

### 3.3 Initial Choice of Delivery Services

Within the household structure, the decision to select the birth attendant has been found to rest predominantly with husbands and guardians (in 70% cases). For treatment of female diseases or gynaecological problems other than pregnancy, a vast majority of women (65%) usually do not seek any medical care, with husbands bringing medicine in a reported 7.7% of cases (Haider et al., 2000).

The outcome of the individual decision making process is to a large extent the result of careful consideration of costs and benefits - not only in economic but also in social terms. In Bangladesh, most poor people living in rural areas and urban slums face a number of

challenges in accessing modern health care facilities, relying on traditional healing practices or self-care. Lack of health education and awareness prevent many people from seeking modern health care, even when these are available free. According to one study that asked rural residents about common health seeking practices, all 40 of the respondents reported to first attempt to use a home remedy. When diseases persisted and symptoms increased in severity, all would next visit traditional healers. Only after this would they visit modern medical practitioners and then tertiary facilities when these initial avenues proved ineffective (Roy 2000).

However, while social views and beliefs will doubtless play a factor in influencing the health seeking behaviour of women and the utilisation of trained professionals, other elements may also play important roles in the initial choice of service provider. One study that has attempted to identify these factors, is that of Hlady *et al.*, which uses a case control study to assess utilisation of trained attendants in the Matlab region of the country. The authors identified cases to be women who requested a trained attendant for their delivery, and found that they tended to live closer to treatment centres – 66% of cases were within 1 mile of the centre of study (only 40% of controls delivered within 1 mile of the facility). They also found cases to be younger, of lower birth parity, and better educated than controls. Interestingly, religion was not seen to be a factor in the use of trained attendance, with similar utilisation for both Hindu and Muslim women.

Constraints on communication and travel were said to severely limit utilisation of midwives. Controls in the study also expressed preferences for delivery assistance from older women with more children who respect family customs (Hlady, *et al.*, 1992/1993). The preference for attendants who respect local customs has been identified in a number of other studies discussing women's views as well. As mentioned Goodburn *et al.* found that existing supernatural beliefs played a large role in influencing initial choice of attendant. They explain that “the strength and universality of the belief in supernatural causation contrast markedly with the medical model of childbirth propounded by the government health services” (Goodburn, *et al.*, 1995: 25). Indeed, all women interviewed gave a preference for delivery by TBAs, viewing hospitals as a place to go only if very ill. Goodburn *et al.* also interviewed TBAs as part of the study, and while it was found that many of them initially

claimed to refer women to hospitals, more in-depth study found that few did so, except as a means of last resort.

Some choice of care, however, may be due to a lack of knowledge by women or guardians in the first place. According to one study by Haider *et al.*, knowledge of a single source of ANC services in the government health facilities such as FWC, UHC, MCWC and DHs is less than 20%, which they conclude has led to low take up of ANC services, especially in rural areas (Haider *et al.*, 2000). According to the authors, arguments in favour of seeking traditional services include the availability of TBAs, lower service cost, and the confidence of users. The most frequent reasons cited for not using a modern health facility were: lack of information and education about services, superstition, fear of losing family prestige, financial crisis, negligence of service providers, insufficiency of logistics in facilities (lack of adequate drugs or medicine), shortage of skilled doctors, and predominance of service by male doctors in the government hospitals (Haider *et al.*, 2000).

Afsana and Rashid have also discussed results from in-depth interviews, focus group discussions, and participant observation with women served by a local NGO (BRAC) Health Centre to assess their views on delivery care and maternal health services. The authors explain that “hierarchies of power at home played a central role in determining where women gave birth” (Afsana and Rashid, 2001: 81). While women could negotiate for TBAs, due to their low cost, it was felt that they had much less choice in the decision to deliver in a clinic or hospital due to the greater expense involved and women’s economic and social dependence on men. Aside from this, however, the authors reported high levels of resistance to attending health centres by mothers, due to a view that only complications should be treated there, and stigma of being seen as ‘sick’ if one attends health centres. Additionally they explain “a common perception was that a woman would be forced to undergo surgery if she gave birth in a biomedical establishment. Any form of incision, whether abdominal or perineal, was regarded as a social stigma” (Afsana and Rashid, 2001: 82).

As TBAs are most Bangladeshi women’s initial choice for birth attendance, the quality of care provided by TBAs is important. UNICEF’s findings on common harmful traditional practices have already been discussed, but the Bangladeshi government has also been training TBAs for many years to try to improve their quality of services (Claquin, *et al.*, 1982).

However, despite these training efforts, Goodburn *et al.* still found that some common TBA practices could be harmful to women, or went against their training. A separate study also found that training TBAs in clean delivery practices had no significant impact on cases of infection (Goodburn, *et al.*, 2000). As a result of current studies such as these, the government of Bangladesh has, in its most recent National Strategy for Maternal Health (2001), shifted the emphasis away from TBAs as service providers, explaining that “there has been a conscious decision not to rely too much on the services of trained TBAs or to invest further in training this category of provider” (Bangladesh Ministry of Health and Family Welfare 2001: 19).

### **3.4 Delays in Seeking Care When Complications Arise**

It has been discussed that local beliefs and customs often lead to preference for TBAs as an initial choice of delivery attendant. Yet some supernatural views were also found to delay uptake of professional care when complications arise. As an example, Goodburn *et al.* (1995) explain that, “because women believe that abnormal discharge is due to supernatural influences or the intake of certain foods, it is unlikely that they would actively seek treatment with antibiotics or consider consulting a formally trained health worker for this condition” (Goodburn, *et al.* 1995: 28). Similarly, Bremmer and Van Den Broek explain how blood of menstruation and birth are seen as ‘bad blood’ according to some Bangladeshi customs, further explaining that “post partum haemorrhage causes no panic for it is believed that this impure blood must be cleared away before the woman can recover her health” (Bremmer and Van Den Broek 1995: 9).

Along with supernatural explanations for complications, the social expectations of women to deliver in the home could also delay seeking professional medical care in the case of onset of complications, leading to increased risk of mortality. Indeed Haider *et al.* found 47% of urban and 64% of rural women reporting unusual delays (more than 12 hours) in the process of seeking appropriate interventions for treatment when complications of delivery arose. Another study by Khan *et al.* (2000) mentioned factors which affected utilisation of EOC services in Bangladesh. These were said to include: lack of awareness of danger signs of pregnancy, lack of education among the population, lack of motivation to use the EOC services in a timely fashion, and the gender of service providers

In order to better conceptualise delays in treatment for maternal care, Thaddeus and Maine (1994) delineate three distinct types of delays: delays in taking the decision to seek care, delays in arriving at a facility once the decision has been made, and delays in receiving appropriate care once at a facility. In Bangladesh, a 2001 survey on maternal health services and maternal mortality measured some of the delays faced in deciding to seek care. It was found that in 61% of cases seeking care, the decision was taken within 6 hours of recognising symptoms needing care. However, in 19 percent of complicated cases, the decision to seek medical care took 3 or more days. In general it was stated that rapid care seeking (under 6 hours) occurred more often when complications were seen as life threatening (NIPORT *et. al*, 2002). Overcoming the barriers that lead to delays to seek care in the first place is clearly a priority for improving Bangladeshi maternal health.

However, Afsana and Rashid also discuss how norms and views may be changing in Bangladesh, explaining that ideas about ‘new modern identities’ were important parts of the narratives given by women. They explain how “the rural woman links modernity with attitudes of the younger and educated generation” – as a result they found some women embarrassed to admit following traditional norms and practices: “these changes in attitudes are significant as they are influencing health-seeking behaviour” (Afsana and Rashid, 2000: 29-30). In these ways the authors illustrate how rural identities and health practices are complex and dynamic, and not to be taken for granted or assumed universal.

### **3.5 Refusal of Referrals**

Cultural and social norms have been shown to affect preference of location and attendant for delivery. They also may lead to unnecessary delays in seeking care, especially if danger signs are not recognised or understood. However, there have been further examples of cases where such factors may have also led to women refusing referrals, even when potential complications have been professionally identified. Bremmer and Van Den Broek (1995) have conducted a study to specifically identify the factors that lead to refusal of referral among pregnant women in the Matlab region of Bangladesh. They asked a number of open and closed questions to 52 women who had refused referral, as well as of decision makers when the women could not answer. One question asked was for them to give their most important reason for refusing referral, with the answers recorded as follows:

**Table 3 – Primary reasons for refusing referral, Matlab Bangladesh**

<b>Reason</b>	<b>Patients</b>	<b>Decision makers</b>
Decision maker refused	10	N/A
Not necessary	8	4
Too ill to go	5	0
Husband absent	5	N/A
Hospital costs	4	5
Already in labour	4	0
Work load	3	0
No childcare available	3	0
Fear of medical intervention	3	0
Evil spirits	2	0
Shame	2	1
Delivery at home (insistence to do so)	1	0
Security of the house	1	1
No company available	1	0

Source: (Bremmer and Van Den Broek, 1995: 40)

The authors discuss how the husband and other decision makers play a large role in shaping the decision to seek care. The responses of ‘too ill’ or ‘already in labour’ are seen as symptomatic of the difficulty health workers face in balancing the need to refer women early, with the difficulty in getting cooperation of women (particularly if referred with no obvious reason). The authors group the responses of fear of ‘medical intervention’, ‘evil spirits’, ‘shame’, and ‘delivery at home’ as all rooted in the specific cultural background of the women – although they comment that the percentages of Muslim and Hindu women refusing referral are similar, which seems to confirm Hlady *et al*'s. Finding, that religion played little part in decision-making.

However, the above table represents only those responses given when women were asked for the most important reason for their refusal. The authors also asked women to agree or disagree with a wide list of possible reasons behind their refusal of referral. They explain that 35 women said they insisted on delivery at home, even in cases of complication. A high number of women (19 of the 52) also agreed that their workloads were a factor, with 19 also agreeing that there was nobody to look after children if the mother left the household. 18 of the 52 women further agreed that transportation problems affected their decision (Bremmer and Van Den Broek, 1995).

### 3.6 Distance and Cost

The above discussion has illustrated how personal beliefs, social responsibilities, and community norms can shape many aspects of maternal health seeking behaviour in Bangladesh. However, even if hospital care is desired, there may be barriers to access and utilisation from a number of unrelated factors. Difficulties in transportation have already been mentioned by a number of authors as possible reasons to cause or support other causes of delays and lack of access to services.

In another study by Rahman, a majority of women in both urban and rural areas reported rickshaw or van as their primary means of transport to be used during pregnancy, delivery, and emergencies (Rahman, 2000).

Interestingly Bangladesh is a very flat and densely populated country, so transportation access barriers might not be expected to the same extent as in other countries with lower population densities or more challenging terrain. However, when pregnant and in labour, particularly with complications, any distance may prove to be a large obstacle, and transportation difficulties are often described. Hlady *et al.*'s findings that women who chose to deliver with a trained attendant were much more likely to live close to a health centre, particularly illustrates the importance of geographical access.

The Bangladesh DHS (1999-2000) collected information from women about their perceived problems in accessing health care. 80% of women felt that not having a health facility near by was an obstacle in accessing health care. 54% women mentioned lack of confidence in the service. Other problems often mentioned included: 71.4% difficulty getting money for treatment; 44% inability to get family permission; 49.2% difficulty to get someone to accompany them; 63.2% not knowing where to go.

From the DHS data, it would seem that distance and possible costs rate very highly in accessing health care when compared to other social barriers or perceived quality of care. The cost of maternal services present barriers to timely and appropriate care, both by delaying the choice to seek care, and by making some care completely inaccessible. In looking at hospital charges for maternal services in Dhaka, Nahar and Costello found that supposedly 'free' services involved substantial hidden costs, with 51% of families (74% of

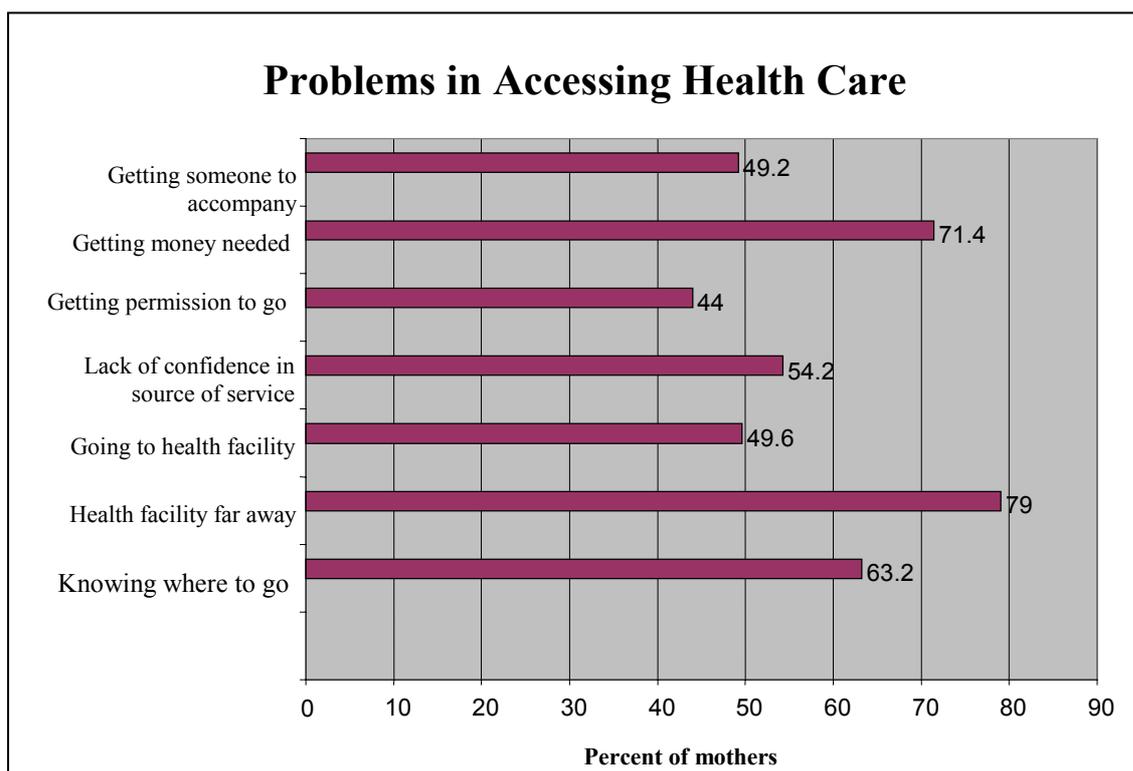
those having caesarean sections) being unable to afford the service charges (Nahar and Costello, 1998). Bremmer and Van Den Broek also identify unaffordable costs, with 10 of 52 women agreeing that this was a factor in their refusal of referral (and only 6 actively disagreed with this reason) (Bremmer and Van Den Broek, 1995).

### **3.7 Quality of Care and Provider-Patient Interaction**

A number of the studies discussed above mention a low perceived quality of care to be a factor influencing choice of service provision. In order to assess the quality of maternal health care services, a number of aspects can be analysed including the structure, process and outcomes of services. The structural dimension of quality includes physical resources, human resources and organizational structure. The process dimension is concerned with therapeutic and diagnostic procedures involved in providing services including interpersonal relations with the users. The outcome dimension can be seen to deal with change in maternal health status due to intervention, along with mother's satisfaction (Donabedian, 1966; Donabedian, 1980). Each of these factors affects the quality of services individually and collectively.

The Bangladeshi Ministry of Health has stated that the quality of maternal health services provided by government institutions is below expectations. It suffers critically from a large number of problems, such as shortage of medical equipment, dearth of doctors/nurses/technicians, unhygienic physical environment, scarcity of power and water, pilferage of drugs and medicines and irregularities in the management system (Bangladesh Ministry of Health and Family Welfare, 2000).

According to a study by Rahman on attitudes of mothers, the most important factors affecting their view of quality of care and availability of drugs, and private practice of public providers (Rahman, 2000).



Source: NIPORT *et al.*, 2001

Another study on quality of antenatal services provided at selected MCWCs revealed a number of quality problems. For example, service providers at MCWCs were said to take inadequate patient histories. Furthermore, FWVs were not skilled in identifying the foetal heart sound. Essential tools for screening of high risk pregnancies, such as reagents for haemoglobin estimation and urine analysis were also found to be unavailable. Records were not maintained properly as the number of expectant mothers receiving ANC exceeded the capacity of the service providers (Habib, 2000).

One particularly important element of maternal services is that of emergency care, where the most extreme complications need to be treated (those requiring blood transfusions or surgical interventions such as caesarean section). Khan *et al.* (2000) specifically reviewed availability and use of EOC services. The study looked at service providers in the government health facilities including: MCs, DHs, MCWCs and UHCs, and suggested providing regular supply of necessary drugs for EOC services, posting of specialists, medical officers and trained auxiliary staff. Comprehensive EOC facilities were found to be available in all MCs, 59.3% of DHs, 27.4% of MCWCs and 30% of UHCs. This would indicate, however, that the facilities are not performing expected roles – as all of these facilities are supposed to provide

EOC services – suggesting the need for regular monitoring of facilities to improve maternal health services.

A separate study undertook focus group discussions as part of a survey to assess the baseline situation of EOC services. The discussions revealed the opinion that the reason for a centre not to function optimally was in many cases a lack of required logistics/equipment or specialists or both. However, these deficiencies were also reported in better performing centres, which would indicate that they were not the sole reason for poor quality observed, although certainly they may have played a part. Some facilities also were seen to suffer from weak management, lack of space and other physical inadequacies (Akther *et.al*, 1993).

Technical quality of care received in facilities can obviously affect maternal outcomes on an individual case basis. However, the community perception of the quality of facilities, as well as the personal interactions between providers and patients, may also affect women's desire to seek professional services in the first place. As part of their study, Afsana and Rashid discussed how health workers treated women in the health centre they studied. They found a number of problematic aspects, such as information being withheld from women. They also found hospital practices that contradicted women's preferences – in particular the common use of a prone, or lying-down, position for delivery in health centres, when women were used to a kneeling position. A lack of privacy was also seen to be a difficult issue for women delivering in institutions. In the same study, women reported that they were treated well in the NGO health centre but not in government hospitals, where women felt staff to be rude or unhelpful, and experienced long delays to service. Beyond this, the authors also described specific cases of poor technical quality of care in hospitals. One case was discussed where a woman with a retained placenta was taken to the hospital, only to be treated in the labour room by a female ward attendant, as doctors were busy with their private practices. The ward attendants were said to commonly manage deliveries in the labour room, "often employing unsafe and dangerous methods" (Afsana and Rashid, 2001: 85). They describe how after the attendant removed the placenta, a relative of the woman was then asked to clean up the labour table.

However, despite such reports, Bremmer and Van Den Broek's study found that the problems surrounding leaving the household were mentioned more often by women as deterrents to

referral uptake than perceived quality of care at the referral facility. As mentioned earlier, their study found 35 of 52 women insisting on delivering at home, even in cases of complications, 19 agreeing that their workloads were a factor in refusing, and 19 agreeing that no one would be able to look after children. These reasons appeared more often than views on quality of care, where 15 of 52 women agreed that they were afraid of medical intervention, 11 that they had more confidence in the village doctor, 11 that they had no confidence in the hospital, 8 that they were afraid physicians would be male, and 4 that they had no confidence in the midwife. In this case it would seem that perceived aspects of quality of care were important to women, but not as common reasons as social norms and obligations for refusing referrals.

Despite these self-reported reasons for not taking up referrals, there is some evidence that improvements in quality of care may overcome some of the barriers to access to maternal care. Based on findings from a project to improve services in the Matlab region of Bangladesh, Maine *et al.* have argued that “if quality emergency obstetric care services are available, substantial numbers of people will use them, even in the absence of community interventions encouraging use” (Maine *et al.*, 1996: 185). In their study, the quality of maternal care was improved in several areas of the Matlab region, with impact and referral behaviour compared to control areas. The improvements included the installation of a new maternity clinic, the posting of increased numbers of health workers to the intervention areas, and the guarantee of trained female physicians on hand for treatment or referral. As a result they found a decrease in maternal mortality in the improved districts – with direct obstetric deaths declining from a total of 20 in 1984-86 to 6 in 1987-89. This was compared with a control area without intervention which saw no decline in mortality. In addition the authors found a statistically significant increase in likelihood to be referred from the intervention area than the control area, and a large number of self-referrals to the clinic from the control areas. Of interest, however, was that in the study the largest declines in mortality occurred through reduction of induced abortion related mortality, even though abortion services and family planning were not part of the interventions. It was unclear why this occurred, although improvements in overall services could have effects on abortion care.

Finally, the quality of care provided by doctors in facilities may also be influenced by the utilisation of services. For instance Bhuiya and Bullough, studied obstetric skills of doctors

at district and sub-district hospitals in Bangladesh, and found that in many cases doctors did not have much experience in maternal care. They explain “maternity facilities are for the most part under-utilized. This is generally attributed to cultural and social factors. The result is that the obstetric experience of doctors working at district and sub-district level is likely to be limited” (Bhuiya and Bullough, 1995: 30).

### **3.8 Discussion**

The variety of studies that have addressed the issue of access to and utilisation of maternal care in Bangladesh have illustrated a complex scenario, with multiple overlapping factors affecting women’s access to and utilisation of professional care. Understanding these factors is of great importance, as presence of a trained attendance at birth is relatively rare in Bangladesh, but is believed to be one of the most important aspects of safe motherhood. The existing literature has identified a number of factors influencing use of services, yet it remains unclear which factors are most important to women and families in Bangladesh, or if there may be other factors that can help to overcome these barriers to use. There appears to be some evidence that improvements in quality of care at health facilities may increase utilisation of services, as shown by Maine *et al.* in Matlab, but other studies have emphasised the socio-cultural barriers that can limit women’s use of professional care regardless of facility quality. It is worth noting, however, that evidence from the Matlab region of Bangladesh may be unrepresentative of much of the country as it is one of the most researched areas in the country, and has been subject to many interventions, with recent attempts to scale-up interventions undertaken in Matlab to other regions in the country (Juncker *et al.* 1996). The work of Bremmer and Van Den Broek was also undertaken in Matlab, which might make their results less representative than they first appear. As Matlab has so much externally supported activity, and has seen improvements in services (as Maine *et al.* describe), this could have resulted in fewer women mentioning poor quality of care as reasons to refuse referral. In other regions women may be more likely to see potential poor care as a reason to avoid institutional services. However, the fact that women continue to refuse referral in Matlab similarly points to the importance of social, economic, and other factors beyond quality of institutional care for many women. Afsana and Rashid, however, have illustrated how social norms and rural identities are complex and dynamic, changing over time. There may be scope for investigation into the factors that lead women to adopt different practices in contrast to those traditionally practiced in their area.

To some extent the government of Bangladesh has recognised the need to address these social factors and access barriers, as evidenced in the 2001 National Strategy for Maternal Health. The document identifies many of the ways the health system must be improved to reduce the burden of maternal mortality in the country, including human resource development and quality assurance, but there is also a section of this report discussing advocacy, Behaviour Change Communication (BCC), and community participation. The aims of the BCC component are:

- Changing attitude and behaviour of people to improve their health status
- Building effective community support for health seeking behaviour
- Changing attitude and behaviour of service providers to provide client centred services
- Promoting men's respect for the special situation of women and girls in the society (Bangladesh Ministry of Health and Family Welfare, 2001: 24).

The report briefly discusses the strategy of the BCC efforts, explaining how it will focus on issues such as: the roles and value of women and their discrimination; dignity and self esteem; early marriage; use of EOC services with emphasis on danger signs and delays; and promotion of safe birth practices. They explain that social marketing methods will need to be used to reach their BCC objectives. In addition, the document draws up a rough estimate of the costs of a national maternal health programme, with more than half of the estimated costs assigned to advocacy, communication, and social mobilisation (US \$105 million of the overall \$181 million cost estimate). One intervention in particular – the development of community support systems – itself represents almost half the total estimated cost (at \$90 million – estimated at \$10,000 each for 18,000 community support systems) (Bangladesh Ministry of Health and Family Welfare, 2001).

The report gives objectives for the BCC strategy to achieve by 2010. Some of these are specific - such as universal knowledge of danger signs of pregnancy, or increased use of skilled attendance to 50% of pregnant women - but others are much more vague – such as an objective to motivate men to take responsibility for ensuring the health care of their wives, or to improve client satisfaction with services. Overall, while the importance of social change for health promotion is clearly recognised by the government, the ways in which social norms and behaviours can be changed are still left rather vague. Notably absent from the discussion is any strategy to address transportation and cost barriers that may prevent utilisation of services. The report represents an initiative on the part of the government to show that

improvements in human resources and quality can only go so far when social norms and beliefs prevent utilisation of services. However, there is little evidence to show that a widespread BCC campaign, even a well-funded one, will have the desired impact. Overall, however, this review found a general lack of information on potential impacts of BCC or information programmes, with no evaluations found for programmes attempting to use these methods to alter health seeking behaviour in Bangladesh.

## **4. Conclusions**

Bangladesh has achieved important health gains over the last decade. However, equivalent progress has not been realised in the area of maternal health. The maternal mortality ratio as an indicator of maternal health in Bangladesh remains unacceptably high. In many ways the existence of a high MMR represents the failure of the health system to effectively respond to the needs of women in the country, yet it must also be seen as the end point in a life time experience of gender discrimination, neglect and deprivation for Bangladeshi women. From a health systems perspective, maternal mortality is an indicator not only of women's health but also of access, quality and effectiveness of the country's health sector.

Despite the presence of an impressive establishment of health infrastructure in the country to date, the maternal health situation remains poor, even though most maternal deaths are avoidable if adequate preventive measures are taken. However, the government of Bangladesh has recognised these factors and documents such as the National Strategy for Maternal Health present a good understanding of the key elements needed to reduce maternal mortality, including skilled attendance at birth, effective referral systems and access to quality emergency services to manage complications.

With this foundation of what is needed in place, we believe that the next step of investigation can be into the system wide factors that currently constrain the Bangladeshi health system from meeting its goals, and which will need to be understood if future health system development is to take place to improve the maternal health situation in the country. Through this literature review exercise, the HSD programme has identified some key areas where we believe more investigation may be useful. A large number of system variables will influence the access, utilisation, quality, and effectiveness of services and improvement strategies. While there may be a general global agreement regarding the interventions needed to reduce maternal mortality, there are still a number of critical knowledge gaps in Bangladesh on how to get those interventions implemented and used effectively.

### **4.1 Future HSD Research**

It is clear that one of the most important issues underlying the poor maternal health outcomes in Bangladesh is the access and utilisation of professional health services by women in the country. The health seeking behaviour of women will most likely be a primary area of

research for the Health Systems Development Programme in the future. This may include understanding the determinants and barriers to access to utilisation of maternal health care services in Bangladesh and in particular the interplay and relative importance of diverse factors such as social norms, financial barriers, quality of care and other institutional factors. The work of Maine *et al.* would indicate that improvements in quality of care may be enough to overcome some of the other barriers to access to care in Bangladesh, but the evidence for this is limited, with a number of questions raised – in particular the fact that after improvements it was abortion related mortality that saw the largest decline. Similarly, quality improvements may be able to reduce mortality, but there may be a limit to how much improvement can be seen from quality improvements alone. In addition, research has highlighted the social barriers and traditional expectations of women, but the work of Afsana and Rashid highlights the dynamic nature of women’s identity in Bangladesh, showing how it can evolve and shift over time. It may be important, therefore, to identify those factors that enable women to shift to acceptance or preference for professional maternal care.

Members of the Health Systems Development Programme have also taken an interest in the health seeking behaviour and particular constraints of small groups in Bangladesh who are particularly hard to reach – such as the so-called ‘tribal’ peoples living in the east of the country. These people may face particular challenges and constraints to accessing health services, including those for maternal health promotion, yet little investigation into the health status and behaviour of these groups has been identified. Preliminary work has been undertaken by members of the Programme to investigate some of these issues.

Maternal health continues to be a high priority for Bangladesh, and the maternal mortality ratio remains an important marker of health system performance in any country. Empirical evidence has shown that in some countries (such as Sri Lanka), improvement in the maternal health care system has been linked to better performance for the whole of the health system. It is therefore important that special focus is laid on maternal health, with investigation into the existing policies, strategies and interventions, which are expected to improve maternal outcomes.

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<sup>7</sup> The exact date of this paper is not known, but it appears to be from 1995.

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