



Bangladesh Maternal Mortality and Health Care Survey 2016

Final Report



Bangladesh Maternal Mortality and Health Care Survey (BMMS) 2016

Final Report

**National Institute of Population Research and Training
International Centre for Diarrhoeal Disease Research, Bangladesh
MEASURE Evaluation**

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FOREWORD

The Bangladesh Maternal Mortality and Health Care Survey (BMMS) 2016 is the third nationally representative survey designed to provide information on the level of maternal mortality, causes of maternal and non-maternal deaths, and utilization of maternal health care services in Bangladesh.

The survey provides a comprehensive look at levels of and differentials in maternal health parameters for policy makers and program personnel. It shows that there has been steady increase in coverage of key maternal health services such as antenatal and skilled delivery care. Bangladesh achieved the Health, Population and Nutrition Sector Development Program (HPNSDP) target of 50 percent of births attended by a medically trained provider by 2016. The increase (from 27 percent in 2010) was predominantly caused by the rise in facility deliveries. The poor-rich inequity in use of facilities for delivery has declined; yet women in the richest quintile are more likely to deliver in a facility, compared to women in the poorest quintile. Hemorrhage and eclampsia continued to be the leading causes of maternal deaths, accounting for 55 percent of all maternal deaths.

I am glad to know that a technical committee reviewed the findings of BMMS 2016 and compared the level of maternal mortality rate (MMR) with other available estimates. The committee observed that MMR estimates available from various sources for the estimated year are not statistically different. Several countries have had experiences similar to Bangladesh, where MMR decline stalled despite improvements in maternal health service utilization and that this can happen at various levels of MMR. However, possible reasons for unchanged MMR need to be explored to formulate policy and programmatic interventions to reduce maternal mortality.

The information and interpretations presented in this report will be instrumental in implementing national priorities under the fourth Health, Population, and Nutrition Sector Program (4th HPNSP) and global commitments like the Sustainable Development Goals (SDGs) for better health of mothers and to save their lives.

The need for further analysis of the BMMS 2016 data is always there. I hope that researchers and program personnel will use the opportunity to utilize these invaluable resources for providing more information and programmatic directions for improvement of maternal health programs.

The contributors of this report deserve special thanks. I deeply appreciate the huge efforts of NIPORT in conducting BMMS 2016. I appreciate MEASURE Evaluation, USA, icddr,b, and the United States Agency for International Development (USAID)/Bangladesh for providing technical assistance. The contributions of the Government of Bangladesh, USAID/Bangladesh, and the United Kingdom's Department for International Development (DFID) have been valuable indeed to accomplish this important survey.


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PREFACE

The Bangladesh Maternal Mortality and Health care Survey (BMMS) 2016 is implemented for the third time in Bangladesh. The first BMMS was conducted in 2001 and the second one in 2010. The surveys was implemented by the National Institute of Population Research and Training (NIPORT) with technical assistance from MEASURE Evaluation, icddr,b and the United States Agency for International Development (USAID).

The BMMS 2016 shows that Bangladesh has made considerable progress in increasing the utilization of key maternal health services. The percentage of births in health facilities increased from 23 percent in BMMS 2010 to 47 percent in BMMS 2016. The percentage of women receiving the complete continuum of maternity care (antenatal care, delivery care, and postnatal care from medically trained providers) has increased significantly from 19 percent in 2010 to 43 percent in 2016. Seeking facility-based care for reported maternal complications has also increased from 29 percent to 46 percent between 2010 and 2016.

The BMMS 2016 estimate of maternal mortality rate (MMR) in Bangladesh for the year 2015 was 196 maternal deaths per 100,000 live birth (in the range of 159 to 234 per 100,000 live births for 95% confidence interval). But the estimate varies with the estimates of other available surveys. A review committee headed by the Additional Secretary (population, family welfare and law), Health Education and Family Welfare Division, Ministry of Health and Family Welfare (MOHFW) reviewed the findings of BMMS 2016 and compared with other available estimates. The committee observed that the BMMS estimate of MMR is consistent with that of the Sample Vital Registration System (SVRS) and Maternal Mortality Estimation Inter-Agency Group (MMEIG) estimates for 2015. Review of the available international literature revealed that several countries have had experiences similar to Bangladesh, where MMR decline stalled despite improvements in maternal health service utilization and can happen at various levels of MMR. The review took a long time to complete resulting delay in publishing the final report.

The information presented in this report will be instrumental in determining strategic directions for the Fourth Health, Population, and Nutrition Sector Program (4th HPNSP) 2007-2022 and global commitment for the Sustainable Development Goals (SDGs). The survey findings will also greatly contribute towards implementing national priorities and the global commitment for better health of mothers, which will result in saved lives.

The BMMS 2016 has been conducted successfully due to the dedicated support and involvement of a large number of individuals and institutions. I am deeply indebted and grateful to all those who contributed to the BMMS 2016. I express my sincere appreciation to the professionals of NIPORT, MEASURE Evaluation, icddr,b and USAID. Two private research agencies, Mitra and Associates and ACPR, were engaged to collect data. I extend my thanks for their sincere efforts in collecting data from the field. Government of Bangladesh, USAID and DFID funded BMMS 2016 and I acknowledge their contributions in accomplishing the entire survey.


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ABBREVIATIONS

ACPR	Associates for Community and Population Research
AMTSL	active management of the third stage of labor
ANC	antenatal care
ASFR	age-specific fertility rate
ASMMR	age-specific maternal mortality ratio
BDHS	Bangladesh Demographic and Health Survey
BEmOC	basic emergency obstetric care
BHFS	Bangladesh Health Facility Survey
BMMS	Bangladesh Maternal Mortality and Health Care Survey
C-section	Cesarean section
CEmOC	comprehensive emergency obstetric care
CSBA	community skilled birth attendant
FWA	family welfare assistant
FWV	family welfare visitor
GFR	general fertility rate
HA	health assistant
HPNSDP	Health, Population and Nutrition Sector Development Program
HPNSP	Health, Population and Nutrition Sector Program
iccdr,b	International Centre for Diarrhoeal Disease Research, Bangladesh
IUD	intrauterine device
MA	medical assistant
MDG	Millennium Development Goal
MMEIG	United Nations Maternal Mortality Estimation Inter-Agency Group
MMR	maternal mortality ratio
MMVS	Maternal Morbidity Validation Study
MOHFW	Ministry of Health and Family Welfare
NIPORT	National Institute of Population Research and Training
NGO	nongovernmental organization
OF	obstetric fistula
PNC	postnatal care
POP	pelvic organ prolapse
PRMR	pregnancy related mortality ratio
SACMO	sub-assistant community medical officer
SDG	Sustainable Development Goal
TFR	total fertility rate
UI	urinary incontinence
UNDP	United Nations Development Program
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

Chapter 1. Survey Objectives and Implementation

- The major objectives of the 2016 Bangladesh Maternal Mortality and Health Care Survey (BMMS) were 1) to provide a nationally representative estimate of the maternal mortality ratio (MMR) for three years preceding the survey (approximately 2014–2016); 2) to identify the causes of maternal deaths, and 3) to assess maternal health-seeking behavior indicators and compare them with the BMMS 2010 to assess how well the country is progressing toward national and global targets for maternal health since the 2010 survey.
- The survey was conducted in a nationally representative sample of 306,961 households. In each selected household, ever-married women ages 13 to 49 were interviewed and any deaths among women of reproductive age were investigated, with particular attention to maternal and pregnancy-related deaths,
- The household response rate was 99 percent and the women’s response rate was 96 percent.

Chapter 2. Characteristics of Households and Respondents

- The physical characteristics of households, which reflect the general socioeconomic condition of the population, have improved substantially since 2010:
 - Households with electricity have increased from 55 percent in 2010 to 87 percent in 2016
 - Household structures with bamboo or thatch roofs have reduced from 4 percent to 1 percent
- The ownership of a telephone or mobile phone has increased from 64 percent to 95 percent.
- Ninety-four percent of women respondents are currently married. Forty-six percent of ever-married women are ages 15–29.
- There has been notable improvement in the level of women’s education over the last 6 years. In 2016, 47 percent of ever married women had some form of secondary education compared to 36 percent in 2010.
- Exposure to electronic media has also increased—59 percent of women watch television at least once a week in 2016, compared to 49 percent in 2010.

Chapter 3. Adult Female Mortality: Levels and Causes

- The estimated maternal mortality ratio (MMR) in BMMS 2016 is 196 per 100,000 live births—there is no evidence of change from the BMMS 2010 estimate of 194 per 100,000 live births because the 95 percent confidence intervals of the two estimates overlap.
- Overall, adult (ages 15–49 years) female mortality was 1.175/1,000 in BMMS 2016, almost the same as in BMMS 2010 (1.201/1,000).
- Cancers (24 percent) and circulatory diseases (23 percent) are the main causes of deaths among women in the reproductive ages in Bangladesh, followed by maternal causes (13 percent).
- Hemorrhage and eclampsia account for 54 percent of all maternal deaths in the BMMS 2016.
- Comparisons of MMR estimates for Bangladesh available from various sources for 2015 show that the BMMS estimate of MMR is consistent with that of the Sample Vital Registration System (SVRS) and Maternal Mortality Estimation Inter-Agency (MMEIG) estimates.
- There was no evidence of change in MMR between BMMS 2010 and BMMS 2016, although there has been a substantial increase in the use of maternal health services during the same period. Review of the available international literature revealed that several countries have had experiences similar to Bangladesh, where MMR decline stalled despite improvements in maternal health service utilization and that this can happen at various levels of MMR.

Chapter 4. Maternity Care

- Almost three in every four women (74 percent) received at least one antenatal care (ANC) visit from a medically trained provider. An additional nine percent of women received ANC from non-medically trained providers only. Between the 2010 and 2016 surveys, the uptake of ANC from medically trained providers increased rapidly.
- Only 15 percent of women received the quality antenatal care package (i.e. receiving at least four ANC visits of which at least one was from a medically trained provider and her weight was taken, blood pressure measured, blood and urine test done and information on danger signs provided at least once during the pregnancy).
- The private sector is now the most prominent source of ANC, both in urban and rural areas. Overall, 58 percent of ANC seekers went to the private sector to receive checkups, while 36 percent used the public sector. The prominence of the public sector as a source of ANC has declined between the 2010 and 2016 surveys.
- Bangladesh achieved the Health, Population and Nutrition Sector Development Program (HPNSDP) target of 50 percent of births attended by a medically trained provider by 2016. The increase (from 27 percent in 2010) was predominantly caused by the rise in facility deliveries.
- Private health facilities account for 29 percent of all deliveries, while 14 percent and 4 percent of births now occur at government and NGO facilities, respectively. In 2010, private and public health facilities accounted for similar percentages of deliveries (11 percent and 10 percent respectively).
- Deliveries by Cesarean section (C-section) increased from 12 percent to 31 percent in the past six years. Eighty-three percent of births in private facilities are by C-section, compared to 35 percent in government and 39 percent in NGO facilities.
- The poor-rich inequity in use of facilities for delivery has declined; yet women in the richest quintile are 3.4 times more likely to deliver in a facility, compared to women in the poorest quintile.
- About half (48 percent) of women who delivered a baby during 2014–2016 received postnatal care (PNC) from a medically-trained provider within two days of delivery. This represents a sharp increase from 23 percent in 2010.
- Only six percent of women who delivered at home received PNC from a medically trained provider.
- The percentage of women who received the complete maternity care continuum (ANC, delivery care, and PNC within two days, from a medically trained provider) has increased significantly from five percent in the BMMS 2001, to 19 percent in the BMMS 2010, and to 43 percent in the BMMS 2016.
- The median expenditure related to normal deliveries at home is less than Taka 1,000. Normal delivery costs the most at private facilities (median around Taka 6,800), followed by government and NGO facilities (median around Taka 3,000 and Taka 2,600 respectively).
- The median expenditure associated with C-section deliveries at private facilities was around Taka 20,000. In comparison, the median expenditure for C-section deliveries was lowest in government facilities, around Taka 12,000.
- Family funds are the most common source to cover expenditures related to facility delivery. Almost 20 percent of households had to take a loan, and two percent sold or mortgaged assets to cover the expenditures.
- Only 28 percent of pregnant women in their third trimester of pregnancy at the time of the survey reported that the family had discussed or decided to deliver at a health facility. In 2010, this proportion was 13 percent.
- Eighteen percent of pregnant women in their third trimester of pregnancy reported that their family had prearranged transport for an emergency and 38 percent reported that their family had prearranged funds for delivery/emergency maternal care. Twelve percent of pregnant women in their third trimester of pregnancy reported that their family has arranged for sources of blood in case of emergency.
- Pregnant women's knowledge of maternal complications was low. The most commonly known complication was symptoms of preeclampsia—46 percent knew about those. Only one in three pregnant women mentioned severe/heavy bleeding or convulsions as maternal complications.

Chapter 5. Maternal Health Problems and Treatment-Seeking Behavior

- Almost half (49 percent) of women reported that they had at least one complication during pregnancy/delivery or after delivery.
- Among women reporting maternal complications, 46 percent sought care from a health facility. Overall, 67 percent sought care from any health provider.
- The proportion of women reporting complications who sought health care from any provider has not increased between the BMMS 2010 (68 percent) and the BMMS 2016 (67 percent). However, there was a notable shift towards care-seeking from health facilities. Facility-based health care for maternal complications increased, from 29 percent in the BMMS 2010 to 46 percent in the BMMS 2016. During the same period, home-based care for maternal complications declined from 15 percent to three percent.
- Women from the richest wealth quintile who had maternal complications were twice as likely to seek care from a health facility compared to women from households in the poorest wealth quintile.
- Women who have completed at least secondary education were nearly two times more likely to seek facility-based care for maternal complications than those with no education. In the past 15 years, there has been a steady increase in seeking care from health facilities for maternal complications among women with no education, from 9 percent in 2001 to 32 percent in 2016, resulting in increased equity in this behavior by educational status.

Chapter 6. Prevalence of Obstetric Fistula and Pelvic Organ Prolapse in Bangladesh: National Estimates

- The national prevalence for obstetric fistula (OF) was 0.42 per 1,000 women with at least one birth. In the case of third- or fourth- stage pelvic organ prolapse (POP), the national prevalence was 11.4 per 1,000 women with at least one birth.
- There were an estimated 19,755 cases of OF in Bangladesh, two-thirds of which were among women between 15 and 49 years of age.
- There were an estimated 535,263 cases of POP in Bangladesh; half of these cases were among women between 15 and 49 years of age.
- In the BMMS 2016, 12 percent of self-reported OF cases reported that their symptoms started after a surgery (about six percent after C-section).

Chapter 7. Fertility, Family Planning, and Childhood Mortality

- Between the BMMS 2010 and the BMMS 2016, the total fertility rate fell slightly from 2.3 to 2.2. Khulna, Dhaka, and Rajshahi divisions have already achieved replacement level fertility.
- The median birth interval has increased from 46 months in 2010 to 54 months in 2016, an increase of 18 percent in six years.
- The proportion of adolescents who had begun childbearing was 27 percent, with no change from the 2010 level. Adolescent childbearing was highest in Rajshahi division (32 percent) and lowest in Sylhet division (14 percent).
- Sixty-three percent of currently married women in Bangladesh were currently using a contraceptive method. Modern methods were much more widely used (56 percent) than traditional methods (7 percent), with oral pills being the most commonly used method (29 percent). No changes were observed between 2010 and 2016 in the contraceptive prevalence rates.
- The use of contraception varied by division—Rangpur had the highest and Sylhet the lowest contraceptive prevalence rates (68 percent and 54 percent, respectively).
- Overall, half of modern contraceptive users obtained their supplies from a private medical sector facility, with pharmacies being the most important source, serving 46 percent of users. The public sector supplied contraceptives to 44 percent of users of modern methods, and NGOs to five percent of users.

CHAPTER 1. SURVEY OBJECTIVES AND IMPLEMENTATION

Summary

- The major objectives of the Bangladesh Maternal Mortality and Health Care Survey (BMMS) 2016 were to provide a national estimate of the maternal mortality ratio (MMR) for the period from 2014 to 2016, to identify the causes of maternal deaths, and to assess maternal health-seeking behavior and compare them with BMMS 2010 to see changes that occurred since the 2010 survey.
- The survey was conducted under the authority of the National Institute of Population Research and Training (NIPORT), with technical assistance from MEASURE Evaluation, University of North Carolina at Chapel Hill, USA; the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b); and USAID/Bangladesh. Mitra and Associates and Associates for Community and Population Research (ACPR) were responsible for data collection, data entry, and processing.
- The survey was conducted in a nationally representative sample of 306,961 households. In each selected household, ever-married women ages 13 to 49 were interviewed and any deaths among women of reproductive age, especially maternal and pregnancy-related deaths, were investigated.
- Field data collection for the BMMS 2016 was carried out over a period of six months from August 22, 2016 to February 10, 2017. Eighty-four interviewing teams were deployed in the field. Each team consisted of eight members including one male supervisor, one female editor, five female interviewers, and one field logistical assistant.
- In addition to ACPR and Mitra and Associates quality control teams, NIPORT and icddr,b quality control teams monitored the quality of field data collection; icddr,b developed a mobile dashboard for real-time data monitoring. In addition, MEASURE Evaluation monitored the data quality through computer-based consistency checks.
- The data were processed on microcomputers using the Census and Survey Processing System (CSPro). To minimize error, a double-data entry procedure was followed.
- The household response rate was 99 percent and the response rate for women was 96 percent.

1.1. Introduction

The Government of Bangladesh is committed to achieving its targets for Millennium Development Goal (MDG) 5: reducing the maternal mortality ratio (MMR) to 143 deaths per 100,000 live births by 2015 and increasing skilled attendance at birth to 50 percent by 2015 (United Nations Development Program [UNDP], 2015). The decline in MMR between 2001 and 2010 indicates remarkable progress. This progress is linked to fertility reduction, access to qualified maternal health care, and overall care-seeking during the antenatal period and during delivery (UNDP, 2015). By the end of the third sector program, a revised maternal health strategy and standard operating procedures (SOPs) for maternal and newborn health were finalized. With the MDGs phasing out and the Sustainable Development Goals (SDG) phasing in (United Nations, 2015), the Fourth Health, Population and Nutrition Sector Programme (4th HPNSP) 2017–2022 has set the target of reaching an MMR of 121 per 100,000 live births in 2022 (Ministry of Health and Family Welfare [MOHFW], 2017). Within this context, the Bangladesh Maternal Mortality and Health Care Survey (BMMS) 2016 was carried out to assess how well the country is progressing toward these targets.

The BMMS 2016 was an activity under the Operational Plan of Training, Research, and Development of the National Institute of Population Research and Training (NIPORT) under the Health, Population and Nutrition Sector Development Program (HPNSDP) 2011–2016 (MOHFW, 2014).

1.2. Objectives of the BMMS 2016

- Estimate the national level MMR in Bangladesh
- Identify the specific causes of maternal and non-maternal deaths among adult women
- Assess the pattern of antenatal, delivery, and postnatal care practices
- Assess maternal complications experience and care-seeking
- Estimate childhood mortality rates
- Measure the level of selected maternal morbidities (obstetric fistula and pelvic organ prolapse)
- Provide district level socioeconomic, demographic, family planning, and health care utilization indicators

1.3. Implementing Organizations

The BMMS 2016 was conducted under the authority of NIPORT of the Ministry of Health and Family Welfare. MEASURE Evaluation, icddr,b, and USAID/Bangladesh provided technical assistance in all phases of the survey. Moreover, two highly reputable data collection firms located in Dhaka, Bangladesh—Mitra and Associates and Associates for Community and Population Research (ACPR)—were responsible for conducting the survey, which included the following tasks: translating and pretesting of the questionnaires, hiring and training the field staff, implementing and supervising the data collection, and entering and processing the data. Each organization was responsible for the fieldwork in four divisions. ACPR was responsible for implementing the survey in Barishal, Khulna, Rangpur, and Rajshahi divisions, while Mitra & Associates were responsible for Dhaka, Chattogram, Mymensingh, and Sylhet divisions.

1.4. Funding Sources

The BMMS 2016 was funded by the Government of the People’s Republic of Bangladesh, the United States Agency for International Development (USAID), and the United Kingdom’s Department for International Development (DFID).

1.5. Sample Design

The primary indicator of interest driving the sampling design of the BMMS 2016 was the MMR, estimated across the three years preceding the survey. Sample size determination was motivated by the goal of achieving a level of precision to the estimate of MMR from the BMMS 2016 similar to that achieved in the BMMS 2010. This implied a 95 percent confidence interval of around 22.7 percent of the assumed value of MMR value for the sample size estimation. For the BMMS 2016, the assumed value for MMR was the MDG target of 143. This led, after rounding up to the nearest sampling unit in the multistage selection process described below, to a household sample size goal of 308,880 households for the BMMS 2016.

To ensure the greatest degree of comparability of MMR estimates with those from an earlier 2001 maternal mortality survey (the BMMS 2001) and the BMMS 2010, the same basic multistage sample selection procedure from the BMMS 2001 and BMMS 2010 was employed in the BMMS 2016. The sampling frames were derived from the 2011 national census frame. This was a departure from the BMMS 2001 and BMMS 2010, which relied on the 2001 census frame. However, both census frames are mutually exclusive and exhaustive national area frames of similar construction.

The frame was parsed into three domains: urban areas, rural areas, and other urban areas. Selection was then independently conducted for each domain in each of the eight divisions. There were thus 24 strata (eight divisions multiplied by three domains in each division). The overall sample size target was apportioned across strata according to shares based on the square root of their population. This had the effect of increasing the sample size apportioned to smaller strata (allowing more scope for accurate subnational estimation of indicators).

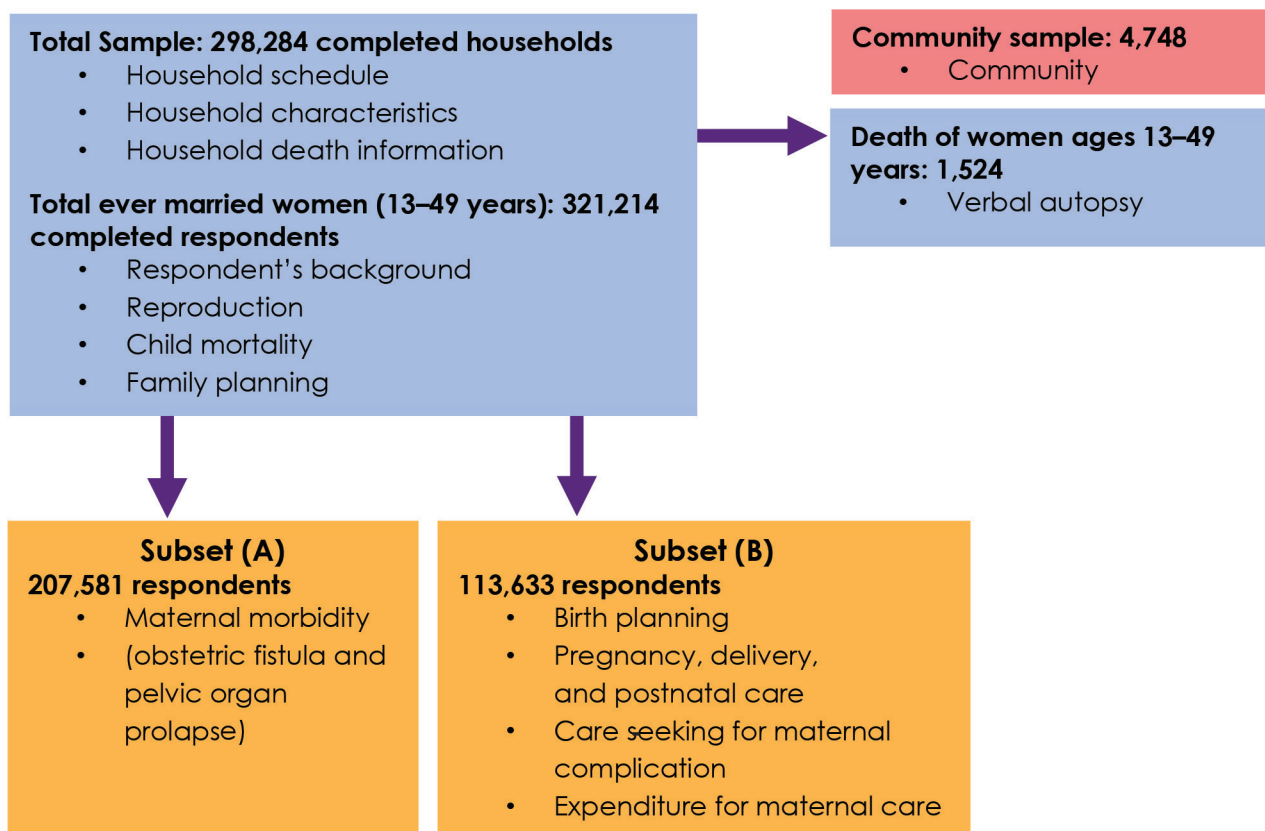
The primary sampling unit (PSU) for the urban areas was the ward. The equivalent administrative unit for rural and other urban areas was the union. Rural areas of each union formed the PSUs for the rural domain. Urban areas in each union formed the PSUs for the other urban domain. In each selected urban PSU, two *mohallas* (the next administrative unit down from the ward) were selected, segmented, and a cluster was selected from each. The process in the rural and other urban domains was the same, except that *mouzas* (the administrative unit below the union) served as the secondary sampling unit.

A total of 1,296 urban, 2,828 rural, and 626 other urban clusters were selected, for a grand total of 4,750 clusters overall. Sixty-five households were randomly selected in each cluster to receive a household instrument. Finally, 23 of the selected households within each cluster were randomly selected to have a long questionnaire administered to all eligible women within the household, while the remaining 42 households had a short version of the questionnaire administered to all eligible women within them. Both questionnaires are described below in more detail. This design provides representative samples for maternal mortality at the national level, and representative estimates at the national, urban/rural, divisional, and district levels for many other indicators.

Sampling weights were constructed as the inverse of the overall probability of selection from the multistage selection process. Weights were adjusted for nonresponse and to ensure a sample share for the urban population consistent with a revised national urban population estimate following completion of the 2011 national census (Bangladesh Bureau of Statistics, 2015).

The sample segregation of BMMS 2016 is presented below.

Figure 1.1. BMMS 2016 sample segregation



1.6. Questionnaires

The survey employed five questionnaires, each based on the BMMS 2010 questionnaire design, in order to ensure maximum comparability with 2010 estimates.

The household questionnaire was used to list all the usual members and visitors who slept in the selected households the night preceding interview. Some basic information was gathered on the age, sex, and education of all household members and the environmental circumstances of the household (household materials, water sources, etc.) and household ownership of assets. The main purpose of the household questionnaire was to identify women who were eligible for the women's questionnaire, and to identify deaths in the household. The household questionnaire asked about any deaths of household members in the three years preceding the survey, to identify adult female deaths (ages 13–49 years) for which the verbal autopsy questionnaire was used.

The women's questionnaire gathered information on respondents' background, reproduction, child mortality, and family planning from all 321,214 eligible ever-married women (weighted) ages 13–49 years.

The subset A questionnaire was used to gather data from 207,581 eligible ever-married women (weighted) concerning their maternal morbidity—focusing on obstetric fistula and pelvic organ prolapse.

The subset B questionnaire was used to gather data from 113,633 eligible ever-married women (weighted) concerning the following:

- Birth planning
- Pregnancy, delivery, and postnatal care
- Care-seeking for maternal complications
- Expenditure for maternal care

The verbal autopsy questionnaire was used to collect information on causes of death for all female adult deaths in the household in the three years preceding the survey. The questionnaire included both structured (pre-coded questions) and unstructured (open-ended) questions, which were answered by the most knowledgeable member of the household. The BMMS 2016 verbal autopsy questionnaire was adapted from the BMMS 2010 verbal autopsy questionnaire and from the World Health Organization (WHO) verbal autopsy questionnaire 2014 (WHO, 2015).

The community questionnaire was administered in each selected cluster during the household listing operation, and included questions about the existence of development organizations in the community and the availability and accessibility of health services and other facilities. A list of health facilities and health service providers in each selected cluster was provided to the interviewing teams to verify information gathered in the woman's questionnaires on the types of facilities accessed and health services personnel seen. The community questionnaire was administered to a group of four-to-six key informants who were knowledgeable about socioeconomic conditions and the availability of health and family planning services/facilities in the cluster. The key informants included such persons as community leaders, teachers, government officials, social workers, religious leaders, traditional healers, and health care providers, etc.

1.7. Training and Fieldwork

Training on household listing operations was conducted for five working days in July 2016. Fifty-nine listing teams were deployed in the field to complete the listing operation in five months. A total of 14 male quality control officers were employed to supervise the listing operation. In addition to the listing of households, listing teams also arranged and conducted group interviews with the key informants to complete the community questionnaire.

The BMMS questionnaires were pretested in July 2016. The interviewers were trained for five days by the key personnel of the survey. NIPORT, icddr, and MEASURE Evaluation were present in a number of the training sessions, both to observe and guide the training. The questionnaires were pretested on 102 households and 30 verbal

autopsies in two rural clusters in Matlab and Mirzapur and four urban clusters in Dhaka city. Based on the pretest results and suggestions from the interviewing teams, NIPORT, MEASURE Evaluation, and icddr,b jointly finalized the questionnaires.

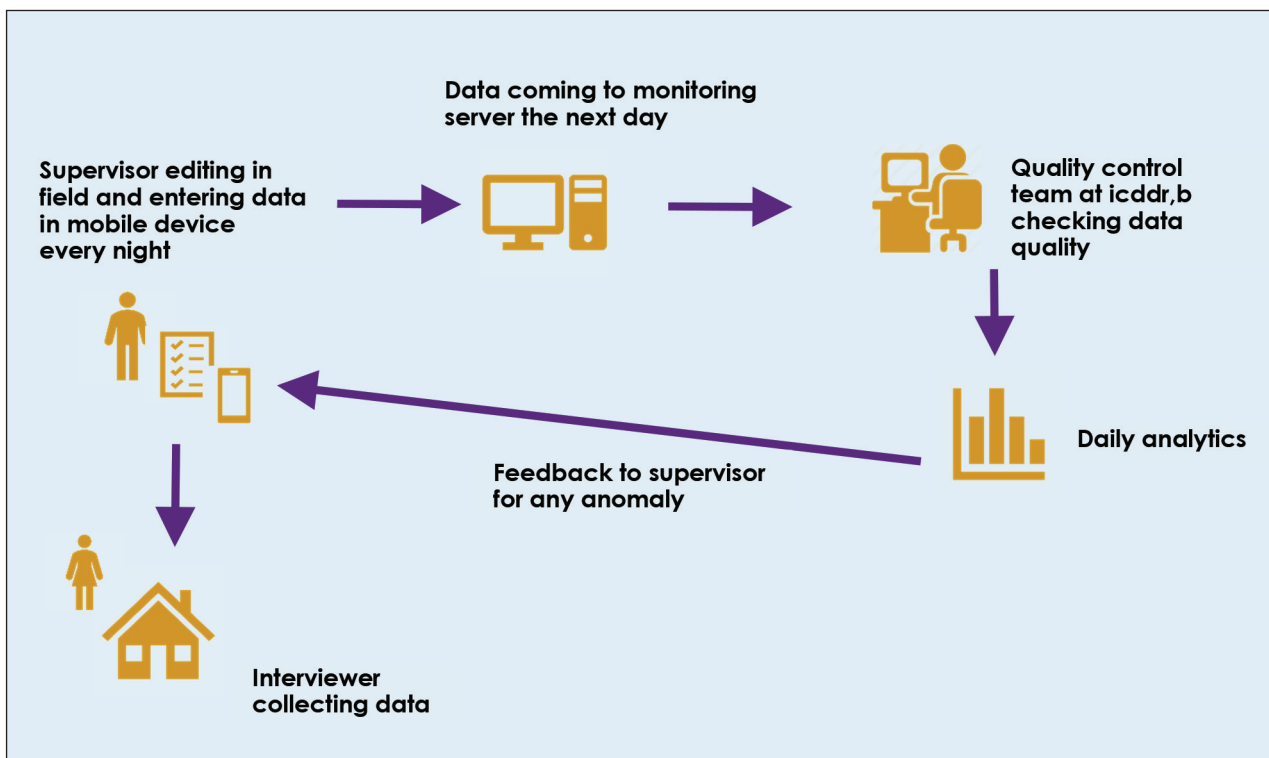
The training on data collection was done in two stages: training of trainers (TOT) from both ACPR and Mitra and Associates was conducted at the first stage by a training coordination committee (TCC), composed of NIPORT, icddr,b, and MEASURE Evaluation. At the second stage, the training of the interviewers, supervisors, and quality control officers was conducted by the trainers who received the TOT. To ensure uniformity of the interviewers training across the two implementing organizations, the TOT was documented through the production of a video. All interviewers were trained for 23 days from August 1 to August 23, 2016. Initially, training consisted of lectures on how to complete the questionnaires, with mock interviews conducted between participants to gain practice in asking questions. Near the end of the training course, the participants spent several days carrying out practice interviews in places close to Dhaka. Trainees whose performance was considered superior were selected as supervisors and field editors.

Field data collection for the BMMS 2016 was carried out over a period of six months from August 22, 2016 to February 10, 2017. Eighty-four interviewing teams were deployed in the field. Each team consisted of eight members, including one male supervisor, one female editor, five female interviewers, and one field logistical assistant.

1.8. Quality Control

The data collection agencies for BMMS 2016 fielded 11 quality control teams to check on the fieldwork and ensure the quality of the data. Each quality control team consisted of one male and one female quality control officer. NIPORT also deployed seven quality control teams, with icddr,b deploying three, to monitor and observe the interviewer activities to ensure data quality. The MEASURE Evaluation team visited at least eight clusters in each phase to observe the quality of data collection. In addition, icddr,b developed a mobile dashboard for real-time data monitoring. The schematic diagram of the mobile monitoring system used in BMMS 2016 is presented below.

Figure 1.2. Quality control pathway using mobile device and dashboard



The BMMS 2016 technical working committee (TWC) also monitored the data coming from the field through computer-based consistency checks. Feedback was given to teams through a debriefing session after each phase of the survey, to improve the quality of data.

1.9. Data Processing

All questionnaires were returned to Dhaka for data processing at ACPR and Mitra and Associates. Data entry personnel were trained in Dhaka in October 2016. The processing operation consisted of office editing, coding of open-ended questions, data entry, and resolving inconsistencies found by the data processing programs. The data were processed on microcomputers working in double shifts. The Census and Survey Processing System 4.1 (CSPro) was used during all stages of data entry and processing. Data processing commenced in mid-October 2016 and was completed in April 2017. To minimize error, a double-data entry procedure was followed.

1.10. Response Rate

Table 1.1 shows response rates for the survey. A total of 306,961 households were selected for the sample, and out of those, 298,284 households were successfully interviewed (a household response rate of 99 percent).

A total of 335,896 ever-married women ages 13–49 were eligible for the interview, of whom 321,214 were successfully interviewed (a response rate of 96 percent).

Table 1.1. Results of the household and individual interviews

Number of households, number of interviews, and response rates, according to residence (unweighted), Bangladesh 2016.

Result	Residence		
	Urban	Rural	Total
Household interviews			
Household selected	123,988	182,973	306,961
Household occupied	121,144	179,842	300,986
Household interviewed	119,726	178,558	298,284
Household response rate	98.8	99.3	99.1
Individual interviews with women ages 13–49			
Eligible women	134,801	201,095	335,896
Eligible women interviewed	129,249	191,965	321,214
Eligible women response rate	95.9	95.5	95.6

CHAPTER 2. CHARACTERISTICS OF HOUSEHOLDS AND RESPONDENTS

Summary

- In 2016, ten percent of ever-married women of reproductive age who responded to the survey were 15–19 years old, compared to 15 percent in 2001. The proportion of ever-married women ages 35–49 increased from 32 percent in BMMS 2001 to 37 percent in BMMS 2016.
- The level of education of women continues to increase. In the past six years, the proportion of ever-married women ages 15–49 with no education decreased from 34 percent to 21 percent, while the proportion who attended secondary school has increased from 36 percent to 47 percent.
- The economic status of Bangladeshi households continues to improve. Three indicators reflect this improvement. Between 2010 and 2016, the proportion of households that had electricity, access to improved toilet, and non-*kacha* dwelling walls increased from 55 to 79 percent, 60 to 83 percent, and 67 to 85 percent, respectively. Poor households (those in the bottom wealth quintiles) also had substantial improvements in these indicators in the past six years.
- Nearly all households (94 percent) own a mobile phone. In 2010, two-in-three households had a mobile phone.
- Female-headed households increased from 10 percent to 13 percent between BMMS 2001 and BMMS 2016.

This chapter provides information on some of the socioeconomic characteristics of the household population and the individual survey respondents—such as age, sex, educational level, and exposure to media. It also examines the conditions of the households in which the survey population live, including availability of electricity, sanitation facilities, housing materials, and possession of household durable goods. The information on household asset ownership is used to create an indicator of household economic status, the wealth index. The background characteristics of women ages 15–49 are discussed in the last part of the chapter. Information collected on the characteristics of the households and respondents is important for understanding and interpreting the findings of the survey and also provides some indication of the representativeness of the survey.

Whenever possible, the BMMS 2016 data are compared with data from the 2010 and 2001 rounds of the BMMS. All BMMS surveys collected information from all usual residents of the selected households (the *de jure* population) and persons who stayed in the selected households the night before the interview (the *de facto* population). Since the difference between these two populations was very small, all tables in this report refer to the *de facto* population, unless otherwise specified. Household information in the BMMS 2016 was collected with a short questionnaire from randomly selected households in each cluster to provide representative estimates for maternal mortality at the national level, while the women in one-third of these households received a long questionnaire focused on birth planning and maternal health care services.

2.1. Household Population

The BMMS 2016 household and woman's questionnaires (short questionnaire) were used to collect data on the demographic and social characteristics of all usual residents of the sampled households and visitors who spent the night before the interview in the household.

2.1.1. Demographic Characteristics of Households

Age and sex are important demographic variables and are the primary basis of demographic classification in vital statistics, censuses, and surveys. Both are important variables in the study of mortality, fertility, and marriage. The effect of variations in sex composition from one population group to another should be taken into account in comparative studies of mortality. In general, a cross-classification with sex is useful for the effective analysis of all forms of data obtained in surveys.

Table 2.1 shows the distribution of the de facto household population by age and sex, according to urban and rural residence. The BMMS 2016 households constitute a population of 1,298,937 persons, 52 percent of whom are female. The sex ratio for all ages is 93 males per 100 females, which was 97 males per 100 females in the BMMS 2010. As the sex ratio obtained from the BMMS 2016 was based on the de facto household population, the marked difference in the sex ratio could be due to higher out-migration of men than women. For example, in the case of international out-migration, 3.7 million people migrated from the country for overseas employment during 2010–2016, of which 88 percent were males (Bureau of Manpower, Employment and Training [BMET], 2018). The sex composition of the urban-rural population was similar in 2010 (97.7 males per 100 females in urban areas and 96.8 males per 100 females in rural areas). After six years, in 2016, a little change is observed in this measure between urban and rural population. Currently, the sex ratio is 95.5 males per 100 females in urban areas and 92.3 males per 100 females in rural areas.

Table 2.1. Household population by age, sex, and residence

Percent distribution of the de facto household population by five-year age groups, according to sex and residence, Bangladesh 2016.

Age group	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
0–4	10.3	9.6	9.9	11.1	10.0	10.5	10.9	9.9	10.4
5–9	10.6	9.9	10.2	11.7	10.5	11.1	11.4	10.3	10.8
10–14	10.9	10.3	10.6	12.0	11.3	11.6	11.7	11.0	11.3
15–19	9.9	11.5	10.7	9.8	10.9	10.4	9.8	11.1	10.5
20–24	7.6	10.9	9.3	6.7	9.7	8.2	6.9	10.0	8.5
25–29	8.7	10.1	9.4	7.1	8.8	8.0	7.5	9.1	8.4
30–34	7.6	8.5	8.0	6.2	7.7	6.9	6.6	7.9	7.2
35–39	7.8	7.0	7.4	6.8	6.3	6.5	7.1	6.5	6.8
40–44	5.9	5.5	5.7	5.2	5.4	5.3	5.4	5.4	5.4
45–49	5.4	5.3	5.4	4.9	5.8	5.4	5.1	5.6	5.4
50–54	4.1	1.8	2.9	4.2	1.7	2.9	4.1	1.7	2.9
55–59	3.0	3.1	3.1	3.3	3.6	3.5	3.2	3.4	3.3
60–64	2.9	2.6	2.8	3.4	3.2	3.3	3.3	3.0	3.1
65–69	2.0	1.5	1.7	2.5	1.8	2.2	2.4	1.8	2.1
70–74	1.6	1.1	1.4	2.4	1.5	1.9	2.2	1.4	1.8
75–79	0.7	0.5	0.6	1.1	0.6	0.8	1.0	0.6	0.8
80+	0.9	1.0	1.0	1.6	1.4	1.5	1.4	1.3	1.4
Missing/don't know	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	176,027	184,407	360,435	450,495	488,007	938,502	626,523	672,414	1,298,937

One-third of the de facto household population (33 percent) was under 15 years of age, and 10 percent was under age five. Persons age 65 and over accounted for six percent of the total population. The proportion of the population under age 15 was somewhat lower in urban than rural areas, as was the proportion of the population over age 65.

The age-sex structure of the population is shown in a population pyramid in Figure 2.1. The pyramid is wider at the base than at the top and narrows slightly at the youngest age group. This pattern is typical of a historically high-fertility regime that has recently started to decline or stabilize.

Figure 2.1. Population pyramid, BMMS 2016

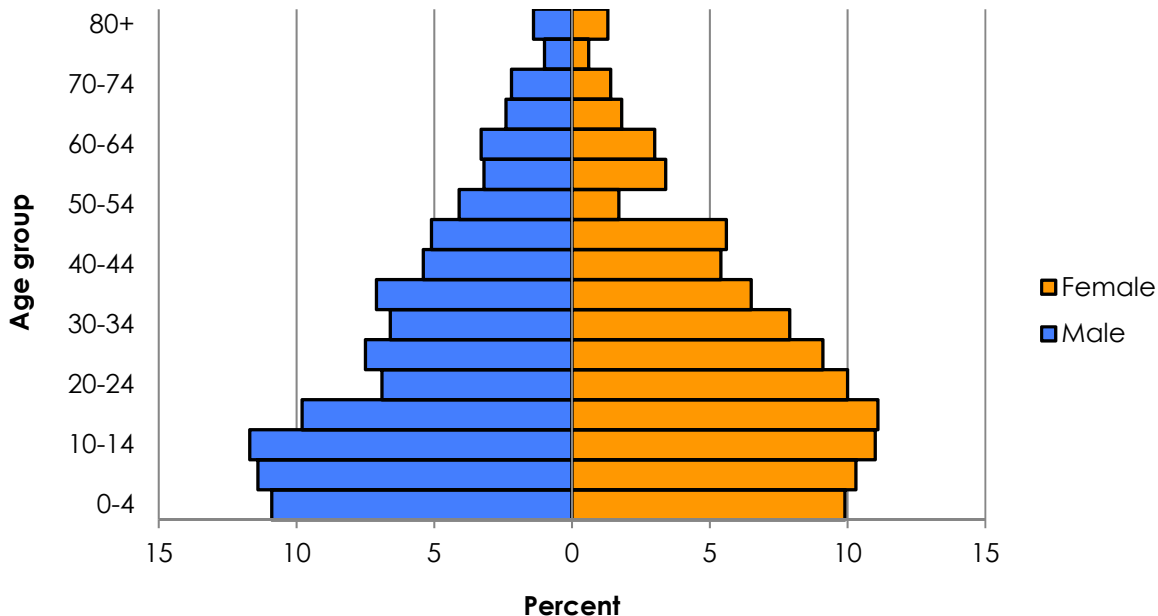


Figure 2.2 shows the distribution of the de facto male and female household population by single year of age. The figure shows noticeable heaping at ages ending with 0 and 5, with heaping more prominent among males than females.

Figure 2.2. Distribution of the male and female household population by single year of age, BMMS 2016

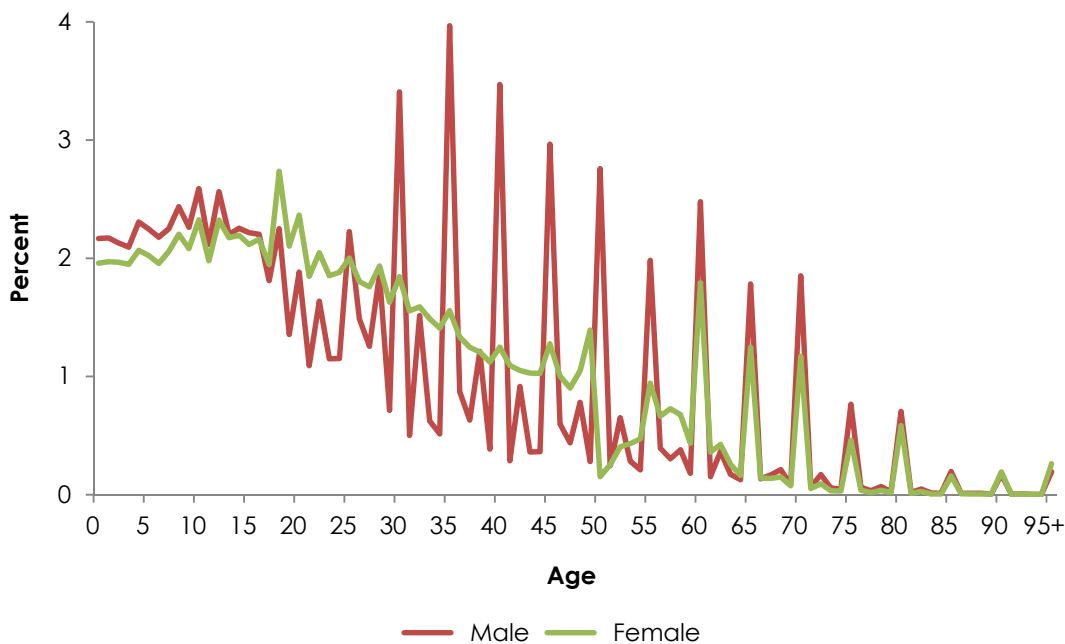


Table 2.2 presents changes in the broad age structure of the population since 1989. The proportion of the population under age 15 has declined from 43 percent in 1989 to 33 percent in 2016. In contrast, the proportion of the population ages 15–59 has increased over time, as has the proportion age 60 and over.

2.1.2. Marital Status

The BMMS 2016 includes information on the marital status of all household members age 10 and older. Table 2.3 shows the marital status distribution of the de facto household population age 13 and older. Among females ages 15–49, 80 percent were currently married and 15 percent had never been married. The proportion never married was higher for males (36 percent) than females (15 percent). The proportion formerly married (widowed, divorced, separated, or deserted) was small—five percent for females and less than one percent for males.

Also of interest is the proportion of persons who married young. At ages 15–19, the proportions of ever-married were three percent for males and 43 percent for females. By ages 25–29, 96 percent of females in Bangladesh had been married. For males in this age group, 72 percent had been married. The Singulate Mean Age at Marriage (SMAM), calculated from age-specific proportions of single respondents in the 2016 BMMS, was 25.2 for males and 18.8 for females (for those 15–49 years of age). According to the SMAM measure, men in Bangladesh tend to marry women who are almost six years younger than they are. In 2010, the SMAM was nearly seven years.

Table 2.2. Trends in population by age

Percent distribution of the de facto household population by age groups, selected sources, Bangladesh 1989–2016.

Age group	Survey												
	1989 BFS	1989 CPS	1991 CPS	1993–94 BDHS	1996–97 BDHS	1999–2000 BDHS	2001 BMMS	2004 BDHS	2007 BDHS	2010 BMMS	2011 BDHS	2014 BDHS	2016 BMMS
<15	43.2	43.2	42.7	42.6	41.0	39.2	39.3	38.2	36.3	35.4	35.3	33.5	32.6
15–59	50.9	50.9	51.2	51.2	53.1	54.4	53.6	55.1	56.6	56.8	56.5	58.0	58.4
60+	5.9	5.9	6.0	6.2	5.9	6.4	7.0	6.6	7.1	7.8	8.2	8.5	9.1
DK/missing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	100	100	100	100	100	100	100	100	100	100	100	100	100

BFS=Bangladesh Fertility Survey; CPS=Contraceptive Prevalence Survey; BDHS=Bangladesh Demographic and Health Survey; BMMS=Bangladesh Maternal Mortality and Health Care Survey.

Sources: NIPORT, et al. (2001); NIPORT et al. (2016)

Table 2.3. Marital status of the household population

Percent distribution of the de facto household population by current marital status, according to sex and age group, Bangladesh 2016.

Age group	Male					Female					
	Currently married	Formerly married	Never married	Missing	Total	Currently married	Formerly married	Never married	Missing	Total	Number
13–14	0.2	0.0	99.8	0.0	100.0	3.7	0.1	96.2	0.0	100.0	29,378
15–19	3.0	0.1	96.9	0.0	100.0	42.5	1.0	56.5	0.0	100.0	74,399
20–24	30.4	0.5	69.1	0.0	100.0	82.9	2.6	14.5	0.0	100.0	67,192
25–29	70.8	0.9	28.3	0.0	100.0	92.2	3.5	4.2	0.0	100.0	61,359
30–34	90.8	1.0	8.2	0.0	100.0	94.2	4.7	1.1	0.0	100.0	53,031
35–39	97.0	0.8	2.2	0.0	100.0	92.5	6.9	0.6	0.0	100.0	43,497
40–44	98.3	0.8	0.9	0.0	100.0	89.1	10.5	0.4	0.0	100.0	36,626
45–49	98.5	0.8	0.7	0.0	100.0	84.4	15.3	0.3	0.0	100.0	37,826
50–54	98.3	1.3	0.3	0.0	100.0	77.6	21.9	0.4	0.0	100.0	11,545
55+	94.0	5.8	0.2	0.0	100.0	45.9	53.9	0.2	0.0	100.0	76,928
15–49	63.8	0.7	35.6	0.0	100.0	79.9	5.3	14.8	0.0	100.0	373,929

2.1.3. Household Composition

Table 2.4 shows the distribution of households in the BMMS 2016 by the sex of the head of the household and by the number of de jure household members in urban and rural areas. A small minority of households in Bangladesh were headed by women (13 percent). The average household size observed in the survey was 4.4 people, with little variation between rural and urban areas; this number was slightly smaller than the 2010 estimate (4.7 people).

Table 2.4. Household composition

Percentage distribution of households by sex of head of household and mean household size, Bangladesh 2016.

Household headship/size	Residence		
	Urban	Rural	Total
Sex of household head			
Male	87.1	86.4	86.6
Female	12.9	13.6	13.4
Total	100	100	100
Number of households	84,125	214,159	298,284
Mean size of household	4.3	4.4	4.4

2.1.4. Education

The educational attainment of household members is an important determinant of their opportunities and behavior. Studies have consistently shown that educational attainment affects reproductive behavior, contraceptive use, fertility, infant and child mortality, morbidity, and issues related to family health and hygiene (Cleland, et al., 1994; Caldwell, et al., 1999; United Nations, 1995; Bongaarts, 2003; Chaudhury, 1977; Akmam, 2002). Tables 2.5A and 2.5B provide data on educational attainment of the household population for both males and females from the BMMS 2016.

Education has become more widespread over time in Bangladesh. This is apparent from the differences in levels of educational attainment by the 15–19 age group. A steadily decreasing percentage of both males and females had never attended school in this age group. Data from BMMS 2001, BMMS 2010, and BMMS 2016 show that proportions who attended secondary school have increased for men and women ages 15–19. The increase for men was smaller than women between 2001 and 2010. However, the increase between 2010 and 2016 was similar for both men and women (Figure 2.3).

Figure 2.3. Percentage of males and females ages 15–19 with some secondary education, Bangladesh 2001–2016

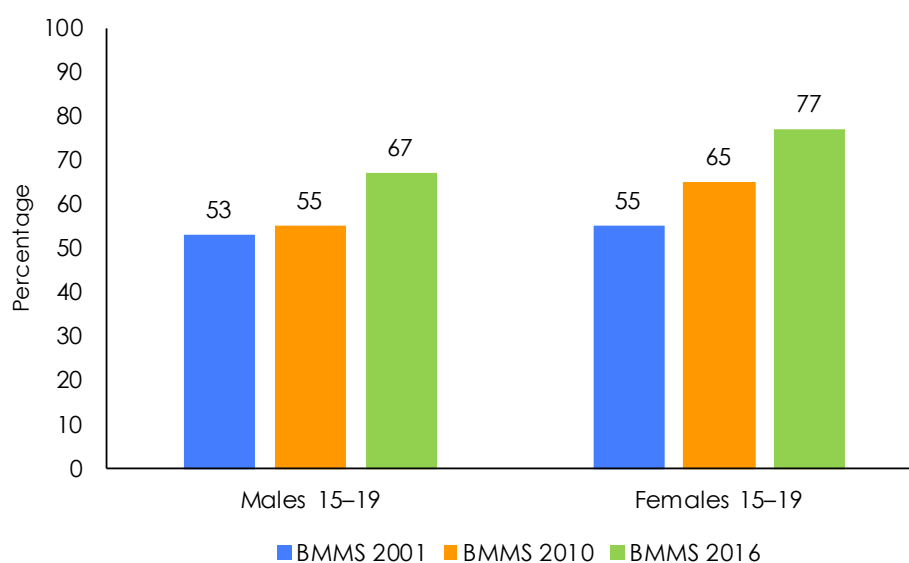


Table 2.5A. Level of education by background characteristics, females

Percentage distribution of de facto household population ages six and above by highest level of education attended, according to background characteristics, Bangladesh 2016.

Background characteristics	Level of education							Total	Number	Median years of education
	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete or higher	Missing				
Female										
Age										
6-9	4.8	94.6	0.5	0.1	0.0	0.0	0.0	100.0	55,804	0.9
10-14	1.5	44.6	19.5	34.3	0.2	0.0	0.0	100.0	73,946	4.7
15-19	3.0	9.2	10.7	51.6	25.5	0.0	0.0	100.0	74,399	8.0
20-24	5.1	12.3	13.1	38.4	31.0	0.0	0.0	100.0	67,192	7.9
25-29	9.4	15.7	15.5	40.1	19.4	0.0	0.0	100.0	61,359	6.9
30-34	18.1	19.8	15.1	30.8	16.1	0.0	0.0	100.0	53,031	5.3
35-39	30.3	22.6	14.0	19.3	13.7	0.0	0.0	100.0	43,497	4.1
40-44	42.1	22.3	12.4	14.3	8.8	0.0	0.0	100.0	36,626	1.7
45-49	48.0	22.4	11.7	12.0	6.0	0.0	0.0	100.0	37,826	1.0
50-54	53.6	19.8	10.8	10.4	5.5	0.1	0.1	100.0	11,545	0.9
55-59	61.8	17.3	9.7	7.7	3.4	0.1	0.1	100.0	23,185	0.8
60-64	69.2	14.4	8.6	5.3	2.4	0.1	0.1	100.0	20,174	0.7
65+	78.6	10.5	6.7	3.1	1.0	0.1	0.1	100.0	33,569	0.6
Residence										
Urban	19.2	25.1	11.5	25.2	19.0	0.0	0.0	100.0	163,127	5.0
Rural	23.6	27.8	12.3	26.3	10.0	0.0	0.0	100.0	429,025	4.3

Table 2.5A. Level of education by background characteristics, females (continued)

Background characteristics	Level of education						Total	Number	Median years of education
	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete or higher	Missing			
Division									
Barishal	16.0	29.0	16.1	25.5	13.4	0.0	100.0	32,582	4.8
Chattogram	20.6	27.3	11.3	28.5	12.4	0.0	100.0	121,272	4.7
Dhaka	21.6	26.7	12.0	25.3	14.3	0.0	100.0	155,102	4.6
Khulna	21.6	25.5	11.3	28.6	12.9	0.0	100.0	62,383	4.8
Mymensingh	25.4	29.7	12.4	22.3	10.2	0.0	100.0	46,905	3.8
Rajshahi	25.0	25.4	11.8	25.9	12.0	0.0	100.0	70,326	4.4
Rangpur	24.8	27.3	10.9	25.4	11.5	0.0	100.0	63,935	4.2
Sylhet	24.8	28.0	14.8	22.7	9.7	0.0	100.0	39,648	4.1
Wealth quintile									
Lowest	32.3	33.5	12.5	18.4	3.4	0.0	100.0	116,381	2.3
Second	26.3	30.9	13.2	24.0	5.5	0.0	100.0	115,967	3.5
Middle	22.0	26.7	12.4	29.0	9.8	0.0	100.0	118,827	4.6
Fourth	19.5	24.7	12.4	29.3	14.1	0.0	100.0	120,286	5.0
Highest	12.1	19.7	10.2	29.0	29.0	0.0	100.0	120,691	7.1
Total	22.4	27.0	12.1	26.0	12.5	0.0	100.0	592,152	4.5

Table 2.5B. Level of education by background characteristics, males

Percentage distribution of de facto household population ages six and above by highest level of education attended, according to background characteristics, Bangladesh 2016.

Background characteristics	Level of education							Median years of education		
	No education	Primary			Secondary		Missing		Total	Number
		incomplete	complete	Secondary incomplete	Secondary complete or higher					
Male										
Age										
6-9	6.5	93.0	0.3	0.1	0.0	0.0	0.0	100.0	57,189	0.7
10-14	3.5	51.9	17.8	26.6	0.2	0.0	0.0	100.0	73,469	4.2
15-19	4.9	15.7	12.3	43.7	23.3	0.1	0.1	100.0	61,616	7.6
20-24	7.3	15.7	15.3	24.7	36.9	0.1	0.1	100.0	43,322	7.7
25-29	11.4	16.8	17.2	28.4	26.0	0.2	0.2	100.0	47,291	6.5
30-34	17.2	16.9	15.3	25.8	24.5	0.3	0.3	100.0	41,116	5.7
35-39	24.3	17.5	13.9	21.7	22.4	0.3	0.3	100.0	44,281	5.1
40-44	32.9	16.8	12.0	17.3	20.8	0.2	0.2	100.0	33,825	4.5
45-49	35.5	16.2	10.5	16.9	20.7	0.2	0.2	100.0	31,735	4.1
50-54	40.7	16.3	10.4	16.0	16.4	0.3	0.3	100.0	26,000	2.7
55-59	40.0	17.0	10.5	16.1	16.2	0.3	0.3	100.0	20,302	2.7
60-64	43.7	15.4	9.4	14.9	16.1	0.4	0.4	100.0	20,648	1.9
65+	48.7	15.6	9.7	11.9	13.6	0.4	0.4	100.0	43,547	1.0
Residence										
Urban	15.8	26.4	11.3	22.1	24.1	0.2	0.2	100.0	154,189	5.2
Rural	21.2	30.3	12.6	21.5	14.3	0.2	0.2	100.0	390,152	4.3

Table 2.5B. Level of education by background characteristics, males (continued)

Background characteristics	Level of education							Total	Number	Median years of education
	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete or higher	Missing				
Division										
Barishal	15.7	30.5	13.5	22.2	17.9	0.2	100.0	29,414	4.8	
Chattogram	17.1	32.4	12.2	22.4	15.6	0.2	100.0	104,350	4.5	
Dhaka	18.5	28.0	11.8	22.0	19.5	0.3	100.0	144,641	4.8	
Khulna	19.1	27.0	11.4	24.0	18.4	0.1	100.0	58,480	4.8	
Mymensingh	24.8	29.7	11.9	19.4	14.1	0.1	100.0	43,098	3.7	
Rajshahi	23.5	26.2	11.5	20.4	18.2	0.1	100.0	67,354	4.5	
Rangpur	21.0	28.3	12.5	21.2	16.7	0.2	100.0	60,495	4.6	
Sylhet	20.3	33.4	15.2	19.4	11.7	0.1	100.0	36,509	4.0	
Wealth quintile										
Lowest	30.6	36.3	12.5	15.1	5.3	0.2	100.0	107,195	2.2	
Second	25.3	33.7	13.6	19.1	8.2	0.2	100.0	109,960	3.2	
Middle	18.8	29.1	13.5	24.2	14.2	0.2	100.0	109,638	4.7	
Fourth	15.9	26.5	12.3	25.3	19.7	0.2	100.0	108,298	5.1	
Highest	7.9	20.4	9.2	24.5	37.9	0.2	100.0	109,250	8.1	
Total	19.7	29.2	12.2	21.6	17.1	0.2	100.0	544,341	4.6	

2.2. Housing Characteristics

The physical characteristics of households are important in assessing the general socioeconomic condition of the population. In the BMMS 2016, household questionnaire respondents were asked about access to electricity, type of toilet facility, and main materials of the roof, wall, and floor. Information on the characteristics of the sampled households is presented in Table 2.6.

Nearly 9-in-10 households had access to electricity, with higher access in urban households. As per this indicator, Bangladesh has improved tremendously since 2001—only 31 percent of the households had access to electricity in 2001, which increased to 55 percent in 2010, and to 87 percent in 2016. The difference in access to electricity between urban areas and rural areas has declined—to 12 percentage points in 2016, down from 39 percentage points in 2010.

Access to some type of toilet facility has become almost universal in Bangladesh. Less than two percent of the households reported that they did not have a toilet facility. Ninety-six percent had hygienic toilets (septic tank/modern toilets, water-sealed/slab latrines, and pit toilets). Household sanitation has improved since the BMMS 2001—the proportion of households with no toilet facilities has declined from 24 percent to 2 percent. Lack of sanitation facilities was more prevalent in rural than urban areas. However, the proportion of households with no toilet facilities was very low in both areas—less than one percent in urban households and two percent in rural households.

Table 2.6. Household characteristics

Percent distribution of households by housing characteristics, according to residence, Bangladesh 2016.

Housing characteristics	Residence		
	Urban	Rural	Total
Electricity			
Both national grid and solar electricity	1.7	4.2	3.5
National grid only	92.6	68.9	75.5
Solar electricity only	1.5	10.9	8.2
No electricity	4.2	16.1	12.7
Total	100.0	100.0	100.0
Sanitation facility			
Septic tank/modern toilet	54.2	12.4	24.2
Improved/slab latrine	36.9	67.3	58.7
Pit without slab	6.8	15.6	13.1
Hanging/other	1.6	2.6	2.3
No facility	0.4	2.1	1.6
Missing	0.0	0.0	0.0
Total	100.0	100.0	100.0
Roof material			
Thatch/palm leaf/bamboo	0.4	1.1	0.9
Tin	70.7	90.4	84.8
Cement, ceramic, tiles	28.5	8.2	13.9
Other	0.4	0.3	0.3
Missing	0.0	0.0	0.0
Total	100.0	100.0	100.0
Wall material			
Cane/palm/trunks/dirt/bamboo with mud	6.1	18.6	15.1
Tin	31.3	52.1	46.2
Cement, stone with lime/cement, bricks	61.0	27.1	36.6
Other	1.6	2.2	2.0
Missing	0.0	0.0	0.0
Total	100.0	100.0	100.0
Floor material			
Earth/sand, palm/bamboo	28.9	75.7	62.5
Wood/planks	0.6	0.4	0.4
Cement, ceramics, tiles	70.5	23.9	37.0
Other	0.1	0.0	0.0
Missing	0.0	0.0	0.0
Total	100.0	100.0	100.0
Number of households	84,125	214,159	298,284

There has been a big shift towards using improved housing materials since 2010—less than one percent of households are now made with bamboo, palm leaf, or thatch roofs. Tin is the most common roofing material in Bangladesh, accounting for 85 percent of households; with a decline from 88 percent in 2010. However, cement, ceramic, or tile roofing increased, from eight to 14 percent during this time. Similarly, 33 percent of households in Bangladesh had walls made of natural materials in 2010, but this number decreased to 15 percent in 2016. Use of natural or rudimentary floor materials dropped by 16 percentage points during 2010–2016, and cement or ceramic floors have taken their place. Sixty-three percent of the households had dwellings with earth, sand, or bamboo floors, and 37 percent had cement or ceramic floors in 2016.

Twenty-nine percent of the urban households had cement, ceramic, or tile roofing (which was only eight percent in rural households). Walls made of tin were more available in rural households (52 percent) than urban ones (31 percent). Around 61 percent of the urban households had cement, stone with lime/cement, or brick walls, which was more than double the percentage of rural households. Similarly, natural walls were more common in rural areas (19 percent) than urban areas (six percent). Urban households also had more improved floors than rural households. Three-in-four households had floors made from natural materials in rural Bangladesh; the proportion was a little over one-in-four in urban areas. This statistic is reversed for cement, ceramic, or tile floors.

Urban-rural differences in housing materials were very prominent. However, housing materials are improving in both urban and rural areas. For example, the proportion of households with roof, walls, and floors made of cement, ceramic, or tiles increased in both urban and rural areas. Similarly, natural roofs, walls, and floors are becoming less prevalent.

2.2.1. Household Possessions

Information on the possession of various durable goods was collected at the household level (Table 2.7). About 75 percent of households owned an electric fan, 49 percent owned a television, 38 percent owned an almirah or wardrobe, and 27 percent owned a refrigerator. Owning a mobile phone has become almost universal—94 percent of the households had at least one mobile phone. Around 1-in-10 households had a water pump. Less than five percent of the households reported ownership of a radio, land phone, IPS or generator, air conditioner, computer or laptop, or VCD. About three percent of the households owned none of the listed items in 2016, which has declined from 11 percent in 2010.

In general, households in rural Bangladesh were less likely to have items like a television, almirah, electric fan, or refrigerator. Urban households were 1.8 times more likely to own a television. Since 2010, ownership of a television has increased from 36 percent to 49 percent of households, whereas ownership of a radio has declined from 12 percent to one percent. Ownership of a mobile phone has also increased, from 63 percent in 2010 to 94 percent in 2016. Increased ownership of a refrigerator was also noticeable—from nine percent in 2010 to 27 percent in 2016.

The BMMS 2016 also collected data on household ownership of land. Approximately 93 percent of Bangladeshi households owned a homestead. While 49 percent owned land other than a homestead, six percent of households did not own any land. Ownership of a homestead or other land was less common in urban areas than in rural areas.

The wealth index was constructed from data on ownership of household durable assets, as well as dwelling characteristics such as type of drinking water available, sanitation facilities, roofing, and flooring. Each asset was assigned a weight (factor score) generated through principle components analysis. Each household's scores (the weight in the instance that the household owned the asset, zero otherwise) were then summed; individuals were ranked according to the total score of the household in which they resided. The sample was then divided into population quintiles ranked from lowest (poorest) to highest (richest). According to Table 2.7, 42 percent of urban households were in the highest wealth quintile, compared to only 10 percent of rural households.

Table 2.7. Household durable goods, land ownership, and household wealth

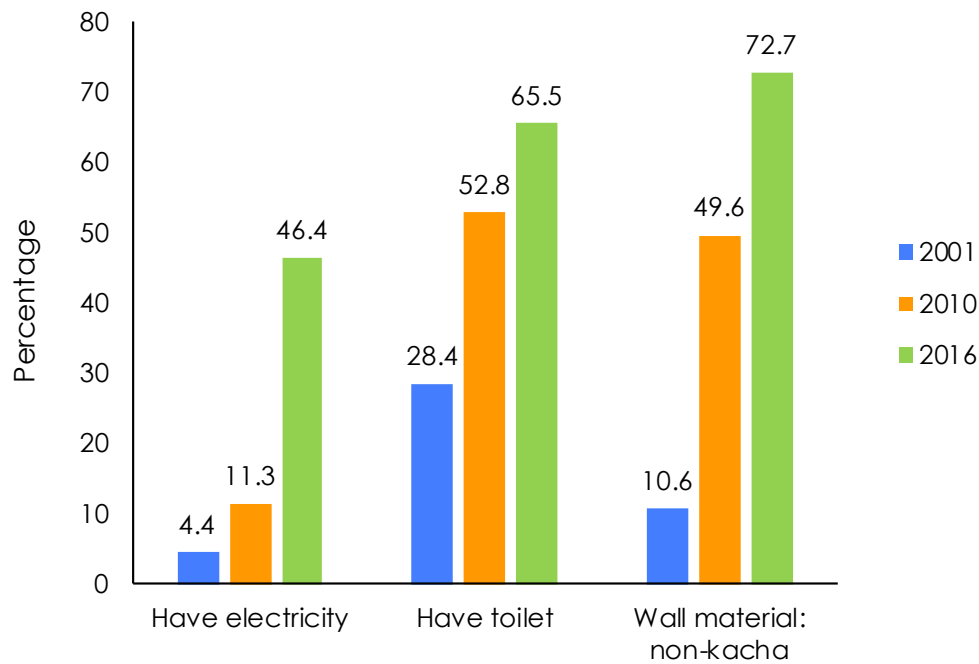
Percentage of households possessing various durable consumer goods, ownership of land, and wealth status, according to residence, Bangladesh 2016.

Characteristics	Residence		
	Urban	Rural	Total
Durable goods			
Radio	1.2	1.5	1.4
Television	70.7	39.8	48.5
Mobile phone	96.2	93.2	94.1
Land phone	2.5	0.6	1.1
Refrigerator	44.1	19.7	26.6
Almirah/wardrobe	53.8	31.5	37.8
Electric fan	90.2	69.4	75.3
IPS/generator	4.4	1.1	2.1
Air conditioner	1.2	0.1	0.4
Computer/laptop	10.2	2.6	4.8
VCD	6.2	3.0	3.9
Water pump	11.0	7.5	8.5
Does not own any of the specified durable goods ¹	1.2	3.9	3.1
Land ownership			
Owens a homestead	88.2	95.1	93.1
Owens other land	43.5	51.2	49.0
None of the above ¹	9.6	4.2	5.8
Wealth quintile			
Lowest	6.2	26.7	20.9
Second	9.5	24.5	20.3
Middle	12.8	22.1	19.5
Fourth	29.1	16.5	20.1
Highest	42.4	10.3	19.3
Number of households	84,125	214,159	298,284

¹ Includes missing.

When the basic household amenities of the poorest quintile of the households are compared among 2001, 2010, and 2016 rounds of BMMS, a notable improvement in the status among the poorest households can be observed. As shown in Figure 2.4, less than five percent of households in the poorest quintile had electricity in 2001. This proportion increased to 11 percent in 2010 and to 46 percent in 2016. Similarly, households with improved toilet increased from 28 percent in 2001 to 53 percent in 2010. This improvement continued, and has reached 66 percent in 2016. The percentage of households having walls made of non-*kacha* materials increased from 11 in 2001 to 50 in 2010, and reached 73 percent in 2016.

Figure 2.4. Basic household amenities in the poorest quintile households, Bangladesh 2001–2016



2.3. Characteristics of Survey Respondents

2.3.1. Background Characteristics

The distribution of ever-married women ages 15–49 and the subset of those women who received the long questionnaire by background characteristics including age, marital status, place of residence, division, and educational level is shown in Table 2.8.

The age distribution of the subset of ever-married women who received the long questionnaire was the same as that of all ever-married women interviewed. Forty-seven percent of ever-married women were ages 15–29. Twenty-eight percent of respondents lived in urban areas. About one-fourth of respondents lived in Dhaka division, and about one-fifth lived in Chattogram division. Thirteen percent of respondents lived in Rajshahi division, 11 percent each in Rangpur and Khulna divisions, eight percent in Mymensingh, and six percent each lived in Barishal and Sylhet divisions.

About one-fifth of ever-married women had never been to school. Thirty-two percent of respondents had attended primary school, and about half of the respondents had some secondary schooling. Ninety-four percent of ever-married women were currently married.

Table 2.8. Background characteristics of respondents: all women and the subset of women who received long questionnaire

Percent distribution of ever-married women ages 15–49 by selected background characteristics, Bangladesh, 2016.

Background characteristics	All women (short questionnaire)			Subset of women (long questionnaire)		
	Weighted percent	Number of women		Weighted percent	Number of women	
		Weighted	Unweighted		Weighted	Unweighted
Age						
15–19	10.1	31,933	30,890	10.0	11,122	10,735
20–24	18.0	56,748	55,553	18.0	20,043	19,587
25–29	18.4	57,970	57,266	18.6	20,707	20,512
30–34	16.5	51,935	52,173	16.6	18,497	18,595
35–39	13.6	42,721	43,475	13.5	15,032	15,355
40–44	11.5	36,111	36,840	11.5	12,804	12,990
45–49	11.8	37,219	38,490	11.8	13,139	13,574
Residence						
Urban	28.1	88,323	126,833	28.2	31,363	44,871
Rural	71.9	226,314	187,854	71.8	79,980	66,477
Division						
Barishal	5.5	17,355	28,143	5.5	6,133	9,915
Chattogram	19.0	59,674	49,607	18.9	21,068	17,518
Dhaka	26.9	84,551	55,716	26.9	29,915	19,654
Khulna	11.4	35,744	40,621	11.3	12,618	14,361
Mymensingh	7.6	23,770	30,719	7.6	8,430	10,923
Rajshahi	12.8	40,160	42,526	12.8	14,256	15,088
Rangpur	11.4	35,899	40,195	11.4	12,676	14,215
Sylhet	5.6	17,484	27,160	5.6	6,245	9,674
Educational attainment						
No education	20.7	64,981	63,304	20.8	23,155	22,507
Primary incomplete	18.1	57,058	55,822	18.1	20,197	19,820
Primary complete	14.1	44,500	44,695	14.1	15,696	15,753
Secondary incomplete	31.2	98,061	97,062	31.2	34,696	34,356
Secondary complete or higher	15.9	50,037	53,804	15.8	17,599	18,912
Marital status						
Currently married	93.9	295,402	295,209	93.9	104,562	104,528
Separated	1.0	3,209	3,090	1.1	1,176	1,104
Deserted	0.4	1,327	1,262	0.4	437	418
Divorced	1.1	3,304	3,256	1.0	1,167	1,121
Widowed	3.6	11,395	11,870	3.6	4,000	4,177
Total	100.0	314,637	314,687	100.0	111,342	111,348

2.3.2. Educational Level of Survey Respondents

Table 2.9 shows the educational level of ever-married women by background characteristics. Among ever-married women, education is inversely related to age; that is, older women are less educated than younger women. For instance, three percent of ever-married women ages 15–19 years had never attended school, compared with 48 percent of those ages 45–49.

Urban residents had more education than rural residents. For example, 22 percent of rural women had no education, compared with 18 percent of urban women. In contrast, while 53 percent of urban women had attended secondary school, 45 percent of rural women had done so.

Less than one-in-five of ever-married women in Barishal, Chattogram, Dhaka, and Khulna divisions had never attended school—this number was one-in-four for those in other divisions. Women in Barishal, Chattogram, Dhaka, and Khulna divisions were also more likely than women in other divisions to have attended secondary school.

Level of education among women from well-off households was much higher than the levels reported by women from other households. For example, the proportions of women who had never attended school in households from the lowest and highest wealth quintiles were 35 and eight percent, respectively. The proportion of women who reported having completed at least a secondary level of education was four percent in the lowest quintile, while it was ten times higher in the highest quintile.

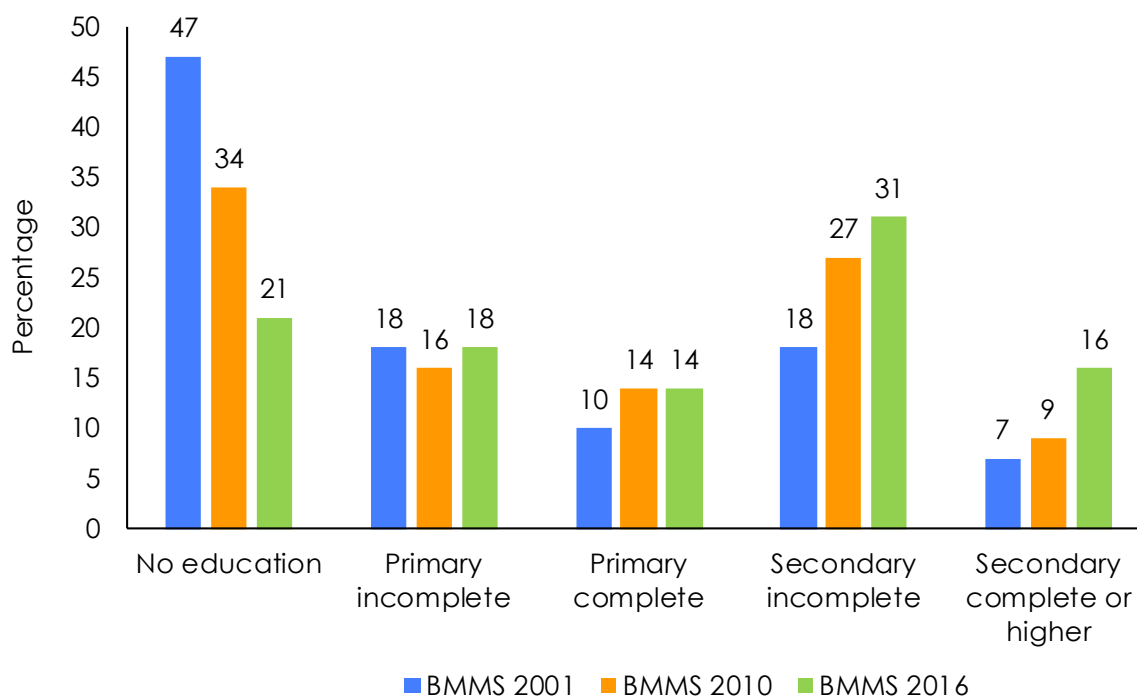
Table 2.9. Level of education by background characteristics

Percent distribution of ever-married women ages 15–49 by highest level of education attended, according to background characteristics, Bangladesh 2016.

Background characteristics	Level of education					Total	Number
	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete or higher		
Age group							
15–19	3.4	11.7	14.2	50.4	20.3	100.0	31,933
20–24	5.2	13.5	14.2	42.2	24.8	100.0	56,748
25–29	9.4	16.1	15.8	41.3	17.4	100.0	57,970
30–34	18.1	20.0	15.2	31.0	15.8	100.0	51,935
35–39	30.4	22.6	14.0	19.5	13.6	100.0	42,721
40–44	42.3	22.2	12.5	14.4	8.7	100.0	36,111
45–49	48.0	22.3	11.7	12.0	6.0	100.0	37,219
Residence							
Urban	17.9	16.3	12.9	29.0	23.8	100.0	88,323
Rural	21.7	18.8	14.6	32.0	12.8	100.0	226,314
Division							
Barishal	12.7	19.8	20.2	29.3	18.1	100.0	17,355
Chattogram	17.3	16.6	12.7	35.7	17.6	100.0	59,674
Dhaka	19.5	18.2	13.9	30.6	17.8	100.0	84,551
Khulna	18.9	17.8	13.0	35.0	15.4	100.0	35,744
Mymensingh	24.7	21.4	14.9	25.7	13.4	100.0	23,770
Rajshahi	24.0	17.3	13.8	30.8	14.1	100.0	40,160
Rangpur	25.3	18.6	13.0	28.9	14.3	100.0	35,899
Sylhet	26.3	18.6	18.7	25.8	10.7	100.0	17,484
Wealth quintile							
Lowest	34.5	24.9	15.9	21.2	3.5	100.0	59,204
Second	26.4	22.7	16.6	28.3	6.0	100.0	61,631
Middle	19.4	18.5	15.0	35.5	11.6	100.0	63,723
Fourth	16.4	15.9	13.8	35.9	18.1	100.0	65,779
Highest	8.0	9.5	9.7	34.0	38.8	100.0	64,301
Total	20.7	18.1	14.1	31.2	15.9	100.0	314,637

Over the last 15 years, there has been a significant improvement in the level of women’s education, as shown by the education of the survey respondents in Figure 2.5. The proportion with some secondary education among ever-married women has increased from 25 percent in 2001 to 36 percent in 2010, and reached 47 percent in 2016. The proportion with no education has declined from 47 percent to 21 percent during the same period.

Figure 2.5. Percentage of ever married women ages 13–49 by education, Bangladesh 2001–2016



2.3.3. Exposure to Mass Media

The BMMS 2016 collected information on the exposure of respondents to broadcast media. Respondents were asked whether they listened to a radio, watched television, or read a newspaper at least once a week. This information is important because it provides an indication of women’s exposure to mass media. Mass media are used in Bangladesh for disseminating family planning, health, and other information. Table 2.10 shows that only two percent of women listened to the radio, 59 percent watched television, and four percent read a newspaper at least once a week. About six-in-ten women were exposed to at least one of these media sources once a week. Urban women were more likely than rural women to be exposed to at least one of the media.

Table 2.10. Exposure to mass media

Percentage of ever-married women ages 15–49 who were exposed to specific media on a weekly basis, by background characteristics, Bangladesh 2016.

Background characteristics	Exposure to specific media					Number of women
	Reads a newspaper at least once a week ¹	Watches television at least once a week	Listen to the radio at least once a week	Accesses all three media at least once a week	Accesses none of the three media at least once a week	
Age group						
15–19	2.5	60.3	2.3	0.4	38.8	31,933
20–24	3.5	62.6	2.1	0.5	36.6	56,748
25–29	4.2	62.2	1.7	0.4	37.0	57,970
30–34	4.1	59.6	1.2	0.3	39.7	51,935
35–39	4.2	56.8	1.0	0.3	42.6	42,721
40–44	3.5	52.7	0.9	0.2	46.7	36,111
45–49	3.0	50.7	0.9	0.2	48.8	37,219
Residence						
Urban	8.0	78.6	2.0	0.7	20.7	88,323
Rural	2.0	50.6	1.3	0.2	48.7	226,314
Division						
Barishal	3.3	34.6	1.3	0.3	64.3	17,355
Chattogram	3.4	57.0	1.4	0.4	42.2	59,674
Dhaka	5.3	74.7	2.1	0.5	24.6	84,551
Khulna	3.5	59.6	1.6	0.3	39.5	35,744
Mymensingh	2.0	47.7	0.8	0.1	51.8	23,770
Rajshahi	3.2	58.9	1.5	0.3	40.4	40,160
Rangpur	2.6	47.5	0.9	0.2	51.9	35,899
Sylhet	2.9	42.0	0.9	0.2	57.4	17,484
Educational attainment						
No education	0.0	40.5	0.4	0.0	59.2	64,981
Primary incomplete	0.3	50.2	0.8	0.1	49.4	57,058
Primary complete	0.8	55.1	1.0	0.1	44.5	44,500
Secondary incomplete	2.2	65.7	1.6	0.2	33.5	98,061
Secondary complete/ higher	17.6	79.9	3.8	1.6	18.2	50,037
Wealth quintile						
Lowest	0.4	14.0	0.7	0.0	85.2	59,204
Second	0.7	40.8	0.9	0.1	58.5	61,631
Middle	1.4	66.6	1.2	0.1	32.8	63,723
Fourth	3.0	77.1	1.7	0.3	22.2	65,779
Highest	12.4	89.2	2.7	1.1	10.0	64,301
Total	3.7	58.5	1.5	0.3	40.8	314,637

¹ Those without any education are counted as not reading a newspaper.

CHAPTER 3. ADULT FEMALE MORTALITY: LEVELS AND CAUSES

Summary

- The estimated maternal mortality ratio (MMR) in BMMS 2016 is 196 per 100,000 live births; there was no evidence of difference from the BMMS 2010 estimate of 194/100,000 live births because the confidence intervals of the two estimates overlap. This MMR estimate is consistent with that of the Sample Vital Registration System (SVRS) and Maternal Mortality Estimation Inter-Agency (MMEIG) estimates.
- Maternal mortality now accounts for around 13 percent of all adult female deaths, with no apparent change from the BMMS 2010 estimate (14 percent).
- For all age groups, the MMR was comparable between BMMS 2010 and BMMS 2016, except in the youngest age group (15–19 years), where it was higher in 2016.
- The risk of maternal death was high among first-time mothers (215 per 100,000 live births), as well as for parities 4 or higher.
- Hemorrhage was the most common cause of maternal mortality, followed by eclampsia, indirect causes, and abortion-related complications.
 - Hemorrhage and eclampsia accounted for 54 percent of all maternal deaths in BMMS 2016, slightly higher than in BMMS 2010 (51 percent).
 - The proportionate contribution of indirect causes of maternal death has declined from 35 percent in BMMS 2010 to 20 percent in BMMS 2016. The contribution of abortion has increased from one to seven percent. No cases of infection as an underlying maternal cause of death were identified in the 2016 survey.
- In BMMS 2016, MMR during pregnancy, during delivery, and after delivery were at levels similar to what was observed in BMMS 2010.
- The continued predominance of hemorrhage and eclampsia deaths and deaths after delivery indicate a need to strengthen access to treatment for these two conditions, improve referral systems, and improve referral-level care.
- Overall, adult (ages 15–49 years) female mortality was 1.175/1,000 in BMMS 2016, almost the same as in BMMS 2010 (1.201/1,000).
- Cancers (24 percent) and circulatory diseases (23 percent) were the main causes of deaths among women in the reproductive age in Bangladesh, with maternal coming in a distant third (13 percent).
- Suicide was the second-most common cause of adult female deaths among women ages 15–19 years, after maternal deaths.

This chapter presents findings from the BMMS 2016 concerning levels, trends, and causes of maternal mortality, and adult mortality for both females and males. Understanding the trends and causes of deaths, and identifying factors associated with higher risk of mortality, provides a basis for prioritizing interventions for prevention and treatment. The BMMS 2016 used strategies comparable to the previous survey to measure levels, trends, and differentials in maternal mortality. Selected findings are also compared with results from BMMS 2001 and 2010.

3.1. Measures of Maternal Mortality

The “Tenth Revision of the International Classification of Diseases” defines a maternal death as any “death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes” (WHO, 2004). A pregnancy-related death is defined as any death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause.

The maternal mortality ratio (MMR) is the most widely known and used indicator of maternal mortality. The MMR is calculated as the ratio of maternal deaths in a period to live births during the same period, expressed per 100,000 live births. MMR relates maternal deaths to the risk event, namely pregnancies. However, births are used as the indicator of pregnancies, as good data on pregnancies are not usually available, since many pregnancies, particularly those that terminate early, may never be reported. Pregnancy-related mortality ratio (PRMR) is also presented in this chapter; the PRMR differs from the MMR in that instead of maternal deaths it includes in the numerator any death occurring during pregnancy or within 42 days of end of pregnancy.

The maternal mortality rate (MMRate) is also used as a measure of maternal mortality, expressed relative to the number of women of reproductive age. The MMRate is the ratio of the number of maternal deaths in a period (often one year) to the person-years lived by women ages 15–49 in the same period (approximated for a one-year period as the mid-year population), expressed per 1,000 women of reproductive age. Unlike the MMR, the MMRate does not express the risk of death per risky event—i.e., pregnancies and child births—but per person potentially exposed to the risk. Consequently, the MMRate is influenced by both a change in the risk associated with pregnancies and deliveries, but also by a change in fertility as it changes the probability of the risky events. A change in fertility will not, by itself, affect the MMR.

3.1.1. Measuring Maternal Mortality

Despite their major societal impacts, maternal deaths are relatively infrequent events. They are also difficult events to record. Even in countries with complete recording of births and deaths, maternal deaths are generally underreported because of incorrect classification of cause (Deneux-Tharoux et al., 2005; Atrash et al., 1995). In countries lacking complete vital registration systems, the problems are even greater: not only may maternal deaths be misclassified, they may simply be omitted. Various strategies have been developed for trying to estimate maternal mortality in settings where death registration is seriously incomplete. The most widely used method is the “sisterhood” approach, where respondents to a sample survey are asked about the survival or otherwise of their sisters. For sisters who have died, a further set of questions is added to identify those deaths that occurred while the woman was pregnant, during delivery, or in a defined postpartum period (Rutenberg and Sullivan, 1991). A second strategy uses a population census or large household survey to collect information about deaths by age and sex in each household in a defined reference period, and asks additional questions for deaths of women of reproductive age to determine whether they died while they were pregnant or during some defined postpartum period (Stanton et al., 2001). The fact that maternal deaths are relatively infrequent has important implications for measurement. Sample surveys need large samples to obtain reasonably precise estimates. The sisterhood method can enhance sample size in a high fertility population because each respondent will report on multiple sisters. However, once fertility drops below about four children per woman, this advantage erodes and may be a major disadvantage in a population with an average of two or fewer children per mother. Both the direct sisterhood approach and the deaths in the household approach can attempt to improve precision by increasing the length of the reference period for which estimates are calculated. For the direct sisterhood approach, the length of the reference period for which an estimate is calculated can be determined during the tabulation stage. Experience from

the Demographic and Health Surveys (DHS) has shown that samples of about 10,000 households will provide direct sisterhood estimates of maternal mortality for a reference period covering the seven years before the survey with 95 percent confidence intervals (95% CI) on the order of ± 25 percent. For the household deaths approach, the basic data on deaths are collected for a specified reference period; estimates can be calculated for shorter but not longer periods during the tabulation stage. Accurate recall of household deaths also becomes a concern with increases in the reference period for which information on deaths is collected.

Both the sisterhood and the household deaths approaches to measuring maternal mortality generally define a “maternal” death in terms of time of death relative to pregnancy. Both methods thus measure pregnancy-related mortality rather than maternal mortality. Although these deaths will include some deaths that are unrelated to the pregnancy (and thus should not be considered maternal deaths), it has been argued that the time of death questions tend to omit some maternal deaths in early pregnancy, simply because the pregnancy was not known to the respondent, and that the overreporting of maternal deaths resulting from the inclusion of incidental deaths tends to cancel out the exclusion of maternal deaths for which the pregnancy was not declared (Hill et al., 2001).

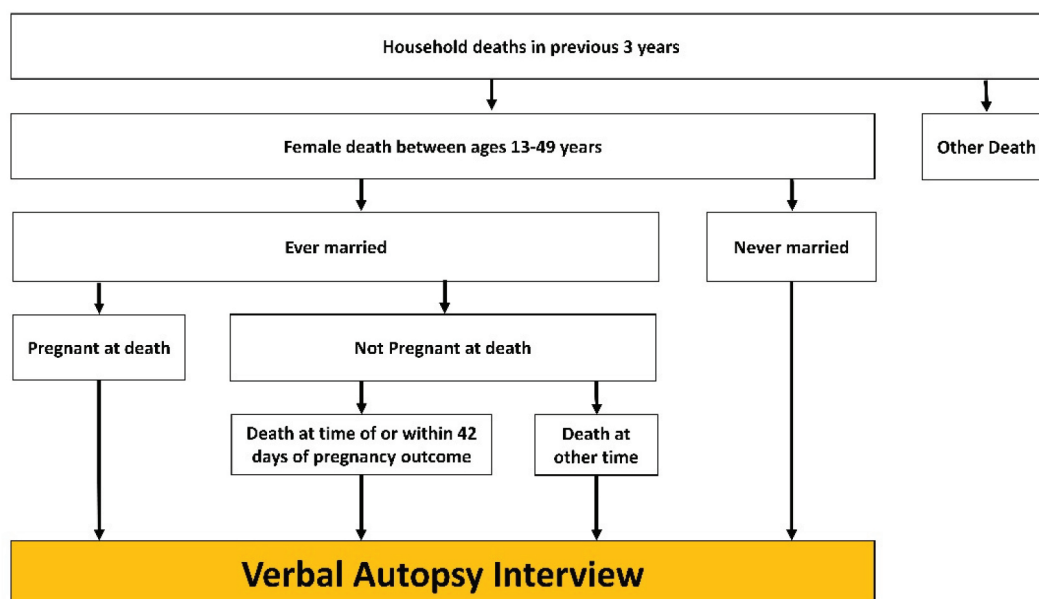
A measure of maternal mortality can be obtained by combining the household death approach with a verbal autopsy, which attempts to identify the true cause of each death by asking about the symptoms that accompanied the final illness. Methods for conducting a verbal autopsy vary, but a common approach is to interview a household member knowledgeable about the deceased person and the events preceding death. The interview starts with an open-ended question asking the respondent to describe in his or her own words the circumstances surrounding the death, it then continues with questions about the presence or absence of specific symptoms. Evaluations of verbal autopsies indicate that their results, particularly for many chronic diseases of adulthood, are neither highly specific nor highly sensitive (e.g., for maternal mortality [Sloan et al., 2001]); results therefore need to be treated with caution. It is also possible that a verbal autopsy may misclassify some maternal deaths because the interview respondent did not know the deceased woman was pregnant.

3.1.2. Maternal Mortality Measures in the BMMS

The BMMS 2016 used the household deaths approach to measure maternal mortality, and it also used both a time of death and a verbal autopsy approach to identify pregnancy-related or maternal deaths among deaths of women of reproductive age reported by households. The household questionnaire included a section concerning deaths of usual residents of the household since October 2012. If any death was reported, further details regarding the name, sex, age at death, and month and year of death were collected. If the deceased person was a woman age 13–49 at the time of death, four questions were asked as to whether the woman died while she was pregnant, giving birth, within 42 days, or after 42 days to one year of the end of the pregnancy (Figure 3.1A). In addition, a verbal autopsy was conducted subsequently with the household member who knew the most about the deceased person for all deaths of women ages 13 to 49 to try to ascertain the cause of death, including whether it was maternal or not. The BMMS 2016 verbal autopsy questionnaire was adapted from the BMMS 2010 verbal autopsy questionnaire and from the WHO verbal autopsy questionnaire 2014 (WHO, 2015). Cause of death was determined from the verbal autopsy by physician review; two physicians independently reviewed each case, but if they could not agree the case was reviewed by a third physician (Figure 3.1B). An expert committee of obstetricians was also involved to assign a specific cause of maternal death when the three physicians agreed that the death was maternal but could not assign a specific cause (10 deaths). The remaining 46 non-maternal deaths for which consensus could not be reached were categorized as unclassified. The International Classification of Diseases Revision 10 was used to assign all causes of death. Though verbal autopsy interviews were conducted for all deaths reported among women ages 13–49 years at the time of death, the analysis presented here is limited to women ages 15–49 years.

In addition to providing information about maternal mortality, both sets of questions provide information about overall mortality, at all ages in the case of household deaths of usual residents. The verbal autopsy also provides information on non-maternal causes of death for women of reproductive age. Overall adult female mortality is examined in Section 3.3.

Figure 3.1A. Verbal autopsy determinations



3.2. Maternal Mortality in Bangladesh: Levels and Causes

The BMMS 2016 provides two different estimates of mortality risks associated with pregnancy:

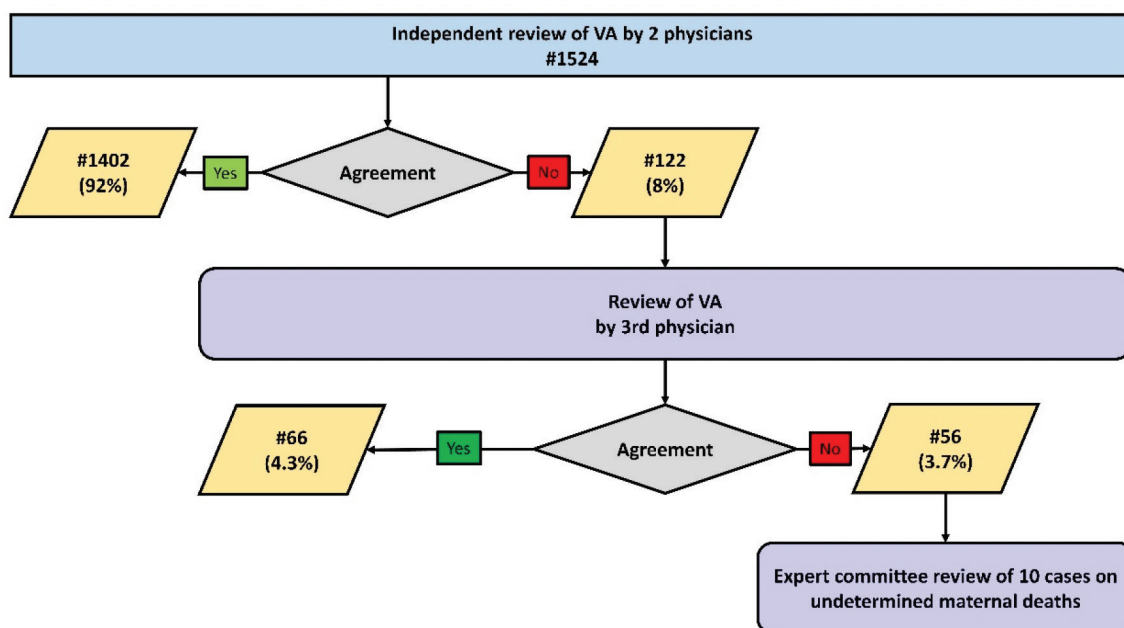
- Pregnancy-related mortality obtained from household deaths; and
- Maternal mortality obtained from household deaths combined with the verbal autopsy.

It should be noted that all the estimates presented here are from samples, and therefore have confidence intervals around them that are large for those based on small subcategories of respondents. Caution should therefore be exercised in interpreting differences between groups.

3.2.1. Estimates from Household Deaths

Household deaths were recorded for the period from October 2012 to the time of the survey, but the results presented here are based on deaths in the 36 months before the interview date, excluding the month of interview. The mortality estimates presented here thus refer approximately to the period from November 2013 to October 2016, as the interviews were conducted during August 2016 to February 2017. For a discussion of the quality of data on household deaths, see Appendix B.

Figure 3.1B. Cause of death review process



Pregnancy-Related Mortality

Table 3.1 shows pregnancy-related deaths in the period 2013–2016 by the age of the deceased woman and by the time of death relative to the pregnancy. Deaths are weighted, which explains the decimal numbers. This table also shows exposure time: the number of woman-years of exposure to risk in each age group. Mortality rates are calculated by dividing the number of events (deaths) in a particular category by the exposure time in that category. A rate can then be expressed relative to births by dividing by the fertility rate specific for the category. The total (weighted) number of pregnancy-related deaths is 168. The overall PRMR is 206 per 100,000 live births (95% CI: 169–244). This compares to the PRMR of 201 in the 2010 survey (95% CI 160–245). Medium-variant UN Population Division estimates indicate that there were 3.06 million births in Bangladesh in 2016, which would mean that there were about 6,298 pregnancy-related deaths in that year (United Nations, 2017). The PRMR increases with age, particularly among women age 30 years or more, with the highest PRMR among women ages 45–49 (2,031 per 100,000 live births). Though the pattern is similar to that seen in 2010, the PRMR among the youngest women (15–19 years) is higher in BMMS 2016 (144 deaths per 100,000 live births) than in BMMS 2010 (75 deaths per 100,000 live births). The lowest PRMR is among women ages 20–24 years (127 per 100,000 live births). Although the pregnancy-related mortality ratio (deaths per 100,000 live births) has remained unchanged, the pregnancy-related mortality rate (deaths per 1,000 years of exposure) has declined by 11 percent between BMMS 2010 and BMMS 2016.

Table 3.1. Pregnancy-related mortality rates and ratios for the three years preceding the survey by maternal age, Bangladesh 2016.

Background characteristics	Mortality						Age-specific fertility and age-specific PRMR	
	Exposure time	Deaths during pregnancy	Deaths during delivery	Deaths post-partum	Total pregnancy-related deaths ¹	Pregnancy-related mortality rate ²	ASFR ³	ASPRMR ⁴
Maternal age								
15–19	221,051.0	12.6	1.6	18.8	33.1	0.150	0.104	143.6
20–24	190,825.6	7.0	3.7	24.8	35.5	0.186	0.147	126.7
25–29	176,606.9	16.1	3.6	17.0	36.7	0.208	0.109	191.5
30–34	150,600.9	12.1	5.2	16.5	33.8	0.224	0.058	383.6
35–39	123,488.5	11.2	1.5	11.8	24.5	0.199	0.022	919.5
40–44	110,372.5	2.2	0.0	1.0	3.1	0.029	0.005	607.0
45–49	86,298.3	1.5	0.0	0.0	1.5	0.017	0.001	2,031.2
General								
Total	1,059,243.7	62.8	15.6	89.9	168.3	0.157	2.227	-
GFR ⁵	-	-	-	-	-	-	0.076	-
PRMR ⁶	-	-	-	-	-	-	-	205.67

Note: Information obtained from the household questionnaire, considering *de jure* female household population in exposure, and deaths from listing with usual members who died in the three years before the survey, and assumes the same fertility rates as *de facto* interviewed women.

¹ Deaths are weighted, hence, the number of deaths is not a round number.

² Deaths per 1,000, total pregnancy-related mortality rate standardized on current age distribution.

³ Births per woman.

⁴ Deaths per 100,000 live births.

⁵ GFR = general fertility rate (15–49).

⁶ PRMR = pregnancy-related mortality ratio.

⁷ 95% confidence interval: 169 to 244.

Maternal Mortality

The verbal autopsies administered for all households where the death of a woman age 15–49 was reported provide a basis for identifying maternal, as opposed to pregnancy-related, deaths. Table 3.2 shows the numbers of deaths judged to be maternal on the basis of the verbal autopsy, by the same time of death relative to pregnancy categories used in Table 3.1. The total (weighted) number of maternal deaths is 160, about five percent lower than the number of pregnancy-related deaths in Table 3.1. The overall MMR is 196 per 100,000 live births (95 percent CI: 159–234) in BMMS 2016. This is similar to the BMMS 2010 estimate of 194 per 100,000 live births (95 percent CI: 153–236). The lowest MMR is among women ages 15–19 years (134 per 100,000 live births) and the highest MMR is among women ages 45–49 (2,031 per 100,000 live births). There is no evidence of change in MMR (per 100,000 live births) between the 2010 and 2016 surveys. However, the maternal mortality rate (deaths per 1,000 years of exposure) has declined by 12.5 percent between BMMS 2010 and BMMS 2016.

Table 3.2. Maternal mortality rates and ratios for the three years preceding the survey by maternal age, Bangladesh 2016.

Background characteristics	Exposure time	Mortality					Age-specific fertility and age-specific MMR	
		Deaths during pregnancy	Deaths during delivery	Deaths post-partum	Total maternal deaths ¹	Maternal mortality rate ²	ASFR ³	ASMMR ⁴
Maternal age								
15-19	221,051.0	4.74	4.57	21.60	30.9	0.140	0.104	134.2
20-24	190,825.6	6.58	0.20	31.63	38.4	0.201	0.147	136.9
25-29	176,606.9	9.43	3.88	20.56	33.9	0.192	0.109	176.7
30-34	150,600.9	9.99	1.39	22.40	33.8	0.224	0.058	383.6
35-39	123,488.5	8.03	0.00	12.02	20.0	0.162	0.022	751.4
40-44	110,372.5	0.00	0.68	0.99	1.7	0.015	0.005	321.4
45-49	86,298.3	0.28	0.00	1.22	1.5	0.017	0.001	2,031.2
General								
Total	1,059,243.7	39.04	10.72	110.43	160.2	0.149	2.227	-
GFR ⁵	-	-	-	-	-	-	0.076	-
MMR ⁶	-	-	-	-	-	-	-	195.9 ⁷

Note: Information obtained from the household questionnaire, considering *de jure* female household population in exposure, and deaths from listing with usual members who died in the three years before the survey, and assumes the same fertility rates as *de facto* interviewed women.

¹ Deaths are weighted, hence, the number of deaths is not a round number.

² Deaths per 1,000, total maternal mortality rate standardized on current age distribution.

³ Births per woman.

⁴ Deaths per 100,000 live births.

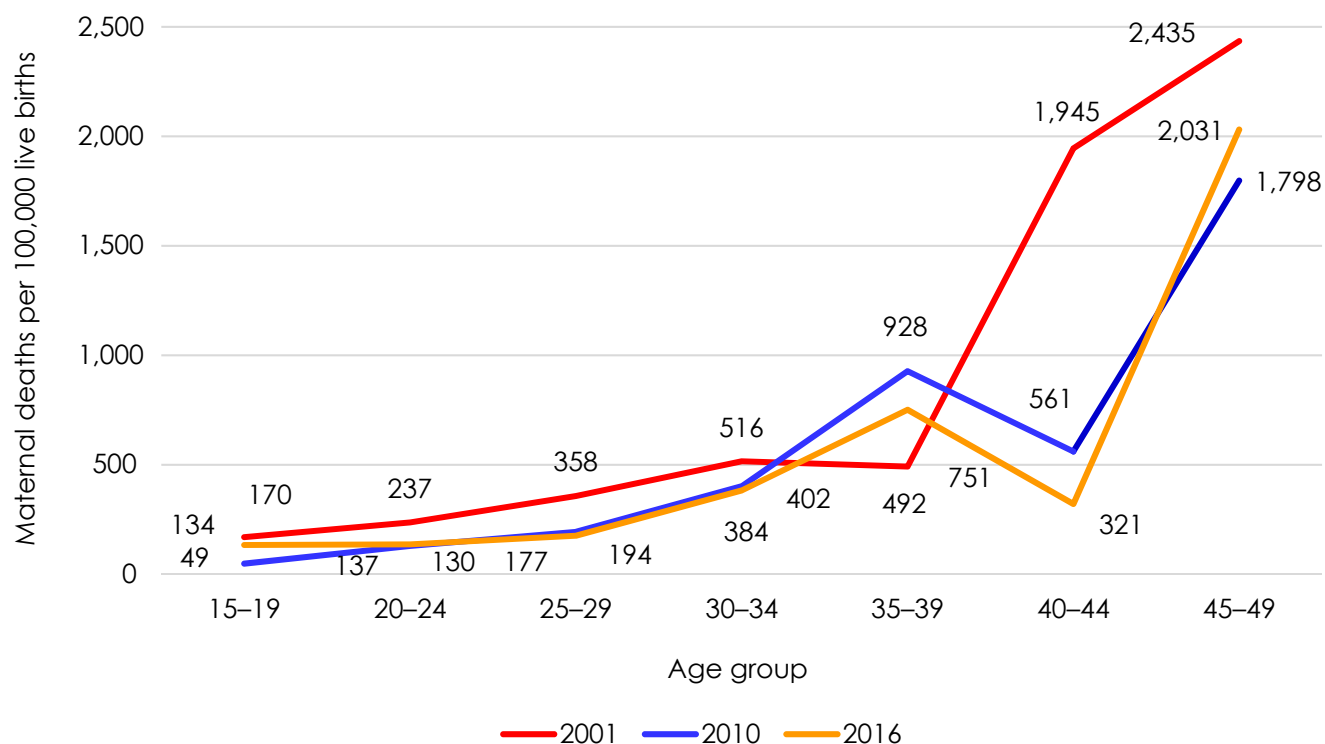
⁵ GFR = general fertility rate (15–49).

⁶ MMR = maternal mortality ratio.

⁷ 95 percent confidence interval: 159 to 234.

Figure 3.2 compares age-specific MMR between all three BMMS surveys (2001, 2010, and 2016). The MMR rises steeply with age, and the pattern is consistent in all three surveys. At almost all ages, the MMR in BMMS 2010 and 2016 are similar, and lower than in BMMS 2001.

Figure 3.2. Comparing age-specific maternal mortality ratios between BMMS 2001, 2010, and 2016 surveys



Maternal Mortality Ratios by Background Characteristics

Table 3.3 shows exposure time, maternal deaths, and MMRs, overall and by broad obstetric causes of death, based on household deaths and verbal autopsy assigned cause of death, by selected background characteristics: residence, division, education, and socioeconomic status of the household. These estimates need to be interpreted with some caution because of limited exposure time and a small number of events. Overall MMR and MMR due to direct obstetric deaths were lower in urban areas compared to rural areas, but the difference in MMR due to indirect obstetric deaths was smaller. By division, Rajshahi had the highest risk, whereas Khulna had the lowest, and the difference was 1.9 fold. Sylhet, Barishal, Mymensingh, and Rajshahi divisions had much higher rates of indirect obstetric deaths compared to the other divisions. No clear linear relation was observed between MMR and maternal education, though MMR declined with higher wealth quintiles. These patterns also apply for direct obstetric deaths, but the patterns for indirect obstetric deaths were less clear.

Table 3.3. Maternal mortality rates and ratios for the three years preceding the survey according to background characteristics, Bangladesh 2016

Background characteristics	Maternal mortality rates and ratios				Final cause of death			
	Maternal deaths	Exposure	MMrate per 1,000 women	GFR	MMR per 100,000 live births	Direct obstetric death	Indirect obstetric death	Undetermined maternal death
Urban/rural								
Urban	29.687	307,791.638	0.095	0.069	137.672	80.033	38.165	19.473
Rural	130.501	751,452.102	0.171	0.079	216.662	163.121	44.390	9.151
Division								
Barishal	10.042	57,598.130	0.169	0.078	216.499	150.048	66.450	0.000
Chattogram	33.751	204,007.722	0.165	0.092	179.475	118.882	40.426	20.167
Dhaka	35.886	287,015.304	0.123	0.071	172.899	115.584	38.937	18.378
Khulna	10.477	117,259.133	0.090	0.063	144.058	133.185	10.873	0.000
Mymensingh	13.202	78,534.677	0.166	0.085	195.047	135.987	59.061	0.000
Rajshahi	24.261	131,452.200	0.179	0.065	277.082	220.147	56.935	0.000
Rangpur	18.917	117,641.948	0.157	0.070	222.735	189.089	18.967	14.679
Sylhet	13.651	65,734.626	0.198	0.093	213.882	124.991	75.458	13.433
Educational level								
No education	25.660	207,924.474	0.111	0.031	351.991	277.039	43.284	31.668
Incomplete primary	24.637	179,848.103	0.133	0.068	196.254	112.399	77.026	6.830
Complete primary	35.488	141,695.482	0.245	0.084	291.427	241.944	39.244	10.238
Secondary or higher	74.403	529,382.283	0.142	0.093	152.954	106.368	35.694	10.892
Missing	0.000	393.398	0.000	0.000	-	-	-	-
Wealth index quintile								
Lowest	44.369	194,128.894	0.224	0.085	264.539	203.827	48.168	12.545
Second	39.308	202,380.184	0.191	0.081	236.087	173.669	62.418	0.000
Middle	33.637	212,752.004	0.157	0.074	210.719	169.168	29.498	12.053
Fourth	22.270	222,616.082	0.100	0.074	134.481	90.698	20.882	22.901
Highest	20.603	227,366.576	0.090	0.069	130.983	66.017	52.948	12.019
Total								
Total	160.188	1,059,243.740	0.149	0.076	195.862	141.235	42.754	11.874

The verbal autopsy questionnaire recorded the number of previous live births that the deceased woman had, making it possible to classify maternal deaths by the woman's parity prior to the final pregnancy and estimate parity-specific maternal mortality risks. Table 3.4 shows the parity-specific births and maternal deaths in the three years before the survey and the resulting MMRs by parity. The MMRs by parity were calculated in a different way from those elsewhere in this report. Elsewhere, MMRs were calculated from maternal deaths and exposure time and converted into MMRs using the general fertility rate (GFR). For the calculations by parity, the MMR was calculated directly from maternal deaths at a given parity divided by the births of that parity, estimated after adjusting observed births for those not reported by women who died. Small numbers of deaths resulted in a rather erratic pattern, but it is clear that the safest births were those at parities 1 and 2, while those at parities 0, 3 and 4 had greater risks.

Table 3.4. Maternal mortality ratios, per 100,000 live births, for the three years before the survey by prior parity, Bangladesh 2016

Background characteristics	Maternal mortality				
	Births	GFR	Total estimated live births	Maternal deaths	MMR
Previous parity					
0	32,185.211	0.033	32,248.249	69.241	214.711
1	26,606.162	0.027	26,658.273	38.872	145.815
2	13,842.923	0.014	13,870.036	24.328	175.398
3	5,653.577	0.006	5,664.651	12.140	214.315
4	2,246.018	0.002	2,250.417	10.750	477.688
5+	1,680.688	0.002	1,683.980	1.308	77.660
General					
Total	82,214.579	0.085	82,375.605	160.188	194.460

Note: Information from the household, individual and verbal autopsy questionnaire; considers births of de facto females only; considers exposure in birth history for de facto females only; considers de jure female household population in total exposure; gets maternal deaths from verbal autopsy questionnaire; assumes same fertility rates as de facto interviewed women.

Maternal Deaths by Cause of Death

Interpreting the information recorded in verbal autopsies, which is a fairly blunt instrument for identifying detailed causes of death, is something of an art form. Of the 160 deaths identified as maternal, the cause of death could not be specified for 13 (eight percent). Ante and post-partum hemorrhage (31 percent) and eclampsia and preeclampsia (24 percent) were the most common causes of maternal deaths (Figure 3.3), followed by abortion (seven percent) and obstructed or prolonged labor (three percent). Seven percent of deaths were related to other direct causes (e.g., puerperal infections and sepsis, surgical/C-section complications, etc.). A large proportion of maternal deaths were due to indirect causes (20 percent) (e.g., cerebrovascular and cardiovascular complications, liver diseases, etc.).

Table 3.5 shows the cause-specific maternal mortality rates by age group. Ante and postpartum hemorrhage was an important cause of death among women ages 20–39 years, particularly among women 30–34 years old. Eclampsia/preeclampsia was an important cause of death among women younger than 40 years. Obstructed or prolonged labor was most common among the youngest women (15–19 years). Abortion-related deaths peaked among women 30–34 years old. Indirect obstetric causes were most common among women ages 25–39 years.

Figure 3.3. Distribution of causes of maternal deaths among women of reproductive age (15–49 years) in the three years preceding the survey, Bangladesh 2016

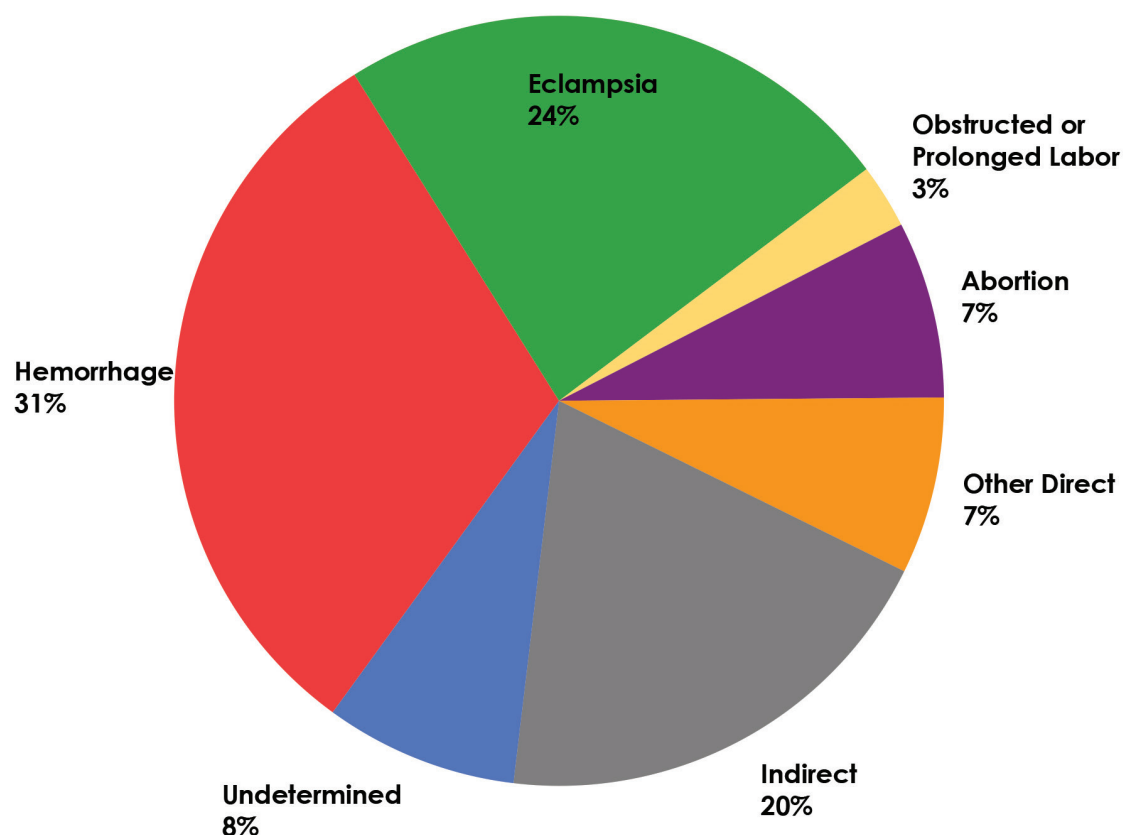


Table 3.5. Cause-specific maternal death rates, per 1,000 women, for the three years before the survey by age, Bangladesh 2016

Background characteristics	Exposure	Direct and indirect cause of maternal deaths							Total
		Hemor-rhage	Eclamp-sia	Obstructed/ prolonged labour	Abortion-related death	Other direct	Indirect obstetric death	Undeter-mined maternal death	
Maternal age									
15–19	221,051	0.023	0.049	0.011	0.000	0.020	0.024	0.013	0.140
20–24	190,826	0.060	0.056	0.000	0.019	0.018	0.033	0.015	0.201
25–29	176,607	0.057	0.025	0.005	0.011	0.024	0.045	0.025	0.192
30–34	150,601	0.086	0.047	0.009	0.027	0.000	0.035	0.019	0.224
35–39	123,488	0.062	0.042	0.000	0.007	0.000	0.051	0.000	0.162
40–44	110,373	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.015
45–49	86,298	0.000	0.000	0.000	0.014	0.000	0.003	0.000	0.017
Total									
Total	1,059,244	0.046	0.035	0.004	0.011	0.011	0.029	0.012	0.149

Note: Information from the household and verbal autopsy; considers de jure female household population in exposure; gets cause-specific deaths from verbal autopsy questionnaire.

Figure 3.4 compares the proportionate contribution of different causes of maternal deaths between the BMMS 2010 and 2016 surveys. The proportionate distribution of hemorrhage as a cause of maternal death remained the same (31 percent) between BMMS 2010 and 2016. There was a slight increase for eclampsia, as it accounted for 20 percent of all maternal deaths in 2010 and 24 percent in 2016. Proportionate distribution of indirect causes of maternal deaths decreased substantially from 35 percent in 2010 to 20 percent in 2016. The contribution of abortion-related maternal mortality increased from one percent in 2010 to seven percent in 2016.

Figure 3.4. Percentage distribution of causes of maternal deaths: Comparison between BMMS 2010 and BMMS 2016

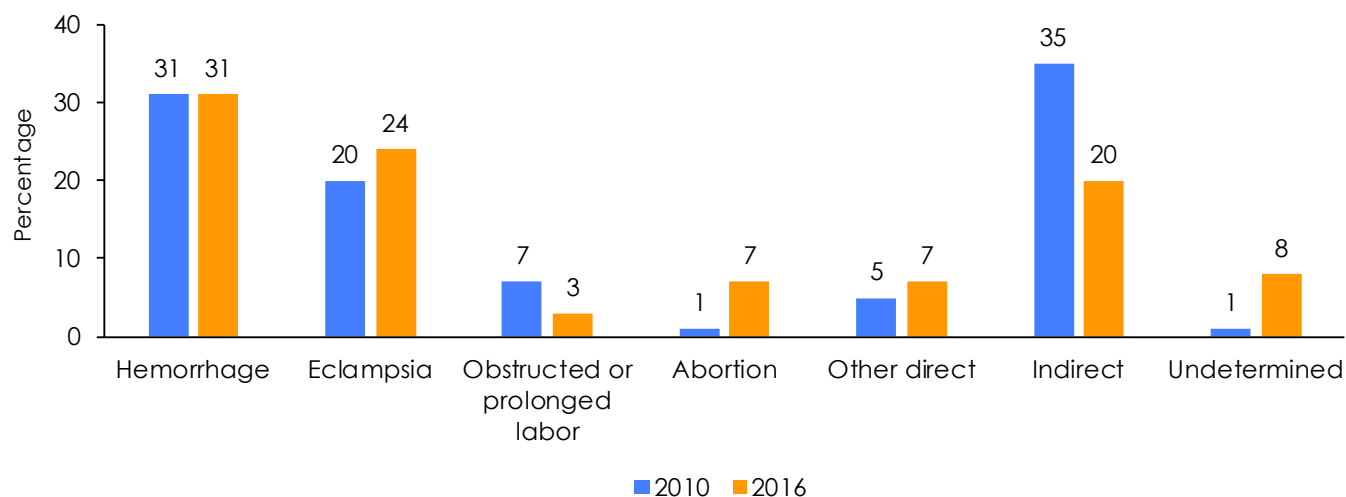
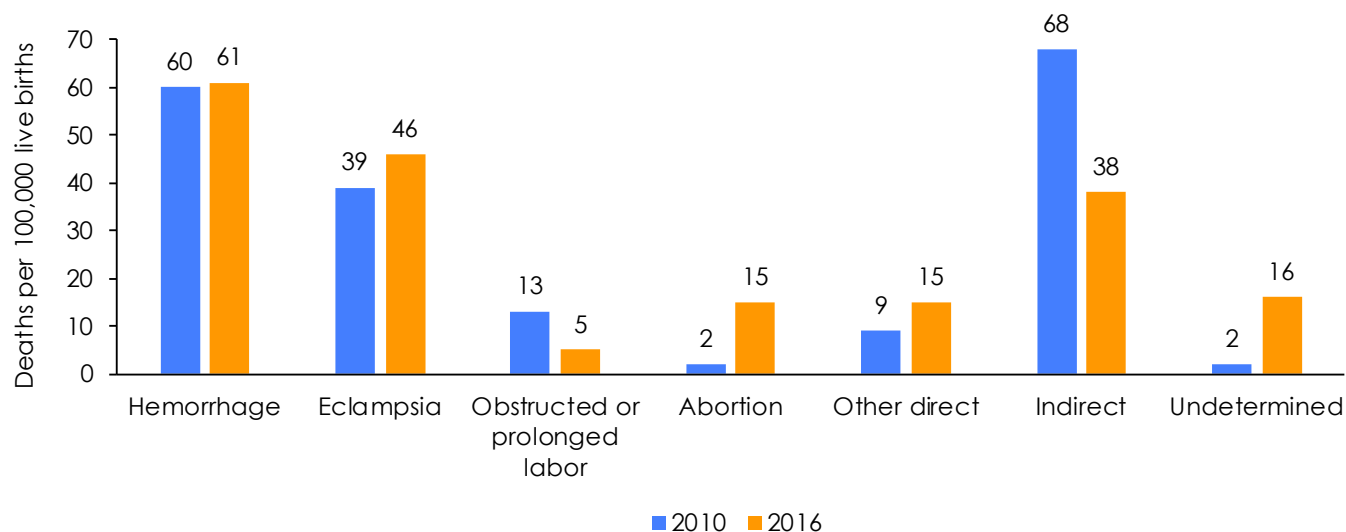


Figure 3.5 compares the cause-specific maternal mortality ratios of different causes of maternal deaths between the BMMS 2010 and 2016 surveys. The cause-specific mortality ratios specific to hemorrhage did not change between the two periods. The cause-specific mortality ratio due to eclampsia increased from 39 per 100,000 live births in BMMS 2010 to 46 per 100,000 live births in BMMS 2016. The cause-specific mortality ratio for abortion increased from two to 15 per 100,000 live births. The cause-specific mortality ratio due to indirect causes decreased from 68 per 100,000 live births in BMMS 2010 to 38 per 100,000 live births in BMMS 2016.

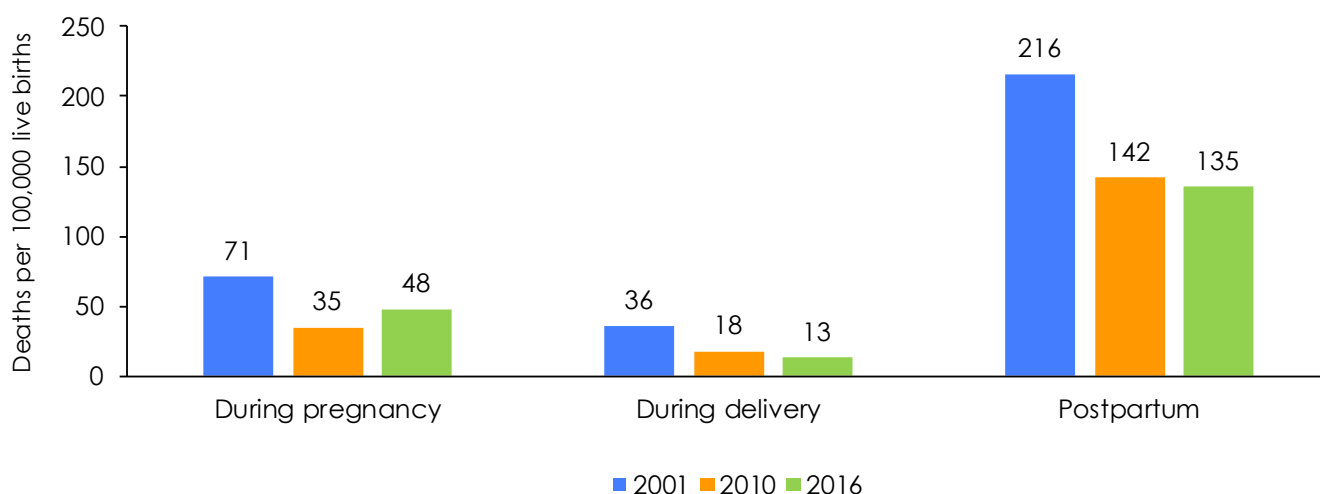
Figure 3.5. Cause-specific maternal mortality ratios: Comparison between BMMS 2010 and BMMS 2016



3.2.2. Distribution of Maternal Deaths by Timing Relative to Delivery

The MMR was the highest during the postpartum period (Figure 3.6). This pattern was consistent in BMMS 2001, BMMS 2010, and BMMS 2016. The MMR during delivery and postpartum periods was slightly lower in BMMS 2016 compared to BMMS 2010. In 2016, about 24 percent of the maternal deaths identified by the verbal autopsy questionnaire occurred during pregnancy, and more than two-thirds (69 percent) occurred postpartum. Only seven percent of deaths occurred during delivery.

Figure 3.6. Maternal mortality ratios by timing of death—during pregnancy, during delivery, and postpartum: Comparison between BMMS 2001, 2010, and 2016

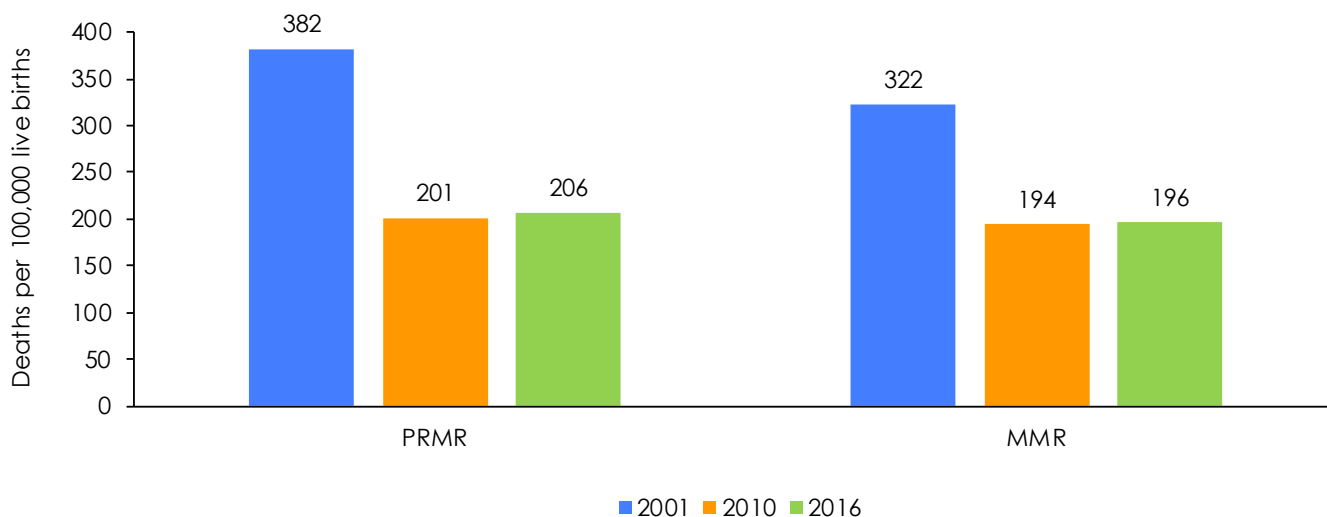


For deaths reported in the household questionnaire, it is possible to compare the classification of deaths as pregnancy-related using time-of-death questions in the household questionnaire with the classification as maternal from the verbal autopsy. Overall, about five percent of the pregnancy-related deaths were not classified as maternal by the verbal autopsy, but 38 percent of pregnancy-related deaths that were reported as occurring during pregnancy were not reported as maternal deaths that occurred during pregnancy (from Tables 3.1 and 3.2). The difference probably reflects the hierarchical way in which the questions about timing of death relative to pregnancy were asked in the household questionnaire, starting with pregnancy, then delivery, and finally after delivery. Support for this conclusion comes from the fact that 17 and eight percent, respectively, of pregnancy-related deaths reportedly occurring during pregnancy were defined by the verbal autopsy as maternal deaths during delivery or after delivery. This shift is one reason why the number of maternal deaths was higher than the number of pregnancy-related deaths in the postpartum period; the other reason is that three deaths (unweighted) occurred more than 42 days after delivery, past the cutoff for pregnancy-related deaths classified as maternal by the verbal autopsy. For pregnancy-related deaths reportedly occurring after delivery, 97 percent were classified as maternal deaths occurring after delivery.

3.2.3. Summary of Estimates of Pregnancy-Related and Maternal Mortality, 2001 to 2016

Figure 3.7 shows estimates of pregnancy-related and maternal mortality by time period from 2001 to 2016. It demonstrates the stagnation of both PRMR and MMR, between BMMS 2010 and BMMS 2016, after significant declines from BMMS 2001.

Figure 3.7. Pregnancy-related maternal mortality ratio (PRMR) and maternal mortality ratio: Comparison between BMMS 2001, 2010, and 2016



3.3. Overall Adult Mortality

3.3.1. Adult Mortality Estimates from Household Deaths

The mortality estimates given here are based on deaths recorded in the 36 months prior to interview and refer approximately to the period from November 2013 to October 2016.

Mortality Levels and Patterns

Table 3.6 shows the deaths, exposure time, and mortality rates from the BMMS for the three years before the survey. The Bangladesh 2016 rates are graphed (on a log scale) in Figure 3.8. The rates show the expected J-shaped pattern with high risk of death in early childhood, dropping to a minimum at ages 10–14, and then rising steadily into old age. Male mortality was generally slightly higher than female mortality, and the differences were most pronounced between ages 10 and 55. The table also shows two summary measures of adult mortality: the probability of dying between ages 15 and 50 (35q15) and the probability of dying between ages 15 and 60 (45q15). Females had an advantage on both measurements, particularly on the second. For both sexes, however, the mortality risks were surprisingly low, corresponding approximately to mortality risks in England and Wales in the early 1960s for both males and females.

Table 3.6. Mortality rates by sex

Direct estimates of mortality rates (per person) from the BMMS household listing of usual members who died in the three years preceding the survey according to sex, Bangladesh 2016.

Background characteristics	Sex					
	Male			Female		
	Deaths	Exposure	Mortality rates	Deaths	Exposure	Mortality rates
Age group						
<1	1,822.2	36,951.9	0.04931	1,415.9	36,118.3	0.03920
1–4	369.2	166,264.6	0.00222	278.1	161,885.2	0.00172
5–9	167.7	220,122.6	0.00076	132.8	213,423.1	0.00062
10–14	148.8	216,800.3	0.00069	96.3	217,082.2	0.00044
15–19	217.9	176,158.4	0.00124	152.8	221,051.0	0.00069
20–24	164.8	145,167.3	0.00114	123.9	190,825.6	0.00065
25–29	236.8	158,047.3	0.00150	150.1	176,606.9	0.00085
30–34	192.1	137,993.0	0.00139	154.7	150,600.9	0.00103
35–39	227.2	125,500.8	0.00181	172.4	123,488.5	0.00140
40–44	322.2	99,137.9	0.00325	190.2	110,372.5	0.00172
45–49	478.4	93,170.5	0.00513	306.0	86,298.3	0.00355
50–54	577.6	68,936.7	0.00838	161.0	54,780.0	0.00294
55–59	615.5	70,054.8	0.00879	716.2	82,444.7	0.00869
60–64	1,280.6	53,211.2	0.02407	1,207.5	50,224.4	0.02404
65–69	1,299.6	48,611.8	0.02673	1,070.8	34,993.2	0.03060
70–74	2,000.1	26,187.2	0.07638	1,517.6	16,899.6	0.08980
75–79	1,115.2	21,693.2	0.05141	723.4	18,163.4	0.03983
80+	4,209.5	15,305.3	0.27504	4,365.8	15,643.5	0.27908
Total						
Total	15,445.4	1,879,315.0	0.00822	12,935.8	1,960,901.4	0.00660
Probability of dying						
35q15	-	-	0.07440	-	-	0.04823
45q15	-	-	0.15060	-	-	0.10202

Note: Deaths from the household listing with usual members who died in the three years before the survey (excluding month of interview); exposure from usual members in the household and applicable exposure of members who died; deaths with missing age at death have been redistributed proportionately; missing age in the household schedule (assumed exposure) redistributed.

Figure 3.8. Age-specific mortality rates in the three years preceding the survey by sex, Bangladesh 2016

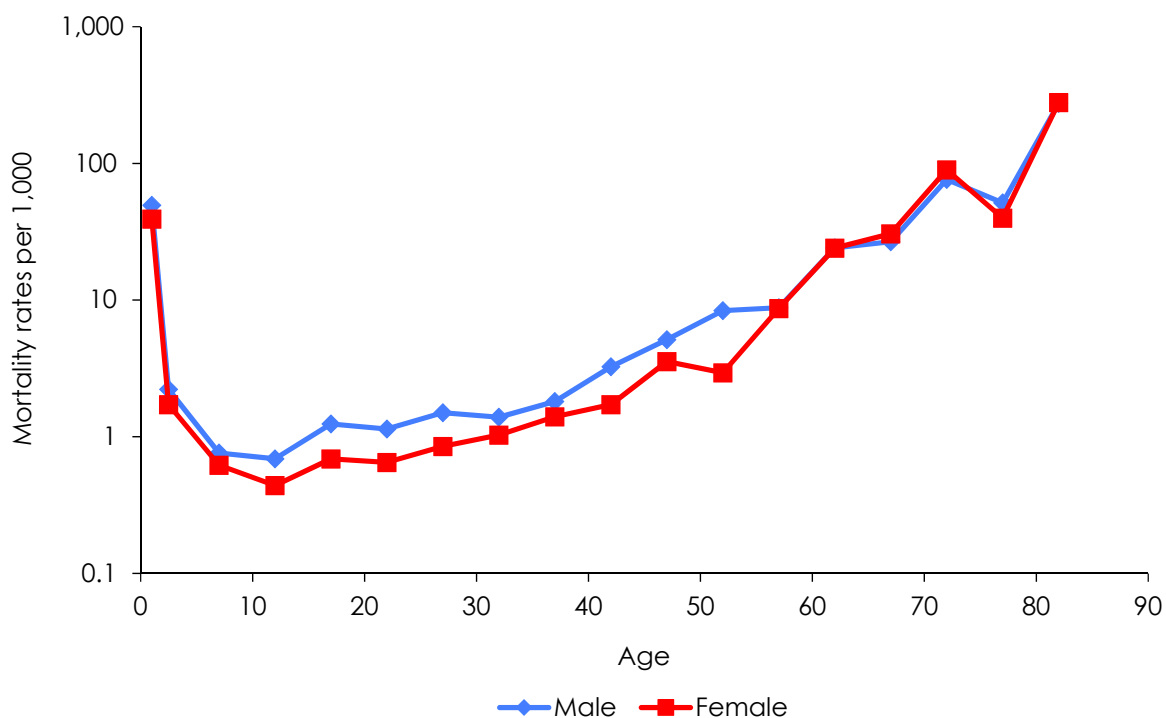


Figure 3.9 compares the age-specific female mortality rates between the BMMS 2001, 2010, and 2016 surveys. Age-specific female mortality rates have substantially declined in 2016 from the 2001 estimates. However, no notable difference was observed between the 2010 and 2016 estimates at any of the age groups except the ages of 35–39 years where the estimates of BMMS 2016 was lower than that of 2010, and 45–49 years where the estimates of BMMS 2016 was higher than that of 2010.

Figure 3.9. Age-specific (15–49 years) female mortality rates per 100,000, Bangladesh 2016

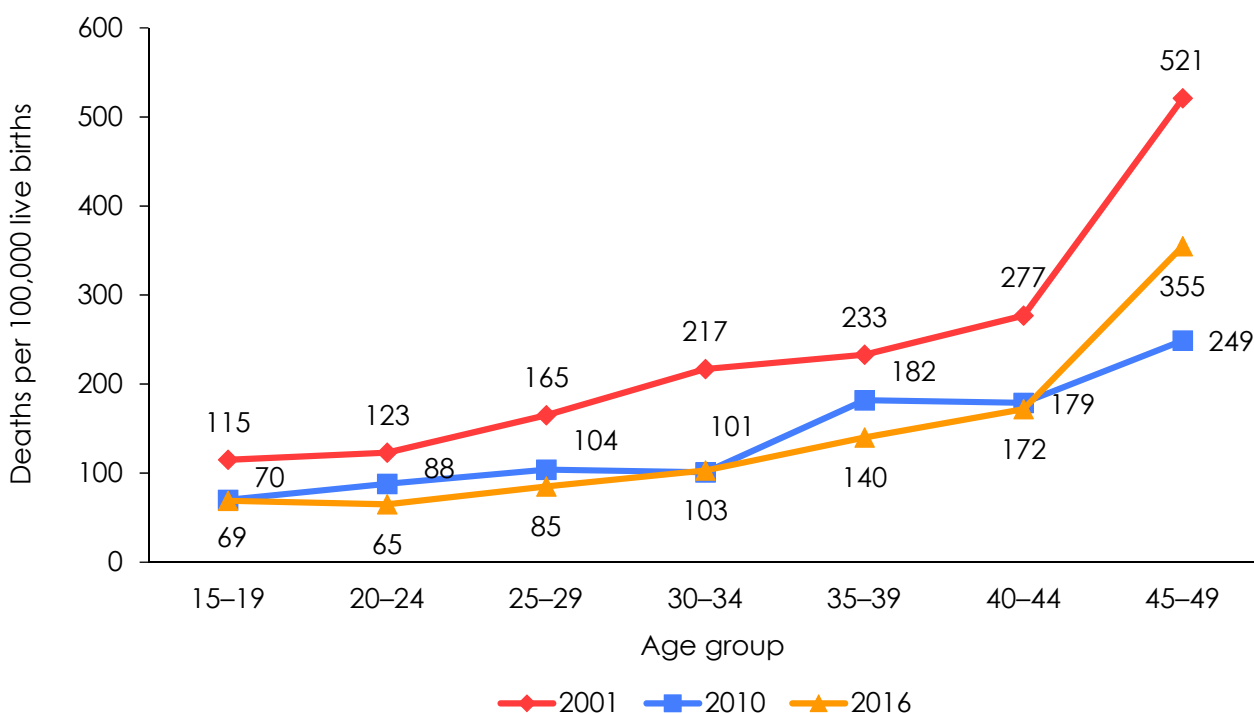


Table 3.7 shows mortality rates by age, sex, residence, and household wealth quintile. The two summary measures of adult mortality are also shown. Rural males had a higher probability of dying below 40 years than their urban counterparts, but the differential was reversed for the probability of dying at ages 40 and above. Rural females had higher mortality risk than urban females up to age 44, but this differential was reversed for the probability of dying at age 45 and above. Mortality risks tended to be highest in the poorest households and lowest in the wealthiest households. The patterns were not entirely uniform, however—perhaps because of the fairly small numbers of deaths. For example, for the indicator 35q15, females in the lowest wealth quintile had the highest risk, while the highest risk for males was in the second richest (richer) quintile; for 45q15, the risk was the highest in the middle quintile among females but the highest in the fourth quintile (richer) among males.

Table 3.7 Mortality rates by background characteristics

Direct estimates of mortality rates (per person) from the BMMS household listing of usual members who died in the three years preceding the survey according to background characteristics, Bangladesh 2016.

Background characteristics	Urban/rural		Wealth index quintile					Total
	Urban Mortality rates	Rural Mortality rates	Poorest Mortality rates	Poorer Mortality rates	Middle Mortality rates	Richer Mortality rates	Richest Mortality rates	
Male								
Age group								
<1	0.04572	0.05062	0.06560	0.05244	0.05411	0.04547	0.02835	0.04931
1–4	0.00181	0.00237	0.00220	0.00281	0.00214	0.00207	0.00184	0.00222
5–9	0.00060	0.00082	0.00093	0.00082	0.00067	0.00069	0.00063	0.00076
10–14	0.00056	0.00073	0.00100	0.00051	0.00065	0.00070	0.00052	0.00069
15–19	0.00123	0.00124	0.00152	0.00142	0.00090	0.00133	0.00102	0.00124
20–24	0.00103	0.00118	0.00148	0.00124	0.00130	0.00078	0.00093	0.00114
25–29	0.00144	0.00153	0.00161	0.00132	0.00115	0.00147	0.00193	0.00150
30–34	0.00135	0.00141	0.00125	0.00133	0.00160	0.00111	0.00164	0.00139
35–39	0.00158	0.00191	0.00184	0.00225	0.00113	0.00224	0.00158	0.00181
40–44	0.00355	0.00312	0.00382	0.00332	0.00271	0.00359	0.00289	0.00325
45–49	0.00567	0.00492	0.00495	0.00497	0.00431	0.00621	0.00525	0.00513
50–54	0.00991	0.00781	0.00754	0.01120	0.00681	0.00878	0.00770	0.00838
55–59	0.01109	0.00801	0.00809	0.00796	0.00692	0.01003	0.01111	0.00879
60–64	0.02731	0.02302	0.02620	0.02554	0.02161	0.02464	0.02269	0.02407
65–69	0.03644	0.02399	0.02075	0.02312	0.02636	0.03133	0.03321	0.02673
70–74	0.10404	0.06891	0.06687	0.07380	0.08078	0.08364	0.07810	0.07638
75–79	0.07229	0.04606	0.03360	0.04664	0.05138	0.05961	0.07160	0.05141
80+	0.36628	0.25326	0.22212	0.25456	0.27535	0.31022	0.32445	0.27504
Total								
Total	0.00811	0.00826	0.00811	0.00792	0.00799	0.00871	0.00838	0.00822
Probability of dying								
35q15	0.07623	0.07369	0.07910	0.07618	0.06343	0.08032	0.07341	0.07440
45q15	0.16842	0.14420	0.14841	0.16067	0.12561	0.16297	0.15668	0.15060

Table 3.7 Mortality rates by background characteristics (continued)

Background characteristics	Urban/rural		Wealth index quintile					Total
	Urban	Rural	Poorest	Poorer	Middle	Richer	Richest	
	Mortality rates	Mortality rates	Mortality rates	Mortality rates	Mortality rates	Mortality rates	Mortality rates	Mortality rates
Female								
Age group								
<1	0.03531	0.04062	0.05250	0.04578	0.03391	0.03648	0.02635	0.03920
1–4	0.00139	0.00184	0.00261	0.00206	0.00123	0.00134	0.00122	0.00172
5–9	0.00046	0.00068	0.00077	0.00079	0.00052	0.00053	0.00042	0.00062
10–14	0.00039	0.00046	0.00058	0.00069	0.00036	0.00021	0.00033	0.00044
15–19	0.00060	0.00073	0.00095	0.00066	0.00081	0.00057	0.00051	0.00069
20–24	0.00065	0.00065	0.00097	0.00077	0.00069	0.00055	0.00038	0.00065
25–29	0.00062	0.00095	0.00122	0.00096	0.00082	0.00074	0.00059	0.00085
30–34	0.00095	0.00106	0.00198	0.00087	0.00075	0.00091	0.00069	0.00103
35–39	0.00118	0.00148	0.00127	0.00168	0.00172	0.00101	0.00129	0.00140
40–44	0.00126	0.00190	0.00232	0.00202	0.00146	0.00177	0.00107	0.00172
45–49	0.00369	0.00350	0.00284	0.00328	0.00455	0.00390	0.00307	0.00355
50–54	0.00347	0.00274	0.00252	0.00290	0.00293	0.00264	0.00357	0.00294
55–59	0.01114	0.00792	0.00733	0.00840	0.00828	0.00945	0.01022	0.00869
60–64	0.03083	0.02203	0.02176	0.02307	0.02276	0.02370	0.02934	0.02404
65–69	0.03870	0.02826	0.02464	0.02886	0.02759	0.03269	0.04068	0.03060
70–74	0.10403	0.08562	0.07444	0.10821	0.08248	0.09532	0.09151	0.08980
75–79	0.05244	0.03641	0.03266	0.03636	0.03878	0.03498	0.05688	0.03983
80+	0.32237	0.26742	0.24345	0.26757	0.27941	0.30025	0.30228	0.27908
Total								
Total	0.00625	0.00673	0.00656	0.00662	0.00655	0.00650	0.00676	0.00660
Probability of dying								
35q15	0.04369	0.05008	0.05613	0.04998	0.05258	0.04615	0.03732	0.04823
45q15	0.11115	0.09944	0.10151	0.10218	0.10424	0.10214	0.10153	0.10202

Note: Deaths from the household listing with usual members who died in the three years before the survey (excluding month of interview); exposure from usual members in the household and applicable exposure of members who died; deaths with missing age at death have been redistributed proportionately; missing age in the household schedule (assumed exposure) redistributed.

Causes of Adult Female Deaths

The verbal autopsy questionnaire was used to collect information about signs and symptoms surrounding every female death between the ages of 15 and 49 (inclusive) as reported by the household. The primary purpose of the verbal autopsy was to identify maternal deaths, but the results also permit the assignment of non-maternal causes. Figure 3.10 and Table 3.8 show mortality rates by cause of death among women ages 15–49 in the three years preceding the survey. The cause categories were maternal, infectious diseases, malignancies/cancers, diseases of the circulatory system, suicide, other violent deaths, miscellaneous causes, and not classified (for deaths in which it was impossible to assign a cause on the basis of the verbal autopsy, or for which the reviewing physicians could not agree on a cause). It was not possible to assign a cause to about seven percent of deaths (Figure 3.10). Cancers (24 percent) and circulatory diseases (23 percent) were the major causes of adult female deaths in Bangladesh, particularly among women age 35 years and above. Around 13 percent of all adult female deaths (15–49 years) were due to maternal causes. Maternal deaths were most common among women ages 20–34 years. Injuries, infections, and suicide each accounted for less than 10 percent of adult female deaths. Suicide was the second most common cause of adult female deaths among women ages 15–19 years after maternal deaths. External causes—injuries—showed no clear age pattern of risk.

Figure 3.10. Distribution of causes of deaths among women of reproductive age (15–49 years) in the three years preceding the survey, Bangladesh 2016

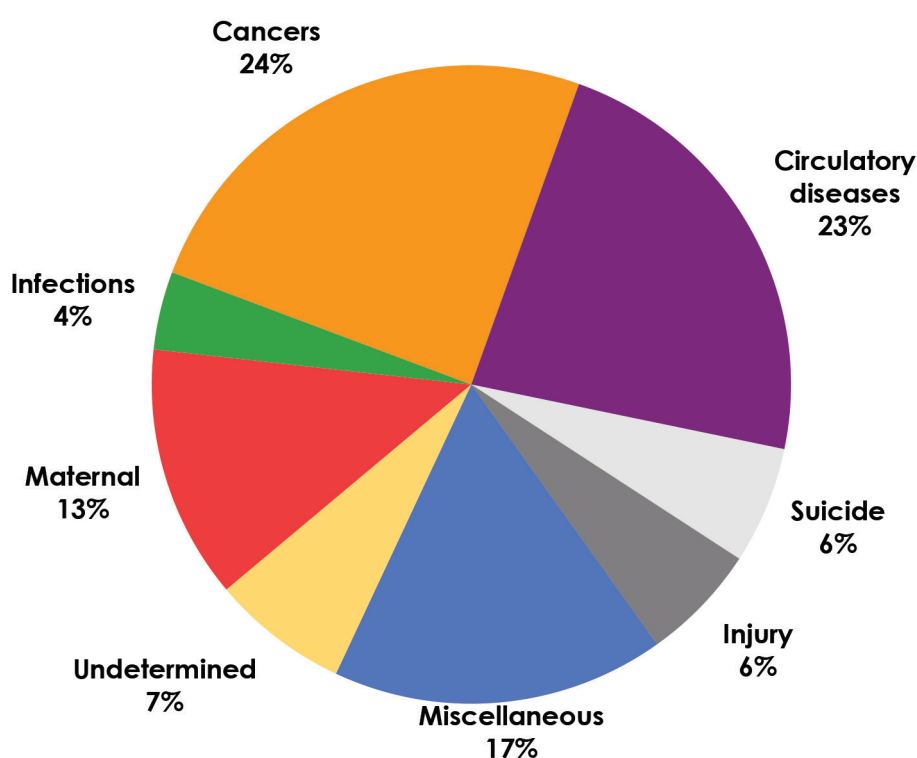


Table 3.8. Cause-specific mortality rates (per 1,000) among women of reproductive age for the three years before the survey by age, Bangladesh 2016

Note: Considers de jure female household population in exposure; gets cause-specific deaths from verbal autopsy questionnaire.

Background characteristics	Exposure	Broad cause of death code (all deaths)							Total	
		Pregnancy, childbirth and the puerperium	Certain infectious and parasitic diseases	Neoplasm	Diseases of the circulatory system	Intentional self harm	External causes of morbidity and mortality	Miscellaneous causes		Unspecified and under-terminated
Maternal age										
15-19	221,051	0.145	0.037	0.063	0.061	0.124	0.058	0.132	0.067	0.686
20-24	190,826	0.201	0.026	0.055	0.109	0.070	0.059	0.100	0.018	0.639
25-29	176,607	0.192	0.048	0.129	0.082	0.069	0.079	0.154	0.095	0.848
30-34	150,601	0.230	0.026	0.278	0.177	0.025	0.032	0.176	0.082	1.025
35-39	123,488	0.162	0.069	0.362	0.404	0.074	0.062	0.220	0.040	1.392
40-44	110,373	0.026	0.082	0.617	0.504	0.045	0.082	0.288	0.075	1.719
45-49	86,298	0.017	0.053	1.223	1.190	0.035	0.135	0.629	0.256	3.537
Total										
Total	1,059,244	0.154	0.045	0.290	0.268	0.070	0.067	0.203	0.078	1.175

Table 3.9 presents exposure time, number of deaths, and mortality rates, for all causes and for specific causes of death (including maternal) for women ages 15–49 years, based on household deaths by selected background characteristics (residence, division, education, and socioeconomic status of the household). For the two main causes of death—i.e., cancers and circulatory system conditions—higher risks were observed in rural areas. There were no obvious differences by region (division) or wealth quintile, but the risks were higher in the poorest quintile for cancers. The lowest risk for both causes was observed among the most educated women. The increasing risk with parity can be a consequence of the increasing age with higher parity.

The proportionate contributions of cancers and circulatory diseases among all adult female deaths were higher in BMMS 2016 compared to BMMS 2010 (Figure 3.11). In contrast, the proportionate contribution of maternal causes of deaths among all adult female deaths has largely remained unchanged, while that of infections and suicide have marginally lowered in BMMS 2016 from the BMMS 2010 estimates.

Figure 3.11. Percentage distribution of cause of death among women of reproductive age (15–49 years): Comparison between BMMS 2010 and BMMS 2016

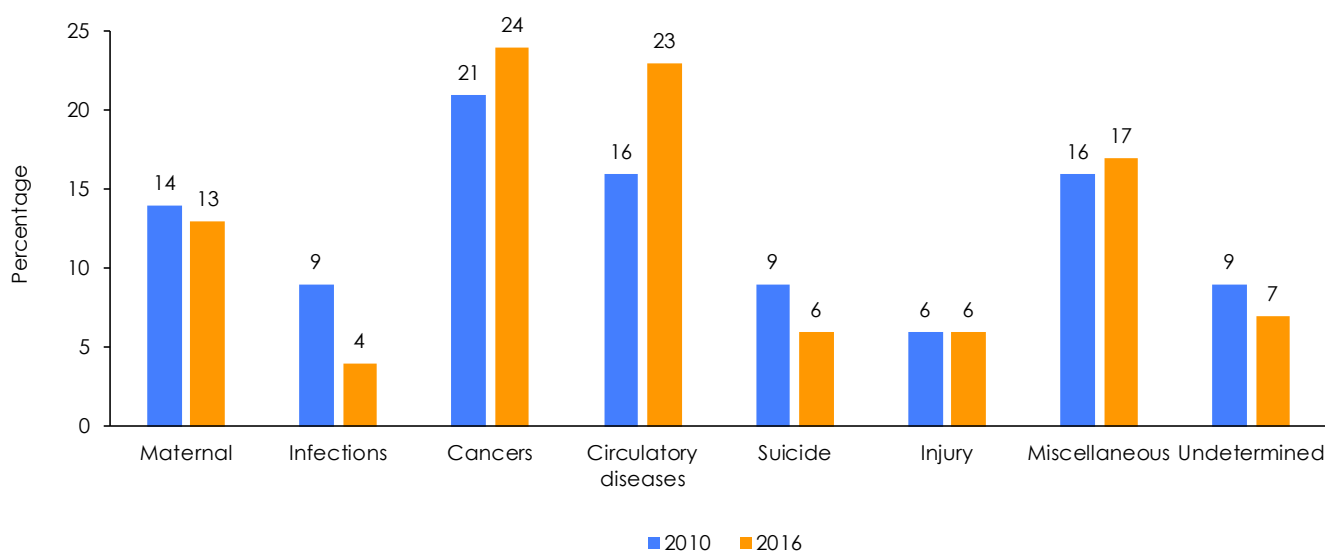


Table 3.9. All cause and cause-specific adult female mortality rates (per 1,000 women) among women of reproductive age for the three years preceding the survey, according to background characteristics, Bangladesh 2016

Background characteristics	Mortality		Cause specific								
	Deaths	Exposure rates	Mortality rates	Pregnancy, childbirth and the puerperium (maternal)	Certain infectious and parasitic diseases (infectious)	Neoplasm (malignancy)	Diseases of the circulatory system	Intentional self harm (suicide)	External causes of morbidity and mortality (other violent)	Miscellaneous and unspecified causes terminated	
Urban/rural											
Urban	308	307,792	1.0018	0.0965	0.0341	0.2491	0.2499	0.0333	0.0434	0.1969	0.0987
Rural	936	751,452	1.2461	0.1778	0.0493	0.3069	0.2750	0.0846	0.0769	0.2055	0.0699
Division											
Barishal	68	57,598	1.1814	0.1743	0.0308	0.2911	0.2588	0.1496	0.0484	0.1605	0.0679
Chattogram	232	204,008	1.1370	0.1654	0.0645	0.2821	0.2223	0.0549	0.0643	0.2302	0.0531
Dhaka	304	287,015	1.0588	0.1250	0.0218	0.2962	0.2541	0.0515	0.0516	0.1382	0.1204
Khulna	146	117,259	1.2444	0.0991	0.0469	0.3590	0.3177	0.1392	0.0851	0.0942	0.1033
Mymensingh	90	78,535	1.1409	0.1681	0.1003	0.2075	0.2519	0.0554	0.0491	0.2768	0.0318
Rajshahi	157	131,452	1.1960	0.1846	0.0096	0.2847	0.3238	0.0553	0.0783	0.2028	0.0570
Rangpur	152	117,642	1.2913	0.1703	0.0772	0.3234	0.2424	0.0743	0.0875	0.2881	0.0281
Sylhet	96	65,735	1.4629	0.2202	0.0403	0.2146	0.3390	0.0386	0.0922	0.3930	0.1249
Educational level											
No education	419	207,924	2.0156	0.1234	0.0664	0.5378	0.5253	0.0786	0.1138	0.3927	0.1777
Incomplete primary	200	179,848	1.1113	0.1416	0.0732	0.2327	0.2568	0.0375	0.0754	0.2568	0.0373
Complete primary	200	141,695	1.4143	0.2586	0.0710	0.4096	0.2722	0.0614	0.0703	0.1890	0.0823
Secondary or higher	425	529,382	0.8035	0.1427	0.0199	0.1806	0.1693	0.0794	0.0454	0.1141	0.0521
Missing	0	393	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Table 3.9. All cause and cause-specific adult female mortality rates (per 1,000 women) among women of reproductive age for the three years preceding the survey, according to background characteristics, Bangladesh 2016 (continued)

Background characteristics	Mortality			Cause specific							
	Deaths	Exposure	Mortality rates	Pregnancy, childbirth and the puerperium (maternal)	Certain infectious and parasitic diseases (infectious)	Neoplasm (malignancy)	Diseases of the circulatory system	Intentional self harm (suicide)	External causes of morbidity and mortality (other violent)	Miscellaneous and unspecified causes terminated	
Wealth index quintile											
Lowest	292	194,129	1.5030	0.2343	0.0621	0.3570	0.2563	0.1209	0.0803	0.2945	0.0977
Second	252	202,380	1.2459	0.1942	0.0691	0.2959	0.2634	0.0429	0.0887	0.2297	0.0620
Middle	273	212,752	1.2825	0.1581	0.0528	0.3495	0.3435	0.0792	0.0666	0.1843	0.0485
Fourth	233	222,616	1.0464	0.1037	0.0240	0.2570	0.2630	0.0789	0.0762	0.1557	0.0877
Highest	195	227,367	0.8575	0.0957	0.0216	0.2047	0.2151	0.0320	0.0286	0.1649	0.0949
Previous parity											
0	451	419,264	1.0756	0.1763	0.0486	0.1664	0.1618	0.1204	0.0669	0.2198	0.1154
1	264	290,527	0.9073	0.1378	0.0234	0.2624	0.2216	0.0341	0.0687	0.1077	0.0516
2	223	181,082	1.2324	0.1343	0.0363	0.3713	0.3760	0.0383	0.0527	0.1928	0.0307
3	130	91,134	1.4222	0.1423	0.0703	0.4096	0.4308	0.0545	0.0700	0.1741	0.0707
4	76	43,079	1.7708	0.2495	0.0719	0.5036	0.4666	0.0097	0.0046	0.4137	0.0511
5+	100	34,157	2.9180	0.0383	0.1261	1.0262	0.6995	0.0324	0.2068	0.6313	0.1574
Total											
Total	1,245	1,059,244	1.1751	0.1541	0.0449	0.2901	0.2677	0.0697	0.0672	0.2030	0.0783

3.4. Comparison of MMR from Various Sources

BMMS 2016 estimated MMR in Bangladesh for the year 2015. Since maternal deaths are rare events, it requires very large samples to measure maternal mortality through surveys/surveillance and one needs to examine the confidence intervals of the MMR estimates to conclude whether changes have happened over time or whether there are differences in MMR estimates reported by various sources.

Comparisons of MMR estimates for Bangladesh are available from various sources for 2015 and show that MMR estimates are not statistically different by source of information. The MMR estimate from the BMMS was 196 maternal deaths per 100,000 live births (the 95% confidence interval was between 159 and 234). The Sample Vital Registration System (SVRS) estimate for the same year was 181 per 100,000 live births (the 95% confidence interval was between 168 and 194) (BBS, 2016). The Maternal Mortality Estimation Inter-Agency Group (MMEIG) for the same year was 176 per 100,000 live births (the 80% uncertainty interval was between 125 and 280) (MMEIG, 2015).

Review of the confidence intervals of each MMR estimate revealed that the BMMS estimate of MMR is consistent with that of the SVRS and MMEIG estimates. The confidence interval of the SVRS estimate is contained within the confidence interval of the BMMS estimate, which means that the MMR estimate of BMMS does not contradict the MMR of SVRS. The Z-statistic test¹ showed that MMR estimates of BMMS and SVRS are not statistically different. Likewise, the confidence interval of the BMMS estimate is completely contained within the uncertainty interval of the MMEIG estimate.² Given that the confidence intervals of the three estimates contain each other, statistically there is no difference between the three MMR estimates. The BMMS estimate of MMR is also consistent with data on maternal deaths reported in the health information system (HIS) of the Directorate General of Health Services (DGHS) for 2015 (management information system [MIS], 2017). BMMS estimates show 4,010 maternal deaths occurring in health facilities in 2015, while the HIS reported 4,089 maternal deaths in health facilities for the same year.

There was no evidence of change in MMR between BMMS 2010 and BMMS 2016, although there has been a substantial increase in the use of maternal health services during the same period. Review of the available international literature revealed that several countries have had experiences similar to Bangladesh, where MMR decline stalled despite improvements in maternal health service utilization and that this can happen at various levels of MMR (World Bank, 2019; MMEIG, 2019). Some examples of countries where this has happened are: Ghana and Lesotho, at the level of 300 maternal deaths per 100,000 live births; Philippines and South Africa, at the level of 120–160 maternal deaths per 100,000 live births; and Cuba and Thailand, at the level of 20–60 maternal deaths per 100,000 live births.

More recent information on MMR is available from SVRS 2018—estimated to be 169 maternal deaths per 100,000 live births (BBS, 2019). The SVRS 2018 estimate of MMR still falls within the BMMS MMR estimate's 95 percent confidence interval of 159–234.

¹ Z-test applied with hypothesis (H_0 : MMR from BMMS = MMR from SVRS; and H_a : MMR from BMMS \neq MMR from SVRS) using formulae $\{(MMR, BMMS) - (MMR, SVRS)\} \div \text{SQRT}\{\text{Variance}(MMR, BMMS) + \text{Variance}(MMR, SVRS) + 2 \text{Covariance}(MMR, BMMS; MMR, SVRS)\}$, where the covariance term is zero as because BMMS and SVRS are independent. $Z=0.74$ and Z value is less than 1.96. Thus, the hypothesis is accepted and could be concluded that the MMRs of BMMS and SVRS are not statistically different.

² MMEIG reports 80 percent uncertainty intervals (UI) for the estimated MMR, which is different from the 95 confidence intervals estimated from surveys or sample vital registration systems. MMEIG uses a regression model that considers GDP per capita, general fertility rate, and skilled birth attendance (SBA) for estimating MMR at the country level. MMEIG's MMR estimate is greatly influenced by GDP and tends to be at the lower side of UI.

CHAPTER 4. MATERNITY CARE

Summary

Antenatal Care

- Almost three in every four (74 percent) women received at least one antenatal care (ANC) visit from a medically-trained provider. An additional nine percent of women received ANC from non-medically trained providers only.
- Between BMMS 2010 and BMMS 2016, the uptake of ANC from medically-trained providers increased rapidly, by more than three percentage points per year.
- Thirty-seven percent of women received the recommended number of (four or more) antenatal checkups during pregnancy. In 2010, 23 percent had received four or more ANC checkups.
- The private sector is now the most prominent source of ANC, both in urban and rural areas. Overall, 58 percent of ANC seekers went to the private sector to receive checkups, while 36 percent used the public sector. The prominence of the public sector as a source of ANC has declined between BMMS 2010 and BMMS 2016.
- A notable proportion of pregnant women (22 percent) were receiving ANC at home.
- Most women who received ANC were weighed (88 percent) and had their blood pressure measured (91 percent) during pregnancy. Four out of five pregnant women who had ANC had received an ultrasound. In comparison, women were less likely to have a blood test (63 percent) or urine test (68 percent) done during ANC. Only 41 percent of women received information on danger signs of pregnancy.
- The percentage of women who had blood or urine tests done during ANC increased notably between BMMS 2010 and BMMS 2016, from 37 to 63 percent for blood test and from 50 to 68 percent for urine test. But there was little change in provision of information on danger signs of pregnancy between 2010 and 2016.
- Antenatal care service use has become more equitable. In 2001, the richest women were 3.4 times more likely than the poorest to receive ANC from a medically-trained provider; in 2016, this ratio declined to 1.8.
- Only 15 percent of women received quality ANC. Quality ANC care is defined as receiving at least four ANC services, of which at least one was from a medically-trained provider and where weight was taken, blood pressure measured, blood and urine test done, and information on danger signs provided at least once during the pregnancy.

Delivery Care

- Bangladesh achieved the HPNSDP target of 50 percent of births attended by a medically-trained provider by 2016.
- Delivery by trained providers increased from 27 percent in BMMS 2010 to 50 percent in BMMS 2016; the increase was predominantly caused by the rise in facility deliveries from 23 to 47 percent.
- Facility deliveries increased at a rate of four percentage points per year between the 2010 and 2016 surveys. The increase in facility delivery was much slower (1.6 percentage points per year) between BMMS 2001 and BMMS 2010.
- Private health facilities accounted for 29 percent of all deliveries, while 14 percent and 4 percent of births now occur at government and NGO facilities, respectively. In 2010, the private and public health facilities accounted for similar percentages of deliveries, with 11 percent at private and 10 percent at public facilities.
- Deliveries by C-section increased from 12 percent to 31 percent in the past six years.

- Eighty-three percent of births in private facilities were by C-section. The proportion of births in government and NGO facilities that were by C-section was much lower in government (35 percent) and in NGO facilities (39 percent).
- The poor-rich inequity in use of facilities for delivery has declined; yet women in the richest quintile were 3.4 times more likely to deliver in a facility, compared to women in the poorest quintile. The absolute percentage difference in use of facility for delivery between the poorest and richest women was very large: 54 percentage points.

Postnatal Care

- About half (48 percent) of women who delivered a baby during 2014–2016 received PNC from a medically-trained provider within two days of delivery.
- Postnatal care coverage has been increasing sharply; PNC by a medically-trained provider has increased from 11 percent in 2001, to 23 percent in 2010, and to 48 percent in 2016. Postnatal care by a non-medically trained provider also increased from six percent, to 10 percent, and to 18 percent during the same periods.
- Only six percent of women who delivered at home received PNC from a medically-trained provider.
- The percentage of women who received the complete maternity care (ANC, delivery care, and PNC within two days, from a medically trained provider) has increased significantly, from five percent in BMMS 2001, to 19 percent in BMMS 2010, and to 43 percent in BMMS 2016.

Delivery Expenditure

- Three out of four normal deliveries occurred at home, and four out of five C-section deliveries occurred at private health facilities. The median cost for delivery varied considerably by the type of location where the delivery occurred and whether the delivery was normal or by C-section.
- The median expenditure related to normal deliveries at home was less than Taka 1,000. The median expenditures for normal deliveries at a facility were four times greater than for home delivery.
- Normal delivery costs were the highest at private facilities (around Taka 6,800). There was a small difference in median expenditures between deliveries conducted in government and NGO facilities (around Taka 3,000 and Taka 2,600, respectively).
- The median expenditure for C-section deliveries is five times higher than the median expenditure associated with normal deliveries at facilities.
- The median expenditure associated with C-section deliveries at private facilities was around Taka 20,000. In comparison, the median expenditure for C-section deliveries was lowest in government facilities, at around Taka 12,000.
- Family funds was the most common source to cover expenditures related to facility delivery. Almost 20 percent of households had to take a loan, and two percent sold or mortgaged assets to cover the expenditures.
- Among women in households in the poorest two wealth quintiles who delivered in a facility, one-third of the households took a loan, and five percent sold or mortgaged assets to cover the cost of delivery. In addition, 28 percent of households received gifts from relatives to help pay maternal care expenditures.

Birth Planning among Pregnant Women

- Appropriate birth planning is still not common in Bangladesh. However, birth planning has improved between 2010 and 2016.
- Only 28 percent of pregnant women in their third trimester of pregnancy at the time of the survey reported that the family had discussed or decided to deliver at a health facility. In 2010, this proportion was lower (13 percent).
- Eighteen percent of pregnant women in their third trimester of pregnancy reported that their family had prearranged transport for emergency. There was very little change in this aspect of birth planning among pregnant women between 2010 and 2016.
- Thirty-eight percent of pregnant women in their third trimester in BMMS 2016 reported that their family had prearranged funds for delivery/emergency maternal care, compared to 31 percent in 2010.
- Twelve percent of pregnant women in their third trimester of pregnancy reported that their family had arranged for sources of blood in case of emergency.
- Among women who gave birth in the three years before the survey, 54 percent reported that their family had prearranged funds for delivery in a health facility in BMMS 2016 compared to 35 percent in BMMS 2010. The percentage who reported that their family prearranged transport in case of an emergency doubled from 10 percent in BMMS 2010 to 21 percent in BMMS 2016.
- Pregnant women's knowledge of maternal complications was low. The most commonly known complication was symptoms of preeclampsia, which 46 percent knew about. Only one in three pregnant women mentioned severe/heavy bleeding or convulsions as maternal complications.

This chapter presents findings from the BMMS 2016 on antenatal, delivery, and postnatal care among women who delivered in the three years preceding the survey. It also includes information on preparation for emergencies of child birth and delivery expenditures. In addition, the chapter presents information on some indicators on birth planning among women who were pregnant at the time of survey.

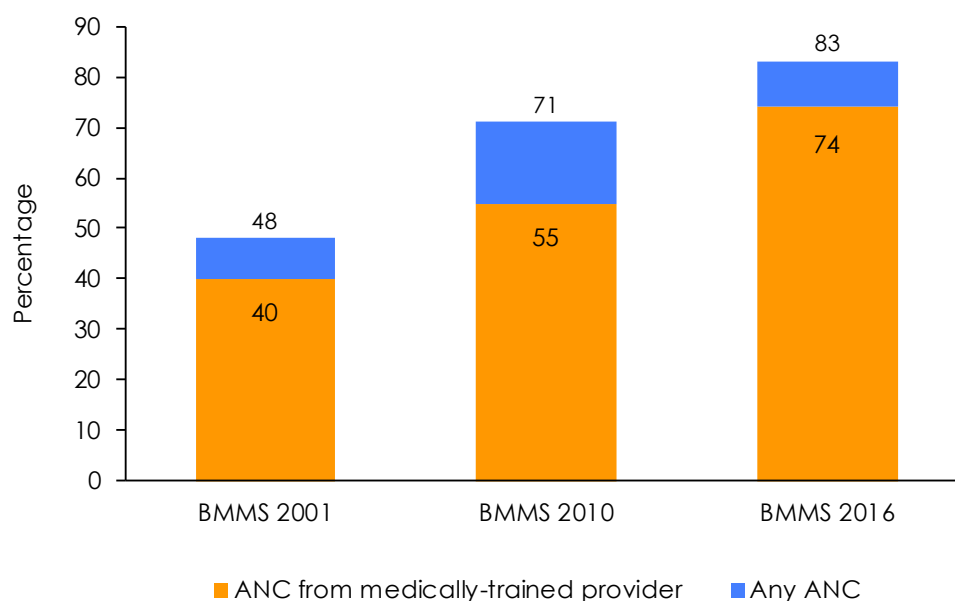
4.1. Antenatal Care

Proper care during pregnancy and childbirth is important to the health of the mother and child. Antenatal care (ANC) is a major component of comprehensive maternal health care and the first window of opportunity for maternal health services after conception. Antenatal care facilitates the detection and treatment of problems during pregnancy such as infections, hypertensive disease, and maternal anaemia, and provides an important and timely opportunity to provide health information to women and their families. In addition, early and regular contact by women with the formal health care system can contribute to timely and effective use of services during delivery or obstetric complications. It is during an antenatal care visit that screening for high-risk pregnancies and complications occur, the danger signs of pregnancy are discussed, and advice on a range of issues (including place of delivery and referral of mothers with complications) is given.

In the BMMS 2001, BMMS 2010, and BMMS 2016, questions on antenatal care were asked for live births¹ in the three years preceding the survey. A comparison of estimates of antenatal care across the three BMMS surveys is shown in Figure 4.1. The figure shows that seeking at least one antenatal care service from a trained provider has been increasing steadily over time, from 40 percent of births in the BMMS 2001 survey to 55 percent in BMMS 2010, and to 74 percent in BMMS 2016. ANC from a medically-trained provider increased at a much faster pace (3.1 percentage point per year) between BMMS 2010 and BMMS 2016, compared to the increase in the nine-year period between BMMS 2001 and BMMS 2010 (1.7 percentage points per year).

¹ The BMMS 2010 and BMMS 2016 did not include a calendar for all pregnancies, so all pregnancy outcomes could not be analysed. Stillbirths, for example, which are normally around 2.5 percent of all pregnancies, are not included.

Figure 4.1. Trends in ANC from any provider and medically-trained provider



4.1.1. Source of Antenatal Care

In the BMMS 2016, women who had a live birth in the three years preceding the survey were asked a number of questions about antenatal care. Interviewers recorded the source of antenatal care, the person who provided that care, number and timing (first and last) of antenatal care, advice or information received on birth planning, and elements of antenatal care received. Table 4.1 shows the percent distribution of source of antenatal care received during pregnancy for the most recent birth in the three years before the survey, according to background characteristics. Although interviewers were instructed to record all the providers a woman consulted for antenatal care, only the most qualified provider was considered in this analysis.

The data indicate that for the most recent birth that occurred in the three years before the survey, almost three-quarters (74 percent) of mothers received antenatal care from a medically-trained provider and 9 percent of women received ANC from a non-medically trained provider only. In BMMS 2016, the primary source of antenatal care were doctors (69 percent). When information on ANC is analysed including all multiple responses on sources of ANC, 25 percent of women were found to receive ANC from nurses, midwives, and family welfare visitors (FWVs) (data not shown). Table 4.1 also shows that there were substantial variations in levels of antenatal care from a medically-trained provider by background characteristics of women. Antenatal care-seeking was higher among younger women. The percentage of births for which the mother received at least one antenatal care from a medically-trained provider was notably higher in urban than rural areas (82 percent and 72 percent, respectively), with differences largely due to the percentage seeking care from qualified doctors. The highest and lowest levels of antenatal care from a medically-trained provider were in Khulna division (83 percent) and Mymensingh division (61 percent), respectively. Seeking antenatal care was strongly associated with increased levels of maternal education and increased household economic status. Mothers with a secondary education or higher were almost twice as likely than mothers with no education to receive antenatal care from a medically-trained provider (93 percent and 48 percent, respectively), and mothers from the wealthiest households were 1.8 times more likely to obtain antenatal care compared to mothers from the poorest households (93 percent and 51 percent, respectively).

Table 4.1 Antenatal care

Percentage distribution of women ages 15–49 who had a live birth in the three years preceding the survey, by ANC provider during pregnancy, for the most recent birth, and the percentage receiving antenatal care (ANC) from a medically-trained provider, for the most recent birth, according to background characteristics, Bangladesh 2016.

Background characteristics	Medically-trained provider						Percentage receiving:				Number of women	
	Qualified doctor	Nurse/ midwife/ paramedic/ FWV	CSBA	MA/ SACMO	Community health worker ¹	No other one	Missing	Total	Any ANC trained provider	ANC from medically-trained provider		
Mother's age at birth												
Below 15	56.9	11.0	0.0	0.0	14.2	0.5	17.3	0.0	100.0	82.7	68.0	182
15–19	69.8	5.8	0.2	0.2	8.8	0.7	14.3	0.1	100.0	85.6	76.0	7,307
20–24	69.9	5.2	0.2	0.2	7.7	0.4	16.4	0.1	100.0	83.5	75.5	9,080
25–29	68.6	5.4	0.2	0.2	8.0	0.7	16.8	0.2	100.0	83.1	74.3	6,503
30–34	66.9	4.1	0.4	0.1	9.1	0.7	18.6	0.1	100.0	81.4	71.6	3,043
35–39	61.8	3.0	0.2	0.0	8.3	0.6	25.8	0.2	100.0	74.0	65.0	840
40–44	45.4	5.1	0.0	0.0	11.4	0.0	38.1	0.0	100.0	61.9	50.5	163
45–49	*	*	*	*	*	*	*	*	*	*	*	14
Residence												
Urban	76.3	5.4	0.3	0.1	6.8	0.6	10.4	0.2	100.0	89.5	82.1	7,188
Rural	66.0	5.2	0.2	0.2	8.8	0.6	18.8	0.1	100.0	81.1	71.6	19,945
Division												
Barishalsal	58.8	4.5	0.1	0.3	8.8	0.4	27.2	0.0	100.0	72.8	63.7	1,525
Chattogram	70.5	7.2	0.3	0.2	4.2	0.9	16.6	0.1	100.0	83.3	78.2	6,261
Dhaka	73.6	4.4	0.1	0.1	7.8	0.7	13.0	0.2	100.0	86.9	78.3	6,862
Khulna	79.6	3.2	0.1	0.3	6.3	0.2	10.3	0.0	100.0	89.7	83.2	2,546
Mymensingh	55.7	4.4	0.4	0.1	14.9	0.9	23.5	0.1	100.0	76.4	60.7	2,273
Rajshahi	70.6	4.2	0.2	0.2	7.7	0.2	16.9	0.0	100.0	83.1	75.2	2,899
Rangpur	63.6	6.9	0.4	0.1	14.7	0.3	14.0	0.0	100.0	86.0	71.1	2,778
Sylhet	59.2	5.4	0.2	0.1	9.3	1.1	24.5	0.2	100.0	75.3	64.9	1,990

Table 4.1 Antenatal care (continued)

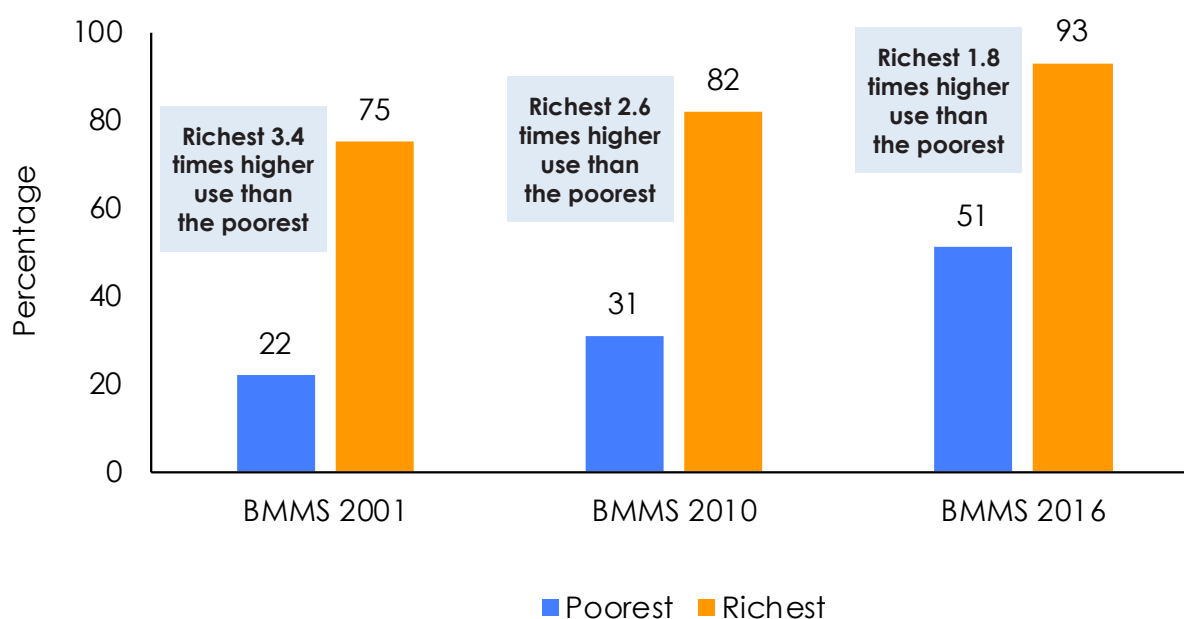
Background characteristics	Medically-trained provider							Percentage receiving:				Number of women
	Qualified doctor	Nurse/ midwife/ paramedic/ FWV	CSBA	MA/ SACMO	Community health worker ¹	Other	No one	Missing	Total	Any ANC	ANC from medically-trained provider	
Mother's education												
No education	41.8	6.3	0.1	0.1	13.1	0.8	37.5	0.3	100.0	62.2	48.3	2,293
Primary incomplete	52.5	6.7	0.2	0.4	12.5	0.8	26.6	0.2	100.0	73.2	59.8	4,195
Primary complete	58.3	6.9	0.5	0.1	11.2	1.0	22.0	0.1	100.0	77.9	65.7	4,103
Secondary incomplete	73.8	5.0	0.3	0.2	7.2	0.5	13.0	0.1	100.0	86.9	79.2	11,064
Secondary complete/higher	89.9	3.1	0.1	0.1	3.1	0.3	3.5	0.0	100.0	96.5	93.2	5,478
Wealth quintile												
Lowest	43.4	7.3	0.5	0.2	14.2	1.1	33.3	0.1	100.0	66.6	51.3	5,451
Second	60.0	5.9	0.3	0.2	10.5	0.6	22.3	0.1	100.0	77.6	66.4	5,513
Middle	72.8	5.1	0.2	0.1	7.3	0.4	13.9	0.1	100.0	86.0	78.3	5,350
Fourth	78.2	4.7	0.2	0.2	6.1	0.7	9.9	0.1	100.0	90.0	83.2	5,592
Highest	90.1	3.1	0.1	0.1	3.2	0.2	3.1	0.1	100.0	96.8	93.4	5,227
Total	68.7	5.3	0.2	0.2	8.3	0.6	16.6	0.1	100.0	83.3	74.4	27,133

Note: If more than one source of ANC was mentioned, only the provider with the highest qualification is considered in the tabulation.

¹ Included community health care provider, health assistant (HA), family welfare assistant (FWA), and nongovernmental organization (NGO) health providers. FWV = family welfare visitor; CSBA = community skilled birth attendant; MA = medical assistant; SACMO = sub-assistant community medical officer.

As the overall coverage of ANC from a medically-trained provider has increased remarkably over time, the rich-poor inequity in use (measured by the ratio of ANC use among women in the richest wealth quintile households to ANC use among women in the poorest wealth quintile households) has been declining. Figure 4.2 shows the proportion of women in the highest and lowest wealth quintiles receiving at least one ANC from a medically-trained provider. In 2001, the richest women were 3.4 times more likely to receive ANC from a medically-trained provider than the poorest; in 2016 the richest were 1.8 times more likely than the poorest to receive ANC. The absolute gap in ANC use between the richest and the poorest has also reduced between 2010 and 2016 from 53 percentage points to 42 percentage points. Although access to ANC is becoming more equitable, the absolute difference in ANC use among women in the richest and the poorest households is still unacceptably high.

Figure 4.2. Trends in ANC from a medically-trained provider, by wealth quintile, 2001–2016



4.1.2. Number and Initial Timing of Antenatal Care

Both the number of antenatal care visits and the timing of the first check-up are considered important in detecting and preventing adverse pregnancy outcomes (WHO 2016; EBCOG Scientific Committee 2015; Zolotor and Carlough 2014). Care is most effective if the visits are started early during pregnancy and continued at regular intervals throughout the pregnancy. Higher numbers of ANC visits were also found to be associated with facility births and perinatal survival in Bangladesh (Pervin et al., 2012). The Government of Bangladesh recommends a minimum of four antenatal care visits, with one visit taking place in the first two trimesters and an additional two visits during the third trimester of pregnancy (MOHFW, 2017).

Table 4.2 shows the frequency and timing of the initial antenatal visit for live births that occurred in the three years preceding the survey. For a minority of these birth outcomes (17 percent), no antenatal care was sought. Among the 83 percent of women who made an ANC visit, the median number of antenatal visits sought by each women was 3.3 visits. Over one-third (37 percent) of women received the recommended four or more antenatal visits. Urban women were 1.5 times more likely to have received four or more ANC than women in rural areas.

The timing of the first antenatal care visit for many Bangladeshi women was quite late, with a median of 4.5 months into the pregnancy. In BMMS 2010, the median months of pregnancy when the first antenatal care was sought was 4.8 months, showing little improvement in seeking early pregnancy care between 2010 and 2016. Only 29 percent of women sought antenatal care during the first trimester. Table 4.2 also shows that early initiation of antenatal care was more common among women who resided in urban areas compared to their rural counterparts. Median months of pregnancy at first ANC visit was 3.9 months and 4.7 months among urban and rural women, respectively.

Table 4.2. Number of antenatal care visits and timing of first visit

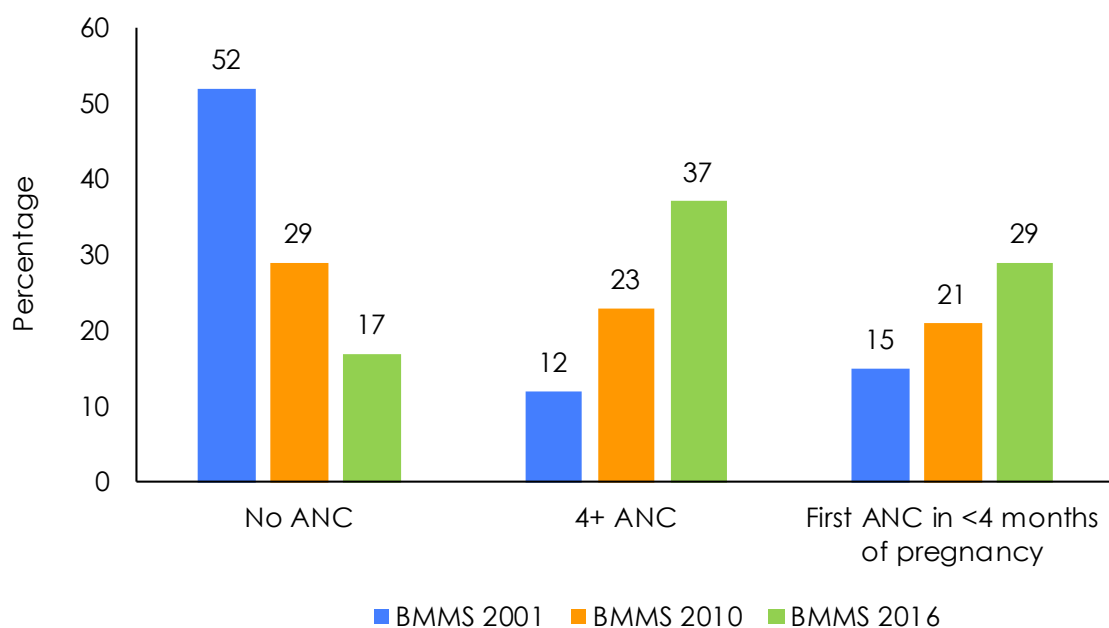
Percentage distribution of women ages 15–49 who had a live birth in the three years preceding the survey by number of antenatal care visits for the most recent live birth and by the timing of first visit, according to residence, Bangladesh 2016.

Number and timing of ANC visits	Residence		Total
	Urban	Rural	
Number of ANC visits			
None	10.4	18.8	16.6
1	10.3	14.6	13.5
2	14.1	17.9	16.9
3	16.2	15.5	15.7
4+	48.8	33.1	37.2
Don't know/missing	0.1	0.1	0.1
Total	100.0	100.0	100.0
Median number of visits (for those with ANC)	3.8	3.0	3.3
Number of months pregnant at time of first ANC visit			
No antenatal care	10.4	18.8	16.6
<4	39.4	25.9	29.4
4–5	28.7	26.2	26.8
6–7	15.2	20.1	18.8
8+	5.9	8.9	8.1
Don't know/missing	0.4	0.1	0.2
Total	100.0	100.0	100.0
Median months pregnant at first visit (for those with ANC)	3.9	4.7	4.5
Number of women with ANC ¹	6,435	16,182	22,617
Number of women	7,188	19,945	27,133

¹ Includes those with missing response about ANC provider.

The percentage of women receiving four or more ANC showed a consistent increase from only 12 percent in BMMS 2001 to 37 percent in BMMS 2016 (Figure 4.3), yet was far behind the target of 50 percent that Bangladesh’s health sector programme had set to achieve by 2016. In the six years between BMMS 2010 and BMMS 2016, women receiving four or more ANC has increased by 14 percentage points. Similarly, women receiving first ANC in the first trimester showed a slow but steady increase over time—in BMMS 2010 two out of ten women received the first ANC during the first trimester of pregnancy. In BMMS 2016, this proportion increased to 29 percent. Late initiation of ANC partly explains the slow progress of four or more ANC and indicates gaps in the continuum of preventive care during pregnancy.

Figure 4.3. Trends in number of antenatal care visits and women receiving first ANC visit <4 months of pregnancy, 2001–2016



4.1.3. Place of Antenatal Care

Women can seek ANC from multiple types of health facilities and/or at home in Bangladesh, although ANC content will depend on whether it was received at home or in a health facility. Most women reported receiving ANC from the private health sector (58 percent). Less than four out of ten women sought ANC from the public sector, while one in ten women received care from the NGO sector. Almost one in five women (22 percent) received ANC at home, but the meaning and content of these visits is uncertain (Table 4.3).

There was no particular age pattern to these provider selections. Receiving ANC at home was reported among women with lower socioeconomic status, living in rural areas, with lower educational attainment, and with high parity births. ANC in the home was most common in the relatively poor Rangpur (50 percent) and Mymensingh (39 percent) divisions, and least common in the relatively wealthy divisions of Chattogram (12 percent) and Dhaka (13 percent) where the private sector was the leading choice. Receiving ANC at home was likely to be higher in areas where density of community health workers providing ANC was high. The public sector remains popular among lower economic and education groups whereas private sectors were utilized more by their better-off counterparts. Private sector sources of ANC were especially utilized by mothers with lower parity (60 percent among first-time mothers).

Table 4.3. Place of antenatal care

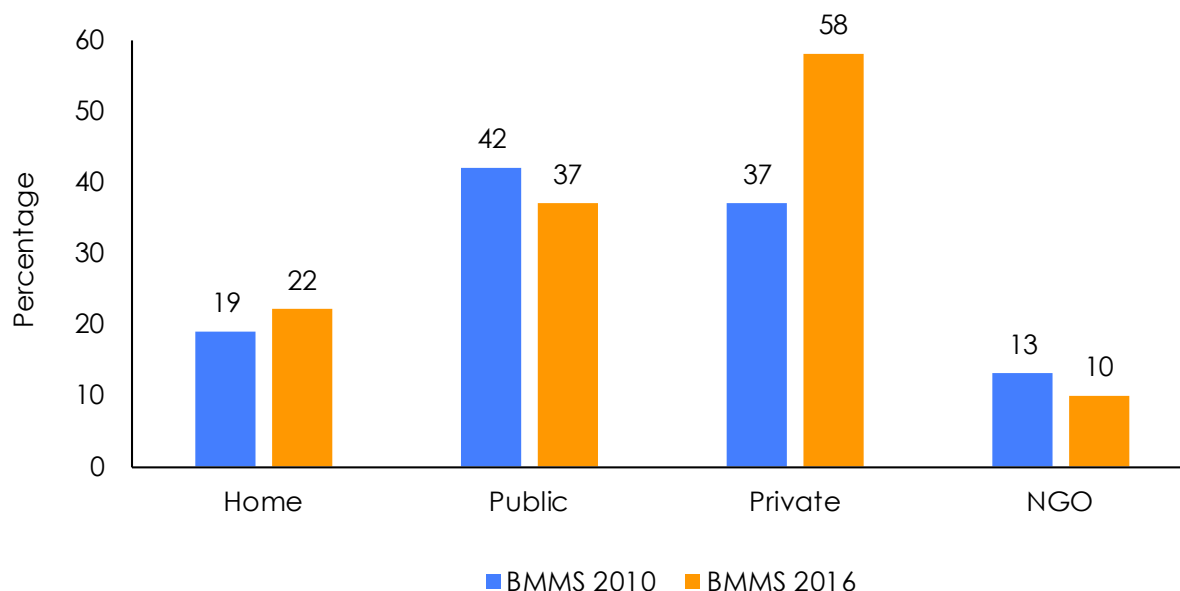
Among women ages 15–49 who had a live birth in the three years preceding the survey, the percentage who received antenatal care (ANC) during the pregnancy associated with the most recent birth, by place of ANC, according to background characteristics, Bangladesh 2016.

Background characteristics	Place of antenatal care ¹					Number of women (who received ANC)
	Home	Public sector	Private sector	NGO sector	Other	
Mother's age at birth						
Below 15	24.5	43.7	41.6	12.7	1.2	151
15–19	24.3	37.1	56.7	10.5	0.7	6,254
20–24	20.4	37.0	58.2	10.6	0.6	7,585
25–29	21.5	35.1	58.9	9.5	0.6	5,402
30–34	20.2	34.8	57.4	10.4	0.4	2,477
35–39	21.7	33.9	58.7	9.2	0.3	621
40–44	28.2	42.6	46.9	4.7	0.0	101
45–49	*	*	*	*	*	11
Birth order						
1	21.0	36.7	60.2	10.7	0.7	9,283
2–3	21.8	35.9	57.3	10.1	0.6	11,094
4–5	25.1	36.4	50.8	8.8	0.5	1,941
6+	26.2	41.5	40.1	9.8	0.6	284
Residence						
Urban	15.0	33.2	54.3	19.2	0.8	6,430
Rural	24.5	37.6	59.1	6.7	0.5	16,173
Division						
Barishal	19.4	45.0	48.6	5.4	0.1	1,111
Chattogram	11.7	28.4	64.9	10.5	1.0	5,214
Dhaka	12.9	31.2	60.6	13.0	0.7	5,961
Khulna	26.7	43.7	59.3	10.1	0.0	2,284
Mymensingh	38.5	38.1	49.9	8.1	0.3	1,737
Rajshahi	26.4	41.1	58.4	6.1	0.1	2,409
Rangpur	50.4	48.0	45.6	12.1	0.4	2,389
Sylhet	14.5	38.4	52.6	8.6	1.5	1,497
Mother's education						
No education	28.7	36.8	40.5	14.7	1.2	1,427
Primary incomplete	27.1	41.7	44.2	11.4	0.5	3,071
Primary complete	24.7	39.2	49.1	11.1	1.0	3,197
Secondary incomplete	22.3	36.1	60.3	9.7	0.5	9,619
Secondary complete/higher	14.4	31.7	70.7	8.9	0.4	5,289
Wealth quintile						
Lowest	32.2	45.4	40.7	6.9	0.6	3,630
Second	30.8	41.5	52.2	8.4	0.4	4,277
Middle	23.4	39.1	59.0	8.3	0.7	4,602
Fourth	17.6	33.2	61.4	13.2	0.5	5,032
Highest	9.6	26.1	69.8	13.2	0.8	5,062
Total	21.8	36.3	57.7	10.3	0.6	22,603

¹ Multiple responses possible.

Figure 4.4 compares the place where ANC was sought in BMMS 2010 and BMMS 2016. In 2010, the public sector facilities were the most common places to seek ANC. In 2016, the private sector health facilities have become the most common places to receive ANC, while the proportion seeking ANC from both the public and NGO facilities have declined between 2010 and 2016. A higher proportion of women were receiving ANC at home compared to receiving care from a NGO facility both in 2010 and 2016.

Figure 4.4. Place of antenatal care, BMMS 2010–2016



4.1.4. Components of Antenatal Care

Impact of accessing antenatal care on positive pregnancy outcomes is highly dependent on the quality and content of ANC, and what services were provided to women during those contacts. Monitoring for complications and identification of high-risk pregnancies during antenatal care visits are critical windows of opportunity for averting maternal and perinatal deaths.

In BMMS 2016, women who received at least one ANC were asked if they received measurement of weight and blood pressure, assessment of urine and blood samples, and an ultrasonogram during antenatal care. Table 4.4 shows the components of antenatal care for women who received it at least once. The proportion of women who had their blood pressure measured and weight taken at least once during pregnancy was found to be high, at 91 percent and 88 percent, respectively. Eight out of ten women reported having an ultrasound done during pregnancy. Just above two-thirds (68 percent) of pregnant women had their urine checked for protein and 63 percent had a blood test for anemia, suggesting that less women underwent these routine tests during pregnancy than ultrasound. Only 49 percent were warned of danger signs of pregnancy, suggesting an inadequate dissemination of vital information and poor counselling during pregnancy.

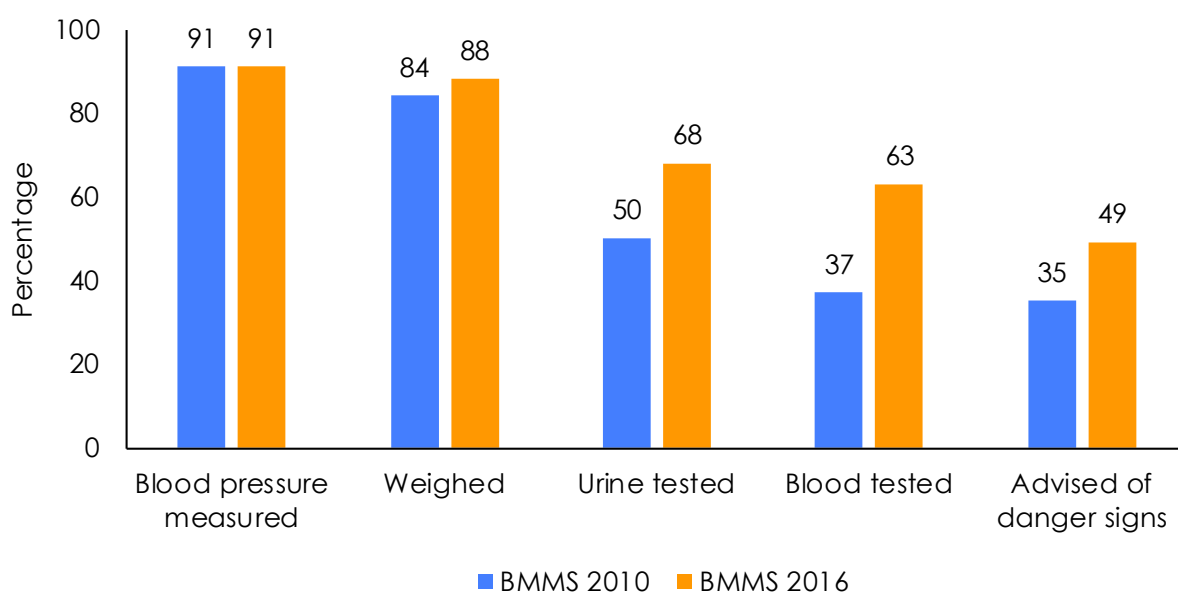
Table 4.4. Components of antenatal care

Percentage of women ages 15–49 with a live birth in the three years preceding the survey who had at least one ANC visit, and who received specific antenatal care services for the most recent birth, according to background characteristics, Bangladesh 2016.

Background characteristics	Procedure performed during antenatal care						Number of women (who received ANC)
	Blood pressure measured	Urine tested	Blood test done	Weighed	Ultra-sound	Advised about danger sign	
Mother's age at birth							
Below 15	86.0	59.1	47.6	81.8	65.9	46.0	151
15–19	90.1	67.1	62.4	87.1	80.1	47.9	6,254
20–24	91.8	68.5	63.4	88.1	80.4	49.2	7,585
25–29	92.4	68.7	63.8	88.1	81.3	49.7	5,402
30–34	91.8	68.8	62.9	86.8	79.2	48.9	2,477
35–39	91.9	65.5	62.2	88.8	78.3	46.8	621
40–44	90.1	61.2	53.3	86.6	69.3	40.8	101
45–49	*	*	*	*	*	*	11
Birth order							
1	92.2	72.0	68.3	89.6	84.4	50.4	9,283
2-3	91.5	67.1	61.5	87.3	79.3	48.6	11,094
4-5	87.9	57.0	48.9	81.6	67.7	43.0	1,941
6+	87.6	51.5	40.3	81.3	62.3	41.0	284
Residence							
Urban	94.0	74.9	71.5	90.4	84.7	50.6	6,430
Rural	90.4	65.2	59.6	86.6	78.4	48.1	16,173
Division							
Barishal	93.5	68.1	64.3	89.2	74.8	55.7	1,111
Chattogram	90.3	71.6	65.9	87.3	79.6	38.9	5,214
Dhaka	90.3	71.4	68.6	87.1	87.5	53.0	5,961
Khulna	92.5	66.6	64.0	91.4	85.9	55.1	2,284
Mymensingh	93.7	61.1	52.7	83.8	70.4	34.7	1,737
Rajshahi	87.6	59.1	55.3	87.3	84.3	55.4	2,409
Rangpur	96.5	62.5	55.4	89.6	69.0	59.6	2,389
Sylhet	92.0	75.1	64.3	86.2	71.1	40.5	1,497
Mother's education							
No education	87.8	53.3	44.5	78.5	62.1	43.4	1,427
Primary incomplete	88.0	55.3	48.3	81.7	65.6	42.7	3,071
Primary complete	88.5	60.4	52.8	84.0	73.0	47.1	3,197
Secondary incomplete	91.2	68.1	63.1	88.3	82.8	48.8	9,619
Secondary complete/higher	96.4	83.8	82.4	94.7	93.2	54.8	5,289
Wealth quintile							
Lowest	89.1	52.5	43.3	81.0	57.6	45.2	3,630
Second	89.0	57.9	51.3	84.4	73.4	46.7	4,277
Middle	89.8	66.3	61.2	87.0	81.4	47.8	4,602
Fourth	92.2	72.0	68.1	89.2	87.0	49.5	5,032
Highest	95.8	85.2	83.5	94.2	94.2	53.4	5,062
Total	91.4	68.0	63.0	87.7	80.2	48.8	22,603

Overall, the quality of antenatal care has improved between BMMS 2010 and BMMS 2016 (Figure 4.5). The percentage of women who had their blood pressure measured and weight taken were already high in BMMS 2010 and remained similar in 2016. However, the percentage of women who had a urine or blood test increased considerably—from 50 percent to 68 percent for urine tests and from 37 percent to 63 percent for blood tests between BMMS 2010 and BMMS 2016. Informing pregnant women on danger signs during pregnancy has improved from 35 percent to 49 percent in BMMS 2010 and BMMS 2016, respectively.

Figure 4.5. Trends in components of ANC, 2010–2016



4.1.5. Quality Antenatal Care

The BDHS 2017–2018 defines quality ANC to be when a woman receives four or more ANC visits, of which at least one is from a medically-trained provider, and all the basic components of ANC are present, including weight and blood pressure measurements, urine and blood tests, and information on signs of possible complications.

Table 4.5 provides information on quality ANC. Although 74 percent of women received at least one ANC from a medically-trained provider during her pregnancy, only 15 percent of women received quality ANC. The likelihood of receiving quality ANC is positively associated with women’s education and household wealth. However, even among women in the highest wealth quintile or those who have completed at least secondary education, only three-out-of-ten pregnant women received quality ANC. Less than 10 percent of pregnant women in Mymensingh and Sylhet divisions, those with less than any secondary education, and those in the two bottom wealth quintiles received quality ANC.

Table 4.5. Quality antenatal care

Percentage of women ages 15–49 with a live birth in the three years preceding the survey who received four or more ANC visits with at least one from a medically-trained provider, the percentage who received four or more ANC visits with at least one from a medically-trained provider and received all components of ANC for recent birth, according to background characteristics, Bangladesh 2016.

Background characteristics	Percentage received four or more ANC visits with at least one from medically-trained provider	Percentage received four or more ANC visits with at least one from medically-trained provider and received all components of ANC*	Number of women
Mother's age at birth			
Below 15	23.4	7.8	182
15–19	32.1	12.9	7,307
20–24	34.8	15.4	9,080
25–29	36.0	16.4	6,503
30–34	33.4	15.0	3,043
35–39	27.4	12.2	840
40–44	17.3	7.4	163
45–49	22.1	22.1	14
Birth order			
1	39.3	17.7	10,398
2-3	33.2	14.3	13,506
4-5	20.1	7.3	2,697
6+	11.2	4.2	532
Residence			
Urban	45.3	21.6	7,188
Rural	29.6	12.2	19,945
Division			
Barishal	24.0	11.8	1,525
Chattogram	32.1	12.2	6,261
Dhaka	36.4	19.4	6,862
Khulna	41.3	18.7	2,546
Mymensingh	26.7	8.1	2,273
Rajshahi	29.8	12.6	2,899
Rangpur	46.1	18.1	2,778
Sylhet	24.6	9.6	1,990
Mother's education			
No education	16.3	6.0	2,293
Primary incomplete	18.9	6.2	4,195
Primary complete	24.8	8.5	4,103
Secondary incomplete	34.7	14.4	11,064
Secondary complete/higher	57.4	30.1	5,478
Wealth quintile			
Lowest	15.5	4.4	5,451
Second	25.3	8.8	5,513
Middle	32.1	12.6	5,350
Fourth	38.7	17.6	5,592
Highest	58.2	30.8	5,227
Total	33.8	14.7	27,133

*All components includes weight taken, blood pressure measured, urine and blood tests done, and information on danger signs provided.

4.2. Delivery Care

4.2.1. Place of Delivery

Table 4.6 presents data on the place of delivery for all live births that occurred during the three years preceding the survey. More than half of the deliveries were still occurring at home, but this has been declining fast in the last 15 years. Facility delivery increased rapidly: from 9 percent in BMMS 2001, to 23 percent in BMMS 2010, to 47 percent in BMMS 2016 (Figure 4.6). Delivery in a facility was more common for women having their first child (57 percent) and among those who lived in urban areas (60 percent). Facility delivery was highest in Khulna division (62 percent) and lowest in Barishal (34 percent) division. Women from households in the highest wealth quintile or those who completed at least secondary education were three times more likely to deliver in a health facility compared to those who came from the lowest wealth quintile households and those who had no education, respectively.

Twenty-nine percent of births occurred in a private hospital/clinic, while 14 percent took place in a public health facility (hospital, upazila health complex, maternal and child welfare centre, union health and family welfare centre, or community clinic). The NGO clinic/hospitals played a relatively minor role, accounting for less than four percent of deliveries.

Figure 4.6. Trends in births delivered in a health facility 2001–2016

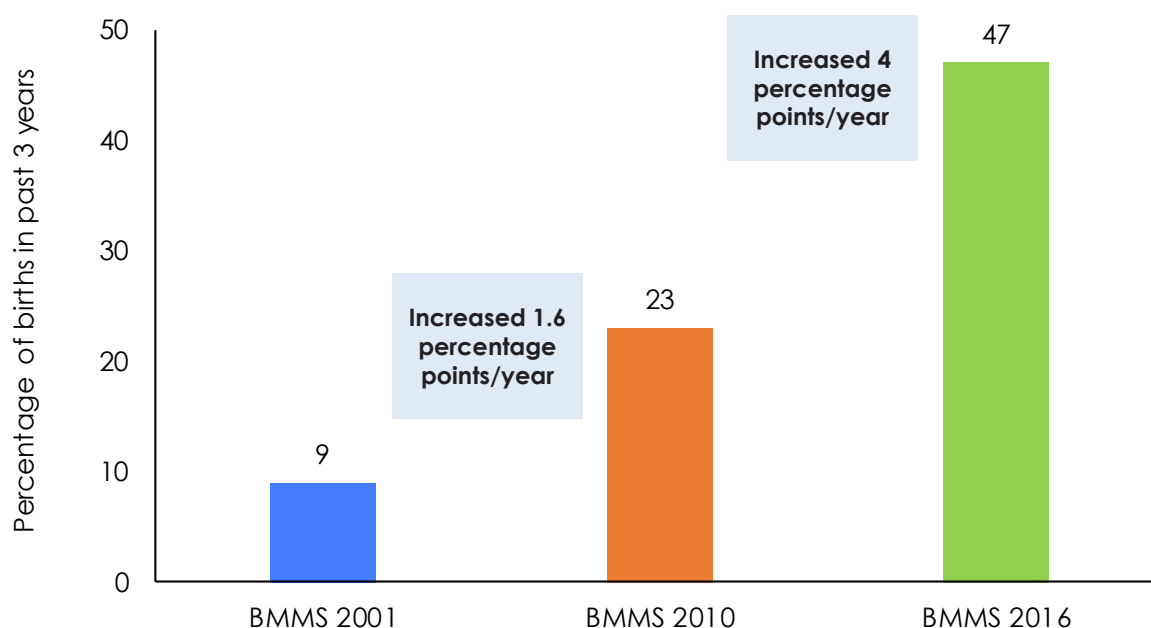


Table 4.6. Place of delivery

Percentage distribution of live births in the three years preceding the survey by place of delivery and percentage delivered in a health facility, according to background characteristics, Bangladesh 2016.

Background characteristics	Health facility					Other/ missing	Total	Percentage delivered in a health facility ¹	Number of births
	Public	Private	NGO	Home					
Mother's age at birth									
Below 15	18.0	19.0	1.1	61.7	0.2	100.0	38.1	202	
15–19	15.1	28.6	3.5	52.3	0.4	100.0	47.2	7,821	
20–24	14.2	30.2	3.9	51.3	0.4	100.0	48.3	9,561	
25–29	13.8	29.6	3.5	52.8	0.3	100.0	46.9	6,772	
30–34	13.8	29.1	3.3	53.1	0.6	100.0	46.3	3,144	
35–39	11.9	27.5	3.1	56.8	0.8	100.0	42.4	868	
40–44	16.8	16.1	3.0	63.6	0.5	100.0	35.9	167	
45–49	*	*	*	*	*	*	*	14	
Birth order									
1	17.0	36.1	4.3	42.2	0.4	100.0	57.4	11,119	
2–3	13.2	27.5	3.4	55.5	0.5	100.0	44.0	14,090	
4–5	9.5	14.9	2.4	73.0	0.2	100.0	26.8	2,790	
6+	9.9	9.4	2.0	78.5	0.2	100.0	21.3	549	
Residence									
Urban	17.8	33.5	8.2	39.9	0.6	100.0	59.5	7,477	
Rural	13.0	27.7	2.0	56.9	0.4	100.0	42.7	21,071	
Division									
Barishal	11.1	21.0	1.6	66.3	0.0	100.0	33.7	1,598	
Chattogram	10.5	27.0	4.1	57.6	0.8	100.0	41.7	6,609	
Dhaka	14.4	37.4	5.6	42.1	0.5	100.0	57.4	7,145	
Khulna	18.6	40.1	3.0	38.0	0.2	100.0	61.8	2,650	
Mymensingh	11.7	18.5	1.5	68.0	0.3	100.0	31.7	2,416	
Rajshahi	17.1	31.6	1.9	49.3	0.1	100.0	50.6	3,030	
Rangpur	17.7	25.0	3.4	53.6	0.3	100.0	46.1	2,915	
Sylhet	16.4	16.2	2.8	63.9	0.6	100.0	35.5	2,186	
Mother's education									
No education	9.5	10.6	3.9	75.3	0.6	100.0	24.1	2,447	
Primary incomplete	11.8	14.0	3.4	70.4	0.5	100.0	29.2	4,455	
Primary complete	12.8	19.0	3.4	64.3	0.4	100.0	35.3	4,350	
Secondary incomplete	15.5	31.2	3.2	49.7	0.3	100.0	50.0	11,600	
Secondary complete/higher	16.8	53.0	4.4	25.2	0.6	100.0	74.3	5,696	
Wealth quintile									
Lowest	9.9	11.2	1.1	77.5	0.3	100.0	22.3	5,830	
Second	14.2	20.8	1.6	63.0	0.5	100.0	36.5	5,836	
Middle	14.8	29.3	2.7	53.0	0.2	100.0	46.8	5,607	
Fourth	16.3	34.6	5.3	43.2	0.5	100.0	56.3	5,852	
Highest	16.3	51.8	7.5	23.7	0.7	100.0	75.6	5,423	
Total	14.3	29.2	3.6	52.5	0.4	100.0	47.1	28,548	

¹ Includes "public," "private," and "NGO facility," but excludes "other."

Between BMMS 2010 and BMMS 2016 the increase in facility delivery was mainly due to the rise in the proportion of deliveries occurring in private facilities (Figure 4.7). In 2010, the private and public health facilities accounted for similar percentages of deliveries (11 percent versus 10 percent, respectively). In 2016, deliveries in private facilities were more than two times higher than deliveries at public sector facilities (29 percent versus 14 percent, respectively).

Figure 4.8 shows facility delivery in each year between 2013 and 2016. During this period the increase in facility delivery was completely due to an increase in births in private health facilities (from 24 percent to 32 percent). The proportion of births in public facilities hardly changed, stagnating around 14–15 percent, during the same period, and this is concerning.

Figure 4.7 Change in facility deliveries by type of facility, 2010–2016

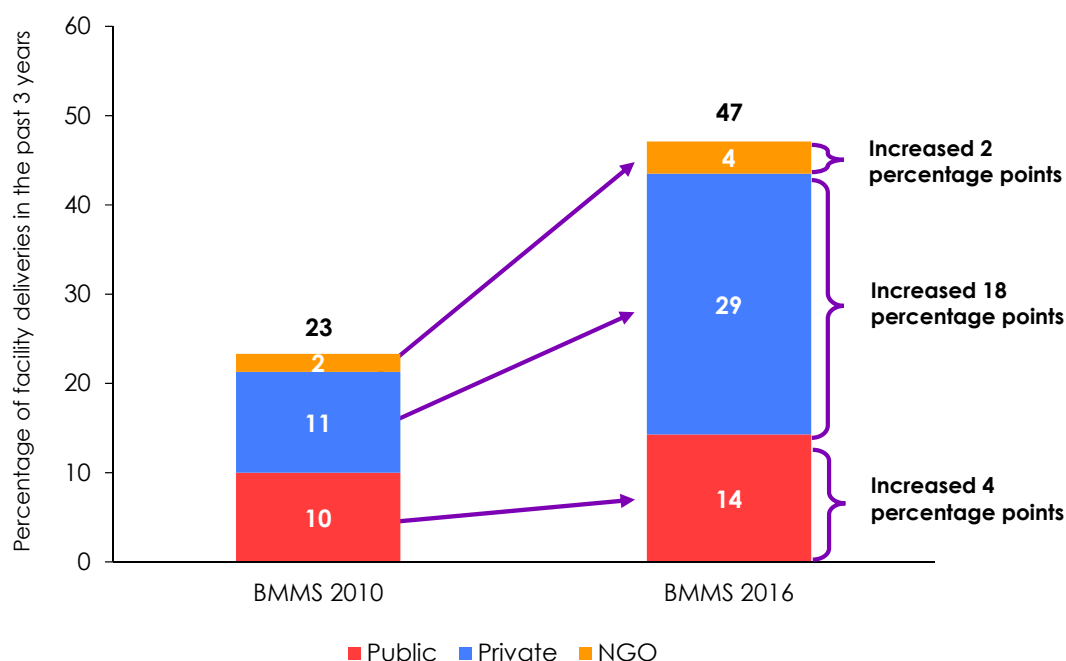
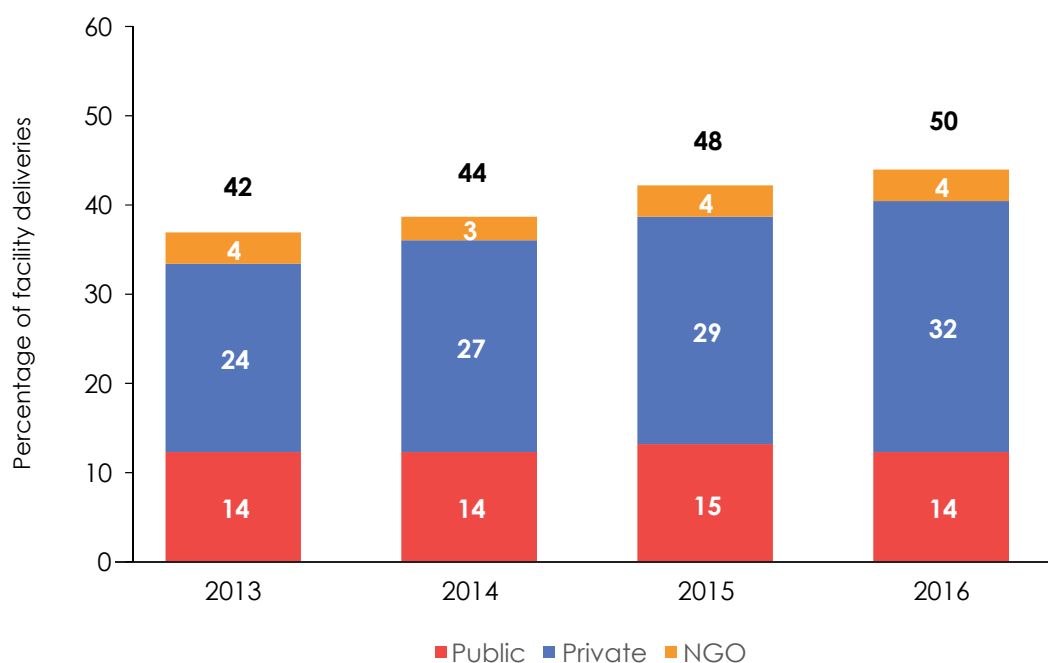


Figure 4.8. Trends in facility delivery, Bangladesh 2013–2016



4.2.2. Assistance during Delivery

The proportion of births delivered by skilled health personnel constitutes one of the main indicators of maternal health in Bangladesh's Health Sector Program 2017–22. Bangladesh's aim is to reach 65 percent of deliveries by medically-trained providers by 2022 (MOHFW, 2017). Table 4.7 shows the types of persons providing assistance during delivery, according to background characteristics, for all live births in the three years preceding the survey. When more than one type of attendant was reported to have assisted at delivery, only the most qualified person was shown.

Delivery by medically-trained providers in Bangladesh has reached 50 percent, and thus the previous health sector program in Bangladesh (HPNSDP, 2011–2016) has achieved its target (MOHFW, 2014). Qualified doctors attended for 39 percent of deliveries, while nurses/midwives/paramedics/family welfare visitors conducted 11 percent of deliveries. Community skilled birth attendants who assisted delivery at home attended only 0.3 percent of deliveries and this has not changed since 2010. Births attended by medically-trained providers were more common among women in urban areas (63 percent), women who had completed secondary or higher education (78 percent), or women in the highest wealth quintile (78 percent). Women of Khulna division (64 percent) had the highest proportion of births assisted by medically-trained providers, while the proportion was the lowest in Mymensingh division (34 percent).

In 2001, untrained traditional birth attendants (untrained TBA) were the most prominent cadre, conducting 63 percent of deliveries. Their prominence declined slightly in 2010 but was still the most prominent group attending deliveries. Between 2010 and 2016 the use of untrained TBA for deliveries declined substantially, from 57 percent to 33 percent—a very welcoming trend. It is important to emphasize that the designation of trained versus untrained was based wholly on reports from respondents, and a respondent may not have known how to categorize her provider. Only three percent of deliveries were assisted by friends or relatives.

Medically-assisted births increased more rapidly in recent years—with an average increase of about four percentage points per year between BMMS 2010 and BMMS 2016, compared to only 1.6 percentage points per year between BMMS 2001 and BMMS 2010 (Figure 4.9).

Figure 4.9. Trends in deliveries by medically-trained provider, 2001–2016

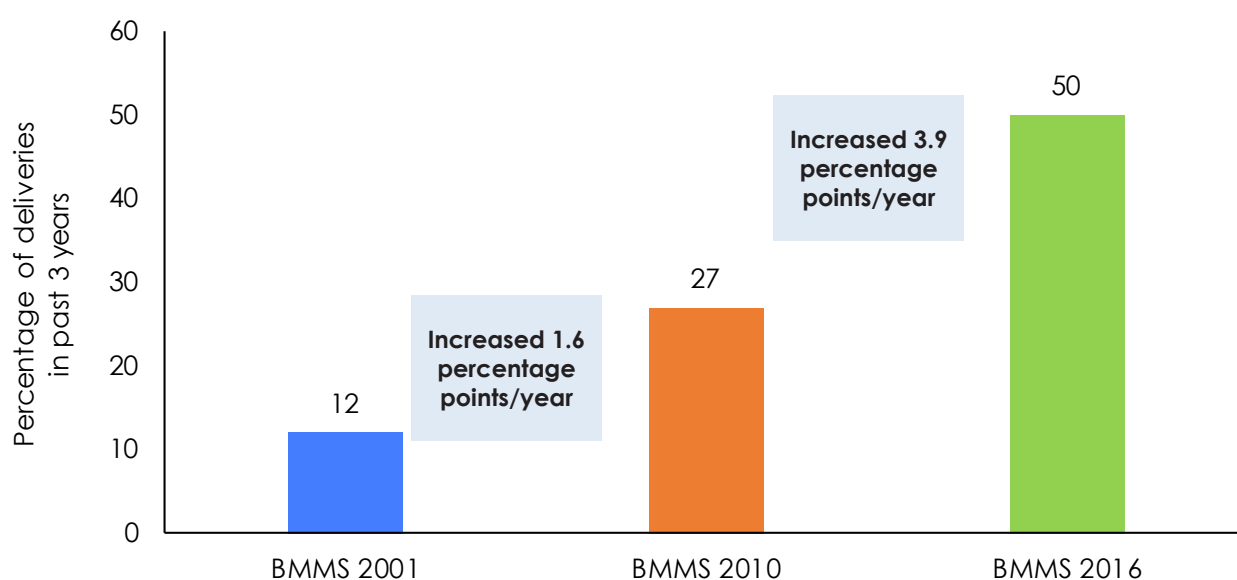


Table 4.7. Assistance during delivery

Percentage distribution of live births in the three years preceding the survey, by person providing assistance during delivery, percentage attended by a medically-trained provider, and percentage delivered by C-section, according to background characteristics, Bangladesh 2016.

Background characteristics	Medically-trained providers										Percentage delivered by a medically-trained provider	Percentage delivered by C-section	Number of births
	Qualified doctor	Nurse/midwife/paramedic/FWV	CSBA	Trained TBA	Un-trained TBA	Relatives/friends/neighbors	Other ¹	No one	Missing	Total			
Mother's age at birth													
Below 15	30.8	8.8	0.0	21.1	36.3	2.3	0.7	0.0	0.0	100.0	39.6	21.6	202
15–19	38.6	11.3	0.3	14.0	32.4	2.9	0.5	0.0	0.1	100.0	50.2	29.2	7,821
20–24	40.0	10.5	0.3	13.9	31.3	3.5	0.4	0.0	0.1	100.0	50.8	31.8	9,561
25–29	39.5	9.7	0.4	13.4	33.0	3.4	0.5	0.1	0.1	100.0	49.6	31.7	6,772
30–34	38.0	10.7	0.2	12.6	34.6	3.1	0.4	0.1	0.2	100.0	49.0	31.0	3,144
35–39	34.9	10.3	0.1	14.0	36.0	3.8	0.4	0.2	0.3	100.0	45.3	28.5	868
40–44	27.3	9.0	0.6	16.7	41.2	4.2	0.1	0.9	0.0	100.0	36.8	20.5	167
45–49	*	*	*	*	*	*	*	*	*	*	*	*	14
Residence													
Urban	49.0	13.4	0.2	11.3	22.9	2.3	0.6	0.0	0.1	100.0	62.6	38.6	7,477
Rural	35.4	9.5	0.4	14.6	36.0	3.6	0.4	0.1	0.1	100.0	45.3	27.9	21,071
Division													
Barishal	28.1	10.4	0.1	16.9	40.0	4.0	0.4	0.0	0.0	100.0	38.6	21.6	1,598
Chattogram	34.4	11.6	0.3	13.2	38.1	1.8	0.4	0.0	0.1	100.0	46.3	25.9	6,609
Dhaka	49.6	9.0	0.2	12.0	25.5	2.8	0.5	0.0	0.2	100.0	58.9	41.2	7,145
Khulna	51.9	11.9	0.2	11.7	21.6	2.3	0.3	0.0	0.0	100.0	64.0	42.7	2,650
Mymensingh	23.5	10.2	0.6	17.0	43.5	4.4	0.6	0.1	0.1	100.0	34.3	20.0	2,416
Rajshahi	41.9	10.1	0.3	10.8	32.3	4.1	0.3	0.2	0.0	100.0	52.3	32.4	3,030
Rangpur	35.6	11.8	0.7	19.2	25.0	7.2	0.5	0.0	0.0	100.0	48.0	26.4	2,915
Sylhet	27.9	9.7	0.5	13.9	45.0	2.1	0.5	0.1	0.4	100.0	38.1	18.6	2,186

Table 4.7. Assistance during delivery (continued)

Background characteristics	Medically-trained providers							Percentage delivered by a medically-trained provider			Number of births		
	Qualified doctor	Nurse/ midwife/ paramedic/ FWV	CSBA	Trained TBA	Un-trained TBA	Relatives/ friends/ neighbors	Other ¹	No one	Missing	Total		Percentage delivered by C-section	
Mother's education													
No education	16.9	9.0	0.1	14.7	52.8	5.3	0.6	0.2	0.3	100.0	26.1	11.8	2,447
Primary incomplete	21.4	9.0	0.3	16.7	47.7	4.2	0.5	0.2	0.2	100.0	30.6	15.7	4,455
Primary complete	27.1	10.2	0.2	16.5	41.5	3.9	0.6	0.0	0.1	100.0	37.4	19.7	4,350
Secondary incomplete	41.3	11.3	0.4	13.9	29.5	3.2	0.4	0.0	0.1	100.0	52.9	32.0	11,600
Secondary complete/ higher	66.6	11.1	0.4	8.6	11.6	1.4	0.1	0.0	0.1	100.0	78.2	56.4	5,696
Wealth quintile													
Lowest	16.4	7.7	0.5	17.3	53.1	4.6	0.3	0.1	0.1	100.0	24.6	11.5	5,830
Second	28.3	10.6	0.4	15.6	40.0	4.5	0.6	0.1	0.1	100.0	39.2	21.3	5,836
Middle	38.0	11.1	0.3	14.8	31.9	3.4	0.4	0.1	0.1	100.0	49.5	29.6	5,607
Fourth	46.7	12.5	0.3	12.7	24.5	2.5	0.5	0.1	0.2	100.0	59.5	36.9	5,852
Highest	67.4	10.7	0.2	7.9	12.0	1.3	0.4	0.0	0.1	100.0	78.3	56.0	5,423
Total	39.0	10.5	0.3	13.7	32.6	3.3	0.4	0.1	0.1	100.0	49.8	30.7	28,548

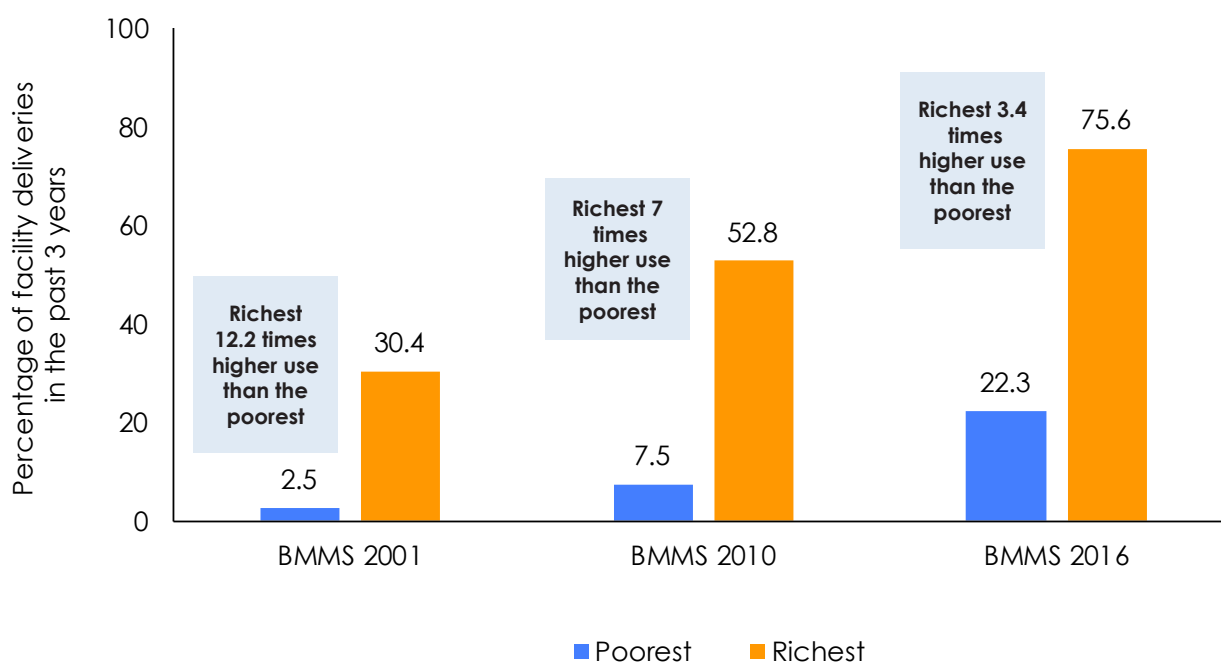
Note: If the respondent mentioned more than one person attending during delivery, only the most qualified person is considered in the tabulation. ¹ "Other" includes MA/SACMO, community health care provider, HA, FWA, NGO workers, unqualified doctor, and "other."

Inequity in Use of Facility for Delivery

Bangladesh’s goal is to achieve universal health coverage by 2032 (HEU 2012). Inequity in use of maternal health services across socioeconomic groups is a major concern in Bangladesh. Two ways to assess whether there are improvements in reducing inequity in use of services is to examine whether the ratio and absolute difference of maternal health service use rates among the rich and the poor are declining over time.

Figure 4.10 shows that the poor-rich ratio in use of health facilities has declined markedly between BMMS 2001 and BMMS 2016. Bangladesh has successfully achieved the HPNSDP (2011–16) target of narrowing the gap between the poorest and the richest in using facility delivery to less than 1-to-4. According to BMMS 2016, 22 percent of births by women in the poorest wealth quintile were in a health facility, compared to 76 percent of births in the richest quintile. This translates to a poor-rich ratio of 1-to-3.4. The corresponding ratios in 2001 and 2010 were 1-to-12.2 and 1-to-7.0, respectively. However, the absolute gap in use of health facility for delivery among households in the poorest wealth quintile and the richest wealth quintile was very large in BMMS 2016—a difference of 53 percentage points. The absolute difference in health facility use rate among the poorest and the richest has been increasing in the last 15 years. Both the poor-rich use ratio and the absolute difference in use need to decline to reduce inequity in maternal health service use.

Figure 4.10. Poor-rich inequity in use of health facilities for delivery, 2001–2016



Reasons for Not Delivering in a Facility

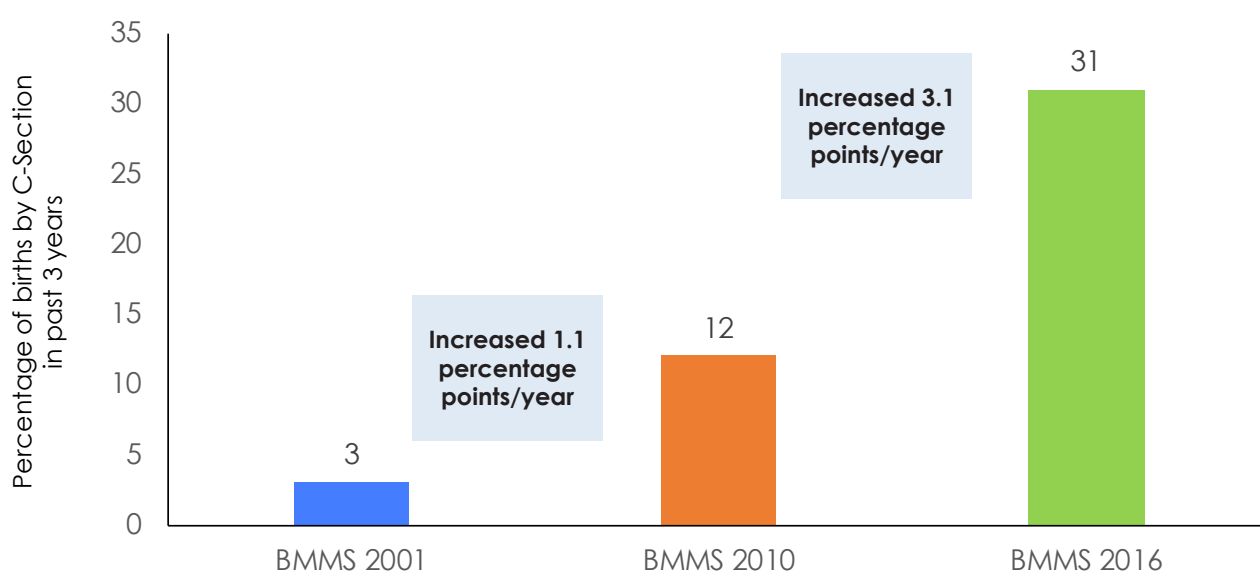
Over half of the women did not deliver in a facility. These women were asked about their reasons for not delivering in a facility. Multiple responses were accepted. The reasons women cited for not delivering at a facility are summarized here (table not provided). Eighty-five percent of women who had a non-institutional birth mentioned that it was not necessary/customary for them to go to a facility for delivery. Fourteen percent mentioned cost to be a factor for not choosing facility delivery. Service-related factors were also important, with seven percent mentioning poor quality of services, five percent reporting access or transport problems, and four percent mentioning fear of health facility/C-section.

4.2.3. Delivery by Cesarean Section

Almost one in three deliveries was performed by C-section (Table 4.7). Rates of C-section rose with increases in household wealth and women's education. More than half (56 percent) of the women in the richest households, and those who had at least completed secondary education, delivered by C-section. Rates of C-section were higher in urban than rural areas. Among the eight divisions, C-section rates were the highest in Dhaka and Khulna Divisions, at 41 percent and 43 percent, respectively.

Deliveries performed by C-section increased by more than 10 times between 2001 and 2016 (Figure 4.11). The rise in C-section was steeper in the past six years, from 12 percent to 31 percent. This translates into a 3.1 percentage point increase per year between BMMS 2010 and BMMS 2016. In comparison, the C-section rate increase was slower, at 1.1 percentage points per year between 2001 and 2010.

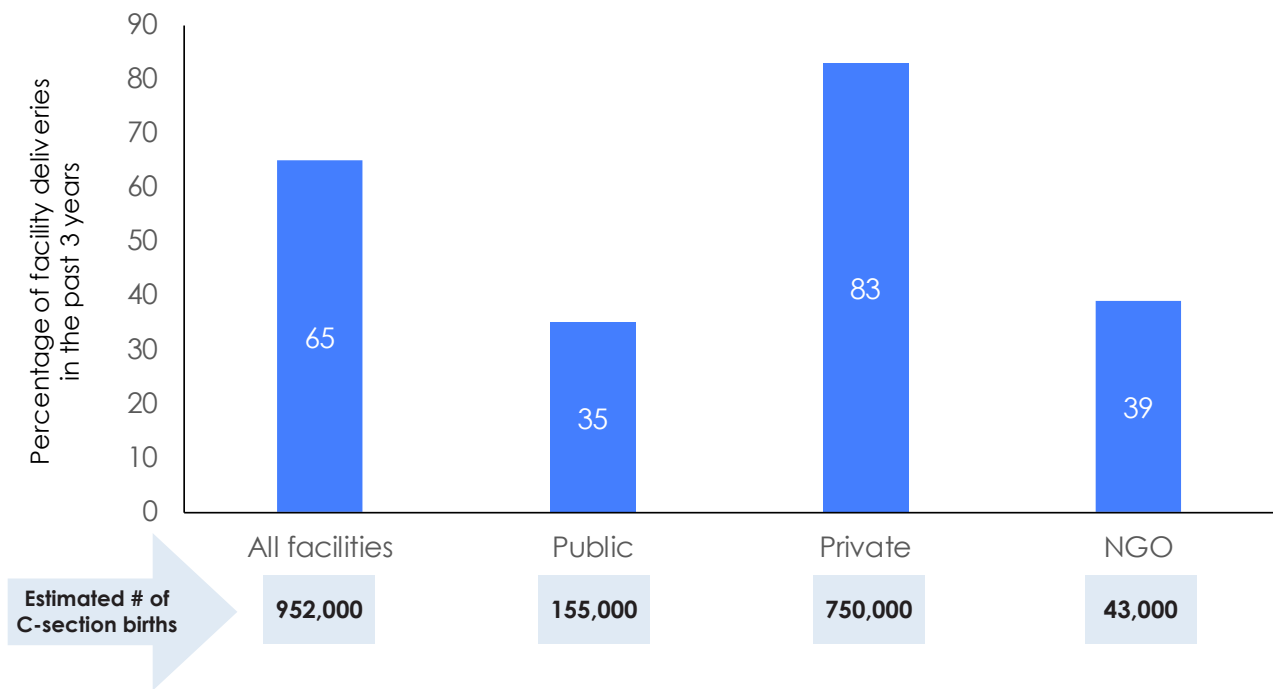
Figure 4.11. Trends in deliveries by C-section, 2001–2016



Two in three facility deliveries were performed by C-section (Figure 4.12). The private sector contributed the largest share of C-sections. More than four in five deliveries (83 percent) performed in private hospitals and clinics were by C-section. Comparatively, 35 percent and 39 percent of deliveries in the public and NGO health facilities were by C-section. This implies that of the 3.1 million annual births in Bangladesh, 952,000 are conducted by C-section, of which private hospitals and clinics performed 750,000 each year.

The rapid increase of births by C-section, with its associated financial and physical costs, is related to the steep increase in deliveries in private hospitals/clinics. The private sector is poorly regulated and very little information is available through the MOHFW routine management information system (MIS) on the number of deliveries taking place in this way and whether or not the procedure is medically indicated. There is also very little information on the certification of these private clinics. Recent data from the 2014 and 2017 Bangladesh Health Facility Surveys indicate private hospitals/clinics with at least 20 beds were poorly prepared for delivery services (NIPORT, ACPR, and ICF, 2018b; NIPORT, ACPR, and ICF International, 2016). Not a single private hospital had the basic readiness (had all of the following: trained staff, guidelines, equipment, and medications) to provide quality delivery care in 2014 and 2017. The 2017 Bangladesh Health Facility Survey also showed that while 97 percent of the private hospitals offered C-section deliveries, only five percent performed all of the 9 signal functions for comprehensive emergency obstetric and newborn care.

Figure 4.12. Proportion of facility deliveries performed by C-section by type of facility, BMMS 2016



4.3. Postnatal Care

Appropriate care during the post-partum period is critical for both mother and newborn survival as well as for their wellbeing. Postnatal care is recognized as an integral component of comprehensive maternal and child health care. However, this period is often considered as the “most neglected period” in the maternal and child health care continuum (WHO 2014). In the BMMS 2016, women were asked whether they received postnatal check-ups for themselves or for their babies during the two months following delivery, for the most recent live birth in the three years preceding the survey. They were also asked regarding the timing of PNC and the types of providers who checked on their or their baby’s health, and the place where the first PNC was done.

4.3.1. Timing and Source of Postnatal Care for Mothers

The majority of the women who received PNC from any provider tended to do so within the first four hours of childbirth (Table 4.8).

Table 4.9 shows that nearly half (48 percent) of the women with recent deliveries reported having a postnatal check-up with a medically-trained provider within the first two days of childbirth. Of the total, 38 percent of women reported that they received PNC from a qualified doctor, and 10 percent from either nurse, midwife, or paramedic. Additionally, 18 percent of women reported receiving PNC from a non-medically trained provider, which included community health workers.

In terms of differentials, women ages 15–39 were more likely to have received PNC from a medically-trained provider than women in younger or older ages. First parity women were much more likely to have received PNC than those with higher parity. There was a strong positive association between PNC and education of women and their household’s wealth quintile. There was substantial regional variation of PNC by a medically-trained provider, it was the highest in Khulna division (62 percent) and lowest in Mymensingh (33 percent), followed by Sylhet and Barishal (37 percent). Use of non-medically trained provider for PNC was particularly high in Mymensingh (36 percent), Sylhet (28 percent), and Chattogram (27 percent) divisions.

Women receiving PNC from a medically-trained provider within two days of childbirth has increased from 11 percent in BMMS 2001 to 48 percent in BMMS 2016. At the same time, PNC from non-medically trained providers has also risen from 6 percent to 18 percent (Figure 4.13).

Table 4.8. Timing of first postnatal checkup for the mother

Percentage distribution of women ages 15–49 who had a live birth in the three years preceding the survey, by time after delivery of the mother's first postnatal checkup for the last live birth, the percentage who had a postnatal checkup within two days of delivery from any provider, and the percentage who had a postnatal checkup within two days of delivery, from a medically-trained provider, according to background characteristics, Bangladesh 2016.

Background characteristics	Timing after delivery of mother's first postnatal check-up					Total	Percentage receiving check-up within 2 days of delivery from any provider	Percentage receiving check-up within 2 days of delivery from a medically-trained provider	Number of women	
	<4 hours	4–23 hours	Within 1–2 days	Within 2 months ¹	Timing missing					No postnatal checkup
Mother's age at birth										
Below 15	50.2	5.5	4.5	3.5	0.6	35.6	100.0	60.3	37.9	182
15–19	55.8	6.2	5.0	2.8	0.4	29.8	100.0	67.0	48.6	7,307
20–24	56.2	7.2	3.7	3.2	0.3	29.4	100.0	67.2	49.1	9,080
25–29	53.5	7.1	4.0	3.3	0.3	31.8	100.0	64.6	47.2	6,503
30–34	53.8	6.6	4.5	3.3	0.1	31.7	100.0	64.9	47.5	3,043
35–39	54.3	6.1	3.4	2.6	0.3	33.3	100.0	63.8	43.3	840
40–44	42.0	9.6	3.0	2.3	0.0	43.2	100.0	54.5	35.4	163
45–49	*	*	*	*	*	*	*	*	*	14
Birth order										
1	61.4	7.2	4.2	2.7	0.3	24.1	100.0	72.8	57.9	10,398
2–3	52.8	6.7	4.1	3.2	0.3	32.9	100.0	63.6	45.1	13,506
4–5	43.7	6.5	4.9	3.6	0.1	41.2	100.0	55.0	29.0	2,697
6+	42.7	4.5	4.7	3.5	0.2	44.4	100.0	51.9	21.6	532
Residence										
Urban	61.3	8.6	5.0	3.0	0.3	21.8	100.0	74.8	59.1	7,188
Rural	52.7	6.2	4.0	3.1	0.3	33.8	100.0	62.9	44.0	19,945

Table 4.8. Timing of first postnatal checkup for the mother (continued)

Background characteristics	Timing after delivery of mother's first postnatal check-up				Timing missing	No postnatal checkup	Total	Percentage receiving check-up within 2 days of delivery from any provider	Percentage receiving check-up within 2 days of delivery from a medically-trained provider	Number of women
	<4 hours	4-23 hours	Within 1-2 days	Within 2 months ¹						
Division										
Barishal	39.5	3.8	2.5	2.8	0.2	51.2	100.0	45.8	37.0	1,525
Chattogram	59.9	8.1	4.8	3.0	0.3	23.9	100.0	72.7	45.5	6,261
Dhaka	53.3	9.1	5.2	3.5	0.6	28.4	100.0	67.5	54.4	6,862
Khulna	61.8	5.0	1.8	2.0	0.1	29.3	100.0	68.6	62.3	2,546
Mymensingh	57.5	6.0	5.3	3.3	0.2	27.6	100.0	68.8	33.2	2,273
Rajshahi	49.3	5.9	2.4	2.4	0.1	39.9	100.0	57.6	51.4	2,899
Rangpur	56.1	3.5	3.4	3.0	0.0	33.9	100.0	63.0	47.1	2,778
Sylhet	52.5	6.6	6.3	4.4	0.3	29.9	100.0	65.4	36.9	1,990
Mother's education										
No education	38.9	5.9	4.2	3.6	0.5	46.9	100.0	49.0	24.5	2,293
Primary incomplete	45.9	5.3	4.5	3.2	0.2	40.9	100.0	55.7	29.7	4,195
Primary complete	47.2	5.7	4.2	3.6	0.2	39.1	100.0	57.1	35.6	4,103
Secondary incomplete	57.1	6.7	4.3	3.1	0.3	28.4	100.0	68.1	50.8	11,064
Secondary complete or higher	70.2	9.6	3.9	2.3	0.2	13.8	100.0	83.7	75.4	5,478
Wealth quintile										
Lowest	40.1	4.3	4.2	3.5	0.2	47.7	100.0	48.6	23.6	5,451
Second	50.0	5.4	4.0	3.3	0.2	37.2	100.0	59.4	38.1	5,513
Middle	56.4	6.2	3.7	2.9	0.3	30.4	100.0	66.4	48.1	5,350
Fourth	60.0	8.5	3.8	3.2	0.4	24.1	100.0	72.2	56.5	5,592
Highest	69.1	9.9	5.4	2.5	0.2	12.9	100.0	84.4	74.5	5,227
Total	55.0	6.8	4.2	3.1	0.3	30.6	100.0	66.0	48.0	27,133

¹ Defined as more than two days and within 60 days or eight weeks.

Table 4.9. Type of provider of first postnatal checkup for the mother

Percentage distribution of women ages 15–49 who had a live birth in the three years preceding the survey by type of provider for the mother's first postnatal checkup, within two days of delivery of the most recent live birth, and the percentage who had a postnatal checkup within two days of delivery, by a medically-trained provider, according to background characteristics, Bangladesh 2016.

Background characteristics	Medically-trained provider					Total	Percentage receiving check-up within 2 days of delivery from a medically-trained provider	Number of women		
	Qualified doctor	Nurse/ midwife/ paramedic/ FWV	CSBA	MA/ SACMO	Non-medically trained provider ¹				Missing	No postnatal checkup ²
Mother's age at birth										
Below 15	26.2	11.7	0.0	0.0	22.4	0.0	39.7	100.0	37.9	182
15–19	37.6	10.7	0.2	0.0	18.3	0.1	33.0	100.0	48.6	7,307
20–24	37.8	11.1	0.2	0.0	18.1	0.0	32.8	100.0	49.1	9,080
25–29	37.7	9.2	0.3	0.0	17.4	0.0	35.4	100.0	47.2	6,503
30–34	37.7	9.6	0.2	0.0	17.4	0.0	35.1	100.0	47.5	3,043
35–39	34.0	9.3	0.0	0.0	20.4	0.1	36.2	100.0	43.3	840
40–44	29.3	6.1	0.0	0.0	19.2	0.0	45.5	100.0	35.4	163
45–49	*	*	*	*	*	*	*	*	*	14
Birth order										
1	46.3	11.4	0.2	0.0	14.8	0.1	27.2	100.0	57.9	10,398
2–3	34.9	10.0	0.2	0.0	18.4	0.0	36.4	100.0	45.1	13,506
4–5	20.9	7.8	0.3	0.0	26.0	0.0	45.0	100.0	29.0	2,697
6+	13.6	7.7	0.2	0.0	30.4	0.0	48.1	100.0	21.6	532
Residence										
Urban	46.4	12.6	0.2	0.0	15.7	0.0	25.2	100.0	59.1	7,188
Rural	34.3	9.5	0.2	0.0	18.8	0.1	37.1	100.0	44.0	19,945

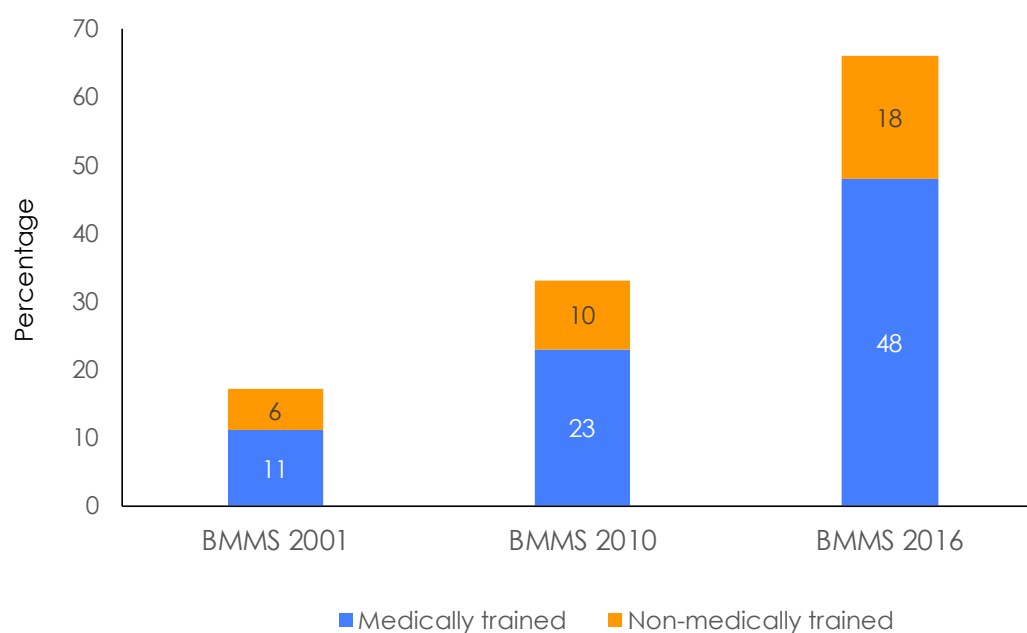
Table 4.9. Type of provider of first postnatal checkup for the mother (continued)

Background characteristics	Medically-trained provider						Total	Percentage receiving check-up within 2 days of delivery from a medically-trained provider	Number of women	
	Qualified doctor	Nurse/ midwife/ paramedic/ FWV	CSBA	MA/ SACMO	Non-medically trained provider ¹	Missing				No postnatal checkup ²
Division										
Barishal	27.9	8.8	0.1	0.1	8.9	0.0	54.2	100.0	37.0	1,525
Chattogram	34.3	11.0	0.1	0.0	27.2	0.1	27.3	100.0	45.5	6,261
Dhaka	44.8	9.5	0.1	0.0	13.1	0.1	32.5	100.0	54.4	6,862
Khulna	49.6	12.5	0.2	0.0	6.4	0.0	31.4	100.0	62.3	2,546
Mymensingh	23.4	9.4	0.4	0.0	35.6	0.0	31.2	100.0	33.2	2,273
Rajshahi	41.2	10.0	0.2	0.0	6.1	0.0	42.4	100.0	51.4	2,899
Rangpur	35.2	11.5	0.4	0.0	15.9	0.0	37.0	100.0	47.1	2,778
Sylhet	27.8	8.9	0.2	0.0	28.4	0.1	34.6	100.0	36.9	1,990
Mother's education										
No education	16.5	8.0	0.0	0.0	24.4	0.1	51.0	100.0	24.5	2,293
Primary incomplete	20.3	9.1	0.2	0.0	26.0	0.0	44.3	100.0	29.7	4,195
Primary complete	26.0	9.4	0.1	0.0	21.3	0.1	42.9	100.0	35.6	4,103
Secondary incomplete	39.7	10.7	0.3	0.0	17.3	0.0	31.9	100.0	50.8	11,064
Secondary complete or higher	63.5	11.8	0.1	0.0	8.3	0.0	16.3	100.0	75.4	5,478
Wealth quintile										
Lowest	16.2	7.0	0.4	0.0	24.9	0.0	51.4	100.0	23.6	5,451
Second	27.8	10.0	0.3	0.0	21.3	0.0	40.6	100.0	38.1	5,513
Middle	36.7	11.3	0.2	0.0	18.2	0.0	33.6	100.0	48.1	5,350
Fourth	43.9	12.5	0.1	0.0	15.7	0.0	27.8	100.0	56.5	5,592
Highest	63.8	10.7	0.1	0.0	9.6	0.2	15.6	100.0	74.5	5,227
Total	37.5	10.3	0.2	0.0	18.0	0.1	34.0	100.0	48.0	27,133

¹ Includes community health care provider, HA, FWA, trained TBA, untrained TBA, unqualified doctor and "other."

² Includes those who had postnatal care after two days of delivery and those whose information on timing was missing.

Figure 4.13. Trends in postnatal care for mothers within two days of delivery, BMMS 2001, 2010, and 2016



4.3.2. Postnatal Care by Place of Delivery

Table 4.10 shows that those who delivered in private health facilities were most likely to receive PNC from a qualified doctor (87 percent), compared to those who delivered in public (59 percent) or NGO facilities (53 percent). Almost one in three women who delivered in public or NGO facilities reported receiving PNC from nurse/midwives or paramedics. Surprisingly, almost one in five women who delivered in NGO health facilities reported that they either received PNC from a non-medically trained provider or did not receive any PNC. For home deliveries, only six percent received PNC from a medically-trained provider within two days of childbirth (much lower than the 4th HPNSP target of 10 percent by 2022), although nearly one-third reported receiving PNC from a non-medically trained provider.

Table 4.10. Postnatal care by place of delivery

Among women ages 15–49 giving birth in the three years preceding the survey, the percent distribution by types of provider of the mother's first postnatal checkup for the last live birth, and the percentage receiving postnatal care from a medically-trained provider, according to place of delivery, Bangladesh 2016.

Place of delivery	Postnatal care within two days							Total	Percentage receiving postnatal care from a medically-trained provider	Number of women
	Qual-ified doctor	Nurse/ midwife/ para-medic/ FWV	CSBA	MA/ SACMO	Non-medically trained provider ¹	Missing	No post-natal check-up ²			
Public facility	59.2	32.0	0.2	0.0	0.5	0.0	7.9	100	91.5	3,874
Private facility	87.2	9.4	0.0	0.0	0.1	0.0	3.3	100	96.6	8,050
NGO	53.1	29.4	0.0	0.0	7.9	0.0	9.6	100	82.5	989
Home	2.0	3.4	0.3	0.0	33.8	0.1	60.3	100	5.8	14,120
Other/missing	42.2	18.1	0.0	0.2	12.6	0.0	26.9	100	60.5	101
Total	37.5	10.3	0.2	0.0	18.0	0.1	34.0	100	48.0	27,133

¹ Includes HA, FWA, trained TBA, untrained TBA, unqualified doctor, and "other."

² Includes those who had postnatal care after two days of delivery.

4.3.3. Complete Maternity Care

Complete continuum of maternity care, including antenatal care, delivery care, and postnatal care from a medically-trained provider, is an important marker of health systems performance of maternal care. In the BMMS 2016, more than two out of five women reported receiving at least one ANC, delivery, and PNC from a medically-trained provider (Figure 4.14). At the same time, 21 percent of women reported receiving none of the three maternity care services at all.

The percent of women receiving complete maternity care has increased significantly, from five percent in BMMS 2001 to 19 percent in BMMS 2010 and to 43 percent in BMMS 2016 (Figure 4.15). Consequently, the percentage of women receiving none of the maternity care services has declined. In BMMS 2001, more than half of the women (52 percent) reported receiving no maternity care during their most recent pregnancy, childbirth, and post-partum period, and the proportion has gradually declined to two in every five women in BMMS 2010 and one in five in BMMS 2016. However, improving the health system's reach to the 21 percent of women who still do not receive any maternity care remains an important area to intervene.

Figure 4.14. Completeness of maternity care, BMMS 2016

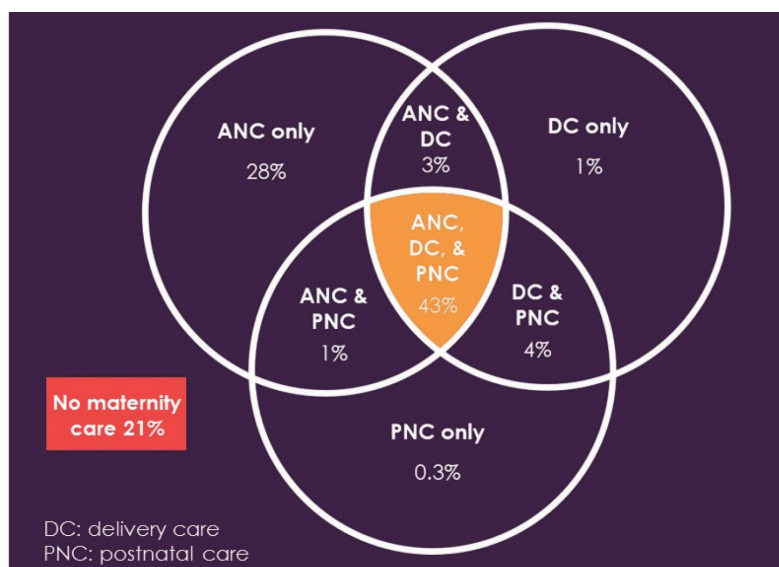
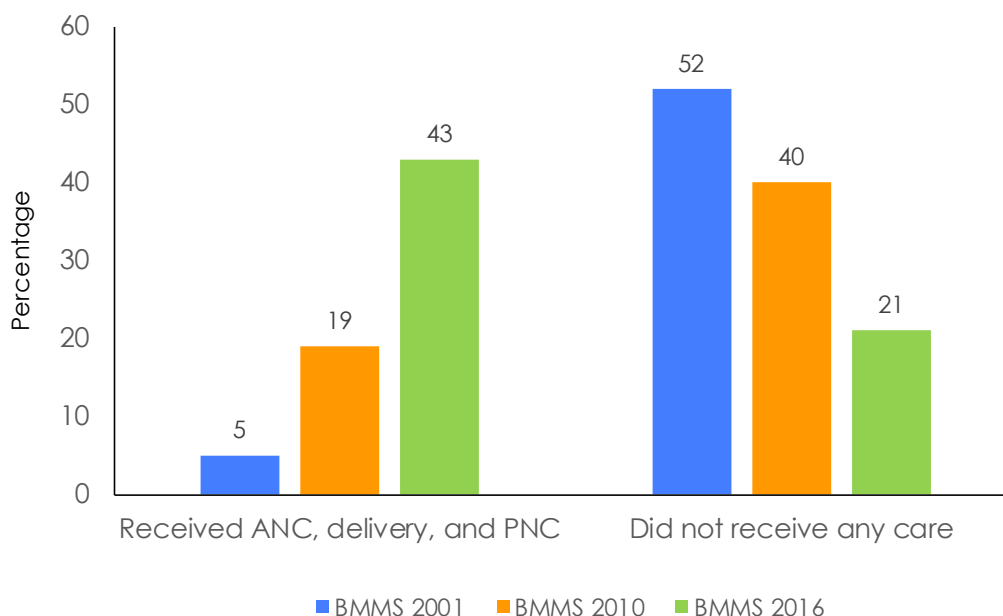


Figure 4.15. Trends in completeness of maternity care from a medically-trained provider, 2001–2016



4.4. Delivery Expenditures

All women who delivered in the three years preceding the survey were asked about the total amount that the family had to spend for the most recent birth. Information was also collected on the sources that provided the funds to cover child birth expenditures.

4.4.1. Delivery Expenditure by Type and Place of Delivery

Expenditures related to childbirth were dependent upon whether the delivery occurred in a facility and whether it was normal delivery or C-section. Seventy-six percent of the normal deliveries occurred at home, 13 percent in public, seven percent in private, and three percent in NGO facilities (Figure 4.16). Three percent of women who had normal delivery reported that they had no expense related to the delivery. For normal delivery, the median expenditures were the lowest for home delivery (around Taka 1,000) and the highest for delivery at private facilities (around Taka 6,800) (Table 4.11; Figure 4.17). The median cost related to a normal delivery across all types of health facilities was around Taka 4,000 (data not shown). There was little difference between public and NGO facilities in either the mean or the median expenditure for a normal delivery. The median cost associated with normal deliveries in a private facility was 2.3 times and 2.6 times higher than the median expenditures associated with normal deliveries at public facilities (around Taka 3,000) and NGO facilities (around Taka 2,600), respectively.

Seventy-nine percent of all C-section deliveries took place in private facilities, 16 percent took place in public facilities, and five percent took place in NGO health facilities (Figure 4.16). Less than one percent of women who had C-section deliveries reported that they paid nothing for the delivery. The median expenditures associated with C-section delivery was around Taka 20,000—which was five times higher than the median expenditure related to normal facility deliveries. Expenditures related to C-section deliveries were the highest in private facilities (median around Taka 20,000; mean around Taka 22,000) and the lowest in public facilities (median around Taka 12,000; mean around 15,000) (Table 4.11; Figure 4.17).

Overall, around one percent of women who delivered in a public or NGO health facility reported that they had incurred no expense related to childbirth.

Figure 4.16. Distribution of normal/C-section deliveries by place of delivery, BMMS 2016

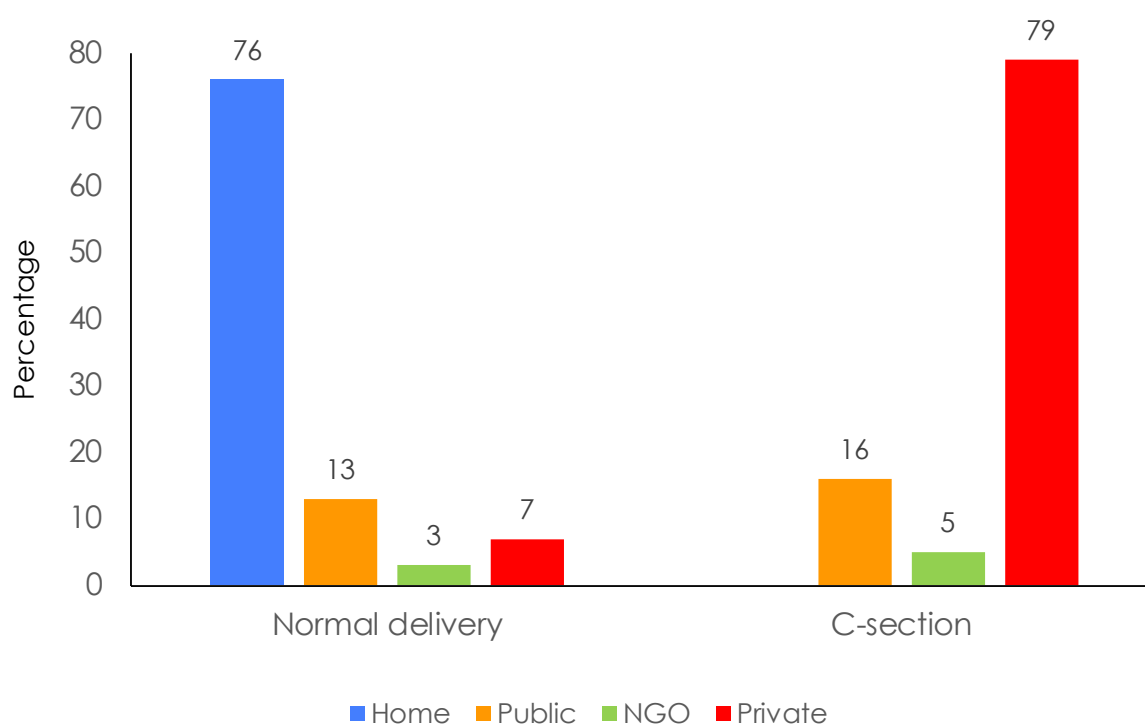
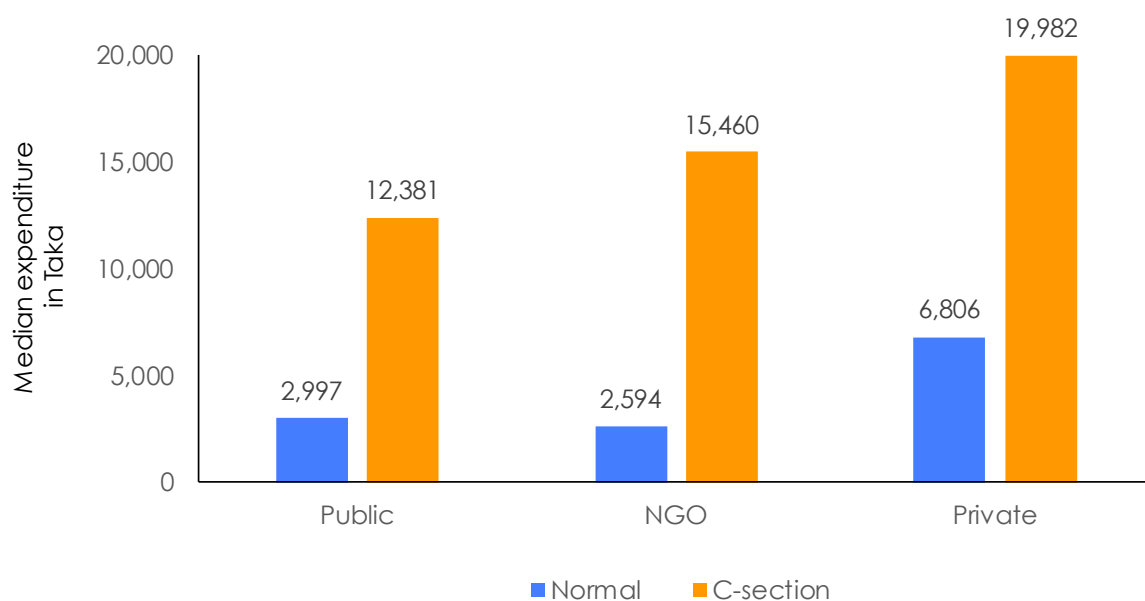


Table 4.11. Delivery expenditures by place of delivery

Percentage distribution of last live births in the three years preceding the survey, by amount spent for delivery, mean and median amount spent, by place of delivery, and by delivery procedure, BMMS 2016.

Place of delivery	Amount spent for last delivery							Total	Mean	Median	Number of births
	Nothing	<500	500–999	1,000–4,999	5,000–9,999	10,000 or more	Missing				
Normal delivery											
Public	0.6	1.8	6.3	57.5	24.2	8.5	1.0	100.0	4,130	2,997	2,490
Private	0.4	0.1	0.2	25.2	39.7	33.2	1.3	100.0	9,160	6,806	1,383
NGO	1.8	2.0	8.3	52.5	23.2	10.6	1.6	100.0	4,160	2,594	585
Home	3.8	20.2	24.2	45.2	4.7	1.0	0.9	100.0	1,459	993	14,120
Other/place unknown	5.8	7.2	5.8	39.8	21.1	9.0	11.4	100.0	4,175	2,988	83
Total	3.1	15.6	19.5	45.6	10.5	4.7	1.0	100.0	2,479	1,008	18,662
C-section delivery											
Public	1.8	0.8	0.1	8.3	20.7	67.2	1.3	100.0	15,447	12,381	1,384
Private	0.1	0.0	0.0	0.9	4.0	94.1	0.8	100.0	22,468	19,982	6,667
NGO	0.6	0.0	0.5	3.6	10.9	83.3	1.1	100.0	19,316	15,460	403
Other/place unknown	*	*	*	*	*	*	*	*	*	*	18
Total	0.4	0.1	0.1	2.3	7.0	89.2	0.9	100.0	21,185	19,930	8,472
All deliveries											
Public	1.0	1.4	4.1	39.9	23.0	29.4	1.1	100.0	8,167	4,960	3,874
Private	0.2	0.0	0.1	5.1	10.1	83.7	0.9	100.0	20,191	18,945	8,050
NGO	1.3	1.2	5.1	32.5	18.2	40.3	1.4	100.0	10,364	6,095	989
Home	3.8	20.2	24.2	45.2	4.7	1.0	0.9	100.0	1,459	993	14,120
Other/place unknown	6.0	5.9	4.8	33.7	18.2	21.9	9.4	100.0	8,582	3,068	101
Total	2.2	10.8	13.4	32.0	9.4	31.1	1.0	100.0	8,324	2,481	27,133

Figure 4.17. Median delivery expenditures in Taka for normal delivery and C-section, BMMS 2016



4.4.2. Source of Funds for Deliveries at Health Facilities

In the BMMS 2016, questions were asked regarding sources of funds to cover costs related to childbirth. Bangladesh is going through a transition from home birth to facility birth, and this has implications on cost of childbirth. Median expenditure of normal delivery at a health facility is at least three times more than home delivery. Sixty-five percent of deliveries in health facilities were by C-section, implying families have to be prepared to cover the costs associated with it.

Table 4.12 shows sources for costs associated with deliveries in health facilities. Families used a variety of sources to cover expenses related to childbirth at health facilities. This was particularly true for those from households in the lowest two wealth quintiles. Overall, the most common source of fund was family fund. The second most common source was gifts from relatives. One in five households had to take loans.

Among women in the two lowest wealth quintiles who delivered in a health facility, one in three had to take a loan, while five percent sold or mortgaged assets. A substantial proportion (28 percent) also received gifts from relatives to cover expenses related to childbirth in a health facility.

Table 4.12. Source of funds for facility delivery by wealth status

Percentage of last live births in the three years preceding the survey that were delivered at a health facility and incurred a cost for delivery, by source of fund for maternal health care related to childbirth, according to household wealth status, BMMS 2016.

Source of funds	Wealth status		
	Poor (2 bottom wealth quintiles)	Non-poor (3 top wealth quintiles)	All households
Family fund	68.4	85.2	81.0
Loan	33.1	15.1	19.7
Sold assets	3.8	1.0	1.7
Mortgaged assets	1.0	0.3	0.5
Gift from relatives	27.7	20.4	22.2
Gift from friends	0.3	0.4	0.3
Other source	0.6	0.3	0.4
Don't know/missing	0.3	0.6	0.5
Number of births	3,239	9,606	12,846

Note: Multiple responses were possible.

4.5. Birth Planning among Pregnant Women

Under the Safe Motherhood Initiative, birth planning is promoted under the assumption that women who have a plan are more likely to prepare for emergencies and use health services during pregnancy, delivery, and the post-partum period (Fortney and Smith, 1999). Birth planning includes many elements, including: (a) a plan for where to give birth; (b) a plan for transportation; (c) a plan for saving money; and (d) knowledge of danger signs.

In the BMMS 2016, information was collected on different components of birth planning among women who were pregnant at the time of the interview. In particular, information was collected on discussions and/or decisions on place of delivery and preparedness for emergencies. Women were also asked about danger signs of pregnancy.

4.5.1. Discussion/Decision about Place of Delivery

Table 4.13 reports discussions/decisions regarding place of birth of pregnancies that were in their third trimester. The responses were provided by women who were in their third trimester of pregnancy at the time of the survey interview. One in five pregnant women in their third trimester of pregnancy had neither discussed nor made a decision concerning place of delivery. Half of the pregnant women reported that the decision/discussion was to have home delivery. Fewer than three in ten (28 percent) of pregnant women reported that the family discussed/decided that the delivery would be at a facility. This indicator on appropriate birth planning shows some improvement in the past six years. In 2010, 13 percent of pregnant women at the same stage of pregnancy said that their family had discussed/decided to deliver at a health facility (Figure 4.18).

Birth planning in terms of discussion/decision about having the delivery at a facility was the highest (38 percent) among women ages 30–34 and the lowest among women age 35+ (19 percent); it was higher in urban areas (43 percent) than rural areas (22 percent). It was the highest in Khulna division (42 percent) and the lowest in Mymensingh division (10 percent), followed by Sylhet division (15 percent). The likelihood of having discussed or decided to deliver in a health facility increased as pregnancy progressed (27 percent in months seven and eight, compared to 33 percent in month 9). The intention to deliver in a facility was higher for more educated women (50 percent for women with secondary complete or higher, versus 13 percent for women with no education), and for women in wealthier households (58 percent among pregnant women in households in the highest wealth quintile, compared to 9 percent among those in households in the lowest wealth quintile).

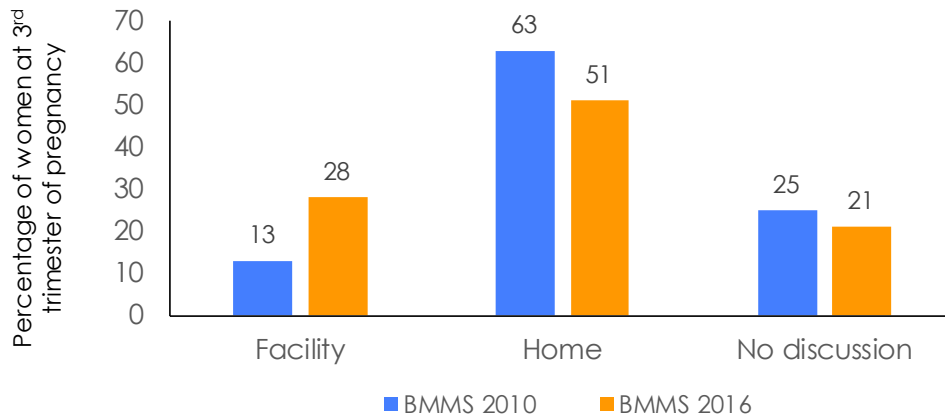
Table 4.13. Family discussion/decision about place of delivery

Percentage of currently pregnant women in the third trimester of pregnancy at the time of interview, by the place of delivery they have discussed/decided on, according to background characteristics, Bangladesh 2016.

Background characteristics	Did not discuss/decide	Discussed/decided place of delivery					Total	Number of women
		Public	NGO	Private	Home	Other		
Age								
15–19	21.3	9.3	3.9	10.5	54.9	0.0	100.0	526
20–24	21.5	11.8	2.8	13.7	50.1	0.1	100.0	643
25–29	19.2	13.3	1.4	13.5	52.6	0.2	100.0	412
30–34	20.9	15.0	3.1	20.3	40.6	0.0	100.0	213
35–39	25.0	7.9	3.6	7.2	56.2	0.0	100.0	60
40–44	*	*	*	*	*	*	*	6
45–49	*	*	*	*	*	*	*	1
Duration of pregnancy								
7 months	26.3	11.3	2.7	12.5	47.2	0.0	100.0	762
8 months	17.8	11.7	3.0	12.4	54.9	0.2	100.0	781
9 months	15.9	12.3	2.9	17.3	51.6	0.0	100.0	319
Birth order								
1	23.3	10.5	3.7	13.4	49.1	0.0	100.0	750
2–3	18.3	14.5	2.1	15.0	49.9	0.1	100.0	899
4–5	21.5	4.5	2.8	5.7	65.7	0.0	100.0	166
6+	[32.2]	[0.0]	[4.6]	[3.4]	[59.7]	[0.0]	[100.0]	47
Residence								
Urban	19.2	17.5	5.4	20.4	37.4	0.1	100.0	483
Rural	21.6	9.6	2.0	10.8	56.1	0.1	100.0	1,379
Division								
Barishal	22.5	13.3	0.3	9.5	54.4	0.0	100.0	84
Chattogram	18.5	12.1	3.6	7.5	58.2	0.1	100.0	445
Dhaka	15.6	10.9	3.8	23.0	46.7	0.0	100.0	497
Khulna	15.8	18.7	0.6	22.8	42.1	0.0	100.0	170
Mymensingh	32.4	5.4	0.8	3.7	57.7	0.0	100.0	158
Rajshahi	24.2	14.9	2.2	11.6	47.1	0.0	100.0	167
Rangpur	26.6	9.9	4.0	11.5	47.9	0.0	100.0	204
Sylhet	28.4	8.9	2.7	3.0	56.4	0.6	100.0	137
Level of education								
No education	27.2	6.0	2.9	4.2	59.8	0.0	100.0	141
Primary incomplete	26.7	3.1	2.8	3.2	64.2	0.0	100.0	272
Primary complete	22.6	12.2	4.4	5.3	55.4	0.0	100.0	239
Secondary incomplete	20.8	12.3	1.9	12.9	52.1	0.1	100.0	806
Secondary complete or higher	14.3	17.6	4.0	28.6	35.2	0.2	100.0	404
Wealth quintile								
Lowest	27.5	5.5	0.3	3.2	63.5	0.0	100.0	379
Second	22.4	7.1	1.5	6.4	62.7	0.0	100.0	401
Middle	23.3	9.9	2.8	9.2	54.8	0.0	100.0	345
Fourth	16.4	15.9	4.9	17.8	44.9	0.1	100.0	414
Highest	14.9	20.7	5.0	32.2	26.9	0.3	100.0	323
Total	21.0	11.6	2.9	13.3	51.2	0.1	100.0	1,862

Note: Birth order of the current pregnancy is derived as the sum of the total number of live births plus one.

Figure 4.18. Family discussion/decision regarding place of birth among pregnant women in third trimester of pregnancy, 2010–2016



4.5.2 Preparation for Emergencies

An important component of birth planning is to prepare for emergencies to minimize delays in seeking care should an emergency arise. Women who were pregnant at the time of the survey were asked whether they had saved money or made arrangements for funds in case of emergency during their current pregnancy. They were also asked whether they had made any arrangements for transport and/or blood in case of emergency.

As shown in Table 4.14, overall, there was inadequate emergency preparedness during pregnancy. Less than four in ten pregnant women in their third trimester mentioned that the family had saved money or made arrangements for funds for emergencies. One in every five pregnant women in their third trimester reported the family had made transport arrangements for emergency needs. One in eight pregnant women in their third trimester had made arrangements for blood in case of emergency. As expected, emergency preparedness during pregnancy was higher among urban women, more educated women, and women in wealthier households.

Comparison of BMMS 2010 and BMMS 2016 shows that there have been some improvements in preparedness for emergency during pregnancy. In 2010, 31 percent of pregnant women in their third trimester mentioned that the family had discussed arrangements for money in case of emergency; in 2016, 38 percent of women in their third trimester mentioned that they either saved some money or made arrangements for money in case of emergency. Similarly, in 2010, 16 percent of pregnant women in their third trimester mentioned that there had been discussion on arranging transport for emergency; in 2016 18 percent of women in their third trimester of pregnancy mentioned that they arranged transportation for an emergency (Figure 4.19).

Figure 4.19. Trends in emergency preparedness among pregnant women at the third trimester of pregnancy, 2010–2016

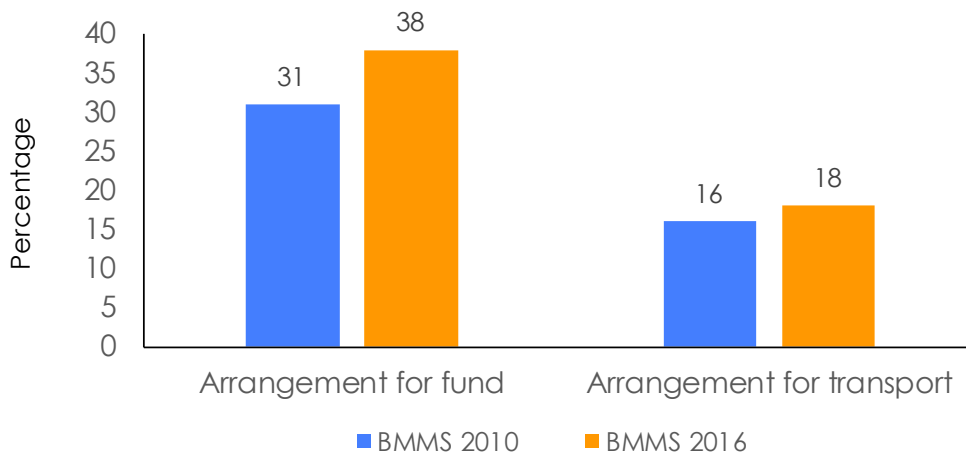


Table 4.14. Pregnant women's preparedness for emergency

Percentage of women currently pregnant in their third trimester at the time of interview, who had made arrangements for emergency during pregnancy, Bangladesh 2016.

Background characteristics	Made arrangement for blood in case of emergency	Made arrangement for transport in case of emergency	Saved money or made arrangement for fund in case of emergency	Number of women
Age				
15-19	11.6	16.6	37.9	526
20-24	12.9	17.8	41.0	643
25-29	10.5	17.6	37.5	412
30-34	15.2	21.9	37.3	213
35-39	10.0	23.4	24.7	60
40-44	*	*	*	6
45-49	*	*	*	1
Duration of pregnancy				
7 months	10.1	16.5	31.2	762
8 months	12.0	17.7	41.2	781
9+ months	17.2	23.0	48.2	319
Birth order of current pregnancy¹				
1	14.1	17.8	42.7	750
2-3	12.3	19.4	39.3	899
4-5	4.6	14.6	20.6	166
6+	[4.6]	[10.4]	[12.6]	47
Residence				
Urban	22.3	20.1	46.9	483
Rural	8.6	17.4	35.3	1,379
Division				
Barishal	14.0	16.5	43.6	84
Chattogram	6.8	16.7	35.8	445
Dhaka	21.3	21.5	43.9	497
Khulna	11.8	18.1	35.6	170
Mymensingh	9.0	19.5	33.2	158
Rajshahi	7.0	10.1	33.2	167
Rangpur	8.9	14.6	37.0	204
Sylhet	10.6	24.5	40.2	137
Level of education				
No education	2.9	8.3	14.7	141
Primary incomplete	3.6	10.5	22.9	272
Primary complete	4.9	14.2	26.7	239
Secondary incomplete	10.9	19.1	38.9	806
Secondary complete/higher	27.9	27.0	62.5	404
Wealth quintile				
Lowest	2.2	11.2	21.8	379
Second	4.4	12.6	29.1	401
Middle	7.7	11.3	32.4	345
Fourth	15.8	23.6	44.7	414
Highest	33.5	33.3	67.0	323
Total	12.1	18.1	38.3	1,862

¹ Birth order of the current pregnancy is derived as the sum of the total number of live births plus one.

Women who had given birth in the three years before the survey were also asked whether they had made any prearrangements for funds and transportation for emergency when they were pregnant with their last child, providing a retrospective perspective on birth planning. Over half of the women who delivered in the past three years reported that they had prearranged funds to face an emergency related to pregnancy and delivery (Table 4.15). This figure was higher than among currently pregnant women in their third trimester (38 percent), but more similar to currently pregnant women in their last month of pregnancy (48 percent). Only one in five women who delivered had prearranged transport to meet an emergency need, which was similar to currently pregnant third trimester women. Patterns in birth preparedness by background characteristics were similar for women with a delivery in the last three years and for currently pregnant third trimester women. The proportion of women who had a delivery in the three years before the survey who reported having prearranged funds for emergencies increased from 35 percent in 2010 to 54 percent in 2016, while the proportion of women with prearranged transport for an emergency doubled from 10 percent in 2010 to 21 percent in 2016 (Figure 4.20).

Figure 4.20. Prearrangements for emergency during pregnancy and delivery, 2010–2016

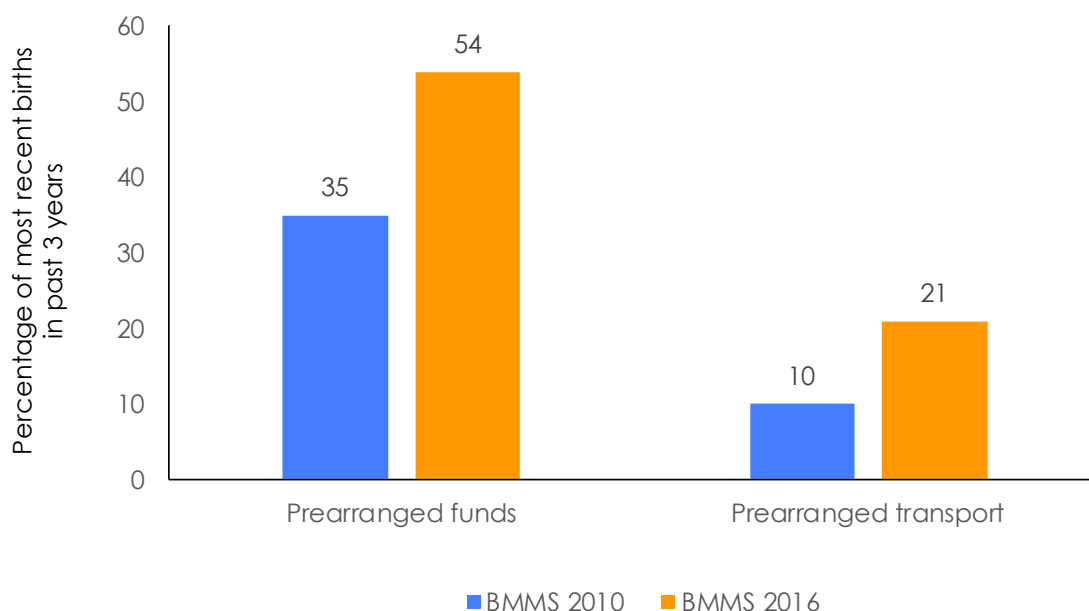


Table 4.15. Prearrangements for emergency during pregnancy and delivery

Percentage of women who had prearranged funds, prearranged transport for emergency with delivery or pregnancy, for most recent live births in the three years preceding the survey, Bangladesh 2016.

Background characteristics	Had prearranged funds for emergency with delivery or pregnancy	Had prearranged transport for emergency with delivery or pregnancy	Number of women
Mother's age at birth			
Below 15	53.0	18.0	182
15–19	51.2	19.2	7,307
20–24	54.4	20.8	9,080
25–29	56.2	23.1	6,503
30–34	52.5	20.1	3,043
35–39	50.7	18.0	840
40–44	39.4	10.3	163
45–49	*	*	14
Birth order			
1	56.2	23.0	10,398
2–3	54.6	20.9	13,506
4–5	42.5	12.7	2,697
6+	31.7	9.3	532
Residence			
Urban	61.0	23.4	7,188
Rural	50.8	19.7	19,945
Division			
Barishal	47.6	18.5	1,525
Chattogram	51.6	19.5	6,261
Dhaka	59.3	22.0	6,862
Khulna	53.5	22.9	2,546
Mymensingh	53.1	18.2	2,273
Rajshahi	51.8	20.2	2,899
Rangpur	52.7	20.5	2,778
Sylhet	48.4	22.4	1,990
Mother's education			
No education	37.2	9.8	2,293
Primary incomplete	42.5	12.8	4,195
Primary complete	46.3	15.1	4,103
Secondary incomplete	55.2	21.6	11,064
Secondary complete/higher	70.9	33.6	5,478
Wealth quintile			
Lowest	37.9	11.8	5,451
Second	43.3	15.4	5,513
Middle	52.6	20.0	5,350
Fourth	62.0	24.1	5,592
Highest	72.6	32.5	5,227
Total	53.5	20.7	27,133

4.5.3. Knowledge of Maternal Complications among Pregnant Women

One of the purposes of antenatal care is to make pregnant women aware of danger signs of pregnancy and to provide them with information about safe delivery. In the BMMS 2016, all currently pregnant women were asked whether they could name any health problem/complication during pregnancy, delivery, or postpartum which can endanger the life of the woman. Pregnant women's knowledge of maternal complications was categorized into the following types: symptoms of preeclampsia, obstructed or prolonged labor, severe/heavy bleeding, retained placenta, high fever with smelly discharge, convulsions/fits, and other symptoms.

Overall, pregnant women's knowledge of maternal complications was found to be low. Less than half of pregnant women at the time of the survey had knowledge about symptoms of preeclampsia (Table 4.16). Slightly less than 40 percent of pregnant women mentioned convulsions or obstructed labor as maternal complications. Less than one in five women had knowledge about severe bleeding—which is a major cause of maternal death. Differences in knowledge of maternal complications by background characteristics varied by complication. For example, knowledge of symptoms of preeclampsia and convulsions was generally higher among more educated and wealthier women, while knowledge of prolonged labor and retained placenta generally increased with age.

Table 4.16. Knowledge of maternal complications among pregnant women, Bangladesh 2016

	Complications							Number of women pregnant
	Symptoms of pre-eclampsia ¹	Obstructed/prolonged labor ²	Excessive bleeding	Retained placenta	High fever with smelly discharge	Convulsion/fits	Other symptoms	
Age group								
15-19	42.6	35.4	13.0	22.4	2.3	28.4	23.0	1,622
20-24	48.3	38.8	17.7	27.4	2.5	37.7	25.4	1,924
25-29	46.8	42.5	22.0	27.7	2.8	43.5	27.3	1,304
30+	46.8	42.9	18.5	28.0	3.6	38.8	28.1	739
Trimester								
1st	44.7	38.5	19.4	25.3	2.7	36.2	24.0	1,486
2nd	44.7	39.4	17.1	26.5	2.8	37.9	27.2	2,243
3rd	48.8	39.5	16.2	26.2	2.4	35.1	24.7	1,862
Residence								
Urban	50.6	38.5	18.0	24.0	3.1	37.2	23.9	1,470
Rural	44.5	39.5	17.3	26.8	2.5	36.3	26.1	4,119
Level of education								
No education	38.5	35.3	11.8	26.5	1.7	25.0	17.4	385
Primary incomplete	38.5	40.8	17.4	29.6	3.0	29.0	22.4	819
Primary complete	39.3	41.1	14.1	27.8	2.2	36.9	20.4	771
Secondary incomplete	46.3	36.5	17.0	24.4	2.3	36.0	26.3	2,346
Secondary complete or higher	57.1	43.3	22.1	25.8	3.5	45.6	31.6	1,268
Household wealth index								
Lowest	41.0	40.2	14.7	29.2	1.6	32.3	24.2	1,137
Second	40.3	37.6	15.5	26.0	2.6	34.9	25.3	1,119
Middle	45.3	39.8	18.5	24.8	3.0	35.0	27.0	1,053
Fourth	47.7	37.1	17.0	26.0	2.6	35.6	26.1	1,227
Highest	56.6	41.8	22.0	24.3	3.4	45.4	24.9	1,054
Total	46.1	39.2	17.4	26.1	2.6	36.5	25.5	5,590

¹ Symptoms of pre-eclampsia includes: severe headache, blurred vision, high blood pressure, and oedema.

² Obstructed/prolonged labor includes: mal-presentation, prolonged labor, obstructed labor, and ruptured uterus.

CHAPTER 5. MATERNAL HEALTH PROBLEMS AND TREATMENT-SEEKING BEHAVIOR

Summary

- Almost half (49 percent) of women reported that they had at least one complication during pregnancy/delivery or after delivery.
- Overall, 67 percent of women with complications sought care from any health provider.
- Among women reporting maternal complications, 46 percent sought care from a health facility.
- The proportion seeking health care from any provider has not increased between BMMS 2010 (68 percent) and BMMS 2016 (67 percent). However, there was a notable shift towards care-seeking from health facilities. Facility-based health care for maternal complications increased, from 29 percent in BMMS 2010 to 46 percent in BMMS 2016.
- Home-based care for maternal complications declined from 15 percent to three percent between BMMS 2010 and BMMS 2016—an encouraging trend.
- Women from the richest wealth quintile who had maternal complications were twice as likely to seek care from a health facility compared to women from households in the poorest wealth quintile. The poor-rich inequity in use of facility-based care for maternal complications has declined in the past 15 years. In BMMS 2001, women from the richest households were five times more likely to seek facility-based care than those in the poorest households.
- Women who had completed at least secondary education were 1.9 times more likely to seek facility-based care for maternal complications than those with no education. In the past 15 years, there has been a steady increase in seeking care from health facilities for maternal complications among women with no education, from nine percent in BMMS 2001 to 32 percent in BMMS 2016, resulting in increased equity in this behavior by educational status.

Although there are several limitations of self-reported reproductive morbidity in general, and maternal morbidity in particular, and poor correspondence between women's self-reported and clinically-diagnosed conditions, obtaining information on women's self-reported morbidity is vital for understanding how women perceive such conditions, their perceived severity, and treatment-seeking behavior in response to such complications (Fortney and Smith, 1999; Jejeebhoy, Koenig, and Elias, 2003; Cleland and Harlow, 2003).

The BMMS 2016 collected information on women's self-reported complications during pregnancy, during delivery, and after delivery, along with related treatment-seeking behavior. This chapter presents self-reported maternal health complications among women who had one or more live births during the three-year period preceding the survey. In particular, the frequency of women's self-reported complications and treatment-seeking behavior in relation to the most recent complication are discussed. Inequity in treatment-seeking behavior for maternal complications by basic background characteristics are also presented in this chapter. The key changes in treatment-seeking patterns for maternal complications between BMMS 2001, BMMS 2010, and BMMS 2016 are also reported.

5.1. Women's Reporting of Maternal Complications

Women who had one or more live births in the three-years preceding the survey were asked whether they had experienced any of the listed complications in the questionnaire during pregnancy, during delivery, or after delivery. As shown in Figure 5.1, almost half of the women reported experiencing one or more of the listed complications at any stage of the pregnancy cycle. With respect to timing of complications, the complications were most common during pregnancy (37 percent), followed by delivery (26 percent) and after delivery (21 percent).¹ In BMMS 2010, a slightly higher proportion of women reported experiencing at least one maternal complication compared to BMMS 2016 (53 percent versus 49 percent).

¹ It is possible that the same complication persisted over multiple stages of pregnancy or delivery. In such cases, the complication would be included in the prevalence of all stages in which it occurred.

Figure 5.1. Percentage of women reporting maternal complications, 2010–2016

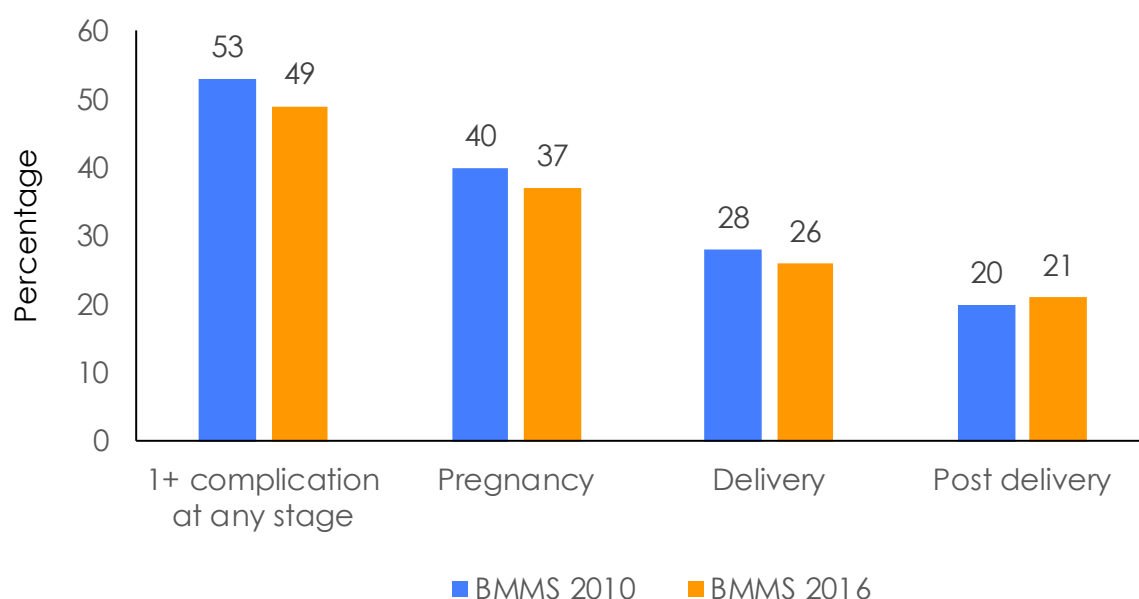


Table 5.1 shows the frequency of reported complications across different stages of pregnancy. The most commonly reported complications were symptoms of preeclampsia (37 percent), followed by obstructed/prolonged labor (17 percent), severe/heavy/excessive bleeding (eight percent), and convulsions/fits (six percent). Less commonly reported complications included retained placenta (two percent), followed by high fever with foul-smelling discharge (one percent). The importance of specific types of complications varied over specific stages of pregnancy/delivery. For example, symptoms of preeclampsia were most common during pregnancy (32 percent), whereas severe/heavy bleeding and convulsions/fits were most common after delivery (six percent and three percent, respectively).

Table 5.1. Recent maternal complications

Percentage of last live births, in the three years preceding the survey, for which women reported complications during pregnancy, during delivery, or after delivery, by type of complications and timing of complications, Bangladesh 2016.

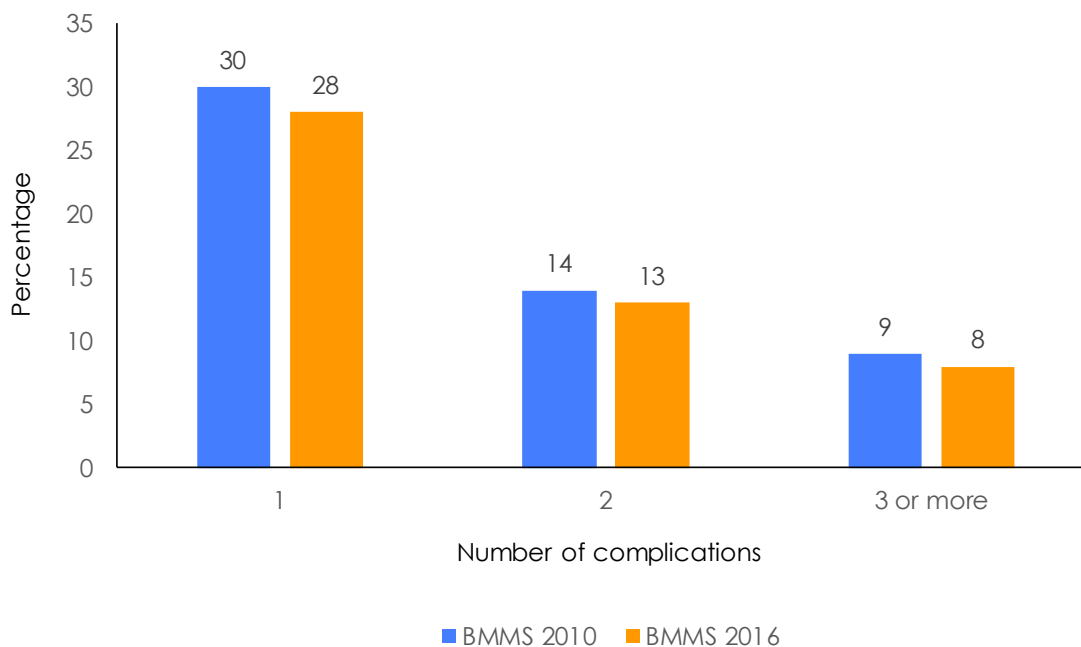
Type of complications	Complications			
	During pregnancy	During delivery	After delivery	Any stage
Had no complication	62.4	74.1	79.0	50.4
Had at least 1 complication	37.4	25.7	20.7	49.3
Symptoms of preeclampsia ¹	31.5	14.4	14.0	36.5
Obstructed/prolonged labor ²	8.1	11.4	0.0	17.1
Severe/heavy/excessive bleeding	1.3	2.2	5.8	7.9
Retained placenta	0.0	0.9	1.2	1.8
High fever with smelly discharge	0.0	0.0	1.1	1.1
Convulsion/fits	2.1	1.5	3.3	6.2
Number of women	27,133	27,133	27,133	27,133

¹ Includes severe headache with blurred vision/high blood pressure/oedema face/feet/body.

² Includes leaking membrane and no labor pain for >6 hours/mal-presentation/prolonged labor (>12 hours).

While half of the women reported no complication, 28 percent reported one complication, 13 percent reported two complications and the remaining 8 percent reported three or more complications. These proportions were slightly lower than that of BMMS 2010 (Figure 5.2).

Figure 5.2. Percentage of women by number of reported maternal complications, 2010–2016



5.2. Treatment-Seeking Behavior For Reference Complication

One of the major objectives of BMMS 2016 was to understand women’s treatment-seeking behavior in response to perceived complications and to see whether there was any change in the treatment-seeking behavior since BMMS 2010. All women who had reported one or more complication were asked a series of questions concerning treatment-seeking behavior in relation to the most recent complication during the reference period. When women reported more than one complication, information was collected for the last reported complication only (N=13,427).

Table 5.2 shows the percentage of live births, in the three years preceding the survey, with complications during pregnancy, during delivery, or after delivery, for which treatment/some sort of care was sought for the last complication, by type of complication and according to some selected background characteristics. Overall, 67 percent of women who reported complications sought care from at least one provider.² For all perceived complications, care was most likely sought for convulsions/fits (85 percent), severe bleeding (83 percent), high fever with smelly discharge (80 percent), obstructed/prolonged labor (79 percent), and retained placenta (61 percent). Care was least likely to be sought for symptoms of preeclampsia (58 percent).

The likelihood of seeking care for maternal complications was almost identical for both urban (68 percent) and rural (67 percent) residents. Women in Chattogram division had the highest likelihood of seeking care for maternal complications (72 percent), whereas women in Dhaka division sought care the least (63 percent). Women who had complications and only one live birth in the past were more likely to seek care compared to those with more than one live birth (not shown). It was also observed that treatment-seeking behavior increased with age (not shown).

² Includes those who bought medicine to treat the complication.

Table 5.2. Care-seeking for complications

Percentage of last live births, in the three years preceding the survey, with complications during pregnancy, during delivery, or after delivery, for which treatment was sought for last complication, by type of complication and background characteristics, Bangladesh 2016.

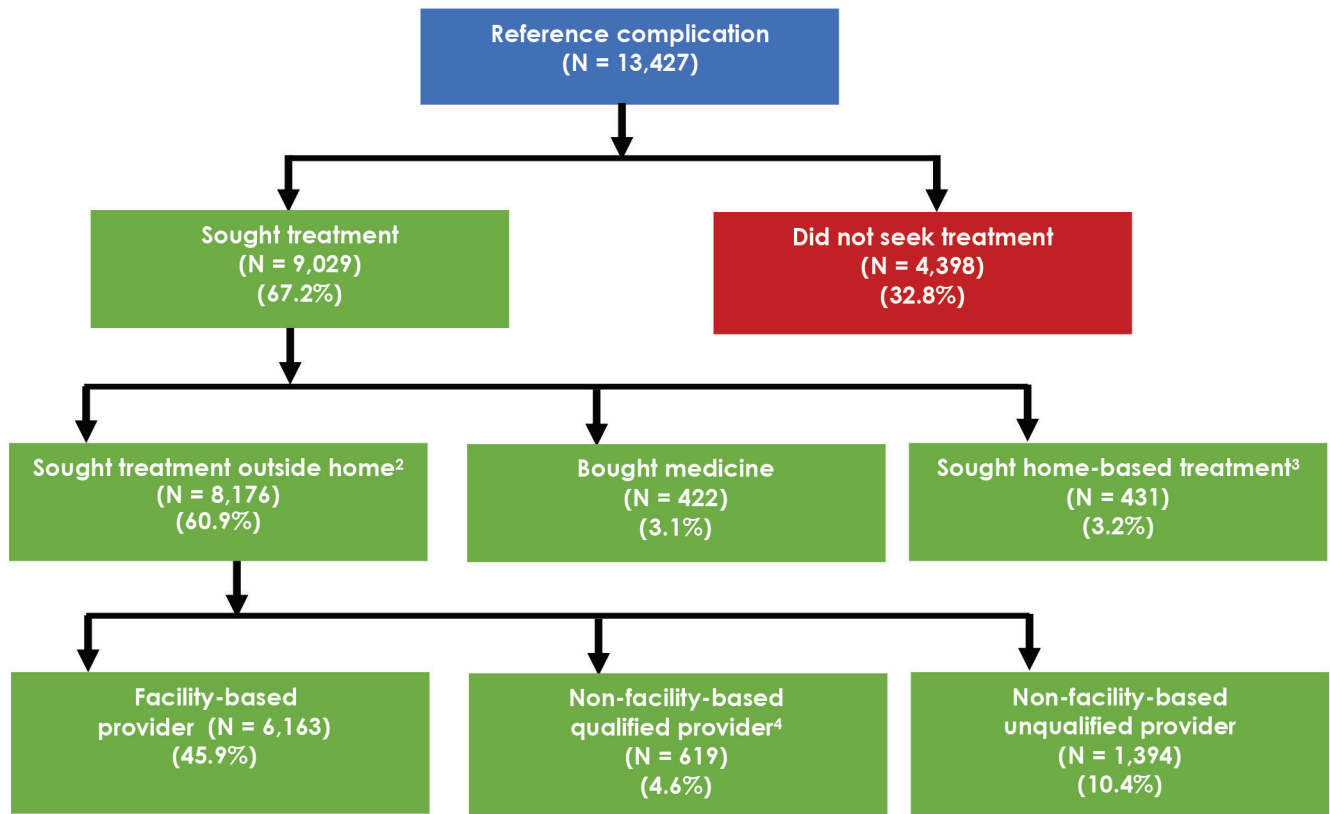
Background characteristics	Sought treatment ¹	Number of women with complication ²
Type of complication		
Symptoms of preeclampsia	57.7	7,636
Obstructed/prolonged labor	79.0	2,983
Severe/heavy bleeding	83.1	1,520
Retained placenta	60.6	328
High fever with smelly discharge	79.8	192
Convulsion/fits	84.6	768
Residence		
Urban	67.9	3,707
Rural	67.0	9,720
Division		
Barishal	67.0	760
Chattogram	71.9	3,278
Dhaka	62.8	3,747
Khulna	68.6	1,155
Mymensingh	64.1	991
Rajshahi	65.6	1,339
Rangpur	69.4	1,109
Sylhet	70.1	1,048
Mother's education		
No education	57.4	1,085
Primary incomplete	60.4	2,120
Primary complete	62.5	1,987
Secondary incomplete	70.1	5,474
Secondary complete/higher	74.2	2,761
Wealth quintile		
Lowest	62.8	2,618
Second	64.7	2,683
Middle	67.7	2,623
Fourth	67.3	2,862
Highest	73.7	2,642
Total	67.2	13,427

¹ Includes those who brought medicine to treat the complication.

² Excludes 28 cases who had multiple complications and could not identify the complication that occurred last.

Figure 5.3 shows the path diagram of treatment-seeking behavior for the most recent complication among 13,427 women who reported that they experienced one or more complications. Overall, one in three women who had complications did not seek any form of care. Over half of the women sought care at a facility or from a qualified provider, 14 percent sought care from an unqualified provider (either at home or outside of the home), and three percent bought medicine to treat the condition.

Figure 5.3. Path diagram of treatment-seeking behavior¹ for maternal complications



¹ Treatment places are hierarchically presented, as treatment was sought from multiple sources in some cases.

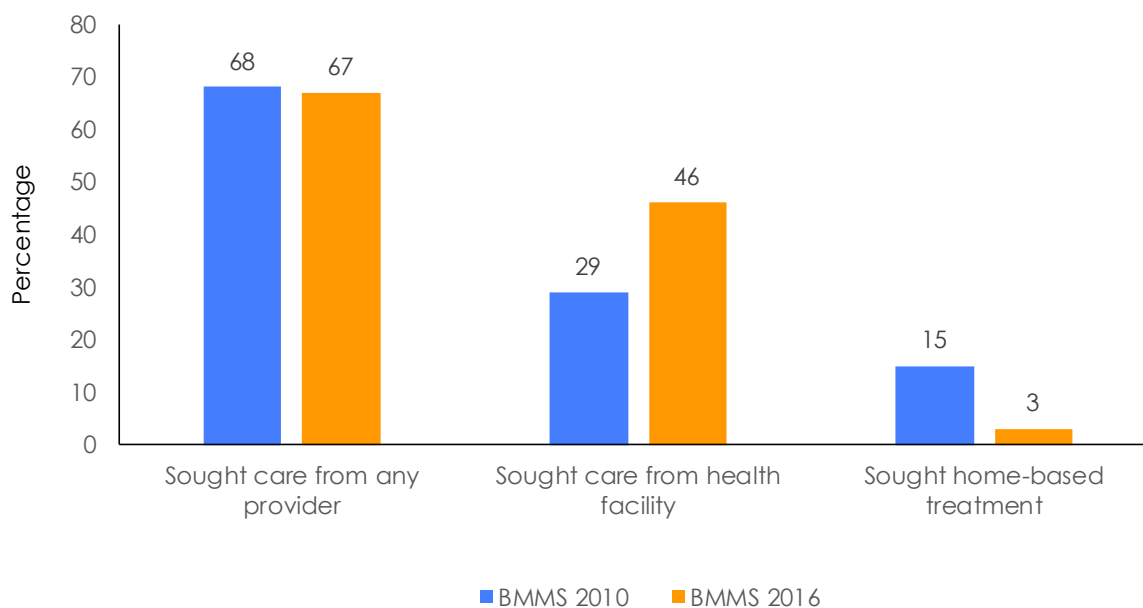
² May have received treatment at home as well.

³ Did not seek treatment outside of home.

⁴ Qualified providers include MBBS doctor/nurse/paramedic/FWV/CSBA/MA/SACMO.

Although some maternal complications are minor in nature and can be managed at home, many of them are serious and require immediate attention managed by a qualified provider at the facility level. Thus, it is important to see whether there was any improvement in the overall treatment-seeking pattern for maternal complications and treatment-seeking from a health facility. Overall, there was no change in the proportion of women seeking care for maternal complications between BMMS 2010 and BMMS 2016 (68 percent and 67 percent, respectively) (Figure 5.4). However, there was a notable increase in the proportion seeking care from a health facility between the two surveys. In BMMS 2016, 46 percent of women experiencing maternal complications sought care from a health facility compared to 29 percent in BMMS 2010.

Figure 5.4. Trends in treatment-seeking for maternal complications, 2010–2016



5.2.1. Place of Seeking Treatment

The women who sought some form of care (except those for whom someone brought medicine from outside) were asked about all the places where treatment was sought for the referenced complication. If more than one place was mentioned, the sequence of seeking care from different places was recorded. If treatment was sought from more than two places, information on the process of seeking care was collected for the first and the last place of care only.

Table 5.3 presents the first source of care by type of reported complication. Seven out of ten women who sought care for maternal complications went to a health facility as their first point of care. Private health facilities were the most likely source of first care.

The first source of care varied by type of complication. For instance, 76 percent of women who experienced obstructed/prolonged labor and sought treatment for it, went to a health facility as the first source of care. Comparatively, 61 percent of women with severe/heavy bleeding and who sought treatment considered a health facility as their first source of care.

Home-based treatment as the first source of care for maternal complications declined notably between BMMS 2010 and BMMS 2016. In 2010, 34 percent of women who sought treatment for maternal complications received home-based care as their first source of treatment compared to only six percent in BMMS 2016.

Table 5.3. First source where treatment was sought for maternal complications

Percentage of last live births in the three years preceding the survey for which women had complications during pregnancy, delivery, or after delivery and sought treatment, by type of complications and first source of care, Bangladesh 2016.

Type of complications	Source of first care							Total	Number of women who sought treatment ³
	Home	Government facility	NGO facility	Private facility	Private: qualified doctor	Private: Pharmacy or unqualified doctor	Other		
Symptoms of preeclampsia ¹	2.1	23.1	4.9	42.2	10.7	15.3	1.7	100.0	4,151
Obstructed/prolonged labor ²	9.1	28.5	5.5	42.0	2.1	10.7	2.0	100.0	2,299
Severe/heavy bleeding	7.4	26.1	3.9	31.2	7.8	23.1	0.5	100.0	1,189
Retained placenta	23.0	31.3	3.3	20.0	3.9	16.7	1.8	100.0	195
High fever with smelly discharge	6.8	24.1	3.4	31.7	9.2	24.0	0.7	100.0	145
Convulsion/fits	9.4	28.2	4.0	35.8	5.7	15.5	1.2	100.0	629
Total	5.8	25.5	4.8	39.5	7.5	15.4	1.6	100.0	8,607

¹ Includes severe headache with blurred vision/high blood pressure/oedema face/feet/body.

² Leaking membrane and no labor pain for >6 hours/mal-presentation/prolonged labor (>12 hours).

³ Excludes those who reported only getting medicine.

5.2.2. Number of Places Visited for Seeking Care for Maternal Complications

Table 5.4 shows the number of places visited by women who sought care for maternal complications. Out of 8,607 women who sought treatment, the vast majority (81 percent) sought care from only one place. An additional 13 percent sought care from two places, and the remaining six percent sought care from three or more places.

Table 5.4. Number of places where health care was sought by type of complications

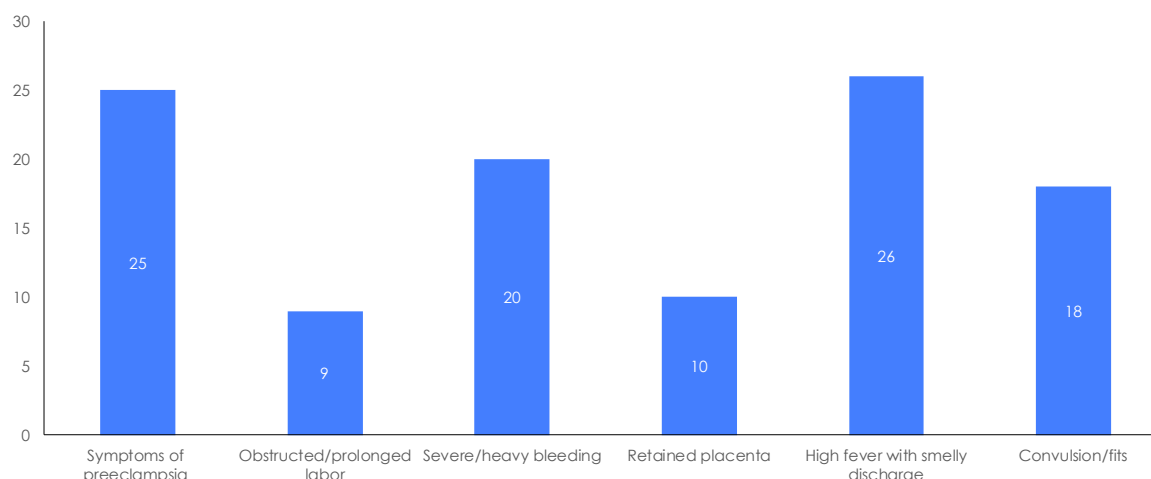
Percentage of last live births in the three years preceding the survey for which women had complications during pregnancy, delivery, or after delivery, by type of complications and number of places where treatment was sought, Bangladesh 2016.

Type of complications	Number of places where care was sought			Total	Number of women who sought treatment ¹
	One place only	Two places	Three or more places		
Symptoms of preeclampsia	74.8	15.7	9.5	100.0	4,151
Obstructed/prolonged labor	91.2	7.5	1.3	100.0	2,299
Severe/heavy bleeding	79.6	14.5	5.8	100.0	1,189
Retained placenta	89.6	7.3	3.1	100.0	195
High fever with smelly discharge	73.8	17.9	8.3	100.0	145
Convulsion/fits	81.9	13.3	4.8	100.0	629
Total	80.7	13.0	6.3	100.0	8,607

¹ Excludes those who reported only getting medicine.

Women who reported symptoms of preeclampsia (25 percent), severe/heavy bleeding (20 percent), high fever with smelly discharge (26 percent), and convulsions (18 percent) had the highest proportion of seeking care from two or more sources compared to other reported complications (Figure 5.5).

Figure 5.5. Percent of women seeking care from two or more sources, by type of complication, BMMS 2016



5.2.3. Reasons for Not Seeking Treatment

Table 5.5 shows the reasons for not seeking care for the most recent complication. Four out of five women who did not seek treatment for complications cited that the reason for not seeking care was the perception that the condition was not serious or that treatment for the complication was not necessary. The second most common reason for not seeking care was related to economics—cost of service was high or household did not have the means to pay for service. Family prohibition and poor service quality were not prominent reasons for not seeking care—only three percent and two percent of women, respectively, cited these two reasons. Economic reasons for not seeking care were reported by 18 percent of women in BMMS 2016 compared to 41 percent of women in BMMS 2010.

Table 5.5. Reasons for not seeking treatment for complications

Percentage of last live births in the three years preceding the survey for which the last complications occurred during pregnancy, delivery, or after delivery, and for which treatment was not sought, by reasons for not seeking treatment, according to type of complications, Bangladesh 2016.

Type of complications	Reasons for not taking treatment							Number of women
	Not necessary, not serious	Cost too much, lack of money	Access problem*	Family didn't allow	Poor quality, better quality at home	Others**	Not customary	
Symptoms of preeclampsia ¹	83.0	15.4	1.3	2.3	1.6	1.8	1.3	3,229
Obstructed/prolonged labor ²	70.6	21.7	5.0	7.0	2.9	4.5	2.9	626
Severe/heavy bleeding	67.3	30.0	1.1	4.8	4.1	3.2	1.6	257
Retained placenta	73.8	24.1	2.5	3.0	2.5	0.7	1.6	129
High fever with smelly discharge	71.8	33.6	0.0	4.3	4.3	6.6	0.0	39
Convulsion/fits	73.4	25.0	2.1	3.5	4.9	4.7	2.1	118
Total	79.7	17.8	1.8	3.2	2.1	2.3	1.5	4,398

*Access problems included: "too far," "transport problem," "no one to accompany," "not known how to go," and "not known where to go."

**Others include: "no time to go," "not want service from male provider," "afraid to go," "clinic/hospital insist Cesarean," "had sudden delivery," and "others."

¹ Includes severe headache with blurred vision/high blood pressure/oedema face/feet/body.

² Leaking membrane and no labor pain for >6 hours/mal-presentation/prolonged labor (>12 hours).

5.3. Inequity in Treatment-Seeking for Maternal Complications

As expected, women's education and socioeconomic status (measured by the households' wealth quintile index) were positively associated with seeking facility-based care for maternal complications (Tables 5.6 and 5.7).

Even among the poorest households, or among women with no education, seeking treatment from a health facility for maternal complications was the most common source of care for maternal complications. Almost one-third of women in the poorest households, or those with no education, had sought care from a health facility. Fewer than five percent of women sought home-based treatment for complications, even among the poorest and those women with no education. Comparatively, in BMMS 2010, facility-based care was sought for maternal complications by 15 percent of women in the poorest households and by 17 percent of women with no education.

Table 5.6. Health care-seeking for maternal complications, by place of care and wealth quintiles

Percentage of last live births in the three years preceding the survey for which women had complications during pregnancy/delivery/after delivery, for which treatment was sought, by place of care and household wealth quintile, Bangladesh 2016.

Care-seeking behavior	Wealth quintile				
	Lowest	Second	Middle	Fourth	Highest
Facility-based provider	30.5	39.4	45.9	51.0	62.2
Non-facility-based qualified provider	5.2	5.5	4.6	4.2	3.5
Non-facility-based unqualified provider	22.4	16.1	13.1	9.6	6.9
Sought home-based treatment	4.6	3.6	4.1	2.5	1.2
Did not seek treatment	37.2	35.3	32.3	32.7	26.3
Total	100.0	100.0	100.0	100.0	100.0
Number	2,618	2,683	2,623	2,862	2,642

Table 5.7. Health care-seeking for maternal complications by place of care and women's education

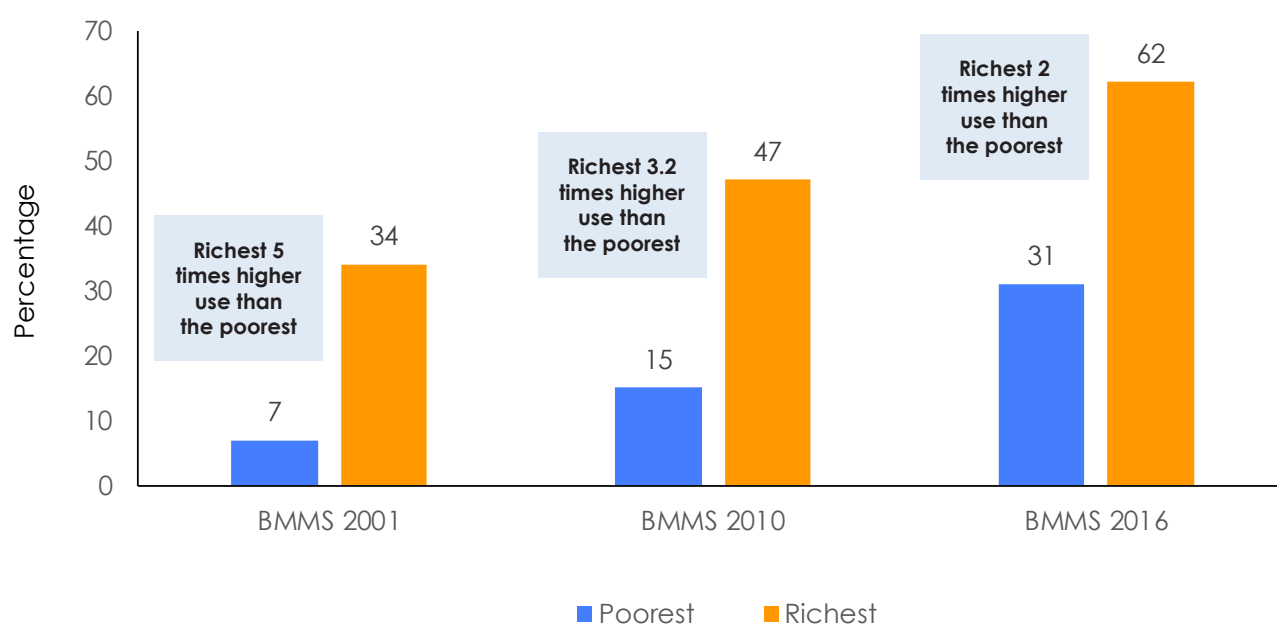
Percentage of last live births, in the three years preceding the survey, for which women had complications during pregnancy/delivery/after delivery, for which treatment was sought, by place of care and women's education, Bangladesh 2016.

Care-seeking behavior	Women's education				
	No education	Primary incomplete	Primary complete	Secondary incomplete	Secondary complete or higher
Facility-based provider	31.9	33.5	38.3	48.3	61.5
Non-facility-based qualified provider	3.9	4.3	5.0	5.1	3.8
Non-facility-based unqualified provider	17.6	18.8	15.5	13.4	6.8
Sought home-based treatment	4.0	3.8	3.7	3.2	2.1
Did not seek treatment	42.6	39.6	37.5	29.9	25.8
Total	100.0	100.0	100.0	100.0	100.0
Number	1,085	2,120	1,987	5,474	2,761

¹ Includes "someone brought medicine."

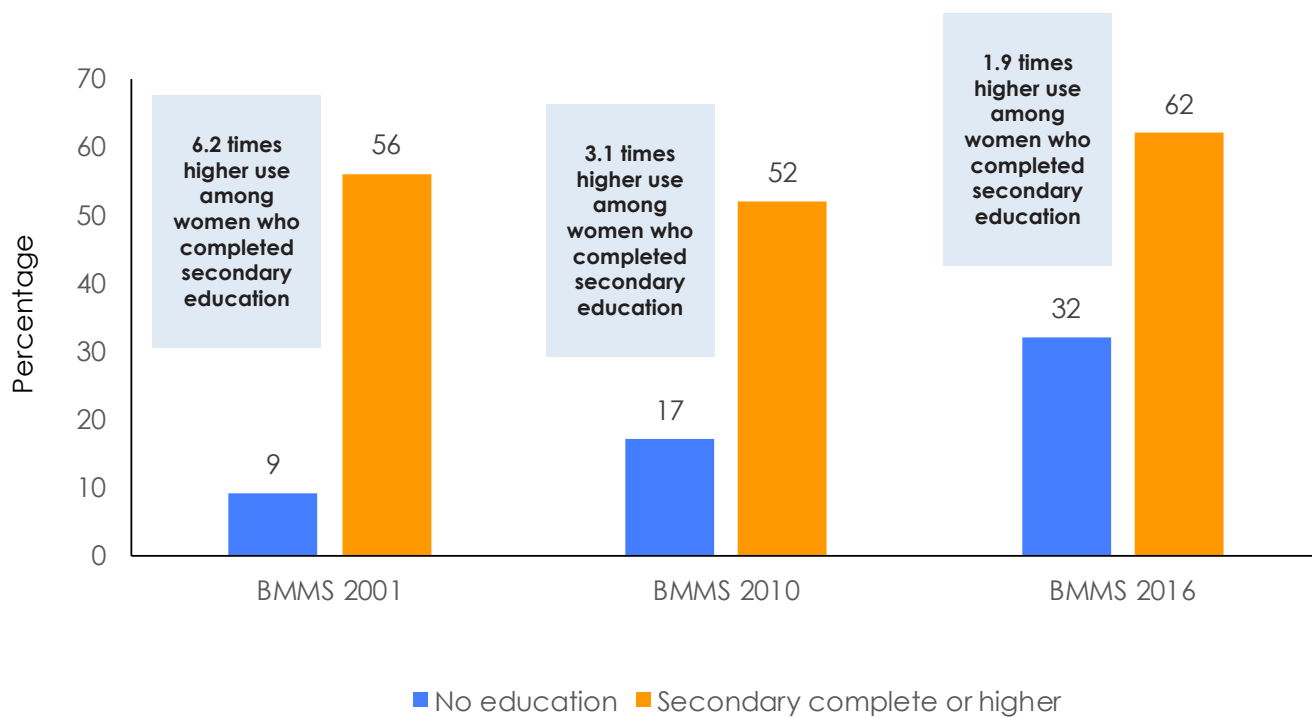
The poor–rich inequity in seeking facility care for maternal complications also declined (Figure 5.6). During the six–year period between BMMS 2010 and BMMS 2016, the percentage of women from the poorest households who sought facility–based care for treatment of complications doubled (from 15 percent to 31 percent); however, the relative increase was less marked for the richest women (47 percent to 62 percent). In 2016, women in the richest quintile were twice as likely to seek facility care for complications compared to those in the poorest quintile. This ratio was 3.2 in the 2010 survey and 5 in the 2001 survey, indicating that the relative inequity in use of health facilities for maternal complications between the poorest and the richest has been declining steadily during the past 15 years. However, the absolute differences in the use rates of facility–based care for maternal complications between women in the richest and poorest households in BMMS 2001, BMMS 2010, and BMMS 2016 were 27, 32, and 32 percentage points, respectively. This absolute difference in use rate needs to decrease to improve equitable use of services.

Figure 5.6. Trend in care–seeking from health facility for maternal complications by wealth quintiles, 2001–2016



Between BMMS 2010 and BMMS 2016, treatment seeking from a facility among women with no education almost doubled (from 17 percent to 32 percent, respectively), while the increase was lower among women who completed secondary education (from 52 percent to 62 percent, respectively). As a result, the relative inequity in health service use for maternal complications by education continued to decline between 2001 and 2016. In 2001, women who completed at least secondary education were 6.2 times more likely to seek facility–based care for maternal complications compared to those with no education. This ratio declined to 3.1 times more likely in 2010, and to 1.9 times more likely in 2016. In addition, the absolute difference in the use rate of facility–based care declined between these two groups of women, from 47 percentage points in BMMS 2001, to 35 percentage points in BMMS 2010, and to 30 percentage points in BMMS 2016 (Figure 5.7).

Figure 5.7. Care-seeking from health facility for maternal complications by women's education, 2001–2016



CHAPTER 6. PREVALENCE OF OBSTETRIC FISTULA AND PELVIC ORGAN PROLAPSE IN BANGLADESH: NATIONAL ESTIMATES

Summary

- The national prevalence for obstetric fistula (OF) was 0.42 per 1,000 women with at least one birth. In the case of third- or fourth- stage pelvic organ prolapse (POP), the national prevalence was 11.4 per 1,000 women with at least one birth.
- Prevalence rates of OF and POP were higher among women 50 years or older.
- There are an estimated 19,755 cases of OF in Bangladesh, two-thirds of which are among women between 15 and 49 years of age.
- In Bangladesh, there are an estimated 535,263 POP cases among women 15 years and older; half of these cases are among women between 15 and 49 years of age.
- In the BMMS 2016, 27 women, out of 221 self-reported OF cases, reported that their symptoms started after a surgery (13 after Caesarean section and 14 after other surgeries).

The burden of maternal ill health includes not only maternal mortality but also maternal morbidity. The true global burden of maternal morbidity is unknown, though it is estimated that for every maternal death, 20 to 30 other women suffer from acute or chronic morbidity (Institute of Medicine [US] Committee on Improving Birth Outcomes, 2003). Overall, there is paucity of data on the prevalence of acute or chronic maternal morbidities in Bangladesh. While the previous two rounds of BMMS (2010 and 2001) and some other small-scale studies collected women's reports of acute morbid conditions during pregnancy, child birth, and the post-partum period, the extent of chronic morbid conditions that are caused by the birthing process and are not life-threatening but greatly impair the quality of life is largely unknown.

Obstetric fistula (OF) and pelvic organ prolapse (POP) are two of the most important chronic maternal morbid conditions (Adler, et al., 2013; Filippi, et al., 2016). Measuring prevalence of these conditions is challenging; self-reported data from surveys are known to have low diagnostic value and tend to overreport OF and POP. Correct diagnoses of OF and POP require clinical examination.

Very few studies of OF and POP have been done in Bangladesh, and these were based on self-reports. In a 2003 cross-sectional study, 1.69 per 1,000 Bangladeshi women who had ever been married reported OF symptoms (Kamal-Waiz, et al., 2003). In a 1996 cross-sectional study, the prevalence of self-reported POP symptoms was 150 per 1,000 among Bangladeshi women (Akhter, Chowdhury, and Sen, 1996).

The BMMS 2016 aimed to measure national levels of OF and third- and fourth-stage¹ POP. Validating self-reported cases of OF and POP in the BMMS sample through clinical examination was not feasible for a nationwide sample of women. Therefore, a complementary study was conducted—the Maternal Morbidity Validation Study (MMVS)—to gather information on the validity of self-reported OF and POP that could then be used to adjust the national level estimate from the BMMS 2016 data. The MMVS was implemented by a partnership including MEASURE Evaluation; icddr, b; the MaMoni/HSS project housed in Save the Children, Bangladesh; the Fistula Care Plus (FC+) project housed in EngenderHealth, Bangladesh; NIPORT; and a consultant from Johns Hopkins University, with funding from USAID and UKAID. The MMVS had two goals:

- To validate the diagnostic properties of a screening tool administered both in the BMMS 2016 and MMVS 2016; and
- To apply the adjustment factors derived from the diagnostic performance to adjust the self-reported symptoms of OF and POP in the BMMS 2016 and provide national estimates.

¹ POP Stage 0 = No prolapse is demonstrated; I = The most distal portion of the prolapse is >1 cm above the level of the hymen; II = The most distal portion of the prolapse is ≤1 cm proximal or distal to the plane of the hymen; III = The most distal portion of the prolapse is >1 cm below the hymen but protrudes no further than 2 cm less than the total vaginal length; IV = Complete eversion of the total length of the vagina—the distal portion protrudes at least the total vaginal length minus 2 cm beyond the hymen.

This chapter summarizes the main findings regarding the validity of the screening tool from the MMVS and the national level estimates of OF and POP prevalence obtained from BMMS 2016.

6.1. Methods

6.1.1. Sample Design

The MMVS was implemented in a random sample of unions in two upazilas in Sylhet. Any clusters included in the BMMS 2016 sample in these two upazilas were excluded from the MMVS. There were three phases to the MMVS study: (1) household census, (2) community sensitization, and (3) clinical examination.

1. Household census: All households in the selected unions were interviewed using a household questionnaire to identify members of the household. An individual morbidity screening questionnaire was then administered to all ever-married women ages 13–64 years in the households to identify possible cases of OF and POP (Box 1). The same questionnaire was also administered in the BMMS 2016 (to a subgroup of 204,035 married women ages 15–49 with at least one birth). Women who had ever given birth were asked a series of questions about OF, POP, and urinary incontinence (UI) symptoms. Women with UI symptoms were considered as “controls” for the study. Women who reported OF and POP symptoms were asked additional questions about their symptoms and treatment seeking.

Box 1. Screening questions

Self-reported OF cases

- Does your urine leak continuously, even when you are not urinating/trying to urinate?
- Do you currently experience feces passing through the birth canal that you cannot stop, even when you are not defecating?

Self-reported 3rd- and 4th-stage POP

- In the last one year did you feel any bulge or something coming out in your vaginal area?

Self-reported UI cases

- Do you leak urine when you are in stress—like laughing, coughing, sneezing, or lifting heavy weights?
- Do you suddenly feel the urge to go to the toilet, and accidentally leak urine?

2. Community sensitization: All women who screened positive for OF and a sample of women who screened positive for POP and UI symptoms on the screening questions were visited at home by fieldworkers from the MaMoni Project who provided them with information about OF and POP, gave them a referral card with a date and location for a clinical examination, and encouraged them to attend. The referral cards were double-blinded to hide each woman’s response to the screening questions.

3. Clinical examination: Clinical examinations were conducted at 13 clinic sites by teams of trained female medical doctors, nurses, and paramedics. Upon arrival at the designated health facility or camp, women who were selected for the clinical examination were examined by a qualified medical provider to obtain a clinical diagnosis that could be linked to the women’s responses to the screening questions. Clinically positive cases of OF and POP were then referred to an appropriate facility for proper management.

The household census identified 51,642 households, of which 48,816 were interviewed. In these households, 65,740 women ages 13–64 were identified. Of these, 56,140 women reported they had ever given birth and were asked the screening questions for OF and POP.

From the household survey, 67 women reported OF symptoms, and all of these women were invited for clinical exams. Of these, 58 women attended the clinical exam and 57 completed the exam. A random sample of 181 women who reported POP symptoms (but not OF) were invited for clinical exams. Of these, 150 attended the exam and 149 completed it. A random sample of 244 women who reported UI symptoms (but not OF or POP) were invited for clinical exams. Of these, 200 attended the exam and 191 completed it.

6.1.2. Data Analysis

Based on the clinical examinations, adjustment factors were derived from the sensitivity and specificity of the screening questionnaire for OF and POP cases. These adjustment factors were applied to the BMMS 2016 self-reported OF and POP cases to estimate the national prevalence of OF and of third- and fourth-stage POP.

The analysis involves three steps:

1. Estimate sensitivity and specificity and positive and negative predictive values of the OF and POP survey questions for the clinical exam sample by cross-tabulating the self-reported survey responses to the screening questions by the clinical exam diagnosis;
2. Adjust the estimate of sensitivity and specificity for verification bias to account for the fact that not all women had a clinical exam; and
3. Use the estimates of positive and negative predictive values to adjust population-based estimates of prevalence of OF and POP in the MMVS household survey and BMMS 2016.

To estimate the number of women ages 15–49 suffering from OF and third- or fourth-stage POP in Bangladesh, we multiplied the adjusted prevalence estimates from the BMMS 2016 by the estimated population of women ages 15–49 who had ever given birth (UN, 2017). Box 2 (on the following page) illustrates this process for third- and fourth-stage POP for the MMVS household sample.

BMMS 2016 includes only women ages 15–49. The reported prevalence of OF in BMMS 2016 and MMVS 2016 among women ages 15–49 was almost identical. We assumed that this similarity holds true for older women and used the prevalence from the MMVS for women ages 50–64 to estimate the number of women age 50 and over with OF to obtain the total disease burden of fistula.

We followed a similar process to estimate the number of women age 50 and over who were suffering from third- and fourth-stage POP to obtain the total POP disease burden. However, we first calculated a scaling factor as the ratio of the POP prevalence reported in the BMMS and the MMVS for women ages 15–49. We then applied this scaling factor to the reported POP prevalence among women ages 50–64 in the MMVS to get an adjusted POP estimate for women ages 50–64 nationally. Finally, we multiplied this adjusted prevalence estimate by the population size of women age 50 and older (who had ever given birth) to estimate the total expected number of women age 50 and older who have POP.

In summary, the calculations for women age 50 and over make the following assumptions: (1) that the national prevalence of OF among women ages 50–64 is the same as the prevalence in the MMVS study areas; (2) that the relative differential in reporting of POP symptoms in the MMVS study area among women ages 50–64 compared to the national level is the same as for women ages 15–49; and (3) that the prevalence of these conditions among women age 65 and older is the same as that among women ages 50–64.

Box 2. Estimation of adjusted prevalence of third and fourth stage POP for MMVS household sample

Step 1. Estimate sensitivity and specificity of POP questions in the clinical sample

Self-report (survey)	Clinical diagnosis		Total
	Yes	No	
Yes: POP reported			
w/o OF symptoms	28	121	149
with OF symptoms	6	24	30
No: POP reported			
w/o OF symptoms	1	190	191
with OF symptoms	1	26	27
Total	36	361	397

Sensitivity = probability of correctly identifying third and fourth stage POP with the survey instrument, among women who have the condition = $(28+6)/36 = 0.944$

Specificity = probability of correctly identifying the absence of third and fourth stage POP among women who do not have the condition = $(190+26)/361 = 0.598$

Positive predictive value (PPV) = probability that women who report a POP symptom on the survey actually have the condition = $(28+6)/(149+30) = 0.1899$

Negative predictive probability (NPV) = probability that women who do not report a POP symptom on the survey actually don't have the condition = $(190+26)/(191+27) = 0.9908$

Step 2. Adjust for verification bias

To adjust for verification bias, we have assumed that women who were not selected for a clinical exam would have screened similarly to women who had a clinical exam. For example, among the 13,022 women in the MMVS household survey who reported POP symptoms but did not undergo a clinical exam, $(28/149) \times 13,022 = 2,447$ would be expected to be diagnosed with third or fourth stage POP if they had undergone a clinical exam.

Self-report (survey)	Clinical diagnosis		Unverified	Total
	Yes	No		
Yes: POP reported				
w/o OF symptoms	28 (+2,447)	121 (+10,575)	13,022	13,171
with OF symptoms	6 (+1)	24 (+3)	4	34
No: POP reported				
w/o OF symptoms	1 (+223)	190 (+42,446)	42,669*	42,860
with OF symptoms	1 (+0)	26 (+6)	6	33
Total	36 (+2,671)	361 (+53,030)	55,701	56,098

* Includes women who reported other UI symptoms or no symptoms in the MMVS household survey. Women with no UI symptoms are assumed to have the same probability of being diagnosed with POP in a clinical exam as the women who reported only other UI symptoms in the clinical exam sample.

Adjusted sensitivity = $(28+2447+6+1)/(36+2,671) = 0.9169$

Adjusted specificity = $[(190+42,446)+(26+6)]/(361+53,030) = 0.799$

Adjusted PPV = $[(28+2447)+(6+1)]/(13,171+34) = 0.188$

Adjusted NPV = $[(190+42,446)+(26+6)]/(42,860+33) = 0.995$

Step 3. Estimate the adjusted prevalence of third and fourth stage POP in the MMVS household sample

- Self-reported prevalence of third and fourth stage POP among ever-married women ages 15–64 who have ever given birth = $(13,171+34)/56,098 = 23.5$ percent
- Adjusted prevalence of third and fourth stage POP among ever-married women ages 15–64 who have ever given birth = $(36+2,671)/56,098 = 4.8$ percent

6.2. Validation Results

High sensitivity and specificity of the OF questions were observed (Table 6.1). This means that the questions were unlikely to miss women with OF and that women without fistula were unlikely to be classified with fistula. However, a low positive predictive value (PPV) was also observed, which means that many women identified with fistula in the survey were not true cases. Therefore, the screening questions overestimate prevalence at the population level.

Sensitivity and specificity of the POP questions were lower than for OF but are still relatively high. However, PPV was low, so many women identified as POP cases by the questions did not have third- or fourth-stage POP. Therefore, the screening questions overestimate prevalence at the population level.

Most (51 percent to 61 percent) of the women with symptoms of OF, POP, or UI in the MMVS 2016 who had been clinically examined had some degree of perineal tear. Among the 19 clinically confirmed OF cases, all reported having sought care and six reported attempted corrective surgery in the past. During the clinical examination, one out of the 19 confirmed OF cases reported that the continuous dripping of urine started after a pelvic surgery—suggesting possible iatrogenic fistula (data not shown).

Table 6.1. Results of validation of survey questions on obstetric fistula and pelvic organ prolapse, Bangladesh MMVS 2016

Diagnostic performance	Obstetric fistula	Pelvic organ prolapse (stages 3 and 4)
Sensitivity		
Observed	100.0	94.4
Adjusted for verification bias	100.0	91.7
Specificity		
Observed	89.7	59.8
Adjusted for verification bias	99.9	79.9
Positive predictive value (PPV)		
Observed	31.5	19.0
Adjusted for verification bias	31.5	18.8
Negative predictive value (NPV)		
Observed	100.0	99.1
Adjusted for verification bias	100.0	99.5
MMVS Self-reported prevalence (ages 15–64)*	1.19	235
MMVS Adjusted prevalence (ages 15–64)*	0.40	48.0
MMVS Self-reported prevalence (ages 15–49)*	1.15	232
MMVS Adjusted prevalence (ages 15–49)*	0.37	35.0

* Per 1,000 ever-married women who had ever given birth.

6.3. National Prevalence Estimates

The national prevalence for OF was 0.42 per 1,000 women with at least one birth. In the case of third- or fourth-stage POP, the national prevalence was 11.4 per 1,000 women with at least one birth (Table 6.2). Prevalence of OF and POP was higher among women 50 years or older. These prevalence estimates imply that there were an estimated 535,263 POP cases among women 15 years and older in Bangladesh; half of these cases were among women between 15 and 49 years of age. Similarly, there were an estimated 19,755 cases of OF in Bangladesh; two-thirds of which were among women between 15 and 49 years of age.

In the BMMS 2016, 27 women, out of 221 self-reported OF cases, reported that the continuous dripping of urine started after a surgery (13 after Caesarean section and 14 after other surgeries) (data not shown).

Table 6.2. Prevalence of OF and third- and fourth-stage POP, by age group, among ever married women 15+ years with at least one birth (BMMS 2016 national estimates)

	Age (years)			Total
	15–49	50–64	65+	
Female population with at least one birth in Bangladesh	34,840,027	8,014,556	4,142,888	46,997,471
Prevalence and burden of third- and fourth-stage POP (per 1,000)				
Self-reported prevalence	52.0	--	--	--
Adjusted prevalence	7.9	21.5*	21.5*	11.4
Total estimated number of cases (POP)	273,873	172,316*	89,074*	535,263
Prevalence and burden of OF (per 1,000)				
Self-reported prevalence	1.21	--	--	--
Adjusted prevalence	0.38	0.53*	0.53*	0.42
Total estimated number of cases (OF)	13,357	4,218*	2,180*	19,755

*Adjusted for reporting differences in POP symptoms between MMVS and BMMS studies.

6.4. Conclusions and Implications

This is the first study to estimate the national burden of OF and POP based on adjustments for clinical confirmation of cases. It shows that the current burden of OF is roughly 20,000, which is lower than the previous estimate of 71,000 based on self-reported symptoms. Bangladesh has an OF program, but its current surgery rate is around 300 cases annually. At that rate, it would take almost 60 years to treat the women who are already living with OF. Bangladesh has a national strategy for fistula, which needs a comprehensive plan of action for the prevention and treatment of this condition.

More than 500,000 Bangladeshi women are currently suffering from POP, which affects their quality of life in numerous ways. The country has no strategic health plan or intervention program for screening and management of POP.

The cost and challenge of identification, treatment, and management of the current caseload of OF and POP is daunting for Bangladesh's health system. Therefore, the effort to combat these conditions should focus on prevention of OF and POP, to limit the number of new cases. Prevention can begin with building public awareness that OF and POP are both preventable and treatable and should not be an acceptable consequence associated with childbirth. Community awareness should be initiated on what causes OF and POP and that they can be avoided through delivery by skilled birth attendants.

Effective screening and identification of OF and POP depend on awareness among women of the signs and symptoms and an active screening mechanism at every point of contact with health providers. An efficient referral system must be established from the screening points to the treatment facilities for management of women diagnosed with OF and POP. For OF cases, surgery and rehabilitation services are not widely available, because the number of skilled surgeons in Bangladesh is limited. In addition, because surgery needs to be followed by an extended stay at a health facility, women are discouraged from seeking care. Thus, innovative solutions to increase and improve access to and use of treatment are required. Further, women living with OF face a lot of social stigma and isolation. Thus, effective counseling of clients and their families is essential for proper rehabilitation and reintegration into the family and society.

CHAPTER 7. FERTILITY, FAMILY PLANNING AND CHILDHOOD MORTALITY

Summary

- Between the BMMS 2010 and BMMS 2016, the total fertility rate (TFR) fell slightly from 2.3 to 2.2. Khulna, Dhaka and Rajshahi divisions have already achieved replacement level fertility (TFR = 2.15).
- The median birth interval has increased from 46 months in 2010 to 54 months in 2016, an increase of 18 percent in 6 years.
- The proportion of adolescents who had begun childbearing is 27 percent, with no change from the 2010 level. Adolescent childbearing is highest in Rajshahi division (32 percent) and lowest in Sylhet division (14 percent).
- Sixty-three percent of currently married women in Bangladesh are currently using a contraceptive method. Modern methods are much more widely used (56 percent) than traditional methods (seven percent), with oral pills being the most commonly used method (29 percent). No changes are observed between 2010 and 2016 in the contraceptive prevalence rates.
- The use of contraception varies by division—Rangpur has the highest and Sylhet the lowest contraceptive prevalence rates (68 percent and 54 percent respectively).
- Overall, half of modern contraceptive users get their supplies from a private medical sector facility, with pharmacies being the most important source, serving 46 percent of users. The public sector supplies contraceptives to 44 percent of users of modern methods and NGOs to 5 percent of users.
- Bangladesh has achieved the MDG 4 target of reducing the under-five mortality rate from 151 deaths per 1,000 live births in 1990 to 48 deaths per 1,000 live births by 2015. The BMMS 2016 shows consistent declining trends in the childhood mortality rates in the three five-year periods preceding the survey.
- The BMMS 2016 data show wide variations in estimates of childhood mortality by division. In general, Sylhet had the highest rates and Dhaka had the lowest rates. For instance, the under-5 mortality rate was 65 deaths per 1,000 births in Sylhet and 39 deaths per 1,000 births in Dhaka. The infant mortality rate was 56 deaths per 1,000 live births in Sylhet and 33 deaths per 1,000 live births in Dhaka.

The BMMS 2016 collected information on a complete birth history (since births are the basis for the denominator of the maternal mortality ratio) for the measurement of maternal mortality and health care. This chapter presents the BMMS 2016 findings on fertility, current use of contraception, and childhood mortality. This information will help the policymakers and program managers to assist in planning appropriate improvements in health and family planning services in Bangladesh. This provides an opportunity for analyzing fertility transition, fertility regulation, and mortality risk among under-five children.

7.1. Fertility

7.1.1. Introduction

Fertility is one of the three principal components of population dynamics that determine the size, structure, and composition of the population in any country. It plays a major role in determining population growth rate and its impact on economic development. This section presents a discussion on levels, trends, and differentials in fertility, birth intervals, and adolescent fertility in Bangladesh.

The fertility measures presented here are based on the complete birth histories collected from ever-married women ages 15–49. Several measures and procedures were used to obtain complete and accurate reporting of births, deaths, and the timing of these events. Each woman was asked to provide information on the number of sons and daughters to whom she had given birth who were living with her, the number living elsewhere, and the number who had died. The woman was then asked for a history of all her live births, including such information as name, month and year of birth, sex, and survival status. For children who had died, age at death was solicited. Interviewers were given extensive training in probing techniques designed to help respondents report this information accurately.

Despite the measures to improve data quality, the information obtained during the BMMS is subject to the same types of errors that are inherent in all retrospective sample surveys, namely, the omission of some births (especially births of children who died at a young age) and the difficulty of determining the date of birth of each child accurately. These difficulties can bias estimates of fertility trends. The quality of the BMMS data is examined in Appendix B. No evidence of substantial data quality problems was found in that analysis.

7.1.2. Current Fertility

Measures of current fertility are presented in Table 7.1. The most widely used measures of current fertility are the total fertility rate (TFR) and its component age-specific fertility rates (ASFRs). ASFRs are calculated by dividing the number of births to women in a specific age group by the number of woman-years lived during a given period,¹ and the TFR is defined as the average number of children a woman would have if she went through her entire reproductive period (15–49 years) reproducing at the prevailing ASFR. Other measures of fertility reported in this section are the general fertility rate (GFR), which represents the annual number of births per 1,000 women ages 15–44, and the crude birth rate (CBR), which represents the annual number of births per 1,000 population. All these measures are calculated using the birth history data for the three-year period before the survey, which roughly corresponds to the calendar years 2014–2016.

The results indicate that the TFR for the three-year period before the survey was 2.2 children per woman age 15–49. This means that a Bangladeshi woman would have, on average, 2.2 children in her lifetime if the current age-specific fertility rates remain constant. This is 12 percent lower than the TFR of 2.5 children found by BMMS 2010. Like previous BMMS and Bangladesh Demographic and Health Surveys (BDHS), the age-specific rates indicate a pattern of early childbearing with a peak in the 20–24 age group (Figure 7.1). Eighty-one percent of childbearing occurred before age 30 with a slight difference occurring in urban (79 percent) and rural (81 percent) areas. The GFR in Bangladesh was 85 births per 1,000 women of reproductive age, while the CBR was 22 births per 1,000 population.

¹ Numerators of the ASFRs are calculated by summing the number of live births that occurred 1 to 36 months preceding the survey (determined by the date of interview and the date of birth of the child) and classifying them by the age (in five-year groups) of the mother at the time of birth (determined by the mother's date of birth). The denominators are the number of woman-years lived in each of the specified five-year age groups during the 1 to 36 months preceding the survey. Since women who had ever married were interviewed in the BMMS survey, the numbers of women in the denominators of the rates were inflated by factors calculated from information in the household questionnaire on ratios of all women to ever married women in order to produce a count of all women. Never-married women are presumed not to have given birth.

Table 7.1. Current fertility

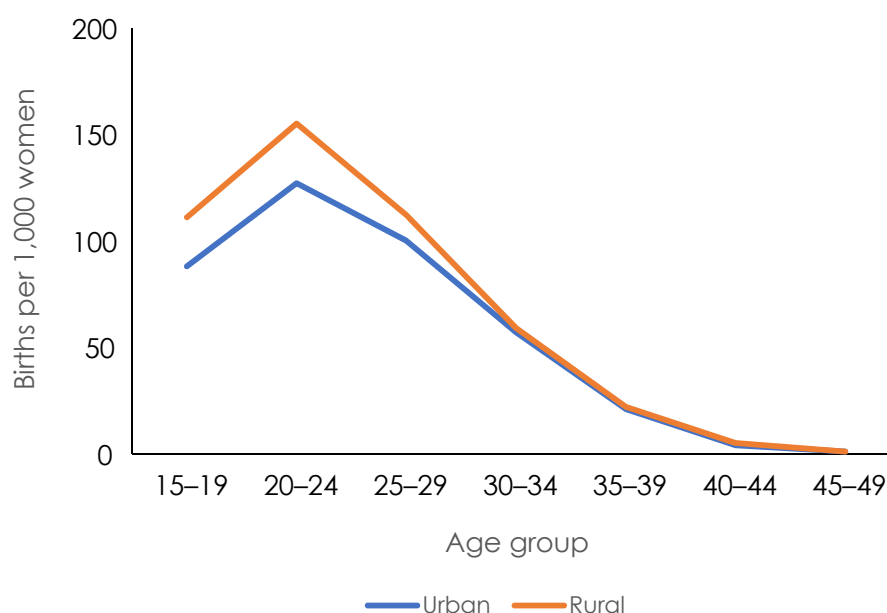
Age-specific and cumulative fertility rates, general fertility rate, and crude birth rate for the three years preceding the survey, by urban-rural residence, Bangladesh 2016.

Age group	Urban	Rural	Total
Mother's age			
15–19	88	111	104
20–24	127	155	147
25–29	100	112	109
30–34	57	59	58
35–39	21	22	22
40–44	4	5	5
45–49	1	1	1
Fertility rates			
TFR 15–49	1.99	2.32	2.23
TFR 15–44	1.98	2.32	2.22
GFR	76	88	85
CBR	20.7	22.4	22.0

TFR: Total fertility rate expressed per woman

GFR: General fertility rate expressed per 1,000 women ages 15–44

CBR: Crude birth rate, expressed per 1,000 population

Figure 7.1. Age-specific fertility rates by urban-rural residence, Bangladesh 2016

The TFR was higher in rural areas (2.3 children per woman) than in urban areas (2.0 children per woman). Like the TFR, the GFR and CBR also varied by residence. Thus, the GFR of 88 per 1,000 for rural women was about 16 percent higher than that of urban women (76 per 1,000). Similarly, the CBR in the rural areas (22 per 1,000 population) was also higher than the CBR in the urban areas (21 per 1,000 population).

7.1.3. Fertility Differentials

Differentials in fertility levels by residence, administrative division, mother's educational level and household wealth quintile are shown in Table 7.2 and Figure 7.2. Data shows fertility varied widely by administrative division. Khulna had the lowest TFR (1.97), followed by Dhaka (2.01) and Rajshahi (2.03) divisions. All these divisions have reached replacement level fertility.² The TFR of Rangpur division (2.17) was also very close to replacement level. Sylhet division (2.69) had the highest TFR, followed by Chattogram (2.53). The TFR of Barishal (2.40) and Mymensingh (2.49) divisions were also higher than the national estimate.

7.2. Fertility by background characteristics

Total fertility rate for the three years preceding the survey, percentage currently pregnant and mean number of children ever born to women 40–49 years of age, by selected background characteristics, Bangladesh 2016.

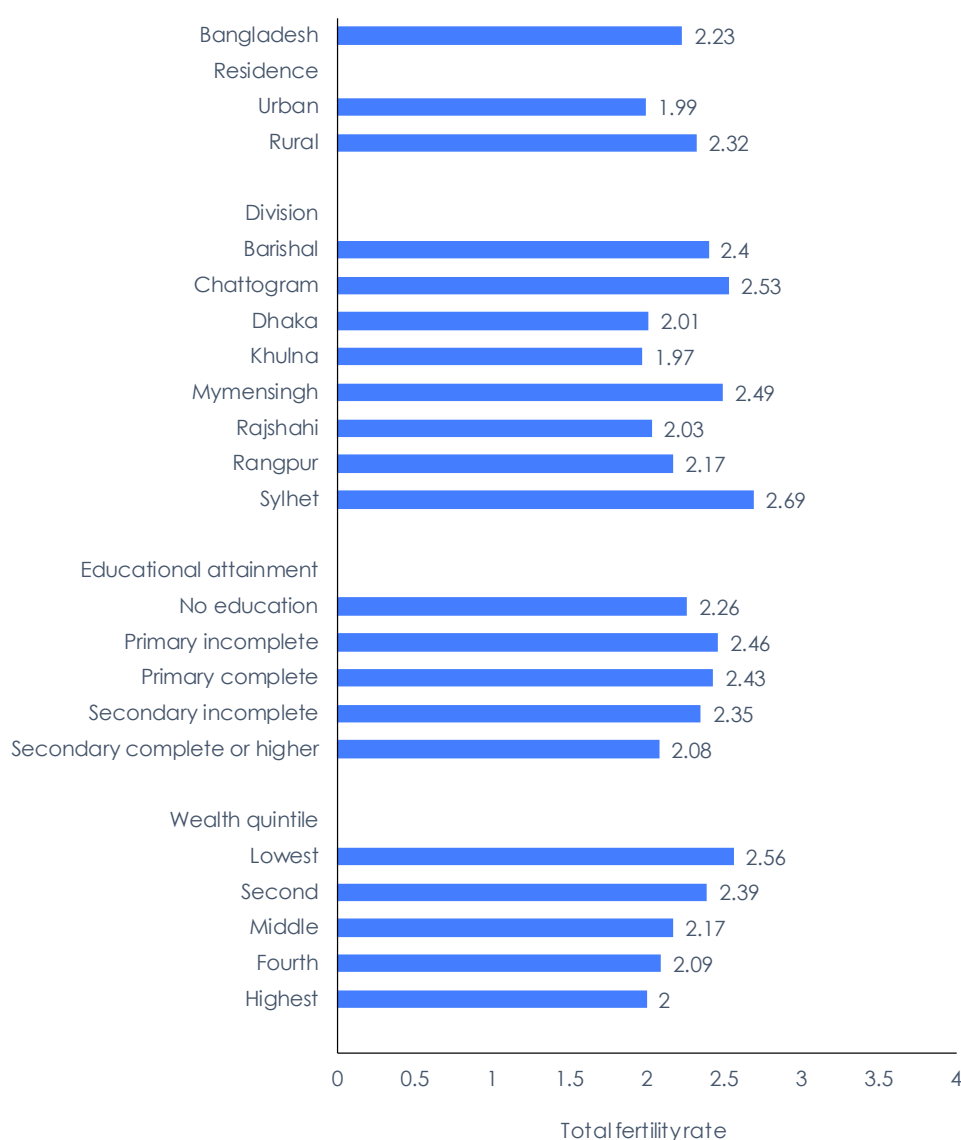
Background characteristic	Fertility rates		
	Total fertility rate ¹	% of women ages 15–49 currently pregnant ²	Mean number of children ever born (CEB) to women ages 40–49
Residence			
Urban	1.99	3.84	3.45
Rural	2.32	4.47	3.95
Division			
Barishal	2.40	4.43	4.10
Chattogram	2.53	5.32	4.38
Dhaka	2.01	4.04	3.60
Khulna	1.97	3.42	3.34
Mymensingh	2.49	4.85	4.10
Rajshahi	2.03	3.68	3.44
Rangpur	2.17	3.71	3.79
Sylhet	2.69	4.62	4.58
Highest educational level			
No education	2.26	1.59	4.09
Some primary	2.46	3.67	4.03
Primary complete	2.43	4.46	3.80
Some secondary	2.35	5.40	3.29
Secondary complete and higher	2.08	5.23	2.44
Wealth index quintile			
Lowest	2.56	4.76	4.23
Second	2.39	4.43	4.09
Middle	2.17	4.10	3.90
Fourth	2.09	4.34	3.66
Highest	2.00	3.87	3.19
Total	2.23	4.29	3.82

¹ Rates for women ages 15–49.

² All women.

² For Bangladesh, the updated replacement level fertility is estimated to be 2.145 children per woman.

Figure 7.2. Total fertility rates by background characteristics, Bangladesh 2016



As expected, women’s education was strongly associated with fertility (United Nations, 1995; Bongaarts, 2003; Chowdhury, 1977; Akmam, 2002). The TFR decreased from 2.26 births for women with no education to 2.08 births for women who had completed secondary or higher education. It seems, a woman who completed secondary education or higher has already reached replacement level fertility. Like education, household wealth is also negatively associated with fertility. The difference in fertility between women in the poorest and the richest wealth quintiles amounted to 0.56 children per woman, on average.

At the time of the survey, 4.3 percent of the women interviewed reported that they were pregnant. This proportion was probably an underestimate because some women who were in the early stages of pregnancy might not have known that they were pregnant, and some women may not have wanted to declare that they were pregnant. The percentage of women currently pregnant was slightly higher in rural areas than urban areas (4.5 percent and 3.8 percent, respectively). Khulna division had the lowest proportion currently pregnant (3.4 percent), whereas the highest proportion of pregnant women was reported in Chattogram division (5.3 percent). The relationship between the percentage currently pregnant and education was U-shaped, rising from a low of 1.6 percent among women with no education to a high of 5.4 percent among women with some secondary education, and then dipping again to 5.2 percent among women who had completed secondary or higher education. Women within the poorest wealth quintile were more likely to be currently pregnant (4.8 percent) than women in the richest quintile (3.9 percent).

Table 7.2 also presents the mean number of children ever born (CEB) to women ages 40–49. It allows a crude assessment of differential trends in fertility over time among population subgroups. TFR is a measure of current fertility, and the mean number of CEB to women ages 40–49 is a measure of past or completed fertility. Comparing completed fertility among women ages 40–49 with the TFR can provide an indication of fertility change, though it is vulnerable to the understatement of parity by older women.

Findings on age at marriage and contraceptive use are also of critical importance in reaching a balanced judgment about fertility trends. Comparison of the mean number of CEB to women ages 40–49 with the TFR, together with corresponding increases in contraceptive use and women's age at marriage, suggests a decline of 1.6 children per woman from 3.8 to 2.2 children in Bangladesh over the last two decades—a substantial decline in fertility in both urban and rural areas, in all administrative divisions, and for all categories of education and wealth quintiles. The difference between current and completed fertility was higher in Sylhet and Chattogram divisions (1.9 births) than other divisions, and in rural areas (1.6 births) than urban areas (1.5 births). Fertility decline was also more pronounced for women from the richest households than for women from the poorer households.

7.1.4. Fertility Trends

Trends in fertility in Bangladesh since the early 1970s can be examined by observing a time series of estimates produced from demographic surveys spanning the last four decades, beginning with the 1975 Bangladesh Fertility Survey (BFS). Data from the BMMS 2016 and previous surveys show that following a nearly decade-long plateau in fertility from 1993 to 2000, fertility in Bangladesh has resumed its decline (Table 7.3). Figure 7.3 describes the ongoing fertility transition in Bangladesh. Fertility has declined sharply, from 6.3 births per woman in 1975 to 2.2 births per woman in 2016. There was an initial rapid decline in fertility of nearly two children per woman up to the early 1990s. Fertility then plateaued at around 3.3 births per woman for most of the 1990s. This was followed by another notable decline in fertility from 2001.

Investigation of the age pattern of fertility shows that fertility has declined substantially among all age groups. Between 2001 and 2016, the fertility decline was smallest for the 20–24 age group (21 percent) and largest for the oldest age group 45–49 (83 percent).

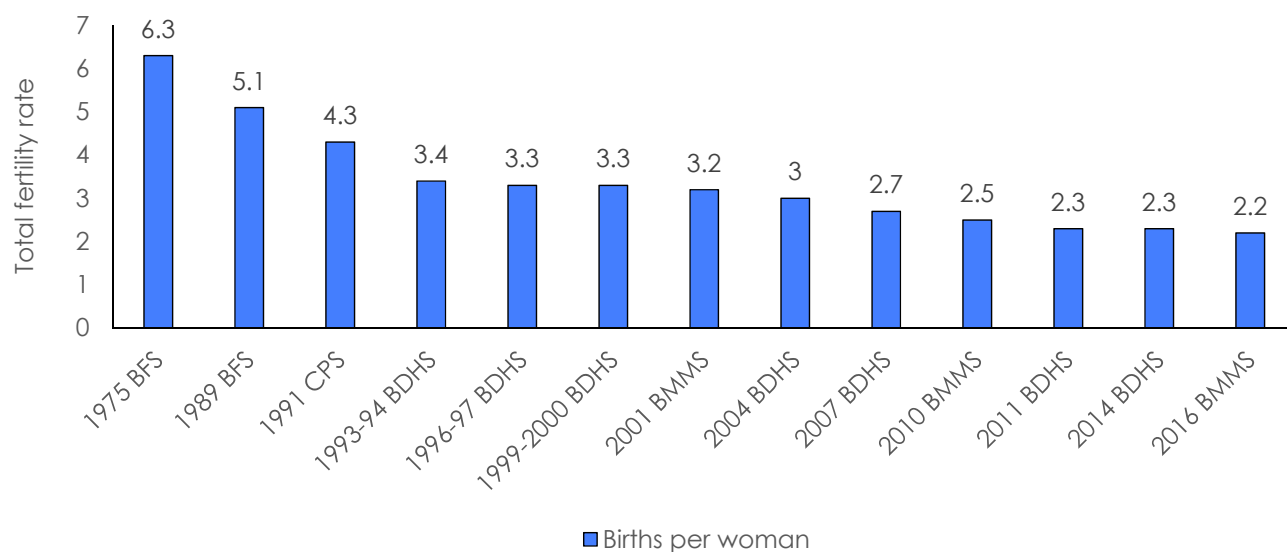
Table 7.3. Trends in current fertility rates

Age-specific fertility rate (per 1,000 women) and total fertility rates (TFRs) among women ages 15–49, selected sources, Bangladesh 1975–2016.

Age group	Survey and approximate time period													
	1999–													2016 BMMS
	1975 BFS	1989 BFS	1991 CPS	1993–94 BDHS	1996–97 BDHS	2000 BDHS	2001 BMMS	2004 BDHS	2007 BDHS	2010 BMMS	2011 BDHS	2014 BDHS	2013– 2015	
15–19	109	182	179	140	147	144	134	135	126	105	118	113	104	
20–24	289	260	230	196	192	188	185	192	173	160	153	143	147	
25–29	291	225	188	158	150	165	149	135	127	123	107	110	109	
30–34	250	169	129	105	96	99	97	83	70	73	56	57	58	
35–39	185	114	78	56	44	44	53	41	34	31	21	25	22	
40–44	107	56	36	19	18	18	20	16	10	10	6	4	5	
45–49	35	18	13	14	6	3	6	3	1	2	3	4	1	
TFR 15–49	6.3	5.1	4.3	3.4	3.3	3.3	3.2	3.0	2.7	2.5	2.3	2.3	2.2	

Note: For the 1975 Bangladesh Fertility Survey (BFS) and 1989 BFS, the rates refer to the five-year period preceding the survey; for the other surveys, the rates refer to the three-year period preceding the survey. The BFS, Bangladesh Demographic and Health Survey (BDHS), and Bangladesh Maternal Mortality and Health Care Survey (BMMS) utilized full birth histories, while the 1991 Contraceptive Prevalence Survey (CPS) used an eight-year truncated birth history. Sources: NIPORT, et al., 2003, and NIPORT, et al., 2012.

Figure 7.3. Trends in total fertility rate, Bangladesh 1975–2016



7.1.5. Children Ever Born and Living

Table 7.4 shows the distribution of all women and currently married women by age and number of children ever born. It also shows the mean number of children ever born to women in each five-year age group, an indicator of the momentum of childbearing. The mean number of children ever born for all women was 2.0, while currently married women had 2.4 births on average. Allowing for mortality of children, Bangladeshi women had, on average, 1.9 living children. Currently married women had an average of 2.2 living children.

Currently married women ages 45–49 have given birth to an average of 4.1 children, of whom 3.6 survived. Among all women ages 15–49, the average number of children who have died per woman was 0.18. Among currently married women, it was 0.20; that is, eight percent of children born to currently married women have died. The percentage of children who have died increased with women’s age. Among currently married women; for example, the proportion of children who have died compared to children ever born increased from 5 percent for women ages 20–24 to 13 percent for women ages 45–49.

Nearly one-quarter (23 percent) of all women ages 15–49 had never given birth. This proportion was highest among women ages 15–19, where 78 percent of women in this age group had never given birth. However, this proportion declined to 28 percent among women ages 20–24 years and rapidly decreased further for older women. The percentage of women who had never given birth was extremely low, (less than 1.9 percent among women ages 35–49) indicating that childbearing among Bangladeshi women was nearly universal. The same pattern was seen for currently married women, a little less than half (49 percent) of the currently married women ages 15–19 had not borne a child. As with currently married women, this proportion diminished, more rapidly, to five percent for women ages 25–29, and declined further for the older women.

Overall, 10 percent of currently married women ages 15–49 had never given birth. The difference in the mean number of children ever born between all women and currently married women was due to the substantial proportion of young and unmarried women in the former category.

The percentage of women in their forties who had never had children is an indicator of the level of primary infertility—that is, the proportion of women who are unable to bear children at all. Since voluntary childlessness is rare in Bangladesh, it is likely that married women with no births are unable to have children. The BMMS 2016 results suggest that primary infertility is low in Bangladesh, at less than two percent. This estimate does not include secondary infertility, that is, women who may have had one or more births but who are unable to have additional children.

Table 7.4. Children every born and living

Percent distribution of all women and currently married women ages 15–49 by number of children ever born, mean number of children ever born, and mean number of living children, according to age group, Bangladesh 2016.

Age	Number of children ever born											Total	Number of women	Mean number of children ever born	Mean number of living children
	0	1	2	3	4	5	6	7	8	9	10+				
All women															
15–19	78.0	19.7	2.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	73,532	0.24	0.23
20–24	28.0	43.4	23.8	4.1	0.6	0.1	0.0	0.0	0.0	0.0	0.0	100.0	66,262	1.06	1.01
25–29	9.3	22.9	43.1	18.4	4.9	1.1	0.2	0.0	0.0	0.0	0.0	100.0	60,437	1.91	1.81
30–34	3.9	10.7	37.1	28.8	12.8	4.6	1.6	0.4	0.1	0.0	0.0	100.0	52,594	2.59	2.41
35–39	1.9	6.3	28.1	30.5	18.1	8.6	4.0	1.7	0.5	0.2	0.1	100.0	42,820	3.12	2.86
40–44	1.9	4.9	20.0	26.5	20.9	13.1	6.8	3.3	1.7	0.6	0.3	100.0	36,191	3.59	3.20
45–49	1.9	4.3	15.3	22.0	21.2	15.3	9.6	5.6	2.8	1.2	0.9	100.0	37,301	4.01	3.46
Total	23.2	18.6	23.8	16.2	9.0	4.7	2.4	1.2	0.5	0.2	0.1	100.0	369,138	2.04	1.86
Currently married women															
15–19	49.1	45.5	5.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	31,183	0.57	0.54
20–24	15.5	50.6	28.2	4.9	0.7	0.1	0.0	0.0	0.0	0.0	0.0	100.0	55,070	1.25	1.19
25–29	4.8	23.2	45.6	19.6	5.3	1.2	0.2	0.0	0.0	0.0	0.0	100.0	55,875	2.02	1.91
30–34	2.2	10.0	37.9	29.6	13.2	4.7	1.6	0.4	0.2	0.0	0.0	100.0	49,513	2.66	2.48
35–39	1.4	5.5	28.0	31.0	18.5	8.9	4.1	1.8	0.5	0.2	0.1	100.0	39,830	3.16	2.90
40–44	1.3	4.0	19.8	27.1	21.4	13.4	7.0	3.4	1.7	0.6	0.3	100.0	32,352	3.66	3.26
45–49	1.3	3.1	14.7	22.4	21.7	15.8	10.0	5.8	2.9	1.3	0.9	100.0	31,579	4.11	3.56
Total	9.8	21.8	28.3	19.2	10.5	5.4	2.7	1.3	0.6	0.2	0.1	100.0	295,402	2.39	2.19

7.1.6. Birth Intervals

Birth interval is the length of time between two successive live births. Examination of birth intervals provides insight into birth spacing patterns and, subsequently, maternal, infant, and childhood mortality. Short birth intervals are associated with an increased risk of death for mother and child (Rutstein, et al., 2004; Rutstein, 2005). Studies have shown that children born less than 24 months after a previous sibling risk poor health as well (Gribble, et al., 2008; Rutstein 2008). Short birth intervals also threaten maternal health.

BMMS 2016 data show that birth intervals in Bangladesh were typically long, with a median interval of 54 months (Table 7.5). Among non-first births, only 11 percent were born after an interval less than 24 months, which is considered “too short.” Three out of four non-first births (74 percent) occurred three or more years after the previous birth, while 15 percent of these births took place 24–35 months after the previous birth. However, evidence also suggests that birth intervals of more than 60 months are related to increased risk of pregnancy complications for mothers, and to increased neonatal and perinatal mortality (Conde-Agudelo, et al., 2006).

A comparison with earlier surveys shows that the median birth interval has increased markedly, rising from 35 months in 1993–94, to 39 months in 2001, to 46 months in 2010, and to 54 months in 2016. Between 1993–94 and 2010, the median birth interval increased by 33 percent—it increased by 18 percent between 2010 and 2016.

Table 7.5. Trends in length of birth interval

Percent distribution of non-first births in the five years preceding the survey by number of months since previous births, Bangladesh 1993–2016.

Survey	Months since previous births					Total	Median number of months since previous births
	7-17	18-23	24-35	36-47	48+		
1993–94 BDHS	8.3	12.0	33.5	22.2	24.0	100.0	34.7
1996–97 BDHS	7.1	10.6	30.3	23.1	28.9	100.0	36.6
1999–2000 BDHS	6.6	9.7	26.9	21.8	35.0	100.0	38.8
2001 BMMS	7.1	9.0	26.8	21.7	35.4	100.0	38.8
2007 BDHS	7.1	8.0	21.8	19.8	43.3	100.0	43.6
2010 BMMS	6.0	7.6	20.8	18.4	47.2	100.0	46.0
2011 BDHS	4.9	7.0	20.3	14.7	34.5	100.0	47.4
2014 BDHS	4.4	6.9	18.1	15.4	40.7	100.0	51.7
2016 BMMS	4.8	6.1	14.9	15.3	59.0	100.0	54.2

7.1.7. Age at First Birth

Age of women at first birth has a direct effect on current fertility level. Early initiation of childbearing lengthens the reproductive period and subsequently increases fertility. Early childbearing can also lead to a large family size and may be associated with increased health risks for the mother and potential health hazards for children. A rise in the median age at first birth is typically a sign of transition to lower fertility levels.

Childbearing begins early in Bangladesh, with most women becoming mothers before age 20 (Table 7.6). The median age at first birth was 19 years for the youngest cohort (ages 20–24) and 18 for all other age cohorts, except for women ages 15–19 years, indicating a slight increase in the median age at first birth in recent years. A comparison of data between the BMMS 2010 and BMMS 2016 shows no change in the median age at first birth for the younger cohort (ages 20–24).

Table 7.6. Age at first birth

Percentage of all women ages 15–49 who gave birth by exact ages, percentage who have never given birth, and median age at first birth, according to current age, Bangladesh 2016.

Current age	Percentage who gave birth by exact age					Percentage who have never given birth	Number of women	Median age at first birth
	15	18	20	22	25			
15–19	2.5	na	na	na	na	78.0	73,532	a
20–24	4.7	31.5	55.4	na	na	28.0	66,262	19.1
25–29	7.0	38.7	63.0	77.9	87.5	9.3	60,437	18.5
30–34	8.5	45.0	68.5	82.0	90.5	3.9	52,594	18.0
35–39	8.3	45.8	69.7	83.6	92.0	1.9	42,820	17.9
40–44	9.2	47.1	70.0	83.8	92.4	1.9	36,191	17.8
45–49	10.1	48.6	70.2	83.4	92.0	1.9	37,301	17.7
20–49	7.6	41.5	65.0	na	na	9.6	295,605	18.3
25–49	8.5	44.4	67.8	81.7	90.5	4.3	229,343	18.0

na = Not applicable.

a = Omitted because less than 50 percent of women had a birth before reaching the beginning of the age group.

7.1.8. Adolescent Fertility and Motherhood

Teenage pregnancy and motherhood is a major social and health concern. Adolescent fertility in Bangladesh occupies a prime place in the design and implementation of reproductive health strategies, policies, and programs. Children born to very young mothers are prone to higher risks of illness and death (Finlay, et al., 2011). Adolescent mothers are also more likely to experience complications during pregnancy and are less likely to be prepared to deal with them, which can lead to maternal death. Moreover, early entry into reproduction denies young women the opportunity to pursue basic and further academic goals which is detrimental to career prospects.

Data in Table 7.7 show that 22 percent of adolescent women (ages 15–19) in Bangladesh were already mothers with at least one child and five percent were currently pregnant, for a total of 27 percent who had started childbearing. The proportion of adolescents who have begun childbearing rises rapidly with age. Early childbearing among adolescent women was more common in rural than urban areas, and in Rajshahi (32 percent) and Rangpur (31 percent) compared with other divisions. Childbearing began later in Sylhet (14 percent) than in other divisions.

Delayed childbearing was strongly related to education among adolescent women. Only 17 percent of adolescents who completed secondary or higher education had begun childbearing, compared with 37 percent of those with no education. Childbearing began earlier in the poorest wealth quintile: 32 percent of adolescents in this group had begun childbearing, compared with only 20 percent of adolescents in the richest wealth quintile.

Data from different surveys show the proportion of adolescents who had begun childbearing remained almost the same up to 2007 (Figure 7.4). A comparison of the 2001 and 2010 BMMS surveys shows a decrease of seven percentage points in the proportion of adolescents who had begun childbearing, from 33 percent in 2001 to 27 percent in 2010. However, comparison of BMMS 2010 and BMMS 2016 shows no change in the proportion of adolescents who had begun childbearing.

Figure 7.4. Trends in teenage pregnancy and motherhood among women ages 15–19, 1993–94 to 2016

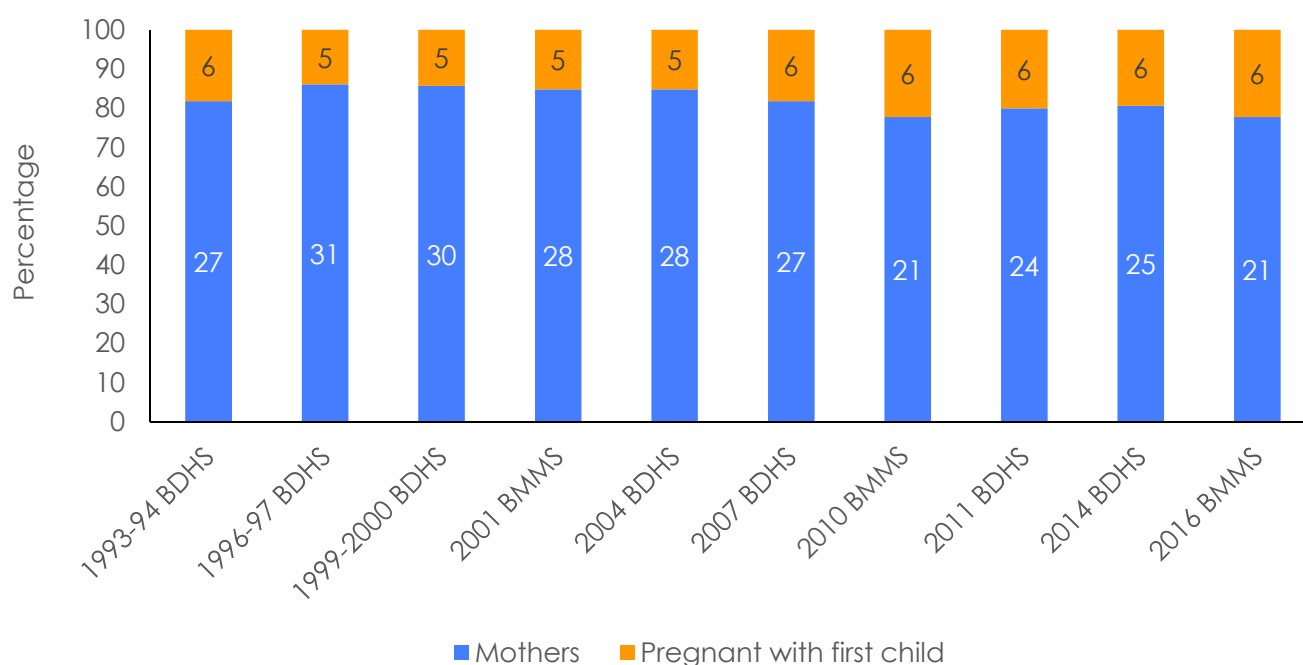


Table 7.7. Teenage pregnancy and motherhood

Percentage of women ages 15–19 who have had a live birth or who are pregnant with their first child, and percentage who have begun childbearing, by background characteristics, Bangladesh 2016.

Background characteristics	Percentage who:		Percentage who have begun child bearing	Number of women
	Have had a live birth	Are pregnant with first child		
Age				
15	3.8	2.0	5.8	14,006
16	8.9	3.8	12.7	14,461
17	19.1	4.7	23.8	12,963
18	29.5	7.8	37.3	18,030
19	46.6	7.2	53.9	14,073
Residence				
Urban	18.8	4.6	23.3	21,010
Rural	23.3	5.5	28.8	52,551
Division				
Barishal	20.5	5.2	25.7	3,740
Chattogram	19.8	5.5	25.3	16,713
Dhaka	22.0	5.1	27.1	19,497
Khulna	23.7	5.3	29.0	6,843
Mymensingh	23.6	4.8	28.4	5,872
Rajshahi	26.5	5.9	32.4	7,781
Rangpur	25.9	5.4	31.4	7,415
Sylhet	11.1	3.1	14.1	7,453
Educational attainment				
No education	32.1	4.9	37.1	2,137
Primary incomplete	34.3	6.1	40.3	6,738
Primary complete	34.3	6.1	40.5	7,963
Secondary incomplete	21.7	5.0	26.7	38,108
Secondary complete/higher	11.7	5.1	16.8	18,668
Wealth quintile				
Lowest	26.3	5.8	32.1	13,603
Second	25.0	5.4	30.4	14,388
Middle	22.5	5.2	27.7	15,248
Fourth	21.0	5.4	26.4	16,021
Highest	15.5	4.3	19.8	14,280
Total	22.0	5.2	27.2	73,532

7.2. Family Planning

In the BMMS 2016, information on the current use of contraception and the sources of supply of modern contraceptive methods was collected. Although ever-married women ages 13–49 were interviewed, only responses from currently married women ages 15–49 are presented.

7.2.1. Current Use of Contraception

The BMMS 2016 indicates that 63 percent of currently married women in Bangladesh are currently using a contraceptive method. Modern methods were much more widely used (56 percent) than traditional methods (seven percent).

The pill, used by 29 percent of currently married women, continues to be by far the most popular method of contraception. Twelve percent of currently married women used injectables, followed by condom (six percent) and female sterilization (four percent each). Two percent of currently married women used implants, less than one percent used an intrauterine device (IUD) and male sterilization. The most popular traditional method was periodic abstinence, used by five percent of women (Table 7.8).

Table 7.8. Current use of contraception by background characteristics

Percent distribution of currently married women ages 15–49 by contraceptive method currently used, according to background characteristics, Bangladesh 2016.

Background characteristics	Modern method										Traditional method					Number of women
	Any modern method	Pill	IUD	Injectables	Implants	Male condom	Female sterilization	Male sterilization	Lactational amenorrhoea method	Any traditional method	Periodic abstinence	Withdrawal	Other method	Not currently using		
Age group																
15–19	53.4	50.0	29.1	0.1	8.0	1.2	7.7	0.0	0.0	3.7	3.5	2.0	1.4	0.0	46.6	31,183
20–24	62.4	58.8	33.0	0.3	12.6	2.1	6.9	0.6	0.2	3.2	3.5	2.4	1.2	0.0	37.6	55,070
25–29	69.3	65.1	34.1	0.5	15.4	2.4	7.2	2.6	0.6	2.3	4.2	3.0	1.2	0.1	30.7	55,875
30–34	73.8	67.5	33.5	0.7	15.7	2.4	7.1	5.6	1.2	1.4	6.3	4.9	1.3	0.1	26.2	49,513
35–39	74.6	64.0	31.1	0.8	14.1	2.0	6.4	7.4	1.7	0.5	10.4	8.6	1.8	0.2	25.4	39,830
40–44	59.5	45.9	21.0	0.6	9.1	1.3	4.2	8.1	1.5	0.2	13.4	11.6	1.8	0.2	40.5	32,352
45–49	32.4	23.4	9.5	0.3	4.0	0.5	1.9	6.4	0.8	0.1	8.9	8.0	0.9	0.1	67.6	31,579
Residence																
Urban	67.0	58.9	29.0	0.6	10.9	1.6	10.7	4.0	0.8	1.3	8.0	6.1	1.9	0.1	33.0	82,260
Rural	61.2	54.9	28.7	0.5	12.5	1.9	4.4	4.2	0.8	1.9	6.2	5.0	1.2	0.1	38.8	213,142
Division																
Barishal	64.7	57.8	30.2	0.4	16.9	1.8	3.5	2.2	0.8	2.2	6.8	5.5	1.4	0.0	35.3	16,432
Chattogram	55.3	49.1	25.5	0.6	11.8	1.1	5.0	3.4	0.5	1.1	6.1	4.8	1.3	0.1	44.7	55,984
Dhaka	64.7	57.1	29.1	0.6	10.5	1.7	8.7	4.2	0.8	1.6	7.5	5.9	1.6	0.1	35.3	79,273
Khulna	64.7	56.4	26.9	0.5	13.0	1.8	6.4	4.8	0.7	2.2	8.3	6.2	2.0	0.0	35.3	33,498
Mymensingh	63.4	57.6	35.3	0.4	11.2	2.3	4.3	2.6	0.8	0.8	5.6	4.6	1.0	0.1	36.6	22,442
Rajshahi	66.0	60.1	29.6	0.5	12.4	2.1	6.9	5.5	0.8	2.2	5.9	4.7	1.2	0.0	34	37,972
Rangpur	68.1	62.4	31.1	0.4	15.6	2.8	3.9	4.3	1.6	2.7	5.6	4.6	1.0	0.1	31.9	33,728
Sylhet	54.3	46.9	24.8	0.6	6.7	1.9	5.2	5.1	1.1	1.6	7.2	6.2	1.0	0.2	45.7	16,073

Table 7.8. Current use of contraception by background characteristics (continued)

Background characteristics	Modern method										Traditional method				Number of women		
	Any modern method	Pill	IUD	Injectables	Implants	Male condom	Female sterilization	Male sterilization	Lactational amenorrhoea method	Any traditional method	Periodic abstinence	Withdrawal	Other method	Not currently using			
Educational attainment																	
No education	58.8	50.2	22.4	0.5	13.7	1.9	1.5	7.7	1.7	0.7	0.7	8.3	7.3	1.0	0.3	41.2	56,821
Primary incomplete	65.1	58.3	27.8	0.6	16.2	2.6	2.7	5.5	1.4	1.5	1.5	6.7	5.6	1.1	0.1	34.9	53,045
Primary complete ¹	66.0	59.8	30.9	0.6	15.6	2.4	3.9	3.8	0.8	1.9	1.9	6.1	5.0	1.1	0.1	34.0	42,045
Secondary incomplete	63.4	57.9	32.9	0.5	11.2	1.6	6.5	2.5	0.4	2.2	2.2	5.5	4.1	1.4	0.0	36.6	94,720
Secondary complete/higher ²	61.1	53.5	27.4	0.4	4.3	0.7	16.7	1.8	0.1	2.1	2.1	7.6	5.3	2.3	0.0	38.9	48,771
Wealth quintile																	
Lowest	65.0	59.2	28.5	0.4	17.6	2.6	1.9	4.4	1.4	2.3	2.3	5.6	4.8	0.9	0.2	35.0	54,284
Second	64.6	58.4	30.3	0.6	14.6	2.4	2.9	4.6	1.0	2.0	2.0	6.0	5.0	1.0	0.1	35.4	57,828
Middle	61.9	55.4	29.8	0.5	12.0	2.0	4.3	4.4	0.8	1.8	1.8	6.3	5.1	1.2	0.1	38.1	60,278
Fourth	61.8	54.9	30.0	0.5	10.6	1.3	6.6	3.6	0.7	1.5	1.5	6.9	5.3	1.5	0.1	38.2	61,841
Highest	61.1	52.7	25.4	0.6	6.3	0.8	14.5	3.6	0.3	1.2	1.2	8.3	6.2	2.1	0.0	38.9	61,171
Total	62.8	56.0	28.8	0.5	12.1	1.8	6.2	4.1	0.8	1.7	1.7	6.7	5.3	1.4	0.1	37.2	295,402

Note: If more than one method was used, only the most effective method was considered in this tabulation.

¹ Primary complete is defined as completing grade 5.

² Secondary complete is defined as completing grade 10.

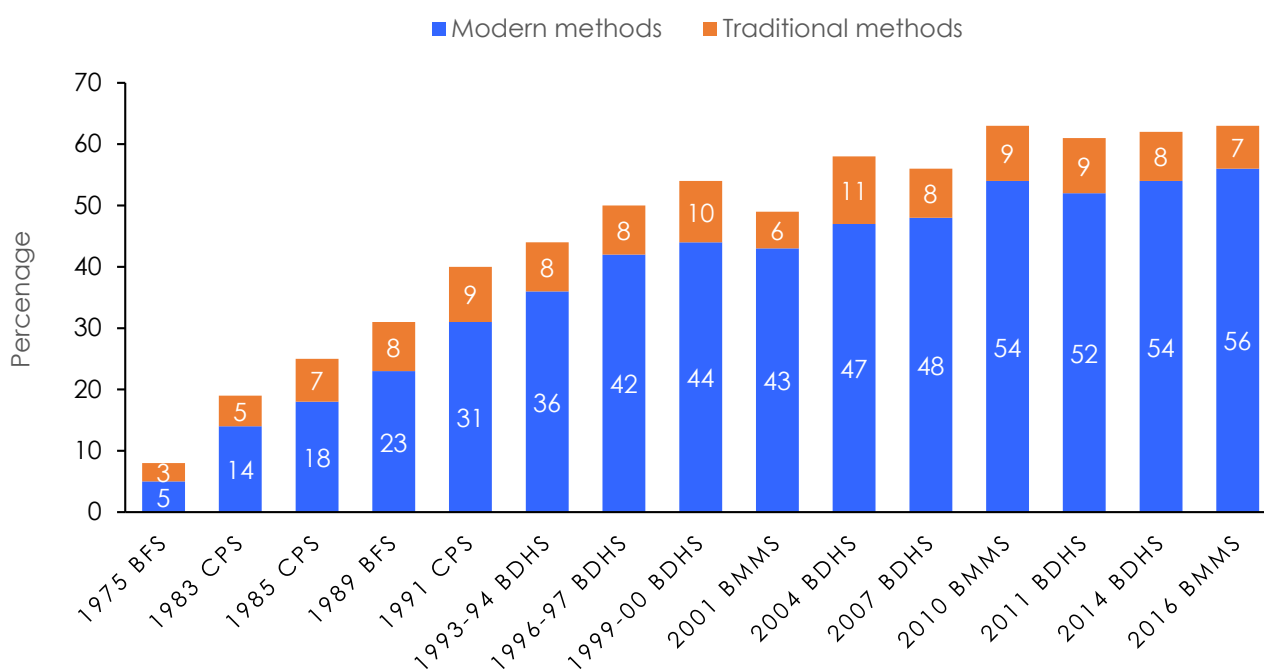
Trends in Current Use of Family Planning

The contraceptive prevalence rate for married women in Bangladesh has increased from eight percent in 1975 to 63 percent in 2016, a roughly eight-fold increase over more than four decades (Figure 7.5). From 2001 to 2010, current contraceptive use has increased by 13 percentage points, an increase of 1.4 percent points each year, but no changes were observed between 2010 and 2016.

The proportional share that each method contributes to the overall use of contraception, known as the method mix, changed over time. The use of modern methods increased by 10 percentage points from 2001 to 2010 (9 years), but it increased by only two percentage points over the last six years (2010 to 2016). Use of oral pills decreased from 31 percent in 2010 to 29 percent in 2016. The use of injectables remained same in 2010 and 2016 (12 percent) (data not shown).

The use of long-lasting methods (male or female sterilization, IUD, and implants) remained the same between 2010 and 2016 (seven percent). Use of sterilization was comparatively higher in the 1980s and early 1990s, but then started to decline (data not shown). The use of sterilization has declined from 10 percent in 1991 to six percent in 2001, and to seven percent in 2016.

Figure 7.5. Trends in contraceptive use among currently married women under age 50, 1975–2016



Differentials in Current Use of Modern Contraceptive Method

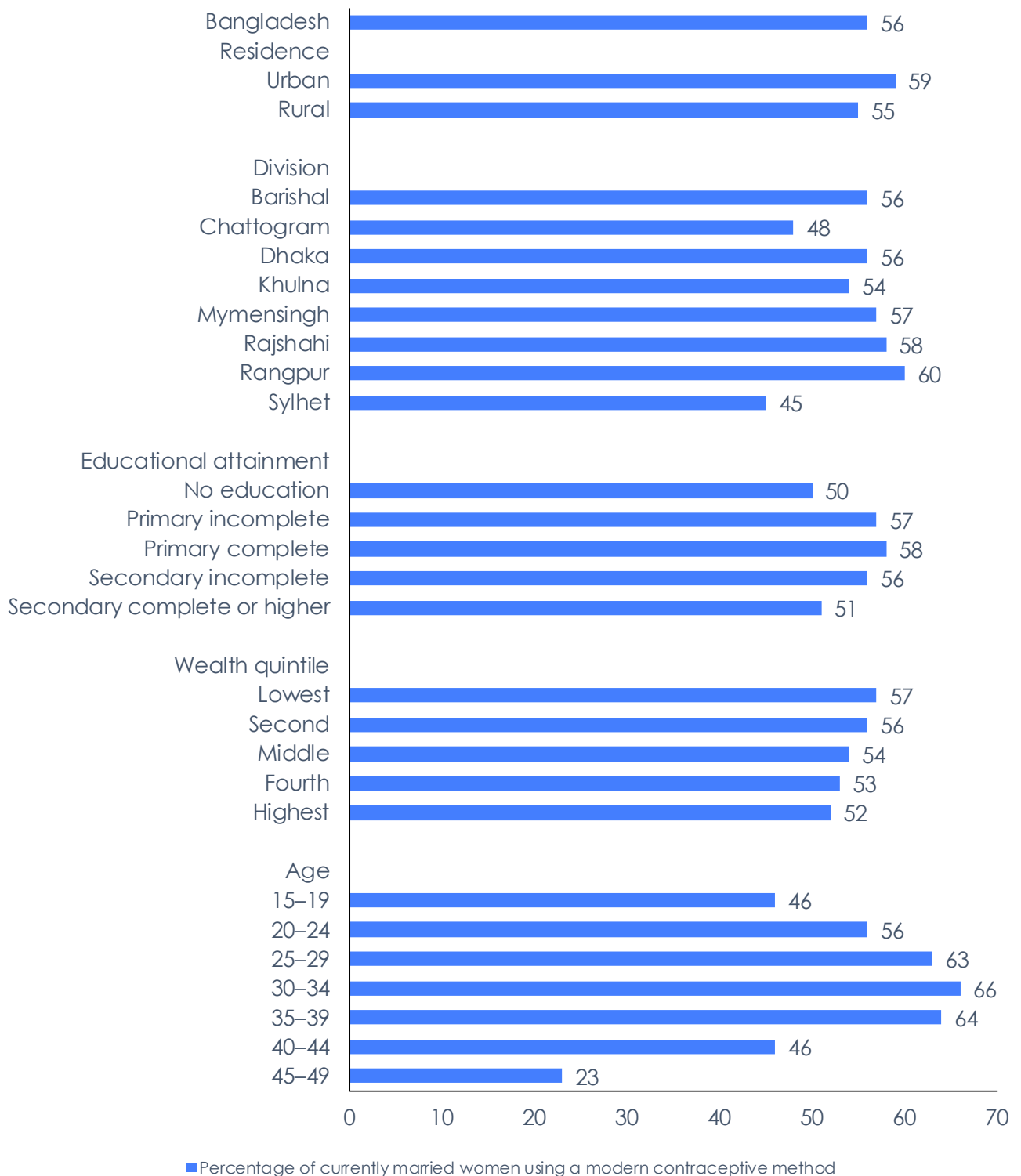
Figure 7.6 and Table 7.8 show differentials in modern contraceptive use by women's background characteristics. Use of modern contraception was higher in urban (59 percent) than in rural areas (55 percent). Use of modern contraception varied greatly by division. Modern contraceptive use ranged from a high of 62 percent in Rangpur to a low of 47 percent in Sylhet.

The pill was the most popular method among currently married women irrespective of education, residence, wealth, and age. The second most widely used method among currently married women was injectables, with the exception of the oldest, most educated, and wealthiest women. After the oral contraceptive pill, the male condom was more popular among more educated and wealthier women.

Modern method use varied by age, reaching a peak of 68 percent among women ages 30–34, followed closely by women ages 35–39 (64 percent). As expected, women in older groups (ages 30–49) were more likely to have been sterilized than younger women.

There were some differences in method choice of currently married women by wealth quintile. Overall, injectable use declined and condom use increased as economic status, measured by wealth quintile, increased. For example, 18 percent of currently married women in the lowest wealth quintile used injectables, compared with six percent of those in the highest wealth quintile. Condom use was only two percent among couples in the lowest wealth quintile, compared with 15 percent among those in the highest wealth quintile. In addition, the use of any permanent methods of modern contraception declined as economic status increased.

Figure 7.6. Use of modern contraceptive method by background characteristics, Bangladesh 2016



7.2.2. Source of Family Planning Method

In the BMMS 2016, women who reported using a modern contraceptive method at the time of the survey were asked where they obtained the method the last time they acquired it. Since some women may not know the category into which the source they use falls (e.g., government hospital, health center, or private clinic/hospital), interviewers were instructed to note the full name of the source or facility. Supervisors and field editors were then instructed to verify that the name and source type were consistent, and asked informants in the clusters for the names of local family planning outlets, when necessary. This practice, used since the 1993 BDHS, was designed to improve the accuracy of source reporting.

Sources of family planning methods were classified into four major categories: public facilities (including government medical college/hospitals, maternal child welfare centers, upazila health complexes, family welfare centers, satellite clinic/EPI outreach centers, community clinics and government fieldworkers), NGO sector sources (including static clinics, satellite clinics, depot holders, and NGO fieldworkers), private medical sources (including private hospitals/clinics, qualified doctors, unqualified doctors, and pharmacies), and other private sources (including shops and friends/relatives). Figure 7.7 and Table 7.9 show current modern method users by most recent source of method.

Overall, half of modern contraceptive users obtained their supplies from a private medical sector facility, with pharmacies being the most important source, serving 46 percent of users. One percent of modern contraceptive users obtained their methods from a private non-medical source, mainly a shop. Nongovernmental organizations (NGOs) supplied contraceptives to five percent of users of modern methods.

The public sector provided contraceptive methods to 44 percent of all modern method users. Government fieldworkers were the most important source in the public sector, supplying contraceptives to 18 percent of users, followed by upazila health complexes (eight percent), community clinics (six percent), and family welfare centers (four percent).

The source of modern contraceptive methods varied largely by the specific method. The public sector was the prime source for female and male sterilization, IUDs, injectables, and implants; while the private sector was the major source for pills and condoms. Upazila health complexes (36 percent), private hospitals/clinics (33 percent), and medical college hospitals/district hospitals (18 percent) were the key sources for female sterilization. Male sterilization, the IUD, and implants were almost exclusively obtained from a public sector facility, particularly at upazila health complexes, medical college hospitals/district hospitals, and family welfare centers. Nevertheless, one-third of all women who were sterilized obtained the procedure at a private source, especially a private hospital or clinic, and only three percent were sterilized at an NGO static clinic. Eight percent of implant users obtained them from NGO static clinics. The private sector, namely pharmacies, was the major supply source of pills (57 percent), injectables (28 percent), and condoms (82 percent). The government fieldworker (24 percent) and community clinics (7 percent) were also important sources of pills. Similarly, injectables were also obtained from government fieldworkers (22 percent), community clinics (12 percent), satellite clinics or EPI outreach (eight percent), family welfare centers (seven percent), and upazila health complexes (five percent).

Figure 7.7. Distribution of current users of modern contraceptive methods by most recent source of method, Bangladesh 2016

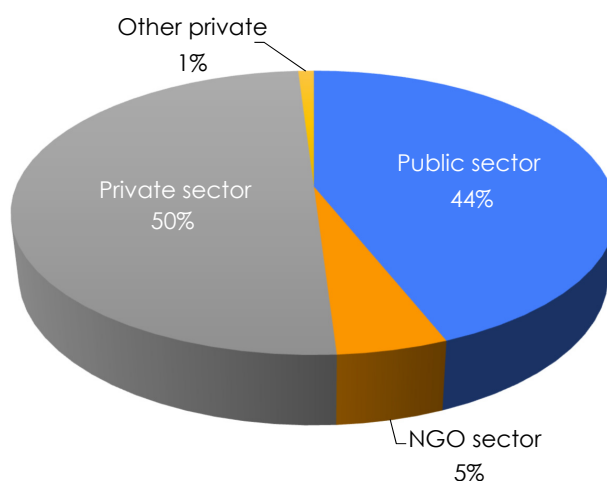


Table 7.9. Source of modern contraception method

Percent distribution of users of modern contraceptive methods among women ages 15–49 by most recent source of method, according to method, BMMS 2016.

Source of modern methods	Modern methods							All modern method
	Pill	IUD	Inject-ables	Implants	Male condom	Female steriliza-tion	Male steriliza-tion	
Public sector	37.7	80.1	55.3	87.9	12.2	63.8	88.3	43.6
Medical college/hospital	0.2	8.3	0.8	6.2	0.3	18.4	23.0	2.3
Maternal and child welfare center	0.4	10.3	1.3	11.5	0.4	7.0	7.1	1.7
Upazila health complex	1.9	41.5	5.2	56.5	0.9	35.9	56.1	8.1
Family welfare center	2.7	17.9	6.9	11.4	0.9	2.0	1.7	3.8
Rural dispensary	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Satellite clinic or EPI outreach	2.1	0.7	7.6	0.2	0.5	0.0	0.0	2.9
Community clinic	6.6	1.0	11.7	1.6	1.6	0.1	0.0	6.3
Govt. field worker	23.8	0.1	21.5	0.2	7.4	0.0	0.0	18.3
Other public	0.1	0.2	0.1	0.2	0.3	0.3	0.2	0.1
NGO sector	2.8	12.2	11.1	8.7	1.7	3.3	5.0	4.9
NGO hospital	0.0	0.6	0.3	0.4	0.1	0.8	1.0	0.2
Static clinic	0.7	11.6	4.9	8.2	0.8	2.5	4.0	2.2
Satellite clinic	0.5	0.0	2.7	0.0	0.1	0.0	0.0	0.9
Depot holder	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1
NGO field worker	1.5	0.0	3.1	0.0	0.6	0.0	0.0	1.5
Other NGO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Private sector	57.8	7.5	33.4	3.3	82.6	32.7	6.1	50.2
Private hospital/clinic	0.1	7.5	1.0	3.1	0.1	32.6	6.1	3.0
Qualified doctor	0.1	0.0	1.5	0.0	0.1	0.0	0.0	0.4
Non-qualified doctor	0.3	0.0	3.1	0.0	0.3	0.0	0.0	0.9
Pharmacy	57.2	0.0	27.8	0.2	82.2	0.0	0.0	45.9
Private medical college hospital	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0
Other private	1.6	0.2	0.1	0.1	3.4	0.1	0.6	1.3
Shop	1.2	0.0	0.0	0.0	3.2	0.0	0.0	1.0
Friends/relatives	0.4	0.0	0.0	0.0	0.1	0.0	0.0	0.2
Other	0.1	0.2	0.1	0.1	0.1	0.1	0.6	0.1
DK/missing	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Number of women	84,986	1,497	35,675	5,374	18,235	12,124	2,450	16,0341

Note: Lactational amenorrhea method is not included as it does not require a device.

7.3. Childhood Mortality

Infant and child mortality rates reflect a country's level of socioeconomic development and quality of life. These measures are also used for monitoring and evaluating population and health programs. The BMMS 2016 asked all ever-married women ages 13–49 to provide a complete history of their births. For each live birth, the sex, month and year of birth, survival status, and age at the time of the survey or age at death was asked. Age at death was recorded in days for children dying in the first month of life, in months for other children dying before their second birthday, and in years for children dying at later ages. This information was used to calculate the following direct estimates of infant and child mortality.³

Neonatal mortality:	The probability of dying in the first month of life.
Post-neonatal mortality:	The probability of dying after the first month of life but before the first birthday.
Infant mortality (${}_1q_0$):	The probability of dying before the first birthday.
Child mortality (${}_4q_1$):	The probability of dying between the first and fifth birthdays.
Under-five mortality (${}_5q_0$):	The probability of dying before the fifth birthday.

All rates are expressed per 1,000 live births except for child mortality, which is expressed per 1,000 children surviving to their first birthday (12 months of age).

7.3.1. Childhood Mortality Rates: Levels and Trends

Neonatal, post-neonatal, infant, child, and under-five mortality rates, by two-year, three-year, and five-year periods preceding the survey, are shown in Table 7.10. Data from the BMMS 2016 show that under-five mortality during the five years preceding the survey (2011–2015) was 47 per 1,000 live births. This means that one in 21 children born in Bangladesh died before reaching their fifth birthday. The infant mortality rate was 39 deaths per 1,000 live births and the neonatal mortality rate was 30 per 1,000 live births. Deaths in the neonatal period accounted for 64 percent of all under-five deaths and 77 percent of all infant deaths.

Bangladesh experienced an impressive decline in childhood mortality in the last two decades. The BMMS 2016 shows consistent declining trends in the childhood mortality rates in the three five-year periods preceding the survey. The under-five mortality rate declined by 21 deaths per 1,000 live births (from 68 to 47) when comparing the estimates for the period 10–14 years before the survey with the estimates for the period 0–4 years before the survey. This decline implies an average rate of decline of two under-five deaths per 1,000 live births per year. The infant death rate also decreased by 1.5 per 1,000 live births and the neonatal death rate decreased by 1 per 1,000 live births annually during this period.

Figure 7.8 shows trends in infant and childhood mortality over the last two decades. It shows a steady downward trend in childhood mortality in Bangladesh. The under-five mortality rate has declined from 133 deaths per 1,000 live births between 1989–93 to 47 deaths per 1,000 live births between 2011–15. However, between 2010–14 and 2011–15 the childhood mortality rates' decline appears to be flattening. The strength of this comparison derives from the fact that these surveys used identical data collection instruments. Between the periods 1989–1993 and 2011–2015, under-five mortality declined from 133 to 47—a 65 percent decline in 16 years—at an average of 4.1 percent per year. During the same period, infant mortality declined by 55 percent (3.4 percent per year) and neonatal mortality declined by 42 percent (2.6 percent per year). Bangladesh has achieved the MDG 4 target of reducing the under-five mortality rate from 151 deaths per 1,000 live births in 1990 to 48 deaths per 1,000 live births by 2015. However, attaining the aim of the fourth HPNSP will require additional efforts to achieve a further 28 percent reduction in the under-five mortality rate (from 47 to 34) in the year 2022.

³ The mortality estimates are true probabilities calculated according to the conventional life-table approach. A detailed description of the method for calculating the probabilities presented here are given by Rutstein (1984).

Table 7.10. Early childhood mortality rates

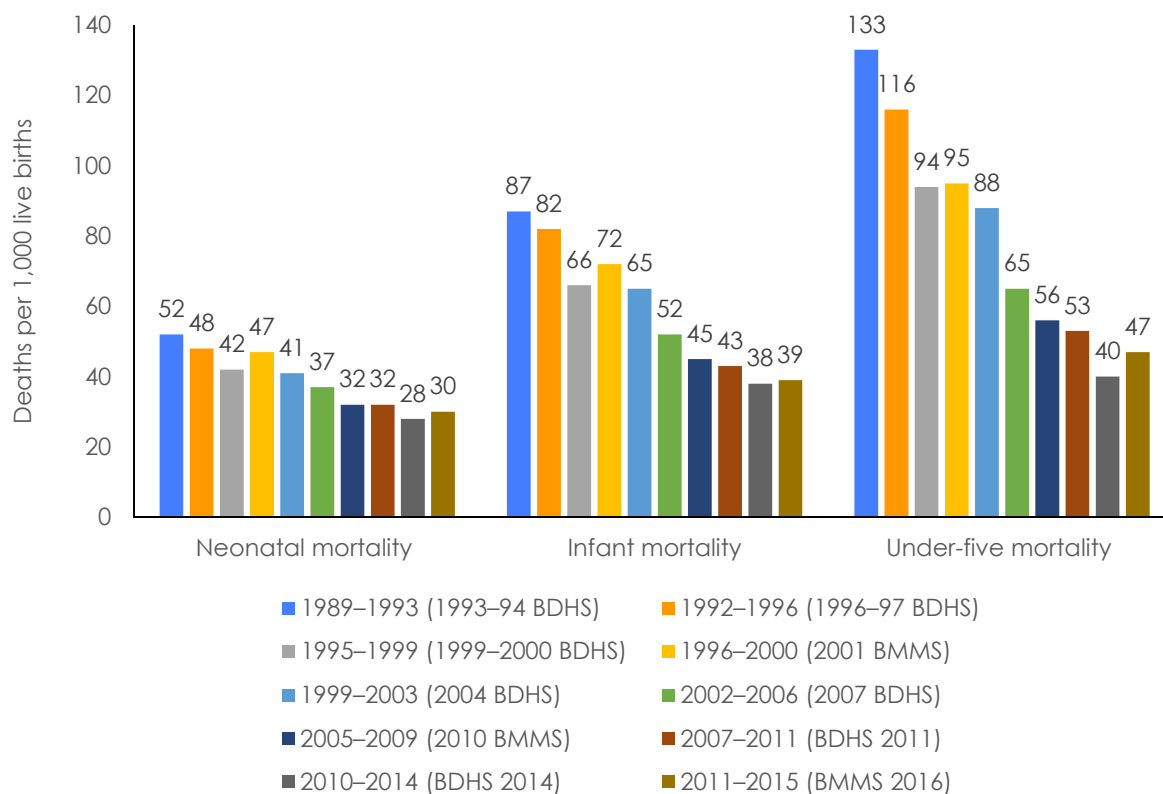
Neonatal, post-neonatal, infant, child, and under-five mortality rates for two-year, three-year, and five-year periods preceding the survey, Bangladesh 2016.

Years preceding the survey	Approximate reference period	Neonatal mortality (NN)	Post-neonatal mortality (PNN)	Infant mortality (1q0)	Child mortality (4q1)	Under-five mortality (5q0)
Two-year period						
0-1	2014-2015	30	9	38	8	46
2-3	2012-2013	31	9	39	8	47
4-5	2010-2011	30	10	40	9	49
6-7	2008-2009	34	11	45	9	54
8-9	2006-2007	34	12	46	11	56
Three-year period						
0-2	2012-2015	31	8	39	8	47
3-5	2008-2011	30	10	40	9	48
6-8	2004-2007	34	11	45	9	54
Five-year period						
0-4	2011-2015	30	9	39	8	47
5-9	2006-2010	33	11	45	10	54
10-14	2001-2005	38	16	54	14	68

Note: Month of interview is excluded from analysis.

¹ Computed as the difference between the infant and neonatal mortality rates.

Figure 7.8. Trends in infant and childhood mortality, 1989 to 2016



7.3.2. Socioeconomic Differentials in Childhood Mortality

Figure 7.9 and Table 7.11 present data on differentials in childhood mortality rates for the five-year period preceding the survey by socioeconomic characteristics. The urban-rural differences in childhood mortality rates favor urban children who have a lower probability of dying at any stage of childhood than rural children. Under-5 mortality in urban areas was 42 per 1,000 live births, 13 percent lower than in rural areas (48 per 1,000 live births). A comparison of BMMS 2010 and BMMS 2016 shows that mortality rates among children under age 5 have declined faster in urban areas than in rural areas. For example, the under-five mortality rate has declined 21 percent in urban areas and 14 percent in rural areas (data not shown), increasing the urban-rural gap in childhood mortality rates from 3 to 6 deaths per 1,000 live births.

The BMMS 2016 data show wide variations in estimates of childhood mortality by division. In general, Sylhet had the highest rates and Dhaka had the lowest rates. For instance, the under-5 mortality rate was 65 deaths per 1,000 births in Sylhet and 39 deaths per 1,000 births in Dhaka. The infant mortality rate was 56 deaths per 1,000 live births in Sylhet and 33 deaths per 1,000 live births in Dhaka. The child mortality rate, however, was highest in Barishal and Chattogram (11 deaths per 1,000 births, each). A comparison of BMMS 2010 and BMMS 2016 data shows that under-five mortality has declined 33 percent in Sylhet division and 42 percent in Dhaka division over the last six years (data not shown).

Maternal education is strongly related to childhood mortality. Higher levels of educational attainment are generally associated with lower mortality risks because education exposes mothers to information about better nutrition, use of contraception to limit and space births, health care during pregnancy, and childhood illnesses, vaccinations, and treatments. The BMMS 2016 shows that children born to mothers with no education had much higher levels of mortality than children born to mothers with some education. The overall under-five mortality rate declined sharply with increasing education of mothers, ranging from 72 deaths per 1,000 live births for mothers with no education to a low of 28 deaths per 1,000 live births for mothers who had completed secondary education or higher. Other mortality indicators also declined similarly with increases in mother's education.

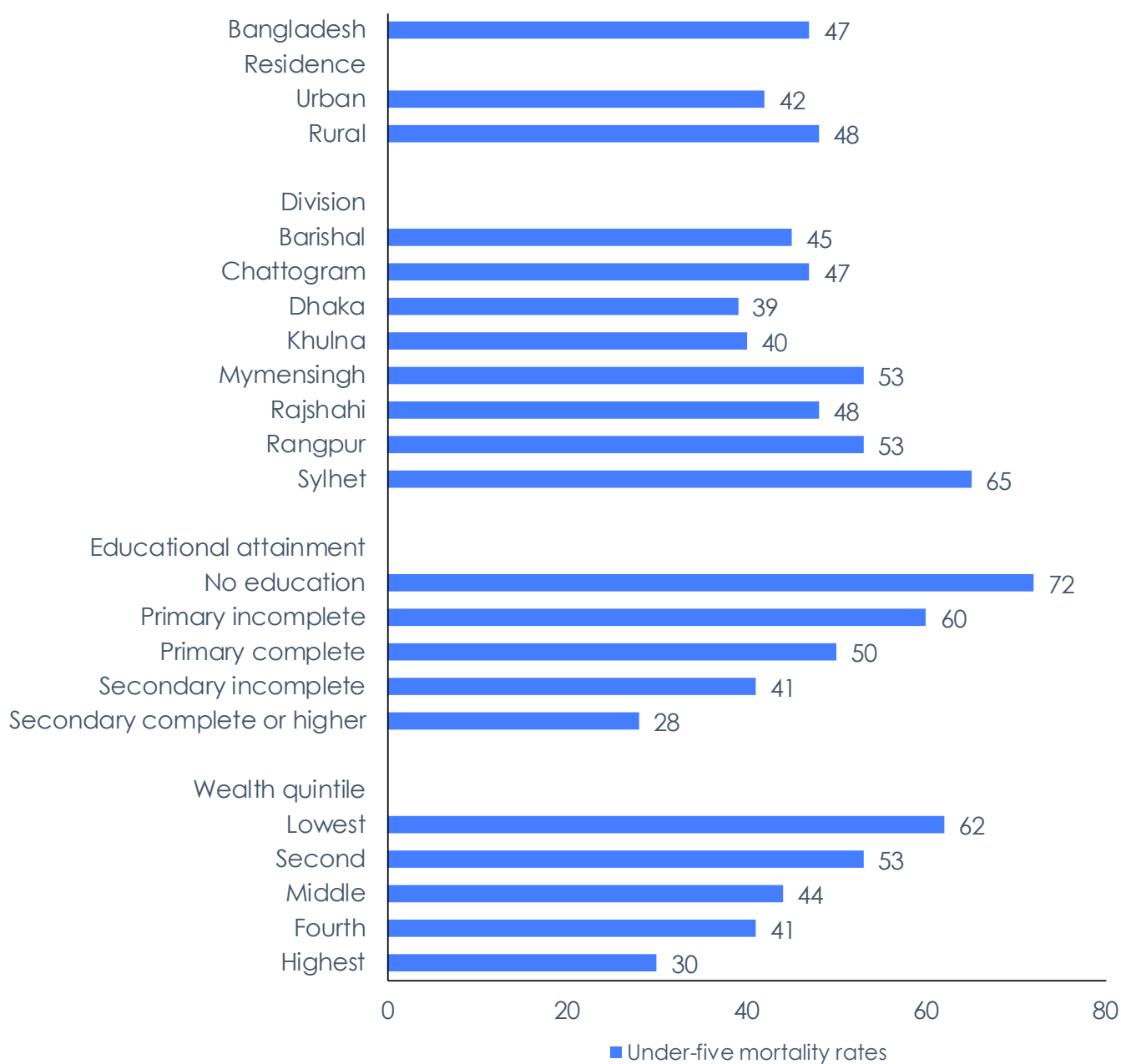
Table 7.11. Infant and child mortality by socioeconomic characteristics

Neonatal, post-neonatal, infant, child, and under-five mortality rates for the five-year period preceding the survey, by background characteristic, Bangladesh 2016.

Background characteristic	Neonatal mortality (NN)	Post-neonatal mortality (PNN)	Infant mortality (1q0)	Child mortality (4q1)	Under-five mortality (5q0)
Residence					
Urban	27	8	36	6	42
Rural	31	9	40	9	48
Region					
Barishal	28	7	34	11	45
Chattogram	27	9	36	11	47
Dhaka	25	8	33	6	39
Khulna	27	6	34	6	40
Mymensingh	36	10	46	8	53
Rajshahi	33	8	41	7	48
Rangpur	37	8	45	8	53
Sylhet	40	16	56	10	65
Mother's education					
No education	43	16	59	14	72
Primary incomplete	38	12	50	11	60
Primary complete	32	10	42	8	50
Secondary incomplete	28	7	34	7	41
Secondary complete or higher	20	5	24	4	28
Wealth quintile					
Lowest	39	13	51	12	62
Second	34	9	43	10	53
Middle	29	8	37	7	44
Fourth	27	8	35	7	41
Highest	20	5	26	5	30
Total	30	9	39	8	47

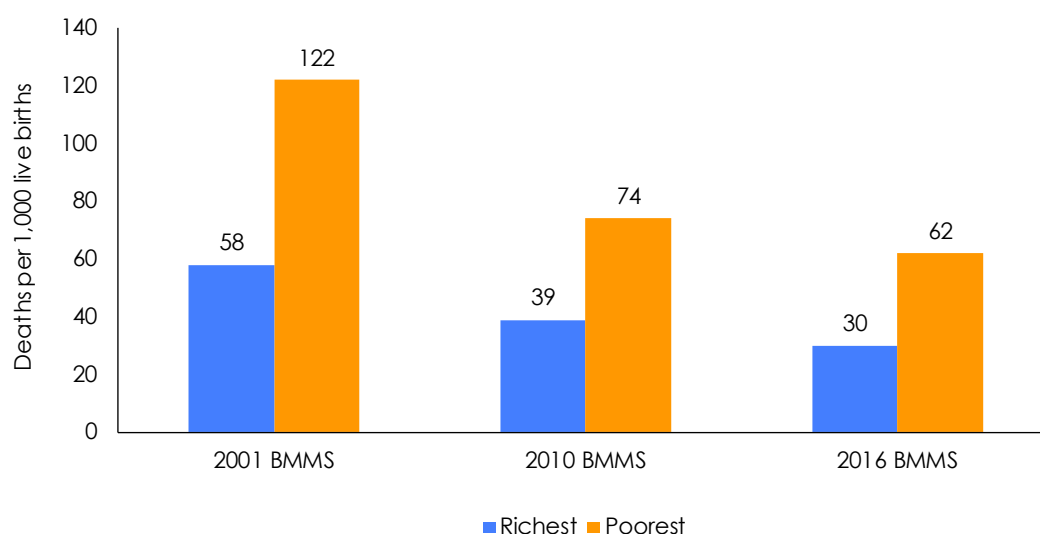
¹ Computed as the difference between the infant and neonatal mortality rates.

Figure 7.9. Under-five mortality rates by socioeconomic characteristics, Bangladesh 2016



A child’s risk of dying is associated with the economic status of the household. The BMMS 2016 shows all indicators of childhood mortality declined substantially as household wealth increased. For example, the infant mortality rate for children in the wealthiest households was 26 deaths per 1,000 live births, whereas the corresponding rate for children in the poorest households was 51 deaths per 1,000 live births. Comparison of BMMS 2001, 2010, and 2016 data shows that the difference of under-5 mortality rates between rich and poor has declined marginally over the period (Figures 7.10 and 7.11). A child from the poorest quintile was 2.1 times more likely to die before reaching age five compared to a child from the wealthiest quintile in 2016. It was almost same during BMMS 2001 (2.1 times) and BMMS 2010 (1.9 times).

Figure 7.10. Under-five mortality rates among rich and poor, Bangladesh 2001, 2010, and 2016



Note: Rates are for the five-year period preceding the surveys.

7.3.3. Demographic Differentials in Childhood Mortality

This section examines differentials in childhood mortality by demographic characteristics of the child and the mother. Table 7.12 presents various indicators of infant and child mortality for the five-year period preceding the survey by sex of the child, mother's age at birth, and birth order.

The neonatal mortality rate during the five-year period before the survey was higher for boys than for girls (34 and 26 deaths per 1,000 live births, respectively). This difference creates higher infant and under-five mortality rates for boys. The data of BMMS 2010 and BMMS 2016 provide evidence for equal child mortality for boys and girls (Figure 7.11), which is contrary to the pattern observed in BMMS 2001 (NIPORT, et al., 2003) and other studies in South Asia (Gupta, 1987; Basu, 1989). The pattern of gender differentials in neonatal mortality is expected because neonatal mortality (which reflects largely congenital conditions) tends to be higher for boys than girls in most populations. However, the pattern of post-neonatal and child mortality reflects behavior change against sociocultural discrimination towards female children.

Figure 7.11. Changes in child mortality rates, Bangladesh 1989 to 2015

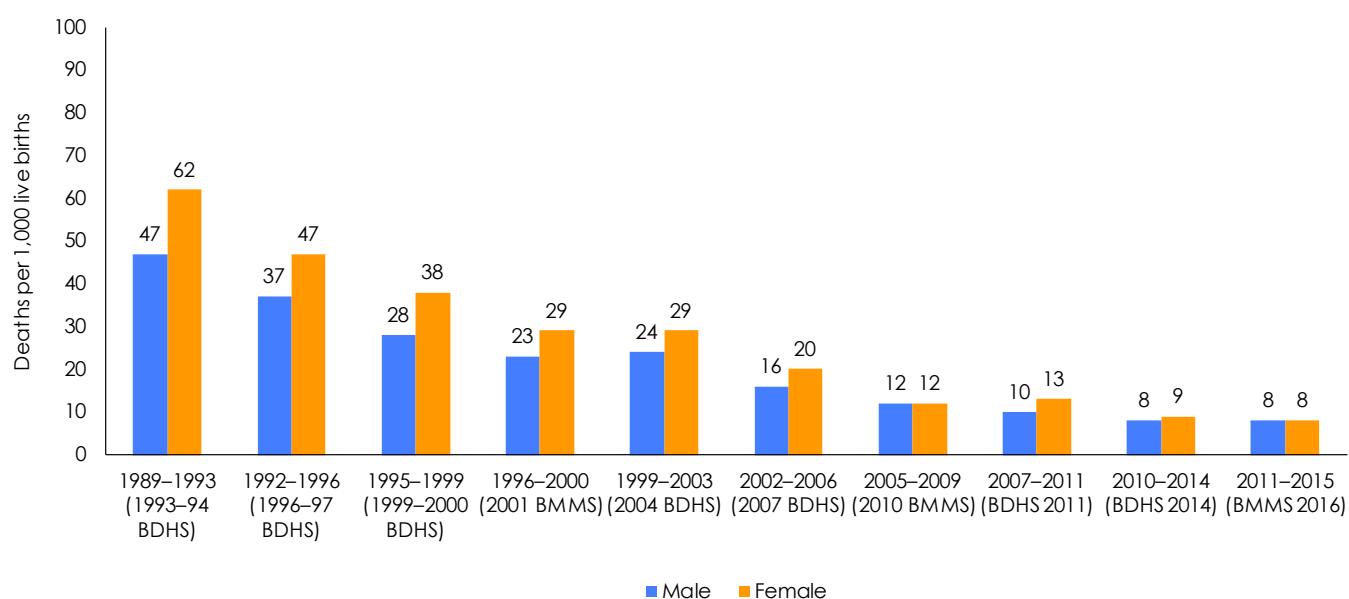


Table 7.12. Infant and child mortality by demographic characteristics

Neonatal, post neonatal, infant, child, and under-five mortality rates for the five-year period preceding the survey, by demographic characteristics, Bangladesh 2016.

Demographic characteristic	Neonatal mortality (NN)	Postneonatal mortality (PNN)	Infant mortality (1q0)	Child mortality (4q1)	Under-five mortality (5q0)
Child's sex					
Male	34	9	43	8	51
Female	26	9	35	8	42
Mother's age at birth					
<20	35	10	44	7	51
20–29	26	7	33	8	41
30–39	35	12	48	11	58
40–49	46	11	57	13	70
Birth order					
1	32	8	40	6	46
2–3	25	8	33	8	41
4–5	41	12	53	13	65
6+	42	20	62	19	80
Previous birth interval					
<2 years	41	18	59	13	70
2 years	28	11	39	12	50
3 years	21	8	30	10	39
4+ years	27	7	34	8	42
Total	30	9	39	8	47

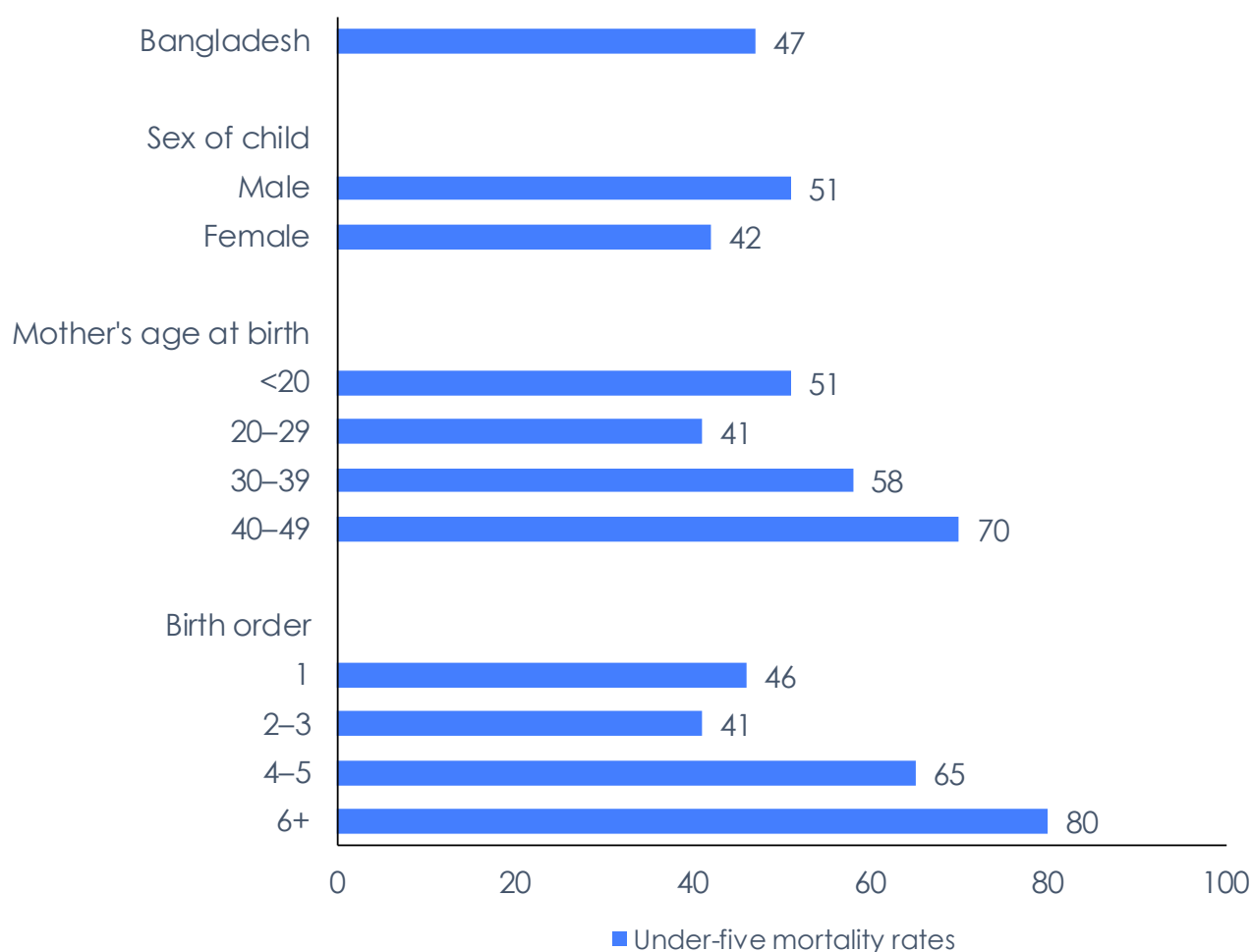
¹ Computed as the difference between the infant and neonatal mortality rates.

² Excludes first-order births.

The maternal age at birth shows a U-shaped relationship with neonatal, infant, and under-five mortality rates. The under-five mortality rate was the lowest for mothers ages 20–29 years (41 deaths per 1,000 live births) and was substantially higher when the mother's age was less than 20 years (51 deaths per 1,000 live births) and/or over 39 years (70 deaths per 1,000 live births) (Figure 7.12). The higher under-five mortality in age groups less than 20 years and 40–49 years was mainly due to much higher neonatal mortality among these age groups. Children born to young mothers are more likely to be of low birth weight, which was likely an important factor contributing to higher neonatal mortality rates. Similarly, children born to mothers above age 40 are at a higher risk of experiencing congenital problems.

The birth order also shows a U-shaped relationship with neonatal mortality, but post-neonatal and child mortality increased steadily with birth order. This results in a reverse J-shaped relationship between the birth order and infant and under-five mortality. The under-five mortality rate was the highest for births of order six or higher (80 deaths per 1,000 live births). The rate was the lowest for births of order 2 or 3 (41 deaths per 1,000 live births) and increased further for first order births (46 deaths per 1,000 live births).

Figure 7.12. Under-five mortality rates by demographic characteristics, Bangladesh 2016



7.4. High-Risk Fertility Behavior

The survival of infants and children depends in part on the demographic and biological characteristics of their mothers. Typically, the probability of dying in infancy is much greater among children born to mothers who are young (under age 18) or old (over age 34), children born after a short birth interval (less than 24 months after the preceding birth), and children born to mothers of high parity (more than three children). The risk is further elevated when a child is born to a mother who has a combination of these risk characteristics.

Table 7.13 shows the percentages of live births in the five years preceding the survey that fall into different child survival risk categories, as well as the distribution of all currently married women across these categories. It also shows the relative risks of children dying across the different risk categories. The purpose of this table is to identify areas in which changed reproductive behavior would likely have an effect on infant and child mortality. Mortality risks are represented by the proportion of children who were born during the five years preceding the survey and who had died by the time of the survey. The “risk ratio” is the ratio of the proportion of dead children in a given high-risk category to the proportion of dead children not in any high-risk category.

Among children born in the five years preceding the survey, slightly over four in ten (41 percent) births were not in any high-risk category. Another four in ten were first births—considered an unavoidable risk category—while 14 percent were in single high-risk categories and five percent were in multiple high-risk categories. The most common single high-risk category was high parity birth where the birth order was three or higher (eight percent), while the most common multiple high-risk category was maternal age (older than 34 years) and high parity (two percent).

Risk ratios, which describe the relationship between a particular risk category and a reference category, are used to compare risk categories. While the “not in any high-risk category” had a risk ratio of 1.00, the unavoidable risk category (first births) had a risk ratio of 1.34. Risk ratios were higher for children in multiple high-risk categories than for those in a single high-risk category. The births of young women (age <18 years) with short preceding birth intervals (<24 months) were most vulnerable, and they were 2.4 times more likely have died by the time of the survey than the children not in any high-risk category. Fortunately, less than one percent of births were in this multiple-risk category. Two percent of births occurred among women who had three or more children and a short preceding birth interval; these children were almost 2.4 times more likely to die than their counterparts not in any high-risk category. The high parity births to women 34 or older and short birth interval had a similar (2.1 times) risk of dying. However, the births of the most common multiple high-risk category (mothers older than 34 years and birth order three and more), which included 2.4 percent of total births, had almost double the risk of dying than the children not in any high-risk category. Among single high-risk categories, four percent of births occurred among women who had short preceding birth intervals, and these children were 1.7 times more likely to die than the children not in any high-risk category.

Table 7.13. High-risk fertility behavior

Percent distribution of children born in the five years preceding the survey by category of elevated risk of dying and the risk ratio, and percentage distribution of currently married women by category of risk if they were to conceive a child at the time of survey, Bangladesh 2016.

Risk category	Births in five years preceding the survey			Percentage of currently married women ¹
	Percentage of births	Percentage of death	Risk-ratio	
Not in any high-risk category	41.4	3.2	1.00	31.5
Unavoidable risk category: first birth	39.6	4.3	1.34	10.1
Single high-risk category				
Mother's age <18	0.6	3.3	1.04	0.2
Mother's age >34	1.2	4.9	1.54	10
Birth interval <24 months	4.3	5.4	1.67	7.6
Birth order >3	8.3	5.3	1.66	10.1
Subtotal	14.3	5.3	1.63	27.9
Multiple high-risk category				
Age <18 and birth interval <24 months ²	0.6	7.8	2.40	0.5
Age >34 and birth interval <24 months	0.0	[1.4]	na	0.1
Age >34 and birth order >3	2.4	6.1	1.90	26.7
Age >34 and birth interval <24 & birth order >3	0.2	6.7	2.06	0.6
Birth interval <24 months and birth order >3	1.5	7.7	2.38	2.6
Subtotal	4.7	6.8	2.11	30.5
In any avoidable high-risk category	19.0	5.6	1.75	58.4
Total	100.0	4.1	na	100.0
Number of births	136,377		na	296,455

Note: Risk ratio is the ratio of the proportion who have died among births in a specific high-risk category to the proportion who have died among births not in any high-risk category.

¹ Women are assigned to the risk categories according to the status they would have at birth of a child if they were to conceive at the time of the survey: current age less than 17 years and three months or older than 34 years and 2 months, latest birth occurred less than 15 months ago. Or, latest births being of order three or higher.

² Includes the combined categories age <18 and birth order >3.

REFERENCES

- Adler, A.J., Ronsmans, C., Calvert, C., Filippi, V. (2013). Estimating the prevalence of obstetric fistula: a systematic review and meta-analysis. *BMC Pregnancy and Childbirth*; 13(1):246.
- Ahmed, S., Tunçalp, Ö. (2015). Burden of obstetric fistula: from measurement to action. *The Lancet Global Health*; 3(5):e243–4.
- Akhter, H.H., Chowdhury, M.E., Sen, A. (1996). A cross-sectional study on maternal morbidity in Bangladesh. BIRPERHT Publication No. 112; Technical Report No. 60. Dhaka, Bangladesh: Bangladesh Institute of Research for Promotion of Essential and Reproductive Health and Technologies.
- Akmam, W. (2002). Women's education and fertility rates in developing countries, with special reference to Bangladesh. *Eubios Journal of Asian and International Bioethics*; 12(4):138–43.
- Alkema, L., Chou, D., Hogan, D., Zhang, S., Moller, A.B., Gemmill, A., Fat, D.M., Boerma, T., Temmerman, M., Mathers, C., Say, L. (2016). Global, regional, and national levels and trends in maternal mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Maternal Mortality Estimation Inter-Agency Group. *The Lancet*; 387(10017):462–74.
- Alkema, L., Zhang, S., Chou, D., Gemmill, A., Moller, A.B., Fat, D.M., Say, L., Mathers, C., Hogan, D. (2017). A Bayesian approach to the global estimation of maternal mortality. *The Annals of Applied Statistics*; 11(3):1245–74.
- Arifeen, S.E., Hill, K., Ahsan, K.Z., Jamil, K., Nahar, Q., Streatfield, P.K. (2014). Maternal mortality in Bangladesh: a Countdown to 2015 country case study. *The Lancet*; 384(9951):1366–74.
- Atrash, H.K., Alexander, S., Berg, C.J. (1995). Maternal mortality in developed countries: not just a concern of the past. *Obstetrics & Gynecology*; 86(4):700–5.
- Bale, J.R., Stoll, B.J., Lucas, A.O. (Eds.). (2003). *Improving Birth Outcomes: Meeting the Challenge in the Developing World*. Washington, D.C., USA: National Academies Press.
- Bangladesh Bureau of Statistics (BBS). (2019). Report on Bangladesh Sample Vital Statistics 2018. Dhaka, Bangladesh: Statistics and Informatics Division, Ministry of Planning.
- Bangladesh Bureau of Statistics (BBS). (2016). Report on Bangladesh Sample Vital Statistics 2015. Dhaka, Bangladesh: Statistics and Informatics Division, Ministry of Planning.
- Bangladesh Bureau of Statistics (BBS). (2015). Bangladesh Population and Housing Census 2011: Analytical Report. National Report, Volume 1. Dhaka, Bangladesh: Statistics and Informatics Division, Ministry of Planning.
- Bangladesh Bureau of Statistics (BBS). Report on Bangladesh Sample Vital Statistics 2010. Dhaka: Statistics and Informatics Division, Ministry of Planning; 2011.
- Basu, A.M. (1989). Is discrimination in food really necessary for explaining sex differentials in childhood mortality? *Population Studies*; 43(2):193–210.
- Bongaarts, J. (2003). Completing the fertility transition in the developing world: The role of educational differences and fertility preferences. *Population Studies*; 57(3):321–35.
- Brass, W. (1974). *Methods for Estimating Fertility and Mortality from Limited and Defective Data*. Chapel Hill, NC, USA: Carolina Population Centre.
- Bureau of Manpower, Employment and Training (BMET). (2018). Overseas employment and remittances from 1976–2018. BMET Statistical Reports. Dhaka, Bangladesh: Ministry of Expatriates' Welfare and Overseas Employment, Government of Bangladesh; 2018. Retrieved from <http://www.old.bmet.gov.bd/BMET/statisticalDataAction> (Accessed on 07 August 2018).
- Caldwell, J.C., Khuda, B.E., Caldwell, I.P., and Caldwell, P. (1999). The Bangladesh fertility decline: an interpretation. *Population Development Review*; 25:67–84.

- Chaudhury, R.H. (1977). Education and fertility in Bangladesh. *The Bangladesh Development Studies*; 5(1):81–110.
- Cleland, J., Harlow, S. (2003). The value of the imperfect: the contribution of interview surveys to the study of gynaecological ill health. In Jejeebhoy, S.J., Koenig, M.A., & Elias C. (Eds.). *Reproductive tract infection and other gynaecological disorders*. Cambridge, United Kingdom: Cambridge University Press; 283–321.
- Cleland, J., Phillips, J.F., Amin, S., Kamal, G.M. (1994). *The determinants of reproductive change in Bangladesh: success in a challenging environment*. Washington, D.C., USA: The World Bank.
- Conde-Agudelo, A., Rosas-Berm, A., Kafury-Goeta, A.C. (2006). Birth spacing and risk of adverse perinatal outcomes: a meta-analysis. *JAMA*; 295(15):1809–23.
- Deneux-Tharaux, C., Berg, C., Bouvier-Colle, M.H., Gissler, M., Harper, M., Nannini, A., Alexander, S., Wildman, K., Breart, G., Buekens, P. (2005). Underreporting of pregnancy-related mortality in the United States and Europe. *Obstetrics & Gynecology*; 106(4):684–92.
- European Board & College of Obstetrics and Gynaecology (EBCOG). (2015). The public health importance of antenatal care. *Facts, Views and Vision in Obgyn*; 7(1): 5–6.
- Filippi, V., Chou, D., Ronsmans, C., Graham, W., Say, L. (2016). Levels and causes of maternal mortality and morbidity. In: Black, R., Laxminarayan, R., Temmerman, M., Walker, N. (Eds.). *Disease Control Priorities, (Volume 2): Reproductive, Maternal, Newborn, and Child Health*. Washington, D.C., USA: The World Bank.
- Finlay, J.E., Özaltın, E., Canning, D. (2011). The association of maternal age with infant mortality, child anthropometric failure, diarrhoea and anaemia for first births: evidence from 55 low-and middle-income countries. *BMJ Open*; 1(2):e000226.
- Fortney, J.A., Smith, J.B. (1999). *Measuring maternal morbidity*. In Berer, M., & Ravindran, T.K.S. (Eds.). *Reproductive health matters, safe motherhood initiatives: Critical issues*. London, England: Blackwell Science Limited.
- Ghana Statistical Service (GSS), Ghana Health Service (GHS), and ICF. (2018). *Ghana Maternal Health Survey 2017: Key Indicators Report*. Accra, Ghana: GSS, GHS, and ICF.
- Gribble, J.N., Murray, N.J., Menotti, E.P. (2009). Reconsidering childhood undernutrition: can birth spacing make a difference? An analysis of the 2002–2003 El Salvador National Family Health Survey. *Maternal & Child Nutrition*; 5(1):49–63.
- Gupta, M.D. (1987). Selective discrimination against female children in rural Punjab, India. *Population and Development Review*; 13(1):77–100.
- Hancioglu, A., Arnold, F. (2013). Measuring coverage in MNCH: tracking progress in health for women and children using DHS and MICS household surveys. *PLoS Medicine*; 10(5):e1001391.
- Health Economics Unit (HEU). (2012). *Health Care Financing Strategy 2012–2032*. Dhaka, Bangladesh: HEU, Ministry of Health and Family Welfare.
- Hill, K., AbouZahr, C., Wardlaw, T. (2001). Estimates of maternal mortality for 1995. *Bulletin of the World Health Organization*; 79(3):182–93.
- Hill, K., You, D., Choi, Y. (2009). Death distribution methods for estimating adult mortality: Sensitivity analysis with simulated data error. *Demographic Research*; 21(9):235–254.
- icddr,b. (2017). *Health and Demographic Surveillance System–Matlab, Volume 50. Registration of health and demographic events 2015*, Scientific Report No. 135. Dhaka, Bangladesh: icddr,b.
- Jejeebhoy, S.J., Koenig, M.A., Elias, C. (Eds.). (2003). *Investigating reproductive tract infections and other gynaecological disorders: a multidisciplinary research approach*. Cambridge, United Kingdom: Cambridge University Press.
- Kamal-Waiz, N., Farouqui, M., Begum, A., Sultana, N., Sarker, S., Faisal, A.J. (2003). *Situation analysis of obstetric fistula in Bangladesh*. Dhaka, Bangladesh: EngenderHealth.
- Management Information System (MIS). (2017). *Health Bulletin 2016*. Dhaka, Bangladesh: Directorate General of Health Services.

- Maternal Mortality Estimation Inter-Agency Group (MMEIG). (2019). Trends in maternal mortality 2000 to 2017: Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva, Switzerland: World Health Organization.
- Maternal Mortality Estimation Inter-Agency Group (MMEIG). (2015). Trends in maternal mortality 1990 to 2015: Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva, Switzerland: World Health Organization.
- Mgawadere, F., Kana, T., van den Broek, N. (2017). Measuring maternal mortality: a systematic review of methods used to obtain estimates of the maternal mortality ratio (MMR) in low-and middle-income countries. *British Medical Bulletin*; 121(1):121–34.
- Mgawadere, F., Unkels, R., Adegoke, A., van den Broek, N. (2016). Measuring maternal mortality using a reproductive age mortality study (RAMOS). *BMC Pregnancy and Childbirth*; 16(1):291.
- Ministry of Health and Family Welfare (MOHFW). (2017). Program Implementation Plan of the Fourth Health, Population and Nutrition Sector Programme (4th HPNSP) 2017–2022. Dhaka, Bangladesh: Planning Wing, MOHFW.
- Ministry of Health and Family Welfare (MOHFW). (2014). Revised Program Implementation Plan of the Health, Population and Nutrition Sector Development Program (HPNSDP) 2011–2016. Volume 1. Dhaka, Bangladesh: Planning Wing, MOHFW.
- National Institute of Population Research and Training (NIPORT), Mitra and Associates, and ICF. (2019). Bangladesh Demographic and Health Survey 2017-18: Key Indicators Report. Dhaka, Bangladesh, and Rockville, MD, USA: NIPORT, Mitra and Associates, and ICF International.
- National Institute of Population Research and Training (NIPORT), Associates for Community and Population Research (ACPR), and ICF. (2018). Bangladesh Health Facility Survey 2017: Preliminary Report. Dhaka, Bangladesh and Rockville, MD, USA: NIPORT, ACPR, and ICF International.
- National Institute of Population Research and Training (NIPORT), Mitra and Associates, and ICF International. (2016). Bangladesh Demographic and Health Survey 2014: Final Report. Dhaka, Bangladesh, and Rockville, MD, USA: NIPORT, Mitra and Associates, and ICF International.
- National Institute of Population Research and Training (NIPORT), Associates for Community and Population Research (ACPR), ICF International. (2016). Bangladesh Health Facility Survey 2014: Final Report. Dhaka, Bangladesh and Rockville, MD, USA: NIPORT, ACPR, and ICF International.
- National Institute of Population Research and Training (NIPORT), MEASURE Evaluation, and icddr,b. (2012). Bangladesh Maternal Mortality and Health Care Survey 2010. Dhaka, Bangladesh and Chapel Hill, NC, USA: NIPORT, MEASURE Evaluation, and icddr,b.
- National Institute of Population Research and Training (NIPORT), ORC Macro, Johns Hopkins University, and icddr,b. (2003). Bangladesh Maternal Health Services and Maternal Mortality Survey 2001. Dhaka, Bangladesh and Calverton, MD, USA: NIPORT, ORC Macro, Johns Hopkins University, and icddr,b.
- National Institute of Population Research and Training (NIPORT), Mitra and Associates, and ORC Macro. (2001). Bangladesh Demographic and Health Survey 1999–2000. Dhaka, Bangladesh and Calverton, Maryland, USA: NIPORT, Mitra and Associates, and ORC Macro.
- Pervin, J., Moran, A., Rahman, M., Razzaque, A., Sibley, L., Streatfield, P.K., Reichenbach, L.J., Koblinsky, M., Hruschka, D., Rahman, A. (2012). Association of antenatal care with facility delivery and perinatal survival—a population-based study in Bangladesh. *BMC Pregnancy and Childbirth*; 12(1):111.
- Rutenber, N., Sullivan, J. (1991). Direct and indirect estimates of maternal mortality from the sisterhood method. In *Proceedings of the Demographic and Health Surveys World Conference*, Washington, D.C., 5-7 August 1991; 3:1669–1695.
- Rutstein, S.O. (2008). Further evidence of the effects of preceding birth intervals on neonatal infant and under-five-years mortality and nutritional status in developing countries: Evidence from the Demographic and Health Surveys. DHS Working Papers No. 41. Calverton, Maryland, USA: Macro International, Inc.

- Rutstein, S.O. (2005). Effects of preceding birth intervals on neonatal, infant and under-five years mortality and nutritional status in developing countries: evidence from the demographic and health surveys. *International Journal of Gynecology & Obstetrics*; 89(Suppl. 1):s7–s24.
- Rutstein, S.O. (1984). *Infant and child mortality: levels, trends and demographic differentials*. Revised edition. WFS Comparative Studies No. 43. Voorburg, Netherlands: International Statistical Institute.
- Rutstein, S., Johnson, K., Conde-Agudelo, A. (2004). Systematic literature review and meta-analysis of the relationship between interpregnancy or interbirth intervals and infant and child mortality. Victoria, Australia: CATALYST Consortium.
- Sloan, N.L., Langer, A., Hernandez, B., Romero, M., Winikoff, B. (2001). The etiology of maternal mortality in developing countries: what do verbal autopsies tell us? *Bulletin of the World Health Organization*; 79(9):805–10.
- Stanton, C., Hobcraft, J., Hill, K., Kodjogbe, N., Mapeta, W.T., Munene, F., Naghavi, M., Rabeza, V., Sisouphanthong, B., Campbell, O. (2001). Every death counts: measurement of maternal mortality via a census. *Bulletin of the World Health Organization*; 79(7):657–64.
- United Nations (UN). (2017). *World Population Prospects: The 2017 Revision, Key Findings and Advance Tables*. Working Paper No. ESA/P/WP/248. New York, New York, USA: Department of Economic and Social Affairs, UN Population Division.
- United Nations (UN). (2015). *Transforming our world: the 2030 Agenda for Sustainable Development*. Resolution adopted by the General Assembly on 25 September 2015. New York, New York, USA: United Nations. Retrieved from <https://undocs.org/A/RES/70/1> (Accessed on 01 May 2018).
- United Nations (UN). (1995). *Women's Education and Fertility Behaviour*. New York, New York, USA: Department for Economic and Social Information and Policy Analysis, UN Population Division.
- United Nations Development Program (UNDP). (2015). *The Millennium Development Goals Report 2015*. New York, New York, USA: UNDP.
- United Nations Population Fund (UNFP). (Forthcoming). *Maternal Mortality Estimation in Indonesia: A Panel Review*. New York, New York, USA: UNFP.
- United States for International Development (USAID). (2018). *USAID Celebrates 25 Years of Demographic and Health Surveys*. Retrieved from <https://dhsprogram.com/Who-We-Are/News-Room/USAID-Celebrates-25-Years-of-Demographic-and-Health.cfm> (Accessed on 23 July 2018).
- World Bank. (2019) *World Development Indicators: Maternal mortality ratio (modeled estimate, per 100,000 live births)*. Washington, DC, USA: The World Bank. Retrieved from <https://data.worldbank.org/indicator/sh.sta.mmrt>.
- World Health Organization (WHO). (2016). *WHO recommendations on antenatal care for a positive pregnancy experience*. Geneva, Switzerland: WHO.
- World Health Organization (WHO). (2015). *Verbal autopsy standards: the 2014 WHO verbal autopsy instrument*. Geneva, Switzerland: WHO. Retrieved from <http://www.who.int/healthinfo/statistics/verbalautopsystandards/en/index1.html> (Accessed on 02 September 2018).
- World Health Organization (WHO). (2014). *WHO recommendations on postnatal care of the mother and newborn 2013*. Geneva, Switzerland: WHO.
- World Health Organization (WHO). (2004). *International Statistical Classification of Diseases and Related Health Problems: 10th Revision*. Volume 2, 2nd Ed. Geneva, Switzerland: WHO.
- Zolotor, A.J., Carlough, M.C. (2014). Update on prenatal care. *American Family Physician*; 89(3):1999–208.

APPENDIX A. HOUSEHOLD POPULATION BY AGE, RESIDENCE, AND SEX

Table A.1. Household population by age, residence, and sex

Percent distribution of the de facto household population by five-year age groups, according to urban-rural residence and sex, Bangladesh 2016.

Age group	All urban			Metropolitan/town			Other urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0-4	10.3	9.6	9.9	10.1	9.5	9.8	10.9	10.2	10.5	11.1	10.0	10.5	10.9	9.9	10.4
5-9	10.6	9.9	10.2	10.4	9.8	10.1	11.4	10.3	10.8	11.7	10.5	11.1	11.4	10.3	10.8
10-14	10.9	10.3	10.6	10.7	10.2	10.5	11.5	10.7	11.1	12.0	11.3	11.6	11.7	11.0	11.3
15-19	9.9	11.5	10.7	9.9	11.5	10.7	9.9	11.4	10.7	9.8	10.9	10.4	9.8	11.1	10.5
20-24	7.6	10.9	9.3	7.6	10.9	9.3	7.4	10.7	9.1	6.7	9.7	8.2	6.9	10.0	8.5
25-29	8.7	10.1	9.4	8.8	10.2	9.5	8.3	9.8	9.1	7.1	8.8	8.0	7.5	9.1	8.4
30-34	7.6	8.5	8.0	7.7	8.6	8.1	7.2	8.0	7.6	6.2	7.7	6.9	6.6	7.9	7.2
35-39	7.8	7.0	7.4	8.0	7.1	7.5	7.4	6.4	6.9	6.8	6.3	6.5	7.1	6.5	6.8
40-44	5.9	5.5	5.7	6.0	5.5	5.8	5.4	5.3	5.3	5.2	5.4	5.3	5.4	5.4	5.4
45-49	5.4	5.3	5.4	5.5	5.3	5.4	5.1	5.3	5.2	4.9	5.8	5.4	5.1	5.6	5.4
50-54	4.1	1.8	2.9	4.2	1.8	3.0	3.8	1.7	2.7	4.2	1.7	2.9	4.1	1.7	2.9
55-59	3.0	3.1	3.1	3.0	3.1	3.1	2.9	3.1	3.0	3.3	3.6	3.5	3.2	3.4	3.3
60-64	2.9	2.6	2.8	2.9	2.5	2.7	3.1	2.7	2.9	3.4	3.2	3.3	3.3	3.0	3.1
65-69	2.0	1.5	1.7	2.0	1.5	1.7	2.0	1.6	1.8	2.5	1.8	2.2	2.4	1.8	2.1
70-74	1.6	1.1	1.4	1.6	1.1	1.3	1.9	1.2	1.6	2.4	1.5	1.9	2.2	1.4	1.8
75-79	0.7	0.5	0.6	0.6	0.5	0.6	0.8	0.5	0.6	1.1	0.6	0.8	1.0	0.6	0.8
80+	0.9	1.0	1.0	0.9	0.9	0.9	1.0	1.1	1.1	1.6	1.4	1.5	1.4	1.3	1.4
Missing/don't know	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	176,027	184,407	360,435	140,626	147,921	288,547	35,401	36,486	71,887	450,495	488,007	938,502	626,523	672,414	1,298,937

APPENDIX B. DATA QUALITY

B.1. Accuracy and Internal Consistency of the BMMS 2016 Data

The survey procedures in the BMMS 2016 (described in Chapter 1) followed internationally recognized maternal mortality survey protocols used globally (GSS, et al., 2018; Mgawadere, et al., 2016; Mgawadere, Kana, & van den Broek, 2017), and methodologies which are considered as the “gold standard” for nationally representative household sample surveys (Hancioglu & Arnold, 2013; USAID, 2010). For consistency, the same survey methods were followed in the 2001, 2010, and 2016 BMMS rounds. Based on the methodological rigor—comprehensive training for the fieldworkers, robust quality control processes followed—no methodological problems/weaknesses can be identified in sampling or field implementation of the BMMS 2016. However, even with strong field procedures, the potential for misreporting (under- or overreporting) of births and deaths always exists in surveys that rely on self-reports of events. Complete coverage of deaths is particularly important for estimating maternal mortality.

We examined the extent of coverage of death reporting by the Brass Growth Balance (BGB) method that compares the age patterns of deaths with the age distribution of the population (Brass, 1975). In this procedure, which is also known as a death distribution method, it is assumed that in a stable population—with no or negligible migration—the growth rate at each age segment is constant, which can be measured from the entry rates into the age segments and the death rates of the age segments. Mathematically, this relationship is expressed by (Hill, You, & Choi, 2009):

$$\frac{N(a)}{N(a+)} = r + \frac{D(a+)}{N(a+)}$$

where $N(a)/N(a+)$ is the entry rate and $D(a+)/N(a+)$ is the death (exit) rate, and r is the population growth rate.

It is possible to estimate the extent of death reporting coverage—under or over—from the slope ($1/c$) of a fitted line between the entry and exit rates, where c is the completeness of the death reporting compared to the true population death rates.

$$\frac{N(a)}{N(a+)} = r + \frac{1}{c} \frac{D(a+)}{N(a+)}$$

Recently developed methods relax the restrictions of the stable population assumption (no migration), but require additional data points, which are not available. Consequently, we applied this simple BGB method.

The results of plotting the entry and exit rates from the BMMS 2016 are shown in Figures B.1 and B.2 for males and females, respectively. We estimated the slope of 1.15 for males and 0.97 for females, which suggests that the coverage rates of death are reasonably good (i.e., close to 1.0). The slope for female deaths reporting was 0.969, which suggests that the extent of misreporting is only about three percent.

Figure B.1. Application of Brass Growth Balance Method to BMMS 2016 data: Males

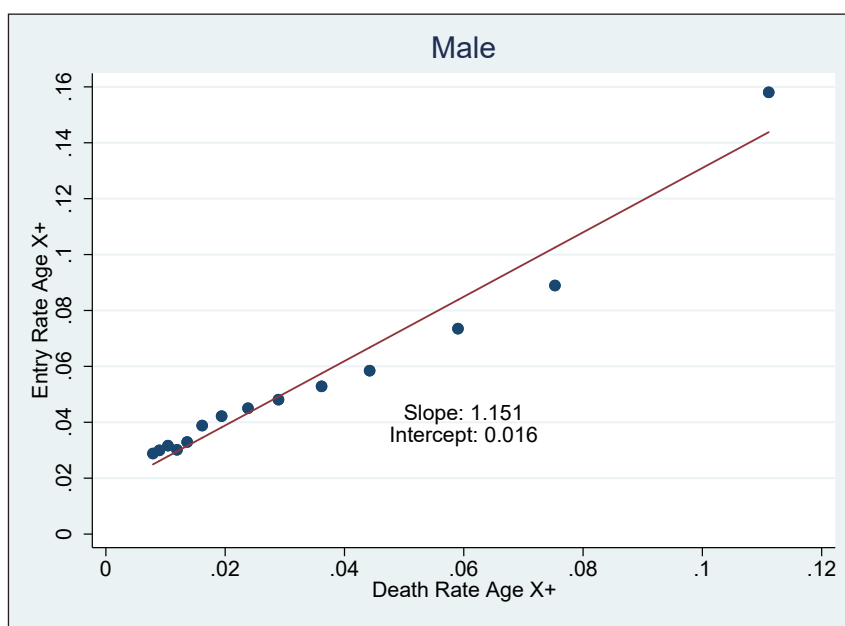
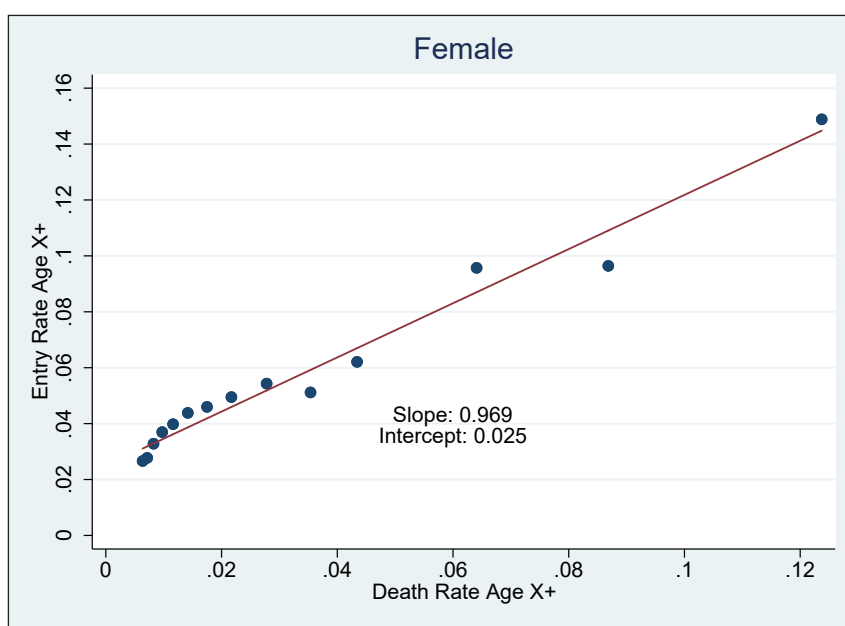


Figure B.2. Application of Brass Growth Balance Method to BMMS 2016 data: Females



The BGB method was originally developed for the coverage of death reporting in census data. The appropriateness of the application of the method for survey data is not well known because survey data are subjected to sampling errors. Nevertheless, our application of the method suggests that the overall coverage of death reporting in the BMMS 2016 was reasonably good.

Even if all maternal deaths are identified correctly, MMR can still be overestimated if the number of live births, the denominator of MMR, is underreported in the survey. Table B.1 shows the fertility rates estimated from different recent surveys in Bangladesh. The TFR and GFR estimated from BMMS 2016 would be lower than those obtained in the 2014 or 2017–18 BDHS if the 2016 BMMS underreported the number of births. The BMMS 2016 fertility estimates are consistent with DHS estimates so there is no evidence that MMR was overestimated in the BMMS 2016 due to underreporting of live births (NIPORT et al., 2018; NIPORT, et al., 2016).

Table B.1. Comparison on fertility estimates from different sources

Indicators	BDHS 2014	BMMS 2016	BDHS 2017–18
General Fertility Rate (ages 15–44)	90	85	86
Total Fertility Rate (TFR)	2.3	2.2	2.3
Contraceptive Prevalence Rate (CPR)	62%	63%	62%

There are certain well-accepted patterns of maternal mortality that should be observed in the data; e.g., by maternal age, parity, urban/rural residence, and socioeconomic status. As in the BMMS 2001 and BMMS 2010, MMR was positively associated with maternal age, followed a J-shape pattern with parity, was lower in urban than rural areas, and was negatively associated with socioeconomic status. If there were distortions due to under- or overreporting, these patterns might not have been observed in the BMMS 2016.

In conclusion, the BMMS 2016 data show good internal consistency. No sign of misreporting (under- or overreporting) of live births or maternal deaths was found, and no sign of distortions in expected patterns of MMR by age, parity, residence, and region were found. These findings all suggest that the data are of good quality.

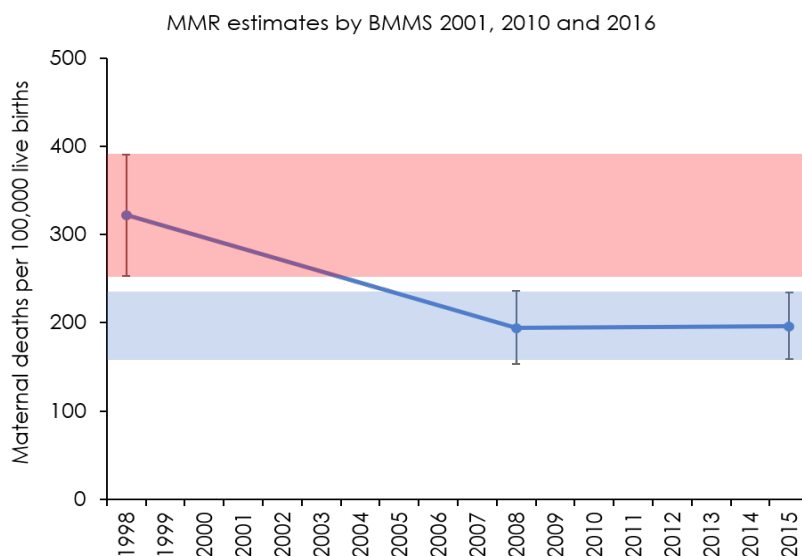
B.2. Estimates from BMMS 2016 and Other Sources

All sample-based survey estimates are subject to sampling error, or uncertainty, since they are based on a sample of individuals rather than the whole population. Sampling errors relate to the fact that the chosen sample is only one of a very large number of samples which may have been chosen from the target population, each giving rise to different sample estimates of MMR. Using statistical theory, it is possible to say how precise a population estimate is by constructing a confidence interval (CI) around it to show the range of values in which the true population value lies (i.e., the value that would have been found if the entire population had been surveyed). Following the standard practice for sample surveys, each round of BMMS estimated the 95 percent CI of MMR. In BMMS 2016, MMR was estimated to be 196 maternal deaths per 100,000 live births with a 95 percent CI between 159 and 234, which means that MMR in Bangladesh was between 159 and 234 in the year 2015 with 95 percent certainty.

The BMMS 2016 demonstrated that there was no evidence of change in MMR in Bangladesh between 2008 and 2015—after a 40 percent reduction in MMR between 1998 and 2008,¹ MMR stayed at the same level between 2008 and 2015 with very similar 95 percent CIs (the blue-shaded area in Figure B.3). As the 95 percent CIs of the BMMS 2001 and BMMS 2010 estimates of MMR did not overlap (red- and blue-shaded areas in Figure B.4), it can be concluded that there was a statistically significant decline in MMR between 1998 and 2008, and then there was no change between 2008 and 2015.

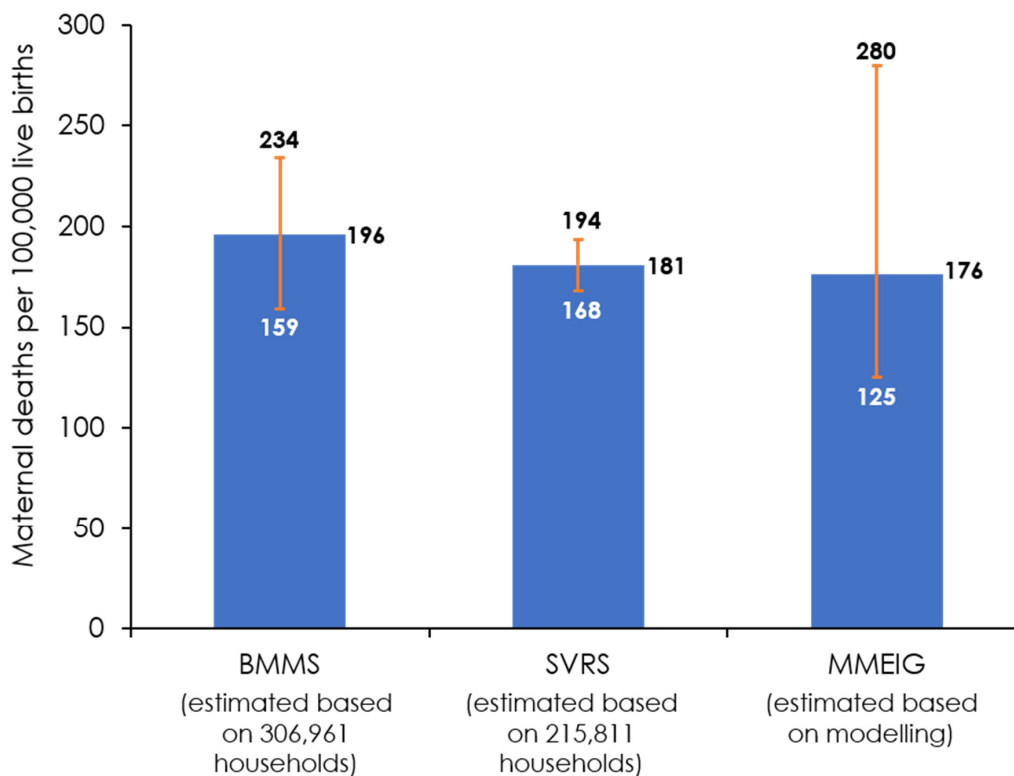
¹ 1998 and 2008 are midpoints of the reference periods for MMR estimation in BMMS 2001 and BMMS 2010 rounds.

Figure B.3. MMR estimates by BMMS 2001, 2010, and 2016 rounds



Comparison of MMR estimates from BMMS 2016 with MMR estimates from other available sources (viz., Sample Vital Registration System [SVRS] of BBS and modeled estimate by the Maternal Mortality Estimation Inter-Agency Group [MMEIG]) demonstrates that although the point estimates vary from one source to another, the 95 percent CIs² overlap (see Figure B.4). This establishes that the MMR estimates for 2015 by SVRS, MMEIG, and BMMS were statistically similar; i.e., the difference between the estimates were not statistically significant.

Figure B.4. Comparison of 2015 MMR estimates from different sources



APPENDIX C. SAMPLE IMPLEMENTATION

Table C.1. Sampling implementation

Percent distribution of household and eligible women in the sample by results of the interview, and household, eligible women and overall response rates, according to residence and division, Bangladesh 2016.

Results of interview and response rates	Residence				Division							Total	
	All urban	Metro-politan/ town	Other urban	Rural	Barishal Division	Chattogram Division	Dhaka Division	Khulna Division	Mymensingh Division	Rajshahi Division	Rangpur Division		Sylhet Division
Selected households													
Completed (C)	96.6	96.2	97.3	97.6	97.3	97.4	95.1	98.2	97.8	97.6	98.0	96.9	97.2
Household present but no competent respondent at home (HP)	0.9	0.9	0.8	0.7	1.0	0.5	1.2	0.6	0.3	0.9	0.7	0.6	0.7
Household absent (HA)	1.5	1.6	1.2	1.2	1.4	1.3	2.1	1.0	1.1	1.2	1.1	1.2	1.3
Postponed (P)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Refused (R)	0.1	0.2	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0	0.1	0.1
Dwelling vacant (DV)	0.5	0.6	0.4	0.3	0.1	0.5	0.8	0.1	0.6	0.0	0.1	0.7	0.4
Dwelling destroyed (DD)	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0
Dwelling not found (DNF)	0.1	0.2	0.1	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.1	0.1
Other (O)	0.2	0.3	0.2	0.2	0.1	0.2	0.3	0.1	0.2	0.2	0.2	0.4	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of sampled households	123,988	83,560	40,428	182,973	27,003	46,725	56,780	38,163	31,312	41,918	38,768	26,292	306,961
Household response rate (HRR) ¹	98.8	98.7	99.1	99.3	98.9	99.4	98.3	99.3	99.7	99.1	99.3	99.3	99.1

Table C.1. Sampling implementation (continued)

Results of interview and response rates	Residence						Division														
	All urban	Metro-politan/ town		Other urban		Rural	Chatt-ogram		Dhaka Division		Khulna Division		Mymen-singh Division		Rajshahi Division		Rangpur Division		Sylhet Division		Total
		98.5	98.3	98.7	98.7		98.7	98.2	99.1	97.6	98.7	99.4	98.5	98.9	98.7	98.7	99.4	98.5	98.9	98.7	
Completed (EWC)	1.4	1.5	1.2	1.2	1.2	1.6	0.8	2.2	1.2	0.5	1.4	1.0	1.2	1.3							
Not at home (EWNH)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
Postponed (EWP)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
Refused (EWR)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
Partly completed (EWPC)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1							
Incapacitated (EWI)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0							
Other (EWO)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0							
Total	129,155	86,305	42,850	191,141	28,738	50,156	57,274	41,305	31,030	43,443	40,812	27,538	320,296								
Number of women	98.5	98.3	98.7	98.7	98.7	98.3	99.1	97.6	98.7	99.4	98.5	98.9	98.7	98.6							
Eligible women response rate (EWRR) ²	97.3	97.0	97.9	98.0	97.2	98.5	95.9	98.0	99.1	97.5	98.2	98.0	97.7								
Overall response rate (ORR) ³																					

¹ Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\frac{100 * C}{C + HP + R + DNF}$$

² Using the number of eligible women falling into specific response categories, the eligible women rate (EWRR) is calculated as:

$$\frac{100 * EWC}{EWC + EWNH + EWR + EWPC + EW1 + EWO}$$

³ The overall response rate (ORR) is calculated as:

$$(HRR * EWRR)/100$$

APPENDIX D. SAMPLING ERRORS

Table D.1. List of selected variables for sampling errors, Bangladesh 2016

Variable	Description	Base Population
No education	Proportion	Ever-married women 15-49
With secondary education or higher	Proportion	Ever-married women 15-49
Currently married	Proportion	Ever-married women 15-49
Children ever born	Mean	Currently married women 15-49
Children surviving	Mean	Currently married women 15-49
Currently using any method	Proportion	Currently married women 15-49
Currently using a modern method	Proportion	Currently married women 15-49
Mother received ANC from trained personnel	Proportion	Last live births in the in the past 3-years
Mother received medical care at birth	Proportion	Live births in the past 3-years
Mother received PNC from trained personnel	Proportion	Last live births in the past 3-years
One or more complications during pregnancy, delivery, or after delivery	Proportion	Last live births in the past 3-years
Total fertility rate (3 years)	Rate	Women-years of exposure of childbearing
Neonatal mortality rate	Rate	Number of births exposed to deaths
Post neonatal mortality rate	Rate	Number of births exposed to deaths
Infant mortality rate	Rate	Number of births exposed to deaths
Child mortality rate	Rate	Number of births exposed to deaths
Under-five mortality rate	Rate	Number of births exposed to deaths

Table D.2. Sampling errors for selected variables, national sample, Bangladesh 2016

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Unweighted (N)	Weighted (WN)			Value -2SE	Value +2SE
No education	0.207	0.002	314687	314637	2.318	0.008	0.203	0.210
With secondary education or higher	0.159	0.002	314687	314637	2.682	0.011	0.156	0.163
Currently married	0.939	0.001	314687	314637	1.336	0.001	0.938	0.940
Children ever born	2.387	0.007	295209	295402	2.186	0.003	2.373	2.400
Children surviving	2.185	0.006	295209	295402	2.129	0.003	2.174	2.197
Currently using any method	0.611	0.002	295209	295402	1.843	0.003	0.607	0.614
Currently using a modern method	0.543	0.002	295209	295402	1.815	0.003	0.539	0.546
Mother received ANC from trained personnel	0.744	0.004	26939	27133	1.532	0.005	0.736	0.752
Mother received medical care at birth	0.498	0.005	28399	28548	1.683	0.010	0.488	0.508
Mother received PNC from trained personnel	0.480	0.005	26939	27133	1.628	0.010	0.470	0.490
One or more complications during pregnancy, delivery or after delivery	0.496	0.004	26939	27133	1.394	0.009	0.487	0.504
Total fertility rate (3 years)	2.23	0.013	na	na	1.792	0.006	2.204	2.256
Neonatal mortality rate	30.01	0.559	137729	138350	1.216	0.019	28.892	31.128
Post neonatal mortality rate	8.75	0.303	133596	134295	1.189	0.035	8.144	9.356
Infant mortality rate	38.76	0.640	132642	133394	1.208	0.017	37.480	40.040
Child mortality rate	8.22	0.326	131892	132631	1.311	0.040	7.568	8.872
Under-five mortality rate	46.66	0.709	135159	135830	1.236	0.015	45.242	48.078

Table D.3. Sampling errors for selected variables, urban sample, Bangladesh 2016

Variable	Number of cases			Standard error (SE)	Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Unweighted (N)	Weighted (WN)				Value -2SE	Value +2SE
No education	0.179	126,833	88,323	0.003	2.546	0.018	0.173	0.186
With secondary education or higher	0.238	126,833	88,323	0.005	3.431	0.021	0.229	0.248
Currently married	0.931	126,833	88,323	0.001	1.338	0.001	0.929	0.934
Children ever born	2.172	118,341	82,260	0.010	1.957	0.005	2.151	2.192
Children surviving	2.013	118,341	82,260	0.009	1.925	0.004	1.995	2.031
Currently using any method	0.656	118,341	82,260	0.002	1.507	0.004	0.651	0.661
Currently using a modern method	0.576	118,341	82,260	0.003	1.498	0.004	0.571	0.581
Mother received ANC from trained personnel	0.821	10,332	7,188	0.006	1.289	0.007	0.809	0.832
Mother received medical care at birth	0.626	10,818	7,477	0.009	1.655	0.015	0.607	0.644
Mother received PNC from trained personnel	0.591	10,332	7,188	0.010	1.678	0.017	0.571	0.610
One or more complications during pregnancy, delivery or after delivery	0.517	10,332	7,188	0.008	1.328	0.015	0.501	0.533
Total fertility rate (3 years)	1.99	na	na	0.013	1.919	0.007	1.964	2.016
Neonatal mortality rate	27.35	53,345	37,178	0.763	1.080	0.028	25.824	28.876
Post neonatal mortality rate	8.19	51,889	36,273	0.415	1.049	0.051	7.360	9.020
Infant mortality rate	35.54	51,672	36,246	0.950	1.166	0.027	33.640	37.440
Child mortality rate	6.19	51,473	36,225	0.567	1.640	0.092	5.056	7.324
Under-five mortality rate	41.51	52,259	36,956	1.290	1.478	0.031	38.930	44.090

Table D.4. Sampling errors for selected variables, rural sample, Bangladesh 2016

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Unweighted (N)	Weighted (WN)			Value -2SE	Value +2SE
No education	0.217	0.002	187,854	226,314	2.254	0.009	0.213	0.221
With secondary education or higher	0.128	0.002	187,854	226,314	2.160	0.012	0.125	0.131
Currently married	0.942	0.001	187,854	226,314	1.327	0.001	0.940	0.943
Children ever born	2.470	0.008	176,868	213,142	2.222	0.003	2.453	2.486
Children surviving	2.252	0.007	176,868	213,142	2.166	0.003	2.238	2.265
Currently using any method	0.593	0.002	176,868	213,142	1.914	0.003	0.589	0.597
Currently using a modern method	0.530	0.002	176,868	213,142	1.903	0.004	0.526	0.534
Mother received ANC from trained personnel	0.716	0.005	16,607	19,945	1.593	0.007	0.706	0.726
Mother received medical care at birth	0.453	0.006	17,581	21,071	1.689	0.013	0.441	0.465
Mother received PNC from trained personnel	0.440	0.006	16,607	19,945	1.624	0.013	0.428	0.451
One or more complications during pregnancy, delivery, or after delivery	0.488	0.005	16,607	19,945	1.414	0.010	0.478	0.498
Total fertility rate (3 years)	2.32	0.032	na	na	1.662	0.014	2.256	2.384
Neonatal mortality rate	30.98	0.917	84,385	101,172	1.537	0.030	29.146	32.814
Post neonatal mortality rate	8.96	0.415	81,708	98,022	1.259	0.046	8.130	9.790
Infant mortality rate	39.93	1.078	80,971	97,148	1.567	0.027	37.774	42.086
Child mortality rate	8.97	0.405	80,420	96,406	1.218	0.045	8.160	9.780
Under-five mortality rate	48.54	1.148	82,901	98,873	1.538	0.024	46.244	50.836

Table D.5. Sampling errors for selected variables, Barishal sample, Bangladesh 2016

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Unweighted (N)	Weighted (WN)			Value -2SE	Value +2SE
No education	0.127	0.006	28,143	1,7355	2.371	0.047	0.115	0.139
With secondary education or higher	0.181	0.006	28,143	1,7355	2.082	0.034	0.169	0.193
Currently married	0.947	0.002	28,143	1,7355	1.040	0.002	0.943	0.950
Children ever born	2.534	0.022	26,626	1,6432	1.590	0.009	2.490	2.577
Children surviving	2.309	0.018	26,626	1,6432	1.571	0.008	2.272	2.346
Currently using any method	0.625	0.005	26,626	1,6432	1.380	0.008	0.615	0.635
Currently using a modern method	0.556	0.006	26,626	1,6432	1.570	0.011	0.544	0.568
Mother received ANC from trained personnel	0.637	0.023	2,369	1,525	1.889	0.037	0.590	0.683
Mother received medical care at birth	0.386	0.020	2,485	1,598	1.630	0.051	0.347	0.426
Mother received PNC from trained personnel	0.370	0.020	2,369	1,525	1.610	0.054	0.330	0.410
One or more complications during pregnancy, delivery, or after delivery	0.499	0.021	2,369	1,525	1.653	0.043	0.456	0.541
Total fertility rate (3 years)	2.40	0.025	na	na	1.700	0.010	2.350	2.450
Neonatal mortality rate	28.02	1.995	11,904	7,530	1.319	0.071	24.030	32.010
Post neonatal mortality rate	6.50	1.009	11,604	7,337	1.353	0.155	4.482	8.518
Infant mortality rate	34.52	1.790	11,542	7,274	1.053	0.052	30,940	38,100
Child mortality rate	11.05	1.333	11,404	7,182	1.362	0.121	8.384	13.716
Under-five mortality rate	45.19	2.526	11,753	7,387	1.318	0.056	40.138	50.242

Table D.6. Sampling errors for selected variables, Chattogram sample, Bangladesh 2016

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Unweighted (N)	Weighted (WN)			Value -2SE	Value +2SE
No education	0.173	0.005	49,607	59,674	2.942	0.026	0.164	0.183
With secondary education or higher	0.176	0.005	49,607	59,674	2.934	0.026	0.167	0.185
Currently married	0.938	0.001	49,607	59,674	1.345	0.001	0.936	0.941
Children ever born	2.564	0.018	46,547	55,984	2.338	0.007	2.529	2.600
Children surviving	2.373	0.015	46,547	55,984	2.221	0.006	2.343	2.403
Currently using any method	0.542	0.005	46,547	55,984	2.231	0.009	0.532	0.551
Currently using a modern method	0.480	0.005	46,547	55,984	2.242	0.010	0.470	0.489
Mother received ANC from trained personnel	0.782	0.009	5,129	6,261	1.727	0.012	0.764	0.800
Mother received medical care at birth	0.463	0.012	5,413	6,609	2.014	0.027	0.438	0.487
Mother received PNC from trained personnel	0.455	0.012	5,129	6,261	1.943	0.027	0.430	0.479
One or more complications during pregnancy, delivery, or after delivery	0.525	0.009	5,129	6,261	1.415	0.017	0.507	0.543
Total fertility rate (3 years)	2.53	0.017	na	na	1.716	0.007	2.496	2.564
Neonatal mortality rate	26.92	1.400	26,493	31,949	1.408	0.052	24.120	29.720
Post neonatal mortality rate	9.55	1.078	25,755	31,055	1.779	0.113	7.394	11.706
Infant mortality rate	36.47	0.971	25,460	30,697	0.827	0.027	34.528	38.412
Child mortality rate	10.59	0.812	25,171	30,366	1.259	0.077	8.966	12.214
Under-five mortality rate	46.67	2.477	24,978	30,166	1.856	0.053	41.716	51.624

Table D.7. Sampling errors for selected variables, Dhaka sample, Bangladesh 2016

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Unweighted (N)	Weighted (WN)			Value -2SE	Value +2SE
No education	0.195	0.004	55,716	84,551	2.735	0.019	0.188	0.203
With secondary education or higher	0.178	0.005	55,716	84,551	3.498	0.026	0.169	0.187
Currently married	0.938	0.001	55,716	84,551	1.684	0.001	0.935	0.940
Children ever born	2.196	0.015	52,305	79,273	2.723	0.007	2.166	2.226
Children surviving	2.024	0.013	52,305	79,273	2.641	0.006	1.999	2.050
Currently using any method	0.631	0.004	52,305	79,273	2.215	0.006	0.624	0.639
Currently using a modern method	0.556	0.004	52,305	79,273	2.090	0.007	0.548	0.563
Mother received ANC from trained personnel	0.783	0.008	4,540	6,862	1.518	0.010	0.768	0.798
Mother received medical care at birth	0.589	0.010	4,728	7,145	1.762	0.017	0.568	0.609
Mother received PNC from trained personnel	0.544	0.010	4,540	6,862	1.699	0.019	0.524	0.564
One or more complications during pregnancy, delivery, or after delivery	0.548	0.010	4,540	6,862	1.730	0.019	0.527	0.569
Total fertility rate (3 years)	2.01	0.017	na	na	1.814	0.008	1.976	2.044
Neonatal mortality rate	25.20	1.019	23,516	35,595	0.997	0.040	23.162	27.238
Post neonatal mortality rate	7.63	0.728	22,947	34,746	1.267	0.095	6.174	9.086
Infant mortality rate	32.83	0.969	22,979	34,807	0.824	0.030	30.892	34.768
Child mortality rate	6.33	0.665	22,961	34,740	1.271	0.105	5.000	7.660
Under-five mortality rate	38.96	1.412	23,426	35,507	1.117	0.036	36.136	41.784

Table D.8. Sampling errors for selected variables, Khulna sample, Bangladesh 2016

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Unweighted (N)	Weighted (WN)			Value -2SE	Value +2SE
No education	0.189	0.004	40,621	35,744	1.767	0.019	0.181	0.196
With secondary education or higher	0.154	0.004	40,621	35,744	1.837	0.023	0.147	0.161
Currently married	0.937	0.001	40,621	35,744	1.104	0.002	0.934	0.940
Children ever born	2.196	0.012	37,993	33,498	1.522	0.005	2.172	2.220
Children surviving	2.024	0.010	37,993	33,498	1.497	0.005	2.003	2.044
Currently using any method	0.625	0.004	37,993	33,498	1.405	0.006	0.618	0.632
Currently using a modern method	0.542	0.004	37,993	33,498	1.366	0.007	0.534	0.549
Mother received ANC from trained personnel	0.832	0.009	2,882	2,546	1.260	0.011	0.814	0.851
Mother received medical care at birth	0.640	0.012	2,997	2,650	1.335	0.019	0.615	0.665
Mother received PNC from trained personnel	0.623	0.013	2,882	2,546	1.316	0.020	0.597	0.648
One or more complications during pregnancy, delivery, or after delivery	0.454	0.011	2,882	2,546	1.125	0.024	0.432	0.476
Total fertility rate (3 years)	1.97	0.009	na	na	1.329	0.005	1.952	1.988
Neonatal mortality rate	27.33	2.159	14,232	12,586	1.580	0.079	23.012	31.648
Post neonatal mortality rate	6.49	0.690	13,890	12,275	1.013	0.106	5.110	7.870
Infant mortality rate	33.82	1.984	13,871	12,225	1.293	0.059	29.852	37.788
Child mortality rate	6.02	0.908	13,697	12,067	1.374	0.151	4.204	7.836
Under-five mortality rate	39.64	1.611	13,794	12,232	0.970	0.041	36.418	42.862

Table D.9. Sampling errors for selected variables, Mymensingh sample, Bangladesh 2016

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Unweighted (N)	Weighted (WN)			Value -2SE	Value +2SE
No education	0.247	0.005	30,719	23,770	1.707	0.019	0.237	0.256
With secondary education or higher	0.134	0.004	30,719	23,770	1.722	0.028	0.127	0.142
Currently married	0.944	0.002	30,719	23,770	1.116	0.002	0.941	0.947
Children ever born	2.562	0.017	28,950	22,442	1.467	0.007	2.527	2.597
Children surviving	2.310	0.015	28,950	22,442	1.444	0.006	2.280	2.339
Currently using any method	0.625	0.004	28,950	22,442	1.184	0.006	0.618	0.633
Currently using a modern method	0.568	0.004	28,950	22,442	1.241	0.007	0.560	0.576
Mother received ANC from trained personnel	0.607	0.012	2,896	2,273	1.124	0.019	0.584	0.630
Mother received medical care at birth	0.343	0.011	3,076	2,416	1.138	0.032	0.321	0.365
Mother received PNC from trained personnel	0.332	0.011	2,896	2,273	1.098	0.033	0.310	0.354
One or more complications during pregnancy, delivery, or after delivery	0.436	0.010	2,896	2,273	1.007	0.024	0.415	0.457
Total fertility rate (3 years)	2.49	0.020	na	na	1.409	0.008	2.450	2.530
Neonatal mortality rate	35.73	1.845	14,538	11,334	1.198	0.052	32.040	39.420
Post neonatal mortality rate	9.82	0.412	14,031	10,938	0.495	0.042	8.996	10.644
Infant mortality rate	45.55	1.790	13,814	10,792	1.009	0.039	41.970	49.130
Child mortality rate	8.24	0.890	13,710	10,738	1.153	0.108	6.460	10.020
Under-five mortality rate	53.41	1.315	14,116	11,086	0.695	0.025	50.780	56.040

Table D.10. Sampling errors for selected variables, Rajshahi sample, Bangladesh 2016

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Unweighted (N)	Weighted (WN)			Value -2SE	Value +2SE
No education	0.240	0.004	42,526	40,160	1.985	0.018	0.232	0.249
With secondary education or higher	0.141	0.004	42,526	40,160	2.031	0.025	0.134	0.148
Currently married	0.946	0.001	42,526	40,160	1.139	0.001	0.943	0.948
Children ever born	2.252	0.015	40,150	37,972	2.015	0.007	2.221	2.283
Children surviving	2.056	0.013	40,150	37,972	1.984	0.006	2.029	2.082
Currently using any method	0.638	0.004	40,150	37,972	1.641	0.006	0.630	0.646
Currently using a modern method	0.579	0.004	40,150	37,972	1.605	0.007	0.571	0.587
Mother received ANC from trained personnel	0.752	0.011	3,013	2,899	1.316	0.014	0.731	0.773
Mother received medical care at birth	0.523	0.014	3,146	3,030	1.505	0.026	0.496	0.551
Mother received PNC from trained personnel	0.514	0.014	3,013	2,899	1.487	0.027	0.487	0.542
One or more complications during pregnancy, delivery, or after delivery	0.462	0.011	3,013	2,899	1.212	0.024	0.439	0.484
Total fertility rate (3 years)	2.03	0.021	na	na	1.706	0.010	1.988	2.072
Neonatal mortality rate	33.21	1.499	15,233	14,542	1.033	0.045	30.212	36.208
Post neonatal mortality rate	7.77	0.828	14,772	14,092	1.146	0.107	6.114	9.426
Infant mortality rate	40.98	1.904	14,678	13,948	1.164	0.046	37.172	44.788
Child mortality rate	6.79	0.868	14,679	13,939	1.281	0.128	5.054	8.526
Under-five mortality rate	47.49	2.167	15,535	14,837	1.270	0.046	43.156	51.824

Table D.11. Sampling errors for selected variables, Rangpur sample, Bangladesh 2016

Variable	Value (R)	Standard error (SE)	Number of cases		Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
			Unweighted (N)	Weighted (WN)			Value -2SE	Value +2SE
No education	0.253	0.004	40,195	35,899	1.752	0.016	0.245	0.261
With secondary education or higher	0.143	0.004	40,195	35,899	1.907	0.025	0.136	0.150
Currently married	0.940	0.001	40,195	35,899	1.162	0.002	0.937	0.942
Children ever born	2.460	0.013	37,677	33,728	1.488	0.005	2.434	2.486
Children surviving	2.219	0.011	37,677	33,728	1.458	0.005	2.198	2.241
Currently using any method	0.654	0.004	37,677	33,728	1.512	0.006	0.646	0.662
Currently using a modern method	0.597	0.004	37,677	33,728	1.555	0.007	0.589	0.605
Mother received ANC from trained personnel	0.711	0.012	3,119	2,778	1.394	0.017	0.686	0.735
Mother received medical care at birth	0.480	0.013	3,271	2,915	1.374	0.026	0.455	0.506
Mother received PNC from trained personnel	0.471	0.013	3,119	2,778	1.367	0.028	0.445	0.497
One or more complications during pregnancy, delivery, or after delivery	0.399	0.010	3,119	2,778	1.055	0.025	0.380	0.419
Total fertility rate (3 years)	2.17	0.008	na	na	1.315	0.004	2.154	2.186
Neonatal mortality rate	37.11	2.574	15,711	14,175	1.707	0.069	31,962	42,258
Post neonatal mortality rate	7.71	0.673	15,125	13,641	0.946	0.087	6,364	9,056
Infant mortality rate	44.81	2.583	14,961	13,527	1.527	0.058	39,644	49,976
Child mortality rate	8.14	1.340	14,873	13,439	1.819	0.165	5,460	10,820
Under-five mortality rate	52.59	3.256	15,631	14,099	1.824	0.062	46,078	59,102

Table D.12. Sampling errors for selected variables, Sylhet sample, Bangladesh 2016

Variable	Number of cases				Design effect (DEFT)	Relative error (SE/R)	Confidence intervals	
	Value (R)	Standard error (SE)	Un-weighted (N)	Weighted (WN)			Value -2SE	Value +2SE
No education	0.263	0.007	27,160	17,484	2.122	0.027	0.249	0.277
With secondary education or higher	0.107	0.004	27,160	17,484	1.735	0.038	0.099	0.115
Currently married	0.919	0.002	27,160	17,484	0.972	0.002	0.915	0.923
Children ever born	2.877	0.024	24,961	16,073	1.485	0.008	2.828	2.925
Children surviving	2.596	0.020	24,961	16,073	1.430	0.008	2.555	2.637
Currently using any method	0.527	0.005	24,961	16,073	1.377	0.010	0.516	0.538
Currently using a modern method	0.453	0.006	24,961	16,073	1.521	0.013	0.441	0.465
Mother received ANC from trained personnel	0.649	0.015	2,991	1,990	1.425	0.024	0.618	0.680
Mother received medical care at birth	0.381	0.015	3,283	2,186	1.450	0.040	0.351	0.411
Mother received PNC from trained personnel	0.369	0.015	2,991	1,990	1.340	0.039	0.340	0.398
One or more complications during pregnancy, delivery, or after delivery	0.529	0.011	2,991	1,990	1.011	0.021	0.506	0.552
Total fertility rate (3 years)	2.69	0.038	na	na	1.501	0.014	2.614	2.766
Neonatal mortality rate	39.95	1.725	16,107	10,638	1.118	0.043	36,500	43,400
Post neonatal mortality rate	15.96	2.534	15,476	10,210	2.515	0.159	10,892	21,028
Infant mortality rate	55.91	3.356	15,341	10,124	1.809	0.060	49,198	62,622
Child mortality rate	10.18	1.527	15,401	10,160	1.888	0.150	7,126	13,234
Under-five mortality rate	65.53	3.911	15,929	10,515	1.995	0.060	57,708	73,352

APPENDIX E. PERSONNEL INVOLVED IN THE BMMS 2016

NIPORT

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APPENDIX F. BMMS 2016 QUESTIONNAIRES

**BANGLADESH MATERNAL MORTALITY AND HEALTH
CARE SURVEY (BMMS) 2016**

LONG QUESTIONNAIRE

Household and Woman's Questionnaire

**National Institute of Population Research and Training (NIPORT)
Ministry of Health and Family Welfare
Associates for Community and Population Research (ACPR)
Mitra and Associates
icddr,b
MEASURE Evaluation**

HOUSEHOLD QUESTIONNAIRE

Face Sheet

IDENTIFICATION																																								
DIVISION.....	<table border="1" style="margin: auto;"> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </table>																																							
DISTRICT.....																																								
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SEGMENT NUMBER.....																																								
TYPE OF CLUSTER: RURAL 1 URBAN 2 OTHER URBAN 3																																								
CLUSTER NUMBER.....																																								
HOUSEHOLD NUMBER.....																																								
TYPE OF QUESTIONNAIRE: SHORT 1 LONG 2																																								
NAME OF THE HOUSEHOLD HEAD _____																																								
NAME OF THE RESPONDENT _____																																								

INTERVIEWER VISITS												
	1	2	3	FINAL VISIT								
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INTERVIEWER'S NAME				MONTH <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>								
RESULT*				YEAR <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td></tr></table>								
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NEXT VISIT: DATE				TOTAL NO. OF VISITS <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td></tr></table>								
TIME												
*RESULT CODES: 1 COMPLETED 2 NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME AT TIME OF VISIT 3 ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD OF TIME 4 POSTPONED 5 REFUSED 6 DWELLING VACANT OR ADDRESS NOT A DWELLING 7 DWELLING DESTROYED 8 DWELLING NOT FOUND 9 OTHER _____ (SPECIFY)			TOTAL PERSONS IN HOUSEHOLD <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> TOTAL ELIGIBLE WOMEN <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> LINE NO. OF RESP. TO HOUSEHOLD SCHEDULE <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>									
SUPERVISOR	FIELD EDITOR		OFFICE EDITOR	KEYED BY								
NAME _____ <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>			NAME _____ <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>				<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>			<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>		
DATE _____	DATE _____											

Introduction and Consent

Hello. My name is _____. I am working with NIPORT, the Ministry of Health and Family Welfare, and _____, a private research organization located in _____. We are conducting a survey about maternal health all over Bangladesh. The information we collect will help Government to improve the maternal and child health services and reduce maternal mortality in Bangladesh. Your household was selected for the survey. I would like to ask you some questions about your household. The questions usually take about 10 to 15 minutes. All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team.

You don't have to be in the survey, but we hope you will agree to answer the questions since your views are important. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time.

In case you need more information about the survey, you may contact the person listed on this card.

GIVE CARD WITH CONTACT INFORMATION

Do you have any questions?
May I begin the interview now?

SIGNATURE OF INTERVIEWER: _____ DATE: _____

RESPONDENT AGREES TO
BE INTERVIEWED.....1

RESPONDENT DOES NOT AGREE
TO BE INTERVIEWED.....2 →

END



HOUSEHOLD SCHEDULE

HH Interview start time:

Hour Min

Now I would like to know some information about the people who usually live in your household or who stayed last night in your house.

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	IF AGE 10 YEARS OR OLDER		WOMAN ELIGIBILITY	IF AGE 5 YEARS OR OLDER	
				Does (NAME) usually live here?	Did (NAME) stay here last night?		MARITAL STATUS	EDUCATION			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
01		What is the relationship of (NAME) to the head of the household? SEE CODES BELOW	M F 1 2	YES NO 1 2	YES NO 1 2	IN YEARS <input type="text"/> <input type="text"/>	What is (NAME's) current marital status? 1=CURRENTLY MARRIED 2=DIVORCED/SEPARATED/DESERTEED/WIDOWED 3=NEVER-MARRIED	CIRCLE LINE NUMBER OF ALL EVER MARRIED WOMEN AGED 13-49 YEARS (Q4=2, Q7=13-49 & Q8=1 OR 2)	Has (NAME) ever attended school?	YES NO 1 2	What is the highest class (NAME) completed?***
02			1 2	1 2	1 2	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	02	1 2	1 2	<input type="text"/> <input type="text"/>
03			1 2	1 2	1 2	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	03	1 2	1 2	<input type="text"/> <input type="text"/>
04			1 2	1 2	1 2	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	04	1 2	1 2	<input type="text"/> <input type="text"/>
05			1 2	1 2	1 2	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	05	1 2	1 2	<input type="text"/> <input type="text"/>
06			1 2	1 2	1 2	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	06	1 2	1 2	<input type="text"/> <input type="text"/>
07			1 2	1 2	1 2	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	07	1 2	1 2	<input type="text"/> <input type="text"/>
08			1 2	1 2	1 2	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	08	1 2	1 2	<input type="text"/> <input type="text"/>
09			1 2	1 2	1 2	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	09	1 2	1 2	<input type="text"/> <input type="text"/>
10			1 2	1 2	1 2	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	10	1 2	1 2	<input type="text"/> <input type="text"/>
11			1 2	1 2	1 2	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	11	1 2	1 2	<input type="text"/> <input type="text"/>

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	IF AGE 10 YEARS OR OLDER		WOMAN ELIGIBILITY	IF AGE 5 YEARS OR OLDER	
				Does (NAME) usually live here?	Did (NAME) stay here last night?		MARITAL STATUS	Has (NAME) ever attended school?		EDUCATION	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
	Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.	What is the relationship of (NAME) to the head of the household? SEE CODES BELOW	Is (NAME) male or female?	Does (NAME) usually live here?	Did (NAME) stay here last night?	How old is (NAME)? IF AGE LESS THAN 1 YEAR WRITE '00' IF 95 OR MORE, RECORD 95.	What is (NAME)'s current marital status? 1-CURRENTLY MARRIED 2-DIVORCED/SEPARATED/DE SERTED/WIDOWED 3-NEVER-MARRIED	CIRCLE LINE NUMBER OF ALL EVER MARRIED WOMEN AGED 13-49 YEARS (Q4=2, Q7=13-49 & Q8=1 OR 2)	YES NO	What is the highest class (NAME) completed?***	
12			M F 1 2	YES NO 1 2	YES NO 1 2	IN YEARS [] []	[]	12	YES NO 1 2	[] []	
13			1 2	1 2	1 2	[] []	[]	13	1 2	[] []	
14			1 2	1 2	1 2	[] []	[]	14	1 2	[] []	
15			1 2	1 2	1 2	[] []	[]	15	1 2	[] []	
16			1 2	1 2	1 2	[] []	[]	16	1 2	[] []	
17			1 2	1 2	1 2	[] []	[]	17	1 2	[] []	
18			1 2	1 2	1 2	[] []	[]	18	1 2	[] []	
19			1 2	1 2	1 2	[] []	[]	19	1 2	[] []	
20			1 2	1 2	1 2	[] []	[]	20	1 2	[] []	

TICK HERE IF ADDITIONAL SHEET USED []

1) Just to make sure that I have a complete listing: are there any other persons such as small children or infants that we have not listed?
 YES [] ENTER EACH IN TABLE NO []

2) In addition, are there any other people who may not be members of your family, such as domestic servants, lodgers or friends who usually live here?
 YES [] ENTER EACH IN TABLE NO []

3) Are there any guests or temporary visitors staying here, or anyone else who stayed/slept here last night, who have not been listed?
 YES [] ENTER EACH IN TABLE NO []

12. TOTAL NUMBER OF ELIGIBLE WOMEN (CIRCLED IN COLUMN 9)

--	--

* CODES FOR Q.3 RELATIONSHIP TO HEAD OF HOUSEHOLD	RELATIONSHIP TO HEAD OF HOUSEHOLD	** CODES FOR Q8 MARITAL STATUS	*** CODES FOR Q11 HIGHEST CLASS COMPLETED
01 = HEAD 02 = WIFE OR HUSBAND 03 = SON OR DAUGHTER 04 = SON-IN-LAW OR DAUGHTER-IN-LAW 05 = GRANDCHILD 06 = PARENT	07 = PARENT-IN-LAW 08 = BROTHER OR SISTER 09 = OTHER RELATIVE 10 = ADOPTED/FOSTER/ STEPCHILD 11 = NOT RELATED 98 = DONT KNOW	1 = CURRENTLY MARRIED (CM) 2 = DIVORCED/ SEPARATED/ DESERTED/WIDOWED (FM) 3 = NEVER- MARRIED (NM)	00 = LESS THAN 1 YEAR COMPLETED 98 = DONT KNOW

HOUSEHOLD CHARACTERISTICS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
13	What is the main source of drinking water for members of your household?	PIPED WATER PIPED INTO DWELLING..... 11 PIPED TO YARD/PLOT..... 12 PUBLIC TAP/STANDPIPE..... 13 TUBE WELL OR BOREHOLE..... 21 DUG WELL PROTECTED WELL..... 31 UNPROTECTED WELL..... 32 WATER FROM SPRING PROTECTED SPRING..... 41 UNPROTECTED SPRING..... 42 RAINWATER..... 51 TANKER TRUCK..... 61 CART WITH SMALL TANK..... 71 SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/ IRRIGATION CHANNEL)..... 81 BOTTLED WATER..... 91 OTHER..... 96 (SPECIFY)	
14	What kind of toilet facility do members of your household usually use?	FLUSH OR POUR FLUSH TOILET FLUSH TO PIPED SEWER SYSTEM.....11 FLUSH TO SEPTIC TANK.....12 FLUSH TO PIT LATRINE.....13 FLUSH TO SOMEWHERE ELSE.....14 FLUSH, DON'T KNOW WHERE.....15 PIT LATRINE VENTILATED IMPROVED PIT LATRINE.....21 PIT LATRINE WITH SLAB.....22 PIT LATRINE WITHOUT SLAB/OPEN PIT.....23 COMPOSTING TOILET.....31 BUCKET TOILET.....41 HANGING TOILET/HANGING LATRINE.....51 NO FACILITY/BUSH/FIELD.....61 OTHER.....96 (SPECIFY)	16
15	Do you share this toilet facility with other households?	YES 1 NO.....2	
16	Does your household have:	YES NO	
	Electricity?	ELECTRICITY 1 2	
	Solar Electricity?	SOLAR ELECTRICITY 1 2	
	A radio?	RADIO 1 2	
	A television?	TELEVISION 1 2	
	A mobile telephone?	MOBILE TELEPHONE 1 2	
	A non-mobile telephone?	NON-MOBILE TELEPHONE 1 2	
	A refrigerator?	REFRIGERATOR 1 2	
	An almirah/wardrobe?	ALMIRAH/WARDROBE 1 2	
	An electric fan?	ELECTRIC FAN 1 2	
	A DVD/VCD player?	DVD/VCD PLAYER 1 2	
	A water pump?	WATER PUMP 1 2	
	An IPS/generator?	IPS/GENERATOR 1 2	
	An air conditioner?	AIR CONDITIONER 1 2	
	A computer/laptop?	COMPUTER/LAPTOP 1 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
17	MAIN MATERIAL OF THE FLOOR. RECORD OBSERVATION.	NATURAL FLOOR EARTH/SAND.....11 RUDIMENTARY FLOOR WOOD PLANKS.....21 PALM/BAMBOO.....22 FINISHED FLOOR PARQUET OR POLISHED WOOD.....31 CERAMIC TILES.....32 CEMENT.....33 CARPET.....34 OTHER (SPECIFY)96	
18	MAIN MATERIAL OF THE ROOF. RECORD OBSERVATION	NATURAL ROOFING NO ROOF.....11 THATCH/PALM LEAF.....12 RUDIMENTARY ROOFING PALM/BAMBOO.....21 WOOD PLANKS.....22 CARDBOARD.....23 FINISHED ROOFING TIN.....31 WOOD.....32 CERAMIC TILES.....33 CEMENT.....34 ROOFING SHINGLES.....35 OTHER (SPECIFY).....96	
19	MAIN MATERIAL OF THE EXTERIOR WALLS RECORD OBSERVATION.	NATURAL WALLS NO WALLS.....11 CANE/PALM/TRUNKS.....12 DIRT.....13 RUDIMENTARY WALLS BAMBOO WITH MUD.....21 STONE WITH MUD.....22 PLYWOOD.....23 CARDBOARD.....24 FINISHED WALLS TIN.....31 CEMENT.....32 STONE WITH LIME/CEMENT.....33 BRICKS.....34 WOOD PLANKS/SHINGLES.....35 OTHER.....96 (SPECIFY)	
23	Does your household own any land (other than the homestead land)?	YES 1 NO.....2	
24	Did any usual resident of this household die since October 2012 (Kartik 1419) ?	YES 1 NO.....2	→ 38
25	How many persons died?	TOTAL PERSONS..... <input type="text"/> <input type="text"/>	
NOTE TO SUPERVISORS: PLEASE ASK NEIGHBORS ABOUT ANY DEATH THAT HAPPENED IN THIS HOUSEHOLD SINCE OCTOBER 2012 (KARTIK 1419) . VERIFY INFORMATION RECORDED IN Q24 AND Q25 AND CORRECT ACCORDINGLY WITH NOTES. INFORM RESPECTIVE INTERVIEWER.			

I would like to know about the person died in your household since **October 2012 (Kartik 1419)**? Please provide me the information first on recent death.

FOR 13-49 YEARS OLD WOMEN											
26	27	28	29	30	31	32	33	34	35	36	37
Tell me the name(s) of the person(s) who died since October 2012 (Kartik 1419) . Start with the last person died.	Was (NAME) a male or female?	How old was he/she when he/she died? RECORD DAYS IF LESS THAN ONE MONTH; MONTHS IF LESS THAN TWO YEARS; YEARS IF TWO YEARS OR MORE.	In what month and year did (NAME) die?	CHECK 27 AND 28: IF DECEASED WAS A FEMALE AGED 13-49 AT THE TIME OF DEATH, CIRCLE CODE '1'. Q27=1 & Q28=13-49	What was (NAME) marital status at the time when she died? CM=CURRENTLY MARRIED FM=DIVORCED/SEPERATED/DOWED NM=NEVER-MARRIED	Was (NAME) pregnant when she died?	Did (NAME) die during childbirth/miscarriage/abortion/MR?	Did (NAME) die within one and half month (6 weeks) after the end of a pregnancy or childbirth/miscarriage/abortion/MR?	Did (NAME) die after one and half month (6 weeks) but within 12 months after the end of pregnancy or childbirth/miscarriage/abortion/MR?	ELIGIBILITY FOR VERBAL AUTOPSY: IF CIRCLE "1" IN Q26 THEN CIRCLE LINE NUMBER	Did (NAME) die at home or outside home?
01 _____ (NAME)	FEMALE...1 MALE...2	DAYS.....1 MONTHS...2 YEARS.....3	MONTH YEAR	YES.....1 NO.....2 (GO TO NEXT DEATH)	CM.....1 FM.....2 NM.....3 (GO TO 36)	YES.....1 (GO TO 36) NO.....2	YES.....1 (GO TO 36) NO.....2	YES.....1 (GO TO 36) NO.....2	YES.....1 NO.....2	01	AT HOME...1 OUTSIDE HOME.....2
02 _____ (NAME)	FEMALE...1 MALE...2	DAYS.....1 MONTHS...2 YEARS.....3	MONTH YEAR	YES.....1 NO.....2 (GO TO NEXT DEATH)	CM.....1 FM.....2 NM.....3 (GO TO 36)	YES.....1 (GO TO 36) NO.....2	YES.....1 (GO TO 36) NO.....2	YES.....1 (GO TO 36) NO.....2	YES.....1 NO.....2	02	AT HOME...1 OUTSIDE HOME.....2
03 _____ (NAME)	FEMALE...1 MALE...2	DAYS.....1 MONTHS...2 YEARS.....3	MONTH YEAR	YES.....1 NO.....2	CM.....1 FM.....2 NM.....3 (GO TO 36)	YES.....1 (GO TO 36) NO.....2	YES.....1 (GO TO 36) NO.....2	YES.....1 (GO TO 36) NO.....2	YES.....1 NO.....2	03	AT HOME...1 OUTSIDE HOME.....2

38	TOTAL NUMBER OF PERSONS CIRCLED IN Q36			(INTERVIEWERS: PLEASE INFORM YOUR SUPERVISOR ABOUT THE NUMBER OF ELIGIBLE VERBAL AUTOPSY CASES IN THE HOUSEHOLD)
39	SUPERVISOR: YOU MUST ATTEMPT TO COMPLETE THE EQUAL NUMBER OF VERBAL AUTOPSIES AS RECORDED IN Q38.			
40	INTERVIEWER: INTERVIEW ALL WOMEN RECORDED IN Q9 USING THE WOMAN'S QUESTIONNAIRE			
	HH interview Ending time: Hour		Min	

Woman's Questionnaire Face Sheet

IDENTIFICATION																															
DIVISION.....	<table border="1" style="margin: auto;"> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>																														
DISTRICT.....																															
UPAZILA/THANA.....																															
UNION/WARD.....																															
MOUZA/ MOHOLLA.....																															
VILLAGE/MOHOLLA/BLOCK.....																															
SEGMENT NUMBER.....																															
TYPE OF CLUSTER: RURAL 1 URBAN 2 OTHER URBAN 3																															
CLUSTER NUMBER.....																															
HOUSEHOLD NUMBER.....																															
TYPE OF QUESTIONNAIRE: SHORT 1 LONG 2																															
NAME OF THE HOUSEHOLD HEAD																															
NAME AND LINE NUMBER OF ELIGIBLE RESPONDENT																															

INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE	_____	_____	_____	DAY MONTH* YEAR
INTERVIEWER'S NAME	_____	_____	_____	CODE RESULT**
RESULT**	_____	_____	_____	_____
NEXT VISIT: DATE TIME	_____	_____		TOTAL NO. OF VISITS
**RESULT CODES: 1 COMPLETED 4 REFUSED 7 OTHER _____ 2 NOT AT HOME 5 PARTLY COMPLETED (SPECIFY) 3 POSTPONED 6 RESPONDENT INCAPACITATED				
*MONTH CODES 01. JANUARY 04. APRIL 07. JULY 10. OCTOBER 02. FEBRUARY 05. MAY 08. AUGUST 11. NOVEMBER 03. MARCH 06. JUNE 09. SEPTEMBER 12. DECEMBER				
SUPERVISOR	FIELD EDITOR		OFFICE EDITOR	KEYED BY
NAME _____	NAME _____		_____	_____
DATE _____	DATE _____		_____	_____

Introduction and Consent

Hello. My name is _____. I am working with NIPORT, the Ministry of Health and Family Welfare, and _____, a private research organization located in _____. We are conducting a survey about maternal health all over Bangladesh. The information we collect will help Government to improve the maternal and child health services and reduce maternal mortality in Bangladesh. You have been selected for the survey. We would like to ask you some questions about your health. The questions usually take about 20 to 25 minutes. All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team.

You don't have to be in the survey, but we hope you will agree to answer the questions since your views are important. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time.

In case you need more information about the survey, you may contact the person listed on this card.

GIVE CARD WITH CONTACT INFORMATION

Do you have any questions?
May I begin the interview now?

SIGNATURE OF INTERVIEWER: _____ DATE: _____

RESPONDENT AGREES TO
BE INTERVIEWED.....1

RESPONDENT DOES NOT AGREE
TO BE INTERVIEWED.....2 END



SECTION 1: RESPONDENT'S BACKGROUND

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME STARTED.	HOUR <input type="text"/> <input type="text"/> MIN <input type="text"/> <input type="text"/>	
102	In what month and year were you born?	MONTH..... <input type="text"/> <input type="text"/> DON'T KNOW MONTH..... 98 YEAR..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DON'T KNOW YEAR..... 9998	
103	How old were you at your last birthday? COMPARE AND CORRECT 102 AND /OR 103 IF INCONSISTENT	AGE (IN COMPLETED YEARS) <input type="text"/> <input type="text"/>	
104	Are you now married, divorced, separated, deserted, widowed, or have you never been married?	CURRENTLY MARRIED.....1 DIVORCED.....2 SEPARATED.....3 DESERTED.....4 WIDOWED.....5 NEVER MARRIED.....6	→ END
105	Have you ever attended school including madrasha?	YES.....1 NO.....2	→ 111
106	What type of school have you last attended?	SCHOOL.....1 MADRASHA.....2	
107	What is the highest level of school you attended: primary, secondary, or higher?	PRIMARY.....1 SECONDARY.....2 HIGHER.....3	
108	What is the highest class you completed including madrasha? WRITE '00' IF NOT COMPLETED ANY CLASS FOLLOW DHS PATTERN	CLASS..... <input type="text"/> <input type="text"/>	
109	Do you read a newspaper or magazine?	YES.....1 NO.....2	→ 111
110	How often do you read a newspaper or magazine: at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK..... 1 LESS THAN ONCE A WEEK..... 2 NOT AT ALL..... 3	
111	Do you listen to radio?	YES.....1 NO.....2	→ 113
112	How often do you listen to the radio: at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK..... 1 LESS THAN ONCE A WEEK..... 2 NOT AT ALL..... 3	
113	Do you watch television?	YES.....1 NO.....2	→ 115
114	How often do you watch television: at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK..... 1 LESS THAN ONCE A WEEK..... 2 NOT AT ALL..... 3	
115	What is your religion?	ISLAM.....1 HINDUISM.....2 BUDDHISM.....3 CHRISTIANITY.....4 OTHER (SPECIFY).....6	
116	Do you belong to any of the following organizations? Grameen Bank? BRAC? BRDB? ASHA? PROSHIKA? Mother's Club? Any other organization (such as micro credit)?	YES NO GRAMEEN BANK.....1 2 BRAC.....1 2 BRDB.....1 2 ASHA.....1 2 PROSHIKA.....1 2 MOTHER'S CLUB.....1 2 OTHER.....1 2 (SPECIFY)	

SECTION 2: REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	Now I would like to ask about all the births you have had during your life.		
201	Have you ever given birth?	YES NO	1 2 → 206
202	Do you have any son(s) or daughter(s) to whom you have given birth who are now living with you?	YES NO	1 2 → 204
203	How many sons live with you? And how many daughters live with you? IF NONE, RECORD "00"	SONS, LIVING WITH THE RESPONDENT <input type="text"/> <input type="text"/> DAUGHTERS, LIVING WITH THE RESPONDENT <input type="text"/> <input type="text"/>	
204	Do you have any son(s) or daughter(s) to whom you have given birth who are alive but do not live with you?	YES NO	1 2 → 206
205	How many sons are alive but do not live with you? And how many daughters are alive but do not live with you? IF NONE, RECORD "00"	SONS ELSEWHERE DAUGHTERS ELSEWHERE	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
206	Have you ever given birth to a boy or girl who was born alive but later died? IF NO, PROBE: Any baby who cried or showed signs of life but survived for a few minutes/hours/days?	YES..... 1 NO..... 2	→ 208
207	How many boys have died? And how many daughters have died? IF NONE, RECORD "00"	BOYS DEAD GIRLS DEAD	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
208	SUM ANSWERS TO 203,205 AND 207, AND ENTER TOTAL. IF NONE, RECORD "00"	TOTAL..... <input type="text"/> <input type="text"/>	
209	CHECK 208: Just to make sure that I have this right: you have had in TOTAL _____ births during your life. Is that correct? YES <input type="checkbox"/> NO <input type="checkbox"/> PROBE AND CORRECT 201-208 AS NECESSARY		
210	CHECK 208: ONE OR MORE BIRTHS <input type="checkbox"/> NO BIRTHS <input type="checkbox"/>		→ 225

211 Now I would like to record the names of all your births, whether still alive or not, starting with the first one you had.									
RECORD NAMES OF ALL THE BIRTHS IN Q212 . IF NO NAME WAS GIVEN, RECORD 'NO NAME' IN 212. RECORD TWINS AND TRIPLETS ON SEPARATE LINES.									
212	213	214	215	216	217	218	219	220	221
What name was given to your (first /next) baby? (NAME)	Were any of these births twins?	Is (NAME) a boy or a girl?	In what month and year was (NAME) born? PROBE: What is his/her birthday?	Is (NAME) still alive?	How old was (NAME) at his/her last birthday? RECORD AGE IN COMPLETED YEARS.	Is (NAME) living with you?	RECORD HOUSEHOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD)	How old was (NAME) when he/she died? IF '1' YR', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; YEARS IF TWO OR MORE YEARS.	Were there any other live births between (NAME OF PREVIOUS BIRTH) and (NAME), including any children who died after birth?
01	SING1 MULT..... 2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES... 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (NEXT BIRTH)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	
02	SING1 MULT..... 2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES... 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	YES... 1 NO..... 2
03	SING1 MULT..... 2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES... 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	YES... 1 NO..... 2
04	SING1 MULT..... 2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES... 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	YES... 1 NO..... 2
05	SING1 MULT..... 2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES... 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	YES... 1 NO..... 2
06	SING1 MULT..... 2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES... 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	YES... 1 NO..... 2
07	SING1 MULT..... 2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES... 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	YES... 1 NO..... 2
08	SING1 MULT..... 2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES... 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	YES... 1 NO..... 2

212	213	214	215	216	217 IF ALIVE:	218 IF ALIVE:	219 IF ALIVE:	220 IF DEAD:	221
What name was given to your (first/next) baby? (NAME)	Were any of these births twins?	Is (NAME) a boy or a girl?	In what month and year was (NAME) born? PROBE: What is his/her birthday?	Is (NAME) still alive?	How old was (NAME) at his/her last birthday? RECORD AGE IN COMPLETE D YEARS.	Is (NAME) living with you?	RECORD HOUSEHOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD)	How old was (NAME) when he/she died? IF '1' YR', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; YEARS IF TWO OR MORE YEARS.	Were there any other live births between (NAME OF PREVIOUS BIRTH) and (NAME), including any children who died after birth?
09	SING1 MULT..... 2	BOY... 1 GIRL..... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	YES... 1 NO..... 2
10	SING1 MULT..... 2	BOY... 1 GIRL..... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	YES... 1 NO..... 2
11	SING1 MULT..... 2	BOY... 1 GIRL..... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	YES... 1 NO..... 2
12	SING1 MULT..... 2	BOY... 1 GIRL..... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	YES... 1 NO..... 2
222	Have you had any other live birth since the birth of (NAME OF LAST BIRTH)?						YES1 NO2	RECORD IN BIRTH HISTORY TABLE	
223	INTERVIEWER: COMPARE 208 WITH NUMBER OF BIRTHS IN BIRTH HISTORY TABLE AND MARK: NUMBERS ARE SAME <input type="checkbox"/> NUMBERS ARE DIFFERENT <input type="checkbox"/> (PROBE AND CORRECT 212-221) CHECK: FOR EACH BIRTH: YEAR OF BIRTH IS RECORDED (Q215) FOR EACH LIVING CHILD: CURRENT AGE IS RECORDED (Q217) FOR EACH DEAD CHILD: AGE AT DEATH IS RECORDED (Q220) FOR AGE AT DEATH 12 MONTHS OR 1 YR.: PROBE TO DETERMINE EXACT NUMBER OF MONTHS (Q220)								
224	INTERVIEWER: CHECK Q215 AND ENTER THE NUMBER OF BIRTHS SINCE OCTOBER 2012. IF NONE, RECORD 0. <input type="text"/>								

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
237	Are you pregnant now?	YES.....1 NO.....2 UNSURE.....3	239
238	How many months pregnant are you? RECORD NUMBER OF COMPLETED MONTHS	MONTHS <input type="text"/> <input type="text"/>	ALL SKIP TO 301
239	INTVIEWER: CHECK Q104 AND CIRCLE APPROPRIATE CODE.	CURRENTLY MARRIED1 DIVORCED.....2 SEPARATED3 DESERTED.....4 WIDOWED.....5	301
240	Are you or your husband currently doing something or using any family planning method to delay or avoid getting pregnant?	YES.....1 NO.....2	301
241	Which method are you using? CIRCLE ALL METHODS MENTIONED.	FEMALE STERILIZATIONA MALE STERILIZATION.....B IUD.....C INJECTABLES.....D IMPLANTS/NORPLANT.....E PILL.....F CONDOM.....G LACTATIONAL AME. MET.(LAM).....H SAFE PERIOD/PERIODIC ABST.....I WITHDRAWAL.....J OTHER _____ X (SPECIFY)	
242	INTERVIEWER: CHECK Q241 AND CIRCLE APPROPRIATE CODE. IF MORE THAN ONE CODE IS CIRCLED IN Q241, CIRCLE THE HIGHEST CODE IN THE LIST	FEMALE STERILIZATION01 MALE STERILIZATION.....02 IUD.....03 INJECTABLES.....04 IMPLANTS/NORPLANT.....05 PILL.....06 CONDOM.....07 LACTATIONAL AME. MET.(LAM).....08 SAFE PERIOD/PERIODIC ABST.....09 WITHDRAWAL.....10 OTHER _____ 11 (SPECIFY)	301 301 301

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
243	<p>Where did you obtain (CURRENT METHOD) the last time?</p> <p>PROBE TO IDENTIFY THE TYPE OF SOURCE.</p> <p>IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE.</p> <hr/> <p>(NAME OF PLACE)</p>	<p>PUBLIC SECTOR</p> <p>PUBLIC HOSPITAL.....11</p> <p>DISTRICT HOSPITAL.....12</p> <p>MCWC.....13</p> <p>UPAZILLA HEALTH COMPLEX.....14</p> <p>UH & FWC.....15</p> <p>SAT. CLINIC/EPI OUTREACH.....17</p> <p>COMMUNITY CLINIC.....18</p> <p>GOVT. FIELD WORKER (FWA).....19</p> <p>OTHER PUBLIC SECTOR _____ 16</p> <p>(SPECIFY)</p> <p>NGO SECTOR</p> <p>NGO STATIC CLINIC.....21</p> <p>NGO SATELLITE CLINIC.....22</p> <p>NGO DEPO HOLDER.....23</p> <p>NGO FIELD WORKER.....24</p> <p>OTHER NGO SECTOR _____ 26</p> <p>(SPECIFY)</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PRIVATE HOSPITAL/CLINIC.....31</p> <p>QUALIFIED DOCTOR'S CHAMBER.....32</p> <p>NON-QUALIFIED DOCTOR'S CHAMBER.....33</p> <p>PHARMACY/DRUG STORE.....34</p> <p>OTHER PRIVATE MEDICAL SECTOR _____ 36</p> <p>(SPECIFY)</p> <p>OTHER SOURCE</p> <p>SHOP.....41</p> <p>FRIENDS/RELATIVES.....42</p> <p>OTHER _____ 96</p> <p>(SPECIFY)</p>	

SECTION 4: PREGNANCY, DELIVERY AND POSTNATAL CARE

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES		SKI P
401	INTERVIEWER: CHECK Q224 ONE OR MORE BIRTHS SINCE OCTOBER 2012 (KARTIC1419)			435
402	INTERVIEWER: ENTER THE LINE NUMBER AND NAME OF EACH LIVE BIRTH SINCE OCTOBER 2012 (KARTIC 1419) IN Q403. IF THERE ARE MORE THAN 2 BIRTHS, USE ADDITIONAL QUESTIONNAIRES. FOR THE LAST LIVE BIRTH START WITH Q404 AND ASK ALL ELIGIBLE QUESTIONS THEREAFTER. ASK Q410 TO Q416 FOR ADDITIONAL LIVE BIRTHS OTHER THAN THE LAST LIVE BIRTH SINCE OCTOBER 2012 (KARTIC 1419)			
402a	Now I would like to ask you some questions about your health during all live births since October 2012 (Kartic1419) . I will ask all questions about the last live birth and then ask about the previous live birth(s).			
402b	INTERVIEWER: NOTE THAT YOU MUST COMPLETE Q404 TO Q434b FIRST FOR THE LAST LIVE BIRTH AND ONLY THEN PROCEED TO ASK Q410 ONWARDS FOR THE PRECEDING LIVE BIRTH(S).			
403	LINE NUMBER FROM 212	LAST BIRTH	NEXT TO LAST BIRTH LINE	
		LINE NO. NAME	NO. NAME	
404	When you were pregnant with (NAME), did you see anyone for antenatal care (medical checkup)?	YES.....1 NO.....2		410
405	Whom did you see? Anyone else? PROBE TO IDENTIFY EACH TYPE OF PERSON AND RECORD ALL MENTIONED.	HEALTH PERSONNEL QUAL. DOCTOR.....A NURSE/MIDWIFE/PARAMEDIC.....B FAMILY WELFARE VISITOR.....C COMMUNITY SKILLED BIRTH ATTENDANT.....D MA/SACMO.....E COMMUNITY HEALTH CARE PROVIDER.....F HEALTH ASST.....G FAMILY WELFARE ASSISTANT.....H NGO WORKER.....I OTHER PERSON TRAINED TBA.....J UNTRAINED TBA.....K UNQUALIFIED DOCTOR.....L OTHERX (SPECIFY)		
406	Where did you receive antenatal care for this pregnancy? Anywhere else? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	HOME HOME.....A PUBLIC SECTOR PUBLIC HOSPITAL.....B DIST. HOSP.....C MCWC.....D UPAZILLA HEALTH COMPLEX.....E UH & FAMILY WELFARE CENTRE.....F SAT. CLINIC/EPI OUTREACH.....G COMM. CLINIC.....H OTHER PUBLIC SECTORI (SPECIFY) NGO SECTOR NGO STATIC CLINIC.....J NGO SAT CLINIC.....K OTHERL (SPECIFY) PRIVATE MED. SECTOR PVT. HOSPITAL/CLINIC.....M QUAL. DOCTOR.....N TRADITIONAL/ UNQUALIFIED DOCTOR.....O PHARMACY.....P OTHERX (SPECIFY)		

407	How many times did you receive antenatal care during this pregnancy?	NUMBER OF TIMES..... <input type="text"/> <input type="text"/> DO NOT KNOW.....98																							
408	How many months pregnant were you when you first received antenatal care for this pregnancy?	MONTHS..... <input type="text"/> <input type="text"/> DO NOT KNOW.....98																							
	CHECK if Q407 is less than one																								
408a	How many months pregnant were you when you last received antenatal care for this pregnancy?	YES.....1 NO.....2																							
409	As part of your antenatal care during this pregnancy, were any of the following done at least once? Was your weight measured? Was your blood pressure measured? Did you have a urine test? Did you have a blood test? Did you have an ultrasonography? Were you counseled about danger signs?	<table border="0"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>WEIGHT.....1</td> <td></td> <td>2</td> </tr> <tr> <td>BP.....1</td> <td></td> <td>2</td> </tr> <tr> <td>URINE.....1</td> <td></td> <td>2</td> </tr> <tr> <td>BLOOD.....1</td> <td></td> <td>2</td> </tr> <tr> <td>ULTRASON.....1</td> <td></td> <td>2</td> </tr> <tr> <td>DANGER SIGNS...1</td> <td></td> <td>2</td> </tr> </tbody> </table>		YES	NO	WEIGHT.....1		2	BP.....1		2	URINE.....1		2	BLOOD.....1		2	ULTRASON.....1		2	DANGER SIGNS...1		2		
	YES	NO																							
WEIGHT.....1		2																							
BP.....1		2																							
URINE.....1		2																							
BLOOD.....1		2																							
ULTRASON.....1		2																							
DANGER SIGNS...1		2																							
409a	When you got pregnant with (NAME), did any fieldworker/ community worker visit you at your home to counsel on healthy pregnancy or checkup?	YES1 NO.....2 410 ←																							
409b	Who visited?	HEALTH ASST.....A FAMILY WELFARE ASSISTANT.....B NGO WORKER.....C TRAINED TBA.....D UNTRAINED TBA.....E OTHER (SPECIFY).....X																							
409c	What did they do: Did s/he measure your weight? Did s/he measure your blood pressure? Did s/he do a urine test? Did s/he do a blood test? Did s/he counsel about danger signs?	<table border="0"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>WEIGHT.....1</td> <td></td> <td>2</td> </tr> <tr> <td>BP.....1</td> <td></td> <td>2</td> </tr> <tr> <td>URINE.....1</td> <td></td> <td>2</td> </tr> <tr> <td>BLOOD.....1</td> <td></td> <td>2</td> </tr> <tr> <td>DANGER SIGNS.....1</td> <td></td> <td>2</td> </tr> </tbody> </table>		YES	NO	WEIGHT.....1		2	BP.....1		2	URINE.....1		2	BLOOD.....1		2	DANGER SIGNS.....1		2					
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BP.....1		2																							
URINE.....1		2																							
BLOOD.....1		2																							
DANGER SIGNS.....1		2																							
409d	How many home visits did you receive during the last pregnancy?	NUMBER OF TIMES..... <input type="text"/> <input type="text"/> DON'T KNOW.....98																							

410	<p>Who assisted with the delivery of (NAME)?</p> <p>Anyone else?</p> <p>PROBE FOR THE TYPE(S) OF PERSON(S) AND RECORD ALL MENTIONED.</p> <p>IF RESPONDENT SAYS NO ONE ASSISTED, PROBE TO DETERMINE WHETHER ANY ADULTS WERE PRESENT AT THE DELIVERY.</p>	<p>HEALTH PERSONNEL</p> <p>QUAL. DOCTOR.....A</p> <p>NURSE/MIDWIFE/PARAMEDIC.....B</p> <p>FAMILY WELFARE VISITOR.....C</p> <p>COMMUNITY SKILLED</p> <p>BIRTH ATTENDANT.....D</p> <p>MA/SACMO.....E</p> <p>COMMUNITY HEALTH CARE PROVIDER.....F</p> <p>HEALTH ASST.....G</p> <p>FAMILY WELFARE ASSISTANT.....H</p> <p>NGO WORKER.....I</p> <p>OTHER PERSON:</p> <p>TRAINED TBA.....J</p> <p>UNTRAINED TBA.....K</p> <p>UNQUALIFIED DOCTOR.....L</p> <p>RELATIVES.....M</p> <p>NEIGHBORS/FRIENDS.....N</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p> <p>NO ONE ASSISTED.....Y</p> <p style="text-align: right;">413 ←</p>	<p>HEALTH PERSONNEL</p> <p>QUAL. DOCTOR.....A</p> <p>NURSE/MIDWIFE/PARAMEDIC.....B</p> <p>FAMILY WELFARE VISITOR.....C</p> <p>COMMUNITY SKILLED</p> <p>BIRTH ATTENDANT.....D</p> <p>MA/SACMO.....E</p> <p>COMMUNITY HEALTH CARE PROVIDER.....F</p> <p>HEALTH ASST.....G</p> <p>FAMILY WELFARE ASSISTANT.....H</p> <p>NGO WORKER.....I</p> <p>OTHER PERSON:</p> <p>TRAINED TBA.....J</p> <p>UNTRAINED TBA.....K</p> <p>UNQUALIFIED DOCTOR.....L</p> <p>RELATIVES.....M</p> <p>NEIGHBORS/FRIENDS.....N</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p> <p>NO ONE ASSISTED.....Y</p> <p style="text-align: right;">413 ←</p>	
411	<p>INTERVIEWER: CHECK Q410 AND CIRCLE APPROPRIATE CODE.</p>	<p>SINGLE RESPONSE1 → 413</p> <p>MULTIPLE RESPONSE2</p>	<p>SINGLE RESPONSE1 → 413</p> <p>MULTIPLE RESPONSE2</p>	
413	<p>Where did you give birth to (NAME)?</p> <p>PROBE TO IDENTIFY THE TYPE OF SOURCE.</p> <p>IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE.</p> <p>_____</p> <p>(NAME OF PLACE)</p>	<p>HOME</p> <p>HOME.....11</p> <p>PUBLIC SECTOR</p> <p>PUBLIC HOSPITAL.....21</p> <p>DIST. HOSP.....22</p> <p>MCWC.....23</p> <p>UPAZILLA HEALTH COMPLEX.....24</p> <p>UH & FAMILY WELFARE CENTRE.....25</p> <p>COM. CLINIC.....28</p> <p>OTHER PUBLIC SECTOR (SPECIFY).....26</p> <p>NGO SECTOR</p> <p>NGO STATIC CLINIC.....31</p> <p>DELIVERY HUT.....36</p> <p>PRIVATE MED. SECTOR</p> <p>PVT. HOSPITAL/CLINIC.....41</p> <p>OTHER (SPECIFY).....96</p> <p style="text-align: right;">415 ↓</p>	<p>HOME</p> <p>HOME.....11</p> <p>PUBLIC SECTOR</p> <p>PUBLIC HOSPITAL.....21</p> <p>DIST. HOSP.....22</p> <p>MCWC.....23</p> <p>UPAZILLA HEALTH COMPLEX.....24</p> <p>UH & FAMILY WELFARE CENTRE.....25</p> <p>COM. CLINIC.....28</p> <p>OTHER PUBLIC SECTOR (SPECIFY).....26</p> <p>NGO SECTOR</p> <p>NGO STATIC CLINIC.....31</p> <p>DELIVERY HUT.....36</p> <p>PRIVATE MED. SECTOR</p> <p>PVT. HOSPITAL/CLINIC.....41</p> <p>OTHER (SPECIFY).....96</p> <p style="text-align: right;">415 ↓</p>	
414	<p>What are the reasons you did not go to a health facility for delivery?</p>	<p>NOT NECESSARY.....A</p> <p>NOT UNDERSTAND THAT SERVICE IS NEEDED.....B</p> <p>NOT CUSTOMERY.....C</p> <p>COST TOO MUCH.....D</p> <p>LACK OF MONEY.....E</p> <p>TOO FAR.....F</p> <p>TRANSPORT PROBLEM.....G</p> <p>NO ONE TO ACCOMPANY.....H</p> <p>POOR QUALITY SERVICE.....I</p> <p>FAMILY DID NOT ALLOW.....J</p> <p>BETTER CARE AT HOME.....K</p> <p>NOT KNOWN HOW TO GO.....L</p> <p>NO TIME TO GO FOR SERVICES.....M</p> <p>NOT KNOW WHERE TO GO.....N</p> <p>NOT WANT SERVICE FROM MALE DOCTOR.....O</p> <p>FOR FEAR.....P</p> <p>CLINIC/HOSPITAL INSIST FOR CAESARIAN.....Q</p> <p>HAD SUDDEN DELIVERY.....R</p> <p>OTHER (SPECIFY).....X</p>	<p>NOT NECESSARY.....A</p> <p>NOT UNDERSTAND THAT SERVICE IS NEEDED.....B</p> <p>NOT CUSTOMERY.....C</p> <p>COST TOO MUCH.....D</p> <p>LACK OF MONEY.....E</p> <p>TOO FAR.....F</p> <p>TRANSPORT PROBLEM.....G</p> <p>NO ONE TO ACCOMPANY.....H</p> <p>POOR QUALITY SERVICE.....I</p> <p>FAMILY DID NOT ALLOW.....J</p> <p>BETTER CARE AT HOME.....K</p> <p>NOT KNOWN HOW TO GO.....L</p> <p>NO TIME TO GO FOR SERVICES.....M</p> <p>NOT KNOW WHERE TO GO.....N</p> <p>NOT WANT SERVICE FROM MALE DOCTOR.....O</p> <p>FOR FEAR.....P</p> <p>CLINIC/HOSPITAL INSIST FOR CAESARIAN.....Q</p> <p>HAD SUDDEN DELIVERY.....R</p> <p>OTHER (SPECIFY).....X</p>	<p>SKIP TO 417 IF MOST RECENT BIRTH. OTHERWISE SKIP TO NEXT Q410.</p>

415	Who mainly made the decision on the place of delivery?	RESPONDENT HERSELF.....01 HUSBAND.....02 MOTHER/FATHER.....03 MOTHER-IN-LAW/FATHER-IN-LAW.....04 JOINTLY.....05 SISTER.....06 SISTER-IN-LAW.....07 OTHER MEMBER OF RESP.'S FAMILY.....08 OTHER MEMBER OF HUSB.'S'S FAMILY.....09 RELATIVES.....10 NEIGHBOR/FRIEND.....11 TBA/FIELDWORKER/DAI.....12 OTHER (SPECIFY).....96	RESPONDENT HERSELF.....01 HUSBAND.....02 MOTHER/FATHER.....03 MOTHER-IN-LAW/FATHER-IN-LAW.....04 JOINTLY.....05 SISTER.....06 SISTER-IN-LAW.....07 OTHER MEMBER OF RESP.'S FAMILY.....08 OTHER MEMBER OF HUSB.'S'S FAMILY.....09 RELATIVES.....10 NEIGHBOR/FRIEND.....11 TBA/FIELDWORKER/DAI.....12 OTHER (SPECIFY).....96	
416	Was (NAME) delivered by caesarean Section, that is, did they cut your belly open to take the baby out?	YES.....1 No.....2	YES.....1 NO.....2	

		LAST BIRTH				
		LINE NO.	NAME			
417	Did you experience any of the following problems during your last pregnancy (pregnant with NAME), during delivery or after delivery? (READ OUT EVERY RESPONSE)	P=PREGNANCY; D= DELIVERY; AD= AFTER DELIVERY	P	D	AD	
	a. Severe headache with blurred vision?	SEVERE HEADACHE WITH BLURRED VISION.....	A1	A2	A3	
	b. Convulsion/fits?	CONVULSION/FITS.....	B1	B2	B3	
	c. High blood pressure?	HIGH BLOOD PRESSURE	C1	C2	C3	
	d. Severe/heavy bleeding?	SEVERE/HEAVY BLEEDING.....	D1	D2	D3	
	e. Leaking membrane and no labor pain for >6 hours?	LEAKING MEMBRANE & NO LABOR PAIN FOR >6 HOURS.....	E1	-	-	
	f. Mal-presentation?	MAL-PRESENTATION.....	-	F2	-	
	g. Prolonged labor (>12 hours)?	PROLONGED LABOR.....	-	G2	-	
	h. Retained placenta?	RETAINED PLACENTA.....	-	H2	H3	
	i. High fever with smelly discharge	HIGH FEVER WITH SMELLY DISCHARGE.....	-	-	I3	
	j. Oedema face/feet/body	OEDEMA.....	J1	J2	J3	
	y. None of the above-mentioned problem happened	NONE OF THE ABOVE MENTIONED PROBLEM HAPPENED.....	Y1	Y2	Y3	
418	INTERVIEWER: CHECK Q417 AND CIRCLE APPROPRIATE CODE	ONLY ONE PROBLEM REPORTED.....	1	→	421	
		MORE THAN ONE PROBLEM REPORTED.....	2		425	
		NO LISTED PROBLEM REPORTED (CIRCLED Y1, Y2 & Y3).....	3	→	425	
419	What was (were) the last problem(s) you suffered from?	SEVERE HEADACHE WITH BLURRED VISION.....	A			
		CONVULSION/FITS.....	B			
		HIGH BLOOD PRESSURE.....	C			
		SEVERE/HEAVY BLEEDING.....	D			
		LEAKING MEMBRANE & NO LABOR PAIN FOR >6 HOURS.....	E			
		MAL-PRESENTATION	F			
		PROLONGED LABOR	G			
		RETAINED PLACENTA.....	H			
		HIGH FEVER WITH SMELLY DISCHARGE.....	I			
		OEDEMA FACE/FEET/BODY.....	J			
419a	INTERVIEWER: CHECK Q419 AND CIRCLE APPROPRIATE CODE.	ONLY ONE PROBLEM REPORTED.....	1	→	421	
		MORE THAN ONE PROBLEM REPORTED.....	2			
420	What was the last most serious problem you suffered from?	SEVERE HEADACHE WITH BLURRED VISION.....	01			
		CONVULSION/FITS.....	02			
		HIGH BLOOD PRESSURE.....	03			
		SEVERE/HEAVY BLEEDING.....	04			
		LEAKING MEMBRANE & NO LABOR PAIN FOR >6 HOURS.....	05			
		MAL-PRESENTATION	06			
		PROLONGED LABOR	07			
		RETAINED PLACENTA.....	08			
		HIGH FEVER WITH SMELLY DISCHARGE.....	09			
		OEDEMA FACE/FEET/BODY.....	10			
421	Did you get treatment for this problem?	YES.....	1	→	423	
		NO.....	2			
		SOMEONE ELSE BROUGHT MEDICINE/BROUGHT ADVICE.....	3	→	425	

422	Why did you not seek treatment? Some other reason?	NOT NECESSARY.....A NOT UNDERSTAND THAT SERVICE IS NEEDED.....B NOT CUSTOMERY.....C COST TOO MUCH.....D LACK OF MONEY.....E TOO FAR.....F TRANSPORT PROBLEM.....G NO ONE TO ACCOMPANY.....H POOR QUALITY SERVICE.....I FAMILY DID NOT ALLOW.....J BETTER CARE AT HOME.....K NOT KNOWN HOW TO GO.....L NO TIME TO GO FOR SERVICES.....M NOT KNOW WHERE TO GO.....N NOT WANT SERVICE FROM MALE DOC.....O FOR FEAR.....P CLINIC/HOSPITAL INSIST FOR CAESARIAN.....Q DID NOT UNDERSTAND THE SERIOUSNESS OF PROBLEM.....R OTHER (SPECIFY).....X	425
423	Where did you seek treatment? INTERVIEWER: IF TREATMENT WAS SOUGHT FROM A SINGLE PLACE MULTIPLE TIMES OR FROM MULTIPLE PLACES, FILL UP THE BOXES ACCORDING TO THE SEQUENCE OF THE CARE	SEQUENCE OF CARE <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> 1 2 3 4 5 HOME HOME.....A PUBLIC SECTOR PUBLIC HOSPITAL.....B DISTRICT HOSPITAL.....C MCWC.....D UPAZILLA HEALTH COMPLEX.....E UH&FWC.....F SC/EPI OUTREACH SITE.....G COMMUNITY CLINIC.....H OTHER (SPECIFY).....I NGO SECTOR NGO STATIC CLINIC.....J NGO SATELLITE CLINIC.....K OTHER (SPECIFY).....L PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC.....M QUALIF. DOCTOR'S CHAMBER.....N UNQUAL. DOCTOR'S CHAMBER.....O PHARMACY.....P PRIV. MEDICAL COLLEGE HOSPITAL (SPECIFY).....Q OTHER (SPECIFY).....X	
425	I would like to talk to you about checks on your health after delivery, for example, someone asking you questions about your health or examining you. Did anyone check on your health after you gave birth do (NAME)?	YES.....1 NO.....2 430 ←	
426	Who checked on your health at that time? PROBE FOR MOST QUALIFIED PERSON.	HEALTH PERSONNEL QUAL. DOCTOR11 NURSE/MIDWIFE/PARAMEDIC.....12 FAMILY WELFARE VISITOR.....13 COMMUNITY SKILLED BIRTH ATTENDANT.....14 MA/SACMO.....15 COMMUNITY HEALTH CARE PROVIDER.....16 HEALTH ASST.....17 FAMILY WELFARE ASSISTANT.....18 NGO WORKER.....21 OTHER PERSON	

		TRAINED TBA.....31 UNTRAINED TBA.....32 UNQUALIFIED DOCTOR.....33 OTHER _____ 96 (SPECIFY)																
427	Where did this first check take place?	HOME HOME.....11 PUBLIC SECTOR PUBLIC HOSPITAL.....21 DIST. HOSP.....22 MCWC.....23 UPAZILLA HEALTH COMPLEX.....24 UH & FAMILY WELFARE CENTRE.....25 SAT. CLINIC/EPI OUTREACH.....27 COMM. CLINIC.....28 OTHER _____ 26 (SPECIFY) NGO SECTOR NGO STATIC CLINIC.....31 NGO SAT CLINIC.....32 OTHER _____ 36 (SPECIFY) PRIVATE MED. SECTOR PVT. HOSPITAL/CLINIC.....41 QUALIFIED DOC. CHAMBER.....42 UNQUALIFIED DOC. CHAMBER.....43 PHARMACY.....44 OTHER _____ 96 (SPECIFY)																
428	How long after delivery did the first check take place? IF LESS THAN ONE DAY, RECORD HOURS. IF LESS THAN ONE WEEK, RECORD DAYS.	HOURS1 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> DAYS.....2 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> WEEKS3 <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> DON'T KNOW.....998																
429	During the first two days after delivery, did any health care provider either do the following for you at home or at a health facility: Breast examination? Check vaginal discharge? Check temperature? Counsel on danger signs?	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="width: 10%; text-align: center;">YES</th> <th style="width: 10%; text-align: center;">NO</th> </tr> </thead> <tbody> <tr> <td>BREAST EXAM.....1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> </tr> <tr> <td>VAG. DISCHARGE.....1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> </tr> <tr> <td>TEMPERATURE.....1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> </tr> <tr> <td>COUNSEL ON DANGER SIGNS.....1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>		YES	NO	BREAST EXAM.....1	2	2	VAG. DISCHARGE.....1	2	2	TEMPERATURE.....1	2	2	COUNSEL ON DANGER SIGNS.....1	2	2	
	YES	NO																
BREAST EXAM.....1	2	2																
VAG. DISCHARGE.....1	2	2																
TEMPERATURE.....1	2	2																
COUNSEL ON DANGER SIGNS.....1	2	2																
		LAST LIVE BIRTH LINE NO..... NAME:																
430	What was the total cost incurred for your last delivery? (Including transportation, medicines, payments to attendant or facility, other costs) IF CANNOT MENTION, WRITE 999995.	TAKA..... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> NO MONEY SPEND.....000000 DON'T KNOW.....999998									→434a							
433	How did you get this money for the last delivery?	FAMILY FUNDS.....A BORROWED.....B SOLD ASSETS.....C FROM RELATIVES (GIFT).....D MORTGAGE.....E FRIENDS (GIFT).....F OTHER (SPECIFY).....X DON'T KNOW.....Z																
434a	Did you have pre-arranged money for managing emergency for this pregnancy or delivery?	YES1 NO2																

434b	Did you have pre-arranged transport to take you to a clinic, hospital or qualified doctor in case of emergency for this pregnancy or delivery?	YES1 NO2	
------	--	-------------------------	--

435	INTERVIEWER: CHECK THE QUESTIONNAIRE CAREFULLY FOR COMPLETENESS BEFORE ENDING THE INTERVIEW. THEN SAY THANK YOU AND END THE INTERVIEW.		
436	RECORD THE TIME	HOURS __ __ MINUTES __ __	

END OF INTERVIEW

BANGLADESH MATERNAL MORTALITY AND HEALTH CARE SURVEY (BMMS) 2016

SHORT QUESTIONNAIRE

Household and Woman's Questionnaire

**National Institute of Population Research and Training (NIPORT)
Ministry of Health and Family Welfare
Associates for Community and Population Research (ACPR)
Mitra and Associates
icddr,b
MEASURE Evaluation**

HOUSEHOLD QUESTIONNAIRE

Face Sheet

IDENTIFICATION																															
DIVISION.....	<table border="1" style="margin: auto;"> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </table>																														
DISTRICT.....																															
UPAZILA/THANA.....																															
UNION/WARD.....																															
MOUZA/ MOHOLLA.....																															
VILLAGE/MOHOLLA/BLOCK _____																															
SEGMENT NUMBER.....																															
TYPE OF CLUSTER: RURAL 1 URBAN 2 OTHER URBAN 3																															
CLUSTER NUMBER.....																															
HOUSEHOLD NUMBER.....																															
TYPE OF QUESTIONNAIRE: SHORT 1 LONG 2																															
NAME OF THE HOUSEHOLD HEAD _____																															
NAME OF THE RESPONDENT _____																															

INTERVIEWER VISITS												
	1	2	3	FINAL VISIT								
DATE				DAY <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>								
INTERVIEWER'S NAME				MONTH <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>								
RESULT*				YEAR <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td></tr></table>								
				INTV. CODE <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td></tr></table>								
				RESULT <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>								
NEXT VISIT: DATE				TOTAL NO. OF VISITS <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td></tr></table>								
TIME												
*RESULT CODES: 1 COMPLETED 2 NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME AT TIME OF VISIT 3 ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD OF TIME 4 POSTPONED 5 REFUSED 6 DWELLING VACANT OR ADDRESS NOT A DWELLING 7 DWELLING DESTROYED 8 DWELLING NOT FOUND 9 OTHER _____ (SPECIFY)			TOTAL PERSONS IN HOUSEHOLD <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> TOTAL ELIGIBLE WOMEN <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table> LINE NO. OF RESP. TO HOUSEHOLD SCHEDULE <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>									
SUPERVISOR	FIELD EDITOR		OFFICE EDITOR	KEYED BY								
NAME _____ <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>			NAME _____ <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>				<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>			<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td></tr></table>		
DATE _____	DATE _____											

Introduction and Consent

Hello. My name is _____. I am working with NIPORT, the Ministry of Health and Family Welfare, and _____, a private research organization located in _____. We are conducting a survey about maternal health all over Bangladesh. The information we collect will help Government to improve the maternal and child health services and reduce maternal mortality in Bangladesh. Your household was selected for the survey. I would like to ask you some questions about your household. The questions usually take about 10 to 15 minutes. All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team.

You don't have to be in the survey, but we hope you will agree to answer the questions since your views are important. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time.

In case you need more information about the survey, you may contact the person listed on this card.

GIVE CARD WITH CONTACT INFORMATION

Do you have any questions?
May I begin the interview now?

SIGNATURE OF INTERVIEWER: _____ DATE: _____

RESPONDENT AGREES TO
BE INTERVIEWED.....1

RESPONDENT DOES NOT AGREE
TO BE INTERVIEWED.....2 →

END



HOUSEHOLD SCHEDULE

HH Interview start time:

Hour

Min

Now I would like to know some information about the people who usually live in your household or who stayed last night in your house.

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	IF AGE 10 YEARS OR OLDER		WOMAN ELIGIBILITY	IF AGE 5 YEARS OR OLDER	
				Does (NAME) usually live here?	Did (NAME) stay here last night?		MARITAL STATUS	Has (NAME) ever attended school?		EDUCATION	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
01	Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.	What is the relationship of (NAME) to the head of the household?*	Is (NAME) male or female?	Does (NAME) usually live here?	Did (NAME) stay here last night?	How old is (NAME)? IF AGE LESS THAN 1 YEAR WRITE '00' IF 95 OR MORE, RECORD 95.	What is (NAME)'s current marital status?*	CIRCLE LINE NUMBER OF ALL EVER MARRIED WOMEN AGED 13-49 YEARS (Q4=2, Q7=13-49 & Q8=1 OR 2)	Has (NAME) ever attended school?	What is the highest class (NAME) completed?***	
			M F	YES NO	YES NO	IN YEARS	1=CURRENTLY MARRIED 2=DIVORCED/SEPARATED/DE SERTED/WIDOWED 3=NEVER-MARRIED	01	YES NO	CLASS	
02			1 2	1 2	1 2			02	1 2		
03			1 2	1 2	1 2			03	1 2		
04			1 2	1 2	1 2			04	1 2		
05			1 2	1 2	1 2			05	1 2		
06			1 2	1 2	1 2			06	1 2		
07			1 2	1 2	1 2			07	1 2		
08			1 2	1 2	1 2			08	1 2		
09			1 2	1 2	1 2			09	1 2		
10			1 2	1 2	1 2			10	1 2		
11			1 2	1 2	1 2			11	1 2		

LINE NO.	USUAL RESIDENTS AND VISITORS Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.	RELATIONSHIP TO HEAD OF HOUSEHOLD What is the relationship of (NAME) to the head of the household? * SEE CODES BELOW	SEX Is (NAME) male or female?	RESIDENCE		AGE How old is (NAME)? IF AGE LESS THAN 1 YEAR WRITE '00' IF 95 OR MORE, RECORD 95.	IF AGE 10 YEARS OR OLDER MARRITAL STATUS		WOMAN ELIGIBILITY CIRCLE LINE NUMBER OF ALL EVER MARRIED WOMEN AGED 13-49 YEARS (Q4=2, Q7=13-49 & Q8=1 OR 2)	IF AGE 5 YEARS OR OLDER EDUCATION	
				Does (NAME) usually live here?	Did (NAME) stay here last night?		What is (NAME)'s current marital status? ** 1=CURRENTLY MARRIED 2=DIVORCED/SEPARATED/DE SERTED/WIDOWED 3=NEVER-MARRIED	Has (NAME) ever attended school?		What is the highest class (NAME) completed? ***	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	
12		<input type="text"/>	M 1 2	YES NO 1 2	YES NO 1 2	<input type="text"/> IN YEARS <input type="text"/>	<input type="text"/>	12	YES NO 1 2	<input type="text"/> CLASS <input type="text"/>	
13		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	<input type="text"/>	13	1 2	<input type="text"/>	
14		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	<input type="text"/>	14	1 2	<input type="text"/>	
15		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	<input type="text"/>	15	1 2	<input type="text"/>	
16		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	<input type="text"/>	16	1 2	<input type="text"/>	
17		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	<input type="text"/>	17	1 2	<input type="text"/>	
18		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	<input type="text"/>	18	1 2	<input type="text"/>	
19		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	<input type="text"/>	19	1 2	<input type="text"/>	
20		<input type="text"/>	1 2	1 2	1 2	<input type="text"/>	<input type="text"/>	20	1 2	<input type="text"/>	

TICK HERE IF ADDITIONAL SHEET USED

1) Just to make sure that I have a complete listing: are there any other persons such as small children or infants that we have not listed? YES ENTER EACH IN TABLE NO

2) In addition, are there any other people who may not be members of your family, such as domestic servants, lodgers or friends who usually live here? YES ENTER EACH IN TABLE NO

3) Are there any guests or temporary visitors staying here, or anyone else who stayed/slept here last night, who have not been listed? YES ENTER EACH IN TABLE NO

12. TOTAL NUMBER OF ELIGIBLE WOMEN (CIRCLED IN COLUMN 9)			
* CODES FOR Q.3 RELATIONSHIP TO HEAD OF HOUSEHOLD	* CODES FOR Q.8 RELATIONSHIP TO HEAD OF HOUSEHOLD	**CODES FOR Q8 MARITAL STATUS	***CODES FOR Q11 HIGHEST CLASS COMPLETED
01 = HEAD 02 = WIFE OR HUSBAND 03 = SON OR DAUGHTER 04 = SON-IN-LAW OR DAUGHTER-IN-LAW 05 = GRANDCHILD 06 = PARENT	07 = PARENT-IN-LAW 08 = BROTHER OR SISTER 09 = OTHER RELATIVE 10 = ADOPTED/FOSTER/ STEPCHILD 11 = NOT RELATED 98 = DONT KNOW	1 = CURRENTLY MARRIED (CM) 2 = DIVORCED/ SEPARATED/ DESERTED/WIDOWED (FW) 3 = NEVER- MARRIED (NM)	RY .00 = LESS THAN 1 YEAR COMPLETED 98 = DONT KNOW

HOUSEHOLD CHARACTERISTICS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																																													
13	What is the main source of drinking water for members of your household?	PIPED WATER PIPED INTO DWELLING..... 11 PIPED TO YARD/PLOT..... 12 PUBLIC TAP/STANDPIPE..... 13 TUBE WELL OR BOREHOLE..... 21 DUG WELL PROTECTED WELL..... 31 UNPROTECTED WELL..... 32 WATER FROM SPRING PROTECTED SPRING..... 41 UNPROTECTED SPRING..... 42 RAINWATER..... 51 TANKER TRUCK..... 61 CART WITH SMALL TANK..... 71 SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/ IRRIGATION CHANNEL)..... 81 BOTTLED WATER..... 91 OTHER..... 96 (SPECIFY)																																														
14	What kind of toilet facility do members of your household usually use?	FLUSH OR POUR FLUSH TOILET FLUSH TO PIPED SEWER SYSTEM.....11 FLUSH TO SEPTIC TANK.....12 FLUSH TO PIT LATRINE.....13 FLUSH TO SOMEWHERE ELSE.....14 FLUSH, DON'T KNOW WHERE.....15 PIT LATRINE VENTILATED IMPROVED PIT LATRINE.....21 PIT LATRINE WITH SLAB.....22 PIT LATRINE WITHOUT SLAB/OPEN PIT.....23 COMPOSTING TOILET.....31 BUCKET TOILET.....41 HANGING TOILET/HANGING LATRINE.....51 NO FACILITY/BUSH/FIELD.....61 → 16 OTHER.....96 (SPECIFY)																																														
15	Do you share this toilet facility with other households?	YES 1 NO.....2																																														
16	Does your household have:	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="text-align: center;">YES</th> <th style="text-align: center;">NO</th> </tr> </thead> <tbody> <tr> <td>Electricity?</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Solar Electricity?</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>A radio?</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>A television?</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>A mobile telephone?</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>A non-mobile telephone?</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>A refrigerator?</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>An almirah/wardrobe?</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>An electric fan?</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>A DVD/VCD player?</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>A water pump?</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>An IPS/generator?</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>An air conditioner?</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>A computer/laptop?</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>		YES	NO	Electricity?	1	2	Solar Electricity?	1	2	A radio?	1	2	A television?	1	2	A mobile telephone?	1	2	A non-mobile telephone?	1	2	A refrigerator?	1	2	An almirah/wardrobe?	1	2	An electric fan?	1	2	A DVD/VCD player?	1	2	A water pump?	1	2	An IPS/generator?	1	2	An air conditioner?	1	2	A computer/laptop?	1	2	
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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
17	<p>MAIN MATERIAL OF THE FLOOR.</p> <p>RECORD OBSERVATION.</p>	<p>NATURAL FLOOR</p> <p>EARTH/SAND.....11</p> <p>RUDIMENTARY FLOOR</p> <p>WOOD PLANKS.....21</p> <p>PALM/BAMBOO.....22</p> <p>FINISHED FLOOR</p> <p>PARQUET OR POLISHED WOOD.....31</p> <p>CERAMIC TILES.....32</p> <p>CEMENT.....33</p> <p>CARPET.....34</p> <p>OTHER (SPECIFY)96</p>	
18	<p>MAIN MATERIAL OF THE ROOF.</p> <p>RECORD OBSERVATION</p>	<p>NATURAL ROOFING</p> <p>NO ROOF.....11</p> <p>THATCH/PALM LEAF.....12</p> <p>RUDIMENTARY ROOFING</p> <p>PALM/BAMBOO.....21</p> <p>WOOD PLANKS.....22</p> <p>CARDBOARD.....23</p> <p>FINISHED ROOFING</p> <p>TIN.....31</p> <p>WOOD.....32</p> <p>CERAMIC TILES.....33</p> <p>CEMENT.....34</p> <p>ROOFING SHINGLES.....35</p> <p>OTHER (SPECIFY).....96</p>	
19	<p>MAIN MATERIAL OF THE EXTERIOR WALLS</p> <p>RECORD OBSERVATION.</p>	<p>NATURAL WALLS</p> <p>NO WALLS.....11</p> <p>CANE/PALM/TRUNKS.....12</p> <p>DIRT.....13</p> <p>RUDIMENTARY WALLS</p> <p>BAMBOO WITH MUD.....21</p> <p>STONE WITH MUD.....22</p> <p>PLYWOOD.....23</p> <p>CARDBOARD.....24</p> <p>FINISHED WALLS</p> <p>TIN.....31</p> <p>CEMENT.....32</p> <p>STONE WITH LIME/CEMENT.....33</p> <p>BRICKS.....34</p> <p>WOOD PLANKS/SHINGLES.....35</p> <p>OTHER.....96</p> <p>(SPECIFY)</p>	
23	Does your household own any land (other than the homestead land)?	<p>YES 1</p> <p>NO.....2</p>	
24	Did any usual resident of this household die since October 2012 (Kartik 1419) ?	<p>YES 1</p> <p>NO.....2</p>	38
25	How many persons died?	TOTAL PERSONS..... <input type="text"/> <input type="text"/>	
<p>NOTE TO SUPERVISORS: PLEASE ASK NEIGHBORS ABOUT ANY DEATH THAT HAPPENED IN THIS HOUSEHOLD SINCE OCTOBER 2012 (KARTIK 1419). VERIFY INFORMATION RECORDED IN Q24 AND Q25 AND CORRECT ACCORDINGLY WITH NOTES. INFORM RESPECTIVE INTERVIEWER.</p>			

I would like to know about the person died in your household since **October 2012 (Kartik 1419)**? Please provide me the information first on recent death.

FOR 13-49 YEARS OLD WOMEN											
26	27	28	29	30	31	32	33	34	35	36	37
Tell me the name(s) of the person(s) who died since October 2012 (Kartik 1419) . Start with the last person died.	Was (NAME) a male or female?	How old was he/she when he/she died? RECORD DAYS IF LESS THAN ONE MONTH, MONTHS IF LESS THAN TWO YEARS; YEARS IF TWO YEARS OR MORE.	In what month and year did (NAME) die?	CHECK 27 AND 28: IF DECEASED WAS A FEMALE AGED 13-49 AT THE TIME OF DEATH, CIRCLE CODE '1'. Q27=1 & Q28=13-49	What was (NAME) marital status at the time when she died? CM=CURRENTLY MARRIED FM=DIVORCED/ /SEPERATED/ DESERTED/WI DOWED NM=NEVER-MARRIED	Was (NAME) pregnant when she died?	Did (NAME) die during childbirth/ miscarriage/ abortion/ MR?	Did (NAME) die within one and half month (6 weeks) after the end of a pregnancy or childbirth/ miscarriage/ abortion/ MR?	Did (NAME) die after one and half month (6 weeks) but within 12 months after the end of pregnancy or childbirth/ miscarriage/ abortion/ MR?	ELIGIBILITY FOR VERBAL AUTOPSYS: Y: IF CIRCLE "4" IN Q 26 THEN CIRCLE LINE NUMBER	Did (NAME) die at home or outside home?
01 _____ (NAME)	FEMALE...1 MALE...2	DAYS.....1 MONTHS...2 YEARS.....3	MONTH YEAR	YES.....1 NO.....2 (GO TO NEXT DEATH)	CM.....1 FM.....2 NM.....3 (GO TO 36)	YES.....1 (GO TO 36) NO.....2	YES.....1 (GO TO 36) NO.....2	YES.....1 (GO TO 36) NO.....2	YES.....1 NO.....2	01	AT HOME.....1 OUTSIDE HOME.....2
02 _____ (NAME)	FEMALE...1 MALE...2	DAYS.....1 MONTHS...2 YEARS.....3	MONTH YEAR	YES.....1 NO.....2 (GO TO NEXT DEATH)	CM.....1 FM.....2 NM.....3 (GO TO 36)	YES.....1 (GO TO 36) NO.....2	YES.....1 (GO TO 36) NO.....2	YES.....1 (GO TO 36) NO.....2	YES.....1 NO.....2	02	AT HOME.....1 OUTSIDE HOME.....2
03 _____ (NAME)	FEMALE...1 MALE...2	DAYS.....1 MONTHS...2 YEARS.....3	MONTH YEAR	YES.....1 NO.....2	CM.....1 FM.....2 NM.....3 (GO TO 36)	YES.....1 (GO TO 36) NO.....2	YES.....1 (GO TO 36) NO.....2	YES.....1 (GO TO 36) NO.....2	YES.....1 NO.....2	03	AT HOME.....1 OUTSIDE HOME.....2

38	TOTAL NUMBER OF PERSONS CIRCLED IN Q36		(INTERVIEWERS: PLEASE INFORM YOUR SUPERVISOR ABOUT THE NUMBER OF ELIGIBLE VERBAL AUTOPSY CASES IN THE HOUSEHOLD)
SUPERVISOR: YOU MUST ATTEMPT TO COMPLETE THE EQUAL NUMBER OF VERBAL AUTOPSIES AS RECORDED IN Q38.			
39	INTERVIEWER: INTERVIEW ALL WOMEN RECORDED IN Q9 USING THE WOMAN'S QUESTIONNAIRE		
40	HH interview Ending time: Hour		MIn

Introduction and Consent

Hello. My name is _____. I am working with NIPORT, the Ministry of Health and Family Welfare, and _____, a private research organization located in _____. We are conducting a survey about maternal health all over Bangladesh. The information we collect will help Government to improve the maternal and child health services and reduce maternal mortality in Bangladesh. You have been selected for the survey. We would like to ask you some questions about your health. The questions usually take about 20 to 25 minutes. All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team.

You don't have to be in the survey, but we hope you will agree to answer the questions since your views are important. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time.

In case you need more information about the survey, you may contact the person listed on this card.

GIVE CARD WITH CONTACT INFORMATION

Do you have any questions?
May I begin the interview now?

SIGNATURE OF INTERVIEWER: _____ DATE: _____

RESPONDENT AGREES TO
BE INTERVIEWED.....1

RESPONDENT DOES NOT AGREE
TO BE INTERVIEWED.....→.2

END



SECTION 1: RESPONDENT'S BACKGROUND

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME STARTED.	HOUR <input type="text"/> <input type="text"/> MIN <input type="text"/> <input type="text"/>	
102	In what month and year were you born?	MONTH..... <input type="text"/> <input type="text"/> DON'T KNOW MONTH..... 98 YEAR..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DON'T KNOW YEAR..... 9998	
103	How old were you at your last birthday? COMPARE AND CORRECT 102 AND /OR 103 IF INCONSISTENT	AGE (IN COMPLETED YEARS) <input type="text"/> <input type="text"/>	
104	Are you now married, divorced, separated, deserted, widowed, or have you never been married?	CURRENTLY MARRIED.....1 DIVORCED.....2 SEPARATED.....3 DESERTED.....4 WIDOWED.....5 NEVER MARRIED.....6	→ END
105	Have you ever attended school including madrasha?	YES.....1 NO.....2	→ 111
106	What type of school have you last attended?	SCHOOL.....1 MADRASHA.....2	
107	What is the highest level of school you attended: primary, secondary, or higher?	PRIMARY.....1 SECONDARY.....2 HIGHER.....3	
108	What is the highest class you completed including madrasha? WRITE '00' IF NOT COMPLETED ANY CLASS FOLLOW DHS PATTERN	CLASS <input type="text"/> <input type="text"/>	
109	Do you read a newspaper or magazine?	YES.....1 NO.....2	→ 111
110	How often do you read a newspaper or magazine: at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK..... 1 LESS THAN ONCE A WEEK..... 2 NOT AT ALL..... 3	
111	Do you listen to radio?	YES.....1 NO.....2	→ 113
112	How often do you listen to the radio: at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK..... 1 LESS THAN ONCE A WEEK..... 2 NOT AT ALL..... 3	
113	Do you watch television?	YES.....1 NO.....2	→ 115
114	How often do you watch television: at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK..... 1 LESS THAN ONCE A WEEK..... 2 NOT AT ALL..... 3	
115	What is your religion?	ISLAM.....1 HINDUISM.....2 BUDDHISM.....3 CHRISTIANITY.....4 OTHER (SPECIFY).....6	
116	Do you belong to any of the following organizations? Grameen Bank? BRAC? BRDB? ASHA? PROSHIKA? Mother's Club? Any other organization (such as micro credit)?	YES NO GRAMEEN BANK.....1 2 BRAC.....1 2 BRDB.....1 2 ASHA.....1 2 PROSHIKA.....1 2 MOTHER'S CLUB.....1 2 OTHER.....1 2 (SPECIFY)	

SECTION 2: REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	Now I would like to ask about all the births you have had during your life.		
201	Have you ever given birth?	YES 1 NO 2	→ 206
202	Do you have any son(s) or daughter(s) to whom you have given birth who are now living with you?	YES 1 NO 2	→ 204
203	How many sons live with you? And how many daughters live with you? IF NONE, RECORD "00"	SONS, LIVING WITH THE RESPONDENT <input type="text"/> <input type="text"/> DAUGHTERS, LIVING WITH THE RESPONDENT <input type="text"/> <input type="text"/>	
204	Do you have any son(s) or daughter(s) to whom you have given birth who are alive but do not live with you?	YES 1 NO 2	→ 206
205	How many sons are alive but do not live with you? And how many daughters are alive but do not live with you? IF NONE, RECORD "00"	SONS ELSEWHERE <input type="text"/> <input type="text"/> DAUGHTERS ELSEWHERE <input type="text"/> <input type="text"/>	
206	Have you ever given birth to a boy or girl who was born alive but later died? IF NO, PROBE: Any baby who cried or showed signs of life but survived for a few minutes/hours/days?	YES..... 1 NO 2	→ 208
207	How many boys have died? And how many daughters have died? IF NONE, RECORD "00"	BOYS DEAD <input type="text"/> <input type="text"/> GIRLS DEAD <input type="text"/> <input type="text"/>	
208	SUM ANSWERS TO 203,205 AND 207, AND ENTER TOTAL. IF NONE, RECORD "00"	TOTAL <input type="text"/> <input type="text"/>	
209	CHECK 208: Just to make sure that I have this right: you have had in TOTAL _____ births during your life. Is that correct? YES <input type="checkbox"/> NO <input type="checkbox"/> → PROBE AND CORRECT 201-208 AS NECESSARY		
210	CHECK 208: ONE OR MORE BIRTHS <input type="checkbox"/> NO BIRTHS <input type="checkbox"/>		→ 225

211 Now I would like to record the names of all your births, whether still alive or not, starting with the first one you had.									
RECORD NAMES OF ALL THE BIRTHS IN Q212 . IF NO NAME WAS GIVEN, RECORD 'NO NAME' IN 212. RECORD TWINS AND TRIPLETS ON SEPARATE LINES.									
212	213	214	215	216	217	218	219	220	221
What name was given to your (first /next) baby? (NAME)	Were any of these births twins?	Is (NAME) a boy or a girl?	In what month and year was (NAME) born? PROBE: What is his/her birthday?	Is (NAME) still alive?	How old was (NAME) at his/her last birthday? RECORD AGE IN COMPLETED YEARS.	Is (NAME) living with you?	RECORD HOUSEHOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD)	How old was (NAME) when he/she died? IF '1' YR', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; YEARS IF TWO OR MORE YEARS.	Were there any other live births between (NAME OF PREVIOUS BIRTH) and (NAME), including any children who died after birth?
01	SING1 MULT.....2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (NEXT BIRTH)	DAYS.....1 MONTHS...2 YEARS.....3	
02	SING1 MULT.....2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 MONTHS...2 YEARS.....3	YES... 1 NO..... 2
03	SING1 MULT.....2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 MONTHS...2 YEARS.....3	YES... 1 NO..... 2
04	SING1 MULT.....2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 MONTHS...2 YEARS.....3	YES... 1 NO..... 2
05	SING1 MULT.....2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 MONTHS...2 YEARS.....3	YES... 1 NO..... 2
06	SING1 MULT.....2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 MONTHS...2 YEARS.....3	YES... 1 NO..... 2
07	SING1 MULT.....2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 MONTHS...2 YEARS.....3	YES... 1 NO..... 2
08	SING1 MULT.....2	BOY... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 MONTHS...2 YEARS.....3	YES... 1 NO..... 2

212	213	214	215	216	217 IF ALIVE:	218 IF ALIVE:	219 IF ALIVE:	220 IF DEAD:	221
What name was given to your (first /next) baby? (NAME)	Were any of these births twins?	Is (NAME) a boy or a girl?	In what month and year was (NAME) born? PROBE: What is his/her birthday?	Is (NAME) still alive?	How old was (NAME) at his/her last birthday? RECORD AGE IN COMPLETE D YEARS.	Is (NAME) living with you?	RECORD HOUSEHOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD)	How old was (NAME) when he/she died? IF '1' YR', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; YEARS IF TWO OR MORE YEARS.	Were there any other live births between (NAME OF PREVIOUS BIRTH) and (NAME), including any children who died after birth?
09	SING1 MULT..... 2	BOY. ... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES. ... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	YES. ... 1 NO..... 2
10	SING1 MULT..... 2	BOY. ... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES. ... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	YES. ... 1 NO..... 2
11	SING1 MULT..... 2	BOY. ... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES. ... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	YES. ... 1 NO..... 2
12	SING1 MULT..... 2	BOY. ... 1 GIRL.... 2	MONTH <input type="text"/> YEAR <input type="text"/>	YES. 1 NO..... 2 ↓ 220	AGE IN YEARS <input type="text"/>	YES. ... 1 NO..... 2	LINE NUMBER <input type="text"/> (GO TO 221)	DAYS.....1 <input type="text"/> MONTHS...2 <input type="text"/> YEARS.....3 <input type="text"/>	YES. ... 1 NO..... 2
222	Have you had any other live birth since the birth of (NAME OF LAST BIRTH)?						YES1 NO2	RECORD IN BIRTH HISTORY TABLE	
223	INTERVIEWER: COMPARE 208 WITH NUMBER OF BIRTHS IN BIRTH HISTORY TABLE AND MARK: NUMBERS ARE SAME <input type="checkbox"/> NUMBERS ARE DIFFERENT <input type="checkbox"/> (PROBE AND CORRECT 212-221) CHECK: FOR EACH BIRTH: YEAR OF BIRTH IS RECORDED (Q215) FOR EACH LIVING CHILD: CURRENT AGE IS RECORDED (Q217) FOR EACH DEAD CHILD: AGE AT DEATH IS RECORDED (Q220) FOR AGE AT DEATH 12 MONTHS OR 1 YR.: PROBE TO DETERMINE EXACT NUMBER OF MONTHS (Q220)								
224	INTERVIEWER: CHECK Q215 AND ENTER THE NUMBER OF BIRTHS SINCE OCTOBER 2012. IF NONE, RECORD 0. <input type="text"/>								

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
237	Are you pregnant now?	YES.....1 NO.....2 UNSURE.....3	239
238	How many months pregnant are you? RECORD NUMBER OF COMPLETED MONTHS	MONTHS <input type="text"/> <input type="text"/>	ALL SKIP TO 301
239	INTVIEWER: CHECK Q104 AND CIRCLE APPROPRIATE CODE.	CURRENTLY MARRIED1 DIVORCED.....2 SEPARATED3 DESERTED.....4 WIDOWED.....5	301
240	Are you or your husband currently doing something or using any family planning method to delay or avoid getting pregnant?	YES.....1 NO.....2	301
241	Which method are you using? CIRCLE ALL METHODS MENTIONED.	FEMALE STERILIZATIONA MALE STERILIZATION.....B IUD.....C INJECTABLES.....D IMPLANTS/NORPLANT.....E PILL.....F CONDOM.....G LACTATIONAL AME. MET.(LAM).....H SAFE PERIOD/PERIODIC ABST.....I WITHDRAWAL.....J OTHER.....X (SPECIFY)	
242	INTERVIEWER: CHECK Q241 AND CIRCLE APPROPRIATE CODE. IF MORE THAN ONE CODE IS CIRCLED IN Q241, CIRCLE THE HIGHEST CODE IN THE LIST	FEMALE STERILIZATION01 MALE STERILIZATION.....02 IUD.....03 INJECTABLES.....04 IMPLANTS/NORPLANT.....05 PILL.....06 CONDOM.....07 LACTATIONAL AME. MET.(LAM).....08 SAFE PERIOD/PERIODIC ABST.....09 WITHDRAWAL.....10 OTHER.....11 (SPECIFY)	301 301 301

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
243	<p>Where did you obtain (CURRENT METHOD) the last time?</p> <p>PROBE TO IDENTIFY THE TYPE OF SOURCE.</p> <p>IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE.</p> <hr/> <p>(NAME OF PLACE)</p>	<p>PUBLIC SECTOR</p> <p>PUBLIC HOSPITAL.....11</p> <p>DISTRICT HOSPITAL.....12</p> <p>MCWC.....13</p> <p>UPAZILLA HEALTH COMPLEX.....14</p> <p>UH & FWC.....15</p> <p>SAT. CLINIC/EPI OUTREACH.....17</p> <p>COMMUNITY CLINIC.....18</p> <p>GOVT. FIELD WORKER (FWA).....19</p> <p>OTHER PUBLIC SECTOR _____16</p> <p>(SPECIFY)</p> <p>NGO SECTOR</p> <p>NGO STATIC CLINIC.....21</p> <p>NGO SATELLITE CLINIC.....22</p> <p>NGO DEPO HOLDER.....23</p> <p>NGO FIELD WORKER.....24</p> <p>OTHER NGO SECTOR _____26</p> <p>(SPECIFY)</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PRIVATE HOSPITAL/CLINIC.....31</p> <p>QUALIFIED DOCTOR'S CHAMBER.....32</p> <p>NON-QUALIFIED DOCTOR'S CHAMBER.....33</p> <p>PHARMACY/DRUG STORE.....34</p> <p>OTHER PRIVATE MEDICAL SECTOR _____36</p> <p>(SPECIFY)</p> <p>OTHER SOURCE</p> <p>SHOP.....41</p> <p>FRIENDS/RELATIVES.....42</p> <p>OTHER _____96</p> <p>(SPECIFY)</p>	

SECTION 3: MATERNAL MORBIDITY

SUB-SECTION 3.1: INCONTINENCE AND FISTULA LIKE SYMPTOM MODULE

Sometimes a woman can have problems in holding urine and/or feces. She may feel shy to talk about this problem in public. Now, with your kind permission I would like to ask you some questions regarding this. Your responses to these questions are private and will not be shared with anyone.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
301.	Do you have problem in controlling urine?	YES.....1 NO.....2	
302.	Do you have problem in controlling feces?	YES.....1 NO.....2	
303.	Do you leak urine when you are in stress like laughing, coughing, sneezing or heavy lifting?	YES1 NO2	
304.	Do you suddenly feel the urge to go to the toilet, and accidentally leak urine?	YES1 NO2	
305.	Does your urine leak continuously , even when you are not urinating/ trying to urinate?	YES1 NO2 →	308
306.	How long have you been having this continuous leaking of urine?	YEARS [][] MONTHS [][][]	
307.	Currently, does your clothing get wet with your urine during sleep every night ?	YES1 NO2	
308.	Do you currently experience feces passing through the birth canal that you cannot stop, even when you are not defecating?	YES1 NO2 →	311
309.	Currently, does your clothing get soiled with your feces during sleep every night?	YES1 NO2	
310.	How long have you been having this continuous leaking of feces?	YEARS [][] MONTHS [][][]	
311	<u>CHECK:</u> IF Q 305 = 1 OR Q 308 = 1, THEN ASK GO TO Q312		
312	Did this problem (leakage of urine and/or feces) start immediately (within 2 weeks) after you delivered a baby or had a stillbirth?	YES1 NO2 →	314
313.	You mentioned that the leakage started after delivery/ still birth. How was the delivery conducted- a normal delivery, an instrumental delivery, or a caesarean section?	Normal delivery.....1 Instrumental delivery.....2 Delivery through C-Section3 } →	316
314.	Did the continuous leakage start after an abortion?	YES1 NO2	
315.	Did the continuous leakage start after any other abdominal or pelvic surgery?	YES1 NO2	
316.	Have you ever sought treatment for this problem?	YES1 NO2 →	319

317.	IF YES, from whom did you seek treatment?	HEALTH PROFESSIONAL DOCTOR.....1 NURSE/MIDWIFE.....2 OTHER PERSON COMMUNITY/VILLAGE HEALTH WORKER.....3 OTHER96	
318.	Did the treatment involve surgery?	YES1 NO2	SUB-SECTION 3.2
319.	Why have you not sought treatment? PROBE AND RECORD ALL MENTIONED.	Do not know can be fixed.....A Do not know where to go.....B Too expensive.....C Too far.....D Poor quality of care.....E Could not get permissionF Embarrassment.....G Problem disappeared.....H OtherX (SPECIFY)	SUB-SECTION 3.2
320.	Have you ever experienced leaking urine/feces continuously , even when you are not trying to urinate/defecate?	YES1 NO2 →	SUB-SECTION 3.2
321.	Did you seek treatment to stop continuous leaking urine/feces?	YES1 NO2 →	SUB-SECTION 3.2
322.	IF YES, from whom did you seek treatment?	HEALTH PROFESSIONAL DOCTOR.....1 NURSE/MIDWIFE.....2 OTHER PERSON COMMUNITY/VILLAGE HEALTH WORKER.....3 OTHER96	
323.	Did the treatment involve surgery?	YES1 NO2	SUB-SECTION 3.2

SUB-SECTION 3.2: PELVIC ORGAN PROLAPSE LIKE SYMPTOM MODULE

Sometimes a woman can have problems in have a bulge or something falling out in vaginal area. She may feel shy to talk about this problem in public. Now, with your kind permission I would like to ask you some questions regarding this. Your responses to these questions are private and will not be shared with anyone.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
324.	In the last 3 months did you have a bulge or something falling out that you can see or feel in your vaginal area?	YES1 NO2 →	330
325.	How long (years) have you been suffering from this problem?	YEARS [][] MONTHS [][]	
326.	Have you ever sought care for this problem?	YES1 NO2 →	329
327.	IF YES, from whom did you seek treatment?	HEALTH PROESSIONAL DOCTOR.....1 NURSE/MIDWIFE.....2 OTHER PERSON COMMUNITY/VILLAGE HEALTH WORKER.....3 OTHER96	
328.	Did the treatment involve surgery?	YES1 NO2	330
329.	Why have you not sought treatment? PROBE AND RECORD ALL MENTIONED.	Do not know can be fixed.....A Do not know where to go.....B Too expensive.....C Too far.....D Poor quality of care.....E Could not get permissionF Embarrassment.....G Problem disappeared.....H OtherX (SPECIFY)	330

435	INTERVIEWER: CHECK THE QUESTIONNAIRE CAREFULLY FOR COMPLETENESS BEFORE ENDING THE INTERVIEW. THEN SAY THANK YOU AND END THE INTERVIEW.	
436	RECORD THE TIME	HOURS [][] MINUTES [][]

END OF INTERVIEW

BANGLADESH MATERNAL MORTALITY AND MATERNAL HEALTH CARE SURVEY (BMMS) 2016

SERVICE AVAILABILITY ROSTER

**National Institute of Population Research and Training (NIPORT)
Ministry of Health and Family Welfare
Associates for Community and Population Research (ACPR)
Mitra and Associates
icddr,b
MEASURE Evaluation**

BANGLADESH MATERNAL MORTALITY AND MATERNAL HEALTH CARE SURVEY 2016

SERVICE AVAILABILITY ROSTER

IDENTIFICATION																									
DIVISION _____ (BARISAL=1; CHITTAGONG=2; DHAKA=3; KHULNA=4; RAJSHAHI=5; RANGPUR=6 ; SYLHET=7) DISTRICT _____ UPAZILA/THANA _____ UNION/WARD _____ MOUZA/MOHOLLA _____ SEGMENT _____ VILLAGE/MOHALLA/BLOCK _____ CLUSTER NUMBER TYPE OF AREA: 1 = RURAL; 2 = URBAN, 3 = OTHER URBAN	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																								
DATE OF VISIT _____ RESULTS OF THE INTERVIEW: [COMPLETED =1, INCOMPLETE = 2, OTHER (SPECIFY) = 6] NAME OF INTERVIEWER _____	DAY <input type="checkbox"/> <input type="checkbox"/> MONTH <input type="checkbox"/> <input type="checkbox"/> YEAR <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> RESULT <input type="checkbox"/> INTERVIEWER CODE <input type="checkbox"/> <input type="checkbox"/>																								
NAME OF PERSONS INTERVIEWED 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="text-align: center; width: 10%;">POSITION</th> <th style="width: 30%;">SEX</th> </tr> </thead> <tbody> <tr> <td>ELECTED OFFICIAL01</td> <td style="text-align: center;"><input type="checkbox"/> <input type="checkbox"/></td> <td>MALE1 <input type="checkbox"/></td> </tr> <tr> <td>RELIGIOUS LEADER02</td> <td style="text-align: center;"><input type="checkbox"/> <input type="checkbox"/></td> <td>FEMALE2 <input type="checkbox"/></td> </tr> <tr> <td>TEACHER/EDUCATOR03</td> <td style="text-align: center;"><input type="checkbox"/> <input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>DOCTOR/HEALTH OFFICIAL04</td> <td style="text-align: center;"><input type="checkbox"/> <input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>SERVICE HOLDER05</td> <td style="text-align: center;"><input type="checkbox"/> <input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>BUSINESS PERSON06</td> <td style="text-align: center;"><input type="checkbox"/> <input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>OTHER _____96 (SPECIFY)</td> <td style="text-align: center;"><input type="checkbox"/> <input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>		POSITION	SEX	ELECTED OFFICIAL01	<input type="checkbox"/> <input type="checkbox"/>	MALE1 <input type="checkbox"/>	RELIGIOUS LEADER02	<input type="checkbox"/> <input type="checkbox"/>	FEMALE2 <input type="checkbox"/>	TEACHER/EDUCATOR03	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	DOCTOR/HEALTH OFFICIAL04	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	SERVICE HOLDER05	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	BUSINESS PERSON06	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	OTHER _____96 (SPECIFY)	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>
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BEGINNING TIME:	HOUR <input type="checkbox"/> <input type="checkbox"/> MINUTES <input type="checkbox"/> <input type="checkbox"/>																								

1. Community information

INFORMED CONSENT

AFTER ASSEMBLING THE INFORMANTS, READ THE FOLLOWING GREETING:

Hello. I am representing the NIPORT of Ministry of Health and Family Welfare. We are carrying out a survey of communities to get a picture of services available to the communities and to understand when and why people use health services. I would like to ask you some questions about your community and about sources of health care in it and around it as a way of better understanding how to serve the population. Please be assured that this discussion is strictly confidential and you may choose to stop the interview at any time. May I continue?

PERMISSION RECEIVED TO CONTINUE?

YES 1

NO 2 → STOP

2. Identification of Health Facilities

Now we would like to ask you some questions about health facilities from which people in this village/mohalla can obtain services if they want. We would like for you to tell us about all of the facilities known by the general population of this village/mohalla that are of specific types. Please start with the ones that are closest to this village/mohalla.

201. HEALTH FACILITY/HEALTH CENTER	202. Where is the HEALTH FACILITY located?	203. What is the HEALTH FACILITY's operating authority?	204. How far in miles/kilometers is the HEALTH FACILITY located from the center of the village? IF LOCATED IN THE VILLAGE/MOHALLA, RECORD '00'.	205. How many minutes does it take to go to the FACILITY using the most common type of transportation?	207. Is HEALTH FACILITY in this thana/union ?
01A. HOSPITAL (Nearest) NAME: _____ _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____ _____	GOVERNMENT 01 NGO 02 PRIVATE 03 RELIGIOUS 04 OTHER 96 DK 98	MILES 1 <input type="text"/> KILOMETERS ... 2 <input type="text"/> DON'T KNOW 98	MINUTES <input type="text"/> <input type="text"/> DON'T KNOW 998	YES, THANA 1 → 02A YES, UNION 1 → 02A NO 2 → 01B
01B. HOSPITAL (District) NAME: _____ _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____ _____	GOVERNMENT 01 NGO 02 PRIVATE 03 RELIGIOUS 04 OTHER 96 DK 98	MILES 1 <input type="text"/> KILOMETERS ... 2 <input type="text"/> DON'T KNOW 98	MINUTES <input type="text"/> <input type="text"/> DON'T KNOW 998	
02A. THANA HEALTH CENTER (THC) (nearest) NAME: _____ _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____ _____	GOVERNMENT 01	MILES 1 <input type="text"/> KILOMETERS ... 2 <input type="text"/> DON'T KNOW 98	MINUTES <input type="text"/> <input type="text"/> DON'T KNOW 998	YES, THANA 1 → 03A YES, UNION 1 → 03A NO 2 → 02B
02B. THANA HEALTH CENTER	DISTRICT: _____	GOVERNMENT 01	MILES 1 <input type="text"/> KILOMETERS ... 2 <input type="text"/>		

<p>201. HEALTH FACILITY/HEALTH CENTER</p> <p>(THC) (in this thana)</p> <p>NAME: _____</p> <p>DON'T KNOW NONE</p>	<p>202. Where is the HEALTH FACILITY located?</p> <p>THANA: _____</p> <p>LOCATION: _____</p>	<p>203. What is the HEALTH FACILITY's operating authority?</p>	<p>204. How far in miles/kilometers is the HEALTH FACILITY located from the center of the village? IF LOCATED IN THE VILLAGE/MOHALLA, RECORD '00'.</p> <p>DON'T KNOW98</p>	<p>205. How many minutes does it take to go to the FACILITY using the most common type of transportation?</p> <p>MINUTES <input type="text"/> <input type="text"/> <input type="text"/></p> <p>DON'T KNOW998</p>	<p>207. Is HEALTH FACILITY in this thana/union ?</p>
<p>03A. HEALTH AND FAMILY WELFARE CENTER (nearest)</p> <p>NAME: _____</p> <p>DON'T KNOW NONE</p>	<p>DISTRICT: _____</p> <p>THANA: _____</p> <p>LOCATION: _____</p>	<p>GOVERNMENT01</p>	<p>MILES 1 <input type="text"/> <input type="text"/></p> <p>KILOMETERS... 2 <input type="text"/> <input type="text"/></p> <p>DON'T KNOW98</p>	<p>MINUTES <input type="text"/> <input type="text"/> <input type="text"/></p> <p>DON'T KNOW998</p>	<p>YES, THANA 1 → 04A YES, UNION 1 → 04A NO.....2 → 03B</p>
<p>03B. HEALTH AND FAMILY WELFARE CENTER (in this union)</p> <p>NAME: _____</p> <p>DON'T KNOW NONE</p>	<p>DISTRICT: _____</p> <p>THANA: _____</p> <p>LOCATION: _____</p>	<p>GOVERNMENT01</p>	<p>MILES 1 <input type="text"/> <input type="text"/></p> <p>KILOMETERS... 2 <input type="text"/> <input type="text"/></p> <p>DON'T KNOW98</p>	<p>MINUTES <input type="text"/> <input type="text"/> <input type="text"/></p> <p>DON'T KNOW998</p>	

<p>201. HEALTH FACILITY/HEALTH CENTER</p>	<p>202. Where is the HEALTH FACILITY located?</p>	<p>203. What is the HEALTH FACILITY's operating authority?</p>	<p>204. How far in miles/kilometers is the HEALTH FACILITY located from the center of the village? IF LOCATED IN THE VILLAGE/MOHALLA, RECORD '00'.</p>	<p>205. How many minutes does it take to go to the FACILITY using the most common type of transportation?</p>	<p>207. Is HEALTH FACILITY in this thana/union ?</p>
<p>04A. MATERNAL AND CHILD WELFARE CENTER (MCWC) (nearest) NAME: _____ _____ DON'T KNOW NONE</p>	<p>DISTRICT: _____ THANA: _____ LOCATION: _____</p>	<p>GOVERNMENT 01</p>	<p>MILES 1 _____ 2 _____ KILOMETERS.....98 DON'T KNOW98</p>	<p>MINUTES _____ DON'T KNOW98</p>	<p>YES, THANA 1 → 06A YES, UNION 1 → 06A NO2 → 04B</p>
<p>04B. MATERNAL AND CHILD WELFARE CENTER (MCWC) (District) NAME: _____ _____ DON'T KNOW NONE</p>	<p>DISTRICT: _____ THANA: _____ LOCATION: _____</p>	<p>GOVERNMENT 01</p>	<p>MILES 1 _____ 2 _____ KILOMETERS.....98 DON'T KNOW98</p>	<p>MINUTES _____ DON'T KNOW98</p>	

List all of the PRIVATE CLINICS that are available for people in this village/mohalla to use.

201. HEALTH FACILITY	202. Where is the HEALTH FACILITY located?	203. What is the HEALTH FACILITY's operating authority?	204. How far in miles/kilometers is the HEALTH FACILITY located from the center of the village? IF LOCATED IN THE VILLAGE/MOHALLA, RECORD '00'.	205. How many minutes does it take to go to the FACILITY using the most common type of transportation?	207. Is HEALTH FACILITY in this thana /union?
06A. PRIVATE CLINIC (nearest) NAME: _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____	PRIVATE..... 03 RELIGIOUS 04 OTHER 96 DK 98	MILES 1 <input type="checkbox"/> KILOMETERS ... 2 <input type="checkbox"/> DON'T KNOW 98	MINUTES <input type="checkbox"/> <input type="checkbox"/> DON'T KNOW 998	YES, THANA 1 → 06B YES, UNION 1 → 06B NO 2 → 07A
06B. PRIVATE CLINIC NAME: _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____	PRIVATE..... 03 RELIGIOUS 04 OTHER 96 DK 98	MILES 1 <input type="checkbox"/> KILOMETERS ... 2 <input type="checkbox"/> DON'T KNOW 98	MINUTES <input type="checkbox"/> <input type="checkbox"/> DON'T KNOW 998	YES, THANA 1 → 06C YES, UNION 1 → 06C NO 2 → 07A
06C. PRIVATE CLINIC NAME: _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____	PRIVATE..... 03 RELIGIOUS 04 OTHER 96 DK 98	MILES 1 <input type="checkbox"/> KILOMETERS ... 2 <input type="checkbox"/> DON'T KNOW 98	MINUTES <input type="checkbox"/> <input type="checkbox"/> DON'T KNOW 998	YES, THANA 1 → 06D YES, UNION 1 → 06D NO 2 → 07A
06D. PRIVATE CLINIC NAME: _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____	PRIVATE..... 03 RELIGIOUS 04 OTHER 96 DK 98	MILES 1 <input type="checkbox"/> KILOMETERS ... 2 <input type="checkbox"/> DON'T KNOW 98	MINUTES <input type="checkbox"/> <input type="checkbox"/> DON'T KNOW 998	YES, THANA 1 YES, UNION 1 NO 2

List all of the OTHER NGO CLINICS (NON-RSDHP OR NON-UJFHP) that are available for people in this village/mohalla to use.

201. HEALTH FACILITY	202. Where is the HEALTH FACILITY located?	203. What is the HEALTH FACILITY's operating authority?	204. How far in miles/kilometers is the HEALTH FACILITY located from the center of the village? IF LOCATED IN THE VILLAGE/MOHALLA, RECORD '00'.	205. How many minutes does it take to go to the FACILITY using the most common type of transportation?	207. Is HEALTH FACILITY in this thana/union ?
07A. NGO CLINIC (nearest) NAME: _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____	NGO02	MILES1 KILOMETERS...2 DON'T KNOW98	MINUTES... DON'T KNOW998	YES, THANA 1 → 07B YES, UNION 1 → 07B NO2 → 08A
07B. NGO CLINIC NAME: _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____	NGO02	MILES1 KILOMETERS...2 DON'T KNOW98	MINUTES... DON'T KNOW998	YES, THANA 1 → 07C YES, UNION 1 → 07C NO2 → 08A
07C. NGO CLINIC NAME: _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____	NGO02	MILES1 KILOMETERS...2 DON'T KNOW98	MINUTES... DON'T KNOW998	YES, THANA 1 → 07D YES, UNION 1 → 07D NO2 → 08A
07D. NGO CLINIC NAME: _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____	NGO02	MILES1 KILOMETERS...2 DON'T KNOW98	MINUTES... DON'T KNOW998	YES, THANA 1 YES, UNION 1 NO2

List all of the **COMMUNITY CLINICS** that are available for people in this village/mohalla to use.

201. HEALTH FACILITY	202. Where is the HEALTH FACILITY located?	203. What is the HEALTH FACILITY's operating authority?	204. How far in miles/kilometers is the HEALTH FACILITY located from the center of the village? IF LOCATED IN THE VILLAGE/MOHALLA, RECORD '00'.	205. How many minutes does it take to go to the FACILITY using the most common type of transportation?	207. Is HEALTH FACILITY in this thana/Union ?
08A. COMMUNITY CLINIC (nearest) NAME: _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____	GOVERNMENT01	MILES1 KILOMETERS ...2 DON'T KNOW98	MINUTES... DON'T KNOW998	YES, THANA 1 → 08B YES, UNION 1 → 08B NO.....2 → 09A
08B. COMMUNITY CLINIC (Union) NAME: _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____	GOVERNMENT01	MILES1 KILOMETERS ...2 DON'T KNOW98	MINUTES... DON'T KNOW998	

List all of the RURAL DISPENSARIES that are available for people in this village/mohalla to use.

<p>201. HEALTH FACILITY</p> <p>09. RURAL DISPENSARY (nearest)</p> <p>NAME: _____</p> <p>DON'T KNOW</p> <p>NONE</p>	<p>DISTRICT: _____</p> <p>THANA: _____</p> <p>LOCATION: _____</p>	<p>202. Where is the HEALTH FACILITY located?</p>	<p>GOVERNMENT01</p>	<p>203. What is the HEALTH FACILITY's operating authority?</p>	<p>MILES1</p> <p>KILOMETERS ...2</p> <p>DON'T KNOW98</p>	<p>204. How far in miles/kilometers is the HEALTH FACILITY located from the center of the village? IF LOCATED IN THE VILLAGE/MOHALLA, RECORD '00'.</p>	<p>MINUTES... <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/></p> <p>DON'T KNOW998</p>	<p>205. How many minutes does it take to go to the FACILITY using the most common type of transportation?</p>	<p>YES, THANA 1</p> <p>YES, UNION 1</p> <p>NO.....2</p>	<p>207. Is HEALTH FACILITY in this thana/union?</p>
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List all of the SATELLITE CLINICS that provide services to individuals in this village/mohalla.

201. HEALTH FACILITY	202. Where is the HEALTH FACILITY located?	203. What is the HEALTH FACILITY's operating authority?	204. How far in miles/kilometers is the HEALTH FACILITY located from the center of the village? IF LOCATED IN THE VILLAGE/MOHALLA, RECORD '00'.	205. How many minutes does it take to go to the FACILITY using the most common type of transportation?	207. Is HEALTH FACILITY in this village ?
10A. SATELLITE CLINIC (Nearest) NAME: _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____	GOVERNMENT01 NGO02 PRIVATE03 RELIGIOUS04 OTHER96 DK98	MILES1 KILOMETERS ...2 DON'T KNOW98	MINUTES... DON'T KNOW 998	YES.....1 NO2
10B. SATELLITE CLINIC NAME: _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____	GOVERNMENT01 NGO02 PRIVATE03 RELIGIOUS04 OTHER96 DK98	MILES1 KILOMETERS ...2 DON'T KNOW98	MINUTES... DON'T KNOW 998	YES.....1 NO2
10C. SATELLITE CLINIC NAME: _____ DON'T KNOW NONE	DISTRICT: _____ THANA: _____ LOCATION: _____	GOVERNMENT01 NGO02 PRIVATE03 RELIGIOUS04 OTHER96 DK98	MILES1 KILOMETERS ...2 DON'T KNOW98	MINUTES... DON'T KNOW 998	YES.....1 NO2
10D. SATELLITE CLINIC NAME: _____ NONE	DISTRICT: _____ THANA: _____ LOCATION: _____	GOVERNMENT01 NGO02 PRIVATE03 RELIGIOUS04 OTHER96 DK98	MILES1 KILOMETERS ...2 DON'T KNOW98	MINUTES... DON'T KNOW 998	YES.....1 NO2

3: List of the Health and Family Planning Workers. Please provide us the name of all health and family planning fieldworkers working in this cluster/village/mohalla

Name of the fieldworker	301. What is the title/position of this fieldworker?	302. Under what authority does this fieldworker work ?	303: Does he/she live in this locality?	304. Where does he/she live?
01. NAME: _____	FWW01 SACMO/MA02 FWA03 FWA with CSBA04 HEALTH ASSISTANT05 HA with CSBA06 COMMUNITY MOBILIZER ...07 OTHER96 DON'T KNOW98	GOVERNMENT01 NGO02 PRIVATE03 RELIGIOUS04 OTHER96 DON'T KNOW98	YES1 NO2 →	DISTRICT: THANA: UNION: VILLAGE:
02. NAME: _____	FWW01 SACMO/MA02 FWA03 FWA with CSBA04 HEALTH ASSISTANT05 HA with CSBA06 COMMUNITY MOBILIZER ...07 OTHER96 DON'T KNOW98	GOVERNMENT01 NGO02 PRIVATE03 RELIGIOUS04 OTHER96 DON'T KNOW98	YES1 NO2 →	DISTRICT: THANA: UNION: VILLAGE:
03. NAME: _____	FWW01 SACMO/MA02 FWA03 FWA with CSBA04 HEALTH ASSISTANT05 HA with CSBA06 COMMUNITY MOBILIZER ...07 OTHER96 DON'T KNOW98	GOVERNMENT01 NGO02 PRIVATE03 RELIGIOUS04 OTHER96 DON'T KNOW98	YES1 NO2 →	DISTRICT: THANA: UNION: VILLAGE:
04. NAME: _____	FWW01 SACMO/MA02 FWA03 FWA with CSBA04 HEALTH ASSISTANT05 HA with CSBA06 COMMUNITY MOBILIZER ...07 OTHER96	GOVERNMENT01 NGO02 PRIVATE03 RELIGIOUS04 OTHER96 DON'T KNOW98	YES1 NO2 →	DISTRICT: THANA: UNION: VILLAGE:

<p>Name of the fieldworker</p>	<p>301. What is the title/position of this fieldworker?</p>	<p>302. Under what authority does this fieldworker work ?</p>	<p>303: Does he/she live in this locality?</p>	<p>304. Where does he/she live?</p>
<p>05. NAME: _____</p>	<p>DON'T KNOW 98 FWW 01 SACMO/MA 02 FWA 03 FWA with CSBA 04 HEALTH ASSISTANT 05 HA with CSBA 06 COMMUNITY MOBILIZER ... 07 OTHER 96 DON'T KNOW 98</p>	<p>GOVERNMENT 01 NGO 02 PRIVATE 03 RELIGIOUS 04 OTHER 96 DON'T KNOW 98</p>	<p>YES 1 NO 2 →</p>	<p>DISTRICT: THANA: UNION: VILLAGE:</p>

5: Availability of Doctors (allopathic, homeopathic) and Pharmacies

Please tell us about the doctors and pharmacies working in this village/mohalla.

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
401	Are there any allopathic/MBBS doctors in this village/mohalla?	YES 1 NO 2 →	403
402	How many allopathic/MBBS doctors are in this village/mohalla?	ONE 1 2-5 2 MORE THAN 5 3 DON'T KNOW 8	
403	How far away is the nearest allopathic/MBBS doctor?	MILE 1 <input type="text"/> <input type="text"/> KILOMETER 2 <input type="text"/> <input type="text"/> DK 998 IN THIS VILLAGE/ MOHALLA 000	
404	Are there any homeopathic doctors in this village/mohalla?	YES 1 NO 2 →	406
405	How many homeopathic doctors are in this village/mohalla?	ONE 1 2-5 2 MORE THAN 5 3 DON'T KNOW 8	
406	How far away is the nearest homeopathic doctor?	MILE 1 <input type="text"/> <input type="text"/> KILOMETER 2 <input type="text"/> <input type="text"/> DK 998 IN THIS VILLAGE/ MOHALLA 000	
407	Are there any ayurvedic/unani doctors in this village/mohalla?	YES 1 NO 2 →	409
408	How many ayurvedic/unani doctors are in this village/mohalla?	ONE 1 2-5 2 MORE THAN 5 3 DON'T KNOW 8	
409	How far away is the nearest ayurvedic/unani doctor?	MILE 1 <input type="text"/> <input type="text"/> KILOMETER 2 <input type="text"/> <input type="text"/> DK 998 IN THIS VILLAGE/ MOHALLA 000	
410	Are there any pharmacies in this village/mohalla?	YES 1 NO 2 →	412
411	How many pharmacies are in this village/mohalla?	ONE 1 2-5 2 MORE THAN 5 3 DON'T KNOW 8	
412	How far away is the nearest pharmacy?	MILE 1 <input type="text"/> <input type="text"/> KILOMETER 2 <input type="text"/> <input type="text"/> DK 998 IN THIS VILLAGE/ MOHALLA 000	

6: List of CSBA:

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
501	Is there any trained birth attendant/dai in your community who delivered baby at home?	YES.....1 NO.....2	501A END

Please tell us the names of all birth attendants working in your community

501A. Name	501B. What is the position of this birth attendants?	501C. Under what authority does this birth attendant work?	501D. Only for CSBA , where does she live
	QUALIFIED DOCTOR..... 01 NURSE/MID-WIFE /PARAMEDIC 02 FWV 03 MA/SACMO 04 HEALTH ASSISTANT 05 FWA 06 FWA WITH CSBA 07 HA WITH CSBA 08 TRAINED TBA..... 09 OTHER _____ 96	GOVERNMENT01 NGO02 PRIVATE.....03 RELIGIOUS.....04 OTHER96 DON'T KNOW 98	Union: <hr/> Village: _____ <hr/> Sample village 1 Diff. village 2
	QUALIFIED DOCTOR..... 01 NURSE/MID-WIFE /PARAMEDIC 02 FWV 03 MA/SACMO 04 HEALTH ASSISTANT 05 FWA 06 FWA WITH CSBA 07 HA WITH CSBA 08 TRAINED TBA..... 09 OTHER _____ 96	GOVERNMENT01 NGO02 PRIVATE.....03 RELIGIOUS.....04 OTHER96 DON'T KNOW 98	UNION: <hr/> VILLAGE: _____ <hr/> Sample village 1 Diff. village 2
	QUALIFIED DOCTOR..... 01 NURSE/MID-WIFE /PARAMEDIC 02 FWV 03 MA/SACMO 04 HEALTH ASSISTANT 05 FWA 06 FWA WITH CSBA 07 HA WITH CSBA 08 TRAINED TBA..... 09 OTHER _____ 96	GOVERNMENT01 NGO02 PRIVATE.....03 RELIGIOUS.....04 OTHER96 DON'T KNOW 98	UNION: <hr/> VILLAGE: _____ <hr/> Sample village 1 Diff. village 2
ENDING TIME	HOUR <input type="text"/> <input type="text"/> MINUTES <input type="text"/> <input type="text"/>		

END OF INTERVIEW

BANGLADESH MATERNAL MORTALITY AND MATERNAL HEALTH CARE SURVEY (BMMS) 2016

VERBAL AUTOPSY QUESTIONNAIRE

**National Institute of Population Research and Training (NIPORT)
Ministry of Health and Family Welfare
Associates for Community and Population Research (ACPR)
Mitra and Associates
icddr,b
MEASURE Evaluation**

**SECTION 2
BACKGROUND INFORMATION**

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
2001	Time of starting interview:	_ _ hrs _ _ mins	
2002	In what month and year did _____ (NAME) die?	MONTH _ _ DON'T KNOW MONTH 98 YEAR _ _ _ _ DON'T KNOW YEAR 9998	
2002a	Did she die suddenly? (Within 24 hours of getting sick)	YES 1 NO 2 DON'T KNOW 8	
2002b	In what month and year did _____ (NAME) born?	MONTH _ _ DON'T KNOW MONTH 98 YEAR _ _ _ _ DON'T KNOW YEAR 9998	
2003	How old was _____ (NAME) at the time of her death? (write in completed years)	_ _ years	
2003b	What was _____ (NAME) place of birth? (Write 99 if don't know)	DIVISION: <input type="checkbox"/>	
		DISTRICT: <input type="checkbox"/> <input type="checkbox"/>	
		UPAZILA/THANA: <input type="checkbox"/> <input type="checkbox"/>	
		UNION/WARD: <input type="checkbox"/> <input type="checkbox"/>	
		MOUZA/MOHALLA: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
2003c	What was _____ (NAME) place of normal residence 1 to 5 years before death? (Write 99 if don't know)	DIVISION: <input type="checkbox"/>	
		DISTRICT: <input type="checkbox"/> <input type="checkbox"/>	
		UPAZILA/THANA: <input type="checkbox"/> <input type="checkbox"/>	
		UNION/WARD: <input type="checkbox"/> <input type="checkbox"/>	
		MOUZA/MOHALLA: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
2003d	What was _____ (NAME) ethnicity? (if Bangali write 98)	_____	
2004	Did _____ (NAME) ever study in a school or madrasah?	YES 1 NO 2 DON'T KNOW 8	2006 2006
2005	How many years of schooling did she complete?	Class _ _ years DON'T KNOW 98	
2006	Did _____ (NAME) do any work, other than her own household chores?	YES 1 NO 2 DON'T KNOW 8	2008a 2008a
2007	Did _____ (NAME) receive any payment or things for the work, or did she receive nothing?	RECEIVED NOTHING 0 RECEIVED CASH 1 RECEIVED OTHER THINGS 2 RECEIVED CASH AND OTHER THINGS 3 DON'T KNOW/UNSURE 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
2008a	What was the date of her marriage?	MONTH DON'T KNOW MONTH 98 YEAR DON'T KNOW YEAR	
2008b	How old was _____(NAME) at the time of her marriage? (write in completed years)	years	
2008	What was her marital status at the time of death?	MARRIED 1 SEPARATED 2 DESERTED 3 DIVORCED 4 WIDOWED 5 NEVER MARRIED 6	2011a 2011a 2011a 2011a 2011a
2009	How old was her husband when _____(NAME) died? [IF RESPONDENT IS WOMAN'S HUSBAND, ASK] How old were you when _____(NAME) died?	Years DON'T KNOW 98	
2010	Did her husband ever study in a school or madrasah? [IF RESPONDENT IS WOMAN'S HUSBAND, ASK] Did you ever study in a school or madrasah?	YES 1 NO 2 DON'T KNOW 8	2011a 2011a
2011	How many years of schooling did her husband complete? [IF RESPONDENT IS WOMAN'S HUSBAND, ASK] How many years of schooling did you complete?	Class years DON'T KNOW 98	
2011a	Did she ever have a period or menstruate?	YES 1 NO 2 DON'T KNOW 8	3001 3001
2011b	Did she have excessive vaginal bleeding in between menstrual periods?	YES 1 NO 2 DON'T KNOW 8	
2011c	Did her menstrual period stop naturally because of menopause?	YES 1 NO 2 DON'T KNOW 8	2011e 2011e
2011d	Did she have vaginal bleeding after cessation of menstruation?	YES 1 NO 2 DON'T KNOW 8	2012 2012
2011e	Was there excessive vaginal bleeding in the week prior to death?	YES 1 NO 2 DON'T KNOW 8	
2011f	At the time of death was her period overdue?	YES 1 NO 2 DON'T KNOW 8	
2011g	For how many weeks had her period been overdue?	 weeks DON'T KNOW/UNSURE 9998	
2012	Did _____(NAME) have any children? (Include live births and still births)	YES 1 NO 2 DON'T KNOW 8	3001 3001
2013	How many live births did she have? (If none, write =00)	Number of live births DON'T KNOW 98	
2013a	How many still births did she have?(If none, write =00)	Number of still births DON'T KNOW 98	

SECTION 3
GENERAL INFORMATION ABOUT EVENTS PRECEDING DEATH

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
3001	Was the _____ (NAME) ill before death or did she have any health problem before death?	YES 1 NO 2 DON'T KNOW/UNSURE 8	3003 3003
3002	For how many days was she ill or did she have the health problem before she died? <i>(If less than 1 day write 00)</i>	DAYS 1 <input type="text"/> <input type="text"/> MONTHS 2 <input type="text"/> <input type="text"/> DON'T KNOW/UNSURE 998	
3003	Where did she die?	HUSBAND'S HOME 1 HER PARENT'S HOME 2 HOSPITAL /CLINIC 3 IN-TRANSIT 4 OTHERS 7	3009 3009 3009 3009
3004	What is the name of hospital/clinic where she died?	NAME OF HOSPITAL /CLINIC _____	
3005	Did anyone from the hospital/clinic tell you why she died?	YES 1 NO 2 DON'T KNOW/UNSURE 8	3009 3009
3006	What was/were the main reason(s) given by the hospital/clinic as to why she died? Verbatim: (1) _____ (2) _____	1. <input type="text"/> <input type="text"/> 2. <input type="text"/> <input type="text"/> 3. DON'T KNOW/UNSURE 998	
3007	Do you have any death certificate/ paper from hospital?	YES 1 NO 2 DON'T KNOW/UNSURE 8	3009 3009
3008	INTERVIEWER: Check the death certificate/paper. Record the cause(s) of death as mentioned in the certificate/paper. Verbatim: (1) _____ (2) _____	1. <input type="text"/> <input type="text"/> 2. <input type="text"/> <input type="text"/> 3. DON'T KNOW/UNSURE 998	
3009	What do you think is the cause(s) of her death? Tell us the two main reasons. Verbatim: CAUSE (1) _____ CAUSE (2) _____	1. <input type="text"/> <input type="text"/> 2. <input type="text"/> <input type="text"/> 3. DON'T KNOW/UNSURE 998	
3010	Did any doctor/health care provider ever tell you or _____ (NAME) that she had _____: (READ OUT EACH DISEASE)	YES NO DK	
	Hypertension?	HYPERTENSION 1 2 8	
	Diabetes?	DIABETES 1 2 8	
	Epilepsy?	EPILEPSY 1 2 8	
	TB?	TB 1 2 8	
	Heart disease?	HEART DISEASE 1 2 8	
	Disease of the blood?	DISEASE OF BLOOD 1 2 8	
	Asthma?	ASTHMA 1 2 8	
	Cancer (Please specify _____)	CANCER 1 2 8	
	HIV/AIDS?	HIV/AIDS 1 2 8	
	Malaria?	MALARIA 1 2 8	
	Dengue fever?	DENGUE FEVER 1 2 8	
	Measles?	MEASLES 1 2 8	
	Other chronic illness (Please specify _____)	OTHER CHRONIC DISEASE 1 2 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
3011	Was she hospitalized in the last 3 years before her death?	YES 1 NO 2 DON'T KNOW 8	4001 4001
3012	How long (day/month/year) before her death was she last hospitalized? <i>If time is less than 1 day then write 00 days. If time is less than 1 month then write in completed days. If time is less than 1 year then write in completed months. If time is 12 months or more then write in completed years.</i>	DAYS 1 MONTHS 2 YEARS 3 DON'T KNOW/UNSURE 998	
3013	Why was she last hospitalized? Verbatim: (1) _____ (2) _____	1. 2. 3. DON'T KNOW/UNSURE 998	
3014	Did she have any operation/surgery in the last 3 years but before death?	YES 1 NO 2 DON'T KNOW 8	4001 4001
3015	How long before her death did she have the last operation? <i>If time is less than 1 day then write 00 days. If time is less than 1 month then write in completed days. If time is less than 1 year then write in completed months. If time is 12 months or more then write in completed years.</i>	DAYS 1 MONTHS 2 YEARS 3 DON'T KNOW/UNSURE 998	
3016	Why did she have the operation/surgery? Verbatim: (1) _____ (2) _____	1. 2. 3. DON'T KNOW/UNSURE 998	
3016a	Did she have an operation to remove her uterus shortly before death?	YES 1 NO 2 DON'T KNOW 8	

SECTION 4. DESCRIPTIVE REPORT OF ILLNESS AND EVENTS THAT LED TO THE DEATH

4001. Explain to the respondent that we would like to hear the details about everything that happened during the last illness before _____ death starting from the beginning of the illness and also about what happened during the final hours of the her death.

Verbatim:

**SUMMARY OF SYMPTOMS AND SIGNS OBSERVED DURING THE LAST ILLNESS BEFORE DEATH
AS REPORTED BY RESPONDENT. PLEASE LIST IN THE ORDER THEY APPEARED**

4002. Symptoms		4003. Duration <i>If time is less than 1 day then write 00 days. If time is less than 1 month then write in completed days. If time is less than 1 year then write in completed months. If time is 12 months or more then write in completed years</i>	4004. Severity
1 _____	_ _	DAYS.....1 _ _ MONTHS.....2 _ _ YEARS.....3 _ _ DO NOT KNOW/UNSURE.....998	VERY SEVERE..... 1 MODERATE..... 2 MILD 3
2 _____	_ _	DAYS.....1 _ _ MONTHS.....2 _ _ YEARS.....3 _ _ DO NOT KNOW/UNSURE.....998	VERY SEVERE..... 1 MODERATE..... 2 MILD 3
3 _____	_ _	DAYS.....1 _ _ MONTHS.....2 _ _ YEARS.....3 _ _ DO NOT KNOW/UNSURE.....998	VERY SEVERE..... 1 MODERATE..... 2 MILD 3
4 _____	_ _	DAYS.....1 _ _ MONTHS.....2 _ _ YEARS.....3 _ _ DO NOT KNOW/UNSURE.....998	VERY SEVERE..... 1 MODERATE..... 2 MILD 3
5 _____	_ _	DAYS.....1 _ _ MONTHS.....2 _ _ YEARS.....3 _ _ DO NOT KNOW/UNSURE.....998	VERY SEVERE..... 1 MODERATE..... 2 MILD 3
6 _____	_ _	DAYS.....1 _ _ MONTHS.....2 _ _ YEARS.....3 _ _ DO NOT KNOW/UNSURE.....998	VERY SEVERE..... 1 MODERATE..... 2 MILD 3
7 _____	_ _	DAYS.....1 _ _ MONTHS.....2 _ _ YEARS.....3 _ _ DO NOT KNOW/UNSURE.....998	VERY SEVERE..... 1 MODERATE..... 2 MILD 3
8 _____	_ _	DAYS.....1 _ _ MONTHS.....2 _ _ YEARS.....3 _ _ DO NOT KNOW/UNSURE.....998	VERY SEVERE..... 1 MODERATE..... 2 MILD 3
9 _____	_ _	DAYS.....1 _ _ MONTHS.....2 _ _ YEARS.....3 _ _ DO NOT KNOW/UNSURE.....998	VERY SEVERE..... 1 MODERATE..... 2 MILD 3

SECTION 5
DETERMINING ELIGIBILITY FOR INTERVIEW MODULES 1-3

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
5001	Was the woman pregnant at the time of death?	YES 1 NO 2 PROBABLY YES 3 DON'T KNOW 8	5004 5004
5002	How many months was she pregnant at the time of death?	MONTH <input type="text"/> <input type="text"/> <input type="text"/> DON'T KNOW 98	
5003	Did the woman die before labour pain began or did she die after labour pain began?	MOTHER DIED BEFORE LABOUR BEGAN.. 1 MOTHER DIED AFTER LABOUR BEGAN BUT BEFORE BIRTH OF CHILD 2	6101 7101
5004	Was _____ (NAME) ever pregnant while still alive?	YES 1 NO 2	8001
5005	What was the outcome of her last pregnancy?	LIVE BIRTH 1 STILL BIRTH 2 ABORTION/MISCARRIAGE/MR 3 DO NOT KNOW/UNSURE 8	5006 5006
5005a	Was the baby born more than one month early?	YES 1 NO 2 DON'T KNOW 8	
5006a	What was the month and year of outcome of her last pregnancy?	MONTH <input type="text"/> <input type="text"/> <input type="text"/> DON'T KNOW MONTH 98 YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DON'T KNOW YEAR 9998	
5006	How long after her delivery/last birth/still birth/abortion/miscarriage/MR did she die? If time is less than 1 day then write 00 days. If time is less than 2 months then write in completed days, if between 2 and 23 months then write in completed months, and if the time between pregnancy outcome and death is 24 months or more then write in completed years.	DAYS 1 <input type="text"/> <input type="text"/> <input type="text"/> MONTHS 2 <input type="text"/> <input type="text"/> <input type="text"/> YEARS 3 <input type="text"/> <input type="text"/> <input type="text"/> DON'T KNOW/UNSURE 998	
5007	Interviewer: Check answer to Q5006	Less than 12 months 1 12 months (1 year) or more 2	8001
5008	Interviewer: Check answer to Q5005 and circle the appropriate code:	Q5005 IS CODED EITHER 1 OR 2 1 Q5005 IS CODED EITHER 3 OR 8 2	7101 6102

SECTION 6
MODULE 1: FOR DEATHS DURING PREGNANCY PRIOR TO ONSET OF LABOUR OR WITHIN 1 YEAR OF
ABORTION/MISCARRIAGE/MR

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
6101	Did _____ (NAME) ever see anyone for a medical checkup during that pregnancy?	YES 1 NO 2 DON'T KNOW 8	6103 6201 6201
6102	Did _____ (NAME) ever see anyone for a medical checkup during the last pregnancy before she died?	YES 1 NO 2 DON'T KNOW 8	6201 6201
6103	From whom did she receive the medical checkup when she was pregnant? IF YES: Whom did she see? Anyone else? PROBE TO IDENTIFY EACH TYPE OF PERSON AND RECORD ALL MENTIONED. IF CODE 'D' CIRCLED _____ (WRITE NAME OF CSBA)	HEALTH PERSONNEL QUAL. DOCTORA NURSE/MIDWIFE/PARAMEDICB FAMILY WELFARE VISITORC COMMUNITY SKILLED BIRTH ATTENDANTD MA/SACMOE COMMUNITY HEALTH CARE PROVIDERF HEALTH ASSTG FAMILY WELFARE ASSISTANTH NGO WORKERI OTHER PERSON TRAINED TBAJ UNTRAINED TBAK UNQUALIFIED DOCTORL OTHER _____ X (SPECIFY)	
6104	Did she first seek a medical check-up during her last pregnancy because she had a problem or just for a checkup?	BECAUSE OF PROBLEM ONLY 1 FOR CHECK UP ONLY 2 FOR BOTH 3 DON'T KNOW 8	6106 6106
6105	For what problem did she first seek medical check-up during her last pregnancy? Verbatim (1) _____ (2) _____ _____	_____ _____ _____ DON'T KNOW/UNSURE 98	
6106	How many months pregnant was she at the time of her first medical check-up during her last pregnancy?	MONTHS..... _____ _____ DON'T KNOW/UNSURE 98	
6107	How many times did she get medical check-up during her last pregnancy?	NUMBER OF TIMES..... _____ _____ DON'T KNOW/UNSURE 98	
6201	Did she have swelling around her ankles during her pregnancy?	YES 1 NO 2 DON'T KNOW 8	
6202	Did she have puffiness of the face during her pregnancy?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
6203	Did she complain of blurred vision during her pregnancy?	YES 1 NO 2 DON'T KNOW 8	6204 6204
6203a	During the last 3 months of pregnancy did she suffer from blurred vision?	YES 1 NO 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
6204	Did she have her blood pressure measured during her pregnancy?	YES 1 NO 2 DON'T KNOW 8	6206 6206
6205	Do you know whether her blood pressure was normal or high or low?	NORMAL 1 HIGH 2 LOW 3 DON'T KNOW 8	
6206	Did she have any loss of consciousness during that pregnancy?	YES 1 NO 2 DON'T KNOW 8	6207 6207
6206a	For how many days did she have loss of consciousness?	<input type="text"/> <input type="text"/> days DON'T KNOW/UNSURE 9998	
6206b	Did the unconsciousness continue until death?	YES 1 NO 2 DON'T KNOW 8	
6207	Did she have fits (convulsions) during that pregnancy?	YES 1 NO 2 DON'T KNOW 8	6209 6209
6208	How many days/months before her death did the fits start? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> months days DON'T KNOW/UNSURE 9998	
6209	Did she have headache during that pregnancy?	YES 1 NO 2 DON'T KNOW/UNSURE 8	6301 6301
6210	Was the headache continuous or on and off?	CONTINUOUS 1 ON AND OFF 2 DON'T KNOW/UNSURE 8	
6211	How was the headache; severe, moderate, mild, or sometimes mild and sometimes severe?	SEVERE 1 MODERATE 2 MILD 3 SOMETIMES MILD AND SOMETIMES SEVERE 4 DON'T KNOW/UNSURE 8	
6301	Did _____(NAME) have fever during that pregnancy or before her death?	YES 1 NO 2 DON'T KNOW 8	6306 6306
6302	How many days/months before her death did the fever start and end? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> months days END <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> months days DIED WITH FEVER..... 9995 DON'T KNOW/UNSURE 9998	
6303	How was the fever like? high or mild?	HIGH 1 MILD 2 DON'T KNOW/UNSURE 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
6304	Was the fever continuous or on and off?	CONTINUOUS 1 AFTER EVERY 1 - 2 DAYS 2 AT NIGHT ONLY 3 OTHER(specify) _____ 7 DON'T KNOW/UNSURE 8	
6305	Did the fever come with severe chills?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
6306	Did the colour of her eye change to yellow (jaundice) during that pregnancy?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
6307	Did she have itching of skin at any time during that pregnancy?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
6308	Did her eyes, face or palms look pale (anaemic) during that pregnancy?	YES NO DK PALE EYES-----1 ---- 2 ---- 8 PALE FACE-----1 ---- 2 ---- 8 PALE PALM-----1 ---- 2 ---- 8	
6309	Did she have a cough during that pregnancy?	YES 1 NO 2 DON'T KNOW 8	6313 6313
6310	How many days or months before her death did the cough start? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START months days DON'T KNOW/UNSURE 9998	
6311	Did the cough produce sputum?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
6312	Did she cough blood?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
6313	Did she have difficulty in breathing during that pregnancy?	YES 1 NO 2 DON'T KNOW 8	6319 6319
6314	Was the difficulty in breathing continuous or on and off?	CONTINUOUS 1 ON AND OFF 2 DON'T KNOW/UNSURE 8	
6315	How many days/months before her death did the difficulty in breathing start and end? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START months days months days END months days DID NOT IMPROVE/Continued until death 9995 DON'T KNOW/UNSURE 9998	
6316	Was she breathless even on light work? <i>(Except what is normally seen in late pregnancy, if applicable)</i>	YES 1 NO 2 DON'T KNOW/UNSURE 8	
6317	Was she breathless on lying on her back? <i>(Except what is normally seen in late pregnancy, if applicable)</i>	YES 1 NO 2 DON'T KNOW/UNSURE 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
6318	Was there pain in the chest with breathing?	YES 1 NO 2 DON'T KNOW 8	
6319	Did she have palpitations during that pregnancy?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
6320	Did she have chest pain during that pregnancy?	YES 1 NO 2 DON'T KNOW 8	6326 6326
6321	Was the pain mild, moderate or severe?	SEVERE 1 MODERATE 2 MILD 3 DON'T KNOW/UNSURE 8	
6322	Did the pain start suddenly or gradually?	SUDDENLY 1 GRADUALLY 2 DON'T KNOW/UNSURE 8	
6323	Was the pain continuous or on and off?	CONTINUOUS 1 ON AND OFF 2 DON'T KNOW/UNSURE 8	
6324	How many days/months before her death did the pain start and end? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START months days END months days DID NOT IMPROVE/ Continued until death 9995 DON'T KNOW/UNSURE 9998	
6325	When she had the chest pain, did she also have pain elsewhere in her body? If, yes, where else did she have pain at the same time?	SHOULDER-----A NECK-----B ARMS-----C NO PAIN ANYWHERE-----D OTHER_____X	
6326	Did she have abdominal pain during that pregnancy before her death?	YES 1 NO 2 DON'T KNOW 8	6329 6329
6327	How many days/months before her death did the abdominal pain start and end? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START months days END months days DID NOT IMPROVE/ Continued until death9995 DON'T KNOW/UNSURE 9998	
6328	Was the pain mild, moderate or severe?	SEVERE 1 MODERATE 2 MILD 3 SOMETHIMES MILD/SOMETIMES MORE ... 4 DON'T KNOW/UNSURE 8	
6329	Was there any change in the color of her urine during that pregnancy before death?	YES 1 NO 2 DON'T KNOW 8	6331 6331

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
6506	Did she have other episodes of bleeding during this pregnancy?	YES 1 NO 2 DON'T KNOW 8	6508 6508
6507	Were those episodes of bleeding painful?	YES 1 NO 2 DON'T KNOW 8	
6508	Did she have a vaginal examination during her illness?	YES 1 NO 2 DON'T KNOW 8	6701 6701
6509	Did the vaginal examination increase the bleeding?	YES 1 NO 2 NOT APPLICABLE (no bleeding)..... 7 DON'T KNOW 8	
6701	Was any attempt made during her pregnancy to induce abortion or to terminate the pregnancy?	YES 1 NO 2 DON'T KNOW 8	
6702	Did the woman do MR?	YES 1 NO 2 DON'T KNOW 8	
6703	CHECK Q6701 AND Q6702.	Q6701 CODED YES OR Q6702 CODED YES 1 Q6701 NOT CODED YES AND Q6702 NOT CODED YES 2	6801
6704	Whose help did she seek to induce abortion or to terminate the pregnancy or to do MR?	HEALTH PROFESSIONAL QUALIFIED DOCTOR (MBBS)----- A NURSE/MIDWIFE/PARAMEDIC----- B FAMILY WELFARE VISITOR----- C COMMUNITY SKILLED BIRTH ATTENDANT----- D MA/SACMO----- E HEALTH ASSISTANT ----- F FAMILY WELFARE ASSISTANT ----- G OTHER PROVIDER TRAINED TBA ----- H UNTRAINED TBA----- I UNQUALIFIED DOCTOR----- J TRADITIONAL HEALER (HERBALIST, HOMEOPATH, SPIRITUAL HEALER) ----- K RELATIVE/FRIENDS ----- L OTHER NGOs BRAC SHASTHAY SEBIKA----- M OTHER SHASTHA SEBIKA----- N OTHER FIELD WORKER----- O OTHER _____ ----- X (SPECIFY) DON'T KNOW/UNSURE ----- Y NONE - SELF INDUCED ----- Z	
6705	Was any foreign object inserted inside the woman to induce abortion or to terminate the pregnancy or to do MR?	YES 1 NO 2 DON'T KNOW 8	6707 6707
6706	What object was inserted?	STICK A TUBES B SYRINGES C OTHERS _____ X DON'T KNOW Y	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
6707	Did the woman take any drugs or injections, or eat anything to induce abortion or to terminate the pregnancy or to do MR?	YES 1 NO 2 DON'T KNOW 8	6709 6709
6708	What drugs or injections did she take? Verbatim (1) _____ (2) _____ _____	_____ _____ _____ _____ DON'T KNOW/UNSURE 98	
6709	Did she have any of the following after inducing abortion or terminating her pregnancy or doing MR? [please read the choices and probe] Foul-smelling discharge Fever Abdominal distention Severe bleeding	Yes No Don't Know Foul-smelling discharge 1 2 8 Fever 1 2 8 Abdominal distention 1 2 8 Severe bleeding 1 2 8	
6801	Did she have a pregnancy prior to the last one before death?	YES 1 NO 2	8901
	THE FOLLOWING QUESTIONS (Q6802-Q6807) REFERS TO ALL PREVIOUS PREGNANCIES PRIOR TO THE LAST ONE BEFORE DEATH		
6802	Did she ever have any complication in a previous pregnancy?	YES 1 NO 2 DON'T KNOW 8	
6803	Did she have a cesarean section in a previous pregnancy?	YES 1 NO 2 DON'T KNOW 8	
6804	Did she have Forcep / Ventos in a previous pregnancy? (Interviewer: explain to respondents what Forcep/Ventos means)	YES, FORCEP 1 YES, VENTOS 2 YES, BOTH FORCEP & VENTOS 3 NO 4 DON'T KNOW/UNSURE 8	
6805	Did _____ (NAME) ever have any still births in a previous pregnancy? If yes, how many? (If none, write =0)	Times _____ DON'T KNOW 8	
6806	Did _____ (NAME) ever have any miscarriages/abortions in a previous pregnancy? If yes, how many times? (If none, write =0)	Times _____ DON'T KNOW 8	
6807	Did _____ (NAME) ever have any MRs in a previous pregnancy? If yes, how many times? (If none, write =0)	Times _____ DON'T KNOW 8	8901 8901
6807a	Did she die during an abortion?	YES 1 NO 2 DON'T KNOW 8	

SECTION 7
MODULE 2: FOR DEATHS DURING LABOUR, DELIVERY OR AFTER DELIVERY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
7101	Did _____ (NAME) ever see anyone for a medical checkup during the last pregnancy before she died?	YES 1 NO 2 DON'T KNOW 8	7201 7201
7102	From whom did she receive the medical checkup when she was pregnant? IF YES: Whom did she see? Anyone else? PROBE TO IDENTIFY EACH TYPE OF PERSON AND RECORD ALL MENTIONED. IF CODE 'D' CIRCLED _____ (WRITE NAME OF CSBA)	HEALTH PERSONNEL QUAL. DOCTOR.....A NURSE/MIDWIFE/PARAMEDIC.....B FAMILY WELFARE VISITOR.....C COMMUNITY SKILLED BIRTH ATTENDANT.....D MA/SACMO.....E COMMUNITY HEALTH CARE PROVIDER.....F HEALTH ASST.....G FAMILY WELFARE ASSISTANT.....H NGO WORKER.....I OTHER PERSON TRAINED TBA.....J UNTRAINED TBA.....K UNQUALIFIED DOCTOR.....L OTHER _____X (SPECIFY)	
7103	Did she first seek medical checkup during her last pregnancy because she had a problem or just for a checkup?	BECAUSE OF PROBLEM ONLY..... 1 FOR CHECK UP ONLY 2 FOR BOTH..... 3 DON'T KNOW 8	7105 7105
7104	For what problem did she first seek medical checkup during her last pregnancy? Verbatim (1) _____ (2) _____ —	____ ____ ____ ____ DON'T KNOW/UNSURE-----98	
7105	How many months pregnant was she at the time of her first medical checkup during her last pregnancy?	MONTHS..... ____ ____ DON'T KNOW/UNSURE-----98	
7106	How many times did she get medical check-up during her last pregnancy?	NUMBER OF TIMES..... ____ ____ DON'T KNOW/UNSURE-----98	
7201	Did she have swelling around her ankles during her pregnancy?	YES 1 NO 2 DON'T KNOW 8	
7202	Did she have puffiness of the face during her pregnancy?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
7203	Did she complain of blurred vision during her pregnancy?	YES 1 NO 2 DON'T KNOW 8	7204 7204
7203a	During the last 3 months of pregnancy did she suffer from blurred vision?	YES 1 NO 2 DON'T KNOW 8	
7204	Did she have her blood pressure measured during her pregnancy?	YES 1 NO 2 DON'T KNOW 8	7206 7206

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
7305	Did the fever come with severe chills?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
7306	Did the colour of her eye change to yellow (jaundice) during her last illness?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
7307	Did she have itching of skin at any time during her last illness?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
7308	Did her eyes, face or palms look pale (anaemic) during her last illness?	YES NO DK PALE EYES -----1-----2-----8 PALE FACE -----1-----2-----8 PALE PALM -----1-----2-----8	
7309	Did she have a cough during her last illness?	YES 1 NO 2 DON'T KNOW 8	7313 7313
7310	How many days or months before her death did the cough start? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> mons days DON'T KNOW/UNSURE 9998	
7311	Did the cough produce sputum?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
7312	Did she cough blood?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
7313	Did she have difficulty in breathing during her last illness?	YES 1 NO 2 DON'T KNOW 8	7319 7319
7314	Was the difficulty in breathing continuous or on and off?	CONTINUOUS 1 ON AND OFF 2 DON'T KNOW/UNSURE 8	
7315	How many days/months before her death did the difficulty in breathing start and end? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> months days END <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> months days DID NOT IMPROVE/ Continued till death . 9995 DON'T KNOW/UNSURE 9998	
7316	Was she breathless even on light work? <i>(Except what is normally seen in late pregnancy, if applicable)</i>	YES 1 NO 2 DON'T KNOW/UNSURE 8	
7317	Was she breathless on lying on her back? <i>(Except what is normally seen in late pregnancy, if applicable)</i>	YES 1 NO 2 DON'T KNOW/UNSURE 8	
7318	Was there pain in the chest with breathing?	YES 1 NO 2 DON'T KNOW 8	
7319	Did she have palpitations during her last illness?	YES 1 NO 2 DON'T KNOW/UNSURE 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
7320	Did she have chest pain during her last illness?	YES 1 NO 2 DON'T KNOW 8	7326 7326
7321	Was the pain mild, moderate or severe?	SEVERE 1 MODERATE 2 MILD 3 DON'T KNOW/UNSURE 8	
7322	Did the pain start suddenly or gradually?	SUDDENLY 1 GRADUALLY 2 DON'T KNOW/UNSURE 8	
7323	Was the pain continuous or on and off?	CONTINUOUS 1 ON AND OFF 2 DON'T KNOW/UNSURE 8	
7324	How many days/months before her death did the pain start and end? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START months days END months days DID NOT IMPROVE/CONTINUED UNTIL DEATH 9995 DON'T KNOW/UNSURE 9998	
7325	When she had the chest pain, did she also have pain elsewhere in her body? If, yes, where else did she have pain at the same time?	SHOULDER ----- A NECK ----- B ARMS ----- C NO PAIN ANYWHERE ----- D OTHER(specify) _____ - X	
7326	Did she have abdominal pain before her death?	YES 1 NO 2 DON'T KNOW 8	7329 7329
7327	How many days/months before her death did the abdominal pain start and end? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START months days END months days DID NOT IMPROVE/CONTINUED UNTIL DEATH 9995 DON'T KNOW/UNSURE 9998	
7328	Was the pain mild, moderate or severe?	SEVERE 1 MODERATE 2 MILD 3 SOMETIMES MILD/SOMETIMES MORE ... 4 DON'T KNOW/UNSURE 8	
7329	Was there any change in the color of her urine before death?	YES 1 NO 2 DON'T KNOW 8	7331 7331
7330	What color did the urine become?	LIGHT YELLOW 1 DARK YELLOW 2 CHUNER PANI (CLOUDY) 3 BHATER MAAR (THICK-WHITE) 4 BLOOD STAINED/RED 5 OTHER(specify) _____ 7 DON'T KNOW/UNSURE 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																												
7507	Were those episodes of bleeding painful?	YES 1 NO 2 DON'T KNOW 8																													
7508	Did she have a vaginal examination during her last pregnancy?	YES 1 NO 2 DON'T KNOW 8	7601 7601																												
7509	Did the vaginal examination increase the bleeding?	YES 1 NO 2 DON'T KNOW 8																													
7601	How many hours or days before her death did her labour pain start? <i>(If less than 1 day, then write in hours, if 1 or more days then write in completed days)</i>	HOURS 1 DAYS 2 DON'T KNOW/UNSURE 998																													
7603	Where did she give birth? PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. IF UNABLE TO DETERMINE IF A HOSPITAL, HEALTH CENTER, OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE NAME OF THE PLACE. _____ (NAME OF THE PLACE)	HOME HOME 11 PUBLIC SECTOR PUBLIC HOSPITAL 21 DIST. HOSP 22 MCWC 23 UPAZILLA HEALTH COMPLEX 24 UH & FAMILY WELFARE CENTRE 25 COM. CLINIC 28 OTHER PUBLIC SECTOR (SPECIFY) 26 NGO SECTOR NGO STATIC CLINIC 31 DELIVERY HUT 36 PRIVATE MED. SECTOR PVT. HOSPITAL/CLINIC 41 OTHER (SPECIFY) 96																													
7604	Who conducted the delivery? Anyone else? PROBE FOR THE TYPES OF PERSON(S) AND RECORD ALL MENTIONED. IF RESPONDENT SAYS NO ONE ASSISTED, PROBE TO DETERMINE WHETHER ANY ADULTS WERE PRESENT AT THE DELIVERY. IF CODE 'D' CIRCLED: _____ (WRITE NAME OF CSBA) _____ (WRITE NAME OF CSBA)	HEALTH PERSONNEL QUAL. DOCTOR A NURSE/MIDWIFE/PARAMEDIC B FAMILY WELFARE VISITOR C COMMUNITY SKILLED BIRTH ATTENDANT D MA/SACMO E COMMUNITY HEALTH CARE PROVIDER F HEALTH ASST G FAMILY WELFARE ASSISTANT H NGO WORKER I OTHER PERSON: TRAINED TBA J UNTRAINED TBA K UNQUALIFIED DOCTOR L RELATIVES M NEIGHBORS/FRIENDS N OTHER X (SPECIFY) NO ONE ASSISTED Y																													
7605	During the delivery, were/was _____ (topic): a. Instruments used to help the baby out (forceps/ventose) b. An operation done to get the baby out (cesarean section) c. A blood transfusion given d. A saline infusion given e. Hysterectomy for rupture uterus f. Manual removal of placenta	<table border="0"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> <th>DK</th> </tr> </thead> <tbody> <tr> <td>FORCEPS/VACUUM</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>CESAREAN SECTION</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>BLOOD TRANSFUSION</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>SALINE INFUSION</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>HYSTERECTOMY</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>MANUAL PLACENTA REMOVAL</td> <td>1</td> <td>2</td> <td>8</td> </tr> </tbody> </table>		YES	NO	DK	FORCEPS/VACUUM	1	2	8	CESAREAN SECTION	1	2	8	BLOOD TRANSFUSION	1	2	8	SALINE INFUSION	1	2	8	HYSTERECTOMY	1	2	8	MANUAL PLACENTA REMOVAL	1	2	8	
	YES	NO	DK																												
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MANUAL PLACENTA REMOVAL	1	2	8																												

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
7606	How long was she in labour for? (if less than 1 hour write 00)	<div style="text-align: right;"> _ _ HOURS</div> NEVER IN LABOUR (C-SECTION)-----95 DON'T KNOW -----98	7610 7608
7607	Do you think she had prolonged labour?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
7608	Did she have excessive bleeding during labour or delivery?	YES 1 NO 2 DON'T KNOW/UNSURE 8	7610 7610
7609	Did the bleeding stain her clothes, the bed or the floor?	<div style="text-align: center;">YES NO DK</div> CLOTHES ----- 1 ----- 2 ----- 8 BED ----- 1 ----- 2 ----- 8 FLOOR ----- 1 ----- 2 ----- 8	
7610	Were any drugs used just before or during the labour?	YES 1 NO 2 NOT APPLICABLE (nolabour pain) 7 DON'T KNOW/UNSURE 8	7613 7613 7613
7611	Can tell me the name of the drugs that was used? _____ _____ _____ _____ _____	DRUG..... _ _ _ DRUG..... _ _ _ DRUG..... _ _ _ DRUG..... _ _ _ DRUG..... _ _ _ DONOTT KNOW/UNSURE 998	
7612	What were the routes/modes used to give the drugs?	ORAL..... A INTRAMUSCULAR B INTRAVENOUS C OTHER (specify _____) X DON'T KNOW/UNSURE Y	
7613	How many days or months before her death did she deliver? (If less than 1 day then write in hours, if less than 30 days write in days and if more, then in completed months)	HOURS 1 _ _ _ DAYS..... 2 _ _ _ MONTHS..... 3 _ _ _ NEVER DELIVERED..... 997 DON'T KNOW/UNSURE 998	7626
7614	Did she have difficulty in delivering the baby?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
7615	What part of the baby came out first?	HEAD 1 LEGS 2 SHOULDER 3 ARMS 4 FACE..... 5 CESAREAN SECTION..... 6 DON'T KNOW/NOT SURE..... 8	7621
7616	Did she have difficulty in delivering the placenta?	YES 1 NO 2 DIED BEFORE PLACENTA WAS DELIVERED..... 3 DON'T KNOW/UNSURE 8	7620

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
7617	How long after the birth of the child was the placenta delivered? (If less than 1 hour write 00)	____ ____ HOURS DON'T KNOW/UNSURE 98	
7618	Was manual removal of the placenta done?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
7619	Was the placenta delivered completely or partially?	COMPLETELY 1 PARTIALLY 2 DON'T KNOW 8	
7620	Did she need to be hospitalized to deliver the placenta?	YES 1 NO 2 HAD ALREADY BEEN ADMITTED IN HOSPITAL 3 DON'T KNOW/UNSURE 8	
7621	Did she have too much bleeding after the baby was born?	YES 1 NO 2 DON'T KNOW/UNSURE 8	7623 7623
7622	Did the bleeding stain her clothes, the bed or the floor?	YES NO DK CLOTHES ----- 1 ----- 2 ----- 8 BED ----- 1 ----- 2 ----- 8 FLOOR ----- 1 -----	
7623	Did she have foul-smelling discharge from the vagina after the baby was born?	2 ----- 8 YES 1 NO 2 DON'T KNOW 8	
7623a	Did she have foul-smelling discharge from the vagina during delivery?	YES 1 NO 2 DON'T KNOW 8	
7624	Did she have pain in the legs after the baby was born?	YES 1 NO 2 DON'T KNOW 8	
7625	Did she have fever after the baby was born?	YES 1 NO 2 DON'T KNOW 8	
7626	Did she have fits (convulsions) during her pregnancy or before delivery of the baby during labor?	YES 1 NO 2 DON'T KNOW 8	7628 7628
7627	Did the fits stop after the baby was born?	YES 1 NO 2 NEVER DELIVERED 3 DON'T KNOW 8	7628a 7801 7628a
7628	Did she develop fits (convulsions) after the baby was born?	YES 1 NO 2 DON'T KNOW 8	
7628a	Did she die during or after a multiple pregnancy?	YES 1 NO 2 DON'T KNOW 8	
7628b	Was she breastfeeding the child in the days before death?	YES 1 NO 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
7629	Did the colour of her eyes become yellow(jaundice) after delivery?	YES 1 NO 2 DON'T KNOW/UNSURE 8	7801 7801
7630	How many days after delivery did her eyes become yellow(jaundice)?	<input type="text"/> <input type="text"/> <input type="text"/> DAYS DON'T KNOW/UNSURE 998	
7801	Did she have a pregnancy prior to the last one before death?	YES 1 NO 2	8901
	THE FOLLOWING QUESTIONS (Q7802-Q7807) REFERS TO ALL PREVIOUS PREGNANCIES PRIOR TO THE LAST ONE BEFORE DEATH		
7802	Did she ever have any complication in a previous pregnancy?	YES 1 NO 2 DON'T KNOW 8	
7803	Did she have a cesarean section in a previous pregnancy?	YES 1 NO 2 DON'T KNOW 8	
7804	Did she have Forcep/ Ventos in a previous pregnancy? (Interviewer: explain to respondents what Forcep/Ventos means)	YES, FORCEP 1 YES, VENTOS 2 YES, BOTH FORCEP & VENTOS 3 NO 4 DON'T KNOW/UNSURE 8	
7805	Did _____(NAME) ever have any still births in a previous pregnancy? If yes, how many? (If none, write =0)	Times..... <input type="text"/> DON'T KNOW 8	
7806	Did _____(NAME) ever have any miscarriages/abortions in a previous pregnancy? If yes, how many times? (If none, write =0)	Times..... <input type="text"/> DON'T KNOW 8	
7807	Did _____(NAME) ever have any MR in a previous pregnancy?If yes, how many times? (If none, write =0)	Times..... <input type="text"/> DON'T KNOW 8	8901 8901

SECTION 8
MODULE 3: GENERAL ILLNESS AND INJURIES LEADING TO DEATH

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
8001	Did _____(NAME) have fever during her last illness before death?	YES.....1 NO.....2 DON'T KNOW.....8	8006 8006
8002	How many days/months before her death did the fever start and end? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START months days END months days DIED WITH FEVER.....9995 DON'T KNOW/UNSURE.....9998	
8003	Was the fever high or mild?	HIGH.....1 MILD.....2 DON'T KNOW/UNSURE.....8	
8004	Was the fever continuous or on and off?	CONTINUOUS.....1 AFTER EVERY 1 - 2 DAYS.....2 AT NIGHT ONLY.....3 OTHER.....7 DON'T KNOW/UNSURE.....8	
8005	Did the fever come with severe chills?	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	
8005a	Did she have night sweats?	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	
8006	Did she have a reddish rash at anytimeduring her last illness before death?	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	
8007	Was she losing weight before death?	YES.....1 NO.....2 DON'T KNOW.....8	8009 8009
8008	Was the loss of weight severe or moderate?	SEVERE.....1 MODERATE.....2 DON'T KNOW/UNSURE.....8	
8009	Did she have poor appetite at anytimeduring her last illness before death?	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	
8101	Did she have swelling around ankles during her last illness before death?	YES.....1 NO.....2 DON'T KNOW.....8	8103 8103
8102	How many days/months before her death did the swelling around her ankles start? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START months days DON'T KNOW/UNSURE.....9998	
8103	Did she have puffiness of the face during her last illness before death?	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	8104 8104
8103a	For how many days did she have puffiness of the face?	 days DON'T KNOW/UNSURE.....9998	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
8103b	Did she have general puffiness all over her body?	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	8104 8104
8103c	For how many days did she have puffiness all over her body?	__ __ days DON'T KNOW/UNSURE..... 9998	
8104	Did she have a swelling in the neck during her last illness before death?	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	
8105	Did she have any other swelling on her body? (Probe)	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	8107 8107
8106	Where was the swelling on her body?	HEAD -----A FACE -----B MOUTH -----C NECK -----D UPPER ARM -----E LOWER ARM -----F AXILLA -----G HANDS -----H CHEST -----I ABDOMEN -----J UPPER BACK -----K LOWER BACK -----L BUTTOCKS -----M GROIN -----N GENITALS -----O THIGHS -----P LEGS -----Q FEET -----R OTHER -----X	
8106a	How many days did the swelling last? (Select the area of swelling from 8106 and mention the duration in days for each of them)	Area: _____ __ __ days DON'T KNOW/UNSURE 9998 Area: _____ __ __ days DON'T KNOW/UNSURE 9998 Area: _____ __ __ days DON'T KNOW/UNSURE 9998	
8107	Did the colour of her eye change to yellow (jaundice) during her last illness before death?	DON'T KNOW/UNSURE YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	
8107a	For how many days did she have the yellow discoloration?	__ __ days DON'T KNOW/UNSURE 9998	
8107b	Did she have any skin problems?	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																
8107c	For how many days did she have the skin rash?	<table border="1"> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td colspan="3">days</td> </tr> <tr> <td>DON'T KNOW/UNSURE</td> <td></td> <td>9998</td> </tr> </table>				days			DON'T KNOW/UNSURE		9998								
days																			
DON'T KNOW/UNSURE		9998																	
8107d	Where was the rash?	HEAD-----A FACE-----B MOUTH-----C NECK-----D UPPER ARM-----E LOWER ARM-----F AXILLA-----G HANDS-----H CHEST-----I ABDOMEN-----J UPPER BACK-----K LOWER BACK-----L BUTTOCKS-----M GROIN-----N GENITALS-----O THIGHS-----P LEGS-----Q FEET-----R OTHER-----X																	
8108	Did she have itching of skin at any time during her last illness before death?	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8																	
8108a	Did she have sores?	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	8109 8109																
8108b	Did the sores have clear fluid or pus?	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8																	
8109	Did her eyes, face or palms look pale (anaemic) during her last illness before death?	<table border="1"> <tr> <td></td> <td>YES</td> <td>NO</td> <td>DK</td> </tr> <tr> <td>PALE EYES-----</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>PALE FACE-----</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>PALE PALM-----</td> <td>1</td> <td>2</td> <td>8</td> </tr> </table>		YES	NO	DK	PALE EYES-----	1	2	8	PALE FACE-----	1	2	8	PALE PALM-----	1	2	8	
	YES	NO	DK																
PALE EYES-----	1	2	8																
PALE FACE-----	1	2	8																
PALE PALM-----	1	2	8																
8110	Did she have any ulcers on her body during her last illness before death?	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	8201 8201																

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
8111	Where were the ulcers on her body? Anywhere else? (<i>Do not probe</i>)	HEAD -----A FACE -----B MOUTH -----C NECK -----D UPPER ARM -----E LOWER ARM -----F AXILLA -----G HANDS -----H CHEST -----I ABDOMEN -----J UPPER BACK -----K LOWER BACK -----L BUTTOCKS -----M GROIN -----N GENITALS -----O THIGHS -----P LEGS -----Q FEET -----R OTHER -----X	
8111a	Did the ulcer ooze pus?	YES1 NO2 DON'T KNOW8	
8111b	For how many days did the ulcer ooze pus?	<input type="text"/> <input type="text"/> days DON'T KNOW/UNSURE 9998	
8111c	Did she have any ulcers, abscess or sores on the feet that were not also on other parts of the body?	YES1 NO2 DON'T KNOW8	
8112	During the illness that led to death, did she bleed from anywhere?	YES1 NO2 DON'T KNOW8	
8113	Did she bleed from the nose, mouth or anus?	YES1 NO2 DON'T KNOW8	
8114	During the illness that led to death, did s/he have a whitish rash inside the mouth or on the tongue?	YES1 NO2 DON'T KNOW8	
8201	Did she have a cough during her last illness before death?	YES1 NO2 DON'T KNOW8	8205 8205
8202	How many days or months before her death did the cough start? (<i>Write in months and days. If less than 1 month, then write 00 for months and only write in days</i>)	START <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> months days DON'T KNOW/UNSURE 9998	
8203	Did the cough produce sputum?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
8204	Did she cough blood?	YES 1 NO 2 DON'T KNOW/UNSURE 8	
8205a	Did she have any breathing problem?	YES1 NO2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
8205b	During the illness that led to death did her breathing sound like any of the following: Stridor, Grunting, Wheezing	YES.....1 NO.....2 DON'T KNOW.....8	
8205c	During the illness that led to death, did she have fast breathing?	YES.....1 NO.....2 DON'T KNOW.....8	8205 8205
8205d	For how many days did the fast breathing last?	<input type="text"/> <input type="text"/> days DON'T KNOW/UNSURE.....9998	
8205	Did she have difficulty in breathing during her last illness before death?	YES.....1 NO.....2 DON'T KNOW.....8	8208a 8208a
8206	Was the difficulty in breathing continuous or on and off?	CONTINUOUS.....1 ON AND OFF.....2 DON'T KNOW/UNSURE.....8	
8207	How many days/months before her death did the difficulty in breathing start and end? (Write in months and days. If less than 1 month, then write 00 for months and only write in days)	START <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> months days END <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> months days Did not improve/CONTINUED UNTIL DEATH9995 DON'T KNOW/UNSURE.....9998	
8208a	Did she have breathlessness?	YES.....1 NO.....2 DON'T KNOW.....8	8210 8210
8208b	For how many weeks did she have breathlessness?	<input type="text"/> <input type="text"/> days DON'T KNOW/UNSURE.....9998	
8208	Was she breathless even on light work? (Except what is normally seen in late pregnancy, if applicable)	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	
8209	Was she breathless on lying on her back? (Except what is normally seen in late pregnancy, if applicable)	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	
8210	Was there pain in the chest with breathing?	YES.....1 NO.....2 DON'T KNOW.....8	
8211	Did she have palpitations during her last illness before death?	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	
8212	Did she have chest pain during her last illness before death?	YES.....1 NO.....2 DON'T KNOW.....8	8301 8301
8213	Was the pain mild, moderate or severe?	SEVERE.....1 MODERATE.....2 MILD.....3 DON'T KNOW/UNSURE.....8	
8214	Did the pain start suddenly or gradually?	SUDDENLY.....1 GRADUALLY.....2 DON'T KNOW/UNSURE.....8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
8215	Was the pain continuous or on and off?	CONTINUOUS..... 1 ON AND OFF..... 2 DON'T KNOW/UNSURE..... 8	
8216	How many days/months before her death did the pain start and end? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START __ __ __ __ months days END __ __ __ __ months days Did not improve/CONTINUED UNTIL DEATH9995 DON'T KNOW/UNSURE.....9998	
8217	When she had the chest pain, did she also have pain elsewhere in her body? If, yes, where else did she have pain at the same time?	SHOULDER-----A NECK-----B ARMS-----C NO PAIN ANYWHERE -----D OTHER_____X	
8301a	Did she have any abdominal problem?	YES..... 1 NO.....2 DON'T KNOW.....8	
8301	Did she have loose motion or diarrhoea before her death?	YES.....1 NO.....2 DON'T KNOW.....8	8306 8306
8302	How many days/months before her death did the loose motion or diarrhoea start and end? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START __ __ __ __ months days END __ __ __ __ months days DID NOT IMPROVE/ CONTINUED UNTIL DEATH9995 DON'T KNOW/UNSURE.....9998	
8303	When the diarrhoea was severe, how many times did she pass stool in a day?	NUMBER OF TIMES..... __ __ DON'T KNOW/UNSURE..... 98	
8304	What did the stool look like?	WATERY..... 1 LOOSE BUT NOT WATERY 2 OTHER_____ 7 DON'T KNOW/UNSURE..... 8	
8305	Did she pass blood in the stool?	YES..... 1 NO.....2 DON'T KNOW/UNSURE..... 8	8306 8306
8305a	Was the blood in the stool up until death?	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	
8305b	Did she have sunken eyes?	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	
8305c	Did she drink a lot more water than usual?	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	
8305d	Did she receive oral rehydration salts?	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
8306	Did she have vomiting during her last illness before death?	YES.....1 NO.....2 DON'T KNOW.....8	8310 8310
8307	How many days/months before her death did the vomiting start and end? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START _ _ _ _ months days END _ _ _ _ months days DID NOT IMPROVE/CONTINUED UNTIL DEATH9995 DON'T KNOW/UNSURE.....9998	
8308	When the vomiting was severe, how many times did she vomit in a day?	NUMBER OF TIMES..... _ _ DON'T KNOW/UNSURE.....98	
8309	What did the vomits look like most of the time?	WATERY FLUID 1 YELLOWISH FLUID 2 DARK BROWN COLOURED FLUID 3 LIKE BLOOD..... 4 FAECAL LOOKING & SMELLING 5 OTHER(specify)..... 7 7 DON'T KNOW/UNSURE..... 8	
8310	Did she have abdominal pain before her death?	YES.....1 NO.....2 DON'T KNOW.....8	8315 8315
8311	What was the type of pain?	CRAMPS..... 1 DULL ACHE..... 2 BURNING PAIN 3 OTHERS 7 DON'T KNOW/UNSURE..... 8	
8312	How many days/months before her death did the abdominal pain start and end? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START _ _ _ _ months days END _ _ _ _ months days DID NOT IMPROVE/CONTINUED UNTIL DEATH.....9995 DON'T KNOW/UNSURE.....9998	
8313	Where exactly was the pain?	LOWER ABDOMEN.....1 UPPER ABDOMEN2 CENTRAL ABDOMEN (around umbilicus)3 ALL OVER THE ABDOMEN4 DON'T KNOW/UNSURE.....8	
8314	Was the pain mild, moderate or severe?	SEVERE1 MODERATE.....2 MILD3 SOMETHIMES MILD/SOMETIMES MORE....4 DON'T KNOW/UNSURE.....8	
8315	Was she unable to pass stool for some days before death?	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	
8316	Did she have distension of abdomen before her death?	YES.....1 NO.....2 DON'T KNOW.....8	8319 8319

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
8317	How many days/months before her death did the distension of abdomen start and end? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START months days END months days DID NOT IMPROVE/CONTINUED UNTIL DEATH.....9995 DON'T KNOW/UNSURE.....9998	
8318	Did the distension develop rapidly within days or slowly over weeks?	RAPIDLY.....1 SLOWLY.....2 DON'T KNOW/UNSURE.....8	
8319	Did she have any hard mass in the abdomen before her death?	YES.....1 NO.....2 DON'T KNOW.....8	8401 8401
8320	Where exactly was the mass?	RIGHT UPPER ABDOMEN.....1 LEFT UPPER ABDOMEN.....2 LOWER ABDOMEN.....3 CENTRAL ABDOMEN (around umbilicus).....4 DON'T KNOW/UNSURE.....8	
8321	How long before her death did the mass in the abdomen start? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START months days DON'T KNOW/UNSURE.....9998	
8401	Did she have headache during her last illness before death?	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	8404 8404
8402	Was the headache continuous or on and off?	CONTINUOUS.....1 ON AND OFF.....2 DON'T KNOW/UNSURE.....8	
8403	Was the headache severe, moderate, mild, or did it vary?	SEVERE.....1 MODERATE.....2 MILD.....3 SOMETIMES MILD AND SOMETIMES SEVERE.....4 DON'T KNOW/UNSURE.....8	
8404a	Did she have a painful neck during the illness that led to death?	YES.....1 NO.....2 DON'T KNOW.....8	8404b 8404b
8404b	For how many days before death did she have a painful neck?	 days DON'T KNOW/UNSURE.....9998	
8404	Did she have stiff neck during her last illness before death?	YES.....1 NO.....2 DON'T KNOW.....8	8501 8501
8405	How many days/months before her death did the stiff neck start? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START months days DON'T KNOW/UNSURE.....9998	
8501	Did she have any loss of consciousness during her last illness before death?	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	8503 8503
8502	Did she become unconscious suddenly or gradually?	SUDDENLY.....1 GRADUALLY.....2 DON'T KNOW/UNSURE.....8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP				
8502a	For how many days did she have unconscious?	<table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> days DON'T KNOW/UNSURE..... 9998					
8502b	Did the unconsciousness continue until death?	YES.....1 NO.....2 DON'T KNOW.....8					
8503	Did she become mentally confused during her last illness before death?	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	8504 8504				
8503a	For how many days/months did she have mental confusion?	<table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> months days DON'T KNOW/UNSURE..... 9998					
8504	Did she have fits (convulsions) during her last illness before death?	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	8509 8509				
8504a	During the last 3 months of pregnancy, did she suffer from convulsions?	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	8509 8509				
8505	How many days/months before her death did the fits start? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START <table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> months days DON'T KNOW/UNSURE.....9998					
8505a	For how many hours/minutes did the fits last?	<table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> Hours Minutes DON'T KNOW/UNSURE..... 9998					
8506	Can you describe the nature of fits?	REPETITIVE JERKING OF WHOLE BODY..... 1 JERKING OF 1 OR 2 PARTS OF THE BODY . 2 OTHER(specify) _____ _____ 7 DON'T KNOW/UNSURE..... 8					
8507	When fits were most frequent, how many times did she fit in a day?	NUMBER OF TIMES..... <table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> DIED AFTER FITS STARTED..... 95 DON'T KNOW/UNSURE..... 98					
8508	Did she become unconscious immediately after the fits?	YES, ALWAYS..... 1 YES, SOMETIMES 2 NO..... 3 DON'T KNOW/UNSURE..... 8					
8509	Did she have difficulty in opening the mouth during her last illness before death?	ABLE TO OPEN MOUTH1 UNABLE TO OPEN MOUTH2 DON'T KNOW/UNSURE.....8					
8510	Did she have stiffness of the whole body before death?	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	8512 8512				
8511	How many days/months before her death did the stiffness start? <i>(Write in months and days. If less than 1 month, then write 00 for months and only write in days)</i>	START <table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> months days DON'T KNOW/UNSURE.....9998					
8512	Did she become paralyzed on one or both sides of the body before her death?	YES.....1 NO.....2 DON'T KNOW/UNSURE.....8	8601 8601				

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
8513	Which part of the body was paralyzed? (Multiple answers)	LOWER LIMBS A ARMS B FACE C ONE SIDE OF BODY D WHOLE BODY E OTHER X DON'T KNOW/UNSURE Y	
8514	How many days/months before her death did the paralysis start? (Write in months and days. If less than 1 month, then write 00 for months and only write in days)	START months days DON'T KNOW/UNSURE 9998	
8601a	Did she have any urine problems?	YES 1 NO 2 DON'T KNOW 8	
8601	Was there any change in the color of her urine before death?	YES 1 NO 2 DON'T KNOW 8	8604 8604
8602	What color did the urine become?	LIGHT YELLOW 1 DARK YELLOW 2 CHUNER PANI (CLOUDY) 3 BHATER MAAR (THICK-WHITE) 4 BLOOD STAINED/RED 5 OTHER 7 DON'T KNOW/UNSURE 8	
8603	Since how many days/months before her death did her urine become _____ (ANSWER TO Q8602)? (Write in months and days. If less than 1 month, then write 00 for months and only write in days)	START months days DON'T KNOW/UNSURE 9998	
8604	Was there any change in her daily frequency of urine before her death?	YES 1 NO 2 DON'T KNOW 8	8607 8607
8605	Compared to before, how many times was she passing urine in a day - more than before, less than before, or no urine at all?	MORE THAN BEFORE 1 LESS THAN BEFORE 2 NO URINE AT ALL 3 DON'T KNOW/UNSURE 8	
8606	Since how many days/months before her death did she start to pass urine _____ (ANSWER TO Q8605)? (Write in months and days. If less than 1 month, then write 00 for months and only write in days)	START months days DON'T KNOW/UNSURE 9998	
8607	Did she have difficulty in passing urine during her last illness before death?	YES 1 NO 2 DON'T KNOW/UNSURE 8	8701 8701
8608	What type of difficulty did she have: Unable to pass urine? Continuous dribbling of urine? Burning sensation while passing urine? Others?	YES NO UNABLE TO PASS URINE 1 2 DRIBBLING OF URINE 1 2 BURNING SENSATION 1 2 OTHER(specify) -- 1 2	
8701	Did she have a swelling in the breast before her death?	YES 1 NO 2 DON'T KNOW/UNSURE 8	8703 8703
8702	Was there pain in the breast along with the swelling before her death?	YES 1 NO 2 DON'T KNOW/UNSURE 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
8703	Did she have an ulcer in the breast before her death?	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	8801 8801
8704	Was there pain in the breast along with the ulcer?	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	
8801	CHECK 5004: Was she ever pregnant before death?	YES.....1 NO.....2	8901
8802	Did she ever have any complication during a pregnancy?	YES.....1 NO.....2 DON'T KNOW.....8	
8803	Did she have a cesarean section in a pregnancy?	YES.....1 NO.....2 DON'T KNOW.....8	
8804	Did she have Forceps / Ventose in a pregnancy? (Interviewer: explain to respondents what Forceps/Ventose means)	YES, FORCEP1 YES, VENTOS2 YES, BOTH FORCEP & VENTOS3 NO.....4 DON'T KNOW/UNSURE.....8	
8805	Did _____(NAME) ever have any still births? If yes, how many? (If none, write =0)	Times _ DON'T KNOW.....8	
8806	Did _____(NAME) ever have any miscarriages/abortions? If yes, how many? (If none, write =0)	Times _ DON'T KNOW.....8	
8807	Did _____(NAME) ever have any MRs? If yes, how many? (If none, write =0)	Times _ DON'T KNOW.....8	
8901	Did _____(name) receive any injury or was there any untoward or violent event leading to death?	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	9001 9001
8902	Can you describe what happened exactly? (<i>PROBE and ASK: anything else</i>) Verbatim _____ _____ _____ _____ _____ _____ _____		
8903	Who else contributed to the information given in Q8901-8902?	NEIGHBOURS ----- A FAMILY FRIENDS ----- B DECEASED'S FAMILY MEMBERS ----- C OTHER (specify) _____ -- X	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
8904	<i>To the interviewer: Please review the response to Q8902 and Code accordingly</i>	<p style="text-align: center;">Yes No</p> <p>Dog/animal bite 1 2</p> <p>Snake bite 1 2</p> <p>Insect or Scorpion 1 2</p> <p>Drowned as a consequence of epilepsy 1 2</p> <p>Force of nature 1 2</p> <p style="text-align: center;"><u>Intentionally self-inflicted</u> <u>Intentionally caused by other</u> <u>Accidental</u> <u>No</u></p> <p>Train accident 1 2 3 4</p> <p>Road accident 1 2 3 4</p> <p>Drowning 1 2 3 4</p> <p>Burn 1 2 3 4</p> <p>Fall 1 2 3 4</p> <p>Cut (knife, sharp object)... 1 2 3 4</p> <p>Suffocation 1 2 3 4</p> <p>Punches, kicks, blows... xxxx 2 3 4</p> <p>Gun shot 1 2 3 4</p> <p>Rape xxxx 2 xxxx 4</p> <p>Poisoning 1 2 3 4</p> <p>Acid burn 1 2 3 4</p> <p>Electrocution 1 2 3 4</p> <p>Other 1 2 3 4</p>	
8904a	<i>If road accident=2 or 3 in question 8904</i> What was her role in the road traffic accident?	Pedestrian----- A Driver or passenger in car or light vehicle ----- B Driver or passenger in bus or heavy vehicle ----- C Driver or passenger on a motorcycle----- D Driver or passenger on a pedal cycle----- E	
8904b	What was the counterpart that was hit during the road traffic accident?	Pedestrian----- A Stationary object ----- B Car or light vehicle ----- C Bus or heavy vehicle----- D Motorcycle ----- E Pedal cycle----- F Other ----- G	
<i>If the interviewer has any suspicion regarding the accuracy of the information given in Q8901-8904 then additional information may be collected from neighbours, family friends, members of the parent's family of the deceased.</i>			
8905	<i>To the interviewer: What is your judgement of the quality of the information gathered on the violent events surrounding the woman's death?</i>	Dependable..... 1 (Yes)..... 2 (Partly) 3 (No) Complete 1 (Yes)..... 2 (Partly) 3 (No)	
8906	Did she have difficulty swallowing?	YES 1 NO 2 DON'T KNOW/UNSURE 8	8910 8910
8907	For how many days before death did she have difficulty swallowing?	<input type="text"/> <input type="text"/> days DON'T KNOW/UNSURE..... 9998	
8908	Was the difficulty with swallowing with solids, liquids, or both?	SOLDS 1 LIQUID 2 BOTH 8	
8909	Did she have pain upon swallowing?	YES 1 NO 2 DON'T KNOW/UNSURE 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
8910	<i>Did she drink alcohol?</i>	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	
8911	<i>Did she smoke tobacco (cigarette, cigar, pipe, etc.)?</i>	YES..... 1 NO..... 2 DON'T KNOW/UNSURE..... 8	
8912	<i>What kind of tobacco did she use?</i>	Cigarettes..... 1 Pipe..... 2 Chewing tobacco..... 3 Local form of tobacco..... 4 Other..... 9	
8913	<i>How many cigarettes did she smoke daily?</i>	NUMBER_____	

**SECTION 9
GENERAL CARE SEEKING**

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
9001	CHECK SECTIONS 6, 7 AND 8, DID THE WOMEN HAVE ANY ILLNESS OR COMPLICATION BEFORE DEATH?	YES 1 NO 2	9105
9002	During _____ (name) last illness/problem, did she or anyone seek treatment for her illness?	YES 1 NO 2 DON'T KNOW 8	9105 9105
9003	Where did she receive care/medical treatment? <i>Repeatedly ask: "Did she receive care/treatment from anywhere else?".</i> <i>If care/treatment was received from more than one place then ask "Where did she first receive care/treatment from? From where did she next receive care/treatment from?", record sequence care/treatment received</i> NAME OF THE FACILITY/ PROVIDER 1. 2. 3. 4. 5. 6.	Sequence of care/treatment received: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> HOME HOME A GOVT SECTOR MEDICAL COLLEGE HOSPITAL B SPECIALISED HOSPITAL (SPECIFY) C DISTRICT HOSPITAL D MCWC E UPAZILA HEALTH COMPLEX F UNION HEALTH & FAMILY WELFARE CENTRE ---G SATELLITE/EPIOUTREACH SITE H COMMUNITY CLINIC I OTHER (SPECIFY _____) J NGO SECTOR NGO STATIC HOSPITAL K NGO SATELLITE CLINIC L OTHER (SPECIFY _____) M PRIVATE MEDICAL SECTOR PRIV. HOSPITAL/CLINIC N QUALIFIED DOCTORS CHAMBER O UNQUALIFIED DOCTOR'S CHAMBER ---- P PHARMACY Q PRIVATE MEDICAL COLLEGE HOSPITAL (SPECIFY _____) R OTHER _____ X (Specify)	
9003a	INTERVIEWER: CHECK Q9003 (SEQUENCE OF TREATMENT) AND CIRCLE IN APPROPRIATE CODE.	1ST LEVEL OF TREATMENT IS CODE A(HOME)1 1ST LEVEL OF TREATMENT IS OTHER THAN CODE A, H, L, O, P AND Q2 1ST LEVEL OF TREATMENT IS H,L,O,P AND Q3	9004 9004a
9003b	Were there any problem regarding admission to the hospital or health facility?	YES 1 Specify: _____ NO 2 DON'T KNOW 8	
9003c	Were there any problem with the way she was treated (medical treatment, procedures, interpersonal attitudes, respect, dignity) in the hospital or health facility?	YES 1 Specify: _____ NO 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
9003d	Were there any problem in getting medications, or diagnostic tests in the hospital or health facility?	YES 1 Specify: _____ NO 2 DON'T KNOW 8	9004a 9004a 9004a

HOME CARE		Skip	OTHER THAN HOME CARE		Skip
1ST TREATMENT RECEIVED					
9004	Who took decision that she should seek treatment at home? THE DECEASED (THE WOMEN HERSELF) A HUSBAND B MOTHER C MOTHER-IN-LAW D SISTER E SISTER-IN-LAW F OTHER MEMBER OF THE DECEASED'S FAMILY G OTHER MEMBER OF HUSBAND'S FAMILY H RELATIVES I NEIGHBOR/FRIEND J TBA/FIELD WORKER/ DAI K OTHER X (SPECIFY)		9004a	Who took decision that she should seek treatment? THE DECEASED THE DECEASED (THE WOMEN HERSELF) A HUSBAND B MOTHER C MOTHER-IN-LAW D SISTER E SISTER-IN-LAW F OTHER MEMBER OF THE DECEASED'S FAMILY G OTHER MEMBER OF HUSBAND'S FAMILY H RELATIVES I NEIGHBOR/FRIEND J TBA/FIELD WORKER/ DAI K OTHER X (SPECIFY)	
9005	After how much time from the beginning of this problem it was decided that she seek treatment? Write 00 if less than 1 hr, write in hrs if less than 1 day ,write in complete month if 30 days or more HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS 3 <input type="checkbox"/> <input type="checkbox"/>		9005a	After how much time from the beginning of this problem it was decided that she seek treatment? (Write 00 if less than 1 hr, write in hrs if less than 1 day ,write in complete month if 30 days or more) HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS 3 <input type="checkbox"/> <input type="checkbox"/>	
9006	Did she seek treatment soon after the decision was made? YES 1 NO 2	9007b	9006a	Did she seek treatment soon after the decision was made? YES 1 NO 2	9007b a
9007	Why the treatment was not sought immediately? HOSPITAL TOO FAR A DID NOT THINK (the condition was) serious? B LACK OF MONEY C NOT WANT SERVICE FROM MALE DOCTOR D OTHER X (SPECIFY)		9007a	Why the treatment was not sought immediately? HOSPITAL TOO FAR A DID NOT THINK (the condition was) serious? B LACK OF MONEY C NOT WANT SERVICE FROM MALE DOCTOR D OTHER X (SPECIFY)	
9007b	After making the decision, how much time did it take to start seeking treatment? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS 3 <input type="checkbox"/> <input type="checkbox"/>		9006b a	After making the decision, how much time did it take to start seeking treatment outside home? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS 3 <input type="checkbox"/> <input type="checkbox"/>	
			9007b a	After starting seeking treatment from outside home, how much time did it take to reach the facility/place (time for transportation)? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS 3 <input type="checkbox"/> <input type="checkbox"/>	
			9007c a	What type of transport was used to go the facility/place?	

HOME CARE		Skip	OTHER THAN HOME CARE		Skip
				On foot..... A Rickshaw/van..... B CNG/tempo/easy bike..... C Motor cycle..... D Ambulance/microbus/car..... E Bus..... F Boat without engine..... G Boat with engine..... H OTHER..... X	
			9007d a	On which day of the week did she reach the facility/place? Friday..... 1 Saturday..... 2 Sunday..... 3 Monday..... 4 Tuesday..... 5 Wednesday..... 6 Thursday..... 7 Don't know/Can't remember..... 9	
			9007e a	On which time of the day did she reach the facility/place? Before 2.00 PM..... 1 After 2.00 PM..... 2 Don't know/Can't remember..... 9	
9008	After starting seeking treatment, how much time did it take to receive treatment at home? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS..... 1 <input type="text"/> <input type="text"/> DAYS..... 2 <input type="text"/> <input type="text"/> MONTHS..... 3 <input type="text"/> <input type="text"/>		9008a	After reaching the health facility/place, how much time did it take to start receiving treatment at the facility/place? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS..... 1 <input type="text"/> <input type="text"/> DAYS..... 2 <input type="text"/> <input type="text"/> MONTHS..... 3 <input type="text"/> <input type="text"/>	
9009	From whom did she receive treatment at home? HEALTH PROFESSIONAL/WORKER QUALIFIED DOCTOR..... A NURSE/MIDWIFE/PARAMEDIC..... B FAMILY WELFARE VISITOR..... C CSBA..... D MA/SACMO..... E HEALTH ASSISTANT..... F FAMILY WELFARE ASSISTANT..... G OTHER PROVIDER TRAINED TBA..... H UNTRAINED TBA..... I UNQUALIFIED DOCTOR..... J RELATIVES..... K NEIGHBORS/FRIENDS..... L OTHER BRAC SHASTHA SEBIKA..... M OTHER SHASTHA SEBIKA..... N OTHER FIELD WORKER..... O OTHER..... X (SPECIFY)				
			9010a	How far is facility/place from her house where she was present? WRITE '00' IF LESS THAN A mile. MILE..... <input type="text"/> <input type="text"/> <input type="text"/> OUTSIDE UPAZILA/TOWN..... 95 DON'T KNOW..... 98	
9013	Did her condition improve after treatment in this place, or did it stay the same or worsen? NO CHANGE..... 1 IMPROVED..... 2 WORSNED..... 3 DON'T KNOW..... 8		9013a	Did her condition improve after treatment in this facility/place, or did it stay the same or worsen? NO CHANGE..... 1 IMPROVED..... 2 WORSNED..... 3 DON'T KNOW..... 8	
9014	Did the person who provided her with treatment at home refer or ask you to go any other place for treatment/advice? YES..... 1 NO..... 2 → 9017i		9014a	Was she referred or told to go any other place for treatment/advice? YES..... 1 NO..... 2 → 9017ia	

	HOME CARE	Skip		OTHER THAN HOME CARE	Skip
9015	Where was she told to go? PUBLIC SECTOR MEDICAL COLLEGE HOSPITAL..... 21 SPECIALIZED HOSPITAL (SPECIFY)..... 22 DISTRICT HOSPITAL 23 MCWC 24 UPAZILA HEALTH COMPLEX..... 25 H&FWC 26 SATELLITE CLINIC/EPI OUTREACH..... 27 COMMUNITY CLINIC 28 OTHER 30 (SPECIFY) NGO SECTOR NGO STATIC CLINIC..... 31 NGO SATELLITE CLINIC 32 OTHER 35 (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC 41 QUALIFIED DOCTOR'S CHAMBER..... 42 UNQUALIFIED DOCTOR'S CHAMBER 43 PHARMACY 44 PRIVATE MEDICAL COLLEGE HOSPITAL..... 45 (SPECIFY) OTHER 96 (SPECIFY)		9015a	Where was she told to go? PUBLIC SECTOR MEDICAL COLLEGE HOSPITAL 21 SPECIALIZED HOSPITAL (SPECIFY)..... 22 DISTRICT HOSPITAL 23 MCWC 24 UPAZILA HEALTH COMPLEX..... 25 H&FWC 26 SATELLITE CLINIC/EPI OUTREACH..... 27 COMMUNITY CLINIC 28 OTHER 30 (SPECIFY) NGO SECTOR NGO STATIC CLINIC..... 31 NGO SATELLITE CLINIC 32 OTHER 35 (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC..... 41 QUALIFIED DOCTOR'S CHAMBER 42 UNQUALIFIED DOCTOR'S CHAMBER 43 PHARMACY 44 PRIVATE MEDICAL COLLEGE HOSPITAL..... 45 (SPECIFY) OTHER 96 (SPECIFY)	
9016	Did she go there? YES 1 → 9017b NO 2		9016a	Did she go there? YES 1 → 9017b NO 2	a
9017	Why did she not go to the referred place? NOT NECESSARY A NOT UNDERSTAND THAT SERVICE IS NEEDED B NOT CUSTOMERY C COST TOO MUCH D LACK OF MONEY E TOO FAR F TRANSPORT PROBLEM G NO ONE TO ACCOMPANY H POOR QUALITY SERVICE I FAMILY DID NOT ALLOW J BETTER CARE AT HOME K NOT KNOWN HOW TO GO L NO TIME TO GO FOR SERVICES M NOT KNOW WHERE TO GO N NOT WANT SERVICE FROM MALE DOCTOR O FOR FEAR P CLINIC/HOSPITAL INSIST FOR CISAREAN Q DID NOT THINK OF SERIOUSNESS OF COMPLICATION R HOSPITAL WAS CLOSED S DOCTOR WAS NOT THERE T OTHER X (SPECIFY)	9017i	9017a	Why did she not go to the referred place? NOT NECESSARY A NOT UNDERSTAND THAT SERVICE IS NEEDED B NOT CUSTOMERY C COST TOO MUCH D LACK OF MONEY E TOO FAR F TRANSPORT PROBLEM G NO ONE TO ACCOMPANY H POOR QUALITY SERVICE I FAMILY DID NOT ALLOW J BETTER CARE AT HOME K NOT KNOWN HOW TO GO L NO TIME TO GO FOR SERVICES M NOT KNOW WHERE TO GO N NOT WANT SERVICE FROM MALE DOCTOR O FOR FEAR P CLINIC/HOSPITAL INSIST FOR CISAREAN Q DID NOT THINK OF SERIOUSNESS OF COMPLICATION R HOSPITAL WAS CLOSED S DOCTOR WAS NOT THERE T OTHER X (SPECIFY)	9017ia
9017b	How much time did it take to reach the facility/place (time for transportation)? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS 3 <input type="checkbox"/> <input type="checkbox"/>		9017b a	How much time did it take to reach the facility/place (time for transportation)? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS 3 <input type="checkbox"/> <input type="checkbox"/>	
9017c	What type of transport used to go there? On foot..... A Rickshaw/van B CNG/tempo/easy bike C Motor cycle D Ambulance/microbus/car E Bus F Boat without engine G Boat with engine H		9017c a	What type of transport was used to go the facility/place? On foot..... A Rickshaw/van B CNG/tempo/easy bike C Motor cycle D Ambulance/microbus/car E Bus F Boat without engine G	

	HOME CARE	Skip	OTHER THAN HOME CARE	Skip
	OTHER X		Boat with engine H OTHER X	
9017d	On which day of the week did she reach the facility/place? Friday 1 Saturday 2 Sunday 3 Monday 4 Tuesday 5 Wednesday 6 Thursday 7 Don't know/Can't remember 9		9017d a On which day of the week did she reach the facility/place? Friday 1 Saturday 2 Sunday 3 Monday 4 Tuesday 5 Wednesday 6 Thursday 7 Don't know/Can't remember 9	
9017e	On which time of the day she did she reach the facility/place? Before 2.00 PM 1 After 2.00 PM 2 Don't know/Can't remember 9		9017e a On which time of the day she did she reach the facility/place? Before 2.00 PM 1 After 2.00 PM 2 Don't know/Can't remember 9	
9017f	After reaching the health facility/place, how much time did it take to start receiving treatment? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS 3 <input type="checkbox"/> <input type="checkbox"/>		9017fa After reaching the health facility/place, how much time did it take to start receiving treatment? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS 3 <input type="checkbox"/> <input type="checkbox"/>	
9017g	Did she receive (or need) any blood transfusion? YES 1 NO 2 DON'T KNOW 8		9017g a Did she receive (or need) any blood transfusion? YES 1 NO 2 DON'T KNOW 8	
9017h	Did s/he receive (or need) treatment/food through a tube passed through the nose? YES 1 NO 2 DON'T KNOW 8		9017h a Did s/he receive (or need) treatment/food through a tube passed through the nose? YES 1 NO 2 DON'T KNOW 8	
9017i	Did she receive (or need) injectable antibiotics? YES 1 NO 2 DON'T KNOW 8		9017ia Did she receive (or need) any injectable antibiotics? YES 1 NO 2 DON'T KNOW 8	
9017n	Did a health care worker tell you the cause of death? YES 1 NO 2 DON'T KNOW 8		9017n a Did a health care worker tell you the cause of death? YES 1 NO 2 DON'T KNOW 8	
9017o	What did the health care worker say? _____		9017o a What did the health care worker say? _____	
9017p	Do you have any health records (clinical test, prescription etc.) that belonged to the deceased? YES 1 NO 2 DON'T KNOW 8	9018 9018	9017p a Do you have any health records (clinical test, prescription etc.) that belonged to the deceased? YES 1 NO 2 DON'T KNOW 8	9018 9018
9017q	Can I see the health records? YES 1 NO 2 DON'T KNOW 8		9017q a Can I see the health records? YES 1 NO 2 DON'T KNOW 8	
9017r	Record the date of the most recent (last) visit Date: ____/____/____		9017ra Record the date of the most recent (last) visit Date: ____/____/____	
9018	INTERVIEWER: CHECK Q9003(SEQUENCE OF TREATMENT) AND CIRCLE IN APPROPRIATE CODE.	LAST LEVEL OF TREATMENT IS CODE A (HOME) 1 LAST LEVEL OF TREATMENT IS OTHER THAN CODE A (OTHER THAN HOME) 2		9018e

HOME CARE		Skip	OTHER THAN HOME CARE		Skip
		ONLY ONE SOURCE OF CARE/TREATMENT RECEIVED..... 3			
9018a	Were there any problems during admission to the hospital or health facility?		YES..... 1 Specify: _____ NO 2 DON'T KNOW..... 8		
9018b	Were there any problems with the way she was treated (medical treatment, procedures, interpersonal attitudes, respect, dignity) in the hospital or health facility?		YES..... 1 Specify: _____ NO 2 DON'T KNOW..... 8		
9018c	Were there any problems getting medications, or diagnostic tests in the hospital or health facility?		YES..... 1 Specify: _____ NO 2 DON'T KNOW..... 8		9018d a 9018d a 9018d a
HOME CARE		Skip	OTHER THAN HOME CARE		Skip
LAST TREATMENT RECEIVED					
9018d	Who took decision that she should seek treatment at home? THE DECEASED (THE WOMEN HERSELF) A HUSBAND B MOTHER C MOTHER-IN-LAW D SISTER E SISTER-IN-LAW F OTHER MEMBER OF THE DECEASED'S FAMILY G OTHER MEMBER OF HUSBAND'S FAMILY H RELATIVES I NEIGHBOR/FRIEND J TBA/FIELD WORKER/ DAI K OTHER X (SPECIFY)		9018d a	Who took decision that she should seek treatment? THE DECEASED THE DECEASED (THE WOMEN HERSELF) A HUSBAND B MOTHER C MOTHER-IN-LAW D SISTER E SISTER-IN-LAW F OTHER MEMBER OF THE DECEASED'S FAMILY G OTHER MEMBER OF HUSBAND'S FAMILY H RELATIVES I NEIGHBOR/FRIEND J TBA/FIELD WORKER/ DAI K OTHER X (SPECIFY)	
9018e	After how much time from the beginning of this problem it was decided that she seek treatment? Write 00 if less than 1 hr, write in hrs if less than 1 day ,write in complete month if 30 days or more HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS 3 <input type="checkbox"/> <input type="checkbox"/>		9018e a	After how much time from the beginning of this problem it was decided that she seek treatment? Write 00 if less than 1 hr, write in hrs if less than 1 day ,write in complete month if 30 days or more HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS 3 <input type="checkbox"/> <input type="checkbox"/>	
9018f	Did she seek treatment soon after the decision was made? YES 1 NO 2	9018i	9018fa	Did she seek treatment soon after the decision was made? YES 1 NO 2	9018ia
9018g	Why the treatment was not sought immediately? HOSPITAL TOO FAR A DID NOT THINK (the condition was) serious? B LACK OF MONEY C NOT WANT SERVICE FROM MALE DOCTOR D OTHER X (SPECIFY)		9018g a	Why the treatment was not sought immediately? HOSPITAL TOO FAR A DID NOT THINK (the condition was) serious? B LACK OF MONEY C NOT WANT SERVICE FROM MALE DOCTOR D OTHER X (SPECIFY)	
9018h	After how much time from the decision she sought treatment? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS 3 <input type="checkbox"/> <input type="checkbox"/>	9020	9018h a	After how much time from the decision she sought treatment? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS 3 <input type="checkbox"/> <input type="checkbox"/>	9020a

HOME CARE		Skip	OTHER THAN HOME CARE		Skip
	After how much time from the beginning of the problem did she receive last treatment at home? Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more			After how much time from the beginning of the problem did she first receive treatment at the last place (clinic, hospital or qualified doctor)? Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more	
	HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS..... 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS..... 3 <input type="checkbox"/> <input type="checkbox"/>			HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS..... 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS..... 3 <input type="checkbox"/> <input type="checkbox"/>	
			9019b a	How much time needed to reach the facility? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS..... 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS..... 3 <input type="checkbox"/> <input type="checkbox"/>	
			9019c a	What type of transport used to go the facility/place? On foot A Rickshaw/van B CNG/tempo/easy bike C Motor cycle D Ambulance/microbus/car E Bus F Boat without engine G Boat with engine H OTHER X	
			9019d a	On which day of the week she reached the facility/place? Friday 1 Saturday 2 Sunday 3 Monday 4 Tuesday 5 Wednesday 6 Thursday 7 Don't know/Can't remember 9	
			9019e a	On which time of the day she reached the facility/place? Before 2.00 PM 1 After 2.00 PM 2 Don't know/Can't remember 9	
9019f	After how much time from seeking, she first received treatment at home? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS..... 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS..... 3 <input type="checkbox"/> <input type="checkbox"/>		9019fa	After how much time from reaching did she start receiving treatment at the clinic, hospital or qualified doctor? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS 1 <input type="checkbox"/> <input type="checkbox"/> DAYS..... 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS..... 3 <input type="checkbox"/> <input type="checkbox"/>	
9020	From whom did she receive treatment at home? HEALTH PROFESSIONAL/WORKER QUALIFIED DOCTOR A NURSE/MIDWIFE/PARAMEDIC B FAMILY WELFARE VISITOR C CSBA D MA/SACMO E HEALTH ASSISTANT F FAMILY WELFARE ASSISTANT G OTHER PROVIDER TRAINED TBA H UNTRAINED TBA I UNQUALIFIED DOCTOR J RELATIVES K NEIGHBORS/FRIENDS L OTHER BRAC SHASTHA SEBIKA M OTHER SHASTHA SEBIKA N OTHER FIELD WORKER O OTHER X				

	HOME CARE (SPECIFY)	Skip		OTHER THAN HOME CARE	Skip
			9021a	How far is this clinic, hospital or qualified doctor from her house where she was present? WRITE '00' IF LESS THAN A mile. MILE: _____ OUTSIDE UPAZILA/TOWN.....95 DON'T KNOW.....98	
9024	Did her condition improve after treatment at home, or did it stay the same or worsen? NO CHANGE..... 1 IMPROVED..... 2 WORSNED..... 3 DON'T KNOW..... 8		9024a	Did her condition improve after treatment in this place, or did it stay the same or worsen? NO CHANGE..... 1 IMPROVED..... 2 WORSNED..... 3 DON'T KNOW..... 8	
9025	Did the person who provided her with treatment at home refer or ask her to go any other place for treatment/advice? YES..... 1 NO..... 2 → 9031		9025a	Was she referred or told to go any other place for treatment/advice? YES..... 1 NO..... 2 → 9031a	
9026	Where was she told to go? PUBLIC SECTOR MEDICAL COLLEGE HOSPITAL..... 21 SPECIALIZED HOSPITAL (SPECIFY)..... 22 DISTRICT HOSPITAL..... 23 MCWC..... 24 UPAZILA HEALTH COMPLEX..... 25 H&FWC..... 26 SATELLITE CLINIC/EPI OUTREACH..... 27 COMMUNITY CLINIC..... 28 OTHER..... 30 (SPECIFY) NGO SECTOR NGO STATIC CLINIC..... 31 NGO SATELLITE CLINIC..... 32 OTHER..... 35 (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC..... 41 QUALIFIED DOCTOR'S CHAMBER..... 42 UNQUALIFIED DOCTOR'S CHAMBER..... 43 PHARMACY..... 44 PRIVATE MEDICAL COLLEGE HOSPITAL..... 45 (SPECIFY) OTHER..... 96 (SPECIFY)		9026a	Where was she told to go? PUBLIC SECTOR MEDICAL COLLEGE HOSPITAL..... 21 SPECIALIZED HOSPITAL (SPECIFY)..... 22 DISTRICT HOSPITAL..... 23 MCWC..... 24 UPAZILA HEALTH COMPLEX..... 25 H&FWC..... 26 SATELLITE CLINIC/EPI OUTREACH..... 27 COMMUNITY CLINIC..... 28 OTHER..... 30 (SPECIFY) NGO SECTOR NGO STATIC CLINIC..... 31 NGO SATELLITE CLINIC..... 32 OTHER..... 35 (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC..... 41 QUALIFIED DOCTOR'S CHAMBER..... 42 UNQUALIFIED DOCTOR'S CHAMBER..... 43 PHARMACY..... 44 PRIVATE MEDICAL COLLEGE HOSPITAL..... 45 (SPECIFY) OTHER..... 96 (SPECIFY)	
9027	Did she go there? YES..... 1 → 9028b NO..... 2		9027a	Did she go there? YES..... 1 → 9028b NO..... 2	a
9028	Why did you not go to the referred place? NOT NECESSARY.....A NOT UNDERSTAND THAT SERVICE IS NEEDED.....B NOT CUSTOMERY.....C COST TOO MUCH.....D LACK OF MONEY.....E TOO FAR.....F TRANSPORT PROBLEM.....G NO ONE TO ACCOMPANY.....H POOR QUALITY SERVICE.....I FAMILY DID NOT ALLOW.....J BETTER CARE AT HOME.....K NOT KNOWN HOW TO GO.....L NO TIME TO GO FOR SERVICES.....M NOT KNOW WHERE TO GO.....N NOT WANT SERVICE FROM MALE	9031	9028a	Why did you not go to the referred place? NOT NECESSARY.....A NOT UNDERSTAND THAT SERVICE IS NEEDED.....B NOT CUSTOMERY.....C COST TOO MUCH.....D LACK OF MONEY.....E TOO FAR.....F TRANSPORT PROBLEM.....G NO ONE TO ACCOMPANY.....H POOR QUALITY SERVICE.....I FAMILY DID NOT ALLOW.....J BETTER CARE AT HOME.....K NOT KNOWN HOW TO GO.....L NO TIME TO GO FOR SERVICES.....M NOT KNOW WHERE TO GO.....N NOT WANT SERVICE FROM MALE	9031a

	HOME CARE	Skip	OTHER THAN HOME CARE	Skip
	DOCTOR..... O FOR FEAR..... P CLINIC/HOSPITAL INSIST FOR CISAREAN Q DID NOT THINK OF SERIOUSNESS OF COMPLICATION..... R HOSPITAL WAS CLOSED..... S DOCTOR WAS NOT THERE..... T OTHER..... X (SPECIFY)		DOCTOR..... O FOR FEAR..... P CLINIC/HOSPITAL INSIST FOR CISAREAN Q DID NOT THINK OF SERIOUSNESS OF COMPLICATION..... R HOSPITAL WAS CLOSED..... S DOCTOR WAS NOT THERE..... T OTHER..... X (SPECIFY)	
9028b	How much time needed to reach there? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS..... 1 <input type="checkbox"/> <input type="checkbox"/> DAYS..... 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS..... 3 <input type="checkbox"/> <input type="checkbox"/>		9028b a How much time needed to reach there? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS..... 1 <input type="checkbox"/> <input type="checkbox"/> DAYS..... 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS..... 3 <input type="checkbox"/> <input type="checkbox"/>	
9028c	What type of transport used to go there? On foot..... A Rickshaw/van..... B CNG/tempo/easy bike..... C Motor cycle..... D Ambulance/microbus/car..... E Bus..... F Boat without engine..... G Boat with engine..... H OTHER..... X		9028c a What type of transport used to go there? On foot..... A Rickshaw/van..... B CNG/tempo/easy bike..... C Motor cycle..... D Ambulance/microbus/car..... E Bus..... F Boat without engine..... G Boat with engine..... H OTHER..... X	
9028d	On which day of the week she reached there? Friday..... 1 Saturday..... 2 Sunday..... 3 Monday..... 4 Tuesday..... 5 Wednesday..... 6 Thursday..... 7 Don't know/Can't remember..... 9		9028d a On which day of the week she reached there? Friday..... 1 Saturday..... 2 Sunday..... 3 Monday..... 4 Tuesday..... 5 Wednesday..... 6 Thursday..... 7 Don't know/Can't remember..... 9	
9028e	On which time of the day she reached there? Before 2.00 PM..... 1 After 2.00 PM..... 2 Don't know/Can't remember..... 9		9028e a On which time of the day she reached there? Before 2.00 PM..... 1 After 2.00 PM..... 2 Don't know/Can't remember..... 9	
9028f	After reaching there, how much time did it take to start the treatment? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS..... 1 <input type="checkbox"/> <input type="checkbox"/> DAYS..... 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS..... 3 <input type="checkbox"/> <input type="checkbox"/>		9028fa After reaching there, how much time did it take to start the treatment? (Write 00 if less than 1 hr, write in hrs if less than 1 day, write in complete month if 30 days or more) HOURS..... 1 <input type="checkbox"/> <input type="checkbox"/> DAYS..... 2 <input type="checkbox"/> <input type="checkbox"/> MONTHS..... 3 <input type="checkbox"/> <input type="checkbox"/>	
9029	Did she receive (or need) a blood transfusion? YES..... 1 NO..... 2 DON'T KNOW..... 8		9029a Did she receive (or need) a blood transfusion? YES..... 1 NO..... 2 DON'T KNOW..... 8	
9030	Did s/he receive (or need) treatment/food through a tube passed through the nose? YES..... 1 NO..... 2 DON'T KNOW..... 8		9030a Did s/he receive (or need) treatment/food through a tube passed through the nose? YES..... 1 NO..... 2 DON'T KNOW..... 8	
9031	Did she receive (or need) injectable antibiotics? YES..... 1 NO..... 2 DON'T KNOW..... 8		9031a Did she receive (or need) injectable antibiotics? YES..... 1 NO..... 2 DON'T KNOW..... 8	
9035	Did a health care worker tell you the cause of death? YES..... 1		9035a Did a health care worker tell you the cause of death? YES..... 1	

	HOME CARE	Skip		OTHER THAN HOME CARE	Skip
	NO2 DON'T KNOW8			NO2 DON'T KNOW8	
9036	What did the health care worker say? _____		9036a	What did the health care worker say? _____	
9037	Do you have any health records (clinical test, prescription etc.) that belonged to the deceased? YES 1 NO 2 DON'T KNOW 8		9037a	Do you have any health records (clinical test, prescription etc.) that belonged to the deceased? YES 1 NO 2 DON'T KNOW 8	
9038	Do you have any health records (clinical test, prescription etc.) that belonged to the deceased? YES 1 NO 2 DON'T KNOW 8		9038a	Do you have any health records (clinical test, prescription etc.) that belonged to the deceased? YES 1 NO 2 DON'T KNOW 8	
9039	Can I see the health records? YES 1 NO 2 DON'T KNOW 8		9039a	Can I see the health records? YES 1 NO 2 DON'T KNOW 8	
9040	Record the date of the most recent (last) visit Date: ____/____/____		9040a	Record the date of the most recent (last) visit Date: ____/____/____	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
9101	How much did it cost in total for the treatment of her last illness? (If cannot mention write 999995)	TOTAL COST NO COST INCURRED 000000	9105
9102	How much did it cost in total for her treatment at home? (Ask about each expense) Write 00000 if there was no expense. (If cannot mention write 99995)	TOTAL COST NO COST INCURRED 000000	
9103	How much did it cost in total for her treatment outside of home? (Ask about each expense) Write 00000 if there was no expense. (If cannot mention write 99995)	TOTAL COST NO COST INCURRED 000000	
9104	From where did she get the funds for her for treatment?	FAMILY FUNDSA BORROWEDB SOLD ASSETS C GIVEN BY RELATIVES (GIFT) D MORTGAGED PROPERTYE GIVEN BY FRIENDS (GIFT)F OTHERX DON'T KNOWY	

9801	INTERVIEWER: CHECK THE QUESTIONNAIRE CAREFULLY FOR COMPLETENESS BEFORE ENDING THE INTERVIEW. THEN SAY THANK YOU AND END THE INTERVIEW.	
9802	RECORD THE TIME	HOURS __ __ MINUTES __ __

INTERVIEWER'S COMMENTS AND OBSERVATION

INTERVIEWER'S ASSESSMENT OF CAUSE OF DEATH

END OF INTERVIEW

APPENDIX G. MMVS QUESTIONNAIRES

MEASUREMENT OF OBSTETRIC FISTULA AND PELVIC ORGAN PROLAPSE: A VALIDATION STUDY

MORBIDITY SCREENING QUESTIONNAIRE

**National Institute of Population Research and Training (NIPORT)
Ministry of Health and Family Welfare
Mitra and Associates
icddr,b
MEASURE Evaluation
MaMoni HSS
Fistula Care+; Engender Health, Bangladesh**

IDENTIFICATION	
DIVISION.....	<input type="checkbox"/>
DISTRICT.....	<input type="checkbox"/> <input type="checkbox"/>
UPAZILA.....	<input type="checkbox"/> <input type="checkbox"/>
UNION.....	<input type="checkbox"/> <input type="checkbox"/>
MOUZA.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
VILLAGE.....	
NAME OF PARA.....	
CLUSTER NUMBER.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
HOUSEHOLD NUMBER.....	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
NAME OF HOUSEHOLD HEAD.....	
NAME OF RESPONDENT.....	

INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE				DAY <input type="checkbox"/> <input type="checkbox"/> MONTH <input type="checkbox"/> <input type="checkbox"/> YEAR <input type="checkbox"/> 2 <input type="checkbox"/> 0 <input type="checkbox"/> 1 <input type="checkbox"/> 6
INTERVIEWER'S NAME				INT. CODE <input type="checkbox"/> <input type="checkbox"/>
RESULT*				RESULT* <input type="checkbox"/>
NEXT VISIT: DATE TIME	_____ _____	_____ _____		TOTAL NO. OF VISITS <input type="checkbox"/>
*RESULT CODES: 1 COMPLETED 2 NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME AT TIME OF VISIT 3 ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD OF TIME 4 POSTPONED 5 REFUSED 6 DWELLING VACANT OR ADDRESS NOT A DWELLING 7 DWELLING DESTROYED 8 DWELLING NOT FOUND 9 OTHER _____ (SPECIFY)				TOTAL PERSONS IN HOUSEHOLD <input type="checkbox"/> <input type="checkbox"/> TOTAL ELIGIBLE WOMEN <input type="checkbox"/> <input type="checkbox"/> LINE NO.OF RESP. TO HH QUESTIONNAIRE <input type="checkbox"/> <input type="checkbox"/>
SUPERVISOR NAME _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> DATE: _____		FIELD EDITOR NAME _____ <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> DATE: _____		OFFICE EDITOR <input type="checkbox"/> <input type="checkbox"/> KEYED BY <input type="checkbox"/> <input type="checkbox"/>

INFORMED CONSENT FOR HOUSEHOLD QUESTIONNAIRE

Introductory statement: My name is _____. I am working with the National Institute of Population Research and Training (NIPORT) and Mitra and Associates, a private research organization located in Dhaka. We are conducting a survey about maternal health in Bangladesh. Your household was selected for the survey. We would very much appreciate your participation in this survey.

Why the study being done: The survey aims to understand the state and progress of maternal morbidity and health care seeking issues in Bangladesh.

What is involved in the study: You have been selected as respondents in this study. I would like to ask you some questions about your household and household members.

What will you have to do if you agree to participate: Since, you have been selected as respondents in this study. I shall be thankful if you provide your valuable response on certain issues. If some questions cause you embarrassment or make you feel uncomfortable, you can refuse to answer them. The survey usually takes between 10 and 15 minutes to complete.

What are the risks and benefits of this study: By providing information you will not have any risk what so ever, rather this will help the government and policy planners to evaluate, strengthen and refocus national effort to avert maternal deaths.

Confidentiality: Whatever information you provide will be kept strictly confidential. It will be used for research purposes and will be seen only by staff and researchers at the organizations mentioned.

Is there any compensation for participating in the study: Your participation in the study is voluntary and promises no financial benefit.

Right to refuse or withdraw: Participation in this survey is voluntary and you can choose not to answer any individual question or all of the questions. However, we hope that you will participate in this survey since your views are important.

Who do I contact if I have a question or problem: If you wish to know more about your rights as a participant in this study you may write the Bangladesh Medical Research Council (BMRC), Mohakhali, Dhaka or the Institutional Review Board (IRB) at the School of Public Health, CB # 7400, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7400, U.S.A. You can also talk with the MEASURE Evaluation Bangladesh team via 01730376458. If you have further questions regarding the nature of this study you may also contact NIPORT, 13/1 Sheikh Shaheb Bazar Road, Azimpur, Dhaka-1205 or phone 9662495, 58611206. In addition, for further information, please contact with Mr. SN Mitra, Executive Director, Mitra and Associates, Plot: 35, Road: 01, Section: 10, Dhaka – 1216, Bangladesh; phone: 01711278663.

At this time, do you want to ask me anything about the survey?

May I begin the interview now? Yes 1 No 2 → END



Participant's Name: _____ Signature (or thumb print): _____ Date: _____

(legal guardian if participant is a minor – note name and relationship): _____

Name of witness: _____ Signature: _____ Date: _____

Name of person obtaining consent: _____ Signature: _____ Date: _____

(Must be study investigator or individual who has been designated to obtain consent)

SECTION 1: HOUSEHOLD SCHEDULE

HH Interview start time:

Hour Min

Now I would like to know some information about the people who usually live in your household or who stayed last night in your house.

LINE NO.	USUAL RESIDENTS AND VISITORS Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.	SEX Is (NAME) male or female? If male then move to the next row	RESIDENCE (Ask ONLY for female)		AGE (IF FEMALE) How old is (NAME)? IF AGE LESS THAN 1 YEAR WRITE '00' IF 95 OR MORE, RECORD 95.	IF FEMALE AND AGE 10 YEARS OR OLDER MARRITAL STATUS		WOMAN ELIGIBILITY CIRCLE LINE NUMBER OF ALL EVER MARRIED WOMEN AGED 13-64 YEARS (Q103=2, Q106=13-64 & Q107=1)
			Does (NAME) usually live here?	Did (NAME) stay here last night?		What is (NAME's) current marital status?*		
(101)	(102)	(103)	(104)	(105)	(106)	(107)	(108)	
01		M <input type="checkbox"/> F <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/>	IN YEARS <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	01	
02		1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	02	
03		1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	03	
04		1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	04	
05		1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	05	
06		1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	06	
07		1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	07	
08		1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	08	
09		1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	09	
10		1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	10	
11		1 <input checked="" type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	1 <input type="checkbox"/> 2 <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>	11	

LINE NO.	USUAL RESIDENTS AND VISITORS	SEX	RESIDENCE (Ask ONLY for female)		AGE (IF FEMALE)	IF FEMALE AND AGE 10 YEARS OR OLDER		WOMAN ELIGIBILITY
			Does (NAME) usually live here?	Did (NAME) stay here last night?		MARITAL STATUS		
(101)	(102)	(103)	(104)	(105)	(106)	(107)	(108)	
12	Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.	M 1 → 2	YES NO 1 2	YES NO 1 2	How old is (NAME)? IF AGE LESS THAN 1 YEAR WRITE '00' IF 95 OR MORE, RECORD 95.	What is (NAME's) current marital status? ** Ever MARRIED- 1 NEVER-MARRIED- 2	CIRCLE LINE NUMBER OF ALL EVER MARRIED WOMEN AGED 13-64 YEARS (Q103=2, Q106=13-64 & Q107=1)	12
13		1 → 2	1 2	1 2				13
14		1 → 2	1 2	1 2				14
15		1 2	1 2	1 2				15

TAKE ADDITIONAL SHEET IF THERE IS MORE THAN 15 MEMBERS. TICK HERE IF ADDITIONAL SHEET USED

- 1) Just to make sure that I have a complete listing: are there any other persons such as small children or infants that we have not listed?
YES ENTER EACH IN TABLE NO
- 2) In addition, are there any other people who may not be members of your family, such as domestic servants, lodgers or friends who usually live here?
YES ENTER EACH IN TABLE NO
- 3) Are there any guests or temporary visitors staying here, or anyone else who stayed/slept here last night?
YES ENTER EACH IN TABLE NO

109. TOTAL NUMBER OF ELIGIBLE WOMEN (CIRCLED IN COLUMN 108)

HH Interview end time:

Hour

Min

Woman's Questionnaire

Face Sheet

IDENTIFICATION	
CLUSTER NUMBER.....	<input type="text"/> <input type="text"/> <input type="text"/>
HOUSEHOLD NUMBER.....	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
NAME OF HOUSEHOLD HEAD _____	
NAME AND LINE NO. OF ELIGIBLE RESPONDENT.....	<input type="text"/> <input type="text"/>

INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE				DAY <input type="text"/> <input type="text"/> MONTH <input type="text"/> <input type="text"/> YEAR <input type="text" value="2"/> <input type="text" value="0"/> <input type="text" value="1"/> <input type="text" value="6"/>
INTERVIEWER'S NAME				INT. CODE <input type="text"/> <input type="text"/>
RESULT*				RESULT* <input type="text"/>
NEXT VISIT: DATE TIME	_____ _____	_____ _____		TOTAL NO. OF VISITS <input type="text"/>

***RESULT CODES:**

- | | | |
|---------------|-----------------------------|---------------|
| 1 COMPLETED | 4 REFUSED | 7 OTHER _____ |
| 2 NOT AT HOME | 5 PARTLY COMPLETED | (SPECIFY) |
| 3 POSTPONED | 6 RESPONDENT IN CAPACITATED | |

***MONTH CODES**

- | | | | |
|---------------|-----------|---------------|--------------|
| 01. JANUARY | 04. APRIL | 07. JULY | 10. OCTOBER |
| 02. FEBRUARY | 05. MAY | 08. AUGUST | 04. APRIL |
| 03. MARCH | 06. JUNE | 09. SEPTEMBER | 07. JULY |
| 04. APRIL | | | 10. OCTOBER |
| 05. MAY | | | 11. NOVEMBER |
| 06. JUNE | | | 05. MAY |
| 07. JULY | | | 08. AUGUST |
| 08. AUGUST | | | 11. NOVEMBER |
| 09. SEPTEMBER | | | 12. DECEMBER |
| 10. OCTOBER | | | |
| 11. NOVEMBER | | | |
| 12. DECEMBER | | | |

SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY
NAME _____ <input type="text"/> <input type="text"/> <input type="text"/>	NAME _____ <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/>
DATE: _____	DATE: _____		

SECTION 2: RESPONDENT'S CHARACTERISTICS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
201	RECORD THE INTERVIEW START TIME	HOUR <input type="text"/> <input type="text"/> MIN <input type="text"/> <input type="text"/>	
202	In what month and year were you born?	MONTH <input type="text"/> <input type="text"/> DON'T KNOW MONTH 98 YEAR <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DON'T KNOW YEAR..... 9998	
203	How old were you at your last birthday? COMPARE AND CORRECT 202 AND /OR 203 IF INCONSISTENT	AGE (IN COMPLETED YEARS) <input type="text"/> <input type="text"/>	
204	Are you currently married, divorced, separated, deserted, or widowed?	CURRENTLY MARRIED 1 DIVORCED 2 SEPARATED 3 DESERTED 4 WIDOWED 5	
205	Have you ever given birth?	YES 1 NO 2 →	332
	Now I would like to ask about all the births you have had during your life. Initially you informed us that you gave birth.		
206	Of all alive birth (s) that you have ever given, how many son(s) and daughter(s) are still alive? (even if they are not living with you now)	SONS <input type="text"/> <input type="text"/> DAUGHTERS <input type="text"/> <input type="text"/>	
207	Have you ever given birth to a boy or girl who was born alive but later died?	YES 1 NO 2 →	209
208	How many boys and girls have died?	BOYS DEAD <input type="text"/> <input type="text"/> GIRLS DEAD <input type="text"/> <input type="text"/>	
209	Have you ever given birth to a boy or girl who didn't cry or never had a signs of life after birth?	YES 1 NO 2 →	211
210	How many such boys and/or girls you gave birth?	Number <input type="text"/> <input type="text"/>	
211	Have you ever attended any school or Madrasa?	YES 1 NO 2 →	213
212	What is your highest completed class? Write 00 if no class was completed	TOTAL <input type="text"/> <input type="text"/>	
213	What is your religion?	ISLAM 1 HINDU 2 BUDDHIST 3 CHIRSTIAN 4 OTHERS 6 (SPECIFY)	

SECTION 3: MATERNAL MORBIDITY

SUB-SECTION 3.1: INCONTINENCE AND FISTULA LIKE SYMPTOM MODULE

We know sometimes women can have problems in holding urine and/or feces. They may feel shy to talk about these problems. Now, with your kind permission I would like to ask you some questions regarding this. Your responses to these questions will be kept strictly confidential and will not be shared with anyone.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
301.	Do you have problem in controlling urine?	YES.....1 NO.....2	
302.	Do you have problem in controlling feces?	YES.....1 NO.....2	
303.	Do you leak urine when you are in stress like laughing, coughing, sneezing or heavy lifting?	YES1 NO2	
304.	Do you suddenly feel the urge to go to the toilet, and accidentally leak urine?	YES1 NO2	
305.	Does your urine leak continuously , even when you are not urinating/ trying to urinate?	YES1 NO2 →	308
306.	How long have you been having this continuous leaking of urine?	YEARS MONTHS	
307.	Currently, does your clothing get wet with your urine during sleep every night ?	YES1 NO2	
308.	Do you currently experience feces passing through the birth canal that you cannot stop, even when you are not defecating?	YES1 NO2 →	311
309.	How long have you been having this continuous leaking of feces? [If less than 1 month write 00]	YEARS MONTHS	
310.	Currently, does your clothing get soiled with your feces while sleeping at every night?	YES1 NO2	
311	Interviewer: CHECK Q 305 and 308 circle the right code. IFQ 305 or Q 308 circled 1.....1 IFQ 305 and Q 308 circled 2.....2 →		321
312	Did this problem (leakage of urine and/or feces) start immediately after your delivery (live/still birth)?	YES1 NO2 →	315
313	After how many days did this problem start?	Within 2 weeks of delivery1 Between 2-4 weeks of delivery2 Between 4-6 weeks of delivery3 Over 6 weeks4	
314	How was the delivery conducted- a normal delivery, an instrumental delivery, or a caesarean section?	Normal delivery.....1 Instrumental delivery.....2 Delivery through C-Section3 } →	317

316	Did this problem (continuous leakage of urine and/or feces) start after any other abdominal or pelvic surgery?	YES1 NO2	
317	Have you ever sought treatment for this problem (leakage of urine and/or feces)?	YES1 NO2 →	320
318	IF YES, from whom did you seek treatment? (PROBE AND RECORD ALL MENTIONED CODE)	HEALTH PROFESSIONAL QUALIFIED DOCTOR (MBBS).....A NURSE/MIDWIFE/PARAMEDIC.....B FAMILY WELFARE VOLUNTEER (FWV)C COMMUNITY SKILLED BIRTH ATTENDENTD MEDICAL ASSISTANT (MA)/SACMO.....E COMMUNITY HEALTH CARE PROVIDER(CHCP)F HEALTH ASSISTANT (HA).....G FAMILY WELFARE ASSISTANT (FWA).....H NGO WORKER.....I OTHER PERSON TRAINED TRADITIONAL BIRTH ATTENDENT (TTBA).....J UNTRAINED TRADITIONAL BIRTH ATTENDENT (UTBA).....K VILLAGE DOCTOR.....L OTHER.....X (SPECIFY)	
319	Did the treatment involve surgery?	YES1 → NO2	SUB-SECTION 3.2
320	Why have you not sought treatment? PROBE AND RECORD ALL MENTIONED.	It was not important.....A Didn't understand the importance of seeking care.....B Too expensive.....D Financial hardship.....E Too far.....F Transportation problem.....G Unavailability of companion.....H Poor quality of serviceI Couldn't get permission from family.....J Didn't know how to go to the facility.....L Didn't know where to go.....N Didn't want to consult any male doctor.....O Out of fear.....P Didn't know the problem can be solved by treatment.....S Uncomfortable/embarrassing.....T Thought that problem has been cured.....U Other.....X (SPECIFY)	SUB-SECTION 3.2

321	Have you ever experienced leaking urine/feces continuously , even when you are not trying to urinate/defecate?	YES1 NO2	SUB-SECTION 3.2
322	Did you seek treatment to stop continuous leaking urine/feces?	YES1 NO2	SUB-SECTION 3.2
323	From whom did you seek treatment? (Multiple response accepted)	HEALTH PROFISSIONAL QUALIFIED DOCTOR (MBBS).....A NURSE/MIDWIFE/PARAMEDIC.....B FAMILY WELFARE VOLUNTEER (FWV).....C COMMUNITY SKILLED BIRTH ATTENDENT (CSBA).....D MEDICAL ASSISTNT (MA)/SACMO.....E COMMUNITY HEALTH CARE PROVIDER.....F HEALTH ASSISTANT (HA).....G FAMILY WELFARE ASSISTANT (FWA).....H NGO WORKER.....I OTHER PERSON TRAINED TRADITIOANL BIRTH ATTENDENT (TTBA).....J UNTRAINED TRADITIOANL BIRTH ATTENDENT (UTBA).....K VILLAGE DOCTOR.....L OTHER.....X (SPECIFY)	
324	Did the treatment involve surgery?	YES1 NO2	

SUB-SECTION 3.2: PELVIC ORGAN PROLAPSE LIKE SYMPTOM MODULE

We know, sometimes women can have problems in have a bulge or something falling out in vaginal area. They may feel shy to talk about this problem. Now, with your kind permission I would like to ask you some questions regarding this. Your responses to these questions will be kept strictly confidential and will not be shared with anyone.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
325	In last one year did you feel any bulge or something falling out in your vaginal area?	YES1 NO2 →	332
325a	When was the last time you feel that any bulge or something falling out? (Record 00 if less than 1 month)	Months ago	
326	Have you felt the bulge or something falling out in your vaginal area, with your hand or have you seen that?	YES, HAVE FELT IT WITH HAND 1 YES, HAVE SEEN IT 2 YES, HAVE FELT IT WITH HAND AND SEEN IT..... 3 NO, HAVE NOT FELT IT WITH HAND OR NOT SEEN IT 4	
327	How long have you been suffering from this problem?	YEARS MONTHS	
328	Have you ever sought treatment for this problem?	YES1 NO2 →	331
329	From whom did you seek treatment? (Multiple response accepted)	HEALTH PROESSIONAL QUALIFIED DOCTOR (MBBS).....A NURSE/MIDWIFE/PARAMEDIC.....B FAMILY WELFARE VOLUNTEER (FWV)C COMMUNITY SKILLED BIRTH ATTENDENTD MEDICAL ASSISTNT (MA)/SACMO.....E COMMUNITY HEALTH CARE PROVIDERF HEALTH ASSISTANT (HA)G FAMILY WELFARE ASSISTANT (FWA)H NGO WORKERI OTHER PERSON TRAINED TRADITIOANL BIRTH ATTENDENT (TTBA)J UNTRAINED TRADITIOANL BIRTH ATTENDENT (UTBA)K VILLAGE DOCTORL OTHERX (SPECIFY)	
330	Did the treatment involve surgery?	YES1 NO2	
330a	Were you cured after receiving treatment?	YES1 NO2 } →	332

331	<p>Why have you not sought treatment? PROBE AND RECORD ALL MENTIONED.</p>	<p>It was not important.....A Didn't understand the importance of seeking care.....B Too expensive.....D Financial hardship.....E Too far.....F Transportation problem.....G Unavailability of companion.....H Poor quality of service.....I Couldn't get permission from family.....J Didn't know how to go to the facility.....L Didn't know where to go.....N Didn't wanted to consult any male doctor.....O Out of fear.....P Didn't know the problem can be solved by treatment.....S Uncomfortable/embarrassing.....T Thought that problem has been cured.....U Other.....X (SPECIFY)</p>	
-----	--	--	--

332	INTERVIEWER: CHECK THE QUESTIONNAIRE CAREFULLY FOR COMPLETENESS BEFORE ENDING THE INTERVIEW. THEN THANK THE REpondent YOU AND END THE INTERVIEW.		
333	RECORD THE INTERVIEW ENDTIME	HOURS <input type="text"/> <input type="text"/> <input type="text"/> MINUTES <input type="text"/> <input type="text"/> <input type="text"/>	

END OF INTERVIEW

STATION 1

IDENTIFICATION	
<p>[ENTER THE FOLLOWING INFORMATION FROM THE CARD]</p> <p>UPAZILA.....</p> <p>UNION.....</p> <p>MOUZA.....</p> <p>VILLAGE</p> <p>NAME OF PARA _____</p> <p>CLUSTER NUMBER</p> <p>HOUSEHOLD NUMBER</p> <p>NAME OF HOUSEHOLD HEAD _____</p> <p>NAME & LINE NUMBER OF RESPONDENT _____</p> <p>(Please check the name of the respondent and household head in the card and then verify by asking the respondent; if any discrepancy, inform the respective field staff)</p>	<div style="display: flex; flex-direction: column; align-items: center; gap: 10px;"> <div style="display: flex; gap: 5px;"> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> </div> <div style="display: flex; gap: 5px;"> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> </div> <div style="display: flex; gap: 5px;"> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> </div> <div style="display: flex; gap: 5px;"> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> </div> <div style="display: flex; gap: 5px;"> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> </div> <div style="display: flex; gap: 5px;"> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> </div> </div>
<p>ASK AND RECORD</p> <p>RESPONDENT'S AGE : <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> YEARS</p>	
<p>DATE OF VISIT: <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> / <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> / 20 <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/></p> <p style="text-align: center; margin-left: 100px;"> DD MM YY </p>	

Consent Form

Many women experience injuries related to pregnancy and childbirth. Treatment is available for many of these, but women do not always know about the treatment options. We are trying to identify women who have injuries related to childbearing, and helping them getting medical treatment. To do this, we are conducting a research study in this upazila and at this centre, and we will be examining women who have certain symptoms that might be signs of injuries like fistula, prolapse and urinary incontinence. You are referred to us by our field colleagues as you might have some relevant symptoms.

Today, if you agree, we will then measure your height, weight, pulse and blood pressure; ask you about some major diseases, and conduct physical examination. This will be done in a private space, by a female doctor. She will examine your pelvic area, both outside and inside, in lying position. She will look at the urinary and fecal canal and birth passage. During this examination, she will use her hands and a speculum, which is a small tool to help look inside the birth passage. In some cases, you may need to do a dye test, in which a thin tube called a catheter will be used to liquid in your body, to see if it comes through the birth passage. You may be asked to cough, to walk around, and/or to wait for a period of time. The full process, including history taking and physical examination, will take up to 3 hours. You may experience discomfort during parts of the examination, but there is no risk of physical injury. If you are diagnosed with a particular medical problem, we will help you understand what it is, whether it can be treated, and help you get treatment if you would like to treat it. We are also taking care of the cost of the examination and your travel costs.

The information in your medical record will be treated with strict confidence by the medical staff here and by the study staff. The information collected for the study will be kept strictly confidential also, and you will never be identified by name in any documents written for the public by this study.

You may or may not like to go through the process that I have described. Even if you start participating, you will have the right to withdraw at any point during history taking or examination process. You may also opt not to answer any particular question or examination. If you do not want to go through the process today and like to come back in the future, the project staffs who are working today may or may not be available to provide your care on that day. If you have further questions regarding this study, you may ask those to our staff now or at any time in future. You will also be able to contact Dr. Quamrun Nahar, the Principal Investigator (phone: 01730317652) for any further questions. If you want to know more about your rights as a participant in this process please contact M.A Salam Khan, IRB secretariat (Phone: 01711428989), icddr,b.

Do you have any questions? **Yes** **No**

Do you agree to participate in this research project? **Yes** **No**

Signature or left thumb impression of participant

Date

Signature or left thumb impression of the witness

Date

Start Time:

Hour , Minute

RESULT at station 1:

[Completed 1, Postponed 2, Refused 3]

Measurement of height, weight and blood pressure and LMP

101	Height	<input type="text"/> <input type="text"/> <input type="text"/> cm
102	Weight	<input type="text"/> <input type="text"/> <input type="text"/> kg
103	Pulse	<input type="text"/> <input type="text"/> <input type="text"/> per minute
104	BP	<input type="text"/> <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> <input type="text"/> Systolic / Diastolic
105	Temperature	<input type="text"/> <input type="text"/> <input type="text"/> F
106	LMP	<input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> /20 <input type="text"/> <input type="text"/> DD MM YY Menopause.....99999995 DON'T KNOW.....99999998

Medical & Surgical History

107	Diabetes:	YES.....1 NO.....2 DO NOT KNOW.....8
108	Tuberculosis:	YES.....1 NO.....2 DO NOT KNOW.....8
109	Any other major illness:	YES.....1 (Specify _____) NO.....2 DO NOT KNOW.....8
110	History of previous surgery:	YES.....1 (Specify _____) NO.....2 DO NOT KNOW.....8

Staff name _____, Staff ID: , Staff signature: _____

End time:

Hour , Minute

STATION 2

Start Time:

Hour , Minute

RESULT at station 2:

[Completed 1, Postponed 2, Refused 3]

Chief Complaints

No.	Question	Response
201	Do you have problem in controlling urine?	YES.....1 NO.....2
202	Do you leak urine when you are in stress like laughing, coughing, sneezing or heavy lifting?	YES.....1 NO.....2
203	Do you suddenly feel the urge to go to the toilet, and accidentally leak urine?	YES.....1 NO.....2
204	Does your urine leak continuously, even when you are not urinating/ trying to urinate?	YES.....1 NO.....2
205	Do you have problem in controlling feces?	YES.....1 NO.....2
206	Do you currently experience feces passing through the birth canal that you cannot stop, even when you are not defecating?	YES.....1 NO.....2
207	In the last one year did you have a bulge or something coming out that you can see or feel in your vaginal area?	YES.....1 NO.....2

Staff name _____, Staff ID: , Staff signature: _____

End time:

Hour , Minute

STATION 3

Start Time:

Hour , Minute

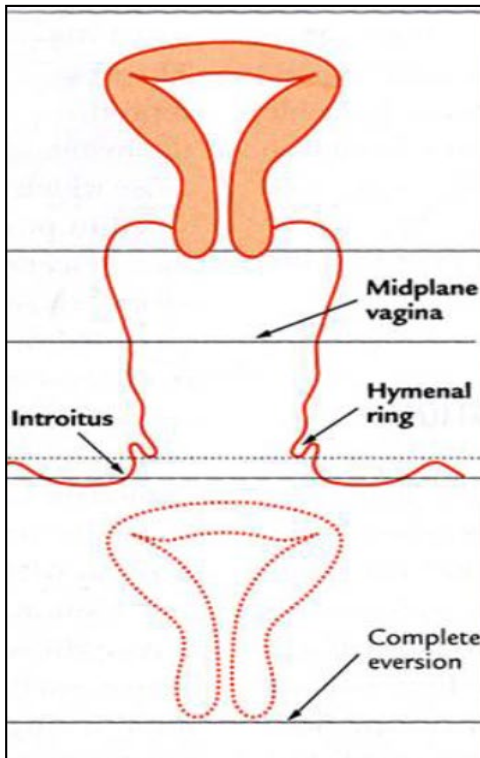
RESULT at station 3:

[Completed 1, Postponed 2, Refused 3]

Clinical Examination

External genitalia		
301	Vulva	Normal.....1 Excoriation.....2
Urethra		
302	Meatus	Identified.....1 Not identified.....2
303	Urine coming through	Urethra.....1 Vagina.....2 Both Urethra and Vagina3 Site of incontinence could not be identified.....4 No incontinence5
Vagina		
304	Vaginal wall	Normal.....1 Bulging.....2 Scarred.....3 Bulging and scarred.....4 Stenosis.....5
305	Hole in vaginal wall	Yes, visible.....1 Yes, felt.....2 Yes, visible and felt.....3 No.....4
Perineum		
306	Perineum	Intact/normal.....1 Not intact/damaged.....2 If not intact/damaged (Specify) _____
Cervix		
307	Cervix	Visible.....1 Not visible.....2
Rectum		
308	Anal Sphincter	Intact/normal.....1 Not intact/damaged.....2
309	Index finger passing through rectum and coming out through vagina	Yes.....1 No.....2

POP-Q staging



POP-Q STAGING

- STAGE 0 No Prolapse seen
- STAGE 1 Most distal part of prolapse >1cm above hymen
- STAGE 2 Most distal part of prolapse is within +/- 1cm of hymen
- STAGE 3 Most distal part of prolapse is >1cm below hymen but less than Total Vaginal Length
- STAGE 4 Complete vaginal eversion

310	POP-Q staging	Done.....1 Not done.....2 [SKIP to 312]
311	POP-Q stage	Stage 0..... 0 Stage 1.....1 Stage 2.....2 Stage 3.....3 Stage 4.....4

312. CHECK Q201, Q204, Q302, Q303 and Q305

The woman should be eligible for Blue test **IF**
 Q201=1 & Q204=1,
 & Q302=1,
 & Q303=2 or 3 or 4,
 & 305=4.

Eligible for Blue test.....1

Not Eligible for Blue test.....2 [Skip to Q315]

Genitourinary Blue Test
 (Please explain the procedure and take a verbal consent from the woman)

313	Blue test	Done.....1 Could not be done2 [Skip to Q315] (specify the reason) _____ Refused3 [Skip to Q315]
314	Results of Blue test	Positive.....1 Negative, dry.....2 Negative, wet with clear urine.....3 Doubtful/ambiguous.....4
315	Final Diagnosis	VVF.....A RVF.....B POP (Stage 1 or 2).....C POP (Stage 3 or 4).....D Perineal tear.....E Suspected case of VVF.....F Other (specify _____) X

Staff name: _____, Staff ID: , Staff signature: _____

End time: Hour , Minute

Counselling and Treatment Plan

Please CHECK 315,

If 315 = A and/or B or F —————> go to Station 5A

If 315 = Only D —————> go to Station 5B.

Otherwise, go to station 4 (For all respondent, station 4 must be filled up)

STATION 5A

Start Time:

Hour , Minute

RESULT at station 5A: [Completed 1, Postponed 2, Refused 3]

Obstetric and treatment history for Fistula Cases (VVF and/or RVF)

[Now I would like to ask you some questions regarding the events that led to developing the fistula. I also want to know the treatment you have received so far for the fistula]

NO	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	Did your experience of leaking urine (and/or passage of stool) start after a pregnancy outcome?	Yes.....1 No.....2 →	506
502	What was of outcome of that pregnancy from which you are experiencing this problem?	Live birth.....1 Still birth.....2 Spontaneous miscarriage.....3 → Induced abortion/MR.....4 →	506 505
503	How long after the initiation of labour pain was the baby delivered?	[][][] hours	
504	How the baby was delivered?	Normal delivery, without episiotomy.....1 Normal delivery, with episiotomy.....2 Forceps delivery3 Vacuum Aspiration.....4 Caesarean section5 →	506 509
505	How was the abortion/MR done?	Indigenous method.....1 Surgical MR2 Medical MR.....3 Others, specify (.....).....6	
506	Did you ever have any abdominal surgery?	Yes.....1 No.....2 →	509
507	What surgical intervention did you have?	Hysterectomy.....1 Ligation.....2 Caesarean section3 Other, specify (.....).....6	
508	Did your experience of leakage of urine (or passage of stool) begin after that surgical intervention?	Yes.....1 No.....2	

NO	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP						
509	Have you ever sought treatment for this problem?	Yes.....1 → No.....2	511						
510	Why didn't you seek care?	Didn't think it was important.....A Didn't understand the importance of seeking care..B Too expensive.....D Financial hardship.....E Too far.....F Difficulties in arranging transportation problem....G Unavailability of companion.....H Poor quality of service.....I Couldn't get permission from family.....J Didn't know how to go to the facility.....L Didn't know where to go.....N Didn't wanted to consult any make doctor.....O Out of fear.....P Do not know can be fixed.....S Out of embarrassment.....T Problem disappeared.....U Other.....X (SPECIFY)	515						
511	How long after developing the problem you have sought the treatment? [IF ANSWER IS LESS THAN ONE MONTH, RECORD DAYS. IF ANSWER IS 1-11 MONTHS, RECORD MONTHS. IF ANSWER IS 1 YEAR OR MORE, RECORD YEARS.]	Days.....1 Months.....2 Years.....3 <table border="1" style="display: inline-table; vertical-align: middle; margin-left: 20px;"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>							

NO	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
512	From whom did you seek treatment? (Multiple response accepted)	Health professional Qualified Doctor (MBBS).....A Nurse/midwife/paramedic.....B Family welfare visitor (FWV).....C Community skill birth attendant.....D Medical assistant (MA)/SACMO.....E Community health care provider.....F Health Assistant (HA).....G Family welfare assistant (FWA).....H NGO worker.....I Other person Trained traditional birth attendant (TTBA).....J Untrained traditional birth attendant (UTBA).....K Village doctor.....L Other (SPECIFY)_____X	
513	Did the treatment involve surgery?	Yes.....1 No.....2 →	515
514	How many times you have undergone surgery for this problem?	<input type="checkbox"/>	

515. Thank you for your valuable time.

Staff name: _____, Staff ID: , Staff signature: _____

End time: Hour , Minute

STATION 5B

Start Time:

Hour , Minute

RESULT at station 5B:

[Completed 1, Postponed 2, Refused 3]

Obstetric and treatment history for Pelvic Organ Prolapse (POP)

[Now I would like to ask you some questions regarding your POP treatment]

NO	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
609	Have you ever sought treatment for this problem?	Yes.....1 → No.....2	611
610	Why didn't you seek care?	Didn't think it was important.....A Didn't understand the importance of seeking care...B Too expensive.....D Financial hardship.....E Too far.....F Difficulties in arranging transportation problem.....G Unavailability of companion.....H Poor quality of service.....I Couldn't get permission from family.....J Didn't know how to go to the facility.....L Didn't know where to go.....N Didn't wanted to consult any make doctor.....O Out of fear.....P Do not know can be fixed.....S Out of embarrassment.....T Problem disappeared.....U Other.....X (SPECIFY)	} 615

NO	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
611	How long after developing the problem you have sought the treatment? [IF ANSWER IS LESS THAN ONE MONTH, RECORD DAYS. IF ANSWER IS 1-11 MONTHS, RECORD MONTHS. IF ANSWER IS 1 YEAR OR MORE, RECORD YEARS.]	Days.....1 <input type="checkbox"/> <input type="checkbox"/> Months.....2 <input type="checkbox"/> <input type="checkbox"/> Years.....3 <input type="checkbox"/> <input type="checkbox"/>	
612	From whom did you seek treatment? (Multiple response accepted)	Health professional Qualified Doctor (MBBS).....A Nurse/midwife/paramedic.....B Family welfare visitor (FWV).....C Community skill birth attendant.....D Medical assistant (MA)/SACMO.....E Community health care provider.....F Health Assistant (HA).....G Family welfare assistant (FWA).....H NGO worker.....I Other person Trained traditional birth attendant (TTBA).....J Untrained traditional birth attendant (UTBA)....K Village doctor.....L Other (SPECIFY) _____X	
613	Did the treatment involve surgery?	Yes.....1 No.....2 →	615
614	How many times you have undergone surgery for this problem?	<input type="checkbox"/>	

615. Thank you for your valuable time.

Staff name: _____, Staff ID: , Staff signature: _____

End time:

Hour , Minute

STATION 4 (Must be filled up for all respondents)

Start Time:

Hour: ,

Minute:

RESULT at station 4:

[Completed 1, Postponed 2, Refused 3]

401	Treatment Plan	Fistula repair immediately..... A Fistula Repair when ready..... B Treatment of Co-morbidities..... C Prolapse surgery..... D Prolapse conservative treatment.....E Physiotherapy..... F Counselling..... G Treatment of other disease.....H (please specify _____) Other.....X (please specify _____)
402	Referral	UHFWC.....1 UHC.....2 District Hospital.....3 Fistula Repair site.....4 Other Hospitals..... 6 (please specify _____) Not referred.....7
403	Counselling	On fistula treatment.....A On prolapse treatment.....B Family Planning.....C Pelvic floor exercise.....D OtherX (please specify _____)

End time:

Hour: ,

Minute:

Staff name: _____, Staff ID: , Staff signature: _____

Thanks the respondent for giving her valuable time.

APPENDIX H. BMMS 2016 REVIEW COMMITTEE REPORT

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়
স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ

স্মারক নং-৫৯.১২.০০০০.০০৩.৯৯.০৩১১৯.৪৪১

তারিখ: ১৫ জুলাই ২০১৯
৩১ আষাঢ় ১৪২৬

বিষয়: বাংলাদেশ মাতৃমৃত্যু ও স্বাস্থ্য সেবা জরিপ-২০১৬ এর প্রাথমিক ফলাফল পর্যালোচনা কমিটির প্রতিবেদন দাখিল প্রসঙ্গে।

সূত্র: স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগের স্মারক নং-৫৯.০০.০০০০.১১৪.৯৯.০১৯.২০১৭.১৭৪, তারিখ: ১৭/১২/২০১৭।

উপর্যুক্ত বিষয়ের প্রতি সদয় দৃষ্টি আকর্ষণপূর্বক জানানো যাচ্ছে যে, বাংলাদেশ মাতৃমৃত্যু ও স্বাস্থ্য সেবা জরিপ-২০১৬ এর প্রাথমিক ফলাফল পর্যালোচনা করার জন্য সূত্রোক্ত অফিস আদেশ মূলে একটি কমিটি গঠন করা হয় (অফিস আদেশের কপি সংযুক্ত)। বিগত ২৮/১২/২০১৭ তারিখে উক্ত কমিটির প্রথম সভা অনুষ্ঠিত হয় (সভার কার্যবিবরণী সংযুক্ত)। সভায় সর্বসম্মতিক্রমে বিবেচ্য জরিপের ফলাফল বিস্তারিতভাবে পর্যালোচনা করার জন্য বিশেষজ্ঞ ব্যক্তিবর্গের সমন্বয়ে একটি উপ-কমিটি গঠন করা হয়। গঠিত উপ-কমিটি পাঁচ দফায় সভায় মিলিত হয়ে বিস্তারিত পর্যালোচনা শেষে সম্প্রতি একটি প্রতিবেদন দাখিল করে।

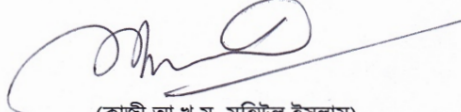
এ প্রেক্ষিতে গত ১৫/০৭/২০১৯ তারিখে মূল কমিটি সভায় মিলিত হয় এবং প্রাপ্ত প্রতিবেদন পর্যালোচনা করে সুপারিশমালা প্রণয়ন করে (সভার কার্যবিবরণী সংযুক্ত)।

এমতাবস্থায়, ১৫/০৭/২০১৯ তারিখে অনুষ্ঠিত মূল কমিটির সভার কার্যবিবরণী বর্ণিত সুপারিশমালার ভিত্তিতে বিএমএমএস-২০১৬ প্রতিবেদন মুদ্রণ ও বিতরণের অনুমোদনের বিষয়ে সদয় বিবেচনার জন্য সংযুক্ত কাগজপত্রাদি এতদসঙ্গে প্রেরণ করা হলো।

সংযুক্ত:

- ১। কমিটি গঠনের অফিস আদেশের কপি - এক পাতা
- ২। ২৮/১২/২০১৭ তারিখে অনুষ্ঠিত কমিটির প্রথম সভার কার্যবিবরণী - চার পাতা
- ৩। উপ-কমিটির প্রতিবেদন - বারো পাতা
- ৪। ১৫/০৭/২০১৯ তারিখে অনুষ্ঠিত মূল কমিটির ২য় সভার কার্যবিবরণী - সাত পাতা

শেখ ইউসুফ হাব্বুন
ভারপ্রাপ্ত সচিব
স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ
স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়

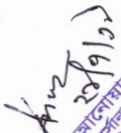

(কাজী আ.খ.ম. মহিউল ইসলাম)

অতিরিক্ত সচিব (জনসংখ্যা, পরিবার কল্যাণ ও আইন)

ও

সভাপতি

বিএমএমএস-২০১৬ এর প্রাথমিক ফলাফল পর্যালোচনা কমিটি
স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ।


মহাপরিচালক, জাতীয় জনসংখ্যা গবেষণা ও প্রশিক্ষণ ইনস্টিটিউট (নিপোর্ট), ১৩/১, শেখ সাহেব বাজার, আজিমপুর, ঢাকা।
স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ
স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়

অনুলিপি সদয় অবগতির জন্য প্রেরণ করা হলো:

- ১। মহাপরিচালক, জাতীয় জনসংখ্যা গবেষণা ও প্রশিক্ষণ ইনস্টিটিউট (নিপোর্ট), ১৩/১, শেখ সাহেব বাজার, আজিমপুর, ঢাকা।

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়
স্বাস্থ্য, শিক্ষা ও পরিবার কল্যাণ বিভাগ
জনসংখ্যা-১ অধিশাখা

বিষয়ঃ বাংলাদেশ মাতৃমৃত্যু ও স্বাস্থ্যসেবা জরিপ ২০১৬ এর প্রাথমিক ফলাফল পর্যালোচনা কমিটির দ্বিতীয় সভার কার্যবিবরণী।

সভাপতিঃ অতিরিক্ত সচিব (জনসংখ্যা, পরিবার কল্যাণ ও আইন), স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ, স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয় ও সভাপতি, মাতৃমৃত্যু ও স্বাস্থ্যসেবা জরিপ ২০১৬ এর প্রাথমিক ফলাফল পর্যালোচনা কমিটি কাজী আ. খ. ম. মহিউল ইসলাম।

তারিখ ও সময়ঃ ১৫/০৭/২০১৭, সকাল: ১১.০০ টা।

স্থানঃ জাতীয় জনসংখ্যা গবেষণা ও প্রশিক্ষণ ইনস্টিটিউট (নিপোর্ট) এর সভাকক্ষ; ১৩/১, শেখ সাহেব বাজার রোড, আজিমপুর, ঢাকা।

বাংলাদেশ মাতৃমৃত্যু ও স্বাস্থ্যসেবা জরিপ (বি.এম.এম.এস) ২০১৬ এর প্রাথমিক ফলাফল পর্যালোচনা কমিটির দ্বিতীয় সভা ১৫ জুলাই, ২০১৭ সকাল ১১.০০ ঘটিকায় নিপোর্ট সভাকক্ষে অনুষ্ঠিত হয়। উক্ত সভায় সভাপতিত্ব করেন কাজী আ. খ. ম. মহিউল ইসলাম, অতিরিক্ত সচিব (জনসংখ্যা, পরিবার কল্যাণ ও আইন), স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ, স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয় ও সভাপতি, মাতৃমৃত্যু ও স্বাস্থ্যসেবা জরিপ ২০১৬ এর প্রাথমিক ফলাফল পর্যালোচনা কমিটি। সভায় উপস্থিত সকলকে স্বাগত জানিয়ে সভাপতি সভার কাজ শুরু করেন। সভায় উপস্থিতির তালিকা পরিশিষ্ট 'ক' তে সংযোজিত হলো।

২. আলোচনাঃ

সভার প্রারম্ভে বিএমএমএস ২০১৬ এর প্রাথমিক ফলাফল পর্যালোচনা কমিটির সদস্য-সচিব ও পরিচালক (গবেষণা), নিপোর্ট জনাব মোঃ রফিকুল ইসলাম সরকার সভাপতির অনুরোধ ক্রমে বিএমএমএস ২০১৬ এর প্রাথমিক ফলাফল পর্যালোচনা উপ-কমিটির বিষয়ে সূচনা বক্তব্য প্রদান করেন। তিনি উপ-কমিটির স্বাক্ষরিত প্রতিবেদন প্রাপ্তির বিষয়ে সভাকে অবহিত করেন এবং জানান যে পাঁচটি সভার মাধ্যমে উপ-কমিটির কার্যক্রম সম্পন্ন করা হয়। তিনি উপ-কমিটিকে প্রতিবেদন পেশের জন্য ধন্যবাদ জানিয়ে জনাব মোহাম্মদ আহছানুল আলম, মূল্যায়ন বিশেষজ্ঞ, নিপোর্ট ও বিএমএমএস ২০১৬ এর প্রাথমিক ফলাফল পর্যালোচনা উপ-কমিটির সদস্য-সচিবকে, উপ-কমিটির প্রতিবেদন উপস্থাপনের জন্য আহ্বান জানান। জনাব আলম উপ-কমিটি কর্তৃক প্রণীত প্রতিবেদনের বিভিন্ন দিক, পর্যালোচনা পদ্ধতি ও মতামত বিস্তারিত ভাবে পাওয়ার পয়েন্টের মাধ্যমে উপস্থাপন করেন। উপস্থাপনের সাথে তিনি উপ-কমিটির কর্মপরিধির আলোকে উপ-কমিটি কর্তৃক গৃহীত মূখ্য কর্মপদ্ধতি, মতামত/পর্যবেক্ষণ সভাকে অবহিত করেন; যা নিম্নোক্ত ছকে উপস্থাপন করা হল:



কর্মপরিধি	মুখ্য কর্ম পদ্ধতি	মতামত
ক) বিএমএমএস ২০১৬ এর সার্ভে পদ্ধতি ও সার্ভে পরিচালনা প্রক্রিয়া পুনঃপরীক্ষা করা।	উপ-কমিটি কর্তৃক জরিপ পদ্ধতি, নামুনায়ন, জরিপ পরিচালনা প্রক্রিয়া পর্যালোচনা ও পরীক্ষা করা হয়। উপ-কমিটি জরিপ প্রতিবেদন ও জরিপ সংশ্লিষ্টদের কাছ থেকে এ বিষয় সমূহের ব্যাখ্যা গ্রহণ করে। তাছাড়া মাতৃমৃত্যু হারের আদর্শ রীতি (Pattern) ও নির্ণায়ক (Determinants) সমূহ পর্যালোচনা করে Internal Consistency পরীক্ষা করা হয়। প্রতিবেদনে তা বিস্তারিতভাবে উল্লেখ করা হয়।	পর্যালোচনান্তে দেখা যায় বিএমএমএস ২০১৬ পরিচালনায় সঠিক পদক্ষেপ ও পদ্ধতি অনুসরণ করা হয়েছে, যা এ ধরনের জরিপ পরিচালনার জন্য সঠিক (Appropriate)। তাছাড়া বি এম এম এস জরিপ থেকে প্রাপ্ত মাতৃমৃত্যু হার যাচিত আদর্শ রীতি অনুসরণ করে সম্পাদিত যা পর্যালোচনান্তে সামঞ্জস্য পূর্ণ ও কাঙ্ক্ষিত (consistent and expected pattern) বলে প্রতিয়মান হয়েছে।
খ) বিএমএমএস ২০১৬ এর প্রাথমিক ফলাফল থেকে প্রাপ্ত মাতৃ মৃত্যু হার অন্যান্য সার্ভের তথ্যের আলোকে পর্যালোচনা করা।	বিএমএমএস ২০১৬ প্রদত্ত মাতৃ মৃত্যু হার বাংলাদেশ পরিসংখ্যান ব্যুরো (BBS) এর SVRS ও Maternal Mortality Estimation Inter-Agency Group (MMEIG) কর্তৃক প্রদত্ত হারের সাথে তুলনা করা হয়েছে। তাছাড়া বিএমএমএস ২০১৬ থেকে প্রাপ্ত হাসপাতালে মাতৃমৃত্যু সংখ্যার সাথে স্বাস্থ্য অধিদপ্তরের HIS প্রদত্ত হাসপাতালে মাতৃ মৃত্যুর সংখ্যার সাথে তুলনা করা হয়। প্রতিবেদনে এ সকল তুলনার চিত্র তুলে ধরা হয়েছে।	বিএমএমএস ২০১৬ থেকে প্রাপ্ত মাতৃমৃত্যু হার পরিসংখ্যান ব্যুরো ও আন্তর্জাতিক Maternal Mortality Estimation Inter-Agency Group (MMEIG) প্রদত্ত মাতৃমৃত্যু হার এর সাথে সামঞ্জস্য পূর্ণ (consistent)। উপরন্তু স্বাস্থ্য অধিদপ্তর কর্তৃক প্রদত্ত হাসপাতালে মাতৃমৃত্যু সংখ্যা বিএমএমএস ২০১৬ কর্তৃক হাসপাতালে মাতৃমৃত্যু সংখ্যা প্রায় একই এবং সামঞ্জস্যপূর্ণ।
গ) দেশের মাতৃস্বাস্থ্য সেবা ব্যবহার বৃদ্ধির পরেও মাতৃমৃত্যু হার হ্রাস না	এ বিষয়ে উপ-কমিটি কর্তৃক দেশে বিদেশে প্রকাশিত বিভিন্ন প্রতিবেদন পর্যালোচনা এবং স্বাস্থ্য কর্মসূচী পরিচালনাকারী ও গবেষকদের সাথে আলোচনা	জরিপ অনুযায়ী বাংলাদেশে আর্থ সামাজিক অবস্থা ও স্বাস্থ্য সেবার ব্যবহার উন্নতি পরিলক্ষিত হয়েছে। তবে বিভিন্ন প্রতিবেদন পর্যালোচনায় দেখা যায় বাংলাদেশের মত অন্যান্য দেশেও আর্থ সামাজিক ও স্বাস্থ্য সেবায় উন্নয়ন হলেও মাতৃমৃত্যু হার

কর্মপরিধি	মুখ্য কর্ম পদ্ধতি	মতামত
পাওয়ার কারণ নির্ণয় ও বিশ্লেষণ করা।	করা হয়। এছাড়াও বিশ্বের অন্যান্য দেশের মাতৃমৃত্যু হার হ্রাস অথবা স্থিতাবস্থা পর্যালোচনা করা হয়।	স্থিতাবস্থায় রয়েছে। এই স্থিতাবস্থার অন্যতম কারণ বাংলাদেশের সরকারী ও বেসরকারী স্বাস্থ্য সেবা কেন্দ্র সমূহে সেবার মান আরও বৃদ্ধি করতে হবে মর্মে প্রতিয়মান হয়। বিশেষ করে প্রশিক্ষিত সেবাদানকারী, সুনির্দিষ্ট গাইড লাইন, যন্ত্রপাতি ও উপকরণ সামগ্রীর অপ্রতুলতা রয়েছে। সেবা কেন্দ্রের মধ্যে বেশীর ভাগ বেসরকারী সেবা কেন্দ্রে প্রসব হলেও বেসরকারী সেবা কেন্দ্রের সেবা প্রদানে উপযুক্ততা উপজেলা ও তদুর্ধ্ব সরকারী সেবা কেন্দ্র থেকে অনেক কম। মাতৃমৃত্যুর প্রধান দু'টি কারণ হচ্ছে খিচুনী (Eclampsia) ও রক্তক্ষরণ (Hemorrhage)। কিন্তু স্বাস্থ্য সেবা কেন্দ্র ও কমিউনিটি পর্যায়ে এ সকল কারণ মোকাবেলায় গৃহীত কর্মসূচী অনেক পিছিয়ে রয়েছে।
ঘ) মাতৃমৃত্যু হার হ্রাসে ভবিষ্যৎ করণীয় সম্পর্কে সুনির্দিষ্ট সুপারিশমালা প্রণয়ন করা।	উপ-কমিটি মাতৃমৃত্যু হার হ্রাসে ভবিষ্যৎ করণীয় বিভিন্ন দিক পর্যালোচনা করে সুনির্দিষ্ট চারটি সুপারিশমালা প্রণয়ন করে।	সুপারিশ সমূহঃ (১) সরকারী, ব্যক্তিখাত ও বেসরকারী স্বাস্থ্য সেবা কেন্দ্রে মাতৃস্বাস্থ্য সেবা দানের জন্য সার্বিক প্রস্তুতি (Service Readiness) পরিবেশ নিশ্চিত করা। সেবাদানের জন্য সার্বিক প্রস্তুতি অর্জন করার লক্ষ্যে প্রশিক্ষিত সেবা প্রদানকারী, সুনির্দিষ্ট গাইডলাইন, যন্ত্রপাতি ও প্রয়োজনীয় উপকরণ নিশ্চিত করা। (২) মাতৃমৃত্যুর প্রধান কারণ সমূহ দূরীকরণে ব্যবস্থা নেয়া, বিশেষ করে খিচুনী ও রক্তক্ষরণ মোকাবেলায় স্বাস্থ্য সেবা কেন্দ্র ও কমিউনিটি পর্যায়ে অনতিবিলম্বে ব্যবস্থা গ্রহণ করা। (৩) স্বাস্থ্য সেবা কেন্দ্রে “মাতৃস্বাস্থ্য Strategy-2017” এর আলোকে স্বাস্থ্য সেবা প্রদানের জন্য [Standard Operating procedure (SOP)] তৈরী ও অনুসরণ করা। (৪) বেসরকারী স্বাস্থ্য সেবা কার্যক্রম তদারকিতে মন্ত্রনালয়ের নেতৃত্ব (Stewardship) জোরাদারকরণ অত্যাৱশ্যক।
ঙ) বিএমএমএস ২০১৬ এর প্রাথমিক ফলাফল	উপ-কমিটি কর্তৃক টিওআর এর আলোকে একটি স্বয়ংসম্পূর্ণ প্রতিবেদন প্রণয়ন করে সভাপতি	উপ-কমিটির প্রতিবেদন এতদসঙ্গে সংযুক্ত করা হলো।

কর্মপরিধি	মুখ্য কর্ম পদ্ধতি	মতামত
পর্যালোচনা কমিটির সভাপতির নিকট একটি স্বয়ংসম্পূর্ণ প্রতিবেদন উপস্থাপন করা।	বরাবরে উপস্থাপন করা হয়েছে।	

সভায় সদস্যগণ সামগ্রিকভাবে উপ-কমিটির কর্মপদ্ধতি, পর্যবেক্ষন এবং মাতৃমৃত্যু হার হ্রাসে করণীয় সম্পর্কে প্রদত্ত সুপারিশমালার সাথে একমত পোষণ করেন এবং প্রদত্ত পর্যবেক্ষণ ও সুপারিশমালার বিভিন্ন বিষয়ে বিস্তারিত আলোচনা করেন। সভায় আলোচিত উল্লেখযোগ্য বিষয় সমূহ নিম্নরূপ:

- ক). বিএমএমএস ২০১৬ প্রাথমিক প্রতিবেদনে প্রদত্ত মাতৃমৃত্যু হারের সাথে অন্যান্য প্রতিবেদনের সামঞ্জস্যতা:
- বিএমএমএস ২০১৬ থেকে প্রাপ্ত মাতৃমৃত্যু হার পরিসংখ্যান ব্যুরো ও Maternal Mortality Estimation Inter-Agency Group (MMEIG) প্রদত্ত মাতৃমৃত্যু হার এর সাথে সামঞ্জস্য পূর্ণ (Consistent)
 - বিএমএমএস ২০১৬ প্রদত্ত হাসপাতালে মাতৃমৃত্যু সংখ্যা এবং স্বাস্থ্য অধিদপ্তর [Health Information System (HIS), Health Bulletin 2015] প্রদত্ত হাসপাতালে মাতৃমৃত্যু সংখ্যা প্রায় একই এবং সামঞ্জস্যপূর্ণ।
- খ). অন্যান্য দেশে মাতৃস্বাস্থ্য সেবার ব্যবহার বৃদ্ধির পরেও মাতৃমৃত্যু হার হ্রাস না পাওয়া:
- বাংলাদেশের মত অন্যান্য দেশেও আর্থ সামাজিক ও স্বাস্থ্য সেবা উন্নয়ন হলেও মাতৃমৃত্যু হার বিভিন্ন সময়ে বিভিন্ন পর্যায়ে স্থিতাবস্থায় রয়েছে।
 - বিশ্ব স্বাস্থ্য সংস্থার গবেষণা অনুযায়ী আর্থ সামাজিক ও স্বাস্থ্য সেবার উন্নয়ন হলেও ঘানা ও লেসোথোতে (মাতৃমৃত্যু প্রতি লক্ষ জীবিত জন্মে ৩০০ পর্যায়ে), ফিলিপাইন ও দক্ষিন আফ্রিকায় (মাতৃমৃত্যু প্রতি লক্ষ জীবিত জন্মে ১২০-১৬০ পর্যায়ে), কিউবা ও থাইল্যান্ড-এ (মাতৃমৃত্যু প্রতি লক্ষ জীবিত জন্মে ২০-৬০ পর্যায়ে) মাতৃমৃত্যু হার বিভিন্ন সময়ে স্থিতাবস্থায় ছিল।
- গ). মাতৃমৃত্যুর প্রধান কারণ (খিচুনী ও রক্তক্ষরণ):
- মাতৃমৃত্যুর প্রধান দু'টি কারণ খিচুনী (Eclampsia) ও রক্তক্ষরণ (Hemorrhage) রোধের জন্য প্রয়োজনীয় মিজোপ্রোস্টল ও ম্যাগনেসিয়াম সালফেট অপরিাপ্ত সরবরাহ
 - মিজোপ্রোস্টল ও ম্যাগনেসিয়াম সালফেট ব্যবহারের জন্য সেবা প্রদানকারীদের অপরিাপ্ত প্রশিক্ষণ
 - সেবাকেন্দ্রে কার্যকরী রেফারেল পদ্ধতি ও মাতৃস্বাস্থ্য সেবা প্রদানের জন্য সার্বিক 'প্রস্তুতি' বিশেষ করে, প্রশিক্ষিত সেবাদানকারী, সুনির্দিষ্ট গাইড লাইন, যন্ত্রপাতি ও উপকরণ সামগ্রীর অপ্রতুলতা
 - অত্যাৱশ্যকীয় ড্রাগ এর তালিকায় মিজোপ্রোস্টল ও ম্যাগনেসিয়াম সালফেট অন্তর্ভুক্ত না থাকা
 - স্বাস্থ্য অধিদপ্তর ও পরিবার পরিকল্পনা অধিদপ্তরের মধ্যে কাংখিত সমন্বয় না থাকা
 - বেসরকারী সেবাকেন্দ্রে সন্তান-সন্তবা মায়েদের সংকটাপন্ন অবস্থা দেখলে তাদেরকে ভর্তি ও সেবা প্রদানে অনাগ্রহ



- সেবা কেন্দ্রের মধ্যে বেশীর ভাগ বেসরকারী সেবা কেন্দ্রে প্রসব হলেও বেসরকারী সেবা কেন্দ্রের সেবা প্রদানে উপযুক্ততা উপজেলা ও তদুর্ধ্ব সরকারী সেবা কেন্দ্র থেকে অনেক কম

ঘ). বিএমএমএস ২০১৬ এর প্রতিবেদন প্রকাশ ও ডাটাসেটের ব্যবহার:

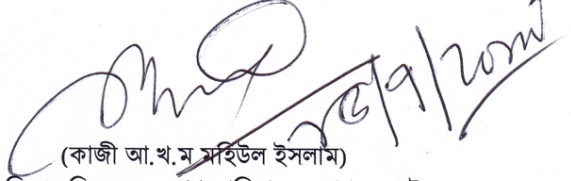
- বিএমএমএস ২০১৬ প্রতিবেদন মূদ্রণ ও বিতরণের ব্যবস্থা গ্রহণ করা প্রয়োজন, তবে বিএমএমএস ২০১০ এর প্রতিবেদনের ন্যায় বর্তমান প্রতিবেদনে নিম্নবর্ণিত বাক্য সংযোজন করা যেতে পারে “The report does not necessarily reflect the views of the Government of Bangladesh, USAID or Development Partners ”
- সাম্প্রতিক সময়ে বিবিএস কর্তৃক হালনাগাদ মাতৃমৃত্যু তথ্য প্রকাশিত হলেও স্বাস্থ্য, জনসংখ্যা ও পুষ্টি সেবার বিভিন্ন সূচকের উন্নতি বিএমএমএস ২০১৬ এর প্রতিবেদনে পরিলক্ষিত হয়। এ সকল তথ্যাদি স্বাস্থ্য, জনসংখ্যা ও পুষ্টি সেক্টর কর্মসূচীর উন্নয়ন পরিকল্পনায় ব্যবহার করা প্রয়োজন।
- এ জরিপে প্রাপ্ত তথ্য উপাত্ত বিশ্লেষণের মাধ্যমে জেলা পর্যায় পর্যন্ত স্বাস্থ্য, জনসংখ্যা ও পুষ্টি কার্যক্রমের বিভিন্ন সূচক সমূহের অবস্থা সম্পর্কে জানা প্রয়োজন।
- বিশ্ববিদ্যালয় ও গবেষণা প্রতিষ্ঠানে থিসিস ও নিবিড় গবেষণার জন্য বিএমএমএস ২০১৬ এর ডাটা সেট ব্যবহার করা প্রয়োজন, এ জন্য বিএমএমএস ২০১৬ প্রতিবেদন প্রকাশ করা প্রয়োজন।
- বিএমএমএস ২০১৬ এ ডাটা সেট ব্যবহার করে স্বাস্থ্য, জনসংখ্যা ও পুষ্টি সেক্টর কার্যক্রমের উন্নয়নের লক্ষ্যে বিষয় অনুযায়ী তথ্য-প্রমাণ ভিত্তিক পলিসি ব্রিফ তৈরী করা প্রয়োজন, এ কার্যক্রমে বিষয় ভিত্তিক সংশ্লিষ্ট পরিকল্পনা প্রণয়নকারী, কর্মসূচী ব্যবস্থাপক, গবেষক ও শিক্ষাবিদগণকে সম্পৃক্ত করা যেতে পারে।

৩. সিদ্ধান্তঃ

সভায় বিস্তারিত আলোচনা শেষে সর্বসম্মতিক্রমে নিম্নবর্ণিত সিদ্ধান্তসমূহ গৃহীত হয়:

- ৩.১ বিএমএমএস ২০১৬ প্রতিবেদন মূদ্রণ ও বিতরণের ব্যবস্থা গ্রহণ করার সুপারিশ করা হয়। প্রকাশিতব্য প্রতিবেদনে বিএমএমএস ২০১০ এর প্রতিবেদনের অনুরূপ “The report does not necessarily reflect the views of the Government of Bangladesh, USAID or Development Partners” বাক্য সংযোজন করা যেতে পারে।
- ৩.২ মাতৃমৃত্যুর প্রধান দু’টি কারণ খিচুনী (Eclampsia) ও রক্তক্ষরণ (Hemorrhage) রোধের জন্য পর্যাপ্ত মিজোপ্রোস্টল ও ম্যাগনেসিয়াম সালফেট যত দ্রুত সম্ভব মাঠ পর্যায়ে ও সেবা কেন্দ্রে সরবরাহ নিশ্চিত করার লক্ষ্যে প্রয়োজনীয় পদক্ষেপ গ্রহণের সুপারিশ করা হয়।
- ৩.৩ মিজোপ্রোস্টল ও ম্যাগনেসিয়াম সালফেট ব্যবহারের জন্য সেবা প্রদানকারীদের প্রশিক্ষণ প্রদানের লক্ষ্যে জেলা ও উপজেলা পর্যায়ে মাসিক সমন্বয় সভায় ব্যবস্থা গ্রহণের সুপারিশ করা হয়। পাশাপাশি সেবাকেন্দ্রে কার্যকরী রেফারেল পদ্ধতি ও মাতৃস্বাস্থ্য সেবা প্রদানের জন্য সার্বিক ‘প্রস্তুতি’ বিশেষ করে প্রশিক্ষিত সেবাদানকারী, সুনির্দিষ্ট গাইড লাইন, যন্ত্রপাতি ও উপকরণ সামগ্রীর পর্যাপ্ত সরবরাহ নিশ্চিত করার সুপারিশ করা হয়।

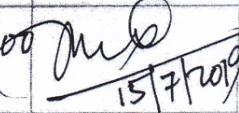



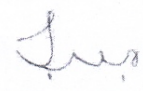



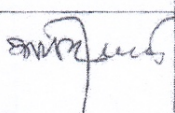
- ৩.৪ মাতৃস্বাস্থ্য সেবা উন্নয়নের লক্ষ্যে স্বাস্থ্য অধিদপ্তর ও পরিবার পরিকল্পনা অধিদপ্তরের মধ্যে কাঙ্ক্ষিত সমন্বয় জোরদার করার সুপারিশ করা হয়।
- ৩.৫ বেসরকারী সেবাকেন্দ্রের স্বাস্থ্য সেবা কার্যক্রম মনিটরিং এর লক্ষ্যে সরকারের Stewardship জোরদার করার সুপারিশ করা হয়।
- ৩.৬ এ জরিপে প্রাপ্ত তথ্য-উপাত্ত বিশ্লেষণের মাধ্যমে জেলা পর্যায় পর্যন্ত স্বাস্থ্য, জনসংখ্যা ও পুষ্টি কার্যক্রমের বিভিন্ন সূচক সমূহের অবস্থা সম্পর্কে প্রতিবেদন তৈরী করার সুপারিশ করা হয়।
- ৩.৭ বিশ্ববিদ্যালয় ও গবেষণা প্রতিষ্ঠানে বিবিধ গবেষণার জন্য বিএমএমএস ২০১৬ এর ডাটা সেট ব্যবহারের সুযোগ সৃষ্টির সুপারিশ করা হয়।
- ৩.৮ বিএমএমএস ২০১৬ এর ডাটা সেট ব্যবহার করে স্বাস্থ্য, জনসংখ্যা ও পুষ্টি সেক্টর কার্যক্রমের উন্নয়নের লক্ষ্যে বিষয় অনুযায়ী তথ্য প্রমাণ ভিত্তিক পলিসি ব্রিফ তৈরী করার সুপারিশ করা হয় এবং এ কার্যক্রমে বিষয় ভিত্তিক সংশ্লিষ্ট পরিকল্পনা প্রণয়নকারী, কর্মসূচী ব্যবস্থাপক, গবেষক ও শিক্ষাবিদগণকে সম্পৃক্ত করার সুপারিশ করা হয়।
৪. পরিশেষে, সভাপতি কর্তৃক ধন্যবাদ জ্ঞাপনের মাধ্যমে সভার সমাপ্তি ঘোষণা করা হয়।


 (কাজী আ.খ.ম. মহিউল ইসলাম)
 অতিরিক্ত সচিব (জনসংখ্যা, পরিবার কল্যাণ ও আইন)
 স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ
 ও
 সভাপতি,
 বিএমএমএস ২০১৬ এর প্রাথমিক ফলাফল
 পর্যালোচনা কমিটি

স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ - ৪

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়
স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ
জাতীয় জনসংখ্যা গবেষণা ও প্রশিক্ষণ ইনস্টিটিউট (নিপোর্ট)
১৩/১ শেখ সাহেব বাজার, আজিমপুর, ঢাকা-১২০৫।

বিষয় : বাংলাদেশ মাতৃমৃত্যু ও স্বাস্থ্য সেবা জরিপ ২০১৬ এর প্রাথমিক ফলাফল পর্যালোচনা কমিটির ২য় সভার উপস্থিতি।

ক্রমিক নং	নাম ও পদবী	মোবাইল নং	স্বাক্ষর
01.	Dr. Md. A. M. M. Nohul Islam Additional Secretary (Population, Family Law) MEAWL, MCHFW	01941587100	 15/7/2019
02.	ডাঃ মোঃ হুমায়ুন কবীর সিনিয়র পরিচালক (স্বাস্থ্য)	01811032520	
03.	Dr. Mohammed Shanif Director (MCHS) & LD (MCHAH), DGFP	01819313861	
04.	Dr. Ahmed Al-Sabir ICF	01710140644	Ahmed Al-Sabir
05.	Mizanur Rahman Sr. Research Advisor, MEASURE	01732678853	
06.	Prof. Sameena Cherwell, President OASB	01715095176	
07.	Md. Zahidul Hoque Sandan Director, BBS	01759958578	
08.	Slam EL Dujer	01713366936	
09.	Prof. Dr. Mohammed Munt ISIR	01720109438	Mohammed Munt 
10.	Syed Shahadat Hossain	01747816856	

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**Report of the Sub-committee
to
Review Preliminary Findings of Bangladesh Maternal Mortality and Health Care
Survey (BMMS) 2016**

Introduction:

The 2016 Bangladesh Maternal Mortality and Health Care Survey (BMMS 2016)ⁱ is the third survey of its kind. The first BMMS was conducted in 2001ⁱⁱ and the second one in 2010ⁱⁱⁱ. All the three surveys are implemented by National Institute of Population Research and Training (NIPORT) with technical assistance from MEASURE Evaluation, icddr,b and the United States Agency for International Development (USAID). The primary objective of all the BMMSs was to estimate the nationally representative maternal mortality ratio (MMR) in Bangladesh. MMR is defined as the number of maternal deaths divided by the number of live births in a year for a population and the unit is expressed as per 100,000 live births.

The preliminary report of the 2016 BMMS was prepared and disseminated in the presence of the representatives from government, non-government, and development partners and included academicians and researchers as well. The 2016 BMMS preliminary report showed that MMR was 196 per 100,000 in 2016, which was 194 in BMMS 2010. However, between 2010 BMMS and 2016 BMMS there were notable increases in the use of maternal health services in Bangladesh.

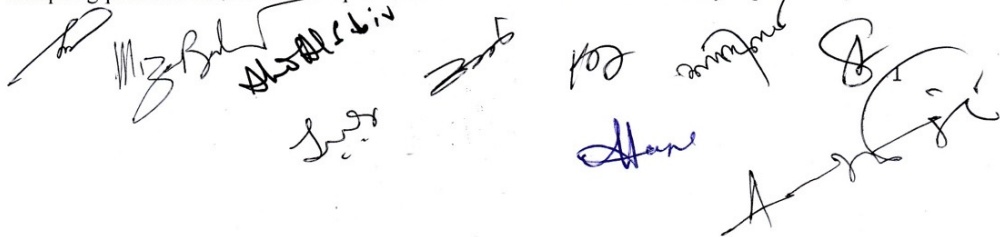
The MOHFW formed a committee headed by the Additional Secretary (population, family planning and law), Health Education and Family Planning Division, MOHFW to review the preliminary findings of BMMS 2016. The committee met once and decided to form a sub-committee vide memo no. NIPORT/Research-1015/BMMSRC/2017/370 dated 18 February 2017 to prepare a report for the committee with the following tasks:

- Review the survey methods and implementation of the 2016 BMMS;
- Compare the maternal mortality ratio (MMR) of the 2016 BMMS with those from other sources;
- Explore possible reasons for unchanged MMR in 2016 despite improvements in use of maternal health services; and
- Suggest future programmatic measures that can help reduce maternal mortality in Bangladesh

The sub-committee members had five meetings to discuss the issues mentioned in the TOR of the sub-committee. Members worked both individually and collectively to prepare the report for submission to the main committee.

Agenda 1: Review the Survey Methods and Implementation of the 2016 BMMS

The sub-committee examined the survey methodology of the 2016 BMMS by reviewing sampling procedures and field implementation as documented in survey report. They also

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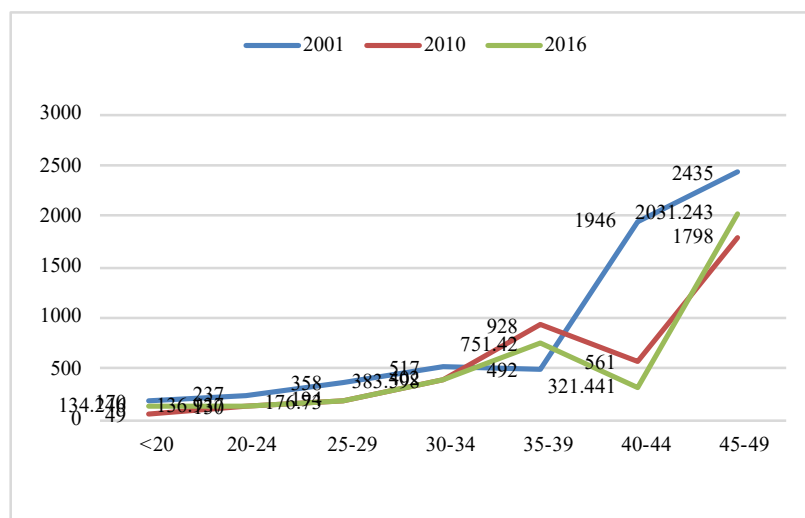
three years preceding the survey. The female supervisors used the verbal autopsy questionnaires to collect information on causes of death in the household in the three years preceding the survey. The survey used following standard review process to determine the causes of death:

- Physicians through review of the verbal autopsy questionnaire determined cause of death;
- Two physicians independently reviewed each case;
- If the physicians could not agree, a third physician reviewed the case. On cases of female death, where consensus on causes of death still could not be reached, those cases were reviewed by a group of experts to determine a specific cause. It is to be noted that one of the sub-committee members was a member of the expert group committee.
- The International Classifications of Diseases Revision 10 were used to assign causes of death.

Internal Consistency of MMR pattern

In any population, generally MMR follows specific patterns according to mother’s age, parity, and urban/rural residence. The subcommittee examined the consistency of the MMR patterns in the three BMMSs and found that all three MMRs were positively and almost linearly associated with maternal age (Figure 1), followed a J-shape pattern with parity (Figure 2), and were lower in urban than rural areas (Figure 3). MMR variations by age, parity, and urban/rural residence indicate internal consistency of MMR pattern.

Figure 1: Comparing age-specific maternal mortality ratios between BMMS 2001, 2010 and 2016



Mirza Rahn
Ahmed Sabir
Dr. Farhat Ishtiaq
Dr. Farhat Ishtiaq
Dr. Farhat Ishtiaq

Figure 2: Comparing parity and maternal mortality ratios between BMMS 2001, 2010 and 2016

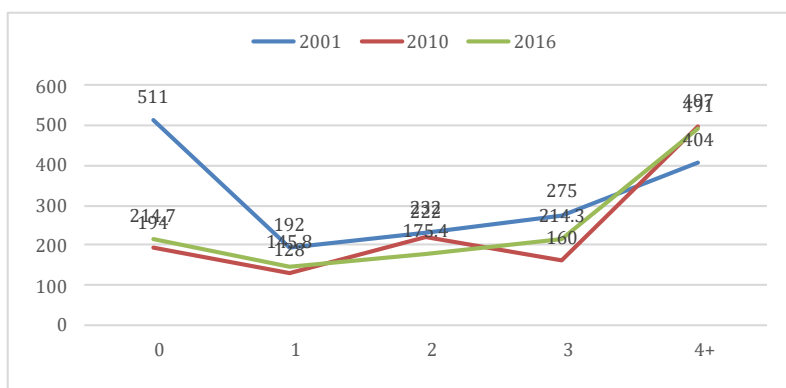
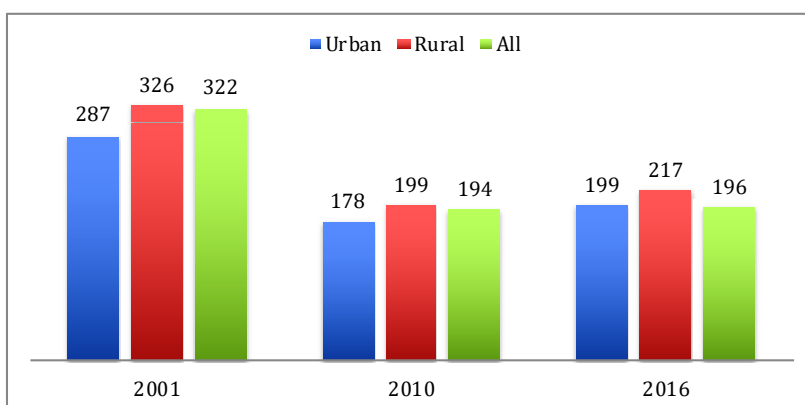


Figure 3: Comparing residence and maternal mortality ratios between BMMS 2001, 2010 and 2016



Agenda 1: Sub-committee's conclusion

Based on review of BMMS survey documents and discussions with survey implementers, the sub-committee found that steps taken and methods followed in the BMMS surveys were appropriate and MMR estimates were consistent and followed expected patterns.

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Agenda 2: Comparison of the 2016 BMMS Estimates of MMR with Other Sources of Data

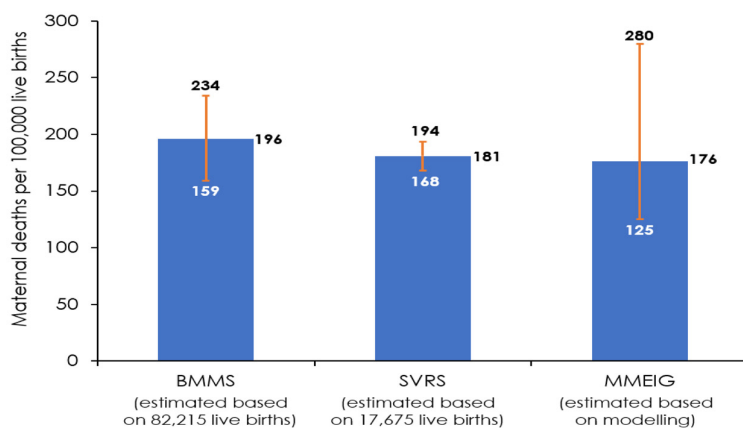
The sub-committee compared MMR of BMMS 2016 estimates with other MMRs from different sources (viz., Sample Vital Registration System [SVRS^{iv}] of BBS and modeled estimate by the Maternal Mortality Estimation Inter-Agency Group [MMEIG^v]). Additionally, number of maternal mortality deaths estimated from BMMS was also compared with number of maternal deaths reported by Health Information System (HIS) of the Directorate General of Health Services (DGHS).

Comparison of 2016 BMMS with SVRS and MMEIG Estimates of MMR

Sample estimates have a margin of error conventionally expressed in confidence interval (CI) of the estimate. The 2016 BMMS estimate of MMR for the year 2015 was 196 maternal deaths per 100,000 live births (the 95% CI is between 159 and 234). SVRS estimate of MMR for the same year was 181 per 1000, 000 live births (CI between 168 and 194). According to MMEIG the MMR estimate was 176 for the year 2015 (estimates CI between 125 and 280) (Figure 4).

Statistically, to examine if there are differences between the MMR estimates, the proper way to proceed is to examine the confidence intervals (CI) of the estimates. If the CIs overlap, it might be concluded that the estimates are not different from each other. In Figure 4, it is observed that the confidence interval of the SVRS estimate is approximately contained within the confidence interval of the BMMS estimate, which means that the MMR estimate of BMMS does not contradict the MMR of SVRS. Moreover, Z-statistic test¹ showed that MMR estimates of BMMS and SVRS are not statistically different.

Figure 4. Comparison of 2015 MMR estimates from different sources



¹ Z-test applied with hypothesis (H₀: MMR from BMMS = MMR from SVRS; and H_a: MMR from BMMS ≠ MMR from SVRS) using formulae $\frac{(MMR, BMMS) - (MMR, SVRS)}{\sqrt{\text{Variance}(MMR, BMMS) + \text{Variance}(MMR, SVRS) + 2 \text{Covariance}(MMR, BMMS; MMR, SVRS)}}$, where the covariance term is zero as because BMMS and SVRS are independent. Z=0.74 and Z value is less than 1.96. Thus, the hypothesis is accepted and could be concluded that the MMRs of BMMS and SVRS are not statistically different.

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Likewise, the confidence interval of the BMMS estimate is completely contained within the confidence interval of the MMEIG estimate², which means that there is no statistical difference between these two estimates. Given that the CIs of the three estimates contain each other, statistically there is no difference between the three MMR estimates.

The sub-committee noted that the CI of the SVRS is unexplainably narrower than the CI of the BMMS, even though the SVRS sample size is one fourth of the BMMS sample. However, a larger CI of SVRS would not change the fact that it is contained within the BMMS confidence interval.

Comparison of 2016 BMMS and HIS of DGHS

The sub-committee also compared the 2016 BMMS estimates of maternal deaths with maternal deaths reported in 2015 from the HIS of DGHS.

The 2016 BMMS MMR estimate of 196/100,000 live birth translates to 6,076 total maternal deaths (occurring in health facilities, at home or in transit). BMMS data also shows that two thirds of the maternal deaths occur in health facilities, which implies that 4,010 maternal deaths took place in the health facilities.

Table 2 shows (i) estimated maternal deaths at health facilities in 2015 based on the 2016 BMMS findings; (ii) maternal deaths at health facilities reported in HIS of DGHS for 2015^{vi}. The figure of the 2016 BMMS is a bit lesser than the figure of the HIS. It is understood that there may be under-reporting of maternal deaths occurring in facilities reported through HIS of DGHS 2015, since maternal deaths in all private facilities may not have been covered by it.

Table 2: Maternal deaths in 2015 from BMMS 2016 and HIS of DGHS

	BMMS 2016	HIS (Health Bulletin 2015)
Number of maternal deaths at health facilities	4,010	4,089

Agenda 2: Sub committee’s conclusion

The 2016 BMMS estimate of MMR is consistent with that of the SVRS and MMEIG estimates. In addition, the number of maternal deaths in health facilities estimated by BMMS 2016 is also consistent with the number of maternal deaths in health facilities reported by HIS of DGHS (Health Bulletin).

² MMEIG reports 80% uncertainty intervals (UI) for the estimated MMR, which is different from the 95% confidence intervals (CI) estimated from surveys or sample vital registration systems. MMEIG uses a regression model that considers GDP per capita, general fertility rate, and skilled birth attendance (SBA) for estimating MMR at the country level. MMEIG’s MMR estimate is greatly influenced by GDP and tends to be at the lower side of UI.

Agenda 3: Explore Possible Reasons for Unchanged MMR in 2016 despite improvements in Use of Maternal Health Services

The sub-committee reviewed published reports and had discussion with health program implementers and researchers to examine the reasons why MMR in Bangladesh did not decline between 2010 and 2016 BMMSs despite improvements in socioeconomic conditions and health care utilization. In addition, the sub-committee also reviewed published international literature to explore whether other countries experienced slowing down/halting of MMR decline for a period.

Possible Reasons for MMR no change between 2010 and 2016 BMMS

Several studies in other countries have highlighted the importance of quality of care in translating use of maternal health services into improved health outcomes. There is consensus that quality of care is generally poor in health facilities in Bangladesh—whether public or private.

Facility delivery increased from 23% to 47% between 2010 BMMS and 2016 BMMS. Most of this increase in facility deliveries occurred in the private sector (from 11% to 29%). The proportion of deliveries occurred in public health facilities increased from 10% to 14% during the same period. The quality of services provided at private health facilities is likely to have the most impact on avoiding maternal deaths and morbidity. Available data show that private hospitals (20 beds or more) are worse off than higher-level public hospitals (UHC or above) in terms of preparedness to provide quality maternal health services. There is hardly any information on types of private facilities where most women deliver. Anecdotal information indicates that a notable proportion of private facilities may be un-licensed. It is assumed that service readiness and quality of care in smaller private clinics and in unlicensed private facilities are worse than the larger registered private hospitals.

A. Health facilities are not ready to provide quality delivery services

The 2014 Bangladesh Health Facility (BHFS 2014)^{vii} provides information on readiness of public, NGO and large private hospitals (those with at least 20 beds). Some are highlighted below:

- Only 39 percent of facilities that provide normal delivery services had a delivery care provider on call or on site around the clock.
- Only 46 percent of higher-level public facilities and 20 percent of private hospitals had at least one staff ever trained on emergency obstetric care.
- Only 3 percent of facilities (excluding community clinics) providing delivery care had service readiness (WHO specified 13 essential items-guidelines, trained staff, equipment and medicines) to provide normal delivery. Service readiness among higher-level public facilities (District hospitals, MCWCs and UHCs) was only 8 percent, while it was zero percent in private facilities.



- All public facilities at upazila level and above are designated to provide basic emergency obstetric care (BEmOC) but only 36 percent reported performing the 7 signal functions for BEmOC. Almost all private hospitals provide C-section delivery but only 32 percent performed the 7 signal functions for BEmOC and 16 percent performed the 9 signal functions for comprehensive emergency obstetric care (CEmOC).
- The 2017 Bangladesh Health Facility Survey^{viii} shows that hardly any of the above conditions in health facilities have improved between 2014 and 2017.

B. Inadequate readiness to address the two main causes of maternal deaths

The two main causes of maternal death in Bangladesh are hemorrhage and eclampsia, accounting for 54 percent of maternal deaths. The readiness of the health system to address these and other complications in maternal health is not enough. Data from the BHFS 2014 and implementation of the misoprostol program show:

- Only 48 percent of all facilities that offer delivery services have a staff person on hand who is trained in active management of the third stage of labor (AMTSL). Private hospitals were far less likely to have staff trained in AMTSL (20 percent) than the public sector e.g., UHC and higher level facilities (67 percent), although most deliveries are occurring in private facilities.
- Just 40 percent have supplies of injectable oxytocin to stop hemorrhage, and even fewer (28%) have injectable magnesium sulphate to treat eclampsia. Private hospitals were more likely to have these life saving commodities than the public sector e.g., Upazila and above level facilities.
- 53 percent of deliveries still occur at home, mostly without skilled birth attendants. Community distribution of misoprostol for management of post-partum hemorrhage was only enough to cover about 17 percent of births in Bangladesh during 2015–2016.^{ix}

International Experience

There is international precedent for a stall in MMR decline. MMR stalled in 37 countries in the world despite improvement in many aspects of health care; the association found to be particularly weak in nine South and Southeast Asian countries, most of which had an MMR of around 200 per 100,000 live births.^x In some of these countries the apparent stall in MMR occurred despite increases in coverage of skilled birth attendance and health facility deliveries. Bangladesh is therefore not the only country to experience this pattern.

The WHO Multi-country Survey on Maternal and Newborn Health 2011^{xi} (which included 314,623 women attending 357 health facilities in 29 countries of Africa, Asia, Latin America, and the Middle East) found that high coverage of essential interventions did not imply reduced maternal mortality in the health-care facilities. The findings of the study demonstrated that, in order to achieve substantial reductions in maternal mortality,

universal coverage of lifesaving interventions need to be matched with comprehensive emergency care and overall improvements in the quality of maternal health care.

Evidence from neighboring country India demonstrates that quality of maternal health services is crucial for the safe motherhood programs to succeed.^{xii, xiii, xiv} An impact evaluation of two programs in Gujarat and Karnataka^{xv} also found that low quality of services, coupled with lack of motivation and incentives among the service providers, is the main reason for the programs for not being able to extend healthcare availability and utilization, and reduce maternal mortality.

Agenda 3: Sub committee's conclusion

Review of the international literature reveals that many countries have had similar experience like Bangladesh where MMR decline stalled despite improvements in maternal health service utilization. Literature review also suggests the importance of quality of care in translating use of health services into improved health outcomes.

In Bangladesh, both public and private health facilities are not ready (in terms of having trained staff, guidelines, equipment and commodities) to provide quality maternal health services. Most facility births occur in private facilities. However, service readiness to provide maternal health care is lower in private hospitals than public health facilities at upazila level and above.

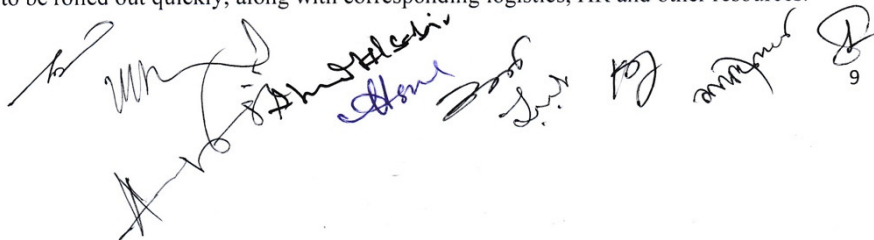
In health facilities and communities, service readiness to address the two major causes of maternal deaths (eclampsia and hemorrhage) has not been adequate.

Agenda 4: Policy and Programmatic Recommendations to Reduce Maternal Mortality

The sub-committee pointed out following policy and programmatic recommendations to reduce maternal mortality:

1. Increase 'effective' coverage of essential maternal health services: Improve service readiness of all facilities—public, private and non-government organizations. Readiness of facilities in terms of infrastructure, staffing and supplies is a prerequisite for quality service. Effective quality services must cover all essential maternal health services like antenatal care (ANC), promotion of safe vaginal birth, active management of third stage of labor, prevention and management of postpartum hemorrhage and eclampsia with effective referral system.

2. Address effectively major causes of maternal death: To achieve further reduction in maternal mortality, roll out effectively evidence based interventions to address the two major causes of maternal deaths in Bangladesh in relevant health facilities and communities. Availability of medicines to treat postpartum hemorrhage and eclampsia needs to be made universal. The postpartum hemorrhage and eclampsia action plan need to be rolled out quickly, along with corresponding logistics, HR and other resources.



3. Adopt and implement Standard Operating Procedures (SOP) in health facilities: Standard Operating Procedures (SOP) needs to be adopted and implemented at all levels of health facilities based on Maternal Health Strategy 2017. Steps are needed to maintain a number of specific standards (e.g., availability of four pairs of obstetricians and anesthesiologists for 24x7 CEmOC facilities) to ensure quality of care at health facilities.

4. Strengthen the government's stewardship role in the health sector: Given the unregulated growth in the for-profit private sector, the government needs to strengthen its capacity to effectively implement monitoring and regulatory activities and ensure quality of care in maternal health services in public, private and non-governmental sectors.

Conclusion

The sub-committee concluded that 2016 BMMS estimate of MMR of 196 maternal deaths per 100,000 live births is consistent with all available sources of data on MMR and maternal deaths for 2015.

There is no evidence of change in MMR between 2010 BMMS and 2016 BMMS although there has been substantial increase in use of maternal health services during the same period. Review of literature revealed that there is also evidence of stalling of MMR decline in other countries despite increase in health care coverage. While further research is needed to fully understand why increased use of maternal health services has not impacted MMR, there are evidences of substantial deficiencies in the quality of maternity care in all types of health facilities.



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References

- ⁱ National Institute of Population Research and Training (NIPORT), International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b), and MEASURE Evaluation. (2017). Bangladesh Maternal Mortality and Health Care Survey 2016: Preliminary Report. Dhaka, Bangladesh, and Chapel Hill, NC, USA: NIPORT, icddr,b, and MEASURE Evaluation.
- ⁱⁱ National Institute of Population Research and Training (NIPORT), ORC Macro, Johns Hopkins University and ICDDR,B. 2003. Bangladesh Maternal Health Services and Maternal Mortality Survey 2001. Dhaka, Bangladesh and Calverton, Maryland (USA): NIPORT, ORC Macro, Johns Hopkins University, and ICDDR,B.
- ⁱⁱⁱ National Institute of Population Research and Training (NIPORT), MEASURE Evaluation, and icddr,b. 2012. Bangladesh Maternal Mortality and Health Care Survey 2010. Dhaka, Bangladesh: NIPORT, MEASURE Evaluation, and icddr,b.
- ^{iv} Report on Bangladesh Sample Vital Statistics 2015, May 2016, Bangladesh Bureau of Statistics (BBS), Statistics and Informatics Division (SID), Ministry of Planning, Government of the People's Republic of Bangladesh, DHAKA, www.bbs.gov.bd
- ^v Maternal Mortality Estimation Inter-agency Group (MMEIG), Trends in maternal mortality: 1990 to 2015, Estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division, November 2015, WHO reference number: WHO/RHR/15.23
- ^{vi} Health Information System (HIS), Health Bulletin 2016, Dhaka: Directorate General of Health Services; 2017.

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- ^{vii}National Institute of Population Research and Training (NIPORT), Associates for Community and Population Research (ACPR), and ICF International. 2016. Bangladesh Health Facility Survey 2014. Dhaka, Bangladesh: NIPORT, ACPR, and ICF International
- ^{viii}National Institute of Population Research and Training (NIPORT), Associates for Community and Population Research (ACPR), and ICF. 2018. Bangladesh Health Facility Survey 2017. Dhaka, Bangladesh: NIPORT, ACPR, and ICF.
- ^{ix} Ministry of Health and Family Welfare, Annual Program Implementation Report: July 2015–June 2016. Dhaka: Program Management and Monitoring Unit, Planning Wing; 2016.
- ^x World Health Organization (WHO), Trends in maternal mortality: 1990 to 2015: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva: WHO; 2015.
- ^{xi} Souza JP, Gülmezoglu AM, Vogel J, Carroli G, Lumbiganon P, Qureshi Z, Costa MJ, Fawole B, Mugerwa Y, Nafiou I, Neves I. Moving beyond essential interventions for reduction of maternal mortality (the WHO Multicountry Survey on Maternal and Newborn Health): a cross-sectional study. *The Lancet*. 2013; 381(9879): 1747-55.
- ^{xii} Randive B, San Sebastian M, De Costa A, Lindholm L. Inequalities in institutional delivery uptake and maternal mortality reduction in the context of cash incentive program, Janani Suraksha Yojana: results from nine states in India. *Social Science & Medicine*. 2014; 123:1-6.
- ^{xiii} Goli S, Jaleel AC. What is the cause of the decline in maternal mortality in India? Evidence from time series and cross-sectional analyses. *Journal of Biosocial Science*. 2014; 46(3):351-65.
- ^{xiv} Hurst TE, Semrau K, Gawande A, Hirschhorn LR. Demand-side interventions for maternal care: evidence of more use, not better outcomes. *BMC Pregnancy and Childbirth*. 2015; 15(1):297.
- ^{xv} Mohanan M, Miller G, La Forgia G, Shekhar S, & Singh K. Improving maternal and child health in India: evaluating demand and supply strategies. 3ie Impact Evaluation Report 30. Washington DC: International Initiative for Impact Evaluation (3ie); 2016.

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়
স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ
জনসংখ্যা-১ অধিশাখা

বিষয় : বাংলাদেশ মাতৃমৃত্যু ও স্বাস্থ্যসেবা জরিপ ২০১৬-এর প্রাথমিক ফলাফল পর্যালোচনা কমিটির প্রথম সভার কার্যবিবরণী।

সভাপতি : কাজী আ. খ. ম. মহিউল ইসলাম
অতিরিক্ত সচিব (জনসংখ্যা, পরিবার কল্যাণ ও আইন) ও সভাপতি, মাতৃমৃত্যু ও স্বাস্থ্য সেবা জরিপ ২০১৬ এর প্রাথমিক ফলাফল পর্যালোচনা কমিটি, স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ, স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়।

তারিখ ও সময় : ২৮/১২/২০১৭, সকাল : ১০.৩০টা;

স্থান : জাতীয় জনসংখ্যা গবেষণা ও প্রশিক্ষণ ইনস্টিটিউট (নিপোর্ট) এর সভাকক্ষ (১৩/১ শেখ সাহেব বাজার রোড, আজিমপুর, ঢাকা)

উপস্থিতির তালিকা- পরিশিষ্ট “ক”

বাংলাদেশ মাতৃমৃত্যু ও স্বাস্থ্য সেবা জরিপ (বিএমএমএস) ২০১৬-এর প্রাথমিক ফলাফল পর্যালোচনা কমিটির প্রথম সভা কমিটির সভাপতি কাজী আ. খ. ম. মহিউল ইসলাম, অতিরিক্ত সচিব (জনসংখ্যা, পরিবার কল্যাণ ও আইন), স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ, স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয় এর সভাপতিত্বে গত ২৮ ডিসেম্বর ২০১৭ সকাল ১০:৩০ ঘটিকায় নিপোর্ট সভাকক্ষে অনুষ্ঠিত হয়। সভাপতি মহোদয় উপস্থিত সকলকে স্বাগত জানিয়ে সভার কাজ শুরু করেন।

২. আলোচনা:

২.১ আইসিডিডিআর,বি-র সিনিয়র পরিচালক ড. সামস-এল-আরেফিন বিএমএমএস ২০১৬ এর পরিচালনার বিভিন্ন দিক এবং মাতৃমৃত্যুর হার নির্ণয়ের পদ্ধতি বিস্তারিতভাবে পাওয়ার পয়েন্ট এর মাধ্যমে উপস্থাপন করেন। পরবর্তীতে এ বিষয়ে উপস্থিত সদস্যগণ আলোচনায় অংশ নিয়ে মতামত ব্যক্ত করেন। ড. আরেফিন বলেন যে, বিএমএমএস ২০১৬-এর মাতৃমৃত্যুর হার মূলত তিন বছরের (২০১৪, ২০১৫ ও ২০১৬ সালের) মৃত্যু হারের গড়। তাই বলা যায় ২০১৪-২০১৬ এর মধ্যবিন্দু হিসেবে ২০১৫ সালে বাংলাদেশে প্রতি লক্ষ জীবিত জন্মে মাতৃমৃত্যুর হার ছিল ১৯৬। বিবিএস-এর এসডিআরএস অনুযায়ী ২০১৫ সালে মাতৃমৃত্যুর হার ছিল ১৮১। তিনি আরও বলেন, জাতিসংঘের হিসাব অনুযায়ী ২০১৩ এর চেয়ে ২০১৫ সালে বাংলাদেশে মাতৃমৃত্যুর হার বেড়েছে। তবে বিএমএমএস ২০১৬ অনুযায়ী আস্থা সীমা (Confidence Interval) বিবেচনা করে বলা যায় ২০১০ সালের পর বাংলাদেশে মাতৃমৃত্যুর হার অপরিবর্তিত রয়েছে। তিনি বলেন, হেলথ বুলেটিন ২০১৬ থেকে জানা যায় ২০১৫ সালে শুধুমাত্র সরকারি হাসপাতালে ৪,০৮৯ জন মা মৃত্যুবরণ করেন। বিএমএমএস সার্ভে অনুযায়ী মোট মাতৃমৃত্যুর দুই-তৃতীয়াংশ হাসপাতালে এবং এক-তৃতীয়াংশ বাড়িতে বা হাসপাতালে আসার পথে হয়ে থাকে। এ হিসাবে ২০১৫ সালে দেশে মোট মাতৃমৃত্যুর সংখ্যা ৬,১৩৪ এবং মাতৃমৃত্যুর হার ১৯৮ (বার্ষিক ৩১ লক্ষ জীবিত জন্ম হিসেবে)।

২.২ সভায় পরিবার পরিকল্পনা অধিদপ্তরের লাইন ডাইরেক্টর, এমসিআরএইচ ডা. মো. শরীফ বলেন যে, পূর্বে বিএমএমএস সার্ভে ১০ বছর হলেও এবার ৫ বছর পর এ সার্ভে করার কারণ জানতে চান। এ প্রেক্ষিতে জানানো হয় মাতৃমৃত্যুর হার এমডিজি ও এসডিজির একটি প্রধান সূচক। মাতৃমৃত্যুর হার হ্রাসে এমডিজির অর্জন এবং এসডিজির বৈজলাইন তথ্য প্রদানের জন্য এ সার্ভে করা হয়েছে। বিএমএমএস ২০১৫ সালে সম্পাদনের পরিকল্পনা থাকলেও প্রক্রিউরমেন্টে এক বছরের অধিক সময় ব্যয় হওয়ায় সার্ভে বাস্তবায়নে কিছুটা বিলম্ব হয়। পরিবার পরিকল্পনা অধিদপ্তর এবং স্বাস্থ্য অধিদপ্তরের এমআইএস-এর সাথে মাতৃমৃত্যুর তথ্যের অসামঞ্জস্যতা যাচাই করার এবং গর্ভপাতে মৃত্যুর হার বৃদ্ধির কারণ, মাতৃমৃত্যুর সার্জিক্যাল কারণ এবং সেবা ব্যবহারে ব্যাপক সাফল্যের পরেও মাতৃমৃত্যু হার না কমার কারণ পুন: পরীক্ষা করার অনুরোধ জানান। ডা. শরীফ বিএমএসএস ২০১৬ সংশ্লিষ্ট কিছু বিষয় যেমন:

গর্ভপাতে মৃত্যুর হার বৃদ্ধির কারণ মাতৃমৃত্যুর সার্ভিসকাল কারণ এবং সেবা ব্যবহারে ব্যাপক সাফল্যের মাত্রহুতা হার না কমার কারণ পুন: পরীক্ষা করার অনুরোধ জানান। তিনি আরও বলেন যে, সার্ভের প্রাথমিক প্রতিবেদনে উল্লিখিত ১৭% মিসপ্রসটল ব্যবহারের তথ্যের উৎস স্পষ্টকরণ করা প্রয়োজন। কেননা ২০১৬ সালে মিসপ্রসটল সরবরাহ ব্যবস্থা প্রবর্তন করা হয়েছে। এ বিষয়ে জানানো হয় এটি বিএমএমএস সার্ভের তথ্য নয়। সেক্টর কর্মসূচির এপিআইআর-এর তথ্যের সহায়তায় এ হিসাব করা হয়েছে।

- ২.৩ ওজিএসবি-র সভাপতি অধ্যাপক লায়লা আরজুমান্দ বানু বিভিন্ন উৎস থেকে প্রাপ্ত মাতৃমৃত্যুর হারে তারতম্য থাকায় তথ্য ব্যবহারে অসুবিধার বিষয়টি তুলে ধরেন। স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগের উপসচিব জনাব মো. মিজানুর রহমানও একই সমস্যা তুলে ধরেন। অধ্যাপক লায়লা আরজুমান্দ বানু বলেন স্বল্প প্রশিক্ষণপ্রাপ্ত বা প্রশিক্ষণ ছাড়া অনেকেই সিজারিয়ান অপারেশন করছেন। প্রাইভেট ক্লিনিকে কিভাবে সিজারিয়ান অপারেশন হচ্ছে তা দেখা দরকার এবং প্রাইভেট ক্লিনিকে মাতৃমৃত্যুর তথ্য সঠিকভাবে উদঘাটনের প্রচেষ্টা নিতে হবে। তিনি আরও বলেন ওজিএসবি লেবার রুম প্রটোকল নিয়ে ওজিওসবি কাজ করছে। তিনি মিডওয়াইফ-এর সংখ্যা বৃদ্ধি করা এবং টৌগাছা মডেলের মত ভাল উদাহরণ অনুসরণ করার পরামর্শ দেন।
- ২.৪ সভায় ঢাকা বিশ্ববিদ্যালয়ের ফলিত পরিসংখ্যান-বিভাগ এর অধ্যাপক সৈয়দ শাহাদাত হোসেন বলেন নমুনা আকারের পার্থক্যের কারণে বিএমএমএস ২০১০ বিএসএমএম ও ২০১৬ এর মাতৃমৃত্যুর হারের আস্থা সীমা তুলনা যোগ্য নয়। তিনি বলেন পদ্ধতিগতভাবে বিএমএমএস ও এসডিআরএস-এর হিসাব তুলনাযোগ্য নয় কেননা SVRS (Sample Vital Registration Statistics) এর পদ্ধতি বিএমএমএস-এর মত নয়। তিনি আরও বলেন যে, এমআইএস থাকলেও এ থেকে বাদ পড়াবাদের হিসাবের আওতায় আনার জন্য সময় সময় সার্ভে করা প্রয়োজন। তিনি বলেন শিক্ষার হার বৃদ্ধির সাথে সাথে বয়স কমিয়ে বলা বা বাড়িয়ে বলার প্রবনতা কমছে। তিনি ২০১৬ এর মাতৃমৃত্যুর হারের আস্থা সীমার মধ্যে ২০১০ সালে মাতৃমৃত্যুর হার নির্ণয় করে তুলনা করার পরামর্শ দেন।
- ২.৫ ঢাকা বিশ্ববিদ্যালয়ের পপুলেশন সায়েন্সেস বিভাগের অধ্যাপক ড. মো. আমিনুল হক বলেন বিএমএমএস ২০১৬সার্ভের প্রাথমিক ফলাফল থেকে দেখা যায় মাতৃস্বাস্থ্য সংক্রান্ত দশটি চলকে (Variables) ইতিবাচক পরিবর্তনের পরেও মাতৃমৃত্যু কমানো যায়নি। এ খাতে এত বিনিয়োগের পরেও এর সুফল কোথায়। ড. আমিনুল হক ২০১০ সালে প্রাপ্ত মাতৃমৃত্যুর হার সঠিক ছিল কিনা তা পরীক্ষা করে দেখার অনুরোধ জানান। এ প্রসঙ্গে ইউএসএইড-এর সিনিয়র গবেষণা উপদেষ্টা ড. কান্তা জামিল বলেন আমরা সৌভাগ্যবান যে ২০১৪ সালে বাংলাদেশ হেলথ ফ্যাসিলিটি সার্ভে করা হয়েছিল। এ সার্ভে থেকে আমরা সরকারি ও বেসরকারি সেবাকেন্দ্রে সেবার প্রস্তুতি সম্পর্কে জানতে পারছি। বিএমএমএস-এর তথ্য বিশ্লেষণে বাংলাদেশ হেলথ ফ্যাসিলিটি সার্ভের তথ্য সহায়ক ভূমিকা রেখেছে। তিনি বলেন ছোট ছোট হাসপাতাল/ক্লিনিকে কী হচ্ছে তা আমরা জানি না। আমরা বিডিএইচএস সার্ভের মাধ্যমে প্রসব সেবা প্রদানকারী ছোট ছোট হাসপাতাল/ক্লিনিকের তথ্য সংগ্রহ করার চেষ্টা করছি।
- ২.৬ সভায় স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগের উপ-প্রধান মো.আবদুস সালাম খান বলেন বিএমএমএস প্রদত্ত মাতৃমৃত্যুর হার Point estimate নয়। তাই এ থেকে বার্ষিক মাতৃমৃত্যুর সংখ্যা হিসাব করা সমীচীন নয়। এছাড়া বিভিন্ন উৎস থেকে প্রাপ্ত বার্ষিক জীবিত জন্মে সংখ্যার মধ্যে তারতম্য রয়েছে।
- ২.৭ স্বাস্থ্য অধিদপ্তরের লাইন ডাইরেক্টর, এমএনসিএএইচ, ডা. মো. জাহাঙ্গীর আলম সরকার বলেন আমাদের ডাক্তারের সংখ্যা বাড়ছে, শিক্ষার হার বাড়ছে, বাল্য বিবাহ কমছে; তার পরেও মাতৃমৃত্যু কেন কমছে না তা ভালভাবে পরীক্ষা করা প্রয়োজন। তিনি বলেন উন্নয়ন সহযোগীরা সরাসরিভাবে ১০টি জেলায় কাজ করছে, সরকারি ও প্রাইভেট এ্যাম্বুলেন্স সেবা সম্প্রসারিত হচ্ছে, ৯০টি সরকারি সেবাকেন্দ্রে মানসম্পন্ন প্রসূতি সেবা দেয়া হচ্ছে, তাই পুরো বিষয়টির প্রকৃত তথ্যভিত্তিক বিশ্লেষণ প্রয়োজন। তিনি বলেন শহর এলাকায় স্থানীয় সরকার বিভাগ কাজ করছে। এখানে সেবা প্রদানে দুর্বলতা থাকতে পারে। সমন্বিত উপায়ে তা দূর করা যেতে পারে।

২.৮ স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়ের পিএমএমইউ-র প্রধান কারিগরি উপদেষ্টা জনাব এম. এম. রেজা বলেন ২০১০ ও ২০১৬ সালের মধ্যে ডাক্তারের সংখ্যা বৃদ্ধি পেলেও ডাক্তারগণ জেলা বা উপজেলা পর্যায়ে থাকছেন কিনা তার ওপর সেবা প্রাপ্তি নির্ভর করে। এক্ষেত্রে প্রত্যাশা অনুযায়ী অগ্রগতি কম।

২.৯ সভায় কমিটির সভাপতি কাজী আ. খ. ম. মহিউল ইসলাম, অতিরিক্ত সচিব (জনসংখ্যা, পরিবার কল্যাণ ও আইন) বলেন আজকের সভায় কমিটির কর্মপরিসর ১ ও ২ নম্বর বিষয়ে আলোচনা হয়েছে। আলোচনা থেকে জানা গেল বাংলাদেশে মাতৃস্বাস্থ্য সেবা কর্মসূচির অগ্রগতির আলোকে আমরা প্রত্যাশিত ফলাফল পাইনি। তাছাড়া পরিবার পরিকল্পনা অধিদপ্তর স্বাস্থ্য অধিদপ্তরের প্রতিনিধিসহ অন্যান্য সদস্যগণ মাতৃমৃত্যু সংক্রান্ত প্রাপ্ত ফলাফল পুনঃ পরীক্ষা করণ ও পুরো বিষয়টির প্রকৃত তথ্য ভিত্তিক বিশ্লেষণ প্রয়োজন মর্মে মত প্রকাশ করেন। তাই আমাদেরকে বিষয়বস্তুর আরও গভীরে যেতে হবে। তিনি বিএমএমএস ২০১৬-এর Whole process revisit করার ওপর বিশেষ গুরুত্বারোপ করেন। অতঃপর তিনি সার্ভে process revisit করার জন্য কর্মপরিসর উপ-কমিটি গঠনের প্রস্তাব করেন। এছাড়া উপকমিটি/কমিটির কার্যক্রম সম্পন্ন না হওয়া পর্যন্ত বিএমএসএস ২০১৬ এর প্রাথমিক ফলাফল শেয়ার/আপলোড/রেফারেন্স হিসেবে ব্যবহার না করার উপর তিনি গুরুত্বারোপ করেন। উপস্থিত সকলে এতে একমত পোষণ করেন।

৩. সিদ্ধান্ত :

সভায় বিস্তারিত আলোচনা শেষে নিম্ন বর্ণিত সিদ্ধান্তসমূহ গৃহীত হয় ;

৩.১ বিএমএমএস ২০১৬-এর প্রাথমিক ফলাফল বিস্তারিত পর্যালোচনা করে সুনির্দিষ্ট সুপারিশমালা প্রণয়নের জন্য নিম্নোক্ত সদস্যদের সমন্বয়ে কর্মপরিসর একটি উপ-কমিটি গঠন করা হলো :

উপ-কমিটি (জ্যেষ্ঠতার ভিত্তিতে নয়):

১. জনাব মো. আবদুস সালাম খান, উপ-প্রধান, স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ
২. ডা. মো. জাহাঙ্গীর আলম সরকার, লাইন ডাইরেক্টর (এমএনসিএইচ), স্বাস্থ্য অধিদপ্তর
৩. ডা. মো. শরীফ, লাইন ডাইরেক্টর (এমসিআরএইচ), পরিবার পরিকল্পনা অধিদপ্তর
৪. প্রতিনিধি, বাংলাদেশ মেডিক্যাল ও ডেন্টাল কাউন্সিল (বিএমডিসি)
৫. পরিচালক, সেন্সাস উইং, বাংলাদেশ পরিসংখ্যান ব্যুরো
৬. অধ্যাপক সৈয়দ শাহাদাত হোসেন, আইএসআরটি, ঢাকা বিশ্ববিদ্যালয়
৭. অধ্যাপক ড. মো. আমিনুল হক, চেয়ারপারসন, পপুলেশন সায়েন্সেস বিভাগ, ঢাকা বিশ্ববিদ্যালয়
৮. অধ্যাপক লায়লা আরজুমান্দ বানু, সভাপতি, ওজিএসবি
৯. জনাব এম. এম. রেজা, প্রধান কারিগরি উপদেষ্টা, পিএমএমইউ, স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়
১০. ড. কান্তা জামিল, ইউএসএইড/বাংলাদেশ
১১. ড. মিজানুর রহমান, মেজার ইভালুয়েশন
১২. ড. সামস-এল-আরফিন, সিনিয়র পরিচালক, এমসিএইচডি, আইসিডিডিআর, বি
১৩. ড. আহমদ আল-সাবির, আইসিএফ, ইউএসএ
১৪. জনাব সুরত কুমার ভদ্র, উর্ধ্বতন গবেষণা সহযোগী, নিপোট

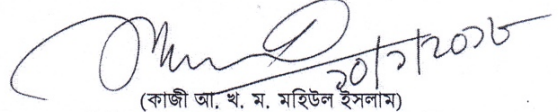
উপরোক্ত উপ-কমিটির সমন্বয়ক হিসেবে জনাব মো. আবদুস সালাম খান, উপ-প্রধান, স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ দায়িত্ব পালন করবেন।

উপ-কমিটির কর্মপরিসর:

- ক) বিএমএমএস ২০১৬-এর সার্ভে পদ্ধতি ও সার্ভে পরিচালনা প্রক্রিয়া পুনঃপরীক্ষা করা;
- খ) বিএমএমএস ২০১৬-এর প্রাথমিক ফলাফল থেকে প্রাপ্ত মাতৃমৃত্যুর হার অন্যান্য সার্ভে (দেশে ও বিদেশে) তথ্যের আলোকে পর্যালোচনা করা;
- গ) দেশের মাতৃস্বাস্থ্য সেবা ব্যবহার বৃদ্ধির পরেও মাতৃমৃত্যুর হার হ্রাস না পাওয়ার কারণ নির্ণয় ও বিশ্লেষণ করা;
- ঘ) মাতৃমৃত্যুর হার হ্রাসে ভবিষ্যত করণীয় সম্পর্কে সুনির্দিষ্ট সুপারিশ প্রণয়ন করা এবং বিএমএমএস ২০১৬ এর প্রাথমিক ফলাফল পর্যালোচনা কমিটির সভাপতির নিকট একটি স্বয়ং সম্পূর্ণ প্রতিবেদন প্রদান করা ;

ঙ) কারিগরী সাহায্যের প্রয়োজন হলে উপ-কমিটিতে এক বা একাধিক ব্যক্তিকে উপ-কমিটিতে সদস্য হিসেবে কো-অপ্ট করা যেতে পারে।

- ৩.২ উপরে বর্ণিত উপ-কমিটির প্রতিবেদন পাওয়ার পর বিএমএমএস ২০১৬-হতে প্রাপ্ত প্রাথমিক ফলাফল সমপর্কে বাংলাদেশ মাতৃমৃত্যু ও স্বাস্থ্যসেবা জরিপ ২০১৬-এর প্রাথমিক ফলাফল পর্যালোচনা কমিটি (মূল কমিটি) কর্তৃক সিদ্ধান্ত গ্রহণ করা হবে। তবে এই সিদ্ধান্ত গ্রহণের পূর্বে বিএমএমএস ২০১৬ এর প্রাথমিক ফলাফল শেয়ার করা, আপলোড করা অথবা রেফারেন্স হিসেবে ব্যবহার না করার বিষয়ে সিদ্ধান্ত গৃহীত হয়।
৪. সভাপতি কর্তৃক ধন্যবাদ জ্ঞাপনের মাধ্যমে সভার সমাপ্তি ঘোষণা করা হয়।



(কাজী আ. খ. ম. মহিউল ইসলাম)

অতিরিক্ত সচিব (জনসংখ্যা, পরিবার কল্যাণ ও আইন)

ও

সভাপতি, বিএমএমএস ২০১৬-এর প্রাথমিক ফলাফল পর্যালোচনা কমিটি
স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ

(একই স্মারক এবং তারিখের স্থলাভিষিক্ত হবে)

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়
স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ
জনসংখ্যা-১ অধিশাখা
www.mohfw.gov.bd

স্মারক নং- ৫৯.০০.০০০০.১১৪.৯৯.০১৯.২০১৭-১৭৪

তারিখ: ০৩ পৌষ ১৪২৪
১৭ ডিসেম্বর ২০১৭

অফিস আদেশ

গত ২২ নভেম্বর ২০১৬ তারিখে প্রকাশিত বাংলাদেশ মাতৃমৃত্যু ও স্বাস্থ্য সেবা জরিপ-২০১৬ এর প্রাথমিক ফলাফল পর্যালোচনার জন্য নিম্নরূপ কমিটি গঠন করা হলো:

বাংলাদেশ মাতৃমৃত্যু ও স্বাস্থ্য সেবা জরিপ-২০১৬ এর প্রাথমিক ফলাফল পর্যালোচনা কমিটি (জ্যেষ্ঠতার ক্রমানুসারে নয়) :

১। অতিরিক্ত সচিব (জনসংখ্যা, পরিবার কল্যাণ ও আইন), স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ, স্বাপকম	- সভাপতি
২। পরিচালক (হাসপাতাল), স্বাস্থ্য অধিদপ্তর	- সদস্য
৩। পরিচালক, সেন্সাস উইং, বাংলাদেশ পরিসংখ্যান ব্যুরো	- সদস্য
৪। উপপ্রধান, স্বাস্থ্য সেবা বিভাগ, স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়	- সদস্য
৫। উপপ্রধান, স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ, স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়	- সদস্য
৬। লাইন ডাইরেক্টর, এমএনসিএইচ, স্বাস্থ্য অধিদপ্তর	- সদস্য
৭। লাইন ডাইরেক্টর, এমসিআরএইচ, পরিবার পরিকল্পনা অধিদপ্তর	- সদস্য
৮। টিম লীডার, পিএমএমইউ, স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়	- সদস্য
৯। চেয়ারপার্সন, পপুলেশন সাইন্সেস বিভাগ, ঢাকা বিশ্ববিদ্যালয়	- সদস্য
১০। অধ্যাপক সৈয়দ শাহাদাৎ হোসেন, ফলিত পরিসংখ্যান বিভাগ, আইএসআরটি, ঢাকা বিশ্ববিদ্যালয়	- সদস্য
১১। সভাপতি, ওজিএসবি	- সদস্য
১২। প্রতিনিধি, আইসিডিডিআর,বি	- সদস্য
১৩। প্রতিনিধি, ইউএসএআইডি/ বাংলাদেশ	- সদস্য
১৪। প্রতিনিধি, মেজার ইভালুয়েশন	- সদস্য
১৫। পরিচালক (গবেষণা), নিপোর্ট	- সদস্য সচিব

কমিটির কর্মপরিধি:

- ১। বাংলাদেশ মাতৃমৃত্যু ও স্বাস্থ্য সেবা জরিপ-২০১৬ এর প্রাথমিক ফলাফল থেকে প্রাপ্ত মাতৃমৃত্যু হার অন্যান্য সার্ভের (দেশে ও বিদেশে) তথ্যের আলোকে পর্যালোচনা করা;
 - ২। মাতৃস্বাস্থ্যসেবা ব্যবহার বৃদ্ধির পরেও মাতৃমৃত্যুর হার হ্রাস না পাওয়ার কারণ বিশ্লেষণ করা;
 - ৩। মাতৃমৃত্যুর হার হ্রাসে ভবিষ্যত করণীয় সম্পর্কে সুপারিশ প্রণয়ন করা;
 - ৪। প্রয়োজনে সংশ্লিষ্ট এক বা একাধিক ব্যক্তিকে কমিটিতে সদস্য হিসাবে কো-অপ্ট করা যেতে পারে।
- ২। কমিটিকে নিপোর্ট, আইসিডিডিআর,বি ও মেজার ইভালুয়েশন প্রয়োজনীয় তথ্য প্রদান করে সহায়তা করবে।
- ৩। এতে যথাযথ কর্তৃপক্ষের অনুমোদন রয়েছে।

স্বাক্ষরিত
১৭/১২/২০১৭
(এস, এম, আহসানুল আজিজ)
উপসচিব
টেলিফোন : ৯৫৪০১০৯
ই-মেইল: population1@mefwd.gov.bd

বিতরণ;

- ১। অতিরিক্ত সচিব (জনসংখ্যা, পরিবার কল্যাণ ও আইন), স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ, স্বাপকম
- ২। পরিচালক (হাসপাতাল), স্বাস্থ্য অধিদপ্তর, মহাখালী, ঢাকা

[অপর পৃষ্ঠায় দ্রষ্টব্য]

Note-2017

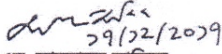
- ৩। পরিচালক, সেক্সাস উইং, বাংলাদেশ পরিসংখ্যান ব্যুরো, আগারগাঁও, ঢাকা
- ৪। উপপ্রধান, স্বাস্থ্য সেবা বিভাগ, স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়
- ৫। উপপ্রধান, স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ, স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়
- ৬। লাইন ডাইরেক্টর, এমএনসিএইচ, স্বাস্থ্য অধিদপ্তর, মহাখালী, ঢাকা
- ৭। লাইন ডাইরেক্টর, এমসিআরএইচ, পরিবার পরিকল্পনা অধিদপ্তর, ৬, কাওরানবাজার, ঢাকা
- ৮। টিম লীডার, পিএমএমইউ (প্রোগ্রাম ম্যানেজমেন্ট এন্ড মনিটরিং ইউনিট), স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়
- ৯। চেয়ারপার্সন, পপুলেশন সাইন্সেস বিভাগ, ঢাকা বিশ্ববিদ্যালয়
- ১০। অধ্যাপক সৈয়দ শাহাদাৎ হোসেন, ফলিত পরিসংখ্যান বিভাগ, আইএসআরটি, ঢাকা বিশ্ববিদ্যালয়
- ১১। সভাপতি, ওজিএসবি (অবস্টেটিক্যাল এন্ড গাইনীকোলজীক্যাল সোসাইটি অব বাংলাদেশ), প্লট-৬/১, সেকশন-১৭ (পুরাতন-১৩), মিরপুর, ঢাকা
- ১২। প্রতিনিধি, আইসিডিডিআর, বি, ৬৮, শহীদ তাজউদ্দিন স্মরণী, মহাখালী, ঢাকা
- ১৩। প্রতিনিধি, ইউএসএআইডি/বাংলাদেশ, মার্কিন দূতাবাস, মাদানী এডিনিউ, বারিধারা, ঢাকা
- ১৪। প্রতিনিধি, মেজার ইভালুয়েশন, ইনস্টিটিউট ফর ক্লাইমেট চেঞ্জ এন্ড হেলথ (৮ম তলা), ৬৮, শহীদ তাজউদ্দিন স্মরণী, মহাখালী, ঢাকা
- ১৫। পরিচালক (গবেষণা), নিপোর্ট, ১৩/১, শেখ সাহেব বাজার রোড, আজিমপুর, ঢাকা

স্মারক নং- ৫৯.০০.০০০০.১১৪.৯৯.০১৯.২০১৭-১৭৪

তারিখ: ০৩ পৌষ ১৪২৪
১৭ ডিসেম্বর ২০১৭

অনুলিপি সদর অবগতি ও প্রয়োজনীয় ব্যবস্থা গ্রহণের জন্য প্রেরণ করা হলো (জ্যেষ্ঠতার ক্রমানুসারে নয়):

- ১। মহাপরিচালক, স্বাস্থ্য অধিদপ্তর/ পরিবার পরিকল্পনা অধিদপ্তর/ নিপোর্ট/ বাংলাদেশ পরিসংখ্যান ব্যুরো।
- ২। মহা মহোদয়ের একান্ত সচিব, স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়।
- ৩। প্রতিমন্ত্রী মহোদয়ের একান্ত সচিব, স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়।
- ৪। সচিবের একান্ত সচিব, স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ, স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়।
- ৫। সচিবের একান্ত সচিব, স্বাস্থ্য সেবা বিভাগ, স্বাস্থ্য ও পরিবার কল্যাণ মন্ত্রণালয়।
- ৬। Executive Director, icddr,b, 68-Shahid Tajuddin Ahmed Sarani, Mohakhali, Dhaka
- ৭। Mission Director, USAID Bangladesh, American Embassy, Madani Avenue, Baridhara, Dhaka
- ৮। Country Coordinator, MEASURE Evaluation, Institute for Climate Change and Health (7th floor), 68-Shahid Tajuddin Ahmed Sarani, Mohakhali, Dhaka
- ৯। অতিরিক্ত সচিব (জনসংখ্যা, পরিবার কল্যাণ ও আইন) এর ব্যক্তিগত কর্মকর্তা, স্বাস্থ্য শিক্ষা ও পরিবার কল্যাণ বিভাগ।


১৭/১২/২০১৭
(এস, এম, আহসানুল আজিজ)
উপসচিব

টেলিফোন : ৯৫৪০১০৯

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