BANGLADESH

National Newborn Health Situation Analysis Report

2014

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Acknowledgments

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The National Technical Working Committee (NTWC) of Newborn Health under the leadership of Professor Mohammad Shahidullah, the Chair of the committee has provided support, encouragement and overall guidance throughout the process of development of the situation analysis report. We express our gratitude to him and all members of the NTWC.

We are happy to recall the contributions of the data collection team and we are appreciating their sincerity and efforts for collecting data related to this situation analysis.

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Dr Md Altaf Hossain
Program Manager, IMCI
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Messages

Mohammad Nasim, MP
Honorable Minister,
Ministry of Health and Family Welfare
Government of the People's Republic of Bangladesh

Message

Bangladesh has made remarkable progress in the health sector over the past few years. The progress of Bangladesh in some health related issues are globally recognized and as such Bangladesh has become a role-model for other developing countries of the world. Achievements in the health sector are the results of the renewed initiatives taken by the Government and supported by the different development agencies for long. The 'UN MDG Awards 2010' awarded to our Hon'ble Prime Minister is a testimony of success of Bangladesh in the health sector.

In 2013 Bangladesh reaffirmed its commitments by declaring A Promised Renewed Call to Action to end preventable child deaths by 2035. With the able leadership of honorable Prime Minister Sheikh Hasina, the Government has been continuing to prioritize the health sector and this has resulted in achieving MDG 4 before the set time and commendable advancements towards achieving other MDGs. Recently Bangladesh has developed Bangladesh Every Newborn Action Plan (BENAP) to further reduce newborn deaths in the country. However, we need to do more in reducing newborn deaths in order to ensure newborn survival and further reduce children's death.

I am happy to see that Bangladesh Newborn Health Situation Analysis Report 2014 is going to be published. I am thankful to the contributors for their hard work in the production of this report.

I hope this situation analysis report will serve as a useful guide to evaluate our work so far done in newborn health care service delivery and help program planners and managers to focus in the areas of improvement.

Mohammad Nasim, MP

Zahid Maleque, MP
Honorable State Minister,
Ministry of Health and Family Welfare
Government of the People's Republic of Bangladesh

Message

The success of Bangladesh in achieving the targets of MDGs is acclaimed globally when our Hon'ble Prime Minister was awarded with 'UN MDG Awards 2010'. She was also awarded with the South-South Award 'Digital Health for Digital Development' in 2011 for her innovative idea to use the Information and Communication Technology to speed-up progress of the health of women and children.

The Government of Bangladesh's commitment for attaining maternal, newborn, children and reproductive health objectives has been manifested in her development plans; Poverty Reduction Strategy Paper (PRSP), Five Year Plan and Health Sector Development Programs. The Sixth Five Year Plan (2011-2015) has integrated the Millennium Development Goals within the broader agenda of the economic and social development in a very expressive manner. The current HPNSDP 2011-2016 includes new newborn health interventions in its operation plans to further reduce newborn mortality.

Bangladesh Newborn Health Situation Analysis Report 2014 elaborates the status of newborn health service delivery in terms of its strengths and areas needing improvements. It also comes up with recommendations to maximize the potential of our health system in heightening the quality of newborn health care with some innovative recommendations to introduce and scale-up new newborn health interventions. I would like to thank all contributors whose hard and sincere works have resulted in the publication of this report.

I believe this situation analysis report will guide program managers and policy planners to adopt appropriate steps to implement evidence-based strategies and interventions to uplift the newborn health service delivery to ensure newborn survival and development in Bangladesh.

Zahid Maleque, MP

Syed Monjurul Islam
Secretary
Ministry of Health and Family Welfare
Government of the People's Republic of Bangladesh

Message

I am really happy to see that Bangladesh Newborn Health Situation Analysis Report 2014 is being published under the auspices of MoH&FW along with the development partners engaged in newborn and child health and the National Technical Working Committee for Newborn Health.

Bangladesh has made impressive progress in reducing child deaths and has already achieved MDG 4. Substantial progress has also been made in reducing maternal deaths and more needs to be done beyond the MDG era to attain Sustainable Development Goals for reducing maternal, newborn and children deaths.

Recently, Bangladesh has adopted evidence –based four new newborn health interventions to reduce newborn as well as child deaths and these interventions along with other maternal and child health interventions are central to achieving the target of reducing child deaths to 20 per 1000 live births by 2035 as a part of A Promised Renewed Call to Action for reducing child deaths due to preventable causes. The next health sector program will have a renewed focus on reducing newborn deaths and improving newborn survival.

Bangladesh Newborn Health Situation Analysis Report 2014 will be a guide for the health managers and policy makers to take appropriate decisions in designing and implementing newborn health interventions in the coming days. The recommendations and the identified areas of improvement portrayed in this repot should be regarded with due attention and importance so that our concerted efforts can bring about positive changes in newborn health care service delivery.

Finally, I would like to thank all contributors, advisors and patrons who have made this huge task possible.

Sayed Monjurul Islam

Ms Roxana Quader
Additional Secretary
Ministry of Health and Family Welfare
Government of the People's Republic of Bangladesh & Chair, National Core Committee on Neonatal Health

Message

It gives me immense pleasure to note that the Bangladesh Newborn Health Situation Analysis Report is going to be printed soon and will be available to the health mangers, newborn health professionals and key health policy makers.

In the recent past, Bangladesh has taken some important steps to advance the agenda of newborn health and contribute to the newborn survival in the country in the continuum of care context of maternal, child and newborn health. With impressive progress gained in the last MDG era, the challenge remains to keep up the momentum and even accelerate it to achieve the more difficult target of Sustainable Development Goals (SDGs). Bangladesh has adopted evidence-based new newborn health interventions to increase the rate of newborn death reduction, which is an area where we need to do more in the coming days.

The National Core Committee on Neonatal Health is a ministerial committee and has been very much supportive in advancing the newborn health agenda in Bangladesh since its beginning. The NCC endorses the technical issues/decisions as these are approved by the National Technical Working Committee for Newborn Health (NTWC-NB Health), its technical committee.

I am happy to approve the report and I believe that this will a guide for the health managers and policy makers to take right steps in designing and implementing newborn health interventions in the future. The suggestions, recommendations and steps for improvement of newborn health included in this report following study, interviewing key stakeholders and analyzing the prevailing situation of newborn health care in Bangladesh.

In conclusion, I would like to thank all contributors and advisors for developing this report.

Roxana Quader

Professor Mohammod Shahidullah
President, Bangladesh Paediatric Association; Chairman, National Technical Working Committee for Newborn Health; and President, Bangladesh Medical and Dental Council

Message

Newborn health in Bangladesh has received renewed attention in recent years against the backdrop of impressive progress made during MDG era in reducing under five children's death with newborns contributing more than 60% share; the proportion of newborn deaths to overall under-five children's death has increased from 39 per cent in 1989-93 to 61 per cent in 2011-14. Adoption of evidence-based new newborn health interventions and declaration of A Promise Renewed (APR) Bangladesh Call for Action for ending preventable child deaths by 2035 are the testimonies of the government of Bangladesh's political commitment to ensure newborn survival in the country. The MoH&FW's new health sector program which is now being developed is also focusing on newborn health as one of its priority activities.

The National Technical Working Committee (NTWC) for Newborn Health is a national committee of newborn experts, champions, advocates and managers from government, development partners, international NGOs and professional societies of Bangladesh. This NTWC has been advancing the newborn health agenda in the country since it began its journey in 2012. The role of NTWC in endorsing new newborn health interventions as the government policy by the National Core Committee of Neonatal Health and developing APR in the country is very commendable. The NTWC has also provided its guidance and technical assistance in developing the Bangladesh Newborn Health Situation Analysis Report from the beginning of the task.

I am happy to see that Bangladesh Newborn Health Situation Analysis Report 2014 is being published and I feel proud to be the part of this mile-stone event. I believe that this report will help us guide the future path for newborn survival in Bangladesh.

I take the opportunity to thank all contributors, advisors and others who have made this task possible.

Professor Mohammod Shahidullah

Professor Dr Deen Mohammad Noorul Huq
Director General, DGHS
Ministry of Health and Family Welfare
Government of the People's Republic of Bangladesh

Message

Bangladesh is passing through a very important transition phase of moving forward from Millennium Development Goals (MDGs) era to Sustainable Development Goals (SDGs) era. The challenges remain ahead are to keep up the momentum of successes achieved overtime in order to finish the un-finished agenda of the past and to confront the goals and targets of newly launched SDGs. Bangladesh is preparing to take up the challenges and past learnings and experiences will guide us in our endeavor to addressing the targets of SDGs.

Newborn health in Bangladesh has come to the limelight during last decade although targets of MDGs did not mention newborn health. As newborn deaths contributed increasing share in under-five Children's deaths overtime, Bangladesh has given due attention in finding out causes and ways to reduce newborn deaths. In recent years, new evidence-based newborn health interventions addressing three main causes of newborn deaths, have been adopted in the policy to introduce and scale-up in the country. Bangladesh's A Promised Renewed Call to Action for reducing child deaths due to preventable causes by 2035 included those interventions as the strategies to achieve the target of APR declaration. Accordingly, the operation plans of the next health sector program 2016 to 2021 will have a renewed focus on reducing newborn deaths and improving newborn survival.

It gives me immense pleasure to note that the Bangladesh Newborn Health Situation Analysis Report 2014 is going to be published soon. This report portrays the service delivery scenario on newborn health in facility and community with community perception of newborn health care along with future directives for improving newborn survival in the country. I believe this report will help policy makers, program managers and even service providers to understand the prevailing newborn health care in the country and help strengthen the focus on newborn health in coming days.

I take the opportunity to thank all contributors for their hard work. I also thank the National Technical Working Committee for Newborn Health for their overall guidance and Saving Lives Program of Save the Children in Bangladesh for their initiatives and successful efforts to accomplish the noble task.

Professor Dr Deen Mohammad Noorul Huq

Mr Mohammad Wahid Hossain
Director General, DGFP
Ministry of Health and Family Welfare
Government of the People's Republic of Bangladesh

Message

I am pleased to know that the Bangladesh Newborn Health Situation Analysis Report is going to be printed soon and be made available to the health and family planning managers in the country. This report is an inventory of newborn health services in different level facilities including that of community level newborn health service delivery. It focuses on the key areas of newborn health service delivery of government and non-government programs in terms of human resources, budgetary allocation, government incentives and preparedness of different facilities to cope with on-going scale-up of new newborn health interventions. I believe that this report will help health and family planning managers understand the prevailing newborn health situation in the country and the future directions for improving newborn survival in our country.

As Bangladesh made commendable advancement in reducing child deaths and improving other socio-economic and family planning indicators, the challenge for the future remains in improving newborn and maternal health status. In 2013, Bangladesh expressed her commitment to end preventable under-five deaths by declaring A Promised Renewed Call to Action with a target of reducing child deaths to 20 per 1000 live births by 2035 and newly adopted evidence-based newborn health interventions along with proven maternal and child health interventions are central to achieve this target.

Newborn and child survival has got direct impact in use of family planning methods; improved newborn survival usually results in birth spacing as well as consistent use of family planning methods, thus improving the health of both newborn and mother. As most of the under-five children's deaths are contributed by newborns, further reduction in under-five children's death requires reduction of newborn deaths. So, the DGFP operational plan of the next health sector program will attach due emphasis on newborn health.

Finally, I would like to thank all who have developed this report along with the National Technical Working Committee for Newborn Health for their guidance. I would also like to thank to the Saving Newborn Lives Program of Save the Children for their pro-activeness and support to finalize this report.

Mr Mohammad Wahid Hossain

Save the Children

Ms Elizabeth Pearce
Country Director
Save the Children in Bangladesh

Message

I am happy to see that the Bangladesh Newborn Health Situation Analysis Report is ready to be published so that the printed copy is available at all levels of health service delivery. It satisfies me to note that the Saving Newborn Lives (SNL) team had taken the initiative and coordinated with government, development partners and newborn professional societies of the country to synthesize the report. I take the opportunity to thank all contributors who have put their sincere efforts, expertise and encouraging enthusiasm to develop the report. I sincerely recognize the input of the National Technical Working Committee for Newborn Health and thank them for their guidance throughout the process of development of the report. I also thank the Program Manager-IMCI and the Director-Primary Health Care for their valuable directives and encouragement during the process of this report development. My heart-felt thanks are for the UNICEF and WHO newborn health team for their support in developing the report.

As Bangladesh has made impressive progress in improving maternal and child health status during MDG period, now the challenge remains to accelerate the momentum of successes beyond MDG era in order to achieve even stiff targets of Sustainable Development Goals. Many exciting events have taken place recently in the country to improve newborn survival; declaration of A Promised Renewed Call to Action to reduce under five children's death due to Preventable causes, policy adoption of evidence-based new newborn health interventions, development of Bangladesh Every Newborn Action Plan (BENAP), development of newborn intervention guidelines, and development of Comprehensive Newborn Care Package (CNCP) and its implementation in one of the districts are speaking of the commitments of the government of Bangladesh to further improve newborn health status in the country. As we are in critical stage of transitioning from the Millennium Development Goals to Sustainable Development Goals, we need to keep our focus on newborn health and increase our efforts in translating all strategies, policies into visible action.

Save the Children collaborates with government and professional bodies in different countries including Bangladesh to advance the state-of-the-art interventions for newborn survival. We are proud to be a partner to the development initiatives for survival, growth and protection of children of Bangladesh.

I wish this report will effectively contribute to improving the newborn survival in the country.

Ms Elizabeth Pearce

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Guided by the National Technical Working Committee for Newborn Health

Foreword

While Bangladesh moves forward with child health successes during MDG era, some remarkable events took place in the last couple of years. The National Core Committee of Neonatal Health adopted evidence-based four new newborn health interventions as the strategic interventions to further reduce newborn deaths, A Promised Renewed on Ending Preventable Child Deaths by 2035, was declared by the Government of Bangladesh and this declaration included four new newborn health interventions as the strategies to achieve the target along with other seven maternal and child health specific interventions. Meanwhile, Bangladesh has already reduced more than two thirds of under-five children's deaths from 1990 to 2015 and thus achieved the MDG 4 ahead of the stipulated time. However, the rate of mortality reduction for newborns is far less than that of older children although Bangladesh has made a rapid progress in reducing newborn deaths in the last decade at a faster pace compared to the regional and global averages. Yet about 70,000 newborns die each year, the rate being 28 per 1000 live births and newborn deaths account for 61% of all under-five deaths in Bangladesh. So, a lot more needs to be done to ensure newborn survival and reduce children's death further but the overall challenges remain to keep the pace of improvement in overall health service delivery in general and in maternal, newborn and child health care in particular.

Bangladesh National Newborn health situation Analysis Report 2014 is the second of its kind and includes newborn health situation in the context of clinical as well as community health service delivery. This report provides a comprehensive overview of factors influencing newborn health care in Bangladesh. The report involved an extensive literature review supplemented by a survey on newborn health care in 110 facilities across the country between July and November 2013. Focus groups and in-depth interviews with health care providers, caregivers, family members and local leaders were carried out to understand the community perspective on newborn health care. Stakeholders from donor agencies, Ministry of Health and Family Welfare, professional societies, research institutes, and non-governmental organizations were interviewed about newborn health and maternal and newborn health programs including their challenges with solutions.

Since 2000, impressive advances have been made in Bangladesh to improve newborn health status, like development of National Newborn Health Strategy, conducting operational research, improvement of community based care, development of National Technical Working Committee for Newborn Health under the National Core Committee for Neonatal Health, policy adoption of evidence-based new newborn health interventions, A Promised Renewed Call to Action to reduce preventable child deaths by 2035, initiation of development of Bangladesh Every Newborn Action Plan and development of Comprehensive Newborn Care Package. All these events contributed in heightening the focus on newborn health both politically and programmatically.

In the context of increasing political and programmatic attention over time in newborn health, and renewed commitments from newborn health partners including newborn champions, professional societies, development agencies and above all government counterparts, Bangladesh is moving towards a crucial phase of translating the policy into action by introducing and scaling-up of evidence-based newborn health interventions along with Essential Newborn Care within the continuum of maternal and child health programs. Bangladesh National Newborn health situation Analysis Report 2014 identifies the gap in health care services at different level and sheds light on the areas of improvement by providing recommendations to improve newborn survival in Bangladesh.

Acronyms

ACS	Antenatal Corticosteroid
ANC	Antenatal Care
APIR	Annual Program Implementation Report
BBS	Bangladesh Bureau of Statistics
BCC	Behavioral Change Communication
BDHS	Bangladesh Demographic and Health Survey
BENAP	Bangladesh Every Newborn Action Plan
BMMS	Bangladesh Maternal Mortality Survey
BPA	Bangladesh Paediatric Association
BRAC	Bangladesh Rural Advancement Committee
CAG	Community Action Group
CBHC	Community-Based Health Care
CC	Community Clinic
CCMG	Community Clinic Management Group
CEmOC	Comprehensive Emergency Obstetric Care
CHCP	Community Health Care Provider
CHX	Chlorhexidine digluconate
CIRPB	Centre for Injury Prevention and Research
CMAM	Community-Based Management of Acute Malnutrition
COIA	United Nations Commission on Information and Accountability survey
CPD	Continuous Professional Development
CPR	Contraceptive Prevalence Rate
CSBA	Community-Based Skilled Birth Attendant
CSG	Community Support Group
CV	Community Volunteer
DGFP	Directorate General of Family Planning
DGHS	Directorate General of Health Services
DH	District Hospital
DHIS	District Health Information System
DGDA	Drug Administration Authority
DSF	Demand-Side Financing
EmOC/EOC	Emergency Obstetric and Neonatal Care
EAP	Every Newborn Action Plan
ENC	Essential Newborn Care
EPI	Expanded Program on Immunization
ESD	Essential Service Delivery
FP	Family Planning
FPI	Family Planning Inspector
FWA	Family Welfare Assistant
FWV	Family Welfare Visitor
GMP	Growth Monitoring and Promotion
GOB	Government of Bangladesh
HA	Health Assistant
HBB	Helping Babies Breathe
HEP	Health Education and Promotion
HFA	Health Facility Assessment
HI	Health Inspector
HIS	Health Information System
HMIS	Health Management Information System

HPNSDP	Health, Population and Nutrition Sector Development Program
HRH	Human Resources for Health
icddr,b	International Centre for Diarrhoeal Disease Research, Bangladesh
IEC	Information Education & Communication
IMCI	Integrated Management of Childhood Illness
IMR	Infant Mortality Rate
IPHN	Institute of Public Health Nutrition
IRT	Independent Review Team
IYCF	Infant and Young Child Feeding
LAPM	Long-Acting and Permanent Methods
LBW	Low Birthweight
LD	Line Director
M&E	Monitoring and Evaluation
MA	Medical Assistant
MCHIP	Maternal and Child Health Integrated Program
MCRAH	Maternal Child, Reproductive and Adolescent Health
MCWC	Maternal and Child Welfare Centre
MDG	Millennium Development Goals
MIS	Management Information System
MMR	Maternal Mortality Ratio
MNCAH	Maternal, Neonatal, Child and Adolescent Health
MNCHFP	Maternal, Neonatal and Child Health, and Family Planning
MNHI	Maternal Newborn Health Initiative
MNH	Maternal
MO	Medical Officer
MOHFW	Ministry of Health and Family Welfare
MO-MCH	Medical Officer, Maternal and Child Health
MOLGRDC	Ministry of Local Government, Rural Development and Cooperation
MPDR	Maternal and Perinatal Death Review
MR	Menstrual Regulation
MTR	Mid-Term Review
NEML	National Essential Medicines List
NGO	governmental Organization
NICC	Nutrition Interagency Coordination Committee
NIPORT	National Institute of Population Research and Training
NNHS	National Neonatal Health Strategy
NNS	National Nutrition Services
NTWC-NBH	National Technical Working Committee for Newborn Health
NVAC	National Vitamin A Plus Campaign
OP	Operational Plan
OT	Operation Theatre
P4P	Pay for Performance
PAP	Priority Action Plan
PHC	Primary Health Care
PIP	Program Implementation Plan
PMMU	Program Management and Monitoring Unit
PNC	Postnatal Care
PPC	Post-partum Care
RBM	Results-Based Management
RD	Rural Dispensary
RFW	Results Framework
RMNCH	Reproductive, Maternal, Newborn and Child Health
SACMO	Sub-Assistant Community Medical Officer
SAM	Severely Acute Malnutrition
SBA	Skilled Birth Attendant
SCNI	Steering Committee in Nutrition Implementation

SES	Socioeconomic Status
SOP	Standard Operating Procedure
SVRS	Sample Vital Registration Survey
TA	Technical Assistance
TBA	Traditional Birth Attendant
TFR	Total Fertility Rate
UDHS	Urban Demographic and Health Survey
UHC	Upazila Health Complex
UHFPO	Upazila Health and Family Planning Officer
UHFWC	Union Health and Family Welfare Centre
UHS	Urban Health Survey
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UPHCSDP	Urban Primary Health Care Service Delivery Project
USAID	United States Agency for International Development
USC	Union Sub Centre
WHO	World Health Organization

Executive Summary

Over the past decade, Bangladesh has witnessed major shifts in health policy and programming aimed at improving newborn survival. Because deaths in the first month of life account for an increasing share of all child deaths, reducing mortality among newborns is crucial for meeting the national commitment to end preventable child deaths by 2035.

This newborn health situation analysis provides a comprehensive overview of factors affecting newborn health care in Bangladesh. It examines the newborn health policy environment, assesses the coverage of newborn healthcare services at different tiers of service delivery, and identifies gaps and ways to address them. The analysis includes recommendations to help improve newborn health and survival in Bangladesh with the roll-out of essential newborn health interventions effectively at scale.

This report involved an extensive literature review, supplemented by a survey on newborn care involving 110 facilities across all seven divisions of Bangladesh between July and November 2013. Community perspectives on newborn care were obtained through focus groups and in-depth interviews with healthcare providers, caregivers, family members, and local leaders. Stakeholders from donor agencies, the Ministry of Health and Family Welfare (MOHFW), professional societies, research institutes, and non-governmental organizations (NGOs) were also interviewed about newborn health-related topics, including their experiences with different maternal and newborn health programs, challenges to improving care, and the availability of needed resources.

Current status of newborn health in Bangladesh

Bangladesh has already attained Millennium Development Goal (MDG) 4—reducing child mortality. Mortality for infants and children under age five has declined steadily in Bangladesh since 1990. The 2014 Bangladesh Demographic and Health Survey shows under-five mortality at 46 deaths per 1,000 live births and the infant mortality rate at 38 deaths per 1,000 live births. These rates represent an impressive improvement over the early 1990s, when these two rates were 133 and 87 respectively. But the neonatal mortality rate has improved more slowly, from about 52 deaths per 1,000 births in the early 1990s to 28 per 1,000 for the mid-2010s. As a result, neonatal deaths account for an increasing share of the deaths of children under age five, rising from about 40% in the early 1990s to 61% currently.[1]

Most neonatal deaths occur within the first week of life. In Bangladesh, the major causes are complications of prematurity, infections, and intrapartum complications like birth asphyxia. Efforts to prevent these deaths are hindered by the fact that a majority of babies are delivered at home without the help of a skilled attendant. The 2014 BDHS found that only 42% deliveries are performed by a skilled provider. Just 32% of babies receive postnatal care from a medically trained provider within two days of delivery, about the same as in the 2011 survey. In general, while essential newborn care practices have improved, only 6% of babies

receive all the components of essential care. These rates clearly identify a need to improve newborn healthcare service delivery consistently at all levels.[2]

Newborn-related health policies and strategies

The Bangladesh government recently initiated policies that make improving newborn health a top priority. In 2009, Bangladesh developed a National Neonatal Health Strategy, marking a critical milestone in advancing newborn health in the country. Since then, newborn health policies have been formulated through a series of consultations among stakeholders, professionals, and development partners, with the National Technical Working Committee for Newborn Health playing a pivotal role in this process.

In July 2013, Bangladesh issued a "call to action", aiming to end child deaths from preventable causes by 2035.[3] This declaration focused on strengthening existing newborn interventions as well as introducing new evidence-based, globally accepted newborn health interventions. As part of the global Every Newborn Action Plan (ENAP), Bangladesh also went ahead formulating its national plan, BENAP.

Newborn health service delivery

Service delivery mechanisms work when all components related to providing services are in place. Newborn health services are not delivered consistently at all facilities and also not at all levels of care. There are wide variations in the type of care offered as well as in the quality of services. These disparities reflect logistical supply problems, uncertainties about providers' roles and responsibilities, inadequate training and supervision, and a critical shortage of health workers. National human resources strategies need to be updated and implemented; vacant positions filled; skill-based training offered; and better coordination achieved among providers in different directorates.

To improve service delivery within the current system, the government has been recruiting a large number of nurses, training community health workers in essential newborn care, and providing standardized training for midwives. The recent revitalization of community clinics provides opportunities to expand basic newborn health care at the community level. At a higher level, union facilities have trained providers to offer routine newborn care as well as manage newborn infection cases.

Measuring quality and coverage of newborn health

Regular collection of data on newborn health is crucial for policy development and program planning. In Bangladesh, however, this information has not been routinely collected and reported. Only recently have national policies called for the comprehensive collection and reporting of newborn health information. Several national surveys over the last few years have added critical data on components of newborn health and care practices including neonatal and post-neonatal mortality rates, use of antenatal and postnatal care, deliveries by skilled birth attendants, birth planning, care-seeking for maternal complications, and essential newborn care practices.

In Bangladesh, health management information (HMIS) data are routinely collected at community and facility levels by two directorates, DGHS and DGFP. However, the directorates use different HMIS systems, and it has been difficult to share information that could facilitate better health service delivery. Since 2008, the MOHFW has made significant strides toward improving information systems. The Health, Population, and Nutrition Sector Development Program 2011-2016 (HPNSDP), for example, has integrated a results framework and monitoring and evaluation system. Within the MOHFW, a program management and monitoring unit manages, coordinates, monitors, and evaluates performance. Recently, both directorates have introduced online data entry systems.

Donors and development partners are also providing support to strengthen HMIS in Bangladesh. The COIA (United Nations Commission on Information and Accountability) initiative,

for example, tracks every pregnant mother and child under age five. This initiative will provide longitudinal information about mothers and young children at the national level. There is also a longer-term plan to expand data collection to other health areas.

New registries with newborn components have been introduced that can enhance the collection and reporting of crucial data. These include the Special Care Newborn Unit register at the Upazila Health Complex (UHC) and higher levels, launched by the DGHS, and the Community Skilled Birth Register and the Pregnant Mother Register for use by the community health workers of DGFP. Additional registers are being planned to capture other high-impact interventions, such as treatment of newborn infections and Kangaroo Mother Care (KMC) for low birthweight babies.

National newborn health programs and initiatives

Large-scale maternal and newborn health interventions are planned either through a MOHFW service delivery mechanism or through collaborative projects between MOHFW and development partners or NGOs. However, these large-scale MNH programs do not offer the complete package of essential interventions for all newborns. At the same time, the scale of the existing interventions are not satisfactory.

Program quality and progress are not always measured uniformly or appropriately. It is crucial to identify ways to integrate, scale up, and sustain newborn health interventions within the existing service delivery platforms and to formulate new strategies to combat local challenges to effective implementation. It is also important to avoid wasteful duplication of efforts in the same geographical areas. A regular reporting system, with a common set of indicators, needs to be developed to monitor progress for all large-scale programs. The government and its partners are committed to improve the system through innovating sustainable approaches.

Situation analysis survey findings

From interviews it was revealed that providers at government facilities are aware of the importance of providing essential newborn care (ENC) to newborns, although they may not know all the components of this essential care. Providers do not follow a standard protocol for delivering postnatal care (PNC) in facilities. Home visits to ensure PNC remain a big challenge for the community health workers, whose work schedules are stretched by other responsibilities.

Overall, the survey found that facilities and communities need adequate preparation before new newborn interventions can be successfully introduced. Facility preparedness is a big challenge to improving newborn health, and will require special attention and support.

Communities, over time, have shed some of the misconceptions and harmful practices related to newborn care. To some extent, newborn care is hampered by the fact that most women choose to deliver at home with unskilled providers and seek care from untrained providers if their newborn becomes ill.

The survey also attempted to capture how new recommendations for neonatal care are being implemented, some of which require providers to adopt new methods. Providers long used to practicing dry cord care after childbirth are now being asked to implement the new policy of applying a 7.1% chlorhexidine digluconate (CHX) solution to the cord stump, followed by dry cord care. Union-level facilities are expected to be equipped and providers trained to manage non-critical cases of neonatal sepsis that might occur if the cord area becomes infected.

KMC, an effective intervention for low-birthweight babies, is being slowly adopted.

Overall, the survey found that facilities and communities need adequate preparation before new newborn interventions can be successfully introduced. Facility preparedness is a big challenge to improving newborn health, and will require special attention and support.

Focus group discussions conducted as part of the newborn health situation analysis revealed that most pregnant women had at least one antenatal care check-up, but generally only visit a medically trained provider for antenatal care or childbirth when they suspect a problem. They

Top priorities include encouraging healthy newborn care practices in the home and community; training service providers; improving logistics to ensure a regular flow of supplies; guaranteeing availability of skilled service providers with effective supervision and monitoring systems; and implementing strategies to create demand for and use of newborn health services.

said the decision about place of delivery was often influenced by their mother or mother-in-law. The focus groups found that PNC is not well understood or widely practiced. Mothers are not well informed about the danger signs that should prompt them to seek care for their infant, and they only seek care for themselves if they experience severe problems like bleeding, weakness, infection, or headache during the postpartum period.

Newborn health in urban Bangladesh

In Bangladesh, health service delivery in urban areas is governed differently than in rural areas, which poses distinctive challenges in access to and utilization of maternal and newborn health services. The Ministry of Local Government, Rural Development and Cooperation (MOLGRDC), rather than the MOHFW, is responsible for providing primary health services in urban areas, with supplementary programs implemented by NGOs and other partners. Urban health service delivery is further challenged by the country's rapid rate of urbanization, especially the growing population in urban slums. This situation calls for coordinated efforts to ensure effective coverage of health interventions and to achieve national health-related targets.

The Urban Health Survey (UHS) 2013 showed that the overall percentage of mothers receiving ANC from any provider increased between 2006 and 2013, with women in non-slum areas most likely to receive at least four ANC check-ups.[4] PNC, a critical service package for mothers and newborns, also increased between 2006 and 2013 in both slum and non-slum areas. However, the UHS revealed that all elements of ENC are not widely practiced in urban areas. Although 87% of respondents in slum areas mentioned using a boiled instrument for cutting the umbilical cord, more than half of cases (51%) applied some substance on the cord stump afterward, increasing the risk of infection. Exclusive breastfeeding of newborns has also gradually increased in both slum and non-slum areas, but it is still far below the desired level. In the UHS 2013, exclusive breastfeeding of children up to six months was 60% in both the slum and non-slum areas and a little higher in other urban areas (66%).

There is no systematic approach to providing health services for urban poor, especially women and children, and the population coverage is not adequate. Currently, only four programs target MNH services among the urban poor: the Urban Primary Health Care Services Delivery Project (UPHCSDP), NGO Health Service Delivery Project (NHSDP), BRAC's Manoshi (urban MNCH) project, and Marie Stopes clinics.

In addition to government programs, the private sector offers a wide range of options for urban Bangladeshis, from large private hospitals to untrained informal "quacks." These providers, although diverse, share similar characteristics. First, they are unregulated; second, their services are expensive; and third, these services may not link patients to a continuum of care, which means that patients seeking referral may not have a clear path to advanced care. Moreover, many private services, particularly from trained health care workers, are highly specialized, which reduces patient access to preventative and primary health care.

The way forward

Over time newborn health in Bangladesh has gained political as well programmatic attention through successful advocacy spearheaded by development partners and newborn health champions. More recently, effective strategic partnerships have been built between government agencies, professional associations, and development partners to advance the newborn health agenda within the continuum of maternal and child health programs. These strategic collaborations have forged a solid foundation for the country's health service delivery program, as evidenced by the formulation of the National Newborn Health Strategy, adoption of policies for evidence-based newborn health interventions, declaration of the "call to action" to

end preventable child deaths, and inclusion of new interventions in the budgets of maternal, child, and adolescent health plans of HPNSDP. In addition to these, BENAP is being developed as a collaborative effort between government and development partners to create a roadmap for improved newborn survival. These efforts will involve strengthening and investing in care during labor, childbirth, and the first day and week of life, improving the quality of maternal and newborn care, and reaching every woman and every newborn by involving parents, families, and communities.

Bangladesh is entering a crucial period as it prepares to roll out new evidence-based newborn health interventions along with routine newborn health care. With new policy adoption and renewed focus on newborn health, the formidable task is to make lasting changes in newborn care practices and care-seeking by families, and to address the barriers of quality newborn health service delivery. New guidelines, protocols, and training materials are being prepared; medicines and equipment are being produced or procured; and logistics systems are being put into place. In short, Bangladesh is well positioned to deliver on the promise of improved newborn health and survival.

However, much work remains to be done. Top priorities include encouraging healthy newborn care practices in the home and community; training service providers; improving logistics to ensure a regular flow of supplies; guaranteeing availability of skilled service providers with effective supervision and monitoring systems; and implementing strategies to create demand for and use of newborn health services. Newborn health interventions feature prominently in the Bangladesh "call to action" to end preventable child deaths. To ensure effective implementation and achievement of newborn health targets, leaders from government and supporting development partners must ensure stakeholder accountability through a transparent process of national-level monitoring of critical benchmarks.

In a country like Bangladesh, where high-level political commitment enables effective coordination, collaboration, and cooperation among government, non-government, professional agencies, and development partners to advance issues, newborn health is likely to stay in the lime ight in the near future. The country's current challenge is to deliver effective newborn health programs within the mainstream health service delivery systems and ultimately to improve newborn survival.

PHOTO: MAMONI HSS PROGRAM

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1. Introduction and Methodology

New research findings, policy shifts, and increasing national interest in newborn health prompted the call for a comprehensive analysis of Bangladesh's newborn health situation by the primary stakeholders dedicated to improving child and maternal health in Bangladesh. Donor agencies, the Ministry of Health and Family Welfare (MOHFW), professional societies, research institutes, non-governmental organizations (NGOs), and other stakeholders supported the effort to assess the ability of the existing health policy environment and service delivery systems to effectively implement essential newborn health interventions.

The specific objectives of the analysis included:

- Assessing the newborn health policy environment;
- Documenting and understanding newborn healthcare service coverage at different tiers of service;
- Investigating the perceptions and practices of newborn health care at the community level;
- Revealing the unmet needs and barriers for quality newborn health care; and
- Identifying gaps and ways to address these gaps to improve newborn health and survival in Bangladesh.

Methodology

The situation analysis process was a collaborative effort among the MOHFW, professional associations, development partners, and NGOs and initiated by the Saving Newborn Lives Program (SNL) of Save the Children in Bangladesh.

The analysis involved:

- Review and analysis of literature, documents and tools (see bibliography);
- Primary data collection (qualitative and quantitative); and
- Stakeholders' interviews.

The findings from these exercises were shared with the National Technical Working Committee for Newborn Health (NTWC-NH) to seek their opinion, guidance, and recommendations.

Literature, documents, and tools review

A comprehensive search of national policy and strategy documents; program implementation plans; survey reports and data; program reports; technical protocols; education and training materials; journal articles; and academic studies provided a wealth of information on newborn health in Bangladesh. The information relevant to this situation analysis was categorized, analyzed, evaluated, and summarized. The sources are listed in the bibliography at the end of this report.

The literature, documents, and tools were largely collected from directorates under MOHFW, including the Directorate General of Health Services (DGHS), the Directorate General of Family Planning (DGFP) and the National Institute of Population Research and Training (NIPORT); United Nations (UN) agencies like the UN Development Program (UNDP), the UN Children's Fund (UNICEF) and the World Health Organization (WHO); Save the Children; BRAC (formerly the Bangladesh Rural Advancement Committee); the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b); and other development partners. The Healthy Newborn Network resource hub provided access to many relevant documents.[5]

Figure 1–1 Districts Included in the Bangladesh Newborn Health Assessment Survey

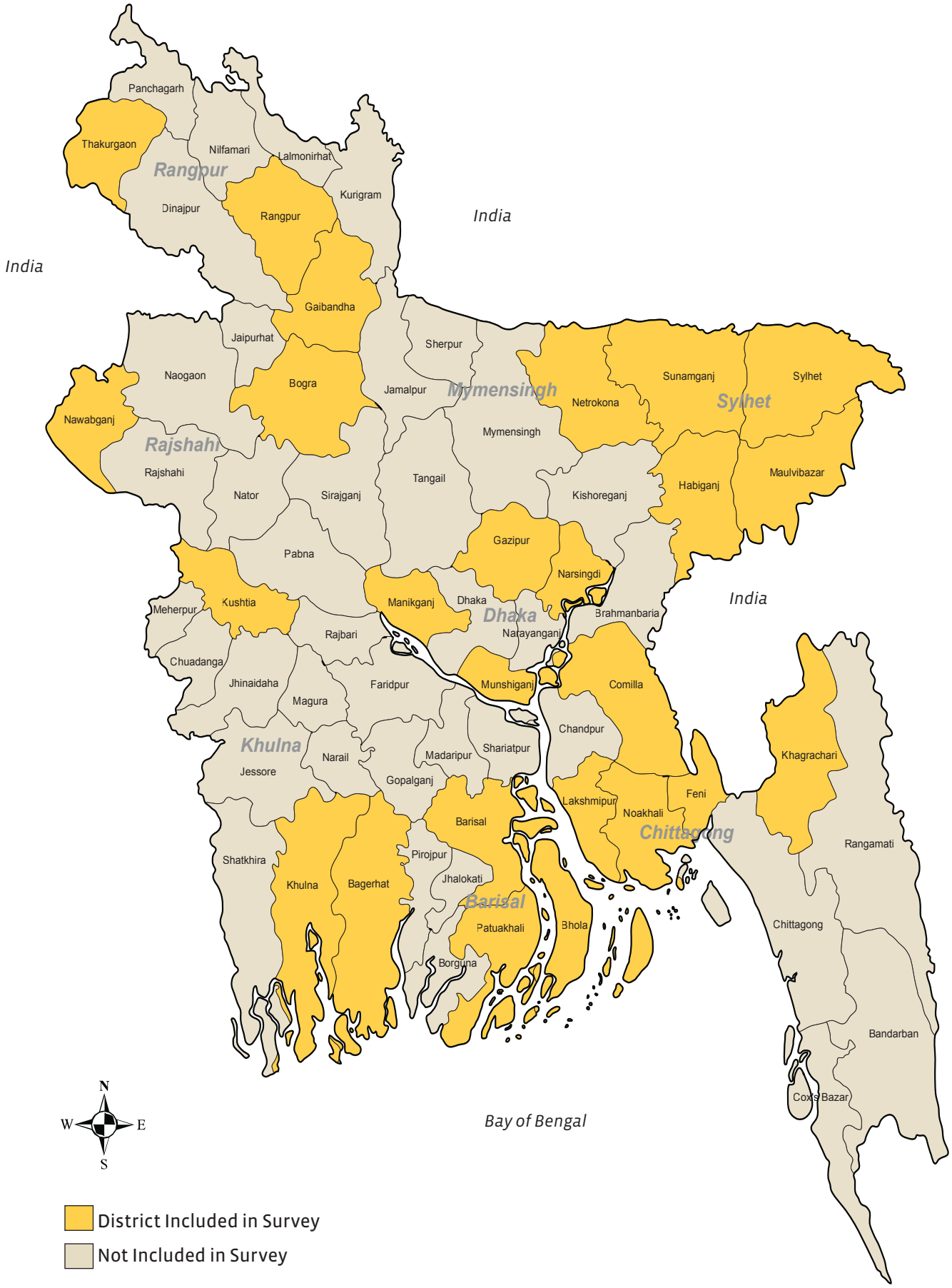

Table 1–1 Bangladesh Newborn Health Situation Analysis Survey: District Sampling

Divisions	Districts Surveyed (N=26)	Sampled Districts Out of All Districts in Division (%)
Dhaka	Narsinghdi, Madaripur, Dhaka, Manikganj, Munshi-ganj, Gazipur, Netrokona	7/17 (41%)
Chittagong	Khagrachari, Noakhali, Lakhsmipur, Feni, Comilla	5/11 (45%)
Rajshahi	Chapainawabganj, Bogra	2/8 (25%)
Rangpur	Gaibandha, Thakurgaon, Rangpur	3/8 (38%)
Khulna	Bagerhat, Kushtia, Khulna	3/10 (30%)
Sylhet	Habiganj, Sunamganj	2/4 (50%)
Barisal	Bhola, Barisal, Patuakhali	3/6 (50%)
	TOTAL	**25/64 (39%)**

Source: Newborn Health Situation Assessment, 2013.

The Every Newborn Toolkit was particularly valuable for developing the survey questionnaire that provided the basis of this report as well as the health systems analysis. The tools in this toolkit were specifically developed to identify issues hindering the scale-up of newborn interventions and to identify possible solutions.[6]

Another key tool, the Bottleneck Analysis, helped identify barriers to improved newborn care throughout the healthcare system. The tool was developed through a collaborative effort by several stakeholders, including the SNL Program of Save the Children, the MOHFW, UNICEF, WHO, and a number of professional associations, NGOs, and development partners.

The tool identifies bottlenecks in the delivery of all newborn care health interventions as well as critical newborn health interventions, and enumerates strategies and solutions to overcome these bottlenecks. The analysis considers all aspects of the health system, including leadership and governance, finance, workforce, service delivery, medical supplies and technologies, health information systems, and community ownership and partnership.

The analysts assigned each health sector component one of four rating categories, ranging from "good (not a bottleneck to scale up)" to "inadequate (major bottleneck to scale up)," to indicate how seriously the problems in specific areas affected the ability to scale up healthcare delivery for newborns.

Primary data collection (qualitative and quantitative)

A special survey was designed to collect information from healthcare facilities and the community. Twenty-five of 64 districts were selected through multi-stage sampling with the goal of including at least a one-quarter of the districts in each division (see Table 1-1). The survey instruments were pretested before finalization and implementation.

Field staff with previous experience working on newborn-related surveys were trained and deployed to implement the survey. The SNL team and research investigators recruited by SNL were closely involved in data collection, compilation, and analysis and in the writing of the survey report.

In-depth stakeholder interviews and focus groups were conducted at some of the sampled facilities and communities. The results of the literature review, surveys, and interviews form the basis of this situation analysis report.

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2. Demography and Epidemiological Information

Bangladesh is a densely populated country with an estimated 2013 population of 154.8 million, growing at an annual rate of 1.4%.[1,2] Although, it ranks just 94th in the world in surface area—with 147,570 square kilometers of land—it is the world's 8th most populous country. Every square kilometer of land contains an average of 1,021 people. Bangladesh's gross domestic product (GDP) has been growing rapidly, at above 6% annually in the 2010s. Yet per capita income was just US $1,010 in 2013, and Bangladesh is classified as a low-income country by the World Bank.[3,4]

Since its independence from Pakistan in 1971, Bangladesh has made impressive gains in basic living standards and health services. Life expectancy rose by 23 years, from age 47 to age 70, between 1971 and 2012. Bangladesh also succeeded in halving its rapid rate of population growth, which was nearly 3% in 1970.

Political leaders encouraged smaller family sizes and slower population growth, in part by making birth control free and available. In the decades after independence, government workers and volunteers distributed contraceptives and family planning information throughout the country. By 2014, 62% percent of women (or their partners) were using contraception, up from just 8% in 1975.[5,6] The total fertility rate (the average number of children a woman can expect to have during her lifetime) fell from 6.3 in 1975 to just 2.3 by 2011, slightly above the "replacement level" at which the population stabilizes over the long term.[6,7]

At the same time, the country has experienced significant socioeconomic development. There have been dramatic improvements in communications, including better road and river transportation and wider access to the media and personal communications, especially with the advent of mobile phones. Education, especially of girls, has increased. Bangladeshi women are earning more income, thanks largely to jobs and opportunities created by the boom in the apparels industry over the past 20 years and to the arrival of microcredit. These developments put money into Bangladeshi women's pockets, which positively affects maternal and child health because women are more likely than men to spend their incomes on health, education, and better food for their families.

Maternal health and survival are closely related to neonatal and child health. Newborns are exposed to a higher risk of mortality and morbidity if born to a mother who is malnourished or deprived of appropriate care.

The country has experienced remarkable improvements in maternal and newborn health. The 2010 Bangladesh Maternal Mortality and Health Care Survey found that the maternal mortality ratio had fallen 40% over the preceding decade.[8] In 2013, the estimated maternal mortality ratio (MMR) was 170 per 100,000 live births, down from 322 in 2001,

but it is still unacceptably high, as most maternal deaths are preventable.[9,10]

Maternal health and survival are closely related to neonatal and child health. Newborns are exposed to a higher risk of mortality and morbidity if born to a mother who is malnourished or deprived of appropriate care.[11] However, maternal mortality has decreased much faster than neonatal mortality in Bangladesh.

Persistently high neonatal mortality

Bangladesh is among 15 low-income countries that already have reduced under-five mortality by more than 100 deaths per 1,000 live births since 1990, and is among seven that have already achieved Millennium Development Goal (MDG) 4: reducing the under-five mortality rate by two-thirds or more by 2015.[12,13]

A series of Demographic and Health Surveys (BDHS), along with other research findings, have documented the decline in childhood mortality (see Figure 2–1). Declines have been especially impressive for children ages one to four, and, more recently, among infants between two and 12 months of age. Mortality in the first month of life—neonatal mortality—has also fallen, but has proved harder to control. The risk of dying in first month is three times higher than in the next 11 months of infancy, and neonatal mortality accounts for 61 percent of all deaths to children under age five in Bangladesh.[14]

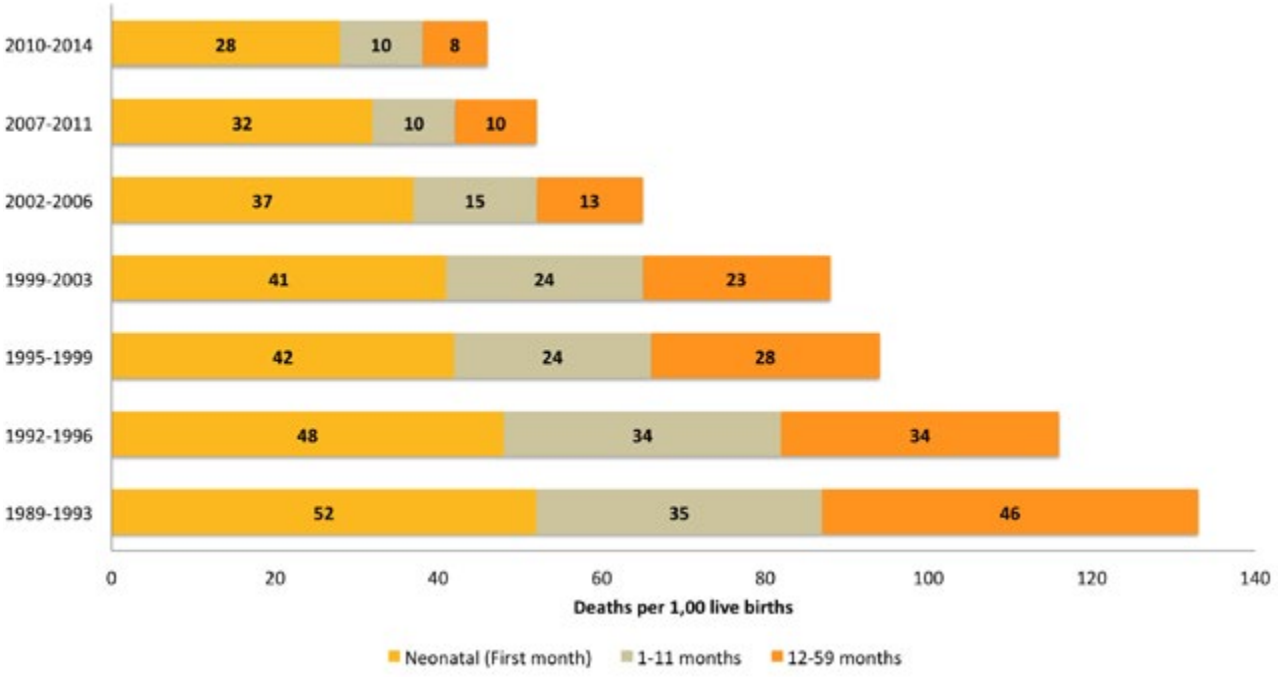
The UN estimates that Bangladesh's neonatal mortality rate (NMR) fell from 55 deaths per 1,000 live births in 1990 to 24 deaths per 1,000 in 2013, as shown in Figure 2–2. Bangladesh is one of two low-income countries (out of 50) credited with the fastest decline in the neonatal mortality rate, and it has led the decline in South Asia.

Geographic location and socioeconomic context

Neonatal mortality varies among the different geographic divisions of the country. 2011 BDHS findings show Chittagong with the lowest neonatal mortality rate (21 per 1,000 live births) and Sylhet with the highest (45 per 1,000 live births).

A new division, Rangpur, added to the 2011 BDHS, had estimated an NMR of 27 per 1,000 live births (not shown in Figure 2–3). Neonatal mortality fell in all divisions except for Barisal between 2004 and 2011. While the Sylhet division has the highest estimated

Figure 2–1 Trends in Childhood Mortality in Bangladesh: 1989–2014



Source: National Institute of Population Research and Training (NIPORT), Mitra and Associates, and ICF International. Bangladesh Demographic and Health Survey 2014: Key Indicators. *Dhaka, Bangladesh, and Rockville, Maryland, USA: NIPORT, Mitra and Associates, and ICF International; 2015. http://dhsprogram.com/pubs/pdf/PR56/PR56.pdf. Accessed May 10, 2015.*

NMR in all BDH surveys, it has also experienced the fastest decline.

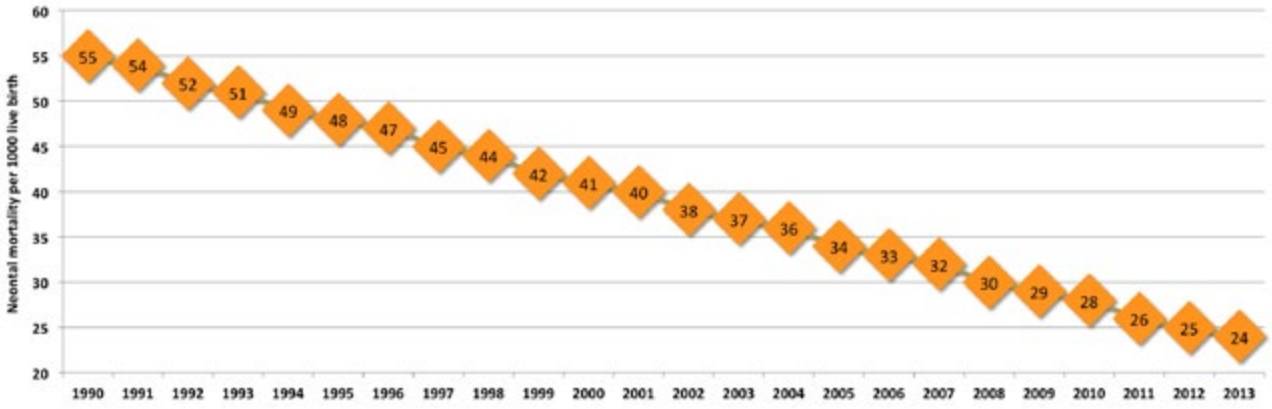
Neonatal mortality is about the same in urban and rural areas, according to the 2011 BDHS. Earlier BDHS surveys found neonatal mortality to be higher in rural than in urban, suggesting that mortality has been falling faster in rural than in urban areas in Bangladesh.[15]

Higher economic status is associated with lower neonatal mortality. The 2011 BDHS report found that neonatal mortality, infant mortality and under-five mortality decreased as the wealth status of the child's family increased. The neonatal rate was just 23 in the highest wealth quintile compared with 34 in the lowest and 38 in the second-lowest quintile.

The first day: The most dangerous time of life

In Bangladesh, as in other countries, most neonatal deaths occur during the early neonatal period—the first week of life.[16] Almost one-half of neonatal deaths occur within the first day (see Figure 2–4), underscoring the urgent need for safer deliveries and essential newborn care.

Figure 2–2 Trends in Neonatal Mortality in Bangladesh: Annual Estimates, 1990-2013



Source: Source: United Nations Inter-agency Group for Child Mortality Estimation. http://childmortality.org. Accessed April 19, 2015.

Figure 2–3 Neonatal Mortality by Division, Bangladesh: 2004, 2007, and 2011

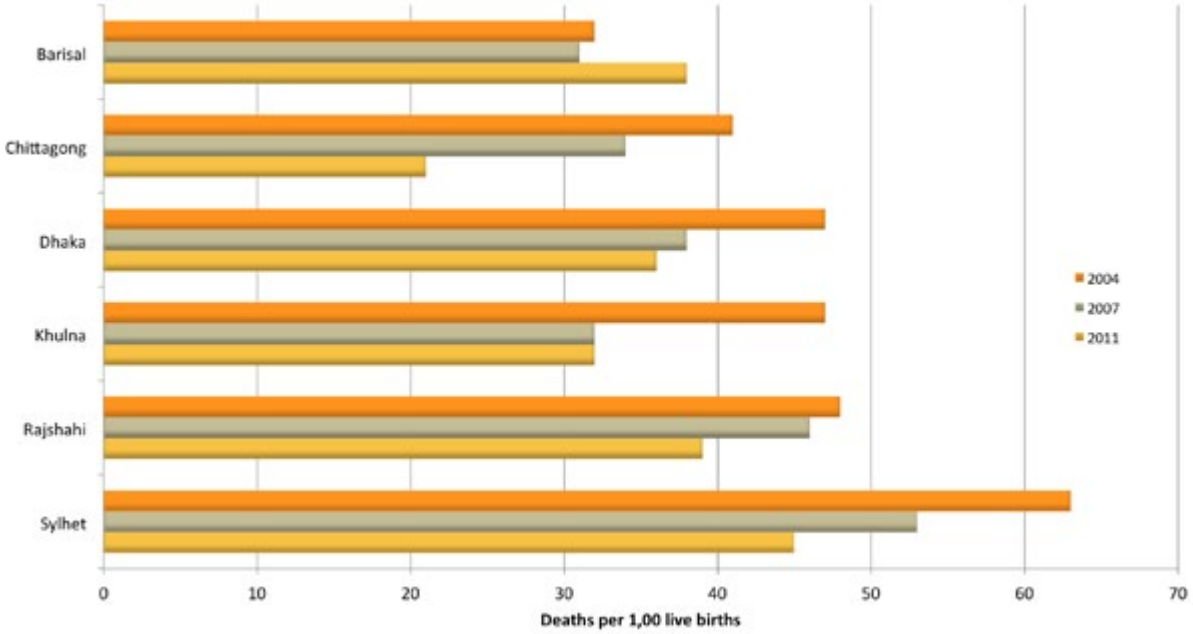


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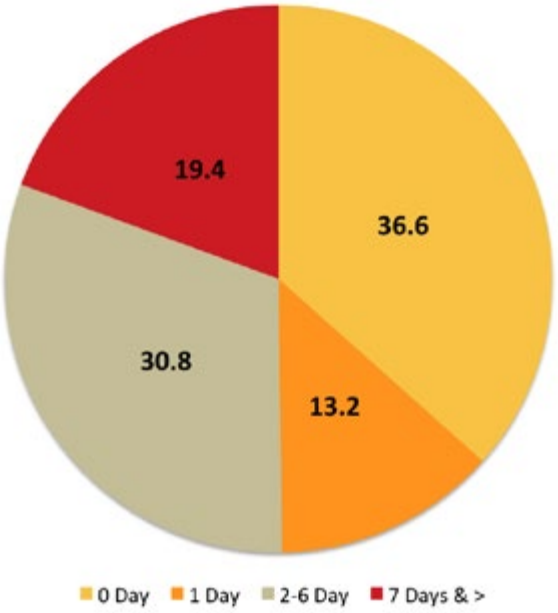
Figure 2–4 Neonatal Deaths by Days After Birth in Bangladesh



Source: Based on data in National Institute of Population Research and Training (NIPORT), Mitra and Associates, Measure DHS-ICF International. Bangladesh Demographic and Health Survey 2011. *Dahka, Bangladesh and Calverton, MD, USA: NIPORT, Mitra and Associates, and ICF International; 2013. http://dhsprogram.com/pubs/pdf/FR265/FR265.pdf. Accessed March 11, 2015.*

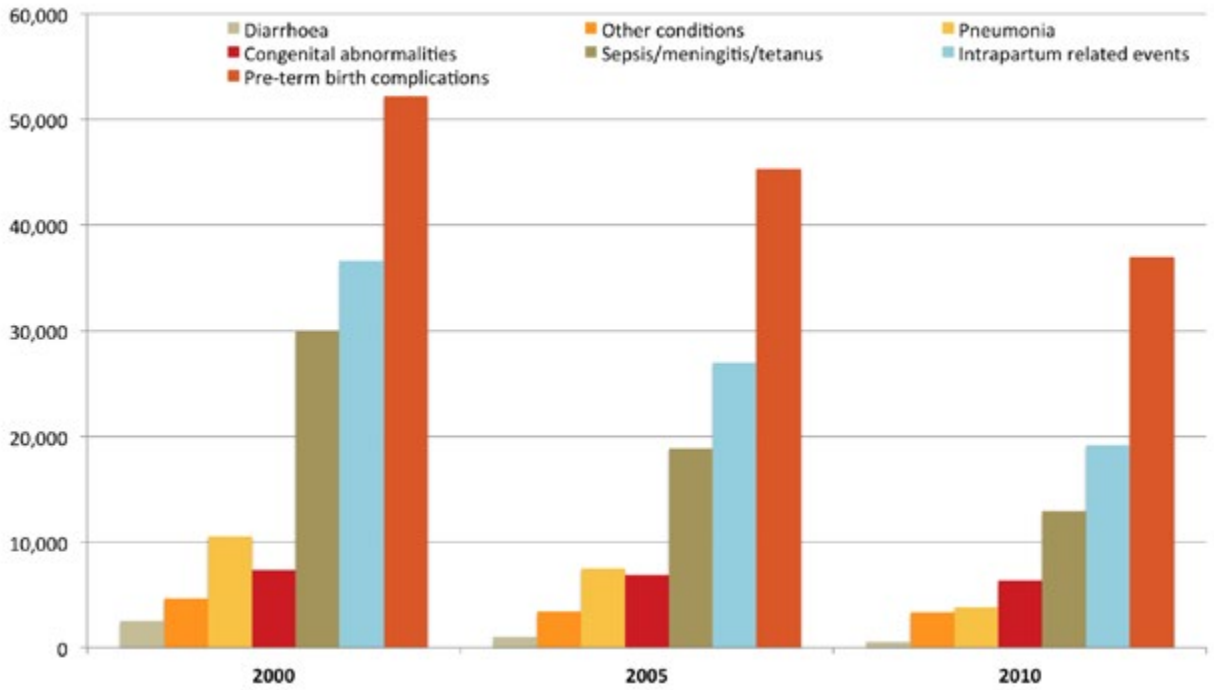
Why newborns are dying

More than 88% of neonatal deaths in Bangladesh result from three highly preventable and treatable causes: severe infection, intrapartum-related events (often referred to as birth asphyxia), and complications of preterm birth (see Figure 2–5). Between 2000 and 2010, there was a moderate change in the proportional contribution of these causes, largely because Bangladesh has made great inroads in preventing deaths from infections, including the elimination of maternal and neonatal tetanus.[17] Diarrhea-related child mortality has also fallen sharply, contributing to this improvement.

Neonatal mortality: Risk factors

A variety of factors affect the risk of newborn illnesses and mortality. International research has identified the most important risk factors as reproductive health issues, especially teenage pregnancy and short birth intervals; socioeconomic conditions such as illiteracy and poverty; and limited access to maternal health services, and especially to antenatal, delivery, and postnatal care.[18,19,20,21,22,23] Research findings also strongly suggest that newborn illnesses and deaths in Bangladesh are closely associated with poor maternal nutrition, complications during delivery, prematurity, unskilled care, or failure to seek care for a sick newborn.[24,25]

Figure 2–5 Causes of Newborn Death in Bangladesh: 2000, 2005, and 2010



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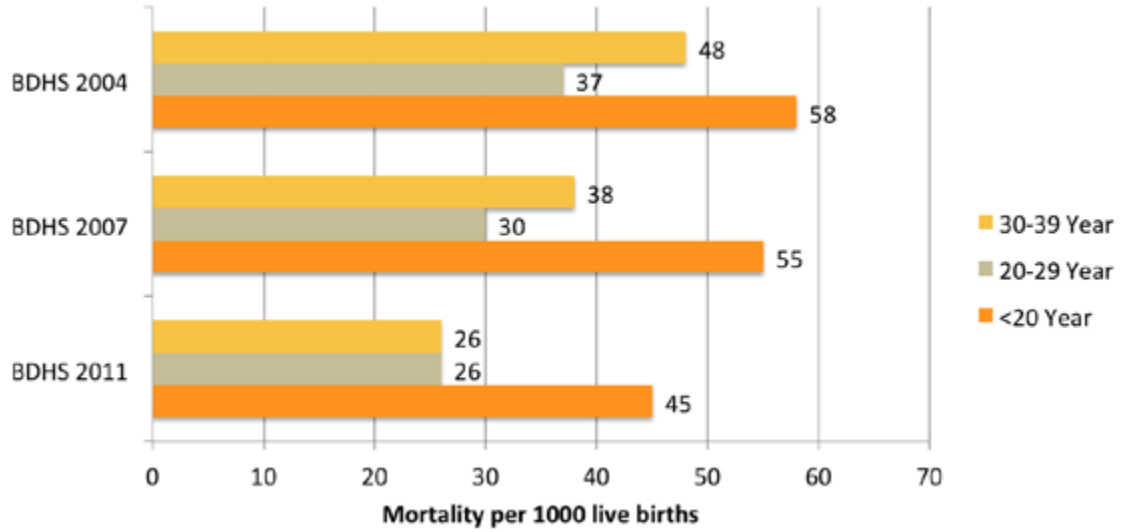
Reproductive health factors

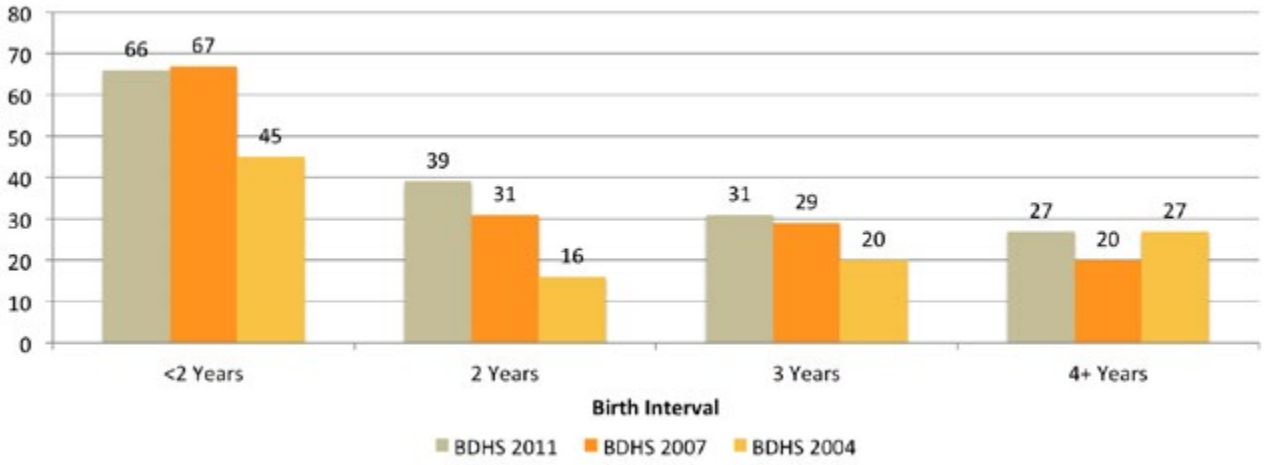
Very young mothers run a greater risk of neonatal mortality than mothers in their 20s and 30s (see Figure 2–6). This is especially important in Bangladesh where women begin childbearing at a young age. Almost one-half of Bangladeshi women have their first child by age 18, and nearly 70% have a child by age 20. Teenage childbearing is more common in rural than urban areas, although the gap has narrowed in recent years. Also, women in the lowest income quintile and those with little or no education begin having children at younger ages than wealthier and more educated women.[26] Reducing pregnancies in this age group could avert a large proportion of newborn deaths.

Figure 2–6 Neonatal Mortality by Mother's Age at Birth, Bangladesh: 2004, 2007, and 2011



Source: National Institute of Population Research and Training (NIPORT), Mitra and Associates, Measure DHS-ICF International. Bangladesh Demographic and Health Survey 2011. *Dahka, Bangladesh and Calverton, MD, USA: NIPORT, Mitra and Associates, and ICF International; 2013. http://dhsprogram.com/pubs/pdf/FR265/FR265.pdf. Accessed March 11, 2015.*

Figure 2–7 Neonatal Mortality by Previous Birth Interval, Bangladesh: 2004, 2007, and 2011



Source: National Institute of Population Research and Training (NIPORT), Mitra and Associates, Measure DHS-ICF International. Bangladesh Demographic and Health Survey 2011. *Dahka, Bangladesh and Calverton, MD, USA: NIPORT, Mitra and Associates, and ICF International; 2013. http://dhsprogram.com/pubs/pdf/FR265/FR265.pdf. Accessed March 11, 2015.*

The BDHS findings have added to the large body of international evidence that babies born less than 24 months apart run a higher risk of death than babies born after longer intervals (see Figure 2-7). Evidence from low- and lower-middle-income countries suggests that shortening the average birth interval to a minimum of two years would reduce infant mortality by 10%.[27] Short birth intervals are associated with prematurity and low birthweight—two major contributing factors in neonatal deaths. Babies born less than two years apart have consistently recorded the highest neonatal death rates in the BDHS. The 2011 BDHS found, however, that just 12% of births occurred within an interval of 24 months, suggesting that short birth intervals are not a major contributor to neonatal mortality in Bangladesh. Increasing use of contraceptives to space births and prolonged breastfeeding contribute to the relatively long median birth intervals: 47 months in the 2011 BDHS.

Stillbirth: Death before birth

A baby who dies before birth is no less loved and cherished, the grief and pain of death for the parents no less agonizing and enduring than for babies born alive. But preventing stillbirths has not received as much attention by the international health community as has the survival of babies born alive.[28,29,30,31,32] Stillbirths remain mostly unrecorded and unnoticed. They often do not figure in international or national child health policies or investment agendas.[33] Yet, an estimated 2.65 million third-trimester stillbirths occur worldwide every year. In low-income countries, where the vast majority of stillbirths occur, simple low-cost interventions in maternity care could save the lives of tens of thousands of babies who die unnecessarily during pregnancy.[34]

In Bangladesh, stillbirth-related data are not widely available. The BDHS 2011 survey documented 232 stillbirths out of 9,021 pregnancies of at least seven months duration, which would yield a stillbirth rate in Bangladesh of 26 per 1,000 total births. A recent study in an urban slum of Bangladesh also estimated a stillbirth rate of 26 per 1,000 total births, of which 62% occurred during labor. Obstetrical complications contributed to 61% of stillbirths. The risk of a stillborn birth is greatest among mothers who are illiterate or age 35 or older, as well as those experiencing preterm delivery, prolonged labor, and failure of labor progress. The fetal risk factors associated with stillbirth are decreased fetal movement, fetal malpresentation, and fetal distress.

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3. Newborn-Related Health Policies and Strategies

Over the last 15 years, Bangladesh has achieved considerable progress in newborn health policy. Prompt uptake of evidence-based solutions and lessons from pilot projects to formulate policies and strategies contributed to Bangladesh's progress towards reaching the 4th and 5th Millennium Development Goals (MDG) and will provide the foundation for Bangladesh's continued advancement in the post-MDG era.

National policies on maternal and newborn health

Several policies and initiatives are important to Bangladesh's progress toward MDG 5: reducing maternal mortality. Four relevant national-level initiatives launched between 2001 and 2010 contributed to the effort through:

- Upgrading facilities for Emergency Obstetric and Neonatal Care (EmOC);
- Government of Bangladesh (GOB) and the United Nations Joint Initiative for Accelerating Progress Towards Maternal and Neonatal Mortality and Morbidity ReductionProject;[1]
- Demand-Side Financing (DSF) maternal health voucher scheme; and
- Community-Based Skilled Birth Attendant (CSBA) Program.[2]

In addition, many non-governmental organizations (NGOs) led initiatives and programs implementing maternal, newborn, and child health interventions that helped government facilities provide a higher level of emergency and comprehensive obstetric care, as well as newborn health interventions.

Bangladesh National Strategy for Maternal Health

The National Maternal Health Strategy was revised and updated beginning in 2013. The new strategy reflects lessons learned over the past decade and in-depth technical consultations with multi-stakeholder working groups on new strategic interventions. This draft strategy is built around the following guiding principles:

- A continuum of care approach to service delivery;
- Provision of high-quality care at all levels;
- Rights and equity for coverage;
- Accountability in service delivery;
- Partnerships to compliment government efforts; and
- Innovation with a focus on improving operations research to identify effective changes.

The Constitution of the People's Republic of Bangladesh states that "health is the basic right of every citizen of the Republic," as health is fundamental to human development. All national health policies and strategies reflect this recognition and commitment.

National Neonatal Health Strategy 2009

A decade ago, government officials and donors paid little attention to newborn survival.[3] Beginning in 2001, international pressure along with concerted efforts by in-country professional networks, Saving Newborn Lives (SNL), UNICEF, WHO, the United States Agency for International Development (USAID), and the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) encouraged the

Ministry of Health and Family Welfare (MOHFW) to develop the national strategy and guidelines for newborn health. The strategy, delineated in the 2009 report, emphasizes the importance of five critical areas of health care: maternal care, healthy newborn care and breastfeeding, birth asphyxia, low birthweight, and neonatal sepsis.

The strategy and guidelines aim to prioritize and improve home and community practices; strengthen facility-based health care; improve resources, logistics, and supplies; and integrate services for neonates and innovations for neonatal care.[4]

Table 3–1 Key Milestones in Advancing Newborn Health in Banlgadesh

Year of Policy Development	Key Policy Development	Action or intervention Promoted
2001	Formation of newborn working group	Planning and overseeing newborn health activities
2002	Formation of Integrated Management of Childhood Illnesses working group	Essential Newborn Care (ENC), Neonatal infection prevention
2002–2003	Incorporation of ENC training module in Government of Bangladesh (GOB) training course for first level community health workers	ENC
2003–2006	Incorporation of newborn health in the national Health, Nutrition and Population Sector Program (HNPSP) strategy	—
2004	Bangladesh Demographic and Health Survey (BDHS) includes perinatal and neonatal indicators	National data on newborn health to assess progress
2004	Creation of Deputy Program Manager (Newborn Health) position at Ministry of Health and Family Welfare (MOHFW)	Ensure prioritization and co-ordination of newborn activities
2006	Projahnmo findings disseminated. Indicators for early Prenatal Care (PNC) included in Health Management Information System (HMIS)	Saving Newborn Lives (SNL) prioritizes strategy for scale up
2007	Formation of National Core Committee (NCC) and sub-committees for National Nutrition and Health Survey (NNHS) development	—
2009	Development and approval of NNHS guidelines	ENC, PNC, infection prevention
2011	New Operational Plan of Maternal, Newborn, Child and Adolescent Health (MNC&AH) and incorporation of four PNC visits by government Community Health Workers (CHWs) in new HPNSDP (2011-2016)	ENC, PNC, infection prevention, Kangaroo Mother Care (KMC)
2012	Formation of the National Technical Working Committee for Newborn Health (NTWC-NBH)	Targeted approach for improving newborn health
2013	National Workshop by NTWC for policy adoption by NCC. 'A Promise Renewed' Declaration and revision of MNC&AH Operational Plan by the Directorate General of Health Services (DGHS)	Policy adoption for scale up of evidence-based newborn health interventions, including Antenatal Corticosteriods for prevention of premature delivery, KMC for management of premature babies, newborn sepsis management at lower level facilities, and Chlorhexidine for umbilical cord care

Box 3–1: Declaration on Ending Preventable Child Deaths by 2035

DECLARATION

Ending Preventable Child Deaths by 2035: Bangladesh Call for Action

Bangladesh reiterates its commitment to end preventable child deaths by 2035 through strengthening previous successes achieved for reducing child mortality. The country has declared its determination to give all out efforts to reduce under-five mortality to 20 per 1,000 live births by 2035.

To achieve this target, in addition to overall development of the health service delivery system, the country will implement the following successful evidence-based activities and strategic interventions.

A) ACTIVITIES:

1. Newborn-specific interventions 1.1 Ensure essential newborn care, including neonatal resuscitation and application of Chlorhexidine in the umbilical cord.
   - 1.2 Introduce and promote the provision of antenatal steroid for premature labour and Kangaroo Mother Care (KMC) for premature and low birth weight infants.
   - 1.3 Ensure proper management of newborn infection with antibiotics at the primary care levels.
   - 1.4 Establish specialized newborn care unit at the sub-district and district level.
2. Ensure delivery by skilled birth attendants at the community levels, and establish round the clock emergency obstetric and newborn care at all sub-district, district and higher level health facilities.
3. Establish effective referral linkage to ensure continuum of care from community clinics to the union, sub-district, district and higher level hospitals
4. Strengthen Integrated Management of Childhood Illnesses both at community and facility levels
5. Engage multi sectoral approach to ensure exclusive breastfeeding of children up to six months and complementary feeding practices after the age of six months
6. Implement community based intervention to prevent child drowning
7. Introduce new life-saving vaccines through the EPI programme

B) STRATEGIC INTERVENTIONS:

1. Round-the-clock quality emergency obstetric and newborn care through the network of adequate service providers
2. Establish Midwife services for safe delivery
3. Optimum utilization of existing human resources and increase their capacity and skill
4. Further strengthening of family planning programme and population policies
5. Integrated approach for maternal-neonatal interventions including mainstreaming of nutrition
6. Differential programming and need-based resource allocation to narrow the equity gap between the poor and the rich, urban and rural, and between geographic regions.

"Newborn survival in Bangladesh is a case of successful advocacy for the placement of a health issue on the policy agenda of a low-income country. Neglected in 2000, by 2011 neonatal mortality reduction had emerged as a government health priority."

Professor Jeremy Shiffman (Generating Political Priority for Neonatal Mortality Reduction in Bangladesh)

National Health Policy 2011

The 2011 National Health Policy identified maternal and child mortality reduction as a top priority. Specifically, it aims to significantly reduce child and maternal deaths by 2021, the golden anniversary of Bangladesh's independence. The policy also calls for adopting effective measures to improve maternal and child health status, and to strive for safe delivery facilities in every village. The policy recognizes that further action is needed to reduce maternal and neonatal mortality. It states the importance of:

- Reducing inequities among socioeconomic groups;
- Reducing child and maternal mortality in urban slums, hilly areas, coastal areas, and disaster prone areas; and
- Developing effective policies to enhance maternal and child health.[5]

Every Newborn Action Plan (ENAP)

The Every Newborn Action Plan (ENAP),[6] a global initiative, aims to reduce newborn mortality to 10 per 1,000 live births in every country by 2035.[7] This plan was formulated by a core group of partners, led by WHO and UNICEF, and involved several multi-stakeholder consultations as well as country teams to plan effective scaling up of newborn interventions.

The plan proposes to end newborn deaths from preventable causes, and sets goals to increase population coverage. It calls for boosting coverage and quality of care for newborns at risk and increasing home visits and participatory group support for women and newborns by 20% before 2020. These goals will be revisited in 2025.

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4. Newborn Health Service Delivery

Bangladeshis receive health care from a combination of providers, including traditional healers, community clinics, and hospitals. The services may be delivered through government agencies, non-governmental organizations (NGOs), or the private sector. Within the government, the Ministry of Health and Family Welfare (MOHFW) has the sole responsibility for delivering health services, as well as for developing national policies, guidelines, and action plans. Within the ministry, the Directorate General of Health Services (DGHS) delivers general preventive and curative health care and provides technical assistance to the ministry when it undertakes new programs and interventions. The Directorate of Family Planning (DGFP) provides family planning and reproductive health services. Both directorates provide maternal, newborn, and child health services at different levels of care, in conjunction with, or under the auspices of, the department of Maternal, Newborn, Child, and Adolescent Health (MNCAH).

NGOs provide community-based and facility-based health services to supplement and complement MOHFW efforts to achieve health and family planning objectives in different parts of the country.

Private and NGO healthcare options

The private healthcare sector is growing rapidly in Bangladesh. The private sector provides a significant portion of healthcare services, particularly in urban areas. The private sector is largely unregulated, and provides services through formally trained and skilled providers as well as by non-formal, unskilled providers, such as traditional birth attendants and healers. Interestingly, 85% of the population turns to the non-formal providers as their first choice for health care.[1] According to Bangladesh's Health Watch, 60% of healthcare services in rural areas are provided by the private sector.

Levels of health service delivery

The Bangladesh government offers free health services to the rural community through public health facilities at different tiers.

The primary tier or level includes community clinics and hospitals or clinics at the union and upazila level. Community Clinics (CCs), the lowest-level static health facilities, are situated at the ward level with upward referral capabilities to union and upazila facilities. To date, 12,527 CCs have been established, approaching a target of 13,500. Each community clinic has both a community group and a

Box 4–1 Basic health care package provided in community clinics

- Maternal and child health care;
- Reproductive health and family planning service;
- Immunization;
- Nutrition;
- Micronutrient supplementation ;
- Health education and counseling;
- Communicable disease control; and
- Treatment for minor ailments and first aid and referral to higher-level health centers.

community support group, which provide voluntary services. Community group members focus on the management of the CC, and the community support group mobilizes the community to avail itself of the services available at the CC.

Usually, the CCs, union sub-centers, and union health and family welfare centers focus exclusively on outpatient services. However, some union health and family welfare centers have been upgraded to include normal delivery services. As specified in 2011 Standard Operating Procedure (SOP) guidelines, union-level facilities will increasingly feature newborn care corners in labor rooms.[2] A newborn care corner is a hygienic location where routine/immediate care is provided along with resuscitation, warmth provision, early initiation of breastfeeding, and weighing the neonate.

Upazila Health Complexes (UHCs) offer outpatient, emergency, and inpatient care services at the sub-district level. They rely on specialists, including pediatricians and obstetricians, medical officers, nurses, and paramedic cadres.

The UHC also provides outpatient newborn care in an Integrated Management of Childhood Illnesses (IMCI) newborn care corner where trained health personnel treat the newborn following standard guidelines. The UHC is required to have a newborn stabilization unit for sick or low-birthweight babies.

Facilities at the secondary and tertiary levels have more advanced care options. DGFP facilities offer delivery care services and newborn care in Maternal and Child Welfare Centers (MCWC). These facilities have doctors and Family Welfare Visitors (FWVs) as well as nurses. DGHS district-level hospitals are staffed with pediatricians, obstetricians, medical officers, and nurses. These hospitals have 100-250 beds and are the first point of referral from primary-level facilities. These facilities have newborn care corners in their operation theaters and labor rooms and, to comply with the 2011 policy, district hospitals are supposed to include a Special Care Newborn Unit (SCANU). The placement of SCANUs is an ongoing initiative between development partners and the Government of Bangladesh (GOB). Currently 59 hospitals have SCANUs, which include lifesaving equipment for newborns, such as radiant warmers and resuscitation sets.

Tertiary-level hospitals, generally attached to a medical college, have sophisticated medical apparatus and well-trained specialist physicians, nurses, and medical technologists. Bangladesh has two hospitals specializing in child health. In some

Table 4–1 Primary Healthcare Centers Run by DGHS at the Upazila Level and Below in Bangladesh, 2012

Level	Type of Facility	Type of service	Number of facilities	Total beds
Upazila	Upazila health complex (50-bed)	Hospital	268	13,400
	Upazila health complex (31-bed)	Hospital	145	4,495
	Upazila health complex (20 or fewer beds)	Hospital	12	130
	Outside health complex	Hospital	6	165
	Trauma center (20-bed)	Hospital	5	100
Union	Hospital (10-20 bed)	Hospital	31	490
	Union sub-center	Outpatient only	1,275	—
	Union health and family welfare center	Outpatient only	87	—
Ward	Community Clinic	Outreach	12,527	—
Totals		**Hospitals**	**467**	
		Health facilities	**14,356**	**18,780**

Source: Bangladesh. Ministry of Health and Family Welfare. National Health Bulletin 2013. *Dhaka, Bangladesh: Management Information System, Directorate General of Health Services. http://hpnconsortium.org/admin/essential/HB_2013_final_-_Full_version_1March14.pdf. Accessed February 17, 2015.*

tertiary facilities, SCANUs include ventilators or other specialized equipment.

Health workforce

The WHO defines health workers to be "all people engaged in actions whose primary intent is to enhance health."[3] An engaged and committed health workforce is crucial for effective and functioning health services. In most developing countries, critical shortages, inadequate skill mix, and uneven geographical distribution of the health workforce pose major barriers to achieving the health-related Millennium Development Goals (MDGs). This is the case in Bangladesh as well, where shortages in the health workforce limit the ability to provide a continuum of care for mothers and newborns.[4]

Community- and primary-level health workforce

Domiciliary health workers serve at the ward or village level. Among these workers, health assistants (HA), under DGHS, provide preventive health care and limited curative care to areas with 5,000 to 6,000 people. They also collect birth, death, and relevant demographic information.

Family Welfare Assistants (FWAs) are community-level workers for maternal, neonatal, and child health and family planning services under DGFP. FWAs motivate, counsel, and educate community members through home visits, courtyard meetings, satellite clinics, and EPI outreach centers, in addition to spending three days a week at the community clinic.

Table 4–2 Newborn Healthcare Facilities at Different Healthcare Levels in Bangladesh

Health Facility	All Newborns/Newborns at Birth	Sick Newborns
Community Clinics	Essential care (breast feeding, thermal protection, hygiene, identify danger signs	Quick identification and prompt referral
Family Welfare Centres	Newborn care corner in labour rooms	Prompt referral
Upazila health complex (First Referral Unit)	Newborn care corner in labour rooms and in operation theatre (OT)	Newborn Stabilisation Unit
District Hospital	Newborn care corner in labour rooms and OT	Special Care Newborn Unit

Source: Standard Operating Procedure (SOP) for Newborn Care Services at Primary and Secondary Level Hospitals. World Health Organization, Bangladesh Neonatal Forum, UNICEF, Government of Bangladesh; 2011.

Box 4–2 Community health workers

Trained Community Health Workers (CHWs) for Newborn Care in Bangladesh

CHWs work for Government of Bangladesh (GOB) and non-governmental organizations (NGOs), supporting community-level preventive health activities. Their levels of capacity, training, and job description vary widely. There are 13.6 community health workers per 10,000 people in rural Bangladesh (4.3 from GOB and 9.3 from NGOs), but less than one-half are trained in essential newborn care. The CHWs trained in ENC are equally distributed throughout the system, while the distribution of ENC-trained CHWs from NGOs varies widely and depends on donor-funded project cycles.

Source: Saving Newborn Lives (SNL) Program and EVERYONE Campaign, Save the Children. The status of community based health workers in rural Bangladesh. December 2011. *http://www.healthynewbornnetwork.org/resource/status-community-based-health-workers-rural-bangladesh. Accessed March 10, 2015.*

Some FWAs and HAs are selected to become Community-Based Skilled Birth Attendants (CSBAs). Female HAs conduct home deliveries after completing a six-month skilled birth attendant (community midwifery) training. They are registered with the Bangladesh Nursing and Midwifery Council as CBSAs, however, their primary roles and responsibilities as HAs/FWAs remain the same. As of September 2013, more than 8,782 FWAs and female HAs had been trained as CSBAs. (See additional information about the CSBA program in Chapter 7).

HAs and FWAs are supervised by Assistant Health Inspectors (AHIs), Health Inspectors (HIs), and Family Planning Inspectors (FPIs), depending on the level and type of staff. CBSAs are supervised by FWVs.

However, there is no defined supervision mechanism for Community Health Care Providers (CHCPs) based in community clinics. CHCPs are recruited and trained by the MOHFW to provide services six days a week in community clinics, with an ultimate goal of one CHCP for each clinic.[5] Upazila-level health and family planning officials monitor their activities.

Table 4–3 Overview of Bangladesh Public Health Workforce

Levels of Care	Directorate General of Health Services (DGHS) Providers		Directorate General of Family Planning (DGFP) Providers	
Community	Household level	Health Assistants (HAs) and Supervisors (AHI, HI)	Household level	Family Welfare Assistants (FWA), Supervisor (FPI)
	Expanded Program on Immunization (EPI) outreach session	Health Assistants (HAs) and Supervisors	Satellite Clinic	Family Welfare Visitor (FWV), FWA, Supervisor, Medical Officer-Maternal and child health/Family planning (MO-MCH-FP)
	Community Clinic (CC)	Community Health Care Providers (CHCPs), HAs	CC	FWAs
Union (Primary Level)	Union Sub-Centre (USC) Union Health and Family Welfare Centres (UHFWC)	Sub-Assistant Community Medical Officer (SACMO), Pharmacist; Some Medical Officers (MOs)	UHFWC	SACMO, Pharmacist, FWV
Upazila (Primary Level)	Upzaila Health Complex (UHC)	Specialist, Doctor, Nurse, Nurse Midwife, SACMO	Maternal and Child Welfare Centre (MCWC) —in a few upazilas only	FWV, SACMO
District (Secondary Level)	District Hospitals (100-250 beds)	Specialist, Doctor, Nurse, Medical Technologists (MTs)	MCWC	MO-Clinic, FWV
Tertiary and Specialized Level	Medical College Hospitals (MCH)/ Specialized Hospitals	Specialist, Doctor, Nurse, MTs	Maternal Child Health Training Institute, Mohammadpur Fertility Service Training Centre	Specialist, doctors, nurses, MTs and FWV

NOTE: HAs and FWAs provide services in the community clinic on alternate days in addition to their routine services.

Table 4–4 Domiciliary Health Workforce in Bangladesh

Health Facility	Domiciliary Workers	Sanctioned Posts	Filled Posts
Directorate General of Health Services (DGHS)	Health Assistant (HA)	20,815	19,274
	Health Inspector (HI)	1,399	1,126
	Assistant Health Inspectors (AHI)	4,198	3,662
Directorate General of Family Planning (DGFP)	Family Welfare Assistant (FWA)	23,500	21,113
	Family Planning Inspector (FPI)	4,500	3,549

Source: Bangladesh. Ministry of Health and Family Welfare. National Health Bulletin 2013. *Dhaka, Bangladesh: Management Information System, Directorate General of Health Services. http://hpnconsortium.org/admin/essential/HB_2013_final_-_Full_version_1March14.pdf. Accessed February 17, 2015.*

Table 4–5 Union Level Cadres' Roles and Responsibilities in Bangladesh

Union Level Staff	Roles/Responsibilities
Family Welfare Visitor (FWV)	▶ Counseling on family planning, reproductive health, Antenatal Care (ANC), Postnatal Care (PNC), newborn health. ▶ Supply condoms and contraceptive pills. ▶ Provide clinical contraceptive (injectables, IUD) service and follow up. ▶ Provide ANC service. ▶ Conduct normal delivery. ▶ Provide menstrual regulation service and follow up. ▶ Provide case management of reproductive tract and sexually transmitted (RIT/STI) infections. ▶ Provide service on limited curative care. ▶ Provide service on satellite sessions.
Sub-Assistant Community Medical Officer (SACMO)	▶ Counseling on family planning, ANC, PNC, newborn health, Expanded Program on Immunization (EPI), Nutrition, RTI/ STI, adolescent health. ▶ Provide ANC service and follow up. ▶ Provide PNC service and referral service if necessary. ▶ Provide EPI service. ▶ Supply short-term family planning (FP) method and follow up FP acceptors. ▶ Reporting and record-keeping of medicine stock register and FP commodities.
Pharmacist	▶ Supply and distribute drugs to patients. ▶ Counseling on dose, compliance, adverse effect, and complications of distributed drugs. ▶ Record-keeping and reporting of drugs and logistics. ▶ Prepare requisition of drugs as needed.

Source: Bangladesh Health Watch. Bangladesh health watch report 2011. *Moving towards universal health coverage. James P Grant School of Public Health, BRAC University, Dhaka; 2012.*

Qualifications and training of community-level workforce

At the community level, Health Assistants (HAs) and Family Welfare Assistants (FWAs) are given 21 days of basic training that encompasses almost all newborn components. The Community IMCI training and CSBA training also include newborn care components. (The CSBA and IMCI programs are described further in Chapter 7). The CHCPs in community clinics are given three months basic training, including newborn care.

The basic health workers' training module for new HAs and FWAs was recently revised to include essential newborn care components, however, there are no provisions for updating the skills of the older cadre of HAs and FWAs.

Union-level health workforce

Union Health and Family Welfare Centers (UHFWC) and the union sub-centers are staffed with FWVs and SACMOs (Sub-Assistant Community Medical Officers, previously known as Medical Assistants) and offer primary care.

FWVs receive 1.5 years of training in midwifery and clinical contraception management in government or private facilities. SACMOs receive three years academic training in government-run medical assistant training schools. SACMOs and FWVs also participate in IMCI training.

Health workforce at the secondary and tertiary levels

Newborn care in secondary- and tertiary-level facilities relies heavily on a skilled and trained workforce of doctors, nurses, and paramedics. Apart from their basic training, these staff receive IMCI training, Emergency Triage Assessment and Treatment (ETAT) training for management of sick children under age five in all UHCs/District Hospitals, and special skill-based training, such as Helping Babies Breathe (HBB), to manage newborns with birth asphyxia.

Facility health workforce shortages

Bangladesh has a severe shortage of trained health workers: There are only 2.8 nurses and midwives and only 3 doctors for every 10,000 people.[6] In comparison, Thailand, which already has universal health care, has the same number of physicians per 10,000 population as, but more than five times the number of nurses and midwives.

A large gap exists between sanctioned and filled posts in facilities as well as at the domiciliary level in Bangladesh, posing a serious constraint in service delivery (see Table 4-6). Vacancies are much higher in some districts, for example, in Barisal (65%), followed by Khulna (58%), Rajshahi (55%), Sylhet (55%), Chittagong (51%), and Dhaka (25%).

Vacancies are greatest among doctors, nurses, and SACMO-Hs. In 2013, between 28% and 54% of these positions were vacant, as shown in Figure 4–1. Filling these positions would help ease the health worker shortages.

Table 4–6 Health Workforce in Secondary and Tertiary Facilities in Bangladesh

Type of staff	Sanctioned	Filled	Vacant	
			Number	Percentage
Doctors (DGHS)	22,120	15,922	6,198	28%
Doctors (DGFP)	1,110	511	599	54%
Nurses	22,601	13,235	9,366	41%
Medical Technologist	6,428	5,096	1,332	21%
Ratio Doctors:Nurses	1.03	1.24	0.73	
Total	**52,259**	**34,764**	**17,495**	**33%**

Source: Bangladesh. Ministry of Health and Family Welfare. National Health Bulletin 2013. *Dhaka, Bangladesh: Management Information System, Directorate General of Health Services. http://hpnconsortium.org/admin/essential/HB_2013_final_-_Full_version_1March14.pdf. Accessed February 17, 2015.*

Figure 4–1 Vacancies in Health Workforce, Bangladesh

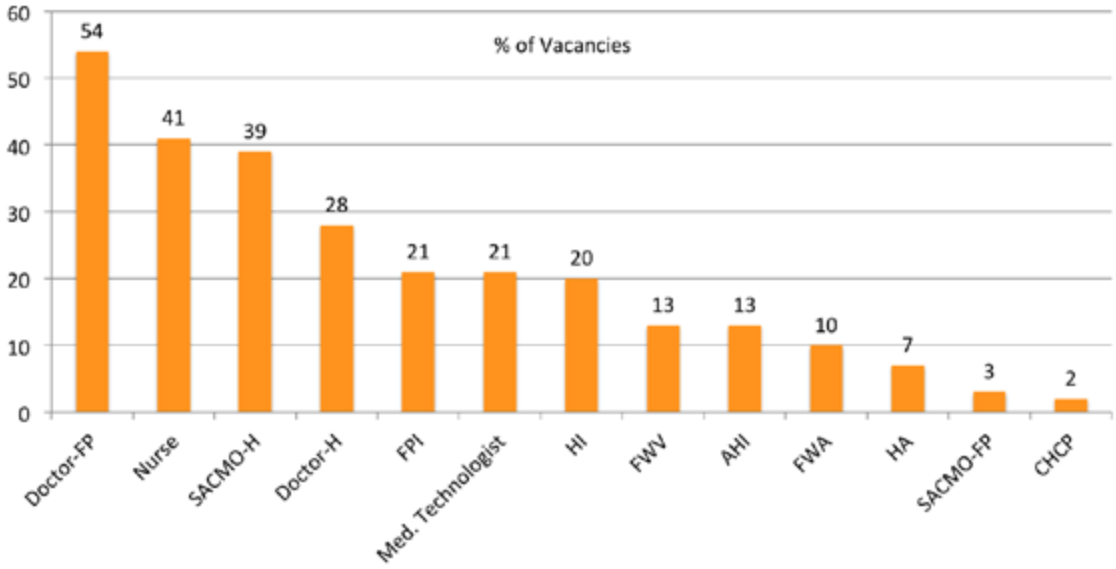

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Table 4–7 Summary: Health Human Resources: Opportunities, Challenges, and Recommendations

Union Level Staff	Roles/Responsibilities
Opportunities	▶ Private- and public-sector commitment to addressing health human resources gaps. ▶ Standardized training for midwifery. ▶ Community-level health workers trained in Essential Newborn Care (ENC).
Challenges	▶ Shortage of doctors and nurses in low population density areas, particularly in rural areas. ▶ Difficulty retaining trained/skilled manpower at rural/hard-to-reach areas. ▶ Vacancies of health workforce high especially in hard-to-reach areas. ▶ Bed-occupancy rate is not optimum (with the exception of Khulna Division). ▶ Centralized system of recruitment and transfer/posting is weak. ▶ Weak supervision systems for health workers at community level. ▶ Unfavorable ratio of doctors, nurses, and medical technologists.
Recommendations	▶ Advocate for recruitment and filling vacant positions. ▶ Finalize the National Human Resources (HR) strategy, revisit the present plan of facility providers, and implement it. ▶ Motivate and plan career opportunities for service providers. ▶ Maximize existing public-private partnerships. ▶ Increase coordination between different departments with the government of Bangladesh (GOB). ▶ Streamline training for non-governmental organization (NGO) and government health workers.

All countries could do at least one thing to move closer to universal coverage or to protect the gains already made. Options for immediate action include:

- *Raising more funds for health domestically*
- *Reducing financial barriers to services by increasing forms of prepayment and the pooling of funds rather than relying on direct out-of-pocket payments*
- *Improving efficiency and equity in the way resources are used*

—The World Health Report 2010

Healthcare financing

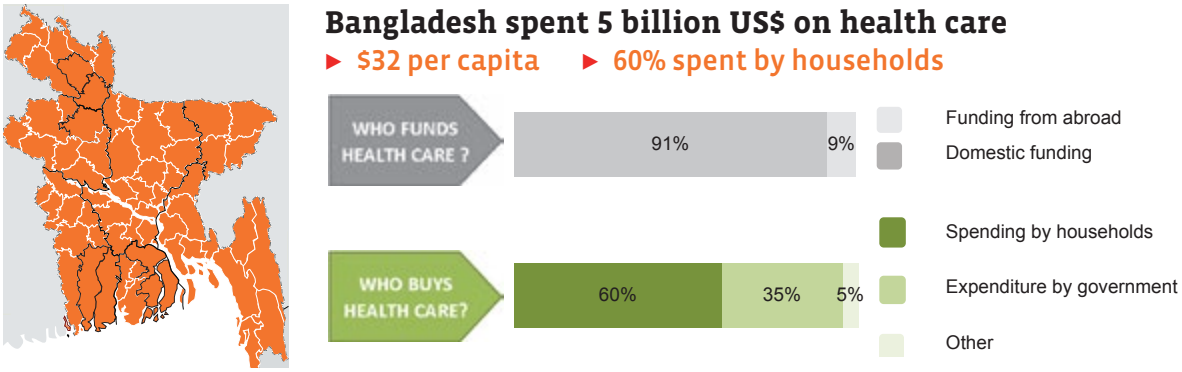
According to WHO, "health financing is concerned with how financial resources are generated, allocated and used in health systems. Health financing policy focuses on how to move closer to universal coverage with issues related to: (i) how and from where to raise sufficient funds for health; (ii) how to overcome financial barriers that exclude many poor from accessing health services; or (iii) how to provide an equitable and efficient mix of health services."[7] Health financing, therefore, is related to the allocation and distribution of funds to drive health systems, as well as the equity of services for a country's entire population. The use of health services largely depends on the appropriate distribution of financial resources for health.

The overall level of funding allocated to health depends on a country's wealth, the proportion of national income devoted to health, and funds for health from external partners.[8] The Commission on Macroeconomics and Health of the World Health Organization (WHO) recommends that US $35 per person per year be spent on health.[9,10] The WHO indicates that Bangladesh spent US$3.5 billion on health care in 2010, US$23 per capita (see Figure 4–2). Domestic sources accounted for 92% of the funding, with just 8% contributed by international partners. Nearly two-thirds (64%) of the per capita spending on health care was borne by households, 34% by the government, and 2% came from other sources.

In an effort to achieve the MDGs, financing of health programs, especially those targeting maternal, newborn, and child health, increased over the past decade. The total health expenditure nearly tripled from US$1.3 billion in 2000 to US$3.1 billion in 2009, with the majority of the increase accounted for by rising out-of-pocket spending.[11] Official Development Assistance (ODA) for maternal, newborn and child health rose faster than for health over all between 2003 and 2008 (from US$175 million to US$252 million).[12] While ODA per child doubled, and maternal and newborn health ODA increased by a third, these were both still lower than the average increase for Countdown to 2015 countries. However, this is a common phenomenon among countries like Bangladesh that have very large populations.[13]

Approximately 20% of the current HNPSDP budget is allocated for reproductive, maternal, newborn, and child health (RMNCH). However, the amount is not

Figure 4–2 Health System Financing Country Profile: Bangladesh, 2013



Source: World Health Organization. Global health expenditure database. health system financing profile by country. http://apps.who.int/nha/database/Country_Profile/Index/en. Accessed October 15, 2015.

Table 4–8 Out-of-Pocket Spending in South Asia

Country	Total Health Expenditure per Capita 2009 in US Dollars	Precentage of Out-of-Pocket Expenditure
Bangladesh	$21	65%
Sri Lanka	$65	44%
Pakistan	$20	41%
India	$44	60%
Nepal	$24	49%
Bhutan	$91	13%

Source: Adapted from World Health Organization. Global health expenditure database. health system financing profile by country. http://apps.who.int/nha/database/Country_Profile/Index/en. Accessed May 1, 2015.

adequate to finance current healthcare services, or support needed expansion.

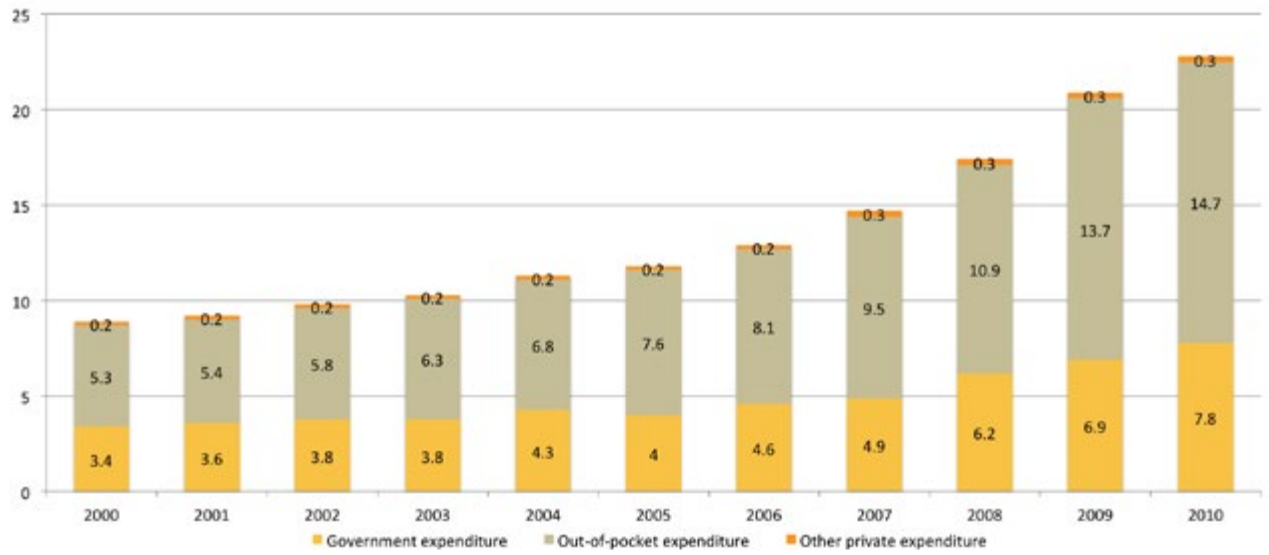
High out-of-pocket spending for general health care

Most Bangladeshis pay for their health care with out-of-pocket spending.[14] Indeed, Bangladeshis spend more out-of-pocket for health care than most other countries in the region (see Table 4-8). Although Bangladesh's per capita income is rising, these substantial out-of-pocket expenditures put large numbers of families at risk of poverty.[15]

Out-of-pocket expenditures increased annually between 2000 and 2010 (Figure 4–3). Government spending increased as well, but the government share of overall financing dropped from 36% to 25% over the decade. Health spending as a percentage of gross domestic product fell from 0.95% to 0.84% between 1997 and 2007.

The annual per capita out-of-pocket expenditure on medical care (both medicine costs and other relevant costs) increased from Tk 291 in 2000 to Tk 1117 in 2010, with about 70% going toward the purchase of medicines.[16]

Figure 4–3 Health Expenditure in Bangladesh, 2000–2010

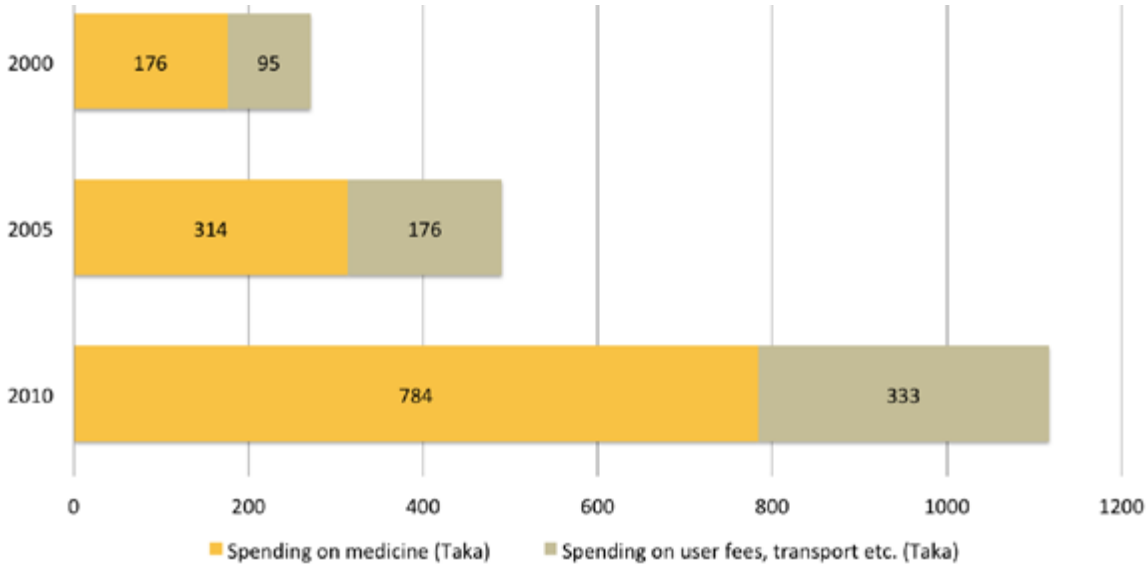


Source: World Health Organization. National Health Accounts. http://apps.who.int/nha/database/Country_Profile/Index/en accessed October 24, 2013.

'Free Services'

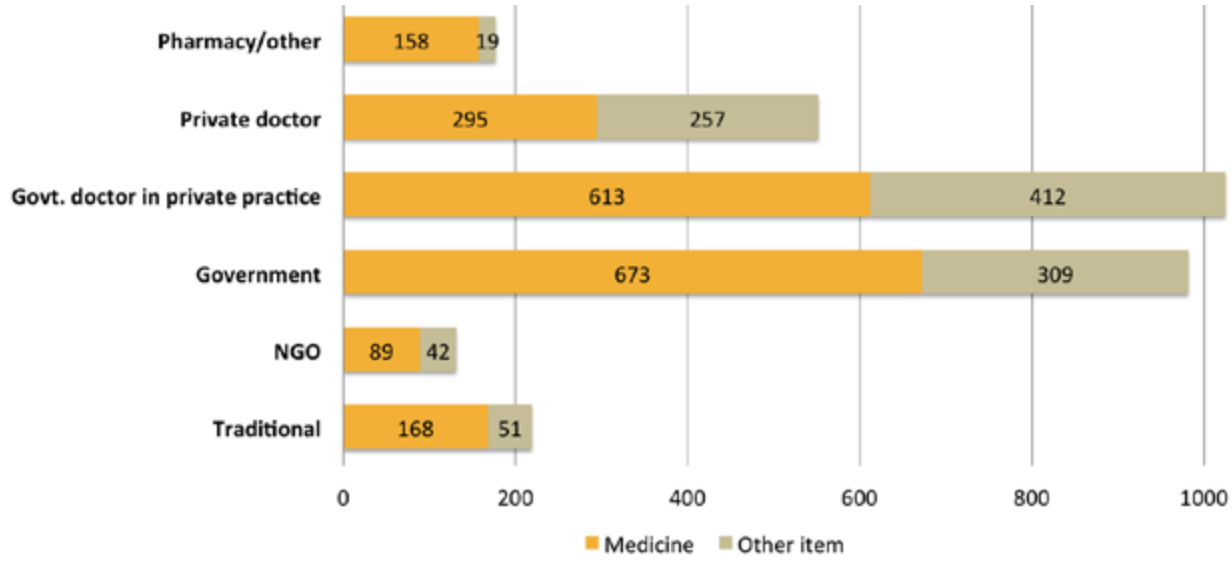
The health services provided by the public health sector are generally free or of minimal cost, but people often buy medicine from the private market or through informal payments to service providers. This means that visits to government facilities can often be as nearly as costly as visits to private doctors, and substantially more costly than visits to pharmacies, or traditional or homeopathic providers (see Figure 4–5). In previous years, the government reduced most user charges at public healthcare facilities to improve access by the poor. However, there are proposals to introduce fees at the primary care level, while ensuring a safety net for those unable to pay. Some NGOs provide Maternal, Newborn, and Child Health (MNCH) services at an affordable cost and with free services for the ultra poor.

Figure 4–4 Out-of-Pocket Spending per Capita in Bangladesh, 2000-2010 (BD Taka)



Source: Chandrasiri J, Anuranga C, Wickramasinghe R, Rannan-Eliya RP. The Impact of Out-of-Pocket Expenditures on Poverty and Inequalities in Use of Maternal and Child Health Services in Bangladesh: Evidence from the Household Income and Expenditure Surveys 2000–2010 *RETA–6515 Country Brief. Manila: Asian Development Bank; 2012.*

Figure 4–5 Average Costs for a Child's Visit to Healthcare Provider in Bangladesh, 2010



Source: Authors' analysis of HIES 2010 data set, from Chandrasiri J, Anuranga C, Wickramasinghe R, Rannan-Eliya RP. The Impact of Out-of-Pocket Expenditures on Poverty and Inequalities in Use of Maternal and Child Health Services in Bangladesh: Evidence from the Household Income and Expenditure Surveys 2000–2010 *RETA–6515 Country Brief. Manila: Asian Development Bank; 2012.*

Box 4–3 Problems of Including Newborn Health in Demand-Side Financing (DSF)

- Newborn component is not addressed in the objectives of DSF program;
- Antenatal care (ANC) counseling does not have any newborn components;
- During delivery, no specific measures are included for newborn care;
- Postnatal care (PNC) is recommended within six weeks of delivery, but no emphasis is given to early PNC;
- Although PNC for newborn is mentioned, the essential components are not included; and
- No financial incentive is given for newborn-related services.

Demand-Side Financing (DSF)

Apart from free or reduced healthcare services from the government, a large-scale project involving Demand Side Financing (DSF), initially implemented in 2006, provides a compensation package for ANC services, delivery care, and management of obstetric complications of pregnancy to poor families. This is a maternal health voucher program developed by MOHFW, with support from WHO, to increase utilization of quality maternal healthcare services, particularly by poor women. DSF projects are being implemented in 53 upazillas. The program aims to reduce demand-side barriers faced by poor women so that they will be able to access quality maternal health services.

A voucher entitles its holder to free maternal health care services including antenatal and postnatal care, safe delivery, and treatment of complications (including caesarean sections and assisted vaginal delivery from designated facilities (public or private), or skilled providers in the community. Service recipients receive cash incentives, transport subsidies, and a gift box. Service providers receive incentives to distribute vouchers and to provide covered services.

However, newborn health care is not adequately covered in current DSF programs for several reasons, as outlined in Box 4–3.

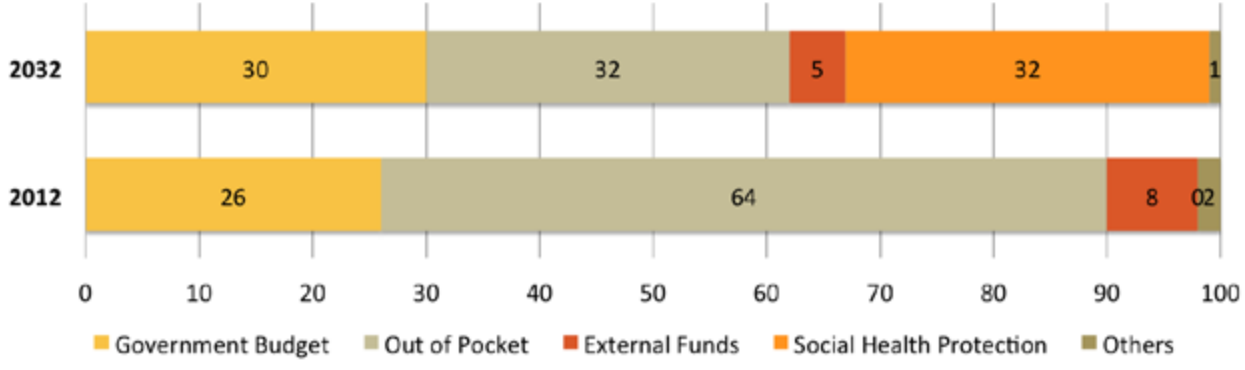
Health insurance in Bangladesh

Currently, there are about 44 insurance companies in Bangladesh mainly focusing on general, life, and accident insurances. Of these, 14 companies offer some form of health insurance products. Group health plans for offices or factory employees are most common. Individual policies are also available, usually supplemental to some other insurance schemes such as life insurance. The main health component of these schemes is coverage for hospitalization, up to an annual limit of just Tk 150,000.[17]

Bangladesh Health Care Financing Strategy 2012–2032

Bangladesh is addressing the disparities in health care financing with a social health protection program, outlined in the Bangladesh Health Care Financing Strategy. This program will help remove financial barriers to health care for those who cannot afford it (Figure 4–6). This strategy will be incorporated into the next HPNSDP.

Figure 4–6 Bangladesh Healthcare Financing Strategy



Source: Bangladesh Health Care Financing Strategy

Table 4–9 Summary: Financing for Neonatal Health

Opportunities	▶ Allocations towards Maternal and Newborn Health (MNH) increasing. ▶ Advocacy and policy dialogue with policymakers to increase national health budget. ▶ Advocacy for feasible social protection/health insurance schemes ongoing. ▶ Social protection scheme mentioned in Bangladesh Health Care Financing Strategy. ▶ Bangladesh sets goal to reach universal health coverage by 2032.
Challenges	▶ Out-of-pocket expenditures increasing. ▶ Majority of health expenditures are out-of-pocket. ▶ No health insurance system to ensure universal health coverage. ▶ Demand Side Finance (DSF) voucher scheme offers negligible neonatal support.
Recommendations	▶ Engage with government health sector to design social protection insurance schemes. ▶ Seek implementation parties that are accountable and capable of supporting realistic and time-bound implementation plans. ▶ Ensure that marginalized populations are covered under health schemes. ▶ Expand DSF maternal health voucher scheme to a national level with particular focus on neonatal health.

PHOTO: MAMONI HSS PROGRAM

The healthcare financing strategy identifies several health financing indicators that will help Bangladesh to measure progress toward universal health coverage. The government is in the process of setting realistic goals for achieving universal health coverage by 2032.

Summary: Healthcare financing: Opportunities, challenges, and recommendations

To ensure universal access to health care in Bangladesh, additional government funding must be allocated for providing service and for strengthening health systems. Current advocacy efforts are focused on reducing out-of-pocket spending in Bangladesh with social protection and health insurance schemes. Multi-disciplinary engagement with the government will be essential to ensure that these schemes are designed and implemented properly. Table 4–9 summarizes the opportunities, challenges, and recommendations for moving toward equitable and adequate health financing.

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5. Measuring Quality and Coverage of Newborn Health

Reliable information is crucial for policy development, program planning, implementation, and evaluation. Data are gathered from various sources, including population-based data, such as surveys and interviews with beneficiaries, and from institutions providing services (Figure 5-1). Each source provides unique and important information that contributes to a comprehensive understanding of population health needs, and how well these needs are being met by the healthcare system.

Until recently, little information relating to newborn health was collected in Bangladesh, but there are promising changes. The prioritization of newborn health in national policy ensures that more data will be available to improve policies and programs. This chapter reviews what data are currently available and recommends what type of additional information can be collected.

Population census

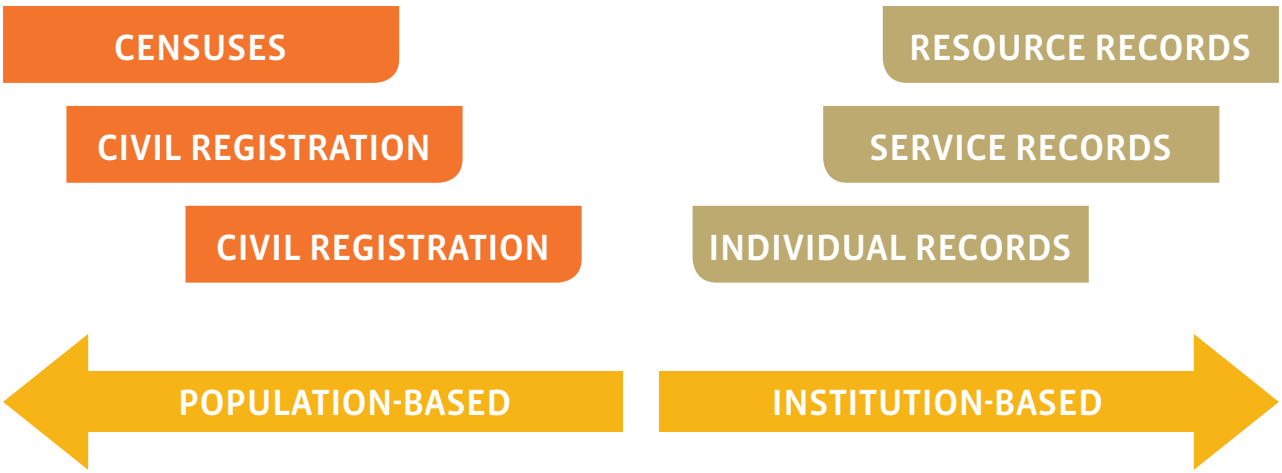
The Bangladesh Bureau of Statistics (BBS) conducts a population census every 10 years, which provides important demographic data that can be used to estimate needs for newborn programming. But census data need to be supplemented with more frequent and comprehensive estimates of births and deaths to capture the neonatal mortality burden and the impact of efforts to improve newborn health.

Vital statistics registration and survey

The government of Bangladesh (GOB) made registration within 45 days of birth compulsory with the 2004 Birth and Death Registration Act. The registration of children under age five increased from 10% in 2006 to 31% in 2011.[1] This is a sizeable increase, but far short of the level needed for program planning. A death registration system was more recently introduced, but these data are not yet considered reliable.[2]

Fortunately, more reliable estimates are provided by an annual survey to collect vital statistics: the

Figure 5–1 Bangladesh Health Information Data Sources



Sample Vital Registration Survey (SVRS), conducted by the Bangladesh Bureau of Statistics in 1,000 primary sampling units, each comprising 250 households. The SVRS makes it possible for the GOB to analyze birth and death data, including causes of death for newborns.[3]

Population surveys

The National Institute of Population Research and Training (NIPORT), with the support of development partners and other research agencies, conducts surveys and disseminates findings among policymakers, organizations implementing programs, and other stakeholders. NIPORT has conducted six Bangladesh Demographic and Health Surveys (BDHS) and two Bangladesh Maternal Mortality and Health Care Surveys (BMMS). These national surveys have been valuable for program planning and policy formulation. Over the years, more questions related to newborn health have been added to the survey questionnaires (Figure 5–2). These surveys now provide critical data on the use of antenatal care, postnatal care, skilled birth attendants, birth planning, care-seeking for maternal complications, and newborn care practices. The data are also used to estimate neonatal and post-neonatal mortality rates.

Since 2006, NIPORT has also conducted the Utilization of Essential Service Delivery Survey, which provides data on the delivery of important services like antenatal, delivery, and postnatal care for years in between the administration of the BDHS and Urban Demographic and Health Surveys (UDHS).

Facility Assessments

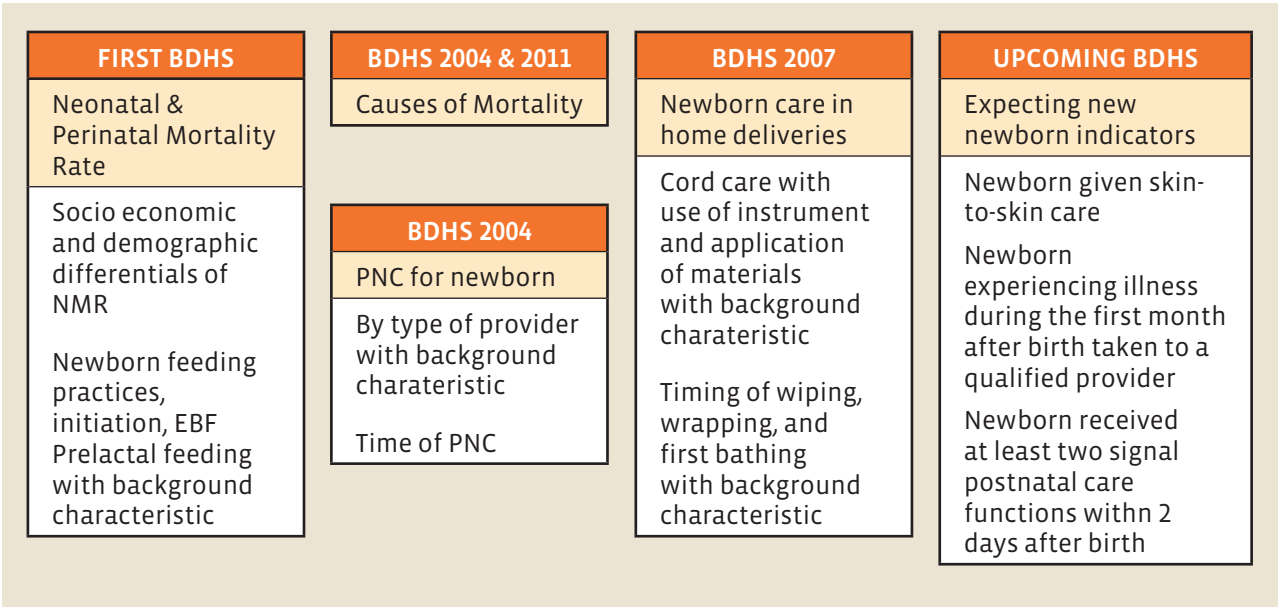
Nationally representative facility assessments are costly and therefore infrequent. The most recent national Service Provision Assessment (SPA) was conducted in 1999/2000.[4] In 2014, NIPORT conducted an SPA in seven districts. While not nationally representative, this survey now includes more information on the availability of services for newborns, has trained staff on key newborn interventions, and outlines the commodities needed to delivery those services. The assessment also involved observation of antenatal and delivery services to measure quality of care.[5]

Maternal and Perinatal Death Review

The Maternal and Perinatal Death Review (MPDR) is an evidence-based intervention that examines the causal factors of a pregnancy-related death of a women as well as the perinatal death. MPDR considers both medical and social causes, then follow up with appropriate actions to reduce future deaths. Because each death represents a story and sequence of events, the MPDR can help identify what went wrong and find practical ways to avoid similar deaths.

In Bangladesh, MPDR interventions, first launched in Thakurgaon in 2010, are now being implemented in 10 districts.[6] This program is a

Figure 5–2. Adding Newborn Health Content to Bangladesh Demographic and Health Surveys



Source: Bangladesh Demographic and Health Surveys, various years.

good example of coordination and collaboration between DGHS, DGFP, and a variety of partners – UNICEF, UNFPA, WHO, and the Center for Injury Prevention and Research (CIPRB).[7] If newborn deaths were included in these MPDR reviews, this system could have an important impact on the quality of care for newborns.

Health Management Information System

In a functioning Health Management Information System (HMIS), data on the delivery of services are routinely recorded and reported at all levels of the health system. Ideally, an HMIS provides reliable, relevant, up-to-date, timely, and complete information on health needs, cases of illness or complications, delivery of services, and effectiveness of services for health managers at the facility, local, and national levels. HMIS data are critical because they can provide local data, which are often not available in national surveys. HMIS data are also available on an on-going basis, and can therefore be monitored monthly, quarterly, and annually. The HMIS ultimately is judged a success by the resulting actions and positive changes in the health system or health status of its population, rather than by the quantity or quality of data produced.

In Bangladesh, HMIS data are currently collected at both community and facility levels. The two Ministry of Health and Family Welfare (MOHWF) agencies, the Directorate General of Health Services (DGHS) and the Directorate General of Family Planning (DGFP) each have their own

Recent initiatives to strengthen HMIS and collection of newborn data

Since 2008, MOHFW has undertaken significant initiatives to improve HMIS at all levels. The Health, Population and Nutrition Sector Program 2011-2016 (HPNSDP) has a robust results framework and monitoring and evaluation system that will enable effective tracking of program implementation and results from a variety of sources. A program management and monitoring unit equipped with skilled professionals and logistics has already been established in the MOHFW for the management, coordination, monitoring, and evaluation of HPNSDP.[8] Various donors and development partners are providing support to strengthen HMIS in Bangladesh.

The United Nations Commission on Information and Accountability (COIA) initiative is an electronic health information system to register and track every pregnant mother and child under the age of five using 11 core indicators. Through this initiative, WHO is measuring the real-time progress of Millennium Development Goals (MDGs) 4 and 5 in 75 countries, including Bangladesh.

DGHS plans to scale up this initiative at all community clinics. All pregnant women and under-five children will be registered using an online data-collection form that has been designed and tested in the District Health Information System (DHIS 2.12), with joint support from the Bangladesh government and development partners. The initiative collects medical information via Android tablet devices and laptop computers used by community health workers and in community clinics. Data will be streamed from community health workers to community clinics. The collected data will be reviewed locally in community clinics and in the community by a variety of committees or community support groups, which can then create intervention plans. When rolled out, the initiative would create longitudinal information about mothers and young children at national levels. There is also a long-term plan to expand data collection beyond maternal and child health.

The government has committed to introducing new interventions for newborns, which highlights the need to revise registers and reporting forms to more accurately capture delivery of these services. New data collection forms are being piloted, as outlined in Table 5–1. There is a need to determine how additional registers may be introduced or revised to capture other high-impact interventions, such as treatment of newborn infections or Kangaroo Mother Care (KMC) for low-birthweight babies, based on national guidelines.

Conclusion

Multiple sources of data are offering a more complete understanding of newborn health in Bangladesh. Many important initiatives are underway to further improve newborn health data sources. In addition to introducing new indicators for newborn health, efforts are needed to help providers and managers at all levels of the system to understand and use the data. Investment in data use can empower local stakeholders to improve the quality of services that they provide. Furthermore, increasing the collection and use of data nationally provides an important incentive for local shareholders to improve the quality, completeness, and timeliness of data that they report.

Table 5–1. Summary of Bangladesh Health Data Sources

System Level	New/Revised tools	Collected Data
Upazila Health Complex and higher levels (DGHS)	Special Care Newborn Unit register (new)	▶ Newborn services provided ▶ Newborn referred ▶ Weight ▶ Newborn deaths
Union Health and Family Welfare Center staffed by Family Welfare Visitors (FWV) (DGFP)	Maternal and Newborn Care Register (replaces 4 existing registers)	Delivery of services including: ▶ Antenatal Care ▶ Delivery care including outcomes/ complications > Live births and stillbirths > Preterm births (<37 weeks) ▶ Immediate Newborn Care > Drying within 1 minute > Skin-to-skin contact > Administration of 7.1% Chlorhexidine (CHX) > Initiation of breastfeeding within 1 hour of birth > Resuscitation (stimulation, bag and mask) ▶ Postnatal care ▶ Referrals
Community (DGFP and DGHS)	Community Skilled Birth Register (new)	Same as above
Community (DGFP)	Pregnant Mother Register (new)	Population-based data on services received from any provider during antenatal, delivery, and postnatal periods as reported by mother

Source: Compilation of existing and newly developed forms and registers.

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6. Evidence-Based Newborn Interventions

A growing body of evidence documents the effectiveness of specific health interventions for improving survival in the first month of life. The most basic interventions are recommended for all births, and focus on the period during and just after delivery. Another set of interventions is used for premature or severely ill newborns. Recommendations change as new techniques and medications are developed and tested, and sometimes require health providers to modify their usual methods.

Interventions for all newborns

Essential Newborn Care (ENC)

The first few minutes after childbirth are crucial for the health of both the mother and newborn. More than three-quarters of newborn deaths occur within the first week of life, with up to one-half during the first 24 hours.[1] Essential Newborn Care (ENC) is a package of simple interventions by healthcare professionals designed to improve a newborn's chances of survival following delivery. ENC interventions should be provided immediately after delivery by birth attendants, family members, relatives, and volunteers trained in ENC practices. Table 6-1 lists the components of the ENC package, as defined in the National Neonatal Health Strategy (NNHS).

Table 6–1 Essential Newborn Care

ESSENTIAL NEWBORN CARE
Clean and safe delivery a. Clean cord cutting and tying
Prevention & management of hypothermia a. Drying b. Skin-to-skin c. Delayed bathing
Assessment of breathing status and management of birth asphyxia if needed a. Tactile stimulation b. Bag and mask resuscitation
Initiation of breast feeding immediately after birth & no later than 1 hour of birth
Appropriate cord care a. Chlorhexidine application followed by dry cord care
Appropriate eye care
Provision of special care for LBW neonates
Identification, management and referral for complications

Source: National Neonatal Health Strategy and Guidelines for Bangladesh (adapted)

The delivery of ENC was prioritized in the Health, Population and Nutrition Sector Development Program (HPNSDP) and its Program Implementation Plan (PIP), as well as in the Operational Plans for the Maternal, Newborn, Child and Adolescent Health unit within the Directorate General of Health Services (DGHS) and the Maternal, Newborn, Reproductive, and Adolescent Health unit of the Directorate General of Family Planning (DGFP). Standard operating procedures (SOPs) have been developed for newborn care services at primary- and secondary-level hospitals. ENC was included in Integrated Management of Childhood Illnesses (IMCI) guidelines, and the Helping Babies Breathe (HBB) protocol was developed to address ENC and birth asphyxia management. (The IMCI and HBB programs are described further in Chapter 7). To ensure a continuum of care, essential newborn care needs to be an integral part of the counseling package during pregnancy, at discharge after delivery, and during the postnatal period.

Regular postnatal check-ups are another important component of care in the first weeks of life. A

postnatal check-up provides health workers an opportunity to assess and treat complications, often avoiding more serious problems. A lack of appropriate care during this period may result in death or disability as well as missed opportunities to promote health practices that could benefit women, newborns, and children.[2]

New development in newborn cord care: Chlorhexidine

Clean umbilical cord care has proven to be essential for the prevention of neonatal infections. Freshly cut umbilical cord stumps are a common entry point for invasive bacteria, which can cause newborn sepsis, a major killer in the first week of life. Cultural practices of applying various substances on the cord, combined with a lack of hygienic measures, are often associated with cord infection.

Until 2013, dry cord care was the recommended intervention to avoid newborn infections. The World Health Organization (WHO) has since revised its recommendation based on conclusive new evidence from three studies conducted in Bangladesh, Nepal, and Pakistan. These studies, conducted between 2007 and 2013, demonstrated that using chlorhexidine digluconate (CHX) to clean the umbilical cord reduced both neonatal mortality and the incidence of infection. A pooled analysis of these three studies found that CHX use was associated with a 23% lower mortality risk compared with dry cord care.[3]

Based on this new evidence, a series of consultations between policymakers, national experts and stakeholders in Bangladesh led to a recommendation for applying a 7.1% CHX solution on the newborn umbilical cord stump as a single application at birth followed by dry cord care for all newborns whether they were born in a facility or at home.

Importance of postnatal care

Bangladesh's National Neonatal Health Strategy (NNHS) Guidelines emphasize the importance of immediate and early postnatal check-ups for both family and providers, as the majority of the neonatal deaths occur during the first few days and weeks. Early identification of health danger signs by family members is essential for obtaining timely care by trained providers or at appropriate facilities. The NNHS strategy guidelines recommend four scheduled postnatal visits: within 24 hours of delivery, on the third day, between seven and 14 days, and within 42 days. The first three visits are particularly important for neonatal survival and health.

Postnatal home visits for newborns: A strategy to improve survival

Most mothers in Bangladesh, as in many other low-income countries, give birth at home. Many face financial, social, and other barriers to bringing their babies to a healthcare facility, especially in the critical first week after birth. In 2009, WHO and UNICEF released a joint statement recommending

Table 6–2 Summary: Chlorhexidine (CHX)

Progress to Date	▸ Chlorhexidine (CHX) application for appropriate cord care included in national policy documents. ▸ National Drug Administration Authority (DGDA) provided the license to produce CHX. ▸ Local pharmaceutical company has begun production at a low cost. ▸ CHX is included in the Ministry of Health and Family Welfare (MOHFW) operational plan.
Challenges	▸ Not currently available countrywide. ▸ Lack of sufficient resources to implement at scale. ▸ HMIS does not capture relevant information.
Next Steps	▸ Operationalize CHX application at all levels of service delivery. ▸ Ensure CHX is available in adequate dosage, with application guidelines, in the market and in government facilities. ▸ Include CHX in the National Essentials Medicine List (NEML).

Table 6–3 Components of PNC for Home Visits of Newborns and Mothers

Newborn Care During Home Visits in the First Week of Life
▶ Promote and support early and exclusive breastfeeding, beginning the first hour after birth.
▶ Help keep the newborn warm by promoting skin-to-skin care.
▶ Promote hygienic umbilical cord and skin care.
▶ Assess danger signs and counsel the family to recognize potentially dangerous signs that require immediate treatment (not feeding well, reduced activity, difficult breathing, fever or feels cold, fits or convulsions).
▶ Promote birth registration and timely vaccination according to national schedules.
▶ Identify and support newborns who need additional care (e.g. low birthweight, sick, born to HIV-infected mother). If feasible, provide home treatment for local infections and some feeding problems.

home visits by health professionals or trained community health workers during a baby's first week of life. The statement cited evidence that home-based newborn care interventions can prevent between 30% and 60% of newborn deaths in high-mortality areas, where many births occur outside of health facilities.[4]

WHO and UNICEF recommend that all mothers and their babies be assessed by medical professionals immediately after birth, regardless of where the birth takes place, and that mothers and newborns should have a series of follow-up visits on a regular schedule. Mothers should seek care immediately if their newborn exhibits specific danger signs, such as high fever with convulsions.

The joint statement highlights evidence from Bangladesh, India, and Pakistan showing the importance home visits by trained Community Health Workers (CHWs) and incorporating home visits during the early postnatal period.[5,6,7,8] However, scaling up home visits to reach most of the babies born outside facilities has encountered many logistical and other problems in Bangladesh (see Box 6–1).

Table 6–4 Summary: Essential Newborn Care and Postnatal Care

Progress to Date	▶ National policies and health policies recognize the importance of Essential Newborn Care (ENC) and Postnatal Care (PNC). ▶ ENC and PNC services and practices are improving but still far from desired coverage; only 32% of newborns receive PNC from a skilled provider within 48 hours of delivery.
Challenges	▶ High proportion of home deliveries hinders access to ENC and PNC. ▶ Families are reluctant to take newborns out of the home to facilities for routine check-ups. ▶ Facilities are not fully prepared to provide ENC and PNC, and quality of services varies. ▶ High out-of-pocket expenses for reaching facilities impede women's access to facility-based PNC and ENC. ▶ Inadequate knowledge and counseling skills of health workers on essential newborn care. ▶ Inadequate supply of essential commodities and lack of indicators related to ENC and PNC visits for tracking progress and making routine decisions.
Next Steps	▶ Increased resources allocation and strategies for improved coverage and quality of care in the next health sector plan ▶ Increased awareness on healthy maternal and newborn care practices and preparedness for appropriate care-seeking ▶ Increased coverage of standard care around labour, delivery and immediate postnatal periods.

Box 6–1 Commentary: Postnatal Home Visits for Newborn Care: Observation on Bangladesh Experience

During the late 1990s and early 2010s, evidence from several Asian community studies strongly influenced thinking about the primary-level management of newborn complications, particularly those indicative of infections. One of the most crucial interventions was the introduction of minimally trained community health workers who could make home visits in the immediate postpartum period, and who were able to identify and manage suspected newborn infections. This approach led to a significant reduction of newborn mortality in study settings. Bangladesh was proud to host one of these landmark trials, which ultimately influenced global policies. In country, the success of this trial was heavily reflected in the process and formulation of the National Neonatal Health Strategy and Guidelines (NNHS) in 2009.

The strategy recommended postnatal home visits in the first week; the identification of suspected newborn infection and referral with pre-referral antibiotics (including injectable); and home-based treatment with antibiotics (including injectable) in case of referral failure.

With the goal of scaling up nationwide, Bangladesh carefully launched the process of transitioning from strategy to program, and included both a pre-planned and a built-within program learning agenda, summarized below.

Issues and constraints

A committed group of professionals (the National Technical Working Committee – NTWC) worked to operationalize the national strategy for postnatal care. While efforts to include newborn components in sector program documents succeeded, there was lack in (i) defining and (ii) sustained follow-up of actual scale-up parameters.

Necessary administrative directives did not instruct community-based workers, such as Family Welfare Assistants (FWAs) and Health Assistants (HAs), to make home visits on specified days. While it was crucial to modify the job descriptions of these health workers to perform PNC at home, they rather have been assigned to static primary healthcare centers named Community Clinics. There was no national effort to train health workers on essential newborn care nor to ensure the supply of essential commodities such as weighing scales or thermometers. Indicators related to postnatal care visits and essential newborn care were not included in HMIS, but were included in large national population surveys (like the Bangladesh Demographic and Health Surveys). These were signs of disjointed thoughts and lack of coordination between levels of the decisionmaking at the government.

From the very beginning, there was an underlying hesitation among the key stakeholders, among physicians in particular, regarding whether to allow community health workers to treat newborns with antibiotics at home. The “sepsis operations research” study was meant to provide operational guidance for scale-up decisionmaking. Because of a lack of clarity in setting objectives, a lack of focus and poor implementation, the study produced frustratingly ambiguous findings that failed to provide definitive direction for policymakers and program implementers.

Findings of the national surveys consistently showed very low coverage of health workers’ home visits. Since these visits have been thought to be the principal platform to deliver home-based newborn care, low coverage jeopardized the effectiveness of the sole delivery mechanism.

Distractions that further diluted efforts to implement postnatal care at home included: the global initiatives to train hospital-based clinical care providers on the management of sick newborns; the establishment of Special Care Newborn Units (SCANUs); and calls to focus on care of preterm babies. The Scaling-up of Helping Babies Breathe (HBB) initiative also diluted efforts to deliver care at home. This initiative focused on skilled birth attendants only, trained 25,000 of them, who actually performed only one-third of the total deliveries and mostly benefited mothers who delivered at facilities.

Box 6–1 Commentary: Postnatal Home Visits for Newborn Care: Observation on Bangladesh Experience *Continued*

The way forward

Over the past decade (2004-2014), the place of delivery has shifted from home to facility by more than double from 15% in 2007 to 37% in 2014. Overall care-seeking has increased across all socioeconomic levels. Private-sector facilities are handling the largest share of these changes. MOHFW has established community clinics for every 6,000 people that are manned with a "to be paramedic" full-time service provider. This could be enhanced to become an effective service delivery point for some newborn care services (mainly preventive and screening) much nearer to the home. The level above the community clinics, the Union Health and Family Welfare Centers (UN&FWC), has paramedical staff in place already trained in Integrated Management of Childhood Illnesses (IMCI) who can provide primary management of newborn sepsis. Experience shows that specialized newborn stabilization units can be operated at even the sub-district level where necessary.

In this context, it appears that Bangladesh has moved away from the principal strategy of home-based newborn care strategies, as stated by the NNHS in 2009. This change in policy focus was apparent in the discussions in the newborn committee in 2013 and in the Bangladesh Call to Action Report: "Promise Renewed to End Preventable Child Deaths by 2035." Emphasis has shifted to strengthening primary healthcare facilities (e.g. UH and FWC) to provide the first line of newborn care instead of at home. Bangladesh has transitioned from the possibly unrealistic goal of reaching every newborn at home to the more realistic primary care facility-based newborn care approach.

Ishtiaq Mannan, CoP, MCHIP, Save the Children

Interventions for major newborn illnesses and complications

Birth asphyxia management

Between 5% and 10% of newborns require assistance to begin breathing immediately after delivery,[9] although very few require advanced measures, such as cardiac massage, intubation, or drugs. The first response for asphyxia includes an immediate newborn assessment along with drying and tactile stimulation for the baby. Through this care, the majority of newborns initiate and sustain breathing within the "golden minute" after birth.[10] Any baby who is not breathing and has not responded to drying and stimulation within the first minute, should receive assistance with a bag and mask following a standard protocol, such as HBB (see photo).

NNHS recommends all health workers, especially those attending deliveries, have the skills to help initiate breathing of newborns. Since 2011, the National Scaling-Up of HBB Initiatives has secured the training and supply of equipment (bag and mask along with sucker) to almost all government and non-governmental medically trained delivery care providers including Community-Based Skilled Birth Attendants (CSBAs).

Table 6–5 Summary: Birth Asphyxia

Progress to Date	▸ The government adopted the Helping Babies Breathe (HBB) curriculum for in-service training of the skilled birth attendants and training was initiated. ▸ Ministry of Health and Family Welfare (MOHFW) initiated and manages HBB training roll out. ▸ All relevant local stakeholder groups are engaged. ▸ National and district-level trainers are recruited. ▸ HBB included in the pre-service curricula.
Challenges	▸ Only 42% of deliveries are attended by Skilled Birth Attendants (SBAs) and many of these occur in private facilities. ▸ Lack of adequate information on how to scale up the intervention to effectively reduce deaths. ▸ Inadequate data on skill retention and practice by the SBAs. ▸ Procurement, supply, and maintenance of HBB equipment is inadequate and insufficient because of lack of resources. ▸ Monitoring of HBB is not integrated in the Health Information Management System.
Next Steps	▸ Assess strategic and operational gaps for effective coverage of HBB to achieve an impact at scale. ▸ Identify integrated strategy to address gaps to improve quality and coverage of newborn resuscitation. ▸ Raise awareness of skilled care at delivery. ▸ Continued nurturing for functional integration and sustainability of HBB.

Prevention of complications due to premature delivery

Two low-cost interventions hold promise for reducing neonatal mortality associated with preterm births in Bangladesh: Antenatal administration of corticosteroid to women at risk of preterm birth and Kangaroo Mother Care (KMC) for preterm or low-birthweight newborns. The benefits, challenges, and outlook for the use of these interventions are discussed below.

Antenatal corticosteroids to prevent preterm complications

Antenatal corticosteroid (ACS) is the single most beneficial intervention for improving newborn outcomes among babies born prematurely.[11] ACS (dexamethasone) triggers the production and release of surfactant into the alveoli of the fetal lung and thus prevents respiratory distress syndrome (RDS). Near universal coverage of ACS for threatened preterm birth could result in as many as 40% fewer newborn deaths from complications associated with prematurity.[12]

WHO recommends ACS for the prevention of RDS as a priority intervention in the management of preterm labor.[13] According to a Lives Saved Tool (LiST) analysis almost 400,000 lives may be saved each year using ACS.[14] The maximum benefit is achieved 48 hours after the first injection, however, even partial or incomplete regimens provide some benefit. Since the timing of delivery cannot be predicted, ACS should be initiated immediately when the risk of a preterm birth is detected.[15]

Although prematurity was identified as a major cause of preventable neonatal deaths in the National Neonatal Health Strategy 2009, the document did not spell out specific recommendations on ACS use. In 2013, several initiatives encouraged scaling up new newborn interventions, including ACS. Based on recommendation by the National Technical Working Committee – Newborn Health (NTWC-NH), the National Steering Committee–Newborn Health endorsed the introduction and scale up of ACS (dexamethasone) use in preterm labor both

in facilities and at the community level to reduce complications from preterm births, especially respiratory distress syndrome. However, based on recent evidence, the technical subgroup on ACS has developed draft guidelines that approve the administration of ACS to every pregnant woman who is at risk of imminent premature delivery and has a condition that increases the chance of delivery within seven days. However, mothers with these risk characteristics who give birth in a facility are excluded provided the following three conditions can be met:

- Ability to accurately assess the gestational age and determine the risk of imminent preterm birth;
- Adequate care available for preterm newborns (including resuscitation, KMC, adequate feeding support, and treatment of infection); and
- Reliable, timely, and appropriate identification and treatment of maternal infection.

The introduction and promotion of ACS for premature labor, along with KMC for premature and low-birthweight infants, were also included in "A Promise Renewed," as part of Bangladesh's commitment to end preventable child deaths by 2035.

Management of premature babies: Kangaroo Mother Care (KMC)

Kangaroo Mother Care (KMC) is an effective, affordable, and feasible intervention to save preterm and low-birthweight newborns in Bangladesh. KMC is the early, prolonged, and continuous skin-to-skin contact between the mother (or mother substitute) and her baby, both in the hospital and at home after discharge. It includes support to mothers for positioning the baby, feeding (ideally exclusive breastfeeding), and the prevention and management of infections and breathing difficulties. The evidence suggests that KMC should be provided to all clinically stable newborns weighing less than 2,000 grams. It provides the most benefit when started within the first week of life.

Preterm newborns with health complications can also benefit from intermittent KMC. Once a baby has gained sufficient weight and caregivers have

Table 6–6 Summary: Antenatal Corticosteroid

Progress to Date	▸ National policy recognizes Antenatal Corticosteroid (ACS) as a priority intervention for preventing complications of prematurity. ▸ National guidelines and protocols have been developed. ▸ Local pharmaceutical companies are capable of producing and marketing the ACS dexamethasone.
Challenges	▸ ACS is available, but not in the required dose (6 mg) for easy administration. ▸ Current practice of using ACS exists in facilities, but the standard protocol is often not followed. ▸ Majority of deliveries occur at home. Among facility deliveries, women often arrive late in labor, diminishing effectiveness of ACS. ▸ There is a general lack of awareness of the dangers and signs of preterm labor. ▸ Birth attendants often do not have the knowledge and skills necessary to administer ACS.
Next Steps	▸ Finalize and disseminate the national protocol and guidelines on use of ACS. ▸ Produce ACS in 6 mg formulation, included in the National Essential Medicine List (NEML) with specific indications for preterm births. ▸ Include ACS costs in the operational plan of relevant directorates of the Ministry of Health and Family Welfare (MOHFW). ▸ Train staff on ACS administration and appropriate logistic management. ▸ Demonstrate and document operationalization of ACS through the public health service delivery system.

learned how to provide KMC, the baby and mother are usually discharged, but continue KMC at home with recommended follow-up visits. Intermittent KMC can also be practiced when the caregiver is unable or unwilling to practice it continuously in a health facility. Among its key benefits, KMC:

- Provides warmth and promotes nutrition for preterm babies;
- Reduces infection (including sepsis, hypothermia, severe illness, and lower respiratory tract disease), and the length of a hospital stay;
- Provides a 51% reduction in mortality for newborns weighing less than 2,000 grams, compared with conventional incubator care;[16] and
- Reduces stress for mother and newborn, enhances mother-infant bonding, and positively affects the family environment and the infant's cognitive development.

KMC is not widely practiced in Bangladesh, although a few hospitals have incorporated it. Notably, the LAMB Hospital in Parbatipur in northern Bangladesh has been implementing KMC routinely since 1999 for all newborns under 1,800 grams. The International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) hospital in Matlab has also been providing KMC services since 2007 to babies weighing less than 2,000 grams at birth or with a gestational age of less than 37 weeks. Since December 2013, Dhaka Shishu Hospital has initiated a KMC service in collaboration with WHO.

After a series of consultations with national stakeholders led by NTWC, the National Core Committee (NCC) on Neonatal Health of MOHFW decided to scale up KMC, as reflected in "A Promise Renewed" in July 2013. A sub-group of the NTWC on Newborn Health has developed national guidelines and protocols on KMC. The NTWC has approved the guidelines and has recommended them for NCC approval.

Management of newborn infection: Focus on injectable antibiotics

Current WHO recommendations for treating severe newborn bacterial infections in infants younger than two months include hospitalization and 10 days of therapy.[17] In developing countries, long hospital stays for mothers and newborns are difficult due to logistical challenges, resource constraints, and sociocultural factors among other reasons.[18,19,20,21,22] Even when infected newborns are hospitalized, the care is often provided too late or is ineffective. Fatality rates for sepsis among hospitalized babies treated with recommended therapy are as high as 30%–50%. This high fatality rate has been linked to delays in seeking care, poor quality care, unhygienic handling and feeding, contaminated hospital

Table 6–7 Summary: Kangaroo Mother Care

Progress to Date	▸ The value of Kangaroo Mother Care (KMC) is increasingly recognized in policy statements. ▸ A national guideline has been developed. ▸ Some local examples of KMC roll-outs are available.
Challenges	▸ A high proportion of women deliver at home. ▸ Lessons to implement KMC through the public health system are absent. ▸ There is inadequate staffing in facilities and frequent transfer of trained nurses out of KMC.
Next Steps	▸ Identify key champions for KMC in Bangladesh. ▸ Finalize KMC guidelines and protocols, training materials, and job aids. ▸ Demonstrate and disseminate KMC experiences at different levels of facilities, and establish some centers of excellence with a pool of national trainers. ▸ Support comprehensive national planning for scale up and for incorporating KMC into sector planning of the Ministry of Health and Family Welfare (MOHFW).

Table 6–8 Summary: Neonatal Infection Management

Progress to Date	▸ National plans prioritize the effective management of neonatal sepsis at scale. ▸ Policy decisions supporting neonatal sepsis management in union facilities. ▸ National guidelines and protocols for referral failure cases have been developed.
Challenges	▸ Inadequate resource allocation of training and supplies in operational plans of the Directorate General of Health Services (DGHS) and the Directorate General of Family Planning (DGFP). ▸ Lack of awareness by caregivers and the Community Health Workers (CHWs) of the danger signs and care-seeking needs for newborn illnesses. ▸ Insufficient numbers of skilled providers in facilities and poor quality of facility care.
Next Steps	▸ Include injectable antibiotics in the supply system of union-level facilities. ▸ Strengthen routine Health Management Information System (HMIS) activities. ▸ Allocate resources in relevant operational plans in the next Health, Population and Nutrition Sector Development Program (HPNSDP) for training and essential commodities. ▸ Capacity-building for health providers. ▸ Create and implement comprehensive national scale-up plan. ▸ Strengthen social behavior change communication (SBCC) activities for increasing awareness for timely recognition and appropriate care-seeking.

equipment, and drug-resistant hospital-acquired pathogens.[23,24,25]

To address these challenges, community-based interventions were tested for prevention, early detection, and management of neonatal infections and were proven effective as an alternative approach. Studies revealed substantial reductions in neonatal mortality through community-level case management of neonatal pneumonia and of neonatal sepsis in conjunction with home-based care.[26,27,28] Community health workers need to be engaged in early detection and treatment of cases. Fortunately, union-level facilities have skilled providers able to administer injectable antibiotics if necessary.

PHOTO: MAMONI HSS PROGRAM

Policy directions for neonatal infection management

NNHS and guidelines recommend that neonatal sepsis cases should be managed at facilities at the upazila or higher level with a standard dose of antibiotics. When identified at community clinics or union-level facilities, these cases are to be referred to a hospital after the first dose of medication has been administered. If referral is not achieved, however, the NNHS recommends that the treatment be continued at the community level. Recent experience with this strategy for managing neonatal infection, bolstered by operations research, has justified strengthening union-level facilities to ensure

adequate newborn sepsis management, especially in the case of referral failure.

Recent studies from Bangladesh, Pakistan, and several African countries provide evidence that simplified antibiotic regimes can also help manage infection in infants less than two months old. The Technical Sub-group on Newborn Sepsis Management has developed a guideline for managing newborn sepsis at union-level facilities and NGO clinics without in-door facilities with a simpler antibiotic regimen for referral failure. This guideline has been submitted to the NTWC for approval.

Birth defects: A killer of newborns in Bangladesh

Birth defects are structural or functional anomalies, including metabolic disorders, which are present at the time of birth. Despite their significance, birth defects are not being addressed in national policy in Bangladesh, and the health system does not yet have the structures in place to prevent or manage birth defects. A WHO/South East Asian Regional Office strategic framework identifies birth defect cases, but no hospital or community-based surveillance is in place to analyze the burden of various types of birth defects. However, the National Neonatal and Perinatal Database (NNPD) network, established in nine public medical college hospitals and five tertiary-level institutes across Bangladesh, aims to estimate the disease burden of selected birth defects by documenting birth defects in all live births at participating centers.

A draft national action plan to address birth defects was developed by MOHFW with support from WHO, Bangabandhu Sheikh Mujib Medical University (BSMMU), and icddr,b. Specific targets and implementation plans have been created to prevent and manage priority birth defects, as well as to establish a hospital and community-based surveillance system to estimate the disease burden of selected birth defects. The seven major activities or mechanisms emphasized in the country action plan for birth defects are as follows:

- Develop a national strategic direction and action plan for birth defects prevention, control and care;
- Reform national policies;
- Implement research and surveillance on birth defects (disease burden and risk factors);
- Initiate capacity-building for prevention of birth defects;
- Integrate indicators related to birth defects in the national HMIS and establish a monitoring and evaluation system;
- Encourage national and international collaboration; and
- Implement special programs to prevent birth defects, including health education and food fortification and supplementation.

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7. National Newborn Health Programs and Initiatives

Over the past decade, significant policy actions and investments have enhanced newborn health interventions in Bangladesh through large-scale programs. Two service delivery mechanisms drive newborn health programs in rural Bangladesh. The first, the Ministry of Health and Family Welfare (MOHFW), provides services at a national scale via its two directorates — the Directorate General of Health Services (DGHS) and the Directorate General of Family Planning (DGFP). The second mechanism works through collaborative projects between MOHFW and development partners, including national and local non-governmental organizations (NGOs). In urban areas, healthcare services are provided by NGOs under the management of the Ministry of Local Government, Rural Development and Cooperation (MOLGRDC). Table 7–1 presents some ongoing maternal and child health programs that include newborn health:

Health, Population and Nutrition Sector Development Program (HPNSDP)

MOHFW has been implementing a sector-wide approach to delivering health since 1998. The current Health, Population and Nutrition Sector Development Program 2011-2016 (HPNSDP) aims to stimulate demand and improve access to and utilization of health and nutrition services to reduce morbidity and mortality, particularly among infants, children, and women; reduce the population growth rate; and improve nutritional status, especially of women and children.

Table 7–1 Maternal and Newborn Health Programs in Bangladesh

Maternal and Newborn Health Programs	
Delivered nationally through MOHFW system under the HPNSDP	Delivered through NGO–MOHFW collaborative projects
▸ Community-based Skilled Birth Attendants (CSBA) Program ▸ Emergency Obstetric Care (EmOC) ▸ Integrated Management of Childhood Illness (IMCI) ▸ Demand Side Financing (DSF) – Maternal Health Voucher Scheme ▸ Scale up Helping Babies Breathe Initiative (HBB) to Strengthen Newborn Resuscitation in Bangladesh ▸ Baby Friendly Hospital Initiative	▸ Accelerating Progress towards Maternal and Neonatal Mortality and Morbidity Reduction (Joint GoB-UN MNHI) ▸ Integrated Maternal, Newborn & Child Survival (IMNCS) Programme ▸ Safe Motherhood Promotion Project (SMPP) ▸ MaMoni Health System Strengthening ▸ Bridging Equity Gaps in Maternal and Child Health and Nutrition in Bangladesh

The key new elements in the HPNSDP that are directly related to newborn health include:[1]

- A new Operational Plan (OP) under DGHS, Maternal, Neonatal and Child Health Care, to provide adequate attention to each area.
- Increasing the number of Skilled Birth Attendants (SBAs).
- Strengthening 24/7 Emergency Obstetric (EmOC) services.
- Expanding the Demand-Side Finance (DSF) scheme.
- Increasing efficiency by integrating maternal and neonatal health services and incorporating expertise and facility-sharing between DGHS and DGFP, with a priority on low-performing and hard-to-reach areas.
- Strengthening the pre-service curriculum of doctors, nurses, and paramedics in midwifery, essential newborn care, and adolescent health.
- Ensuring home visits by a trained worker within two days of childbirth; strengthening sick newborn services at upazila health complexes (UHCs) and district hospitals with rapid and effective referral systems.
- Promoting maternal and neonatal health services for urban slums, in collaboration with MOLGRDC and other healthcare providers.

Neonatal health components in the Program Implementation Plan (PIP) of HPNSDP 2011-2016 include:

- Implementing the National Neonatal Health Strategy (NNHS) and action plan involving NGOs and volunteers, if needed.
- Increasing institutional deliveries by providing Emergency Triage Assessment and Treatment (ETAT) training to 900 service providers.
- Establishing and commissioning sick newborn care units and newborn care units/corners in the district hospitals.
- Promoting home-based Essential Newborn Care (ENC) by trained health workers and ensuring a Postnatal Care (PNC) visit by a trained medical provider within two days of delivery.
- Incorporating community-based management of neonatal sepsis and birth asphyxia.

To achieve these goals, the HPNSDP 2011–2016 includes several programs that do not exclusively target newborns, but include interventions that can improve newborn health. Programs delivered through the MOHFW system include:

Community-Based Skilled Birth Attendants (CSBA) Program

The Community-Based Skilled Birth Attendants (CSBA) program began in 2003. The program funds the training and deployment of government health workers to conduct safe deliveries and essential newborn care, as mentioned in Chapter 4. The trained attendants facilitate referral by identifying warning signs during delivery and providing first-line management of obstetric complications. The six-month CSBA module trains government health workers to attend home deliveries and identify complications for referral to Comprehensive Emergency Obstetric Care (CEmOC) facilities.

CSBAs are trained by the DGHS, with support from and collaboration with UN organizations. In 2012, CSBA and Family Welfare Visitor (FWV) training curricula were revised to include updated ENC modules, and to incorporate PNC and the latest evidence on newborn resuscitation. As of 2013, the CSBA program was organized in 342 upazilas within 60 districts.[2]

Emergency Obstetric Care (EmOC)

MOHFW, in collaboration with UNICEF, focuses on facility-based EmOC programs in Bangladesh. The government of Bangladesh (GOB) specifies that EmOC services need to address maternal and neonatal health. Basic Emergency Obstetric Care (BEmOC) can be performed in health centers without an operating theater. CEmOC includes operations, such as caesarean sections and safe blood transfusions.

GOB has provided a great deal of support for EmOC services in all health-sector programs, with additional support from development partners like the UN Population Fund (UNFPA) and UNICEF, and contributions from the private and NGO sectors. These efforts aim to strengthen emergency services by improving staff skills, ensuring adequate supplies, and providing detailed maps, among other actions—which will improve services for Bangladeshis of all ages.

The occurrence of stillbirths and neonatal deaths in EmOC facilities is still quite high, underscoring the need to improve the timing and quality of care. In 2012, 627 EmOC facilities reported 643,892 live births, 18,904 stillbirths, 2,339 maternal deaths and 5,908 neonatal deaths.[3] Nearly 1% of babies born in these facilities died within their first month of life.

About 2.9% of all deliveries were stillbirths and 0.4% of deliveries resulted in a maternal death. Only a few facilities conduct routine reviews of maternal and perinatal deaths.

Implementation of EmOC services faces many challenges, especially the availability of adequate and skilled personnel, the retention of skilled staff at rural and hard-to-reach locations, a well-established blood transfusion system, adequate logistics, sufficient data, and financial costs.

Integrated Management of Childhood Illnesses (IMCI)

The GOB, with support from UNICEF, is implementing Integrated Management of Childhood Illness (IMCI) interventions through increased coverage and improved health care. IMCI has incorporated neonatal health interventions to address the slow reduction in newborn mortality.

After a formal review in February 2003, GOB made provisions for rapidly scaling up IMCI interventions. Currently, facility IMCI interventions are scaled up to 425 upazilas, initially in districts with high child mortality. Community IMCI interventions are scaled up to 150 upazilas, mainly in low-performing districts. Further increases are expected. However, community-based sick childcare by basic health workers and informal village doctors has expanded at a much slower pace.[4]

IMCI has already been incorporated into the curriculum in medical colleges. To date, more than 4,000 doctors, 17,000 paramedics, 8,500 basic health workers, and 15,600 skilled birth attendants have been trained in different aspects of IMCI.[5]

Box 7–1 Newborn Components in IMCI

- Drying, wrapping, warming the newborn
- Checking respiration and taking necessary measurements
- **I**nitiation of breastfeeding
- **C**are of the cord and eyes
- **W**eighing the baby
- **S**pecial care for low birth weight (including skin- to-skin care
- **F**eeding of the newborn)
- **D**anger sign identifications, management, and referral.

PHOTO: MAMONI HSS PROGRAM

But IMCI facilities have not served many newborns. In 2012, more than 4.6 million children under age five received treatment from IMCI facilities, but only 3% (about 164,000) were less than a month old. Of these, 35% presented at the facilities with very severe diseases—11% with diarrhea.

Scaling-up the Helping Babies Breathe Initiative (HBB)

The Helping Babies Breathe (HBB) program is being scaled up nationwide by MOHFW with support from the Maternal and Child Health Integrated Program (MCHIP) of Save the Children, BSMMU (Bangabandhu Sheikh Mujib Medical University), UNICEF, and the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b).

This HBB initiative aims to improve the knowledge and skill of Skilled Birth Attendants (SBAs) to identify and manage newborns with birth asphyxia, and to train workers in ENC and newborn resuscitation. Government SBAs and selected private SBAs are coached in using bag and mask for resuscitation and in post-resuscitation referral and care. HBB training and required logistics are available to all public health and NGO service providers offering delivery care in all 64 districts of Bangladesh.

The success of HBB has been plagued by the lack of sufficient skilled providers during delivery, and low retention of skills, especially among lower-level facility providers and CSBAs. Ensuring the critical supply of HBB training aids and equipment will remain a challenge in sustaining the program.

Baby-Friendly Hospital Initiative and IYCF

The Baby-Friendly Hospital Initiative is one of several initiatives credited with increasing exclusive breastfeeding among children in Bangladesh. The

Bangladesh Demographic and Health (BDHS) surveys found that exclusive breastfeeding of children younger than six months increased from 43% in 2007 to 64% in 2011. Although this slipped to 55% in the 2014 BDHS, it still exceeds the HPNSDP 2011-2016 target of 50% for exclusive breastfeeding of children until they are six months old, when solid food is introduced.

The Infant and Young Child Feeding program (IYCF) focuses on the timely initiation of solid, semi-solid or soft food after six months of age. The National Nutrition Service (NNS) is introducing and scaling up IYCF services in a variety of facilities, including community clinics.

Current Government-NGO Collaboration Projects

Large-scale donor-driven Maternal, Newborn, and Child Health (MNCH) programs, including newborn health interventions, are currently implemented through collaborations between GOB and its development partners. The following are the largest MNCH collaborative projects:

Accelerating Progress towards Maternal and Neonatal Mortality and Morbidity Reduction (Joint GOB – UN MNHI)

This project was designed to improve community maternal and newborn health (MNH) practices and utilization of quality MNH services, particularly among poor and marginalized populations. It is expected to develop district and sub-district MNH plans, implemented and monitored by DGHS and DGFP management teams. The project was implemented by GOB with technical assistance from UNFPA, UNICEF, and WHO. It was financially supported by Canada's Department of Foreign Affairs and Trade Development (DFATD), the Department for International Development (DFID) of the United Kingdom, and the European Union. In its current phase (2011-2016), the project serves a population of up to 14 million in a number of districts. Components of the project specific to newborn health include:

- The Maternal and Perinatal Death Review (MPDR), further described in Chapter 5.
- Special Care Newborn Units (SCANU), further described in Chapter 4.
- Health system approach: Local Level Planning (LLP). LLP is an innovative approach to local-level planning. It directs resource allocations to identified cost centers for implementation, and empowers local health and family planning teams to decentralize planning, financing, implementation, and monitoring in MNHI intervention districts. District and upazila MNHI task groups and committees have been formed to develop, endorse, and monitor implementation of local-level plans. This approach also identified local-level human resource recruitment needs for the first time in Bangladesh history.

Improving Maternal, Neonatal and Child Survival Program (IMNCS)

The Improving Maternal, Neonatal and Child Survival Program (IMNCS) was designed to increase knowledge and improve MNCH practices in communities; improve the quality of these services at household and community levels; increase the availability, quality, and access to the continuum of MNCH care and services at facilities; and increase participation, accountability, and responsiveness to communities with MNCH services. The project also aims to address both demand and supply-side bottlenecks that hinder progress.

The initial program, begun in 2008, targeted 19.4 million people living in rural areas in 10 districts, but will eventually cover around 25 million people in 14 districts. It was implemented jointly by BRAC (formerly the Bangladesh Rural Advancement Committee) and UNICEF under the leadership of GOB, with funding from DFID, Australia's foreign aid agency (AusAID), and the Embassy of the Netherlands.

The neonatal components addressed in IMNCS encompass ENC, including early initiation of breastfeeding; management of birth asphyxia; special care for low-birthweight babies; detection and referral of neonatal sepsis; referral support for all neonatal complications; assistance at facilities; and a safety net for the poor. Many of the immediate services are delivered at the household level while attending childbirth. Other services are offered during scheduled PNC visits.

Other IMNCS projects that focus on health systems include:

- **Involvement of multiple cadres.** IMNCS initiated the provision of maternal, neonatal, and child health service deliveries in the community through front-line community health workers namely, Shasthya Shebika, Newborn Health Workers, Shasthya Kormi and CSBAs, and a well-established supervision mechanism.

"SMPP is a sustainable program. We are using [the] health system, not using additional staff, only trying to fill up the gaps. Our intention is to strengthen the system including the capability building of the staff. SMPP phase 2 is focusing more on the newborn care, the facilities are being strengthened, and awareness is [being] built in the community."

— JICA official

Safe Motherhood Promotion Project (SMPP)

The Safe Motherhood Promotion Project (SMPP) was created to improve maternal and neonatal health in three districts by strengthening safe delivery service systems and obstetric and neonatal care. It was initiated by GOB with technical support and funding from the Japanese International Cooperation Agency (JICA). The current phase (Phase 2) runs from 2011 to 2016, and focuses on newborn care.

SMPP Phase I focused on maternal health and some components of newborn care: increasing awareness of newborn danger signs; staff training on such issues as essential newborn care; management of birth asphyxia; and prevention of unhealthy medical practices. It introduced a quality improvement cycle in facilities and established the community support system and support groups. These groups help identify and track pregnant women; manage community resources for emergency transport; build community awareness about maternal and delivery issues; and coordinate and link health providers, local governments, and the community. The project also introduced a cadre of private community-based skilled birth attendants in hard-to-reach areas surrounded by water (chars). Major initiatives in Phase 2 include SCANUs at the district level and the training of health providers.

MaMoni-Health Systems Strengthening Project

The MaMoni-Health Systems Strengthening Project was created to improve the use of integrated maternal, newborn, child health, family planning, and nutrition services. It aims to increase the availability and quality of high-impact interventions by strengthening district-level local management and health systems.

MaMoni HSS has undertaken a series of high-impact activities to achieve the following four intermediate results:

- Improve service readiness through critical gap management;
- Strengthen health systems at the district level and below;
- Promote an enabling environment to strengthen district-level health systems; and
- Identify and reduce barriers to accessing health services.

The project is managed by Save the Children and other partners and funded by the US Agency for International Development (USAID) through MCHIP, the project period is from 2013 to 2017 in different low performing districts.

The MaMoni HSS approaches that specifically target newborns include:

- Delivery care and childbirth
- Postnatal care
- Promotion of newborn care intervention
- Specialized care for sick newborn

Mamoni HSS also incorporates MPDRs, a locally customized community-to-facility referral system, and local-level behavior change campaigns to promote newborn issues.

Bridging Equity Gaps in Maternal and Child Health and Nutrition in Bangladesh

The overall goal of the project is to reduce maternal, neonatal, and under-five mortality and morbidity and improve child growth and development in selected districts. The project promotes enhanced vaccine coverage and stronger health systems with increased availability and access to quality maternal, neonatal, and child health and nutrition services.

The project was implemented by UNICEF in collaboration with DGHS, assistance from Partners in Health & Development, and support from the Government of Canada. The project runs from 2014 to 2017 and serves an area of 5.2 million people in three districts.

The newborn health components of the project include SBAs; IYCF counseling; identifying health

danger signs for mother and newborn; referrals; immediate newborn care; EmONC; PNC; and communication for development.

Opportunities and gaps in national newborn health programs

- **Coverage:** Despite increasing the investment in and number of large-scale programs that prioritize newborn health, population coverage varies for essential interventions as well as across the continuum of care. There continues to be a lack of data that could evaluate the effective coverage of priority MNH interventions.
- **High-impact newborn interventions:** There is a lack of consistency in the component parts, definitions, and measures of progress and quality. It is necessary to define a set of essential interventions at a national level for individual programs to be consistently implemented.
- **Operational quality services:** There is an urgent need to demonstrate that essential newborn interventions could be integrated into existing service delivery systems and then scaled up, without sacrificing quality and equity.
- **Adoption of strategies specific to local context:** Strategies and services need to be adapted to meet the challenges at the upazilla, union, and community levels. A combination of GOB-NGO support may be needed where there are inadequate GOB resources.
- **Resource allocation:** The current interest of donors in increased investing in newborn health presents an opportunity to secure sustained funding and project timelines that allow enough time for sound implementation and a steady uptake of innovations. Too often projects run out of resources before the lessons learned can be more widely implemented.
- **Institutionalization.** To implement high-impact quality interventions across the country, a concerted effort must be made to involve the government, NGOs, donors, and other development partners over the long term. Instead of short-term donor-driver projects, institutionalizing newborn health within the policies and strategies of individual organizations will better sustain the commitment to reach the desired goal.
- **Reporting.** Programs must report regularly on an agreed set of indicators to accurately track progress in newborn health. The capacity of the frontline workers and local managers should be improved to better collect and analyze data needed to enhance services.

References

1 Bangladesh Ministry of Health and Family Welfare. *Health, population and nutrition sector development program (2011-2016), program implementation plan (PIP).* July 2011. http://www.dghs.gov.bd/index.php/en/mis-docs/important-documents/item/hpnsdp-2011-16. Accessed March 11, 2015..

2 Bangladesh. Ministry of Health and Family Welfare. *National Health Bulletin 2013.* Dhaka, Bangladesh: Management Information System, Directorate General of Health Services. http://hpnconsortium.org/admin/essential/HB_2013_final_-_Full_version_1March14.pdf. Accessed February 17, 2015.

3 See note 2.

4 See note 1.

5 See note 2.

8. Newborn Health Services and Practices at Facilities and in the Community

This situation analysis has been enriched by information collected directly from facilities, health providers, communities, and families about newborn health services, beliefs, and practices. This effort included an investigation of health care commodities—the equipment and medical supplies available and used during and after childbirth. Together, these elements provide a clear picture of the newborn health in Bangladesh at the various tiers of the health system.

Facility survey

Information on facilities and health providers was obtained through a survey, in-depth interviews, facility records review, and direct observation of providers working in 110 facilities across all seven divisions of Bangladesh. Semi-structured questionnaires were used in 83 facilities. The survey mainly consisted of questions on facility practices

Table 8–1 Facility Survey Respondents

Tiers/Level	Facility	Respondent
Tertiary	Medical College Hospital (MCH)	Consultant/Medical Officer (MO)
District Level Facilities	District Hospitals	Consultant/Resident Medical Officers (RMO)/ Senior Staff Nurse (SSN)
	Mother & Child Welfare Centre (MCWC)	MO-Clinic / Family Welfare Visitor (FWV)
Upazila Level Facilities	Upazila Health Complex (UHC)	Consultant/ Resident Medical Officers/ MO Clinic, Upazila Health & Family Planning Officer (UH&FPO)/Senior Staff Nurse
Union Level Facilities	Union Health & Family Welfare Centre (UHFWC)	Sub-Assistant Community Medical Officer (SACMO)/Family Welfare Visitor (FWV)
Community Level Facilities	Community Clinic (CC)	Community Heath Care Provider (CHCP)/ Health Assistant (HA)/ Family Welfare Assistant (FWA)/Community Skilled Birth Attendant (CSBA)

Source: Newborn Health Situation Analysis 2013 Survey.

Table 8–2 Essential Newborn Care Practices

Newborn care practices		District Hospital (10)	Mother & Child Welfare Centre (4)	Upazila Health Complex (26)	Union Health & Family Welfare Centre (29)	Community Clinic (14)	Total (N=83)
Drying and wrapping immediately after birth		10	4	26	29	6	75
Time interval of drying after birth	0–4 min	10	4	25	28	5	72
	5–9 min	0	0	1	1	1	3
Time interval of wrapping after birth	0–4 min	10	3	24	27	5	69
	5–9 min	0	1	2	2	1	6
Counseling on delayed bathing		10	4	26	29	9	78/83
Number of hours after birth	Less than 72 hours	9	4	19	26	5	63/78
	72 hours or more	0	0	5	1	2	8/78
	Don't know	1	0	2	2	2	7/78
Cord cutting practice							
Cord cutting instruments sterilized		10	4	26	29	3	72
Sterile blade used to cut cord		10	4	26	29	3	72
Applied substance on umbilical stump		0	2	7	2	0	11

Source: Newborn Health Situation Analysis 2013 Survey.

of Essential Newborn Care (ENC) and care of low-birthweight babies and newborn infections.

In the remaining facilities, in-depth interviews were conducted with providers who were directly involved with newborn health care. Interviewers directly observed the quality of newborn services in relevant parts of the facilities, including Integrated Management of Childhood Illnesses (IMCI) corners, emergency rooms, delivery rooms, and maternity wards.

The Newborn Health Situation Analysis 2013 surveyed medical providers from around the country at different types and levels of facilities, ranging from medical college hospitals to union-level facilities and community clinics, as shown in Table 8–1. Members of the community were also interviewed to ascertain their knowledge and use of the newborn care services at nearby facilities.

Table 8–3 Provider's Reported Observation Criteria of a Newborn Immediately after Birth

Providers-reported observations of newborns in surveyed facilities	N=83
Sucking ability	74
First cry	74
Respiration patterns	72
Skin color	72
Movement	65
Birth trauma	57
Birth defect	67

Source: Newborn Health Situation Analysis 2013 Survey.

ENC practice at facilities

ENC is usually provided in facilities right after delivery by the attending physicians or nurses. All providers did follow a few steps of ENC, even when they did not offer the entire ENC package. In general the survey found:

- **Cord care.** Providers used sterile blades for cutting babies' umbilical cords after birth, and washing their hands with soap or antiseptic solution. Most providers did not apply any additional substance on the cord, as had been the practice in the past.
- **Thermal care.** In all facilities, newborns were dried and wrapped within five minutes of birth. Respondents from 72 of the 83 facilities stated that they provided some sort of skin-to-skin care. Babies born in community clinics were less likely to receive thermal care.
- **Counseling on delayed bathing.** Providers at all tiers (excluding the community clinic) invariably counsel mothers on delayed bathing of their newborn, but they often do not inform mothers of the recommended time for the first bath, which is at least 72 hours after birth.
- **Newborn assessment at birth.** When a baby is born, providers need to assess the various aspects of newborn health. Most providers immediately observed the sucking ability or first cry of the newborn, along with other health indicators (see Table 8–3).
- **Breastfeeding counseling.** All providers stated that they counsel mothers on early initiation of breastfeeding, and recommend exclusive breastfeeding, starting as soon as possible after birth.
- **Weighing of newborns.** Providers at 65 out of the 83 surveyed facilities weigh the newborn soon after birth. Some facilities at different tiers lacked functional weighing scales for newborns.

Preventing and managing prematurity

The administration of antenatal corticosteroid (ACS) to women at risk of preterm delivery is crucial for preventing prematurity. The survey revealed that providers in the majority (30 out of 40) of the surveyed district and upazila facilities were aware of ACS and its use for preterm delivery, but only one was using the correct dosage.

Providers gave varied responses about the amenities available for managing preterm babies in their facilities. At public tertiary facilities, premature babies are managed in neonatal intensive care units (NICUs). But not all facilities can provide access to the appropriate equipment, including functioning incubators and/or radiant warmers to warm the preterm, along with bag and mask sets, oxygen, weighing scales, intravenous fluids, and suction apparatus.

Table 8–4 Incubator and Weighing Scale Availability of the Surveyed Facilities

Facility type (N=40)	District Hospitals (14)	Upazila Health Centers (26)	Total (40)
Incubator available	10	11	**21**
At least 1 functioning incubator	8	5	**13**
Incubator for multiple newborns	4	2	**6**
At least 1 functioning weighing scale	13	19	**32**

Source: Newborn Health Situation Analysis 2013 Survey.

Most providers said they provided skin-to-skin care for preterm newborns, but there seemed to be some misconceptions about what this entailed. In two of the facilities, providers said that they offer Kangaroo Mother Care (KMC) for preterm newborn management but they did not actually have the service.

Even though KMC is a low-cost intervention for preterm babies, interviews with providers identified several challenges for implementing it widely in facilities:

- Extremely preterm babies are kept separately from their mothers, making KMC impractical or impossible.
- Low-income mothers may find the costs of transportation to and accommodation at facilities for KMC prohibitive.
- Mothers from high socioeconomic backgrounds usually prefer not to stay with their newborns.
- Many Bangladeshi women are uncomfortable practicing KMC because it seems contrary to their culture.

- Many professionals and families prefer using incubators for preterm babies because they view this equipment as more modern and dependable.

Newborn sepsis management practices in facilities

In tertiary hospitals, newborn infection cases are invariably treated with a combination of injectable antibiotics. The type of antibiotic used differs from facility to facility. Providers mentioned that they switch to higher generation antibiotics if the patient is not improving. In addition to antibiotics, tertiary facilities provide other treatment support, including oxygen therapy, blood transfusion, and management of hypothermia and hypoglycemia.

In district and upazila facilities, newborn infection cases are also managed with injectable antibiotics, but the type of antibiotic varies depending on the availability of the medicine and the providers' practice. About half of district, upazila and lower-level facilities refer sepsis cases to higher-tier facilities, generally after administering pre-referral antibiotics.

Community survey findings

As part of the Newborn Health Situation Analysis, a qualitative study was undertaken to investigate community newborn health beliefs and practices in rural Bangladesh. The study complements national surveys, such as the Bangladesh Demographic and Health Surveys (BDHS) and Bangladesh Maternal Mortality Surveys (BMMS), and other large data sets, as it is one of the few ethnographic studies that describe how people think about healthcare-seeking and caregiving, particularly as related to newborns. Findings also show the perspectives of healthcare providers, many of whom grapple with the twin challenges of high demand from their community and their own insufficient training.

Community and household level surveys included focus group discussions (FGDs), semi-structured in-depth interviews, and semi-structured mixed-method interviews. The survey included community opinion leaders, community health workers (HAs and FWAs), field supervisors (FPIs), and service providers of lower-level facilities (SACMOs, FWVs, and CC Health Care Providers), as shown in Table 8–5. Traditional birth attendants were also included as they are still the primary providers for childbirth and newborn care in Bangladesh. In addition to mothers, grandparents and other family members were interviewed because they play an important role in decisions about delivery and newborn care.

Pregnancy and delivery care

- Most mothers said they had received at least one ANC check-up, but they seek care from a medically trained provider only when there is a perceived illness. Women consider delivery to be a normal event that does not require visiting facilities unless there are perceived complications or dangers.

Table 8–5 Data Collection Activities and Type of Respondents, Community Survey

Method	Respondent	Number
Focus Group Discussions (16)	Mothers	**11**
	Community Support Groups	**2**
	Union facility providers / Sub-Assistant Community Medical Officer (SACMO) & Family Welfare Visitor (FWV)	**1**
	Community Health Worker (CHW)	**1**
	Family Planning Inspector (FPI)	**1**
In Depth Interviews (40)	Newborn's parents	**15**
	Newborn's grandmothers	**6**
	Traditional Birth Attendant (TBA)	**4**
	Community Health Care Provider (CHCP)	**6**
	Community Health Worker / Health Assistant (HA/CHW)	**9**
Semi-structured Interviews (62)	Newborn's caregivers (mothers, grandmothers, etc.)	**62**

Source: Newborn Health Situation Analysis 2013 Survey.

- Family members, especially the pregnant woman's husband, mother-in-law, and mother, play crucial roles in deciding on the place of delivery.
- Only a few women talked about receiving home visits during their pregnancy or reported learning about nutrition and the usefulness of institutional delivery during these visits.
- Women reported that the healthcare cost, the distance to a facility, and travel expenses were the major barriers to seeking care at facilities. Some women expressed fears that they might have an unnecessary caesarean section (C-section) if they delivered in a hospital.
- Mothers who do go to facilities mentioned that an abnormal ultrasonography diagnosis would support the decision to seek institutional care.

Birth preparedness

Standard birth preparedness typically includes selecting a place of delivery, identifying a skilled provider, saving funds for emergencies, and arranging transportation to get to a facility in case of an emergency. Most mothers reported that they preferred to deliver at home and said they knew to be prepared with a new thread, blade, and cloth or quilts for wrapping the baby (see Figure 8-1).

Mothers frequently return to their parents' home for their delivery, particularly for their first delivery, and may stay for a few months. Women said they feel a reprieve from household tasks in their maternal home.

Identifying a birth attendant

Traditional Birth Attendants (TBAs) play an important role in maternal and newborn health in Bangladesh, because most women deliver babies at home. In interviews, both TBAs and women recognized that expectations for care are shifting toward safer and more hygienic practices. Women who gave birth at home reported contacting specific TBAs, nurses, or relatives prior to delivery. TBAs do receive some money or gifts for their services, but total costs are considerably lower than for delivery in a facility.

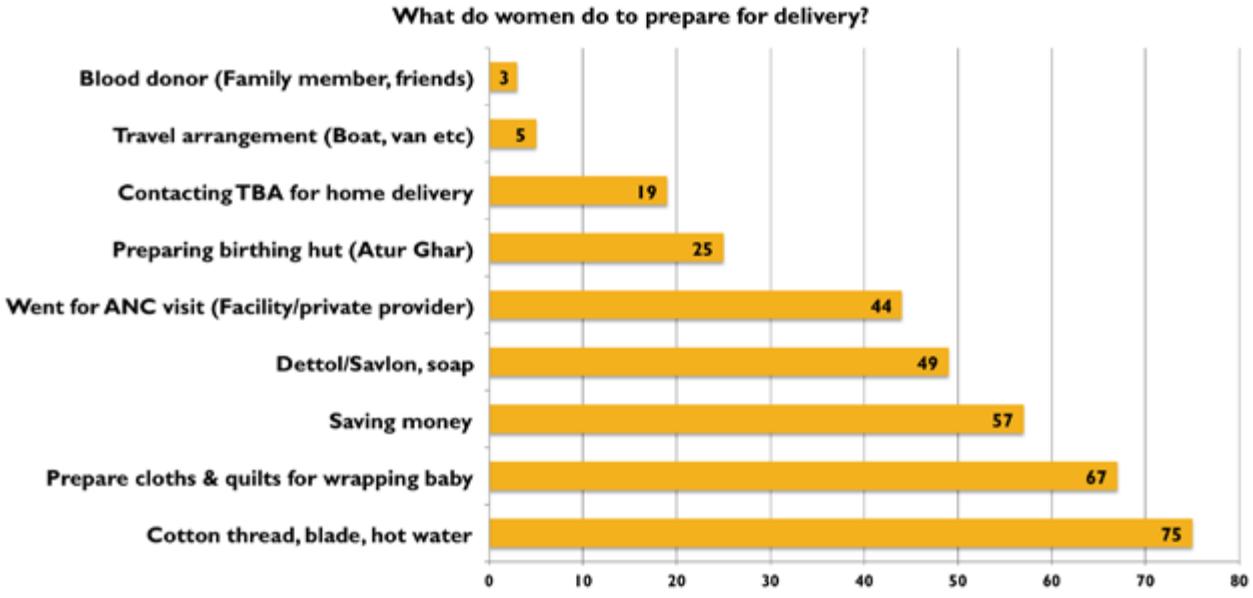
Focus group findings on Essential Newborn Care

Drying/wrapping, bathing, and skin-to-skin contact

- FGD participants reported drying and wrapping the baby but did not understand the reason for the practice.
- The idea of skin-to-skin contact with newborns was foreign, but women understood the importance of holding babies close and reported doing this often.

> *"Earlier we used to bathe the newborn immediately after birth, but not anymore."*
>
> *–Mother, Manthan, Daudkandi*

Figure 8–1 Focus Group Discussion (FGD) Responses on Birth Planning



Source: Newborn Health Situation Analysis 2013 Survey.

- Some mothers knew that babies should not be bathed soon after delivery. Although more than half reported bathing their babies immediately after birth, there is increasing trend in delaying the practice.

Early and exclusive breastfeeding

- Most mothers said they give colostrum to the newborn soon after delivery.
- Women learned the importance of colostrum and immediate and exclusive breastfeeding for the first six months from media (especially TV) as well as from service providers.
- Previously, mothers fed newborns with sugar water and honey soon after delivery, but most have abandoned the practice.

Clean cord care

- Women stated that they prepare for delivery by purchasing new blades (shaving) and threads, and sterilizing just before delivery—often on advice of family members or health workers.
- Community Health Workers (CHWs) reported that some harmful practices for cord care still persist.
- During pregnancy, mothers ate additional nutritious foods, such as vegetables and fruits, and commonly took iron supplements. They reported learning about the benefits of a better diet from the media (TV) and from other mothers.
- Community support groups mentioned that brokers, including village doctors, may convince the family to go to a private facility in exchange for a referral fee, and that some clinics perform unnecessary C-sections for monetary reasons.

Focus group sessions with community mothers
[PHOTO CREDIT: Sohrab Hussain]

> *The PNC in community is not happening properly due to [the] heavy workload on the community health workers. They have got to visit household[s], sit in the community clinics 3 days a week, manage routine as well as special activities in their assigned wards."*
>
> *—Upazila Health & Family Planning Officer*

Findings on Postnatal Care (PNC)

In the community, Postnatal Care (PNC) services are supposed to be provided by the CHWs. These CHWs have several tasks, including explaining newborn danger signs to mothers during PNC visits. These visits also provide opportunities for CHWs to assess the newborn health during the first 28 days of the child's life. However, challenges remain:

- Mothers did not understand the importance of routine PNC visits. Most FGD participants admitted that they did not visit a facility after delivery, and also said they did not require health workers when both they and their newborns were healthy.
- Community respondents in focus groups were largely unaware of newborn danger signs. Most respondents identified newborn danger signs as a cough or fever.
- Mothers rarely had enough food to ensure an adequate flow of breastmilk.
- CHWs reported that their working hours and workload did not allow them the time to complete routine household visits.

Care-seeking for sick newborns: Knowledge and practice

Most of the caregivers of newborns surveyed were aware of public facilities but less than half of them ever sought care for their sick newborns in those facilities (see Table 8–6).

Respondents were also asked about the available services at Family Welfare Centers (FWCs) and community clinics (CCs). Almost half responded that they did not know much about the services, as they had never gone there by themselves. They had not attended a clinic for a variety of reasons, for

example, because the facilities were too far away or because they had never needed to visit.

Some of the FWC and CC services mentioned included ANC and related services like immunizations; weight measurement; supply of iron, calcium, and multivitamin tablets; family planning and related services; and advice and treatment for minor illnesses like diarrhea, fever, or the common cold.

Despite knowing about available health facilities locally, most caregivers mentioned that district hospitals were their first choice of providers if they needed care for their newborn. This may reflect an expectation for better treatment or better preparedness at district hospitals. Their second choice would be Union Health and Family Welfare Centers (UHFWCs) or traditional healers. Some respondents did not know where treatment for newborns was offered.

The focus groups revealed a lack of understanding about newborn illness or newborn danger signs. Caregivers seek care when they perceive a few signs of illnesses in newborns, such as a cough and cold, not feeding well, or when newborns do not defecate or micturate. At times, the decision is made by family members such as the father or mother-in-law. The choice of the provider can also vary. Usually providers close to the home are accessed first. The financial ability of the father and the beliefs of certain providers are also important factors in treating sick newborns.

Community groups and community support groups

Each community clinic has a community group (CG) and three community support groups (CSGs), which were included in the survey. The CG oversees the entire management of the CC and motivates the community to use it. CSGs mainly encourage the community to use the clinic, collect necessary information, identify pregnant mothers, ensure check-ups, and help mothers prepare their delivery plan.

The TBA (third from the right) conducted delivery for all family members in this photograph. [PHOTO CREDIT: Sohrab Hussain]

CSG group members reported that patient flow has increased in CCs and that their community activities are well received. This increase in the number of patients has also led to faster consumption of medications. When a newborn visits a facility, the Community Health Care Provider (CHCP) examines the newborn to see if s/he is breathing properly, and then observes the color, weighs the child, and counsels the caregivers as soon as possible. But the CHCP usually refers sick newborns to the referral facilities. They said that ill infants do not receive treatment at the CC.

Table 8–6 Knowledge and Practice in Community on Use of Public Health Facility

	Family Welfare Centres	Community Clinics
Community Members	Number of caregivers (N=62)	
Know about facility	40	44
Know provider's availability	28	24
Know provider's name	22	23
Know what days the facility is open	29	29
Treated in facility	27	31

Source: Newborn Health Situation Analysis 2013 Survey.

Box 8–1 Upgraded UHFWC — reliable health service delivery center for the community

This upgraded Union Family and Welfare Center (UHFWC) is now a 20-bed hospital in the village of Koitak in the Chhatok upazila of Sylhet district. This hospital serves 250 to 300 patients and conducts between four and five normal deliveries a day. The hospital is easily accessible for the local population and has doctors available around the clock. Medicine is free for patients most of the year.

Recommended actions: newborn health practices and delivery

The community survey provided further evidence that Bangladesh is far from providing universal coverage of skilled attendants for childbirth, and families are often reluctant to seek delivery care at facilities. Concerted efforts are needed, not only to raise awareness of the advantages of skilled delivery care, but also to ensure quality and client-friendly services.

It is encouraging that many women know at least some of the ENC components. Women also have adopted healthier practices over time. There is already a widespread awareness about the benefits of immediate and exclusive breastfeeding. However, there continues to be a gap between widespread awareness and behavior. For example, the 2014 BDHS shows that among the non-institutional births, 57% of babies were breastfed within the first hour of life.[1]

The awareness of and demand for routine postnatal check-ups are quite low. Community health workers have a heavy workload and often do not prioritize postnatal home visits. New strategies are needed to increase routine postnatal check-ups for mothers and newborns, including task shifting at every level. Although caregivers were well informed about the available public facilities, the practice of seeking care at those facilities for newborn illness was still rare.

Communities' need to improve their knowledge and understanding newborn danger signs, and to be more receptive to institutional delivery. Women must more clearly understand the risks associated with childbirth and early newborn care, and need to know how and when to seek care. However, efforts to educate mothers need to consider the social structures in which women live, including the role of husbands and mothers-in-law in decisions about delivery and care. Women are aware of community clinics and other sources for primary level care, but they prefer to seek care at district hospitals when necessary. Yet community health workers—who are often from the same locality as patients—continue to be key for enhancing health education and newborn care. Their availability and rapid response in identifying sick newborns, initiating treatment, and referral could improve case management.

Health commodities for newborns

In 2010, the UN Secretary-General's report, Global Strategy for Women's and Children's Health, highlighted the suffering of women and children from a lack of access to life-saving commodities. The report called on the global community to work jointly to save 16 million lives by 2015 through the increased access to, and appropriate use of, essential medicines, medical devices, and health

supplies. Increased access to these essential commodities could effectively address the main avoidable causes of death during pregnancy, childbirth, and childhood.[2]

The UN Commission on Life-Saving Commodities for Women and Children is leading the program to increase access to these life-saving commodities in 50 of the world's poorest countries.[3] With a strong focus on the reproductive, maternal, newborn, and child health (RMNCH) continuum of care, the commission identified and endorsed an initial list of 13 commodities. It defined life-saving commodities as those medicines, medical devices, and health supplies that effectively address the leading avoidable causes of death during pregnancy, childbirth, and childhood and that, if more widely accessed and properly used, could significantly reduce preventable deaths among women and children. The newborn specific commodities are: injectable antibiotics for newborn sepsis; ACS for preterm respiratory distress; Chlorhexidine (CHX) for newborn cord care; and resuscitation devices for newborn asphyxia.

Procurement and supply chain mechanisms

In Bangladesh, the procurement and supply chain management for health commodities operate differently for the two directorates within the Ministry of Health and Family Welfare (MOHFW): the Directorate General of Health Services (DGHS) and the Directorate General of Family Planning (DGFP). Medical and surgical requisites, including drugs and commodities for maternal and newborn health (MNH), are procured centrally as well as locally. Under the DGHS, procurement is done centrally by the Central Medical Store Depot and supplied to facilities through their own mechanism or directly by facility managers. At the district level, civil surgeons also procure necessary MNH drugs and commodities using their revenue funds.

DGFP has its own mechanism for procurement and distribution, from its logistics and supplies unit to the user level. Drug and Dietary Supplies (DDS) kits,

Table 8–7 Availability of Medicines and Logistics

Available Necessary Commodities in Surveyed Facilities	District Hospital (10)	Mother & Child Welfare Centre (4)	Upazila Health Complex (26)	Union Health & Family Welfare Centre (29)	Community Clinic (14)	Total (83)
Stethoscope	10	3	26	27	13	79
Sterilization Options*	10	3	26	23	8	70
Thermometer	8	3	22	21	13	67
Sterile Equipment for Cord Cutting	10	3	26	23	4	66
Sharp Disposal Containers/Bin	9	3	25	22	4	63
Soap or Hand Wash	8	3	23	22	6	62
Running Water Facility	9	3	26	19	4	61
Bag and Mask or Ambu Bag/ Newborn Resuscitator	9	3	23	23	3	61
Baby Weighing Scale	9	3	19	20	2	53
Syrup/Drop Amoxicillin	3	2	7	23	9	44
Injection Gentamycin	8	1	15	0	0	24
Linen/Blankets/Cotton Roll for Drying, Wrapping	5	3	12	6	2	28
Room Thermometer	2	0	3	0	5	

*Among sterilization options, providers mentioned of autoclave, boiling, chlorine solution, bleaching powder and boiling with or without Detol, Savlon, detergent powder, or soap.

Source: Newborn Health Situation Analysis 2013 Survey.

composed of 26 medicines, are supplied at fixed intervals by DGFP to all UHFWCs. The kit is supplied through a push system and is distributed uniformly irrespective of the population density in a given area. If the DDS kit lacks a sufficient supply of a specific medicine, the facility has to wait till another kit is delivered.

Priority newborn health commodities in Bangladesh

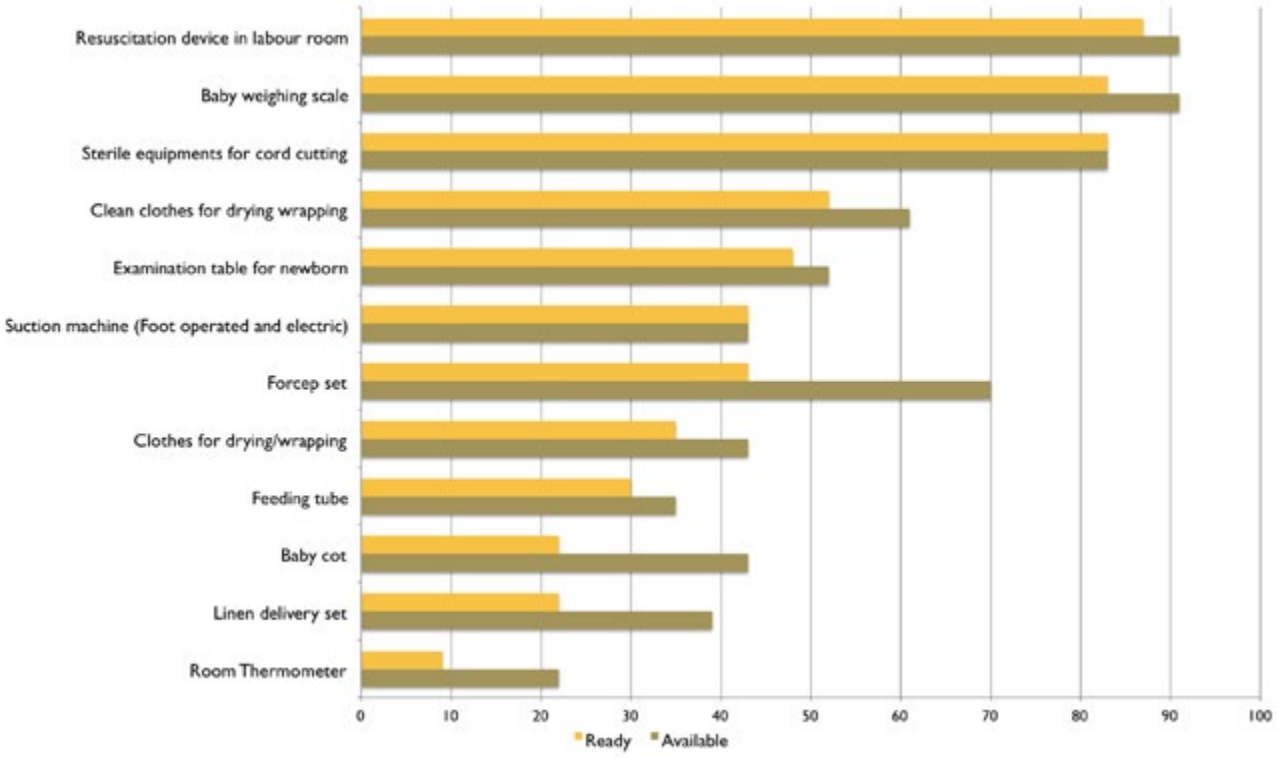
The facilities survey allowed an assessment of the availability and accessibility of commodities necessary for newborn health. For example, drying and wrapping is an integral part of ENC for which linen cloth is required. The survey found that linen was supplied in just 33% of the surveyed facilities. Families provided their own material in the majority of cases.

In addition, the health facility monitoring survey conducted by UNICEF in 2013, evaluated MNCH Interventions in 23 health facilities (district hospitals and upazila health complexes) in 15 districts. The survey found that the availability of the commodities do not necessarily match their readiness for use. Sterile equipment for cord cutting, a baby weighing scale, and a resuscitation device were available and ready for utilization in at least 80% of the facilities. However, other commodities, including clothes for drying and wrapping, linen delivery sets, baby cots, feeding tubes, and suction machines were available in less than 50% of facilities.

The availability and the utilization of equipment related to delivery and newborn care varied in these facilities. While sterile equipment used for cord cutting and the suction machines were both available and ready to use, there was a 20% difference between the availability and readiness of equipment such as forceps sets, baby cots, and linen delivery sets.

Blood pressure machines and stethoscopes were largely available (83%) and well utilized (78%), and most available weight machines were functional. There was a large difference in the availability and utilization status of the toilets, privacy options, and hand washing facilities for clients, or in record-keeping (ANC PNC register and ANC PNC card). The overall findings showed a lack of amenities available for delivery services at these facilities.

Figure 8–2 Availability and Readiness of Equipment for Neonates in Health-Facility Labor Rooms, 2013 {percent}



Source: Health Facility Monitoring Survey, UNICEF, 2013.

Table 8–8 Summary: Health Commodities

Opportunities	▶ Directorate General of Health Services (DGHS) and Directorate General of Family Planning (DGFP) have mechanisms in place for procurement and supply.
Challenges	▶ MNH drugs are procured centrally as well as locally using both revenue and development budgets. But procurement of drugs is often subject to bureaucratic delays. ▶ Delay in releasing fund is common for both DGHS and DGFP. ▶ Allocated funds are not always enough to procure adequate quantities of drugs. ▶ There is no effective demand forecasting or stock-tracking mechanisms in place for maternal and newborn health (MNH) commodities in DGFP and DGHS. ▶ The procurement of drugs and commodities through revenue and development budgets is not well coordinated. ▶ There is no provision or system to procure MNH care drugs on an emergency basis under DGHS. ▶ Current national or local systems do not accurately forecast or distribute adequate supplies of chlorhexidine (CHX) to treat umbilical cord infections at the community level.
Next Steps	▶ Establish coordination mechanisms between DGHS and DGFP to harmonize procurement and supply at both the national and local levels. ▶ Establish structured logistics management systems for tracking essential commodities from DGHS.

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2 UN Secretary-General Ban Ki-moon. *Global Strategy for Women's and Children's Health.* 2010. http://www.who.int/pmnch/topics/maternal/20100914_gswch_en.pdf. Accessed April 21, 2015.

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9. Newborn Health in Urban Bangladesh

Urban areas pose unique challenges for access to and utilization of maternal and newborn health (MNH) services, especially in light of the country's rapid urbanization. As the urban population grows, ensuring equitable health care in urban areas will become increasingly important for improving public health nationally.

One-third of Bangladesh is urban, up from about one-fifth in 1990.[1] High levels of migration bring a stream of rural residents to cities, mainly to the capital, in search of work. Dhaka is one of most densely populated large cities in the world, with Chittagong not far behind (Figure 9–1).[2,3]

Many of these newly settled urbanites live in urban slums—informal settlements constructed on public or private land. One-third of Dhaka's population currently resides in slums and this proportion shows no signs of easing.[4]

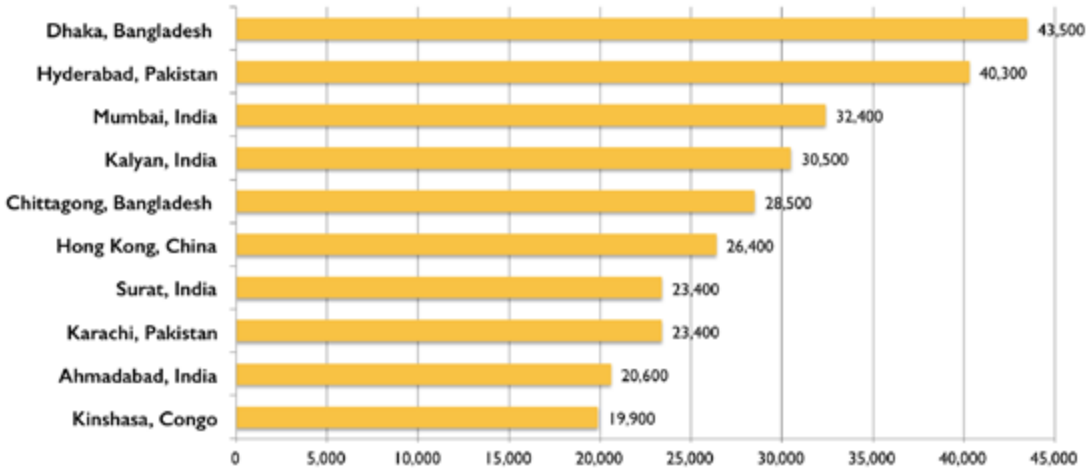
Recent surveys and other evidence highlight the inequities in health service delivery among Bangladesh's rapidly growing urban population. Yet, there is no comprehensive urban health policy that can address these inequities. In light of the government's commitment to universal health care and to improving newborn health, these survey findings provide valuable guidance for developing an urban health policy and creating effective programs to serve all mothers and newborns within urban areas.

Urban health inequities

The Urban Health Survey (UHS) 2013 looked at three major domains of urban areas: slum populations and non-slum populations residing in nine city corporations, and the rest of the urban population, including district municipalities and large towns or pourasavas with more than 45,000 residents (according to the 2011 population census).

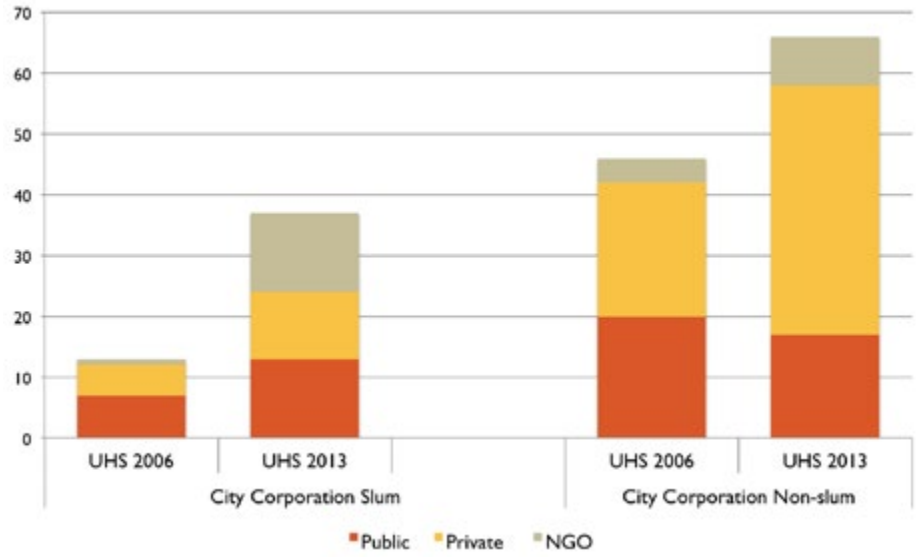
The survey found that the use of medically trained providers for childbirth increased in all urban areas between 2006 and 2013. The percentage of deliveries in facilities rose from 13% to 37% in slums, thanks largely to efforts by the non-governmental (NGO)

Figure 9–1 Most Densely Populated Urban Areas Over 2.5 Million, World



Source: Demographia. Demographia World Urban Atlas: 11th ed., 2015. http://www.demographia.com/db-worldua.pdf. Accessed April 21, 2015.

Figure 9–2 Use of Health Facilities for Childbirth in Urban Areas, 2006 and 2013



Source: National Institute of Population Research and Training (NIPORT), MEASURE Evaluation, icddr,b. Urban Health Survey 2013: Preliminary Results. *http://www.icddrb.org/images/stories/WhatWeDo/Research/CPUCC/uhs2013preliminaryreport_final_16oct2014.pdf. Accessed April 21, 2015,*

sector. In non-slum areas, facility delivery is much higher (66%), mostly provided by the private sector.

The percentage of urban women receiving antenatal care (ANC) from any provider increased between 2006 and 2013 (see Table 9–1). However, UHS also found that most women in non-slum and other urban areas receive ANC from medically trained providers (83% and 76% respectively) whereas in slum areas, only half of the women receive ANC from a medically trained provider. Further, women in non-slum areas are more likely to receive at least four antenatal check-ups than are women in the other two domains.

Similarly, postnatal care (PNC), a critical service package for mothers and newborns, increased between 2006 and 2013 for both slum and the non-slum areas. In addition, the gap in PNC among women and children in slum and non-slum areas is narrowing (Figure 9-3), although women in non-slum areas are twice as likely to receive this care as are women in slum areas. In all three domains, mothers are more likely to receive postnatal check-ups than are newborns.

The UHS 2013 found that many elements of essential newborn care are not practiced for births outside of facilities (Figure 9-4). In slum areas, a boiled instrument reportedly was used to cut the umbilical cord for 87% of recent births. For more than 51% these births, however, a substance was applied on cord stump afterwards, contrary to recommended practice.

Table 9–1 Location of Antenatal Check-ups, 2013

Domain	Home	Public sector	Private sector	NGO Sector	Other	Number of women
City corporation slum	14.2	23.9 2	9.5	42.4	0.2	2,456
City corporation non–slum	4.5	21.9	58.1	21.5	0.1	1,545
Other urban	6.1	38.9	51.7	11.0	0.0	1,945

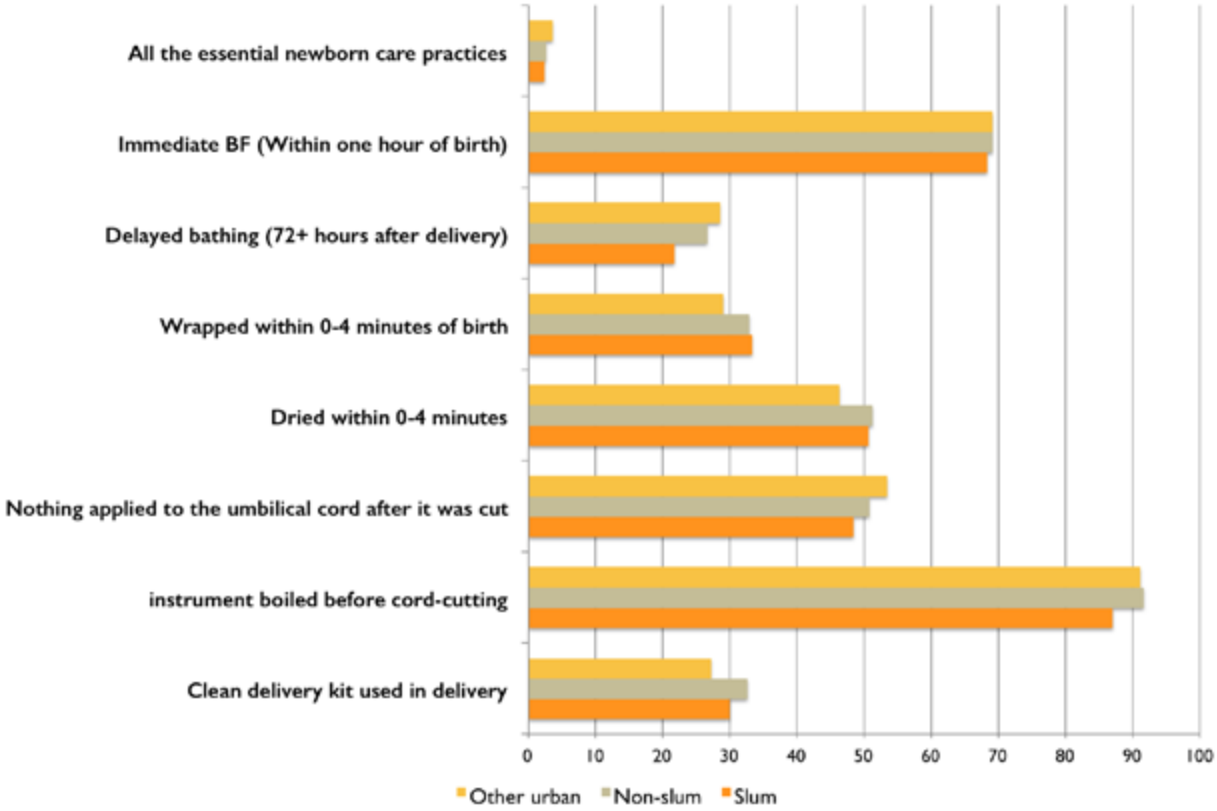
Note: Multiple responses possible

Source: National Institute of Population Research and Training (NIPORT), MEASURE Evaluation, icddr,b. Urban Health Survey 2013: Preliminary Results. *http://www.icddrb.org/images/stories/WhatWeDo/Research/CPUCC/uhs2013preliminaryreport_final_16oct2014.pdf. Accessed April 21, 2015.*

Figure 9–3 Postnatal Check-ups From a Medically Trained Provider for Women and Newborns Within Two Days of Delivery, Urban Bangladesh: 2006 and 2013

Source: National Institute of Population Research and Training (NIPORT), MEASURE Evaluation, icddr,b. Urban Health Survey 2013: Preliminary Results. http://www.icddrb.org/images/stories/WhatWeDo/Research/CPUCC/uhs2013preliminaryreport_final_16oct2014.pdf. Accessed April 21, 2015.

Figure 9–4 Essential Newborn Care Practices in Non-Institutional Births in Urban Bangladesh



Source: National Institute of Population Research and Training (NIPORT), MEASURE Evaluation, icddr,b. Urban Health Survey 2013: Preliminary Results. *http://www.icddrb.org/images/stories/WhatWeDo/Research/CPUCC/uhs2013preliminaryreport_final_16oct2014.pdf. Accessed April 21, 2015.*

Urban health policy

The policy response to Bangladesh's rapid urbanization and great inequity in access to services for the urban poor has been slow. Government health delivery in urban areas is under the jurisdiction of the Ministry of Local Government, Rural Development and Cooperation (MOLGRDC), not the Ministry of Health and Family Welfare (MOHFW), which overseas health delivery in the rest of Bangladesh. There has not been a comprehensive urban health policy in Bangladesh to establish an alternative health system for urban areas.

An urban health policy is under development, marking a critical step toward ensuring an equitable public health system for the urban population. Any policy must take a systems approach and consider financing and data management as well as human resources management and service delivery. Currently, private-sector and urban providers do not send data to the Health Management Information System (HMIS), which means that public data on health in urban Bangladesh is incomplete and inaccurate.

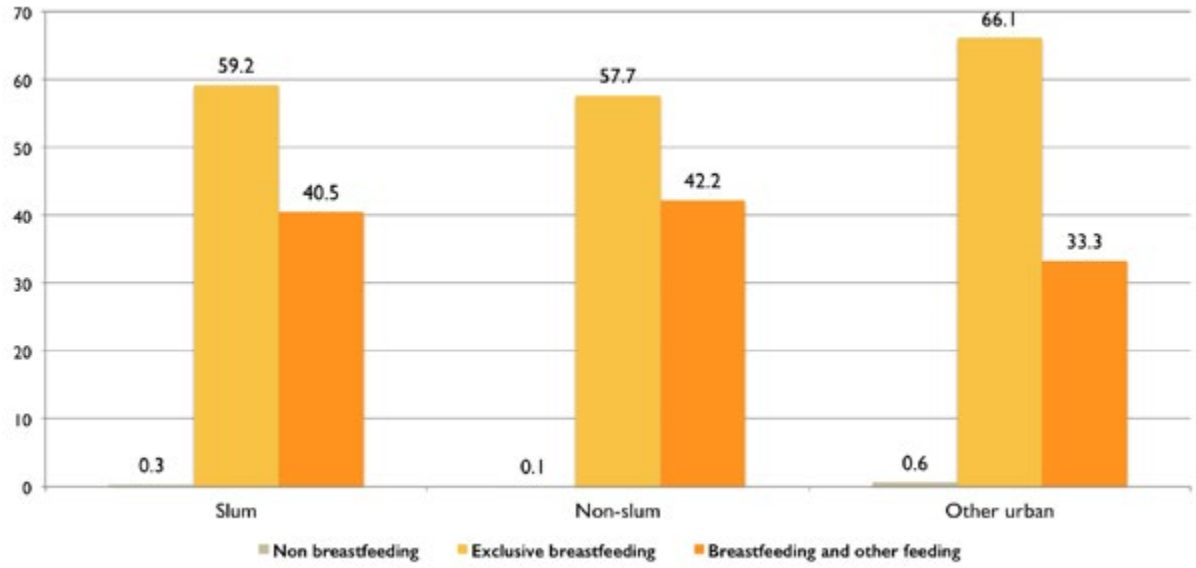
The present draft policy for urban health stipulates the following objectives:

- Universal coverage for urban population with a pro-poor focus;
- Strengthen preventive and prenatal health care;
- Reduce urban poverty;
- Achieve national population policy goals and targets;
- Achieve national nutrition goals and targets;
- Adopt innovative service delivery programs using modern technology, management policies, and practices;
- Improve institutional governance and capacity;
- Mobilize financing and resources; and
- Strive for sustainability.

Box 9–1 Situation analysis survey findings in urban areas

Over the years, exclusive breastfeeding of infants has gradually increased in both slum and non-slum areas, but it is still far from universal. In UHS 2013, exclusive breastfeeding of children under six months of age was nearly 60% in both slum and non-slum areas, and a little higher (66%) in other urban areas.

Figure 9–5 Breastfeeding Practices for Children Under Age Six Months in Three Domains, 2013



Source: National Institute of Population Research and Training (NIPORT), MEASURE Evaluation, icddr,b. Urban Health Survey 2013: Preliminary Results. *http://www.icddrb.org/images/stories/WhatWeDo/Research/CPUCC/uhs2013preliminaryreport_final_16oct2014.pdf. Accessed April 21, 2015.*

The role of MOLGRDC, as outlined in the most recent HPNSDP, is:

- To ensure proper utilization of resources for urban primary health care activities;
- To provide PHC services to the urban population; and
- To provide strong coordination between MOLGRDC and MOHFW.

At present, no Government of Bangladesh (GOB) entity directly fulfills these roles.

Urban health service delivery system

While many programs and organizations provide services in urban Bangladesh, most are unable to cover the massive urban population, particularly the poor. Only four programs currently target maternal and newborn health services among the urban poor: The Urban Primary Health Care Services Delivery Project (UPHCSDP), the NGO Health Service Delivery Project, BRAC's Manoshi (urban MNCH) project, and Marie Stopes Bangladesh. These four programs provide some maternal and newborn health services for the urban poor, and brief descriptions of some of these key health programs follow.

The Urban Primary Health Care Services Delivery Project (UPHCSDP)

UPHCSDP is a multi-partner initiative. International donors fund this public-private partnership with MOLGRDC as a lead implementing partner. The project's role is to fulfill the legal mandate for local governments to provide primary health care in urban areas. Funding is awarded to NGOs who then establish clinics offering a variety of reproductive, maternal, newborn, and child health (RMNCH) services in urban slums as Comprehensive Reproductive Health Care Centers, Primary Health Care Centers, and Satellite Clinics.

Neonatal health services provided through UPHCSDP include:

- Counseling women and families on exclusive breastfeeding, danger signs, prevention of hypothermia, and immunization;
- Providing health education for mothers on cleanliness and care for the newborn;
- Providing neonatal care; and
- Early detection and referral of neonatal complications.

UPHCSDP increases access to care, particularly Emergency Obstetric Care (EmOC) and menstrual regulation and the essential service package.[5] However, it has been plagued with challenges in coordination, procurement, and the flow of funds.

Most importantly, although UPHCSDP aims to fill gaps in health care, the infrastructure of the program cannot currently meet the needs of the growing urban population. The challenge is amplified by insufficient free or low-cost services.

NGO Health Service Delivery Project

The NGO Health Service Delivery Project (NHSDP) project, started in December 2012 and continuing until December 2017, is implemented in all 64 urban and rural districts of Bangladesh, with support from the United States Agency for International Development (USAID) and the Department for International Development (DFID) in the United Kingdom.

NHSDP delivers an essential service package of primary health care to an area of approximately 20 million people (13% of the total population) with 26.5 million service encounters. The clinics offer safe deliveries, including ANC, Essential Newborn Care (ENC), PNC, limited curative care, and community-based services for healthy maternal and newborn care. However, there are not enough clinics to serve the urban population.

The project supports the government effort by providing free or affordable quality healthcare services to the poor and the underserved population.

BRAC's Manoshi (MNCH Urban) Program

BRAC's Manoshi Program, funded by the Bill and Melinda Gates Foundation, provides health care in urban slums in seven city corporations in Bangladesh. BRAC health workers, Shastho Karmi (SK), motivate, educate, and prepare expectant mothers for childbirth through behavior-change communication interventions. The program features particular healthcare innovations for urban settings, including recruitment and training of traditional birth attendants (TBAs); clean and private delivery centers in urban slums; an actively managed referral system ensuring the home-to-hospital continuum of care; mobile technology for monitoring and evaluation of women; and maternal/neonatal death reviews. The program also develops community support groups within urban slums to help navigate their internal systems of power.[6]

There were two major innovative approaches included in the BRAC Manoshi program: M-health and the establishment of birthing huts. With the m-Health program, SK health workers can use a mobile-based data collection software to collect vital patient information, viewable by other health providers on a secure web page. SKs can receive physician feedback for their patients on their mobile phones. An automated risk assessment algorithm analyzes each patient's data and categorizes the patient into a risk category based on predefined criteria. The server can create automatic alerts to different tiers of the Manoshi personnel. The m-Health system also generates automatic work schedules for SKs, prioritizing higher risk patients. Supervisors are able to monitor the data sent by SKs in a powerful graphical reporting and monitoring tool.

The birthing hut project was developed in an attempt to increase delivery attendance by specially trained personnel. The Manoshi program has established several delivery centers or birthing huts that provide pregnant women critical access to medical expertise, and allow quick diagnosis of pregnancy or delivery complications and referrals to hospitals when needed.

Table 9–2 Summary: Urban Newborn Health

Opportunities	▶ Urban health policy under development. ▶ Promising models for maternal and newborn health (MNH) service delivery in the urban setting established by non-governmental organizations (NGOs), in partnership with the Government of Bangladesh (GOB). ▶ High density of healthcare providers in urban areas. ▶ Access to media for raising awareness..
Challenges	▶ Wide variation in amenities, housing, and basic services in low-income and slum areas. ▶ Lack of a consistent and coordinated service delivery system. ▶ Highly mobile and rapidly growing urban slum population. ▶ Inequity in access to care among socioeconomic groups. ▶ Unregulated private sector. ▶ High out-of-pocket expenses for health services. ▶ Inadequate data for planning effective programs.
Next Steps	▶ Finalize urban health policy and formulate long-term implementation plan prioritizing maternal and newborn health. ▶ Advocate for healthcare needs of the urban poor and allocation of resources. ▶ Adapt equitable, sustainable, and scalable approaches based on local and international evidence and models. ▶ Raise awareness about health care among the urban poor. ▶ Develop effective and strategic coordination between the Ministry of Health and Family Welfare (MOHFW) and Ministry of Local Government, Rural Development and Cooperation (MOLGRDC). ▶ Regulate the private sector to ensure access by poor and marginalized populations. ▶ Develop insurance schemes to ensure universal access to health care and reduce out-of-pocket spending. ▶ Encourage multi-sector collaboration involving local entities, civil societies, and NGOs. ▶ Strengthen routine monitoring, data use, and accountability to improve services and coverage among the urban poor

The Manoshi program has had promising results, including improvements in maternal and neonatal health indicators and improved equity, mainly due to the creation of an effective referral system.[7] However, the program is not designed as an MNH system for all urban poor. Its focus is exclusively on urban slums. Therefore, it can only be part of a patchwork of urban healthcare options, not a comprehensive health system for all of urban Bangladesh.

Marie Stopes Bangladesh

The Marie Stopes Bangladesh has 148 clinics, mostly in urban areas, which fall into three categories based on available services and service providers: maternity, referral, and Marie Stopes clinics. All provide some reproductive health services, but only the maternity and Marie Stopes clinics perform deliveries.

The program offers subsidies for the urban poor. It also has mobile healthcare services for homeless populations, serving 10 locations in Dhaka and Chittagong with a mobile van. But, as with the NHSDP, the number of clinics is inadequate for the growing urban population.

Private-sector services

The private sector offers a wide range of options for urban Bangladeshis outside of government programs. The range of care ranges from large private hospitals to untrained informal "quacks."[8] These diverse providers share similar characteristics. First, they are unregulated; private providers are not legally compelled to comply with national health regulatory bodies. Second, these services are expensive. As mentioned in Chapter 8, high out-of-pocket fees make the poor particularly vulnerable to possible catastrophic healthcare-related debt as prices continue to rise.[9] Third, these services may not link patients to a continuum of care, which means that patients seeking a referral may not have a clear path to advanced care. Moreover, private services including medically trained professionals tend to be highly specialized, which reduces access to preventative and primary health care.

Summary: Urban newborn health

To continue the progress toward universal health coverage, it is critical to address the health needs of the urban poor over the next decade. To effectively respond to inequitable access and utilization of services, policymakers and program managers must understand the barriers to quality care faced by the urban poor. Despite concerted efforts by NGOs and government partnership programs to fill the gaps, great challenges remain in achieving coverage and in delivering quality services. The approval and operationalization of the urban health policy is an important first step in assuring health services for all of Bangladesh.

The summary table (9–2) shows positive steps already taken toward developing a comprehensive plan to address urban health. Much can be learned from existing programs and the partnerships between NGOs and GOB that drive them. The rapid growth and changing dynamics in urban slums may increase awareness about and demand for health services.

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10. Roadmap for Improving Newborn Survival

Bangladesh has made remarkable progress in reducing the deaths of children under age five over the past two decades. The Bangladesh Demographic and Health Surveys (BDHS) recorded declines in under-five mortality of 65% and in infant mortality of 56% between 1993 and 2014, meeting the target set in Millennium Development Goal (MDG) 4. Over the same time period, neonatal mortality fell more slowly, by about 42%. Consequently, neonatal mortality makes up an increasing share of all child deaths.[1] In 2014, neonatal mortality contributed 61% of all under-five deaths in Bangladesh, up from about 40% in the early 1990s.

The vast majority of newborn deaths occur in the first week of life: 37% on the day of delivery and 50% within the first two days. Complications of premature birth, infections and intrapartum-related complications (including birth asphyxia) contribute about 88% of all newborn deaths in the country. In addition, the rate of stillbirths is persistently high (26 per 1,000 deliveries) in Bangladesh.

Through successful advocacy spearheaded by developing partners and newborn health champions, newborn health in Bangladesh has gained greater political as well programmatic attention. Effective strategic partnerships have recently been built between government, professional associations and development partners to advance the newborn health agenda within maternal and child health programs. These strategic collaborations have built a solid foundation in the country's health service delivery program, as evidenced by the formulation of the National Neonatal Health Strategy, by adopting evidence-based newborn health interventions, by the declaration of the commitment to end preventable child deaths, and by including new interventions, along with the budgets for maternal and newborn health in the Operation Plans of the most recent (2011–2016) Health Population and Nutrition Sector Development Program (HPNSDP).

The Comprehensive Newborn Care Package was launched by the government to standardize newborn care services and improve coverage across the country. A national action plan is being formulated to create a roadmap for improved newborn survival by strengthening and investing in

care during labor, childbirth, and the first day and week of life; by improving the quality of maternal and newborn care; and by reaching out to every woman and newborn using the power of parents, families, and communities.

This situation analysis on newborn health in Bangladesh highlights the current health policy and service delivery systems and the factors affecting the successful roll-out of essential newborn health interventions at scale. The analysis examined important specific objectives of the newborn health policy environment, detailed the extent of coverage of newborn health care services at different tiers of service delivery, and identified gaps and ways to address them to better ensure newborn health and survival.

Bangladesh is in a critical period of rolling out evidence-based newborn health interventions along with routine newborn health care. With new policies being adopted, and a renewed focus on newborn health, the challenge is to make permanent changes

in newborn care practices and in care-seeking by families, and to address the barriers to quality newborn health service delivery. New guidelines, protocols, and training materials are being prepared; necessary medicines and equipment are being produced or procured; logistics and monitoring systems are being strengthened.

All of these achievements demonstrate that Bangladesh is ready to deliver on the commitment to improve newborn health and survival. Top priorities are to train the service providers; to ensure good logistical systems and adequate supplies; to guarantee the availability of the skilled service providers with effective supervision and monitoring systems; and to implement strategies that create a demand for and a use of newborn health services and healthy newborn care practices in the home and community. Social and behavior change communications need focused attention to ensure uptake of desired practices at scale. Innovative approaches in designing and implementing communication and community mobilization strategies will be imperative for improving newborn care practices among families as well as among service providers.

Newborn health interventions are featured prominently in the government's commitment to improve maternal, newborn, and child health and survival. To ensure effective implementation and achievement of targets, leaders from both government and supporting development partners must ensure stakeholder accountability. This can be done through a transparent and open process of national-level monitoring of key benchmarks for "A Promise Renewed."

Health system challenges continue to make public health services unavailable and inaccessible to the poor in both urban and rural Bangladesh. The most important challenges are the shortage of skilled providers at key service delivery points, inadequate quality and lack of standards for services, and high out-of-pocket expenditures. This country has demonstrated its potential before, and can further "bend the curve" to improve newborn survival. Signs are promising. Despite the challenges, Bangladesh is already among the 13 low-income countries that have reduced neonatal mortality rate by more than 25% over the past decade.

Bangladesh has a high level of political commitment to improving maternal and newborn health, which allows effective coordination, collaboration, and cooperation among government, non-governmental, and professional agencies and development partners. Maternal and newborn health will continue to be a top nationwide priority. It remains to be seen whether Bangladesh will deliver more effective newborn health programs within the country's health service systems to improve newborn survival at home, and to be an example abroad.

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