MCHIP Bangladesh End-of-Project Report

November 1, 2009–June 30, 2014

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Jhpiego in collaboration with
Save the Children

The Maternal and Child Health Integrated Program (MCHIP) is the USAID Bureau for Global Health's flagship maternal, neonatal and child health (MNCH) program. MCHIP supports programming in maternal, newborn and child health, immunization, family planning, malaria, nutrition, and HIV/AIDS, and strongly encourages opportunities for integration. Cross-cutting technical areas include water, sanitation, hygiene, urban health and health systems strengthening.

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Country Summary: Bangladesh

Selected Health and Demographic Data for Bangladesh	
Maternal mortality ratio*	194
Neonatal mortality rate**	32
Total fertility rate**	2.4
≥4 ANC visits**	25.5%
Contraceptive prevalence rate**	52.1%
Skilled attendant at birth (2011)**	31.7%
Postnatal care (2 days)**	29.6%
Sources: BMMS 2010*; [2] BDHS 2011**.	

Major Activities by Program

District Health Systems Strengthening:

In Lakhsmipur and Noakhali districts:

- Service providers and supervisors received training on the integrated maternal and newborn health/family planning/nutrition (MNH/FP/N) service package, as well as antenatal care and postnatal care
- District/upazila managers trained on leadership, management, and local human resources planning and task shifting
- Local paramedics trained and deployed to strengthen union-level MNH/FP/N services in critical positions at district-level Union Health and Family Welfare Centers (UH&FWCs)
- 10 FWCs, one UHC, and one district hospital initiated use of the automated Health Management Information System (HMIS) to process service data with key district- and upazila-level managers, and service providers receiving training on HMIS
- Union Health and Family Planning Standing Committees trained on key MNH/FP/N issues and using standard tools to monitor the local MNH/FP/N situation and status; unions held committee meetings bimonthly and allocated budget on MNH/FP/N needs in the community
- Community group members trained on key MNH/FP/N issues and carrying out monthly meetings
- Traditional Birth Attendants trained on healthy MNH practices, minimizing harmful practices, and increasing referrals
- Community volunteers selected and trained on community action group formation and facilitation

Helping Babies Breathe:

- Doctors from the public, private, and nongovernmental organization (NGO) sectors trained on Helping Babies Breathe (HBB) curriculum, increasing their knowledge, skills, and practices of immediate management of birth asphyxia
- Developed nationally adapted and accepted protocol of birth asphyxia management feasible for all levels of skilled birth attendants (SBAs) at facility and community levels; additionally, the standard HBB protocol was endorsed by the Ministry of Health and Family Welfare (MOH&FW) for all SBAs, and the HBB curriculum was included in existing in-service/pre-service curricula
- Newborn care surveillance activities started in selected service delivery points (facility and community) in four districts, and service providers of the government of Bangladesh (GOB), NGOs, and private sector trained on surveillance data recording, reporting, and management
- Key national stakeholders and district-level service providers informed and involved in planning and implementation of HBB scale-up activities
- District advocacy and planning meetings held on HBB scale-up with all district- and upazila-level Director General of Health Services (DGHS) and Director General of Family Planning (DGFP) managers

Healthy Fertility Study:

- Addressed unmet need for contraceptives during the postpartum period in Bangladesh by seeking to determine whether an integrated FP/MNH package would improve key MNH outcomes
- Endline survey examined non-contraceptive health benefits of contraceptive use for women and their children

MAMA:

- Reached subscribers with health information in all districts of Bangladesh to make healthy decisions for themselves and their babies by partnering with five major telecommunication operators
- Maintained a highly complex technical platform that offers messages based on subscriber preference, location, and economic status
- Developed specific message content that was approved by the GOB and available for urban and rural populations and specific dialects in Sylhet and Chittagong
- Created a unique service for husbands and other household members to reinforce messages provided to the pregnant or new mother and encourage family involvement in healthy decision-making around pregnancy, birth, and infant care
- Established and offered a counseling line for subscribers, which serves as a direct channel to communicate with a doctor about health problems
- Completed a formative research phase to build local partnerships, tailor content, develop information delivery channels, and build brand awareness
- Employed a customer acquisition strategy, which includes assisted registrations through outreach partner community agents, a sales force known as "brand promoters," and media campaigns that encourage target groups to self-register or dial a hotline number
- Applied innovative financing models, leveraged corporate social responsibility funding at local and global levels, subsidized the service for 80% of subscribers by charging user fees, and used advertising and sponsorship donations in order to utilize mobile phones to improve health outcomes at national scale

National Newborn Advocacy:

- Developed, printed, and distributed technical briefs on four priority newborn interventions (use of antenatal corticosteroid, Kangaroo Mother Care, management of newborn sepsis, and early application of chlorhexidine to all newborn umbilicus)
- Held a stakeholder consultation meeting with key professionals from national-level professional associations and the MOH&FW as well as conducted divisional meetings in seven divisions to ensure that health and family planning managers were prepped in advance of the district-wide rollouts
- Technically oriented district- and upazila-level managers/service providers on the newborn interventions

White Ribbon Alliance, Bangladesh:

- Organized a workshop on Public Sector Accountability for Maternal Health Commitments to understand the status of public sector accountability around MNH and identify gaps and potential solutions to improve maternal health care in Bangladesh
- Supported national-level Safe Motherhood Day activities in Bangladesh with partners
- Supported local activities for the global 2012 Family Planning Summit
- Conducted a situational assessment of the quality of care in MNH services in 10 facilities and shared results and recommendations with media and national policymakers
- Supported the development of a client charter of rights for MNH in consultation with DGHS, DGFP, and other stakeholders

Program Dates	November 1, 2009–June 30, 2014					
Total Mission Funding to Date by Area	DHSS: $4,295,739 HBB: $2,671,562 WRA: $700,000 MAMA: $3,093,841 HFS: $723,000 Total: $11,484,142					
Geographic Coverage	No. (%) of divisions	7/7	No. of districts	64/64	No. of facilities	N/A
Country and HQ Contacts	Ishtiaq Mannan, Chief of Party; Koki Agarwal, MCHIP Director; Pat Daly, Senior Director, Health and Nutrition; Joseph De Graft-Johnson, Newborn Health Senior Advisor; Angie Brasington, Community Health and Social Change Advisor; Jennifer Shindeldecker, Program Officer; Jaime Mungia, Senior Program Officer					

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Acronyms and Abbreviations

AAB	Aponjon Advisory Board
ANC	Antenatal Care
BCC	Behavior Change Communication
BP	Brand Promoter
BPL	Beximco Pharmaceuticals, Ltd.
BPS	Bangladesh Perinatal Society
BSMMU	Bangabandhu Sheikh Mujib Medical University
BTRC	Bangladesh Telecom Regulatory Commission
CA	Community Agent
CAG	Community Action Group
CBS	Community-Based Services
CDCS	Country Development Cooperative Strategy
CV	Community Volunteer
CHW	Community Health Worker
CM	Community Midwife
CSBA	Community Skilled Birth Attendant
CT	Core Trainer
DGFP	Director General of Family Planning
DGHS	Director General of Health Services
DHSS	District Health System Strengthening
DSO	District Surveillance Officer
ENC	Essential Newborn
FO	Field Officer
FP	Family Planning
FWA	Family Welfare Assistant
FWC	Family Welfare Center
FWV	Family Welfare Visitor
GHI	Global Health Initiative
GOB	Government of Bangladesh
GP	Grameen Phone
HA	Health Assistant
HBB	Helping Babies Breathe
HFS	Healthy Fertility Study
HMIS	Health Management Information System
HPNSDP	Health, Population, Nutrition Sector Development Program
HSS	Health System Strengthening
icddr,b	International Center for Diarrheal Disease Research, Bangladesh
IEC	Information, Education, and Communication
IGS	Institute of Governance Studies

JATRI	Journalism Training and Research Initiative
LAM	Lactational Amenorrhea Method
LMIS	Logistic Management Information System
M&E	Monitoring and Evaluation
MAMA	Mobile Alliance for Maternal Action
MaMoni	Integrated Safe Motherhood, Newborn Care, and Family Planning Project
MCH	Maternal and Child Health
MCHIP	Maternal and Child Health Integrated Program
MCWC	Maternal and Child Welfare Center
MDG	Millennium Development Goal
MNCH	Maternal, Newborn, and Child Health
MNH-FP-N	Maternal and Newborn Health, Family Planning and Nutrition
MOH	Ministry of Health
MOH&FW	Ministry of Health and Family Welfare
MT	Master Trainer
NCSS	Newborn Care Surveillance System
NGO	Nongovernmental Organization
NHSDP	NGO Health Service Delivery Project
NNA	National Newborn Advocacy
PMP	Project Monitoring Plan
PMRS	Project Monitoring and Reporting System
PNC	Postnatal Care
PPFP	Postpartum Family Planning
PSE	Pre-Service Education
QPRM	Quarterly Program/Performance Review Meeting
SBA	Skilled Birth Attendant
SBM-R®	Standards-Based Management and Recognition
SMC	Social Marketing Company
SNL	Saving Newborn Lives
SOP	Standard Operating Procedure
SSFP	Smiling Sun Franchise Program
TBA	Traditional Birth Attendant
TCC	Technical Committee on Content
TOT	Training of Trainers
U5MR	Under-Five Mortality
UHC	Upazila Health Complex
UH&FWC	Union Health and Family Welfare Center
UP	Union Parishad
USAID	United States Agency for International Development
WHO	World Health Organization
WRA,B	White Ribbon Alliance, Bangladesh

Acknowledgments

The Project would like to express its gratitude to the Bangladesh Ministry of Health and Family Welfare (MOH&FW) for its close collaboration and contributions, particularly the Director General of Health Services (DGHS) and Director General of Family Planning. For their support of the Maternal and Child Health Integrated Program's (MCHIP's) Aponjon program, the IEC Committee of the MOH&FW deserves special mention for its support in guiding and approving program content for use at the national level. The Ministry of Post and Telecommunication also deserves special thanks for its support of the Aponjon program as well as the Bangladesh Telecommunication Regulatory Commission (BTRC) for its continual technical assistance. The Aponjon program also acknowledges the backing of the Access to Information office of Bangladesh's Prime Minister's Office.

MCHIP's implementing partners under the District Health System Strengthening (DHSS) program—Dushtha Shasthya Kendra, Development Organization of the Rural Poor, Bangladesh Extension Education Services, Resource Integration Centre, and Research Training and Management International—were responsible for rolling out the program in program districts, bringing their organizational skills, commitment and resources to make the program a success.

The Bangabandhu Sheikh Mujib Medical University and the Integrated Management of Childhood Illness department of the DGHS were key partners in national advocacy and rollout of the Helping Babies Breathe initiative in all 66 districts, and also supported the DHSS program by conducting trainings with UNICEF on emergency triage assessment and treatment for sick newborns for all doctors and paramedics. Partners in Health and Development provided critical training support under DHSS. icddr,b and Eminence Associates for Social Development provided technical support for the collection of program surveys that influenced program decision-making and quality assurance.

The Saving Newborn Lives project of Save the Children provided technical input to introduce emerging newborn interventions, particularly in preparing the technical package on the introduction of newborn interventions.

The Obstetrical and Gynecological Society of Bangladesh was a key partner in the development of national guidelines for postpartum hemorrhage and pre-eclampsia/eclampsia at all levels. Without its leadership and commitment, rapid uptake of interventions and government commitment would not have been possible. The project would also like to thank the Bangladesh Perinatal Society for its technical contribution in finalizing guidelines on newborn interventions and for facilitating the national newborn advocacy activities in all divisions and districts.

MCHIP Aponjon recognizes the contribution of Multimedia Content and Communications, Ltd., as the driving force behind the development of the Aponjon content. MCHIP Aponjon would also like to acknowledge Johnson & Johnson's significant funding and technical assistance for the development of Aponjon content. Aponjon also acknowledges the help and technical assistance from the members of the Technical Committee on Content, who are the national and international experts behind reviewing the Aponjon messages to ensure that they meet international standards.

We are also grateful for the support of other global funders of the Mobile Alliance for Maternal Action program, including the United Nations Foundation, the mHealth Alliance, and BabyCenter LLC. Their support contributed to the success of the Aponjon program. MCHIP would also like to acknowledge the contribution of Beximco Pharmaceuticals, Ltd., which was the first corporate funding partner of the Aponjon program and helped Aponjon build its network. Additionally, MCHIP Aponjon thanks Lal Teer Seeds, Ltd., for in-kind contributions and Rahimafrooz Superstores Ltd., which, as a retail partner, featured the Aponjon Sponsor-a-Mother package in its outlets.

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The Healthy Fertility Study would like to thank partners internationally and in Bangladesh for their support of the study, including the MOH&FW, Bangladesh NGOs Shimantik and the Center for Data Processing and Analysis, the ACCESS-FP Program, and the Johns Hopkins Bloomberg School of Public Health, for their participation in the success and impact of the program.

Executive Summary

The Maternal and Child Health Integrated Program (MCHIP) implemented a complex program for five years in Bangladesh in response to the continued challenges present in the health system. Bangladesh has achieved significant success in reducing child and neonatal mortality rates. The under-five child mortality rate decreased from 144 to 41 per 1,000 and maternal mortality fell from[1] 322 to 194 per 100,000 live births over a nine-year period.[2] However, substantial challenges remain in human resources for health, including a shortage of health care providers. There are only five physicians and two nurses for every 10,000 people in Bangladesh.[3] Successes in health coverage are also not consistent across the country, with certain divisions seeing remarkable improvements in health indicators and quality services while other areas of the country have experienced more modest reductions. The government is committed to achieving Millennium Development Goals (MDGs) 4 and 5 and the international public health community has now focused attention on neonatal survival and is making extensive efforts to decrease newborn mortality.

PROJECT BACKGROUND AND APPROACH

In Bangladesh, the MCHIP initiatives have included White Ribbon Alliance, Bangladesh (WRA,B), National Newborn Advocacy (NNA), Helping Babies Breathe (HBB), District Health Systems Strengthening (DHSS), Mobile Alliance for Maternal Action (MAMA) under the brand name of *Aponjon*, a Healthy Fertility Study (HFS), and Standard Operating Procedures (SOP) for Maternal Health. Additionally, there were two associate awards: MaMoni (2009–2014) and MaMoni Health Systems Strengthening (HSS) (2013–2017). MCHIP works directly with the Ministry of Health and Family Welfare in Bangladesh (MOH&FW) and with other partners, including academia, professional organizations, development partners, civil society, and nongovernmental agencies to successfully implement initiatives.

DISTRICT HEALTH SYSTEM STRENGTHENING PROGRAM

Building upon the strong successes of the MaMoni associate award, which worked through the public health system to deliver maternal and newborn health/family planning/nutrition (MNH/FP/N) in Habiganj and Sylhet using a district model approach, the DHSS program was an interim expansion of the district model to two new districts in advance of the follow-on associate award MaMoni HSS. Under DHSS, working with implementing partners DSK, DORP, BEES, RIC and RTMI, MCHIP rolled out a set of activities that aimed to strengthen the government of Bangladesh's (GOB) district health systems and the delivery of key maternal and newborn care services through the district-, upazila-, union-, and ward-level systems in two underserved districts in Bangladesh, Lakhsmipur, and Noakhali. Key accomplishments under DHSS include the following:

Photo Credit: Development Organization of the Rural Poor.

Demonstration session by the participants of ANC and PNC training

- 2,600 field workers, supervisors, and service providers received training on integrated MNH/FP/N package, antenatal care (ANC) and postnatal care (PNC), increasing the MOH&FW's capacity to deliver an integrated package of services as appropriate for the level of care.

[1] UNICEF 2011[2] BMMS 2010

[2] BMMS 2010

[3] Ahmed SM, Hossain MA, Rajachowdhury AM, and Bhuiya AU. 2011. The health workforce crisis in Bangladesh: Shortage, inappropriate skill-mix and inequitable distribution. *Hum Resour Health* 9:3

- 50 key district- and upazila-level managers were trained on leadership and management and local human resources planning and task shifting.
- 29 paramedics were trained and deployed to strengthen union-level MNH/FP/N services in critical positions in Lakhsmipur and Noakhali districts in Union Health and Family Welfare Centers (UH&FWCs).
- 10 FWCs, one Upazila Health Complex (UHC), and one district hospital are using the automated Health Management Information System (HMIS) to process service data. Key district- and upazila-level managers and service providers received training on HMIS.
- 110 Union Health and Family Planning Standing Committees were trained on key MNH/FP/N issues and use standard tools to monitor the local MNH/FP/N situation and status. Unions hold committee meetings bimonthly after activation and are encouraged to allocate budget and spend money on MNH/FP/N community gaps.
- 2,800 community group members were trained on key MNH/FP/N issues and held monthly meetings.
- 750 traditional birth attendants (TBAs) were trained on conducting healthy MNH practices, minimizing harmful practices, and increasing referrals.
- More than 13,000 community volunteers (CVs) were selected in Noakhali and Lakhsmipur, with 70% trained on community action group (CAG) formation and facilitation. CAGs were formed in 70% of project target areas.

HELPING BABIES BREATHE

HBB is an intervention that provides guidance to health care providers for treating newborns during the first minute of life and assisting babies who are experiencing difficulty breathing. Researchers have demonstrated that HBB can reduce newborn mortality due to asphyxia in controlled field trials. Globally, more than 60 countries have introduced HBB at some level, but relatively few have attempted a national rollout.

Under MCHIP, a group of key stakeholders in Bangladesh implemented HBB at scale to achieve impact at the population level. All 64 districts across Bangladesh received the first round of training and provision of equipment to facilities and private skilled birth attendants (SBAs). The MOH&FW led the effort to launch the HBB initiative and has received support from MCHIP, Save the Children, the Bangabandhu Sheikh Mujib Medical University, professional societies, and other partner organizations. Implementation of the HBB initiative has benefited from a well-funded, centrally driven, uniform approach to the scale-up and the first phase was completed in February 2014.

"We know the correct [resuscitation] technique now and the method works very fast. Referral rate will go down after the training."

– Nurse Fatema Khatun, Joypurhat District

Key accomplishments under HBB include:

- As of February 2014, 23,579 SBAs and 1,881 doctors from the public, private, and non-governmental organization (NGO) sectors have been trained as trainers on HBB curriculum, increasing their knowledge, skills, and practices of immediate management of birth asphyxia.
- The HBB program developed nationally-adapted and accepted protocol of birth asphyxia management feasible for all levels of SBAs at facility and community levels. Additionally, under the field support program, standard HBB protocol was endorsed by the MOH&FW for all SBAs and HBB curriculum was included in the existing in-service and pre-service curriculum.
- Newborn care surveillance activities started in selected service delivery points (facility and community) in four districts and 490 service providers of GOB, NGOs, and the private sector were trained on surveillance data recording, reporting, and management.
- The Smiling Sun Franchise Program (SSFP), Urban Primary Health Care Project, BRAC Health Program and UN agencies, districts, and upazila health and FP managers were informed and involved in planning and implementation of HBB scale-up activities.
- 12 district advocacy and planning meetings on HBB scale-up were held with all district- and upazila-level Director General of Health Services (DGHS) and Director General of Family Planning (DGFP) managers.
- Weekly surveillance of newborn resuscitation cases in two medical college hospitals, two district hospitals, four Maternal and Child Welfare Centers (MCWCs) and eight UHCs in eight districts was established.
- Community-based surveillance in eight different upazilas of four districts, including 16 community SBAs, eight UH&FWCs, two private hospitals, and two NGO facilities was established.

HEALTHY FERTILITY STUDY

A Community Health Worker provides a contraceptive method to a postpartum woman as part of the HFS

The HFS was designed in response to the need for improved integration of FP and MNH services. The study aimed to address unmet need for contraceptives in the first year postpartum and enable contraceptive use through the second year postpartum. It started in 2007 under the previous United States Agency for International Development (USAID) ACCESS FP project and, in December 2010, the study transitioned to MCHIP. Four intervention unions (i.e., the smallest rural administrative unit in Bangladesh) received the integrated FP/MNH package and four control unions received the MNH care package. The HFS enrolled women longitudinally from pregnancy through 36 months postpartum to assess the impact of the intervention package on key outcomes. The 36-month postpartum survey was completed in 2013 according to the protocol; an endline survey was added in 2014 to examine the non-contraceptive health benefits of contraceptive use on women and their children.

HFS findings throughout the 36-month postpartum period are available in a detailed report.[4] Selected findings are as follows:

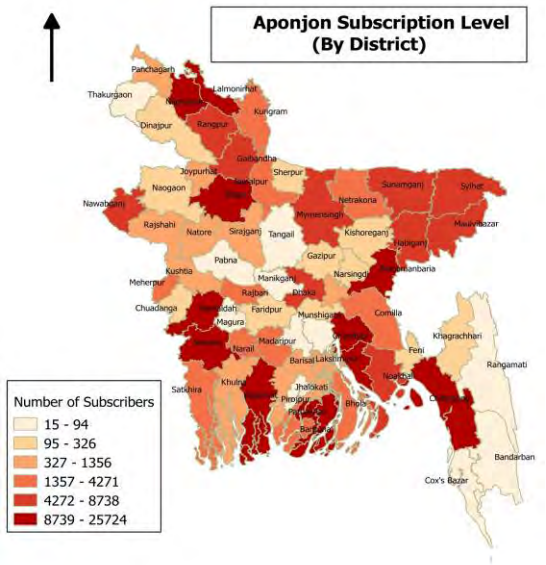
[4] *Healthy Fertility Study: Operations Research to Address Unmet Need for Contraception in the Postpartum Period in Sylhet District, Bangladesh: Final Report.* Jhpiego: Baltimore, MD, USA.

- The HFS model led to more than 20% increased cumulative probability of modern method adoption through 36 months postpartum.
- HFS activities led to a decrease in the incidence of pregnancy within the first 36 months of delivery, which is the period of highest risk for mother and baby.
- HFS activities were associated with a 21% reduction of probability of shorter birth intervals and 20% lower risk of preterm birth.
- Integration of FP services within a larger maternal, newborn, and child health (MNCH) platform is feasible and does not have a negative impact on service coverage or health impact.

MOBILE ALLIANCE FOR MATERNAL ACTION—APONJON

The MAMA initiative was introduced to leverage Bangladesh's existing mobile phone network and address the need to expand access to critical health information, particularly for pregnant women and new mothers. Bangladesh has widespread mobile phone network coverage (97%), with approximately 67% of households owning a mobile phone, for a total number of approximately 116 million subscribers as of February 2014. With 39% of women owning their own phone, there is enormous potential to improve MNCH education using existing mobile phone technology.

In Bangladesh, MAMA, locally branded as *Aponjon*, meaning "someone very close," delivers behavior change communication (BCC) messages to pregnant women and new mothers using mobile phone technology. The USAID-conceived global, public-private initiative is in association with Johnson & Johnson, Inc., Baby Center, mHealth Alliance, and the United Nations Foundation, and is supported by a wide variety of public and private resources and implementing partners. The country-owned, country-led initiative has strong support of the GOB and is in line with the Prime Minister's Digital Bangladesh initiative to increase access to information for all populations. Implementation and coordination in Bangladesh is directed by Dnet, a Bangladeshi social enterprise.



Aponjon began as a pilot in 13 districts in October 2011 and in December 2012, the service was launched nationwide.

With funding from USAID, Aponjon has made significant accomplishments:

- **Reached 627,756 subscribers residing in all 65 districts of Bangladesh.** These pregnant and new mothers now have access to critical health information to make healthy decisions for themselves and their babies.
- **Partnered with six major telecommunication operators**, which together cover 97% of the market.
- **Maintained a highly complex technical platform** that offers messages in both short message service (SMS) and voice format, based on subscriber preferences.
- **Developed message content**, which entailed a process of ethnographic research, review of national guidelines and international literature on MNCH, and an expert review by a panel of Bangladeshi physicians, researchers, and communications professionals. The content was approved by respective committees of the GOB.

- Content is available for urban and rural populations, as well as dialect specific content for Sylhet and Chittagong. Content is delivered twice weekly to subscribers in one of two forms: SMS or a 60-second voice message. Voice messages are a mix of direct messages and mini-skits (i.e., dramas), with local actors playing the roles of a doctor, pregnant woman, mother, and mother-in-law. Examples of dialogues range from a doctor explaining the importance of consuming iron-rich food to reminding the pregnant character that it is time for her medical checkup.
- Created a unique service specifically for husbands and other household members that reinforces messages provided to the pregnant or new mother and encourages family involvement in healthy decision-making around pregnancy, birth, and infant care.

> *"Aponjon has given me some insights that I didn't have before. The information that I shouldn't give honey or oil to the child to eat after birth, or that I should give breast milk within an hour of delivery, and that the delivery had to be done at the hospital were some invaluable information. It helped me gain support from my family, because they usually insist on the traditional ways. And yes, thanks to Aponjon, I also went for four checkups to the health center … that boosted my confidence."*
>
> – Anjona Pal (age 21, three-month-old baby), Aponjon client, Puran Bazar, Chandpur

- **Established and offered a counseling line for subscribers,** which serves as a direct channel to communicate with a doctor about health problems.
- **Completed a formative research phase** to build local partnerships, tailor content, develop information delivery channels, and build brand awareness. Dnet, together with the support of the Johns Hopkins University Global mHealth Initiative, analyzed data to identify: a) the most effective programmatic strategies to guide the future implementation of Aponjon, based on preliminary evidence for the formative research phase; and b) gaps in the existing data monitoring and evaluation system and guide future avenues for implementation. A detailed results report is available.[5]
- **Employed a multi-prong customer acquisition strategy,** which includes assisted registrations, "brand promoters," and media campaigns that encourage target groups to self-register or dial a hotline number.
- **Applied innovative financing models**, leveraged corporate social responsibility funding at local and global levels to subsidize the service for 80% of subscribers by charging nominal user fees and using advertising and sponsorship donations. These achievements have advanced Aponjon toward its longer-term objective to become the first financially sustainable health information service utilizing mobile phones to improve health outcomes at national scale.
- **Used qualitative (phone surveys) and quantitative (field survey) measures to monitor the program.** In addition to project monitoring, an independent impact evaluation of the Aponjon program will be conducted by the International Centre for Diarrheal Disease Research, Bangladesh (icddr,b) under the USAID project Transforming Research into Action (TRAction), to measure the impact of Aponjon's mobile-based health information service on women's behavioral health outcomes both qualitatively and quantitatively.

NATIONAL NEWBORN ADVOCACY (NNA)

Following the endorsement and announcement of the Bangladesh Call for Action toward a Promise Renewed to End Preventable Child Deaths by 2035, the MOH&FW expressed its commitment to end preventable newborn deaths. To this end, the MOH&FW has taken several policy decisions to reduce newborn mortality and morbidity including the adoption of four new high-impact newborn interventions. The Newborn Technical Working Group (NTWG) developed national standards and guidelines for the relevant newborn interventions:

[5] Rajan R et al. 2013. *MAMA 'Aponjon' Formative Research Report.* Johns Hopkins University Global mHealth Initiative: Baltimore, MD, USA.

- Introduction and scale-up of use of antenatal corticosteroid (Dexamethasone) during preterm labor by skilled providers to reduce complications of preterm birth, specifically respiratory distress syndrome (RDS);
- Introduction and national scale-up of Kangaroo Mother Care (KMC) at the facility level, with its continuation to the community to manage preterm, low birth weight newborns;
- Strengthening of union-level facilities for management of newborn sepsis with upward linkages with UHCs; and
- Single early application of 7.1% chlorhexidine digluconate to all newborn umbilicus to prevent infection and newborn sepsis.

Although new to Bangladesh health systems, the National Core Committee (NCC) for Newborn Health of the MOH&FW has already endorsed these newborn interventions to be part of the national program going forward. Supported by a pipeline of funds under the WRA,B project, the MCHIP-funded NNA program, in collaboration with technical partners including the Gates-funded Saving Newborn Lives (SNL) program, rolled out a simple technical orientation for district- and upazila-level MOH&FW service providers on the four evidence-based interventions that address newborn morbidity and mortality.

Key accomplishments for this activity include:

- Four technical briefs on the above priority newborn interventions were developed, printed and distributed in partnership with SNL.
- 2,374 key district- and upazila-level managers/service providers in 47 districts were provided with a technical update and orientation on the newborn interventions. The remaining districts will be reached under MaMoni HSS.
- A stakeholder consultation meeting was held with 61 key professionals from Bangladesh Perinatal Society (BPS), Obstetrical and Gynecological Society of Bangladesh, Bangladesh Pediatric Association, Bangladesh Neonatal Forum, DGHS, DGFP, and development partners at the national level. Seven divisional meeting were held in Dhaka, Chittagong, Rajshahi, Khulna, Rangpur, Sylhet, and Barisal divisions to ensure that divisional- and district-level health and FP managers were prepped on the technical orientation in advance of the district-wide rollouts.

WHITE RIBBON ALLIANCE, BANGLADESH

The WRA,B is an international coalition of individuals and organizations formed to promote increased public awareness of the need to make pregnancy and childbirth safe for all women and newborns in developing as well as developed countries. MCHIP provided support to the WRA,B for advocacy, communications, media, and capacity-building around safe motherhood from November 2010–March 2013.

Key accomplishments include the following:

- With support from the Journalism Training and Research Initiative (JATRI) and Institute of Governance Studies (IGS), organized a workshop on Public Sector Accountability for Maternal Health Commitments in April 2012, to: understand the status of accountability of the public sector regarding maternal health, identify gaps, identify possible solutions and potential partners, and develop a roadmap for public sector accountability to ensure maternal health in Bangladesh.
- As part of the advocacy mandate, supported annual, national-level Safe Motherhood Day activities with stakeholders including the Prime Minister and key staff from the MOH&FW.
- Supported local Bangladeshi activities for the global Family Planning Summit in 2012, including the national coordinator of the WRA,B serving as the newscaster of the Citizen's Voice news channel on the Summit and participating in Citizen's Roundtable sessions at the

Summit. Additionally, collaborated with the Health Ministry and DFID in preparations for the Health Minister's participation at the Summit as well as organizing Dhaka meetings around the Summit.

- Conducted a rapid, situational assessment of the quality of care in MNH services in 10 facilities with results and recommendations shared with media and national policymakers.
- Supported the development of a client charter of rights for MNH in consultation with DGHS, DGFP, and other stakeholders.

Introduction

Currently, major concerns for the majority of health sector programs in Bangladesh are coverage and quality of care. As both child and maternal mortality improves, strengthening systems at all levels of service delivery points and bringing essential services closer to the community are imperative. In Bangladesh's resource-constrained environment, the overall goal is to reduce inefficiencies and ensure optimal utilization of existing investments that have already been made and harnessing potential investment.

The Ministry of Health and Family Welfare (MOH&FW) recently launched its third sector program, the Health, Population, Nutrition Sector Development Program (HPNSDP), for the period of 2011–2016. The key strategic approach has been defined as strengthening upazila-level health systems in district settings as the means to increasing overall program performance and coverage. The United States Agency for International Development's (USAID's) Country Development Cooperative Strategy (CDCS) and the Bangladeshi strategy for the Global Health Initiative (GHI) also outline the same approach. Bangladesh is on track to achieving its Millennium Development Goal (MDG) 4 target of reducing the under-five mortality rate (U5MR) by 2015. However, recent data show that newborn mortality is almost 60% of the under-five deaths due to birth asphyxia, infection, and prematurity. Unless deaths due to these causes are addressed, Bangladesh's goal of achieving MDG 4 and beyond will be in jeopardy.

A high-level delegation from Bangladesh participated in the initiative *A Promise Renewed* in Washington, DC, in June 2012, and committed to reduce U5MR to 20 per 1,000 live births by 2035, along with 80 other countries. It has become clearer that implementing evidence-based interventions at scale and reaching the poorest and most marginalized communities are pivotal to realization of this goal. A follow-up meeting on July 23, 2013, launched the Bangladesh Call for Action to end preventable child deaths by 2035.

DISTRICT HEALTH SYSTEMS STRENGTHENING OBJECTIVES AND APPROACH—APRIL 1, 2012–JUNE 30, 2014

The District Health Systems Strengthening (DHSS) builds upon experiences from the USAID-funded Integrated Safe Motherhood, Newborn Care and Family Planning Project (MaMoni) that was implemented in two alternate districts in Bangladesh (Sylhet and Habiganj) from 2009–2014. Key features that were carried over from the MaMoni program and based on lessons learned and identified gaps include:

- Partner nongovernmental organizations (NGOs) play a supportive, catalytic, and facilitative role to enhance the capacity of the MOH&FW, which is the key service provider.
- Providers deliver integrated care packages and implementation is district wide.
- Systems promote community engagement and capacity strengthening to ensure sustainability and joint accountability for improved health.

The focus of the DHSS is to support adaptations and the strengthening of the health systems supported by the MOH&FW and Ministry of Local Government and Rural Development and Cooperative systems. Key objectives of the DHSS program are:

- Improve the national policy environment so that national policy and strategic plans support effective implementation of evidence-based maternal and newborn health, family planning and nutrition (MNH/FP/N) interventions
- Strengthen essential components of health delivery systems that support MNH/FP/N services at district, upazila, union, and ward levels

- Increase access to critical and lifesaving MNH/FP/N interventions at optimal quality-of-care at community-based service delivery points and from selected existing, strategically located facilities
- Institute systems that engage community and local government entities at the upazila, union, and ward levels to improve demand and supply for MNH/FP/N care

HELPING BABIES BREATHE OBJECTIVES AND APPROACH—APRIL 1, 2011–JUNE 30, 2014

In June 2010, the Helping Babies Breathe (HBB) initiative was formally launched in Washington, DC. Bangladesh was selected as one of five countries to conduct an HBB pilot study with USAID funding. Findings from the facility and community levels were disseminated broadly in Bangladesh with key stakeholders, including the MOH&FW. These government agencies were encouraged to review the findings of the initial study. Subsequently, the Directorates of Health and Family Planning under the MOH&FW initiated scale-up of the HBB interventions nationwide with a broad group of partners.

HBB, which targets only skilled birth attendants, currently holds limited potential to reduce newborn mortality in Bangladesh, given that only 32% of deliveries are attended by skilled birth attendants (SBAs) and only one-third of attended deliveries take place in MOH&FW facilities. However, the government fully understands the potential of HBB and has incorporated it into the curriculum for all SBAs, both at medical schools and nursing colleges. The rollout of the HBB program in Bangladesh included a standardized approach to introducing HBB in new districts that centered on:

- Training senior delivery attendants from all major health facilities to be HBB trainers;
- Conducting a one-day advocacy and micro-planning meeting at the district level; and
- Conducting in-service HBB training of all SBAs in the district.

The field-level implementation of HBB in Bangladesh focused on conducting in-service training and providing resuscitation equipment. HBB stakeholders have begun to address issues around supervision, mentoring, and monitoring HBB-related performance through the routine MOH&FW health system. However, most providers manage few actual cases of asphyxia and do not receive effective worksite supervision or mentoring in their practice of HBB. The HBB program sought to address this challenge by providing follow-up trainings during routine meetings, and supporting regular worksite skill maintenance practice on the HBB manikins. An HBB process documentation as well as program evaluation took place in 2013 and results were shared with stakeholders and donors for incorporation in future HBB activities and next stage rollout under MaMoni health system strengthening (HSS).

Objectives of the HBB program under the Maternal and Child Health Integrated Program (MCHIP) included the following:

- Improve the capacity of SBAs to resuscitate newborns and manage birth asphyxia in the facility and in the community thus reducing neonatal mortality and future disabilities resulting from birth asphyxia.
- Develop nationally adapted and accepted protocols of birth asphyxia management feasible for all levels of SBAs both at facility and community levels
- Increase knowledge, skills, and practices of immediate management of birth asphyxia at all levels of SBAs both at facility and community levels
- Strengthen monitoring systems of safe delivery practices including birth asphyxia management
- Increase availability of equipment for newborn resuscitation at all levels and increase trainings on equipment use at the upazila level

HEALTHY FERTILITY STUDY OBJECTIVES AND APPROACH- DECEMBER 1, 2010- JUNE 30, 2014

The research group "Projahnmo" conducted a cluster-randomized, community-based trial from 2002 to 2006 in Sylhet District of rural, northeastern Bangladesh. This trial developed and tested a community-based MNH program delivered through home visits by locally recruited and trained female community health workers (CHWs) and complemented by community mobilization activities. This home care model led to a 34% reduction in neonatal mortality during the last six months of the intervention; however, at the same time, key FP indicators were poor. In comparison to national rates, Sylhet division had higher indicators of total fertility (3.7 in Sylhet compared to 2.7 nationally); birth-to-birth intervals < 24 months (26.1% compared to 15.1%); and unmet need for contraception (26% compared to 17.1% nationally). The HFS aimed to design and test an integrated model of postpartum family planning (PPFP) within a community-based MNH care program to address the unmet need for contraception in the postpartum period in Sylhet division. The objectives of this study were to:

- Develop and test an integrated FP/MNH service delivery approach in the Bangladesh setting
- Assess the strengths and limitations of integrating FP with an ongoing community-based MNH care program
- Assess the impact of the intervention package on exposure to key messages, knowledge of contraceptive methods and the benefits of healthy fertility practices, contraceptive prevalence, and method mix at different points during the extended postpartum period
- Assess the impact of the intervention on pregnancy spacing outcomes

The HFS followed 2,247 enrolled women in four intervention unions and 2,257 women in four control unions in Sylhet District longitudinally from pregnancy to three years after delivery to capture the dynamics of contraceptive use behavior. All eligible mothers were interviewed at 3, 6, 12, 18, 24, 30, and 36 months. Four unions received the intervention, an integrated FP/MNH package, and four unions received the MNH care promotion package.

The data collection from the study cohort with the 36-month postpartum survey was completed in January 2013. An endline survey was added in the sixth program year of MCHIP to examine the non-contraceptive health benefits of contraception promotion and longer birth and pregnancy intervals. The study team examined whether there was any beneficial impact on women's health and quality of life; positive parenting in child care; and child development, including cognitive, social, and motor functioning.

MOBILE ALLIANCE FOR MATERNAL ACTION OBJECTIVES AND APPROACH- DECEMBER 9, 2011 – AUGUST 31, 2014

Dnet, a Bangladeshi social enterprise and NGO, served as the secretariat for the implementation of Aponjon, which was the local brand name of the global MAMA project. MCHIP provided management and technical support to Dnet through a sub-award for MAMA implementation. Dnet's other roles included overseeing the health information service design and deployment in the pilot and expansion phases and advancing the business model to fund and sustain the initiative. Under the stewardship of the Government of Bangladesh (GOB), Dnet worked with a broad coalition of NGOs, for-profit entities, technology companies, media organizations, and corporate sponsors.

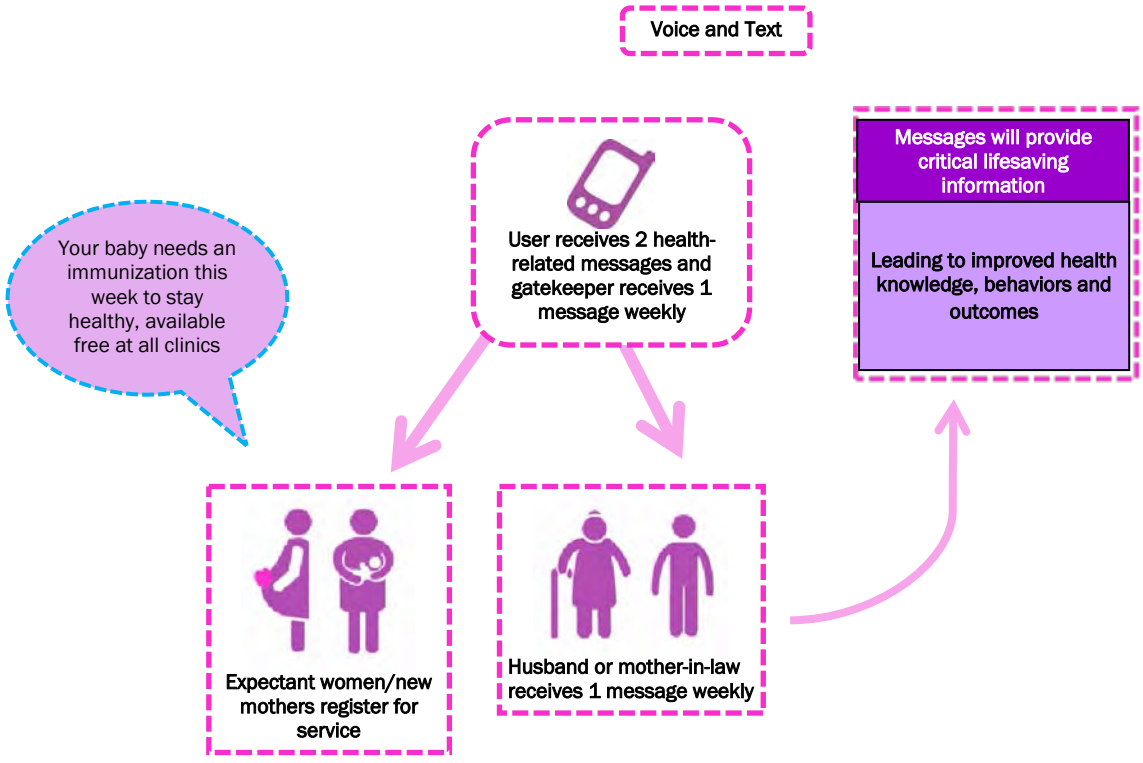
The goal is to contribute to a reduction in maternal and neonatal mortality in the long run by improving health-seeking and preventive behaviors of pregnant women, new mothers, and their families. The objectives under MCHIP are to:

- Achieve improvements in health knowledge and practice as well as health-seeking behavior of targeted women and gatekeepers:
  - Reach approximately 500,000 pregnant women and new mothers, and 100,000 gatekeepers by June 2014
  - Achieve improvements in health knowledge and practice as well as health-seeking behavior of targeted women and gatekeepers
- Ensure quality and effectiveness of services
- Build and manage partnerships
- Test financing/business model for sustainability
- Share learning from the project

The characteristics of the Aponjon messaging system are:

- A pregnant mother and her family member receive 102 messages during pregnancy and 156 messages during the first year of motherhood, covering maternal health, immunization, and FP as well as nutrition (including breastfeeding) and safe delivery and hygiene.
- Aponjon targets pregnant women and new mothers, particularly low-income women with limited access to health information who can access a mobile phone.
- Extending the service to family members supports healthy decision-making and involves gatekeepers in decision-making.
- Aponjon offers subscribers choices on message format and timing. There is a dedicated customer service center and subscribers can have live chats with a medical doctor.
- Subscribers are added through outreach partner community agents (BRAC, Social Marketing Company [SMC], MaMoni, NGO Health Service Delivery Project [NHSDP] and Info lady).

Figure 1. Aponjon Service at a Glance



In 2011, Aponjon started its pilot operation in 13 districts and conducted the national launch in 2012. This was done after formative research in selected locations illuminated the interests, attributes, and needs of the target beneficiaries.

NATIONAL NEWBORN ADVOCACY OBJECTIVES AND APPROACH—OCTOBER 1, 2013–JUNE 30, 2014

The MCHIP team has been successfully working with the MOH&FW and other stakeholders in implementing several national-level programs. The HBB initiative has already been implemented in 45 districts and Standard Operating Procedures (SOP) for MNH and revision of the Maternal Health Strategies 2001 are in their final stages. This work has been led by the MOH&FW (Director General of Health Services [DGHS] and Director General of Family Planning [DGFP]) with technical, management, and financial support from USAID through MCHIP. MCHIP has engaged professional associations and other major stakeholders like UNICEF and the World Health Organization (WHO) in supporting these programs and has built capacity of national institutions like Bangabandhu Sheikh Mujib Medical University (BSMMU).

Under the *Bangladesh Child Survival Call for Action: A Promise Renewed* initiative, MCHIP collaborated with the GOB and other key MNCH actors to reduce newborn mortality and morbidity. Sensitization meetings on the four priority newborn health interventions were held with all managers and professionals in all seven divisions and 64 districts across Bangladesh to address behavior change for these interventions, as well as to educate service providers and key stakeholders on recent technical developments for the interventions.

A central element under the National Newborn Advocacy (NNA) initiative was a series of sensitization meetings, which were led by MCHIP and Bangladesh Perinatal Society (BPS), along with a coalition of partners, including SNL and the MOH&FW. These meetings fostered open discussions and were facilitated by teams drawn from the relevant technical experts and partner representatives from professional organizations and the government. MCHIP's objective for the NNA activity is:

- To improve the national policy environment so that national policy and strategic plans support effective implementation of evidence-based MNH/FP/N interventions.

WHITE RIBBON ALLIANCE OBJECTIVES AND APPROACH—NOVEMBER 1, 2009–MARCH 31, 2013

Under MCHIP, the White Ribbon Alliance, Bangladesh (WRA,B) program had the following objectives, which echoed the international efforts of the global WRA:

- Raise awareness of the magnitude of maternal and neonatal mortality among policymakers and community leaders to influence them into action.
- Target advocacy efforts at those with decision-making authority in the access, utilization, and quality of MNH care services, with a focus on specific "asks."
- Identify, mentor, and encourage champions for safe motherhood, who will speak out in support of safe motherhood and reach audiences not usually accessible to WRA,B.
- Identify, document, and share proven local solutions for scale-up and replication.
- Disseminate lessons learned about the myriad programmatic interventions and approaches known to be effective to reduce maternal mortality, especially those related to community and participatory approaches.
- Facilitate public and private sector accountability to the fulfillment of commitments and investments.
- Strengthen the organizational capacity of the WRA,B.

By celebrating international days, including International Women's Day, National Safe Motherhood Day, and International Breastfeeding Week, WRA,B built awareness of maternal and child health (MCH) issues in Bangladesh. These awareness campaigns were organized in collaboration with the MOH&FW, other health stakeholders, and Bangladeshi media and journalists. WRA,B trained print and electronic media journalists, who predominantly covered health issues, to inform them of key maternal and child health issues in Bangladesh.

Additionally, WRA,B used advocacy with national- and district-level decision-makers to change policies and practice for women's and children's health issues. After carrying out the research study "Allocation of Funds for Maternal Health: A Historical Analysis," WRA,B met with key MOH&FW and Planning & Development Ministry officials, donors, and NGO staff members to present the findings. Overall, the study revealed that maternal health receives less priority in terms of public allocation and provision of services. In the 2009–10 fiscal years, the allocation for maternal health was only 2.5% of the MOH&FW's annual budget, 0.15% of the government's annual budget, and equivalent to 0.03% of the GDP, which is $116 billion as of 2012.

WRA,B also carried out an orientation for leaders of influence in Sylhet with support from the Imam Training Academy, Smiling Sun Franchise Program (SSFP), and MaMoni. Fifty-one religious leaders participated in the orientation, learning about the maternal health situation in Bangladesh, and how to improve the maternal health status in their communities. After identifying gaps and problems in their communities, the religious leaders developed action plans to address those issues at a community level.

An ongoing activity of WRA,B is to identify, mentor, and encourage champions for safe motherhood, who will speak out in support of safe motherhood for those whose voices have been silenced by maternal death. WRA,B used their placement and position to broadly disseminate in-country materials, including Advocacy Toolkits, the Birth Atlas, Case Studies of Adolescent Mothers Dying, and the *BMMS 2010 Report*. Under MCHIP, WRA,B sought to generate public sector awareness for increased accountability of lawmakers and policymakers by organizing an investigative talk show with policymakers, senior program managers, and lawmakers on the quality of emergency obstetric care.

Major Accomplishments

Although the MCHIP program began in Bangladesh through the MaMoni associate award (2009–2014), the USAID Mission asked MCHIP to carry out additional mandates through field support for specific activities. MaMoni and the majority of field support activities were closely integrated to ensure that the programs compounded the work completed under the others.

DHSS (APRIL 1, 2012–JUNE 30, 2014)

The DHSS program was an interim expansion of the district model begun under MaMoni to two new districts (Lakhsmipur and Noahkhali) in advance of the new associate award, MaMoni HSS. Similarly to MaMoni, DHSS extended the community approach to also work through and support district-level public health systems. The program worked with four local implementing partners to roll out program activities in conjunction with the MOH&FW DGHS and DGFP.

DHSS sought to improve the capacity of managers, supervisors, service providers, and field workers to provide better MNH/FP/N services.

Photo Credit: Dustha Shahtya Kendra

Demonstration of a newborn drying technique during a training session at Sadar, Lakshmipur.

Filling a gap that was acknowledged under MaMoni, DHSS worked to ensure that district- and upazila-level health managers were provided skills to enable them to have better decision-making regarding MNH/FP/N issues at their facilities. A management and leadership curriculum was developed for district- and upazila-level managers and 22 district and upazila managers in both districts received the training that was developed.

Additionally, a job description-based training module was developed to train project staff from different levels and positions about their specific role. More than 200 district- and upazila-level staff were oriented on their job descriptions so that their day-to-day responsibilities and the associated tools and guidance were clear.

Using the basic MNH/FP/N module that was developed under MaMoni, DHSS strengthened the knowledge of frontline Ministry of Health (MOH) field workers on MNH/FP/N issues through a competency-based training. A total of 243 union-level service providers also received a competency-based training on quality antenatal care (ANC) and postnatal care (PNC) services. In addition, 578 first-line MOH&FW supervisors received training on supportive supervision. In coordination with MaMoni, DHSS supported a quality assurance (QA) system for service delivery through introduction of the Standards-Based Management and Recognition (SBM-R) approach. DHSS contributed to the development and refinement of operational standards for eight clinical and management areas. Five health facilities in Habiganj conducted baseline assessments to identify gaps and corrective actions.

District Advocacy and Planning Meeting in Noakhali District

Similar to MaMoni, the DHSS program worked to deepen community linkages and interface with the health system.

Under DHSS, one community volunteer (CV) was

selected per every 250 people, with 19,399 CVs selected in Noakhali and Lakhipur districts; of this number, 15,589 are female. CVs were selected based on her or his interest in voluntary social work, enthusiasm, social skills, and willingness to devote approximately eight hours per month to their community. These selected CVs were provided with five-day training orientations (in two steps), covering basic MNH/FP/N issues, facilitation of a Community Action Group (CAG), and their expected roles and participation in community microplanning meetings. Each CV will form and facilitate a CAG for his or her respective catchment population and hold monthly CAG meetings, following a simple process cycle of problem identification, action planning for local solutions, and evaluation. Seventy percent of CAGs were formed in planned intervention areas under DHSS and will continue under the MaMoni HSS associate award and beyond, to support health activities within communities in Noakhali and Lakhsmipur.

High-volume TBA orientation at UHC Sadar, Lakshmipur

Through the training, each CV built their capacity and knowledge on how to identify local MNH/FP/N problems and develop potential solutions. CVs also were trained on how to provide basic MNH/FP indicators to the MOH&FW mainstream Health Management Information System (HMIS). All 19,399 CVs received the first level of orientation and 16,765 CVs received the second level of training. Training will be continued under the MaMoni HSS program.

Additionally, DHSS initiated daylong orientation packages for high-volume Traditional Birth Attendants (TBAs) in Noakhali and Lakshmipur districts. TBAs were selected through a systematic process based on pre-set criteria. On average, five TBAs were selected from each union. In all, 716 TBAs received training and were refreshed on their knowledge of preparation for clean delivery, essential care for mothers and newborns during and after delivery, and identification of high-risk mothers and newborns, and risks related to harmful practices and referral.

Moreover, under DHSS, monitoring support was provided to 1,626 community health care providers at 1,931 community clinics in 21 districts in three low-performing divisions (Sylhet, Chittagong, and Barisal). A total of 2,775 community group members from 166 community groups in Lakhsmipur were trained on their roles and responsibilities.

One of the key objectives of DHSS was to build the local governance structure—the Union Parishad's (UP) interface with health systems—by promoting an enabling environment to strengthen the district-level health systems and to identify and reduce barriers for accessing health services through increased numbers of communities engaged in local health improvement through various groups and networks.

Upazila-level advocacy meetings were organized in seven upazilas (six in Noakhali and one in Lakshmipur district), where 488 participants (443 in Noakhali and 45 in Lakshmipur) were in attendance. Presentations about the project included a MCH situation update, a project overview, and expected results. Strategies and goals were also shared during the meetings and followed by open discussions.

Photo Credit: Murad Ahamed Khan, DM-M&E and Documentation, SCI

Message board installed in front of Dhan Siri UP in Kabirhat Upazila, Noakhali

In addition, union advocacy meetings were organized to create an enabling environment at the union level and to inform the UP members and local decision-making leaders about MNH/FP/N issues. A total of 86 union-level advocacy meetings (56 in Lakshmipur and 30 in Noakhali) with 3,138 participants (2,050 in Lakshmipur and 1,088 in Noakhali) were organized under DHSS.

UP orientation workshops were organized to develop a unified vision for UP members, standing committee members and local elites on MNH/FP/N issues, as well as to create motivation for improving their local MNH situation. Through 96 orientation workshops, DHSS trained 2,545 UP members from 146 UPs on roles and responsibilities of the UP for MNCH. Additionally, DHSS supported the activation of 110 Union Health and Family Planning Standing Committees, with committees now holding regular bimonthly meetings.

The DHSS program also promoted awareness of critical health and FP issues through film campaigns and strategically located message board placements. Videos with specific health messages were shown through a campaign in media dark areas of Lakhsmipur and Noakhali, with more than 253 showings in total. Additionally, 343 large message boards were installed in all unions of Noakhali and Lakhipur to develop mass awareness on MNH/FP/N issues. Locations were systematically selected and messaging focused on ANC and PNC, FP, and danger signs during pregnancy. Additional awareness campaigns will continue under MaMoni HSS.

HBB (APRIL 1, 2011–JUNE 30, 2014)

The HBB program sought to improve the capacity of SBAs to resuscitate newborns and manage birth asphyxia at both the facility and community levels—ultimately to reduce neonatal mortality and future disability resulting from birth asphyxia. The HBB project in Bangladesh exemplified how a rapid scaling-up of a public health intervention was possible with political commitment, systemic cascade approach of the trainings, technical capacity of the implementing partners, successful partnerships, and availability of funds from a diverse set of donors. As of April 2014, 23,579 SBAs and 1,881 doctors from the public, private, and NGO sectors were trained on the HBB curriculum, increasing their knowledge, skills, and practices of immediate management of birth asphyxia. In total, 25,540 health professionals across Bangladesh were trained in HBB.

HBB training in Sreepur, Gazipur District

The HBB program **developed a nationally adapted protocol of birth asphyxia management, based on the global HBB learning materials developed by the American Academy of Pediatrics, which was accepted at facility and community levels and feasible for all SBAs to use.** Additionally, under the field support program, standard HBB protocol was endorsed by the MOH&FW for all SBAs and HBB curriculum was included in all existing in-service and pre-service curriculum.

The HBB program supported the development of HBB materials in advance of trainings as well as spreading awareness on the importance of addressing birth asphyxia. The program adapted and reprinted relevant information, education, and communication (IEC) materials,

translated and printed HBB training workbooks, laminated HBB workplan posters and training materials, including knowledge and skill test questions, and HBB training CDs.

District training for HBB included Training of Trainers (TOT), which focused on physicians, both generalists and specialists, and they in turn trained SBAs. Thus, **SBAs at facility and community levels increased their knowledge, skills, and practices of immediate management of birth asphyxia.** Within six to eight weeks, all district trainings were held in each upazila and also within the district hospital, medical colleges, and any specialized hospitals, and included participants from the Maternal and Child Welfare Center (MCWC) and NGO SBAs, and doctors.

Management Support and Monitoring for Trainings: The MOH&FW selected BSMMU to be the administrative organization to provide overall support to the rollout of the HBB program. One BSMMU field officer worked closely with the district and upazila health and FP officials to support the organization of the HBB training, including proper supply of training materials and resuscitation equipment. Additionally, BSMMU field officers (FOs) provided assistance for planning, organizing, and completion of the trainings in each district.

Table 1. Summary of HBB Training Participants from 2011 to 2014

TOTAL NUMBER OF BATCHES FOR DOCTORS	TOTAL NUMBER OF PARTICIPANTS (DOCTORS)	# OF BATCHES FOR SBAS	SBA PARTICIPANTS					
			Doctors	Paramedics/ Private Nurses/CSBAs	FWVs	CSBAs		Nurses
						FWAs	HAs	
102	1,881	1,300	3,367	1,377	4,717	4,443	2,322	7,353

Additionally, the HBB program held **refresher trainings on newborn resuscitation during SBA routine monthly meetings.** To maintain proficiency and promote skills retention on birth asphyxia management, trained staff received refresher trainings and resuscitation practice on a NeoNatalie anatomic model in all facilities up to the upazila level. Periodically, national-level HBB staff visited district and upazila facilities to monitor the occurrence of the refresher trainings and support district staff, including reviewing refresher training and logistic and management issues.

The HBB program also strengthened systems to monitor safe delivery practices, including management of birth asphyxia. Newborn care surveillance activities were started in selected service delivery points (both at the facility and community levels) in four districts. A total of 490 service providers from GOB, NGO, and private sector facilities were trained on surveillance data recording, reporting, and management.

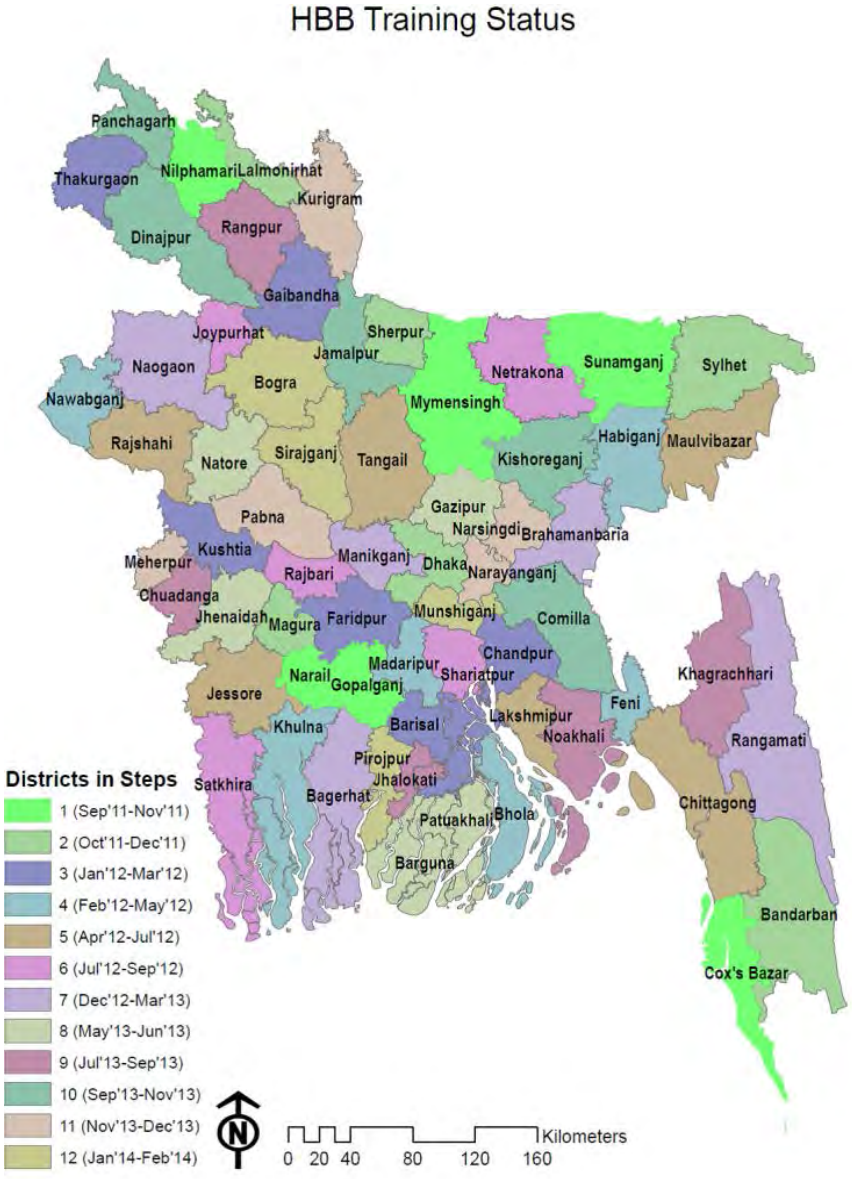
Facility-based surveillance of newborn resuscitation cases included weekly surveillance of newborn resuscitation cases in 48 sites—from college hospitals to health complexes—including both private and public facilities. District Surveillance Officers (DSOs) under the HBB project conducted weekly active surveillance and collected data on all deliveries, still births, and live births of those designated facilities. Community-based surveillance of newborn resuscitation cases was established in 16 different upazilas in eight districts by 32 community SBAs (CSBAs), 16 Family Welfare Centers (FWCs), and two NGO facilities that are a part of the surveillance network. One DSO will support two districts.

MCHIP, along with UNICEF, continued to work with DGHS and DGFP to develop and execute a comprehensive HMIS to monitor safe delivery practices, including birth asphyxia management, in all facilities and in the community by the CSBA and family welfare visitors

(FWVs). MCHIP played a strong advocacy role in this effort. HBB worked closely with MOH&FW HMIS officials to incorporate and develop new reporting formats to track SBA activities. Monitoring checklists used to track the refresher training of SBAs by local-level trainers were developed along with a process to review the status of the checklists by upazila and district health managers.

Under the HBB program, essential newborn resuscitation equipment was made available across Bangladesh. The HBB program equipped all the public health facilities where deliveries are conducted with newborn resuscitation equipment and also provided equipment to CSBAs and FWVs who conduct home deliveries. NeoNatalies were provided to all facilities up to the Upazila Health Complex (UHC) for refresher training. A total of 4,491 facilities were equipped with NeoNatalies. In addition, 13,076 bag-valve-masks with suction component were distributed to 6,729 CSBAs and 3,747 Union Health and Family Welfare Center (UH&FWCs). Resuscitators were mounted on the walls of 5,161 labor rooms and operating theaters. Figure 2 illustrates the rollout schedule of HBB during the scale-up process.

Figure 2. Rollout Schedule of HBB Training



HBB External Evaluation and HBB Process Documentation: An external evaluation of the HBB program was conducted by the International Center for Diarrheal Disease Research, Bangladesh (icddr,b) to assess the program's effectiveness. Additionally, MCHIP hired an independent consultant who worked with MCHIP headquarters staff members to document the HBB scale-up process and to suggest recommendations for next steps after the initial rollout.

The external evaluation did not show that there was any difference in the NMR between intervention and control areas. Both of these reports identified the need to continue to nurture and strengthen HBB programming with emphasis on strengthening post training skills retention, monitoring and supportive supervision past the initial scale-up phase to achieve the desired impact of a reduction in neonatal asphyxia deaths across Bangladesh.

HEALTHY FERTILITY STUDY (DECEMBER 1, 2011–JUNE 30, 2014)

HFS key findings through the 36-month postpartum period are listed below.

Feasibility and Acceptability: Study findings suggest that the integration of FP services into a community-based MNH service delivery platform is feasible and effective without inadvertently affecting the coverage of MNH interventions. Data on the reported coverage of critical MNH home visits and additional postpartum visits in the intervention arm were used to ascertain whether HFS activities were feasible at high coverage rates, as well as to determine whether they had a negative impact on MNH service provision. Findings suggest that overall coverage remained high in both intervention and control areas, exceeding 70% for the majority of visits. Finally, coverage for the additional HFS postpartum visits at months 2 or 3 and 4 or 5 was 63% and 73%, respectively.

Beyond coverage of home visits, rates of attendance at community mobilization meetings were used as a measure of HFS feasibility and acceptability. Community midwives (CMs) recruited Lactational Amenorrhea Method (LAM) Ambassadors and worked collaboratively with them to deliver behavior change communication (BCC) through community meetings and one-on-one engagement with key stakeholders in the intervention area. During follow-up visits, HFS participants were asked about their attendance at community mobilization meetings. By 12 months postpartum, 87% of study participants had attended at least one community mobilization meeting.

Contraceptive Use: HFS activities were associated with a significant increase in the probability of contraceptive adoption 36 months postpartum in the intervention clusters compared to control clusters. This is an important finding, given that this is the time period when women are at a higher risk for a subsequent pregnancy. Differentials in modern contraceptive use were observed according to key maternal characteristics, including participant's age, education, parity, and household socioeconomic status. Among intervention area participants, modern contraceptive use was highest among women 25–29 years of age; 64% of users had received one or more years of education; 47% of users reported having four or more children; and perhaps, most notably, current modern contraceptive use was highest among individuals in the lowest wealth quintile.

Contraceptive Methods: Among contraceptive methods, LAM was an important method of contraception at 3 and 6 months postpartum in the intervention area. However, at 12, 18, 24, 30, and 36 months postpartum, pills were the preferred method for users in both study arms, followed by injectables and condoms. Sterilization acceptance increased over time.

Contraceptive Source: At 36 months postpartum, HFS CHWs were the primary source for condoms (88%) and pills (71%) in the intervention area. In the comparison area, pharmacies or shops were the main source for condoms (87%) and pills (57%), followed by government health facilities. In the intervention area, the March 2011 introduction of community-based provision of injectables through HFS CHWs corresponded to increases in injection use from 12 months (8%) to 36 months (10%) postpartum. HFS CHWs did not provide the first dose of the injectable, but they did provide follow-up doses. User preferences on the source for injectables suggest that HFS CHWs provided injectables to 65% women in the intervention arm. By comparison, 75% of control area participants obtained injectables from government health facilities, highlighting the willingness of individuals to utilize functioning public sector services.

Non-Use of Contraceptives: Among non-users of contraceptives, the leading reasons cited in the intervention area were that the husband was abroad (49%), followed by a desire to become pregnant (39%), and husband's disapproval (37%). In the comparison area, the husband's disapproval was the leading reason cited by 42% of respondents, followed by the desire to become pregnant (39%), and religious prohibition (23%).

Discontinuation of Contraceptives: Side effects were the foremost reason cited in both study arms for discontinuing pills and injectables. Becoming pregnant was the most frequent reason for discontinuation of condoms in the comparison arm, followed by "wanting a more effective method." In the intervention arm, the most common reasons for condom discontinuation were husband's disapproval and a desire for a more effective method.

Pregnancy, Birth Outcomes, and Health Impact: In an effort to capture the impact of study activities, self-reported pregnancy outcomes were assessed at 36 months postpartum. HFS activities were associated with a 21% reduction in the cumulative probability of postpartum pregnancy after the delivery of the index child (HR: 0.79; 95% CI: 0.70–0.89). HFS activities were also associated with a 21% reduction of probability of shorter birth intervals (HR: 0.79; 95% CI: 0.70–0.88) and 20% lower risk of preterm birth (HR: 0.80; 95% CI: 0.63–1.03). Significant differences in the odds of low birth weight or neonatal mortality were not observed.

Conclusions: The HFS findings to date demonstrate that the integration of comprehensive PPFP services at the community level through an MNCH platform improved contraceptive acceptance throughout the 36-month postpartum period. While findings from 18 to 36 months postpartum suggest that increases in contraceptive uptake plateaued, contraceptive use remains significantly greater in the intervention area. Efforts to identify trends in contraceptive use over time suggest that rates of contraceptive adoption have increased over time in the months following delivery across both study areas.

The large proportion of "husband abroad" in the intervention area continues to play a significant role in contraceptive use as does husband's disapproval (both study arms). These findings highlight the importance of engaging husbands and other family members in FP promotional activities if uptake is to be observed. Increases in the "reported desire to become pregnant" continued to be observed with 39% of intervention and comparison area recipients citing this as an important reason for current non-use of contraceptives. Among individuals who have discontinued use of contraceptives, husband's disapproval, desire for a more effective method, and side effects were leading reasons for discontinuation in both arms.

In addition, HFS activities were associated with a 21% reduction in the hazards of shorter birth intervals (HR: 0.79; 95% CI: 0.70–0.88). A significant difference in neonatal mortality was not observed by study arm, affirming hypotheses that HFS activities will not overload CHWs and cause adverse inadvertent consequences on newborn health outcomes.

Endline Survey: An endline survey was added to examine the non-contraceptive health benefits of contraceptive use on women and their children. The survey was conducted between January and June 2014 and data entry and cleaning will be completed in August 2014.

MAMA (DECEMBER 9, 2011 – AUGUST 30, 2014)

MAMA, the innovative mobile technology and maternal health project, which was branded Aponjon in Bangladesh, had tremendous success and serves as a model for other countries trying to replicate its success. Among its accomplishments are:

- Two mass media campaigns, with different themes, reached over four million viewers and resulted in 2,900 women subscribing to the service during the period
- As of June 2014, the campaign generated 11,261 likes and reached nearly 1 million people on Facebook
- Aponjon deployed 537 Brand Promoters (BPs) in eight districts[6] using two channels: 172 BPs through the communication agency IMS and 365 BPs through 25 local NGOs. As of June 2014, 378,677 new subscribers have been acquired.
- The day-by-day subscriber acquisition number is progressing. The training of 3,033 Community Agents (CAs) was completed and they reached 230,465 subscribers. This is lower than projected in the business model so the outreach team carried out an analysis exercise to identify areas of focus and changes/improvement/root causes on lower acquisition numbers.
- Interim findings from the impact analysis of Aponjon done by icddr,b showed that clients feel that Aponjon messages have strong symmetry with gestational/child's age, the messages are useful for both preemie mothers and mothers who had delivered a long time back, the information is well explained, it matches with the problems that they face in real life, and has helped them overcome cultural beliefs and taboos.

Result 1: Sustained improvements in health knowledge and practice as well as health-seeking behavior of targeted women and gatekeepers achieved.

The program aimed to reach 500,000 pregnant women and new mothers and 100,000 gatekeepers through communications, marketing, and outreach. Communications included promotion and media campaigns (social media campaigns and online campaigns), special communication productions, public relations, and community radio. Marketing and outreach efforts included events and below-the-line activation. BPs worked in hospitals, clinics, and doctors' chambers to target urban and semi-urban segments of the population. The program trained outreach partners to promote the service and assist would-be subscribers with registration. Incentive programs provided different types of incentives for CAs, stand-alone agents, focal points, and other key stakeholders directly involved in field-level subscribers registration.

> *"Aponjon has given me some insights that I didn't have before. The information that I shouldn't give honey or oil to the child to eat after birth or that I should give breast milk within an hour of delivery and that the delivery had to be done at the hospital were some invaluable information. It helped me gain support from my family because they usually insist on the traditional ways. And, yes thanks to Aponjon, I also went for four checkups to the health center that boosted my confidence."*
>
> – Anjona Pal (21) [Aponjon client with a 3-month-old baby] Puran Bazar Chandpur

[6] Dhaka, Chittagong, Rangpur, Rajshahi, Khulna, Ba rishal, Sylhet, and Mymensing.

The Aponjon content has made a huge difference in the way of thinking of the people who have availed the service. Findings from formative research showed that most of the clients rated their trust of Aponjon content as "very high" (28%) and "high" (63%).[7] The messages have also served the purpose of making a behavioral change among subscribers. Based on findings from four phone surveys on a sample size of 300 Aponjon clients, the behavioral practice statistics were much better among Aponjon clients compared to overall national statistics. For example, the three phone surveys statistics average showed that the percentage of women attending four ANC visits during pregnancy was 72% (compared to the national average of 26%), the percentage of women going for PNC checkups within 48 hours of delivery was 67% (compared to the national average of 28%), and feeding of colostrum and exclusive breastfeeding up to six months were 92% and 87%, respectively (compared to national averages of 47% and 36%, respectively).[8,9]

Sample survey findings also showed that the frequency of facility-based delivery was 62% among Aponjon subscribers compared to the national average of 29%.[10] The impact analysis of Aponjon conducted by icddr,b showed that clients found that Aponjon messages: have strong symmetry with the gestational/child's age; are useful for preemie mothers or mothers who delivered a long time back; are well-explained; match the problems that they face in real life; helped them overcome cultural beliefs and taboos; increased their awareness on need for professional care for health problems; increased awareness on preventive measures to avert diseases; and are well-explained compared to messages from health care providers.[11]

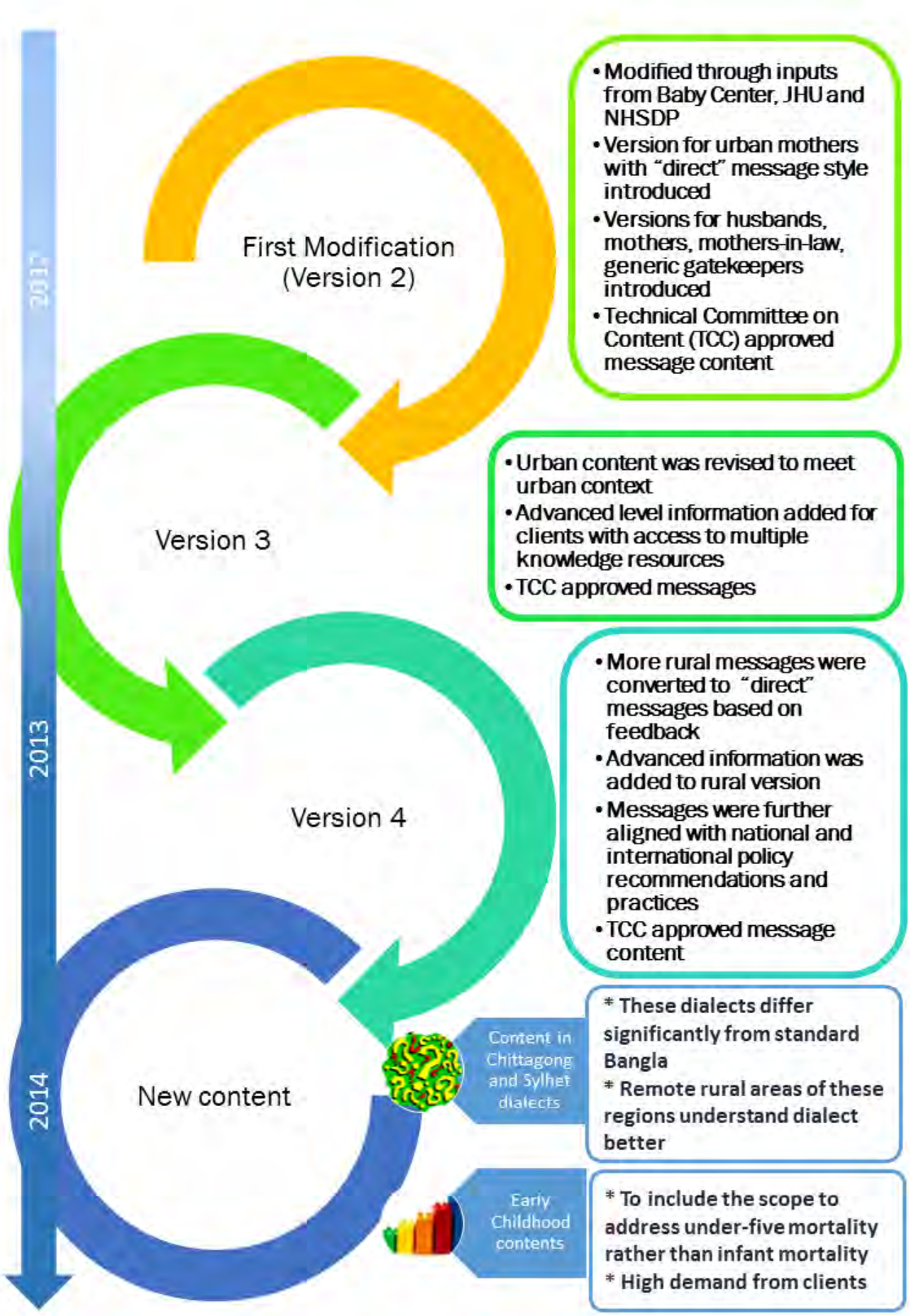
To take Aponjon to the next level, keeping in mind the constantly expanding market and usage of smartphones, the program would like to explore a mobile application with Aponjon content as well as some additional and advanced information. Moreover, findings from a survey among the urban clients have shown that they want advanced information in addition to the current Aponjon content. They also showed interest in an Aponjon mobile application should it be developed and deployed. Accordingly, a plan and preliminary technological design of the mobile application have been developed and development of text content for mobile application is expected to start by April 2014.

Table 2. Number of Community Agents and Trainings, April 2012–June 2014

SL	OUTREACH PARTNERS	NUMBER OF COMMUNITY AGENTS	NUMBER OF TRAININGS
1	BRAC	1,334	71
2	NHSDP	1,288	54
3	MaMoni	80	4
4	Infolady	68	8
5	SMC	24	10
6	UISC	17	2
	Total	**3,033**	**149**

[7] Report on Aponjon Formative Research, published December 2013.
[8] Aponjon Phone Survey Reports, Q1, Q2, Q3, 2013.
[9] Bangladesh Health Survey, 2011.
[10] Report on Sample Survey, 2013.
[11] Accessibility, acceptability, and effectiveness of Aponjon mobile phone-based health information messages for behavioral change for improved health care practices: A study on Bangladesh; 2013, icddr,b.

Figure 3. Flowchart of Content Enhancement and Versions



Technical Committee on Content reviews message content.

Recording of dialect content in the studio.

Initial conceptual design of the Aponjon mobile application.

Result 2: Quality and effectiveness of services ensured—The program used technology, new services, M&E, and operation customer service center to achieve this result.

Technology included four major components supported under MCHIP: 1) registration; 2) service access by users; 3) billing; and 4) reporting.

- **Registration:** Potential subscribers are given options to facilitate registration: SMS, short code IVR menu, and calling customer service center. CAs visit households to identify potential subscribers, explain the service, and collect data for registration.
- **Service access:** To ensure that the service is user-friendly, subscribers are given options for receiving stage-based messages: SMS, dialing the short code and listening to voice message, receiving the call at a pre-selected time, and listening to message. There are also options for removing the subscriber from the service, listening to a missed message, and listening to the same message repeatedly. Subscribers can call the customer service center to register a complaint, ask questions, inform date of delivery, or any other information related to service.
- **Billing:** The standard charge per message during the pilot was BDT 2, with options for a discount. If the family meets certain criteria of being economically disadvantaged, such as the mother being the primary source of income, or if the source of income is day labor, then the family may receive the service free of charge or up to a 50% discount.
- **Reporting**: A reporting system helps Aponjon to understand service technical and usage problems, as well as planning of outreach.

The Aponjon IVR and SMS application and platform were developed originally under the program Strengthening Health Outcomes through the Private Sector, known as SHOPS. The pilot, which transitioned to MCHIP in late 2011, tested the service platform with 2,000 subscribers for six months for each telecommunication company. Dnet entered into a contract with SSD-Tech to manage the legacy platform for national scale operations in 2012.

The Aponjon counseling line was developed where subscribers may call and consult a doctor in case of problems related to pregnancy, delivery, and baby's health. The pilot counseling line was deployed from June to September 2013. Operations research was conducted to understand the satisfaction, willingness to pay, call patterns, and impact on the service.

Key Conclusions from Operational Research on Counseling Line:

- Line has gained trust of gatekeepers and women.
- Line should have a night shift doctor,
- Each shift should have at least two doctors, which should increase as the client base grows.
- More clients are registering for the service when they learn that Aponjon provides an opportunity to talk to a doctor. Call center agents, brand promoters, and health workers in the field find it easier to enroll people in the service after explaining the counseling line.

Since the pilot phase of the counseling line, Aponjon has continued the service 24/7 since June 2013. Moreover, guidelines for the counseling line for doctors were developed to provide parameters for call management. The guidelines were developed by specialist doctors and Dnet, and recommendations from MCHIP were incorporated.

The monitoring and evaluation (M&E) component included formative research, development of the project monitoring plan (PMP), and project monitoring and reporting system (PMRS), phone survey, and a sample survey.

Formative Research

Formative Research—Selected Key Findings

- The majority of women subscribers (70%) were ages 18–34, 42% had a primary school education or less, and 26% reported a total monthly family income of 4,000 taka or less ($51 USD or less per month).
- Many more subscribers enrolled in Aponjon with the assistance of a CA compared to enrolling on their own (78% vs. 22%, respectively).
- Few subscribers—less than 2% of women and 5% of gatekeepers—recalled any of the popular campaign strategies. The campaigns were focused in particular geographic areas, and may not have had the widespread reach necessary for adequate evaluation of comparative effectiveness.
- Over half of the subscribers assessed (57%) paid the full price of 2.3 taka per message for Aponjon service, another 25% paid a discounted rate of 1 taka per message, and the remaining 17% were offered free service.
- Overall, 94% of subscribers reported that they were satisfied with the service.

"I got aware of these things [the information from Aponjon]. Now I'll tell 10 more people about the service, then they'll know about it."

– Gatekeeper, Gaibandha

Development of PMP

Components of the PMP:

a. The PMP will involve routine data collection for two key sets of indicators

i. Behavioral outcome indicators:

- Indicators measuring preventive/healthy behavior; and
- Indicators measuring care-seeking behavior.

ii. Output/immediate outcome indicators:

- Process indicators outlining various activities associated with program implementation and related outputs

b. Criteria for indicator selection:

- Indicators for which information can be gathered for routine monitoring of program activities;
- Indicators that are to be used to assess performance; and
- Indicators that are aligned to project activities.

The instruments and data sources used in the PMRS include system data, phone survey, and sample survey, and are described below.

Aponjon deployed a web-based information system called PMRS, based on the subset of indicators from the PMP. The initial dashboard was developed in 2012, which shows the basic performance status of the program, such as the total number of primary subscribers, gatekeepers, the total percentage of free subscribers, etc.

In order to make the dashboard more comprehensive, PMRS version 1 has been developed. Besides basic performance status, this dashboard will also show early warnings for marketing, technology, and M&E units. Therefore, these units will be able to track whether they are in line to achieve the targets, performance of the platform, and behavioral changes of the beneficiaries. This version of PMRS will also be able to track revenue from user fees and identify gaps between the projected and real revenue. PMRS will provide early warnings so that concerned leaders can take necessary steps in advance to keep the program successful, which makes this tool one of the team's greatest achievements.

Phone Survey

Through stratified random sampling, subscribers were called over their cell phones for interviews. The phone survey helped illustrate the client's knowledge, attitude, and practice in both MCH and user experience of Aponjon as a service. Previously, the M&E team conducted 60 successful interviews (20 new mothers + 20 pregnant mothers + 20 gatekeepers) in each survey. However, the M&E team has revised the strategy moving forward and will conduct 120 successful interviews in each phone survey (20 new mothers with gatekeepers + 20 new mothers, no gatekeeper + 20 pregnant mothers with gatekeepers + 20 pregnant mothers, no gatekeeper + 20 gatekeepers of new mothers + 20 gatekeepers of pregnant mothers). These sample sizes will allow comparison of the difference among the primary subscribers with gatekeepers and without gatekeepers.

Sample Survey

For empirical observation on project objectives and for data validation purposes, a number of different samples are interviewed. The findings of these sample surveys are used to cross-check the phone survey findings. The sample surveys are conducted annually. The first sample survey started in July 2013, with 424 subscribers interviewed (expectant women [168], new mothers [160], and gatekeepers [89]) in eight locations (Dhaka urban slum, Gaibandha, Chandpur, Bagerhat, Patuakhali, Chittagong, Noakhali, and Sylhet). Fifteen researchers were trained to conduct the survey that ended in September 2013.

Researcher Murtaza and Farhana interviewing a respondent in Bagerhat, July 2012.

Major findings from the survey revealed that Aponjon voice messages were highly appreciated by both women and gatekeepers. Women and gatekeepers appreciated the messages regarding baby's naval care, reminder to go for vaccination, baby's diet, hygiene, and baby's developmental milestones. Field insights suggest requirement of well-thought approach to include mothers-in-law and elderly gatekeepers in the service who may prevent women from taking the necessary actions for pregnancy and baby's health (especially in Noakhali). Using the voice of a female as Daktar apa (doctor) in the voice messages were very popular. There were instances of peer referral in registration to the service. Voice messages remain the major mode of service in rural areas where reading SMS is quite a challenge. Hopefully there will be a change of scenario when Bangla SMS will be introduced. Women and gatekeepers urged that the service be extended beyond the baby's first year (up to five years). Despite the price to pay 2.3 taka per message, clients showed interest in receiving messages longer than one minute.

Women and gatekeepers mentioned having benefited from the Aponjon messages in raising their youngest child, unlike in their previous parenthood experiences when they didn't have Aponjon. Some clients listened to the messages over a loudspeaker, allowing other family members and neighbors to listen to the information. Aponjon had access in rural areas where families follow cultural and religious rituals (e.g., Patuakhali).

Sample Survey-I draft report was completed and submitted for internal review. The data were analyzed with statistical software.

From February 2014, data collection for sample survey-II data analysis was completed and the report will be finished in December 2014.

Interim Findings from Impact Analysis from icddr,b

Some of the findings shared by icddr,b in its publication, "Accessibility, acceptability and effectiveness of Aponjon mobile phone based health information messages for behavioral change for improved health care practices: A study on Bangladesh," show the following:

Accessibility:

- Aponjon is now a well-known term.
- The Aponjon messages have strong symmetry with gestational/child's age.

Acceptability:

- The messages are useful for preemie mothers and mothers who delivered a long time back.
- Information comes according to age and gestational stage.
- Information is well-explained.
- Messages match with problems that recipients faced.
- Mothers got good results by following advice.
- Child health-related information is useful.
- The service provides information at home.
- Most mothers want messages for children beyond one year of age.

Increased knowledge and awareness:

- Mothers learned new information, which previously was thought unimportant.
- Child development messages were useful.
- Mothers learned information opposed to cultural belief.
- Awareness was increased on home remedies to avert potential problems.
- Awareness was increased on conditions needing professional care.
- The service helped ensure better care for current child rather than previous one.
- The messages included increased awareness on importance of colostrum, ANC, birth preparedness, vaccination, and exclusive breastfeeding.
- Mothers learned a lot of information on maternal care.
- The messages are more thoroughly explained than conventional messages given by health care providers.

Operating Customer Service Center

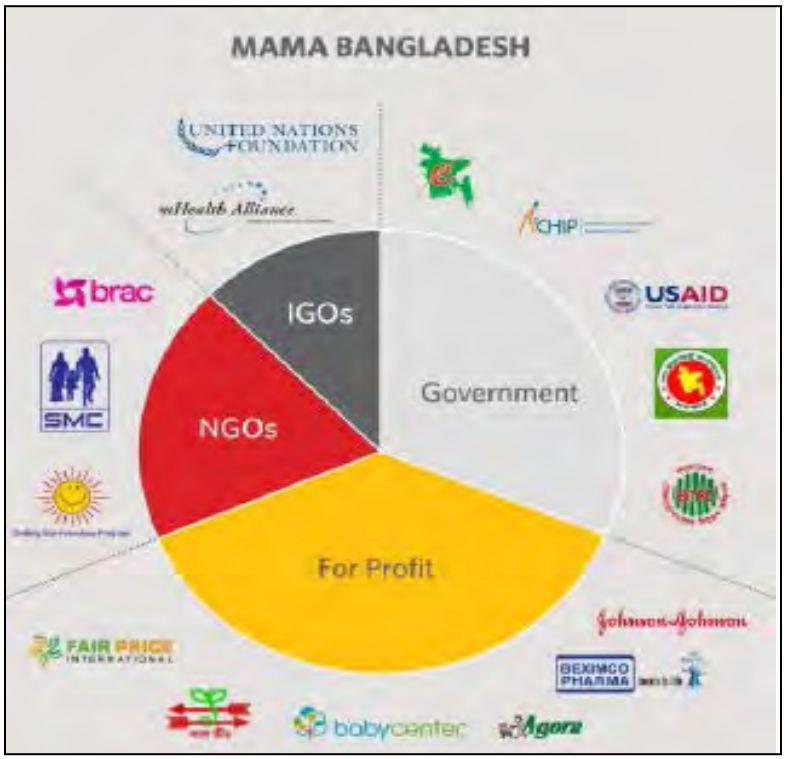
Dnet supports the end user through a customer service center (call center) operation. The call center's primary purpose is to assist users in registering for the Aponjon service. The customer support center has a web interface with software platform, and enters customer data in the system for facilitated registration. The customer service center also track calls regarding complaints with the service through a trouble ticketing system where technical problems are referred instantly to be resolved by the software vendor or mobile operator. Call center agents also make phone calls to assist with the phone survey, update information and data entry, and provide call records and reports in a regular manner.

Aponjon ensures the performance of call agents by setting key performance indicators and providing regular trainings. Aponjon customer service agents registered 66,507 new subscribers and updated 29,322 date-of-birth records to migrate pregnant women to new mother services. Based on the workload, seating capacity is being increased or decreased.

Result 3: Build and manage partnerships—New meaningful partnerships and strengthening of existing partnerships will create opportunities for sustainability and improvement.

Aponjon's consortium includes organizations with technical and content expertise, access to clinical services and health workers, and experience in M&E. Figure 4 illustrates the variety of partners Aponjon has secured. At the global level, partners are USAID, Johnson & Johnson, United Nations Foundation, the mHealth Alliance, and BabyCenter. USAID provided the majority of financial support during pilot and scale-up, as well as support for partnership building. Supplemental funds were provided by Johnson & Johnson, while BabyCenter supported the initial content review.

Figure 4. Aponjon Partnerships



As a country project, Aponjon also collaborates and coordinates with MAMA Global on key milestones, mobilizing corporate funding, and dissemination of results at global venues (i.e., Women Deliver Conference 2013 and mHealth summit 2013). Dnet communicated regularly with the MOH&FW, Access to Information Program, and the Prime Minister's Office to build partnerships and increase national ownership. As a result of these partnerships, Aponjon was included in the agenda of Digital Bangladesh program, 2012–2013. Dnet also worked with BTRC, the telecommunication regulatory body, and obtained approvals for national scale operation.

One major achievement was Aponjon's successful negotiations with telecommunication operators, with support from Ministry, Access to Information Program, and BTRC. These negotiations have resulted in the following:

- System support for differential charging: Regular subscribers pay a fixed price whereas poor subscribers receive the service free of charge; subscribers are charged by dialing and receiving the messages
- Addition of family members from cross operators
- Operators' agreement to a revenue sharing ratio of 55:45 (Aponjon:Operator)
- Communication (below the line) support via SMS broadcasts
- USSD-based registration

Advisory Board

An Aponjon Advisory Board was formed to facilitate project implementation, with the Secretary of the MOH&FW as Chair. Three meetings have been held to date (July 2011, April 2012, and August 2012).

Telecom Operators

One of the main challenges that Aponjon faced during its pilot was to gather all operators under one umbrella. Given that Grameen Phone (GP) was the only operator during the pilot, areas like Chittagong—which had low GP coverage—had a much lower number of subscribers. After a lengthy process of negotiation and technological integration with each operator, four operators were added before the national launch. Aponjon has completed integration with five major operators, with combined market coverage of 97%, and is currently in negotiation with the sixth, Teletalk.

Table 3. Telecommunications Operators in Bangladesh

MOBILE NETWORK OPERATORS	APPROXIMATE SUBSCRIBERS (MILLIONS)
Grameen Phone, Ltd. (GP)	49
Banglalink Digital Communications, Ltd.	29
Robi Axiata, Ltd. (Robi)	24
Airtel Bangladesh, Ltd. (Airtel)	9
Pacific Bangladesh Telecom, Ltd. (Citycell)	1
Teletalk Bangladesh, Ltd. (Teletalk)	3

Result 4: Financing/business model for sustainability tested.

Given that Aponjon is designed to become a financially viable mobile phone-based health information service, multiple revenue streams have been pursued, including USAID, Johnson & Johnson, fees from subscribers, Corporate Social Responsibility support, and cross-promotion opportunities.

Corporate Founding Partnership

Beximco Pharmaceuticals, Ltd. (BPL) is the first and only corporate founding partner of Aponjon. Beginning with the first agreement in July 2011, BPL contributed $90,000 cash, which was instrumental for conducting formative research. In the second year, BPL provided cash and free medicine for distribution during Aponjon fairs (i.e., in-kind support).

Corporate Partnership

Dnet signed a corporate partnership contract with Lal Teer Seed, Ltd., in December 2012, and Lal Teer contributed an in-kind grant of $62,000 per year for five years to be used exclusively to carry out necessary below-the-line activities to make the initiative successful. For example, they promoted Aponjon service in their calendars and flipcharts. These promotional items were provided door to door in remote/char areas of Bangladesh.

GP, the country's largest mobile telecom service provider, provided design and testing support during the pilot with financial support of $4,320.

Retail Partnership

Agora (Rahimafrooz Superstores, Ltd.), Bangladesh's largest retail chain, signed a contract with Aponjon in December 2012, as a retail partner. Under this agreement, Agora has provided its support to sell "Sponsor-a-Mother" gift packs at its retail stores at a discounted commission. Agora's usual sales commission for this kind of product is 30%, but it is charging only 10% sales commission from Aponjon.

Sponsor a Mother

Dnet received funds from Johnson & Johnson to sponsor 3,000 disadvantaged mothers to receive the Aponjon service free of charge for 89 weeks. Some funds were also received via the Aponjon website donation channel. The sponsor-a-mother gift pack initiative was launched in Agora, the country's most prominent retail chain in April 2013. The first two months showed promise with 40 packs sold; however, over time, the sale of gift packages decreased because of cost. The Aponjon marketing team is currently identifying more attractive and useful gifts for customers that are also reasonable in price. This channel is also helping to earn sponsorship for the poor mothers.

Result 5: Project learning shared.

By the term knowledge management, Aponjon understands the importance of sharing the knowledge and learning of the program with relevant stakeholders, implementers, policymakers, and those interested in mHealth services or social entrepreneurship. At the same time, Aponjon interacts with mHealth practitioners, donors, the GOB, NGOs, academicians, policymakers, ICT practitioners, health professionals, and social development sector to gain knowledge on new cutting-edge technology. Aponjon follows some activities regularly and others intermittently under the knowledge management component.

Participation in Different Conferences and Seminars

Aponjon team members participate in local and international conferences, where they share research papers, presentations on different components of Aponjon (technology, content, marketing or business strategy) with a broad audience. Such participation had proven very successful in terms of networking with relevant stakeholders, building new partnerships or collaboration, and of course exchanging knowledge. The list of conferences is available in Annex 3.

Participation in Workshops

Apart from conferences, Aponjon team members participate in workshops to gain skills and knowledge on related matters. Some examples are as follows:

- Two members of the M&E team received M&E training at icddr,b, which was organized by USAID in September 2012. The knowledge gained at the workshop by team members enriched the M&E framework and gave a guideline to the team during Aponjon's retreat in October 2012. As a follow-up to the training, these two team members were later trained on GIS in M&E at the same venue a few months later. Aponjon will implement GIS tracking for building a referral system in the near future.
- An M&E specialist from Aponjon attended a workshop on M&E and knowledge management on BCC, which was organized by BKMI and K4H in April 2013 at Savar. The workshop contained basic theories on knowledge management and how to integrate this with M&E of BCC activities. The workshop also concentrated on evaluation strategies for project activities.
- A knowledge management workshop was organized for Dnet employees in July 2013, during which they were trained on how to accumulate knowledge and process knowledge for decision-making. Dnet invited external expert Mr. Reefat Bin Sattar, Director, Program Quality and Impact, Action Aid, to conduct the workshop.

Site Visits of Global Visitors

Mrs. Grace Mozena visited the MAMA program in Sylhet:

Mrs. Grace Mozena, wife of U.S. Ambassador to Bangladesh, visited the MAMA Bangladesh project sites in Sylhet District.

Dr. Rita Colwell visited the MAMA Bangladesh office:

Dr. Rita R. Colwell, Chairman, Canon US Life Sciences, Inc., and Professor, University of Maryland at College Park and Johns Hopkins University Bloomberg School of Public Health, along with her team, visited MAMA Bangladesh Office on January 10, 2012.

USAID Assistant Administrator Mr. Ariel Mendez and Deputy Assistant Administrator Mr. Robert Clay visited the MAMA pilot location:

USAID Assistant Administrator Mr. Ariel Mendez and Deputy Assistant Administrator Mr. Robert Clay visited MAMA Bangladesh initiatives on January 17, 2012, in Balaganj, Sylhet District, one of Aponjon's pilot areas.

Learning and knowledge-sharing workshop held at MAMA Bangladesh office:

A learning and knowledge-sharing workshop was organized at the MAMA secretariat from January 17–18, 2012. The key expert for the workshop was Mr. Marwan Tanjung, Finance and Operations Manager, Jhpiego. The workshop provided the opportunity to learn, share, and discuss the general principles of managing projects under USAID funding and the interpretation of clauses of sub-agreements.

MAMA Bangladesh participated in America week 2012:

MAMA Bangladesh participated in America week, which was held from January 30 to February 1, 2012 at Chittagong.

On February 1, 2012, the U.S. Ambassador to Bangladesh Mr. Dan W. Mozena and his wife, Mrs. Grace Mozena, visited the MAMA Bangladesh initiative at the SSFP clinic in Rahattarpul, Bakulia.

Visit of MAMA global team:

Ms. Sandhya Rao, Senior Advisor for Private Sector Partnerships USAID Bureau for Global Health; Ms. Kirsten Gagnaire, Global Partnerships Director of MAMA; Ms. Alice Lin Fabiano, Global Program Manager, Johnson & Johnson; and Ms. Dayle Kern, Communication Officer, mHealth Alliance visited Mirpur Vashantek – BRAC Manoshi Centre, one of the Aponjon pilot areas.

Ms. Kirsten Gagnaire and Ms. Dayle Kern also visited Aponjon's clients and outreach facilities in Sylhet during their visits from March 20–21, 2012.

NNA (OCTOBER 1, 2013–JUNE 30, 2014)

Under the *Bangladesh Child Survival Call for Action: A Promise Renewed* initiative, MCHIP collaborated with the GOB and other key MNCH actors to reduce newborn mortality and morbidity. Through the NNA program, sensitization meetings with all managers and professionals on the four priority newborn health interventions were held in 47 districts across Bangladesh to address behavior change for these interventions, as well as to educate service providers and key stakeholders on recent technical developments for the interventions. The rollout will continue in the remaining 17 districts in Dhaka division under the MaMoni HSS program through June 2014.

In collaboration with the Gates-funded SNL program, MCHIP collaborated with BPS to organize these sensitization meetings with the Obstetric and Gynecological Society of Bangladesh, Bangladesh Neonatal Forum, and Bangladesh Pediatric Association. SNL also provided support with the development and printing of materials. In preparation for the rollout,

meetings were held with 74 participants from DGHS, DGFP, and professional associations to roll out divisional- and district-level sensitization meetings. Additionally, 73 participants from DGHS, DGFP, professional bodies, and development partners attended the facilitators' meeting, during which detailed guidance was provided on how to facilitate the divisional- and district-level informational meetings.

During the sensitization meetings, the opinions, views, and recommendations of the participants on implementation strategies of these newborn activities were collected through open discussions. In total, 2,429 participants attended sensitization meetings. Seven divisional meetings were held in Dhaka, Chittagong, Rajshahi, Khulna, Rangpur, Sylhet, and Barisal. A total of 409 participants from divisional- and district-level health and FP managers, consultants, nurses, leaders of professional bodies, and development partners attended the meetings.

At 47 district meetings in Barisal, Chittagong, Khulna, Rajshahi, Rangpur, and Sylhet, 1,875 participants from district- and upazila-level health and FP managers, consultants, nurses, leaders of professional bodies, and development partners attended the meetings.

While these newborn topics will continue to be rolled out under MaMoni HSS, the MCHIP team learned some key lessons from the rollout that will be applied for technical rollouts in the future including:

- Health and FP managers of all levels and professionals from ob/gyn, neonatology and pediatrics departments were open to new interventions and knowledge and they should be included in future rollouts.
- MCHIP's partnership with professional associations increased the acceptability of new interventions with the professional community and a similar involvement should be used when other interventions are advocated for or disseminated at the field level with health professionals.
- Unfortunately, the unstable political situation hindered the rollout timeline of the sensitization activities because of the multiple partners that were involved. In the future, external events should be taken into consideration for national rollouts when a diverse set of stakeholders are involved.

WHITE RIBBON ALLIANCE (NOVEMBER 1, 2009–MARCH 31, 2013)

Workshop on Public Sector Accountability for Maternal Health Commitments

WRA,B with support from JATRI and IGS organized a workshop on Public Sector Accountability for Maternal Health. Participants were key stakeholders and members of the media, lawmakers, and members from organizations working in governance and legal support. All of the participants in the lively discussion felt that this was a timely initiative and expressed their support. Topics discussed were: the status of accountability of the public sector regarding maternal health; identification of gaps; identification of possible solutions and potential partners; and development of a roadmap for public sector accountability to ensure maternal health in Bangladesh. The tools from social accountability will be utilized to develop a strategy to address public sector accountability for maternal health.

Observation of Safe Motherhood Day

A rally celebrating National Safe Motherhood Day in 2012, focused on the theme, "Safe Delivery is a Woman's Right." National dignitaries included the Prime Minister and the Senior Secretary as well as MOH&FW leadership, including the Health Minister and other senior staff. There was an award ceremony for best performing center and awareness campaigns including nationwide text messaging, newspaper articles, and televised talk shows were also used to inform Bangladeshis of the significance of the day. Most local private TV channels also broadcast a special news feature on maternal health observing the day.

Family Planning Summit

At the first-ever Summit on Family Planning to mobilize global policy, financing, commodity, and service delivery commitments to support the rights of an additional 120 million women and girls in the world's poorest countries to use contraceptive information, services, and supplies by 2020, $4.6 billion was pledged, including a commitment by the GOB to spend $400 million on FP for 39.4 million couples in Bangladesh by 2012. Represented by the Health Minister, the Senior Health Secretary, and the Director General of Health and Family Planning, the GOB also committed to address issues of inequities between urban and rural and rich and poor—to ensure rights and to address the high rate of adolescent pregnancies. The hope is that this commitment will reduce the unmet need of FP from 12% to 7% and help to increase the contraception prevalence rate to 60% in the two lowest coverage areas in Bangladesh. WRA,B worked with the Health Ministry and DFID to prepare and follow up on the summit with stakeholders in Bangladesh.

Participatory assessment of the quality of care of MNH services in select facilities: WRA,B conducted a rapid situation analysis across 10 GOB, NGO, and private facilities in five divisions to determine the quality of care in MNH services (including ANC, PNC, safe delivery, and nutrition).

- The assessment and exit interviews revealed that major barriers to quality of MNH care include poor sanitation, long waits, and short consultation times, as well as unskilled human resources and absenteeism, along with frequent transfer of key human resources and inadequate support staff.

A set of recommendations was drafted and shared with key stakeholders, including the suggestion that a watchdog mechanism should be established involving the government, civil society, media, and elected representatives to ensure higher standards of MNH services.

Development of a draft client charter of rights in consultation with DGHS, DGFP, and other stakeholders: WRA,B supported the development of a Client Charter of Rights, which was then shared with DGHS, DGFP, and NGO stakeholders. The Charter of Rights was finalized based on input from the relevant groups.

Cross-Cutting Themes

SCALE-UP

HBB

The HBB protocol was endorsed and adapted for all levels of SBAs at facility, community, and national levels. Additionally, all facility- and community-based SBAs in all divisions of Bangladesh increased their knowledge, skills, and practices of immediate management of birth asphyxia under the HBB program.

The MOH&FW and its partners developed the initial plan to scale up HBB in Bangladesh in late 2010 and developed a planning document—*Scaling-up of Helping Babies Breathe Initiative (HBB) to Strengthen Newborn Resuscitation in Bangladesh: Draft National Plan*—that described the HBB pilot study and policy development issues. The document also presented plans for activities and time frames, institutional arrangements, roles and responsibilities of implementing agencies, M&E activities, resource mobilization, a budget overview, and a draft workplan to be periodically updated.

Under the HBB field support program, below are some elements that were critical for the scale-up to be successful:

- *Diverse leadership roles in implementing the scale-up*: The MOH&FW, MCHIP, Save the Children, BSMMU, and UNICEF assumed the primary leadership roles in designing and implementing the HBB scale-up. Each partner had a specific role and partners met regularly to continue the rollout process.
- *Provision of HBB practice and service equipment*: Funded by USAID and UNICEF (40 and 24 districts, respectively), with value-added tax covered by the MOH&FW, two types of resuscitation equipment were relevant to the implementation of HBB: 1) practice equipment used for simulated practice and training at worksites (i.e., not on live newborns) and consisted of a NeoNatalie anatomical model, a penguin sucker, an Ambu bag and two masks; and 2) service equipment for use in the delivery ward or operating theater to resuscitate distressed newborns (included the same equipment except for the NeoNatalie).
- *Cascade training design*: Initial HBB training efforts were to be focused on using a cascade training design to develop a pool of 15 HBB Core Trainers (CTs) and 225 Master Trainers (MTs) who would in turn conduct ToTs to prepare District Trainers in each new district as HBB was sequentially scaled up over the duration of the scale-up process. In actuality, 14 CTs and 68 MTs were trained
- *Facilities or modalities where MOH&FW SBAs will be trained*: Within each district, SBAs from all levels of the MOH&FW health system were to be trained in HBB, including those who provide delivery services in the following facilities or modalities:
  - Tertiary hospitals associated with medical colleges;
  - Secondary hospitals at the district level (both district hospitals and MCWCs);
  - Sub-district (upazila) health centers (UHCs);
  - Community-level health facilities (FWCs); and
  - Home-based (by CSBAs). CSBAs' primary responsibility is to attend home-based deliveries in the community.
- *Cadres trained in MOH&FW facilities:* The HBB training in Bangladesh targeted all SBA providers of facility-based delivery care, including staff nurses who work in delivery rooms, operating theater, and other wards; pediatricians; anesthetists; and other specialist physicians. At the community level, all CSBAs and FWVs providing delivery services at homes and in the FWC are trained as well.
- *Sequencing districts*: The HBB team divided the 64 districts in Bangladesh into groups where HBB was introduced in 12 steps. Initial plans were for HBB to be introduced in six districts during each step. The districts in each step were chosen so that districts were

included from different divisions in each phase for easier supervision of district- and upazila-level trainings by district-level managers. Additionally, the districts were sequenced to include districts participating in other health programming or the HBB evaluation study conducted by icddr,b during specific phases of the rollout.

MAMA

mHealth initiatives across continents often suffer from pilot syndrome, despite huge potential. Only a few initiatives move toward national scale operations. Aponjon is one such global initiative that was successfully scaled up to the national level from a successful pilot and is moving toward capturing 2 million beneficiaries by the end of 2015.

Being an initiative with a public-private partnership and social enterprise approach, scale-up was a very complex endeavor, which the Dnet team successfully accomplished. Aponjon is a true example of scaling at its depth and breadth. By covering the whole geography with community agents of various forms, Dnet ensured breadth of scaling, whereas the depth of scale was ensured by integrating telecommunication operators covering 99% of subscribers.

Partnership building was the key for successful scale-up, with government agencies, telecom operators, national NGOs with grassroots level network, corporate sector, and key policymakers.

Dynamic planning and application of learning in decision-making and modification of implementation approach were also instrumental. A creative and enthusiastic young team with diverse expertise was able to overcome all the obstacles and challenges in implementing such a complex and innovative program.

EQUITY

MAMA

The Aponjon program is an example of how a social enterprise initiative can ensure access to health care services for people who are otherwise outside of mainstream facilities. The price of the Aponjon service is subsidized; compared to normal mobile value added services it is cheaper by 250–500%. Moreover, mothers, who are below the poverty line, receive the service free of cost. Thus, the most vulnerable individuals in relation to the MDGs 4 and 5 are able to access the Aponjon service. The deployment of community agents also ensured equitable access to Aponjon service.

INTEGRATION

MAMA

The Aponjon service is nicely integrated with community-based health care facilities of the government and NGOs. The service is available twice a week, which fills the gap between two visits of CHWs. Addition of a counseling line allows subscribers to talk to a live doctor for any additional information or advice.

MEASUREMENT

MAMA

From the very beginning, Aponjon designed a comprehensive PMP with a set of indicators related to access, affordability, acceptability, uptake, and behavioral change. A dynamic online dashboard allows monitoring of key progress indicators, which also allows the team to use it as a decision support system. Besides this, an independent evaluation of impact of Aponjon is under way, which will provide statistically significant evidence of changes in the behavior of the target population.

Recommendations and Way Forward

HBB

HBB activities became a part of MaMoni HSS as of March 2014. Under the new phase, the HBB team will develop a broader Essential Newborn Care (ENC) Package ("HBB Plus"), which incorporates nationally adopted and internationally recommended newborn initiatives. Additionally, under MaMoni HSS, the HBB rollout will continue with refresher TOTs, and continued follow-up training of private facility providers will take place to continue what was started under the field support HBB project. Under MaMoni HSS, the data generation of newborn care surveillance activity, which started in December 2013, will continue through March 2015, with the data analyzed and used intermittently during the surveillance period.

Under MaMoni HSS, the MCHIP team will continue to follow up with incorporation of HBB protocol in pre-service and in-service training, including topics and questions within professional exams and case studies.

Due to strong, capable partnerships with a well-planned, cascade approach to the training and sufficient funding, the HBB project was successful in building widespread coverage to strengthen health professionals' knowledge on how to address newborn resuscitation across Bangladesh. However, challenges of the scale-up still remain in retention of skills of those trained. The health providers' skills diminish with time, realizing a need to incorporate skills maintenance into the existing health system, ensuring availability of equipment and trainers at the local level. Under the HBB program, refresher training became a part of local monthly meetings, but it was not seen to be very effective, given that it competed with the many other priorities for health providers.

The HBB process documentation report documented lessons learned from the initial rollout phase of HBB. Below are the consensus-based recommendations to guide the implementation of HBB in Bangladesh in the coming years:

1. **Identify partners and secure inputs for the consolidation phase of scale-up**: The HBB program should identify new partners and sources of funding to support an ambitious plan to enhance the effectiveness of the HBB intervention during its second phase (over the coming two to four years), while maintaining broad support for HBB among local stakeholders.
2. **Create expanded opportunities for operations and implementation research**: The HBB program in Bangladesh should leverage the strong execution of the scale-up and wealth of in-country research expertise to conduct operations and implementation research on scale-up strategies for HBB, including mentoring and supervision.
3. **Target resources strategically**: Resource allocation should be based in part on a pragmatic assessment of the potential for HBB to achieve impact on newborn mortality in various sub-sectors of the delivery milieu including NGO and private clinics and public-sector CSBAs.
4. **Secure dedicated MOH&FW funding**: The sustainability of HBB is strengthened notably when the MOH&FW commits funds to meet recurrent costs for its implementation. Partners should work with the MOH&FW to develop a mechanism for the MOH&FW to gradually take responsibility for recurring program costs.
5. **Sharing data and generating enthusiasm for HBB**: The HBB program should find a way to share the results from these efforts with all concerned stakeholders. The learning generated through implementing the surveillance system will provide authorities pragmatic lessons for inclusion of newborn indicators in the HMIS. One option would be to publish a newsletter on a bimonthly or quarterly basis that shares findings from M&E activities and

highlights other program activities. Such a newsletter could be distributed to all district and sub-district offices and facilities and would help to maintain the profile of the initiative while generating enthusiasm among stakeholders to further strengthen the initiative.

Component-specific recommendations:

6. **Strategically increase the potential for impact through in-service training**: The HBB program should assess how effectively SBA in private and NGO clinics practice HBB after they are trained and base future investments in these providers on the benefits that result.
7. **Assess quality and effectiveness of pre-service education (PSE)**: The program should assess the quality of HBB education during the various stages in the PSE process and determine which stages need to be strengthened to produce providers that can practice HBB effectively. Based on the findings of the assessment, the HBB program should take action to support strengthening the PSE component.
8. **Develop and field-test approaches to strengthen worksite-based learning and mentoring**: Developing an effective approach to worksite-based learning and mentoring for HBB will be one of the most difficult yet important tasks to pursue in the next phase of the scale-up. The HBB program should develop and test several approaches to learn more about what works and what does not.
9. **Ensure future supplies of HBB equipment**: The end of the first phase of the scale-up also marks the end of the mass distribution of HBB equipment to all participating providers and facilities. Under MaMoni HSS, the HBB team should work with both the MOH&FW and private suppliers to ensure that a steady supply of HBB equipment is available to all facilities.
10. **Determine how supervision can best contribute to program performance**: There is some overlap between supervision and worksite training and mentoring—HBB managers should determine how these activities can best be implemented and how they reinforce each other and strategize accordingly.
11. **Help facilities self-monitor their HBB performance:** As well as incorporating resuscitation indicators into the HMIS, the HBB partners should offer guidance and technical assistance to facilities that show interest in monitoring their own performance of HBB.

NATIONAL NEWBORN ADVOCACY—SENSITIZATION ON PRIORITY NEWBORN INITIATIVES

While the MCHIP team was able to initially sensitize health care providers in many districts across Bangladesh on evidence-based newborn interventions, under MaMoni HSS, the team will need to continue to ensure that awareness of the issues is built with health professionals at all levels from national to local. As national standards have been developed, advocacy efforts under MaMoni HSS should focus on mobilizing resources and supporting the MOH&FW and partners at the national and district level to operationalize and rollout the interventions in order to ensure an impact for newborns.

DHSS

As planned from the start of the DHSS program, MaMoni HSS will need to continue to implement its community and facility approaches and activities to ensure that impact is reached at scale in Noakhali and Lakhsmipur.

MAMA

The following recommendations are made based upon the program successes and lessons learned.

1. **Technology platform:** It has been a challenge to make the service available to subscribers of all telecommunication companies. Universal access is a basic principle of inclusiveness of any service. In Bangladesh, the Aponjon service is connected to telecommunication companies through an aggregator. Dependency on the aggregator may impact quality of service delivery and limit access to rich data to help inform programming and tracking behavioral change. For a large scale service like Aponjon, it is recommended that the project own the technology platform for cost effectiveness of the service, financial sustainability and full control of access to data generated from service delivery.
2. **Engagement of key players:** Aponjon's aim to ensure wide access and appropriate contextualized service design would be almost impossible without the cooperation of telecommunication operators, key government agencies, and telecommunication regulators. Since beginning the service, Dnet put significant efforts in striking the right kind of partnership with the government agencies so that the program may function independently and receive critical support though ownership of the agencies. Dnet was able to arrange a public-private collaboration, in which the MOH&FW is Aponjon's official partner and chairs a multi-sectoral advisory board. Dnet was also able to strike a better revenue-sharing deal with telecommunication operators by engaging the Ministry and Bangladesh Telecom Regulatory Commission (BTRC). Aponjon is unique in Bangladesh and deployed a "mobile terminating" voice message service, where, by pushing a call to a client, a charge can be deducted from the balance of a subscriber automatically. Differential charging (some subscribers pay and others receive it for free) was also possible thanks to active engagement of the BTRC.
3. **Resource mobilization from alternative sources:** Dnet was able to engage the private sector, which resulted in a mixed experience. Dnet was able to mobilize resources from private sector, both through in-kind and in-cash contributions. However, due to political uncertainty and recession, this support was inconsistent. Revenue from subscriptions was expected to be adequate; however, due to the dependency on the aggregator and discrepancies between telecommunication companies and the aggregator, the revenue will not be enough to cover the cost of running a program with millions of subscribers in the short run, without the service having its own technology platform. The revenue scope from advertisements also did not work well, given that it is a completely new channel and advertisers are still skeptic about it.
4. **Expenditure on research and development:** Mobile phone service demand is very dynamic, given that the technological development is very rapid. It is very important to invest in research and development for offering new services to the beneficiaries.

Annex 1: DHSS, HBB, NNA Indicator Matrix

	INDICATOR	DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	PY6 TARGET	FY14 ACHIEVEMENT TOWARD PY6 TARGET *(Due to political instability during 2014, several activities were transferred under MaMoni HSS)*
Objective 1: improve the national policy environment so that national policy and strategic plans support effective implementation of evidence-based MNH/FP/N interventions							
1.2	Number of community group members trained	Training of community group members on MNH/FP/N issues and their roles and responsibilities	MaMoni training reports	Quarterly	District M&E Manager	2,800 community group members trained on a three-day package.	100%
1.4	Number of advocacy and planning meetings on HBB completed with district and upazila MOH managers	Enhancing MOH districts and upazila managers' ownership and engagement in HBB scale-up activities, planning, implementation, and coordination	Monthly and quarterly reports	Monthly, Quarterly	Manager M&E, HBB	14 district advocacy and planning meetings on HBB scale-up with all district- and upazila-level DGHS and DGFP managers.	16 district advocacy and planning meetings on HBB scale-up with all district- and upazila-level DGHS and DGFP managers
1.5	Number of advocacy meetings carried out with stakeholders, development partners, and others on HBB scale-up	Enhancing stakeholders' ownership and engagement in HBB scale-up activities, planning, implementation, and coordination	Monthly and quarterly reports	Monthly, Quarterly	Manager M&E, HBB	Two advocacy meetings with stakeholders, development partners and others on HBB scale-up	Activity transitioned to MaMoni HSS

INDICATOR		DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	PY6 TARGET	FY14 ACHIEVEMENT TOWARD PY6 TARGET *(Due to political instability during 2014, several activities were transferred under MaMoni HSS)*
1.6	Number of advocacy and planning meetings/workshops with DGHS, DGFP, and urban health officials of all community clinics on monitoring of HBB scale-up	Enhancing DGHS and DGFP managers' ownership and engagement in monitoring of HBB scale-up activities	Monthly and quarterly reports	Monthly, Quarterly	Manager M&E, HBB	Two advocacy and planning meetings/workshops held with DGHS, DGFP, and urban health officials of all community clinics on monitoring of HBB.	Activity transitioned to MaMoni HSS
1.7	Number of HBB scale-up surveillance findings dissemination meetings	Dissemination of HBB scale-up surveillance findings	Monthly and quarterly reports	Monthly, Quarterly	Manager M&E, HBB	One HBB scale-up surveillance findings dissemination meeting held.	Activity transitioned to MaMoni HSS
1.8	Number of HBB surveillance refresher orientations in eight surveillance districts	Refresher orientation of SBAs on HBB surveillance in 8 surveillance districts	Monthly and quarterly reports	Monthly, Quarterly	Manager M&E, HBB	21 HBB surveillance refresher orientations held in eight surveillance districts.	100%

	INDICATOR	DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	PY6 TARGET	FY14 ACHIEVEMENT TOWARD PY6 TARGET *(Due to political instability during 2014, several activities were transferred under MaMoni HSS)*
1.9	Number of key district- and upazila-level managers/service providers orientated on four high-priority newborn interventions in all 64 districts	MOH managers and service providers oriented on four high-priority newborn technical interventions	Monthly and quarterly reports	Monthly, Quarterly	Component Manager	1,900 key district and upazila managers/service providers in all 64 districts received technical orientation on four high-priority newborn interventions.	2,374 key district and upazila managers/service providers in 47 districts received technical orientation on four high-priority newborn interventions. *(Remaining 17 districts will be completed under MaMoni HSS)*
Objective 2: strengthen essential components of health delivery systems that support MNH/FP/N services at district, upazila, union and ward levels							
2.1	MOH&FW managers received leadership and management training and developed capacity on HR planning, local level planning, budget, workplan and developed district workplan	GOB managers training on HR planning, local level planning, budget, workplan, and detailed implementation plan	Quarterly reports	Quarterly	Sr. Manager, District Operations	50 key district and upazila managers received leadership and management training and developed district annual plan in two districts.	100% of training completed.

INDICATOR		DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	PY6 TARGET	FY14 ACHIEVEMENT TOWARD PY6 TARGET *(Due to political instability during 2014, several activities were transferred under MaMoni HSS)*
2.2.1	Number of units and wards where community microplanning system introduced to collect community data through CVs	Introduction of community microplanning meeting at unit and ward levels	Monthly reports	Monthly	Manager-Community-Based Services (CBS)	*Community microplanning meetings* introduced in 1,350 units or wards (25% of total target).	*Community microplanning* was not introduced as training of relevant MOH field workers was not completed. This will be transitioned to MaMoni HSS.
2.2.6	Number of units and wards where Vital events data (birth, death, eligible couple, pregnancy) are synchronized between health and FP departments to generate single estimates combining both facility- and community-level information	Link birth and death data with UP registration systems.	Monthly reports	Monthly	Manager-CBS	Vital events data are synchronized between health and FP departments to generate single estimates for 1,350 units and wards (25% of total target).	This activity will be transitioned to MaMoni HSS.
2.2.8	Number of service delivery points using any level of automation to process service data	Automated HMIS developed	Monthly reports	Monthly	District M&E Manager	10 FWCs, one UHC, and one DH will use any level of automation to process service data.	100%
2.3	Number of districts and upazilas that developed a logistics management system that is based on need of the population projection and in use	Logistic Management Information System (LMIS) developed at district and upazila level and which is linked with program database	Monthly reports	Monthly	District M&E Manager	LMIS developed for testing in one upazila.	Development of LMIS will be completed under MaMoni HSS.

INDICATOR		DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	PY6 TARGET	FY14 ACHIEVEMENT TOWARD PY6 TARGET *(Due to political instability during 2014, several activities were transferred under MaMoni HSS)*
2.4	Number of MOH&FW managers received management and leadership training	Leadership and management training of MOH&FW managers to develop district- and upazila-based plan	Quarterly reports	Quarterly	District M&E Manager	50 key district- and upazila-level managers received leadership and management training.	100%
2.5	Number of districts and upazilas where district- and upazila-based planning and program review cycle (which is based on population need, status, and local situation) introduced.	District- and upazila-based plan developed and reviewed quarterly	Quarterly program/performance review meeting (QPRM)	Quarterly	District M&E Manager	One QPRM completed to review district and upazila plans and program.	Project MIS was under review, so QPRM will take place under MaMoni HSS.

	INDICATOR	DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	PY6 TARGET	FY14 ACHIEVEMENT TOWARD PY6 TARGET *(Due to political instability during 2014, several activities were transferred under MaMoni HSS)*
Objective 3: to increase access to critical and lifesaving MNH/FP/N interventions at optimal quality of care at community-based service delivery points and from selected existing, strategically located facilities							
3.1 3.2 3.3	Number of field workers, supervisors, and service providers who received training on: • Basic integrated MNH/FP/N • ANC, PNC Number of doctors who received TOT on management of birth asphyxia Number of SBAs who received training on management of birth asphyxia	Field workers (FWAs, health assistants [Has] and CHWs), supervisors, doctors, and nurses received training on integrated MNH/FP/N package and ANC, PNC Doctors received TOT on management of birth asphyxia SBAs received training on management of birth asphyxia	Monthly training reports, Quarterly reports	Monthly, quarterly	Implementing partner organization	2,600 field workers, supervisors, and service providers received training on MNH/FP/N. 240 paramedics received training on ANC and PNC. 400 doctors received TOT on birth asphyxia. 5,500 SBAs received training on management of birth asphyxia.	100% 248 doctors received TOT on birth asphyxia 6,048 SBAs received training on management of birth asphyxia
3.7	Number of facilities where Standards-Based Management and Recognition® (SBM-R) introduced and have action plan	Training on SBM-R done, SBM-R introduced, and have action plan	Four-monthly SBM-R reports	Every four months	Manager of quality assurance	SBM-R introduced in five facilities of Habiganj district.	100%

INDICATOR		DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	PY6 TARGET	FY14 ACHIEVEMENT TOWARD PY6 TARGET *(Due to political instability during 2014, several activities were transferred under MaMoni HSS)*
3.8	Number of public health facilities and community SBAs equipped with newborn resuscitator (bag, mask, sucker)	Distribution of resuscitation equipment (bag, mask, and sucker) at all facilities and community SBAs and distribution of training equipment in all relevant facilities up to upazila level	Monthly reports	Monthly	Manager HBB (M&E)	3,300 health facilities and community SBAs equipped with newborn resuscitators.	3,175 health facilities and community SBAs equipped with newborn resuscitators

INDICATOR		DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	PY6 TARGET	FY14 ACHIEVEMENT TOWARD PY6 TARGET *(Due to political instability during 2014, several activities were transferred under MaMoni HSS)*
3.10 3.11	Number of facilities and CSBAs brought under surveillance network	Facility- and community-based surveillance of newborn resuscitation cases	Monthly surveillance report	Monthly	Manager HBB (M&E)	Weekly surveillance of newborn resuscitation cases in two medical college hospitals, six district hospitals, two MCWCs, and 16 UHCs in eight districts established. Community-based surveillance in 16 different upazilas of eight districts, including 32 CSBAs, 16 UH&FWCs, two private hospitals, and two NGO facilities established.	Weekly surveillance of newborn resuscitation cases in two medical college hospitals, six district hospitals, eight MCWCs, and 16 UHCs in eight districts established. Community-based surveillance in 16 different upazilas of eight districts, including 32 CSBAs, 16 UH&FWCs, two private hospitals, and two NGO facilities established.

INDICATOR		DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	PY6 TARGET	FY14 ACHIEVEMENT TOWARD PY6 TARGET *(Due to political instability during 2014, several activities were transferred under MaMoni HSS)*
Objective 4: institute systems that engage community and local government entities at the upazila, union, and ward levels to improve demand and supply for MNH/FP/N care							
4.1	Number of unions and upazilas where uniform birth and death figures come out	Link and synchronize the vital registration system with MOH&FW HMIS and local government so that a single source of UP is used to keep accounts of births and deaths	Monthly HMIS	Monthly	District M&E manager	35 unions (25% of total) of Noakhali and Lakhsmipur reported uniform birth and death figures in monthly report.	This activity will take place under MaMoni HSS.
4.2.2	Number of Union Health and Family Planning Standing Committees had their bimonthly meeting	Activating Health and Family Planning Standing Committee bimonthly meeting	Monthly reports	Monthly	District M&E manager	110 (75% of total) Health and Family Planning Standing Committee meetings conducted bimonthly.	Training of Union Health and Family Planning Standing Committees took place. These will continue to meet under MaMoni HSS.
4.2.3	Number of UP Health and Family Planning Standing Committee members received capacity-building training	Capacity-building training/orientation of UP Health and Family Planning Standing Committee members	Monthly and quarterly training reports	Monthly and quarterly	District M&E manager	1,350 UP Health and Family Planning Standing Committee members received capacity-building trainings.	100%

INDICATOR		DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	PY6 TARGET	FY14 ACHIEVEMENT TOWARD PY6 TARGET *(Due to political instability during 2014, several activities were transferred under MaMoni HSS)*
4.3	Number of UPs allocated budget for MNH/FP/N in the current year	UP to allocate budget for priority local MNH/FP/N issues and ensure/monitor appropriate expenditure.	UP yearly budget	Yearly	UP/Upazila team	110 of UPs of Noakhali and Lakhsmipur (75%) allocated budget for priority local MNH/FP/N issues and monitored/ensured appropriate expenditure.	Activation of UP Health and FP Standing Committees took place. This activity will continue under MaMoni HSS.
4.5.1	% of CVs selected against plan	Selection of 1 CV per 250 population and formation of 1 CAG per 750 population	MaMoni monthly reports	Monthly	Upazila coordinator, District M&E Manager	100% of CVs (13,000) selected in Noakhali and Lakhsmipur.	100%
4.5.2	% of CVs trained on CAG formation and group meeting facilitation	5 days training of CVs in 2 phases to develop their capacity on group formation and meeting facilitation	MaMoni monthly reports	Monthly	Upazila coordinator, District M&E Manager	100% of CVs (13,000) trained on CAG formation and group facilitation.	70%
4.5.3	Number of high-volume TBA oriented on healthy maternal and newborn practices	1-day package training of TBAs to promote healthy MNH practices, minimize harmful practices and referrals	MaMoni training reports	Quarterly	District M&E manager	750 TBAs oriented on healthy practices.	100%
4.5.4	% of target areas with population of 250 where CAG was formed	Formation of 1 CAG in 250 population	MaMoni routine MIS	Monthly	Manager CBS	100% of target areas with population of 250 where CAG is formed.	70% (CAGs will be formed in 30% of target areas)

Annex 1: MAMA Indicator Matrix

	INDICATOR	DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	ACHIEVEMENTS PAST YEARS/ PY6 TARGETS	Achievements Q1 Sept–Dec 2013	Achievements Q2: Jan–March 2014	Achievements Q3: April – June 2014
Objective 1: achieve improvements in health knowledge and practice as well as health-seeking behavior of targeted women and gatekeepers									
1.1	**Cumulative number of subscribers**	Numerator: Total number of subscribers to date. This number includes subscribers who may have de-registered. Denominator: None	System data	Quarterly	M&E team	PY4: 5,643 PY5: 114,942 PY6: 500,000	261,818	431,790	624,756
1.2	**Percentage of target subscribers enrolled**	Numerator: Number of subscribers enrolled in given period x 100 Denominator: Number of target subscribers for given period	System data	Quarterly	M&E team	PY4: 14% PY5: 107.5% PY6: 100%	104%	133%	150%
1.3	**Number of pregnant women currently active**	Numerator: Total number of pregnant women who are active and getting "Aponjon" service Denominator: None	System data	Quarterly	M&E team	PY4: NA PY5: 24,451 PY6: 106,362	49,416	80,947	63,796
1.4	**Number of new mothers currently active**	Total number of new mothers who are active and getting "Aponjon" service Denominator: None	System data	Quarterly	M&E team	PY4: NA PY5: 52,373 PY6: 227,824	129,325	246,171	208,761
1.5	**Number of gatekeepers currently active**	Numerator: Total number of gatekeepers who are active and getting "Aponjon" service Denominator: None	System data	Quarterly	M&E team	PY4: NA PY5: 4,606 PY6: 20,036	38,068	49,027	26,179
1.6	**Retention of subscribers**	Numerator: Number of subscribers who did not de-register Denominator: Total number of subscribers enrolled	System data	Quarterly	M&E team	PY4: NA PY5: 96.89% PY6: 97%	94.7%	95.47%	93.22%

INDICATOR		DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	ACHIEVEMENTS PAST YEARS/ PY6 TARGETS	Achievements Q1 Sept–Dec 2013	Achievements Q2: Jan–March 2014	Achievements Q3: April – June 2014
1.7	**Discontinuation of service by subscribers**	Numerator: Number of subscribers de-registered Denominator: Total number of subscribers during that period	System data	Quarterly	M&E team	PY4: 5.62% PY5: 3.09% PY6: 3%	5.27%	4.53%	6.78%
1.8	**Percentage of target number of gatekeepers enrolled**	Numerator: Number of gatekeepers enrolled during the reporting period Denominator: Number of target gatekeepers for the reporting period	System data	Quarterly	M&E team	PY4: NA PY5: 10.7% PY6: 15%	168%	41%	42%
1.9	**Discontinuation of service by gatekeeper subscribers**	Numerator: Number of gatekeepers subscribed or deregistered to date Denominator: Total number of gatekeepers subscribers to date	System data	Quarterly	M&E team	PY4: 7.77% PY5: 0.03% PY6: 0.03%	3.5%	7.4%	15%
1.10	**Knowledge acquired about ANC from the service** (60 respondents x 3 phone surveys = 180 total respondents) 2014: 4, 5, 6 phone surveys, 120 respondents each	Numerator: Number of respondents per period who said Aponjon was the source for learning that 4 ANC visits required during pregnancy Denominator: Number of respondents who reported attending 4+ (or required number to date) ANC visits	Phone surveys 1–3	Quarterly/ Annually	M&E team	PY4: NA PY5: 32% PY6: 35%	69%	64%	64%
1.11	**Household practice on drinking pure water**	Numerator: Number of respondents drinking pure water (Tube-well w/o arsenic, boiled, filtered, Pure it and treated rain water) Denominator: Number respondents per period	Phone surveys 1–3	Quarterly/ Annually	M&E team	PY4: NA PY5: 95% PY6: 96%	71%	97%	96%

INDICATOR		DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	ACHIEVEMENTS PAST YEARS/ PY6 TARGETS	Achievements Q1 Sept–Dec 2013	Achievements Q2: Jan–March 2014	Achievements Q3: April – June 2014
1.12	**Frequency of ANC visits by pregnant women as a result of service**	Numerator: Number of subscribers attended at least 4 ANC or required number of ANC visits Denominator: Number of respondents interviewed per period	Phone surveys	Quarterly/ Annually	M&E team	PY4: NA PY5: 60.5% PY6: 65%	66%	80%	82%
1.13	**Blood group detection of pregnant women**	Numerator: Number of respondents who can tell what their blood group is (for gatekeepers of the primary subscriber) Denominator: Total number of respondents per period	Phone surveys	Quarterly/ Annually	M&E team	PY4: NA PY5: 64% PY6: 66%	67%	66%	67%
1.14	**Arrangement for delivery at facility (both planned and actual)**	Numerator: Number of respondents who arranged or delivered at a facility per period Denominator: Total number of respondents per period	Phone surveys	Quarterly/ Annually	M&E team	PY4: NA PY5: 56% PY6: 58%	57%	61%	61%
1.15	**Arrangement for safe delivery at home (actual)**	Numerator: Number of new mothers and their gatekeepers who arranged for delivery at home with a TBA Denominator: Number of new mothers and their gatekeepers	Phone surveys	Quarterly/ Annually	M&E team	PY4: NA PY5: 28.5% PY6: 30%	31%	23%	35%
1.16	**Ratio of colostrum feeding**	Numerator: Number of respondents—new mothers and gatekeepers of new mothers who fed their baby with colostrum within 1 hour of birth Denominator: Number of new mothers and their gatekeepers	Phone surveys	Quarterly/ Annually	M&E team	PY4: NA PY5: 90.5% PY6: 91%	92%	90%	95%

INDICATOR		DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	ACHIEVEMENTS PAST YEARS/ PY6 TARGETS	Achievements Q1 Sept–Dec 2013	Achievements Q2: Jan–March 2014	Achievements Q3: April – June 2014
1.17	**Ratio of exclusive breastfeeding**	Numerator: Number of new mothers and gatekeepers of new mothers who breastfed exclusively up to 6 months Denominator: Number of respondents— new mothers and gatekeepers of new mothers	Phone surveys	Quarterly/ Annually	M&E team	PY4: NA PY5: 81.5% PY6: 83%	82%	92%	95%
1.18	**Immunization rate of BCG**	Numerator: Number of respondents—new mothers and gatekeepers of new mothers immunized their infants with BCG Denominator: Number of new mothers and gatekeepers of new mothers interviewed	Phone surveys	Quarterly/ Annually	M&E team	PY4: NA PY5: 98% PY6: 100%	97%	100%	97%
1.19	**PNC visit rate**	Numerator: Number of new mothers and gatekeepers of new mothers attended PNC visit (within 2 days of giving birth) Denominator: Number of new mothers and gatekeepers of new mothers interviewed	Phone surveys	Quarterly/ Annually	M&E team	PY4: NA PY5: 58% PY6: 60%	65%	62%	76%
1.20	**Percentage of subscribers who recommend the service to peers**	Number of subscribers who recommend the service to peers Denominator: Number of subscribers interviewed	Phone surveys	Quarterly/ Annually	M&E team	PY4: 95 PY5: 98% PY6: 99	97%	100%	100%

INDICATOR		DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	ACHIEVEMENTS PAST YEARS/ PY6 TARGETS	Achievements Q1 Sept–Dec 2013	Achievements Q2: Jan–March 2014	Achievements Q3: April – June 2014
1.21	**Use of safe delivery kit in case of home-based delivery**	Numerator: Number of new mothers and gatekeepers of new mothers delivered at home, AND used safe delivery kit x 100% Denominator: Total number of new mothers and gatekeepers of new mothers interviewed who delivered at home	Phone surveys	Quarterly/ Annually	M&E team	PY4: NA PY5: 84% PY6: 86%	81%	89%	91%
Objective 2: ensure quality service delivery									
2.1	**Satisfaction and usability about the service (Weighted average of Likert Scale Score)**	Numerator: Number of subscribers scored the service with 4 and 5 in Likert Scale Denominator: Number of respondents interviewed	Phone surveys	Quarterly/ Annually	M&E team	PY4: NA PY5: 93% PY6: 94%	94%	99%	100%
2.2	**Level of dissatisfaction**	Numerator: Number of respondents not fully satisfied/dissatisfied with the service Denominator: Total number of respondents per survey	Phone surveys	Quarterly/ Annually	M&E team	PY4: NA PY5: 7% PY6: 6%	5%	9%	3%
2.3	**Level of successful SMS delivery**	Numerator: Number of SMS delivered successfully Denominator: Number of SMS attempted to send, multiplied by 100	System Data	Quarterly	Technology team	PY4: NA PY5: 92% PY6: 95%	70%	47%	58%
2.4	**IVR cutoff rate**	Numerator: Total number of IVR was not delivered Denominator: Total number of IVR supposed to deliver	System data	Quarterly	Technology team	PY4: NA PY5: 29% PY6: 25%	31%	80%	87%

INDICATOR		DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	ACHIEVEMENTS PAST YEARS/ PY6 TARGETS	Achievements Q1 Sept–Dec 2013	Achievements Q2: Jan–March 2014	Achievements Q3: April – June 2014
Objective 3: build and manage partnerships									
3.1	**Partnerships with government agencies**	Number of partnerships materialized	List of GOB partners' agreements/ letters	One time	Marketing team	PY4: 1 PY5: 4 PY6: 4	4	4	4
3.2	**Regularity of Aponjon Advisory Board (AAB) meeting**	Numerator: Number of AAB meeting held x 100% Denominator: Number of AAB meeting planned	Meeting minutes	Yearly	Marketing team	PY4: 50% PY5: 66% PY6: 75%	0% (could not happen due to election)	0%	0%
3.3	**Partnerships with private entities**	3.3.1. Partnerships Numerator: Number of partnerships materialized x 100% Denominator: Number of partnerships planned	Agreements	Yearly	Marketing team	PY4: NA PY5: 40% PY6: 50%	100%	100%	100%
Objective 4: test financing/business model									
4.1	**Revenue generation**	Numerator: BDT revenue generated (from telecommunication partners, sponsor a mother, advertisement) per period Denominator: NA	Business plan	Yearly	Accounts team	PY4: NA PY5: 46,282 PY6: 10,350,000	730,788 (we did not receive any revenue from GP yet)	(we have not received any revenue from any source during this quarter)	158,151 (Airtel and Banglalink)
4.2	**Corporate resource mobilization (in cash)**	Numerator: BDT corporate resource mobilized per period Denominator: NA	Accounts Document	Yearly	Accounts team	PY4: 7867,500 PY5: 1000,000 PY6: 4000,000	1000,000	(we have not received any revenue during this quarter)	(we have not received any revenue during this quarter)
4.3	**Corporate resource mobilization (in kind)**	Numerator: Monetary value BDT of corporate resource mobilized per period Denominator: NA	Corporate partners agreement	Yearly	Marketing team	PY4: 65,00000 PY5: 50,00000 PY6: 6,000,000	2,000,000	300,000	(we have not received any revenue during this quarter)

INDICATOR		DEFINITION/ CLARIFICATION	DATA SOURCE/ COLLECTION METHOD	FREQUENCY OF DATA COLLECTION	RESPONSIBLE PARTY	ACHIEVEMENTS PAST YEARS/ PY6 TARGETS	Achievements Q1 Sept–Dec 2013	Achievements Q2: Jan–March 2014	Achievements Q3: April – June 2014
4.4	**Cost-burning rate (target <1)**	Numerator: Actual expenditure Denominator: Expenditure planned	Accounts Document	Yearly	Accounts team	PY4:103% PY5: 70% PY6:90%	Before year end, it will not show the exact result	Before year end, it will not show the exact result	Before year end, it will not show the exact result
4.5	**Average cost per user**	Numerator: Cumulative total cost to (end of quarter in BDT) Denominator: Cumulative number of subscribers to date	Accounts Document	Yearly	Accounts team	PY4: 5,549 PY5: 563 PY6: 207	Before year end, it will not show the exact result	Before year end, it will not show the exact result	Before year end, it will not show the exact result
4.6	**Financial viability (target >1)**	Numerator: All inflow BDT per period Denominator: All outflow per period	Accounts Document	Yearly	Accounts team	PY4: 99.99% PY5: 90% PY6: 99.99%	Before year end, it will not show the exact result	Before year end, it will not show the exact result	Before year end, it will not show the exact result
Objective 5: share learning from project									
5.1	**Visibility at national level**	Coverage of the project in print media Numerator: Number of print media coverage Denominator: NA	Newspaper scrapbook, archiving of publications, clips	Quarterly	Communication Team	PY4: NA PY5: 18 PY6: 25	10	4	3
5.2	**Visibility at global level**	Coverage of the project in international print media Numerator: Number of international print media coverage x 100 Denominator: Planned number of coverage in international print media	Newspaper scrapbook, archiving of publications, clips	Quarterly	Communication Team	PY4:NA PY5: 1 PY6: 3	2	1	1

Annex 2: Success Stories

FATEMA QUICK TO ACT, SAVES BABY GIRL

Credit: Mamun-Ur-Rashid

Fatema (right) with Ruby and her two-week-old daughter at the Upazila Health Complex

In northwest Bangladesh, along the border with India and deep in Joypurhat District, lies Pachbibi Upazila. It was there in Goneshpur Village that a story unfolded around the plight to save Ruby Begum's newborn daughter.

The first time Ruby, 24, was pregnant seven years ago, she had enlisted a traditional birth attendant (TBA) to conduct the delivery at home, and her daughter, Rimu, was born. In early 2012, Ruby was pregnant again and again planned to deliver her second baby at home.

On the morning of September 30, 2012, Ruby's mother took her to the Pachbibi Upazila Health Complex (UHC) because of a severe pain in her lower abdomen that had persisted since the night before. Fortunately for Ruby, the duty nurse, Fatema Khatun, identified her as being in active labor and quickly admitted her to the UHC. Fatema sensed that the baby was in distress because of the meconium stains she spotted when conducting the delivery. The delivery took only an hour and a half, but as soon as the baby was born, Fatema realized that the baby girl was not breathing at all.

Coincidentally, the Helping Babies Breathe (HBB) training for skilled birth attendants (SBAs) was in progress at the same UHC just a few doors away from the delivery room. Nurse Fatema had received her training just two days before with the previous cohort. Before she received the HBB training, she knew only to apply the mouth-to-mouth resuscitation method to revive babies under the same circumstances. This time, Fatema first wrapped and dried the baby and tried to stimulate her. When there was no response, Fatema took out the little suction bulb used in the HBB program to clean the baby's nose and mouth and then used the bag and mask to artificially resuscitate the newborn. The first "golden" minute passed, but still there was no response. Fatema kept trying for another two to three minutes and finally heard the baby's cry. She still knew the baby's condition was critical and immediately called Dr. Shafiullah, a child specialist of Joypurhat Sadar, who was conducting the HBB training at the UHC, to examine the baby. The doctor assessed the baby's condition and upon his confirmation that the baby was safe, the mother and baby were both released.

Fatema is one of 12,000 participants to receive the HBB training and newborn resuscitation supplies for SBAs. Fatema shared that, in the preceding 10 years, she had conducted close to 2,000 deliveries and whenever there was a situation where mouth-to-mouth resuscitation failed, she had no choice but to refer the cases to higher facilities. Fatema thinks that most of the cases she referred possibly did not survive the ordeal. In this case, Fatema identified the danger and acted quickly, which turned the situation around for Ruby and her family, making a significant difference in Ruby's baby's life. Dr. Khurshed Alam, the Upazila Health and Family Planning Officer at Pachbibi UHC, believes that the HBB training is an important innovation that adds value to the job that the SBAs are already doing.

HBB is an evidence-based educational program to teach neonatal resuscitation techniques in resource-limited areas. In Bangladesh, the national scale-up of the HBB initiative has been undertaken since early 2011 by the MOH&FW—in collaboration with USAID, MCHIP, Save the Children, UNICEF, Bangabandhu Sheikh Mujib Medical University, icddr,b, and the Laerdal Foundation—to strengthen the capacity of the health facilities and SBAs to provide essential newborn care, including newborn resuscitation.

"We know the correct [resuscitation] technique now and the method works very fast. Referral rate will go down after the training."

—– Nurse Fatema Khatun, Joypurhat District

SHUMI DEV TAKES APONJON FORWARD IN THE COMMUNITY

Aponjon Is an Inspiration for both Health Workers and Clients

Shumi Dev is a 24-year-old community health worker (CHW) who has been working for MaMoni in Balaganj (Sylhet) under the supervision of Shimantik. Her primary work is to disseminate information about antenatal and postnatal checkups, safe delivery, and family planning methods among expectant women, new mothers, and eligible couples. Shumi received training from the Aponjon team along with 13 colleagues in her area during the pilot phase. For the Aponjon service, she registers expectant women and new mothers who have mobile phones in their houses and who want to receive weekly messages throughout their pregnancy and until their child's first birthday.

Shumi approaches the poorest of the poor who do not have access to doctors and who need behavioral orientation to improve maternal and child care at the household level. She identifies women who have a mobile phone at home, who are eligible to receive the service (expectant women or those who have a child under one year of age), explains the service mode and gets their consent to register them for the service. She uses Aponjon's registration form and captures each client's socioeconomic condition for further socio-demographic considerations. She believes that Aponjon is reaching women and families who badly need critical health information.

"I think the service will be very good for people who happen to come from low-income group. Wealthy- and middle-income people who consult [a] doctor on regular basis and are exposed to a lot of health information may not think the service is required for them. I am already getting a lot of response from the low-income group," said Shumi.

Shumi has been with Aponjon since the inception of its pilot phase in 2011. She is one of the health workers whose feedback about the service's pricing policy, call center, registration process, and customer acquisition process was incorporated in the service before rollout.

Shumi thinks the service is raising awareness among people about the things they should do to avoid any mishaps. For example, women and families are reminded of their appointments with their doctors for antenatal and postnatal checkups. Women and families have faith that the mobile messages are provided by an expert doctor, so when the "doctor" in the messages is asking them to test their blood groups, they are immediately testing their blood. Shumi thinks Aponjon is making her life easier by motivating people to take action accordingly without fear.

"Aponjon tells women about danger signs or symptoms and not to panic. Women listen to the mobile messages, realize what they are going through is a normal process, and gradually perform the works that we [also] have been asking them to do," said Shumi. The inspired CHW feels proud to be able to transfer her inspiration to the community, which is in such dire need of trustworthy and important information.

Annex 3: List of Presentations at International Conferences and Publications

Sayed Rubayet. National Scaling-Up of Helping Babies Breathe Initiatives in Bangladesh (PPT). Presented at: HBB GDA Meeting, July 2012.

Joseph Johnson. HBB Quality Improvement System (PPT). Presented at HBB GDA Semi Annual Meeting, September 9, 2013, Chicago.

Professor M A Mannan. Scaling-up of Helping Babies Breathe Initiative (HBB) to Strengthen Newborn Resuscitation in Bangladesh (Poster). Presented in October 2013, Australia.

Professor Mohammod Shahidullah. National Scale-up of HBB. Presented at ICP Conference, August 24–29, 2013, Melbourne, Australia.

Professor Mohammod Shahidullah. National Scale-Up of HBB. Presented at XI World Congress of Perinatal Medicine 2013, June 19–22, 2013, Moscow, Russia.

Professor Mohammod Shahidullah. National Scaling-Up of Helping Babies Breathe Initiative. (https://www.youtube.com/watch?v=Qx9xPJxvmcQ). Presented at 2013 Global Newborn Health Conference, April 15–18, 2013, Johannesburg, South Africa.

MAMA Bangladesh participated in The Daily Star leadership colloquium 2012 on ICT in health care. January 6–7,2012.

MAMA Bangladesh participated in the GSMA mHealth Summit. May 28–June 1, 2012, Cape Town, South Africa. The attendance from Aponjon was crucial before the national launch of the service.

A three-member team from Aponjon participated at the mHealth summit held in Washington, DC, USA in December 2012. Aponjon team exhibited poster titled "Improving health awareness through mobile health messages in Bangladesh" on the research findings from the formative research conducted during the pilot phase.

Aponjon presented two sessions at the Social Enterprise and Innovation Day 2013 at the Asian University for Women, Chittagong, one on Social Enterprise and the other on Aponjon.

A two-member team attended the Women Deliver Conference on May 28, 2013, in Kuala Lumpur, Malaysia. They shared experiences of MAMA Bangladesh and made contact with participants who were interested in mHelath. Participants were touched by the way MAMA was addressing women's health in Bangladesh.

In December, a two-member team participated in the mHealth summit 2012 organized in the USA. In one of the presentations, the team shared the Aponjon experience with the global stakeholders, while another member presented a keynote address about the Aponjon dashboard at the main conference.

In December 2013, Aponjon M&E Specialist Atik Ahsan attended the ICTD 2013 conference in South Africa, where he presented his poster on the findings of phone surveys with Aponjon subscribers. This presentation helped highlight Aponjon's services among academics and ICT practitioners. This was the first time the MAMA initiative made a presentation at the ICT forum.

Fida Mehran, Head of Content, MAMA Bangladesh, presented the Aponjon program through the presentation, "Mobile Based Awareness – An effective tool for Maternal and Child Health Development" at the Annual National Early Childhood Development Conference 2014, held in March 2014.

M&E Specialist Mafruha Alam's abstract on the impact of health behavior of Aponjon subscribers was accepted for the GHIC conference, which was held in April 2014 at Yale University. The paper was selected for poster presentation at the conference. This was the first presentation from Aponjon at Yale, where academics and students learned about mHealth serving the developing world.

Publications:

Aponjon M&E team worked closely with Johns Hopkins University to publish the report of formative research, collaboratively, which is available now for distribution.

Annex 4: List of Materials and Tools Developed or Adapted by the Program

TECHNICAL REPORTS	
HBB case studies	English
HBB process documentation report	English
Process evaluation draft report	English
HBB: Providers' Skill Retention Post-Initial Training	English
HBB pilot study draft report	English
NNA technical brief	English
DHSS Situational Analysis	English
Service preparedness and facility assessment survey	English
MCHIP Bangladesh Healthy Fertility Study: Six-Month Postpartum Follow-Up Survey Report, January 2011	English
MCHIP Bangladesh Healthy Fertility Study: 18-Month Postpartum Follow-Up Survey Report, December 2011	English
MCHIP Bangladesh Healthy Fertility Study: 24-Month Postpartum Follow-Up Survey Report, June 2012	English
MCHIP Bangladesh Healthy Fertility Study: 30-Month Postpartum Follow-Up Survey Report, October 2012	English
MCHIP Bangladesh Healthy Fertility Study: Final Report 2014	English
MCHIP Bangladesh Program Managers' Guide to Community-Based Family Planning and Maternal and Newborn Health Integration, 2012	English
MCHIP Bangladesh Across the Behavior Change Continuum: Assessment of Return to Fertility Messages and "Asma's Story" within the Healthy Fertility Study, 2012	English
TRAINING MATERIALS AND TOOLS	
HBB Manual	Bengali
HBB Flipchart	Bengali
HBB Workplan	Bengali
Pre- and Post-Test Questioners	Bengali
Refresher Checklist	Bengali
Clinical Reminder	Bengali
HBB Training Video in Bangla (draft)	Bengali
Message board (soft copy)	Bengali
Flash card/banner for TBA training (soft copy)	Bengali
MNH training module for CHWs	Bengali
MNH training module for paramedics	Bengali
TBA orientation module	Bengali
CV orientation module	Bengali
CG training module (Revitalization of Community-Based Health Care in Bangladesh module adapted)	Bengali
JD based training module for DC/FC, UC/TO and FSO	Bengali
MCHIP Bangladesh HFS LAM Leaflet, 2011	Bengali

MAMA Training Manual for the Community Agents and Brand Promoters	Bengali
MAMA Training Drama	Bengali
HEALTH WORKER JOB AIDS (FORMS, CHARTS, ETC.)	
Supervisory checklist of HBB/SBA training used by GOB managers	Bengali
Monitoring checklist of HBB/SBA training used by BSMMU trainers	Bengali
Newborn Care Surveillance checklist	Bengali
Logistics checklist used by Field Officers during district revisit	Bengali
BROCHURES AND POSTERS	
MCHIP Bangladesh Community mobilization, 2011	English
CONFERENCE/PRESENTATION MATERIALS	
MCHIP Bangladesh Healthy Fertility Study Design, Dhaka Dissemination Meeting, October 2011	English
MCHIP Bangladesh Healthy Fertility Study Design, Dhaka Dissemination Meeting, September 2013	English
MCHIP Bangladesh Healthy Fertility Study Design, Washington, DC, Dissemination, September-2013	English
MCHIP Bangladesh Healthy Fertility Study: Lessons Learned, Dhaka Dissemination Meeting, September 2013	English
MCHIP Bangladesh Healthy Fertility Study: Lessons Learned, Washington, DC, Dissemination, September-2013	English
MCHIP Bangladesh Healthy Fertility Study: Policy and Program Implications, October 2011	English
MCHIP Bangladesh Healthy Fertility Study: Program Brief, October 2011	English
MCHIP Bangladesh Healthy Fertility Study: Program Brief, September 2013	English
MCHIP Bangladesh Healthy Fertility Study Results, Dhaka Dissemination Meeting, October 2011	English
MCHIP Bangladesh Healthy Fertility Study Results, Dhaka Dissemination Meeting, September 2013	English
MCHIP Bangladesh Healthy Fertility Study Results, Washington, DC, Dissemination, September 2013	English
MCHIP Bangladesh Healthy Fertility Study: Behavior Change Communication and Community Mobilization	English
MCHIP Bangladesh Healthy Fertility Study: Effect of Postpartum Family Planning Integration within a Community-Based MNH Program in Rural Bangladesh, May 2013	English
MCHIP Bangladesh Healthy Fertility Study: Impact of Integrating FP within a Community-Based Maternal and Neonatal Health Program in Rural Bangladesh, International FP Conference, November 2011	English
MCHIP Bangladesh Healthy Fertility Study: Impact of LAM, APHA Conference, October 2012	English
MCHIP Bangladesh Healthy Fertility Study: Impact of Promotion of Lactational Amenorrhea Method within a Community-Based Maternal and Neonatal Health Program in Rural Bangladesh, International FP Conference, November 2011	English
MCHIP Bangladesh Healthy Fertility Study: Improving FP Services through Training and Capacity Building of Frontline Workers in an MNH Program in a Low-Resource Area in Bangladesh, November 2013	English
MCHIP Bangladesh Healthy Fertility Study: Integrated FP/MNCH Services, APHA Conference, October 2012	English
MCHIP Bangladesh Healthy Fertility Study: Integrating FP into MNH Program in Rural Bangladesh, Global Health Conference 2011	English
MCHIP Bangladesh Healthy Fertility Study: Integrating FP within a Community-Based Maternal and Neonatal Health Program in Rural Bangladesh, March 2011	English

MCHIP Bangladesh Healthy Fertility Study: Integrating FP within Community-Based MNH Program in Sylhet, Bangladesh, March-2011	English
MCHIP Bangladesh Healthy Fertility Study: Integrating FP within Community Based MNH Program in Sylhet, Bangladesh, May 2012	English
MCHIP Bangladesh Healthy Fertility Study: Lactational Amenorrhea Method Ambassadors, Local Champions Providing Peer Support, Counseling, and Advocacy for LAM, February 2012	English
MCHIP Bangladesh Healthy Fertility Study: LAM Barrier Analysis, Washington, DC, Dissemination, September 2013	English
MCHIP Bangladesh Healthy Fertility Study: Scale Up Best Practices in Low-Performing Sylhet division, August 2013	English
MCHIP Bangladesh MaMoni, old brief, 2011	English
MCHIP Bangladesh MaMoni, project brief, 2012	English