

ACCESS Health International

SAJIDA Bandhu: A Case Study

**An mHealth Pilot Innovation at Rural Area of
Bangladesh for Maternal and Child Health**

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CHMI identifies, analyzes and connects programs working to improve health and financial protection for the poor. CHMI works through a network of partner organizations in 16 countries where there are large numbers of private health care providers. CHMI is funded by the Bill & Melinda Gates Foundation and the Rockefeller Foundation.

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Disclaimer

The case study has been compiled after primary and secondary research on the organizations and published subsequent to their approval. The case has been compiled after field visits to the organization in April 2011. The author of the case or ACCESS Health International are not obliged or responsible for incorporating any changes occurred in the organization after receiving the due permission from the organization to publish the case. The case study has been developed with a specific focus to highlight some key practices/interventions of the organization and does not cover the organization in its entirety.

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Introduction

ACCESS Health International started its journey in Bangladesh on February 1 2011 with the aim to create a knowledge base on the overall healthcare market in the country. It focuses on innovative approaches, as well as low-cost, quality ensured, technology-based new initiatives and an array of health interventions beyond the traditional leeway of health provisions in Bangladesh.

ACCESS Health International Bangladesh broadens its outlook both in public and private sectors, public-private partnership framework or any other partnership approach.

Since its independence in 1971, Bangladesh has successfully adopted and implemented new approaches to health interventions that have helped in improving healthcare, especially in maternal and child health. The country has also received global recognition for its progress towards achieving Millennium Development Goal (MDG) for child and maternal health.¹

SAJIDA Foundation is one of the ever-increasing NGOs in Bangladesh with diversified social development interventions. Together with its micro-finance program, it works toward maintaining the health of poor people within community reach in accordance with national and international health targets. The communities have been selected from specific locations of Bangladesh.

Click Diagnostics is a global mobile health (mHealth), profit-oriented social enterprise that aims to bring affordable and quality health services to under-served communities. This is done through the creation of proactive and self-sustaining health systems driven by mobile technologies, community-level entrepreneurship, and value-based partnerships.

This case study proposed to explore the partnership between SAJIDA Foundation and Click Diagnostic in gathering knowledge on the use of mobile phone technology by SAJIDA Bandhus² (the Community Health Workers). The pilot partnership, which provided health information and services to rural women for maternal and child health needs, was initiated in October 2010. Upon its completion in June 2011, it is expected to expand geographically with the necessary changes. The purpose of the case study is also to bring this new intervention to rural areas, where formal health care is not accessible.

¹ Source: <http://www.undp.org.bd/mdgs>.

² Bandhu is a commonly used Bengali word means friend; the community health workers of SAJIDA Foundation are designated as SAJIDA Bandhus (SB)

Executive Summary

SAJIDA has been committed to its goal of providing quality health care services to the poor and poorest of the poor. Its health program that was initiated in 1999 remains an integral component of SAJIDA's development interventions. As part of its comprehensive development approach, the purpose of the program is to improve the health of SAJIDA member families (micro-finance participants). It also plans to provide quality preventive and curative healthcare services to other community people in SAJIDA's working areas.

Click Diagnostic's mobile health (mHealth) is a business-oriented social platform that connects health service providers, reduces cost of service delivery, and optimally utilizes tiers of the existing health system for patient care. In Bangladesh, a community health-worker with a Click-enabled mobile phone is able to act as the primary agent for service delivery. She is connected with the doctor of the formal health care delivery system via the mHealth platform.

Click diagnostic and SAJIDA Foundation had entered into a partnership in October 2010 to pilot a project (from October 2010 – June 2011). The pilot aimed at improving maternal and child health in rural areas of Dhaka through the use of mobile phone technology. SAJIDA has its own financial and budget management to test the pilot from its own source. Therefore, this pilot targeted only SAJIDA's micro-finance program beneficiaries who were participants in its mandatory health insurance scheme. While SAJIDA's medical team provided input on medically technical issues, the Click team provided the technology and connectivity thereby creating a mHealth platform.

The SAJIDA Bandhus conducted door-to-door visits of the micro finance borrowers that comprised about 3,100 households or 15,500 beneficiaries at pilot locations. Primary-level health information was collected using mobile phone software. Special focus was given to prenatal and postnatal women during the visits. A doctor, stationed at SAJIDA hospital and equipped with an Internet enabled laptop, was able to monitor the incoming patient data and provide necessary medical advice in real-time. On completion of the pilot in June 2011 and based on its findings SAJIDA intends to expand the scope of services and coverage to a greater population of about 100,000 households or 500,000 beneficiaries.

A representative from ACCESS Health International visited all the three sites of the pilot study. She interacted with the beneficiaries, the SBs and senior program managers from both organizations. The case study noted the process of small-scale pilot intervention.

Methodology of the Case Study

The case study used the following methodology to better understand the partnership and its contribution toward healthcare in rural areas:

- A discussion was held with senior managers of organizations as well as the implementing doctor and community workers in order to appreciate the partnership and its implementing modalities. The discussion also focused on the monitoring and technical aspects of health and information technology. The beneficiaries were also consulted on their views to this new approach of receiving services at home.
- Documents were reviewed online and offline from both organizations to get organizational history, mission, vision and the advantages of such an intervention.
- Duty travel was made to field locations of the sites where SAJIDA Foundation and Click Diagnostic were working together.

SAJIDA Foundation Health Program

[SAJIDA's Health Program](#) began as a small-scale operation offering basic treatment to about 4,478 families. This was carried out through one health centre and five satellite clinics. Based on the demand from the community and the subsequent increase in SAJIDA's financial capacity, the number of satellite clinics was increased to sixteen for eight of its micro-finance branches. At the time there was a high demand for ante-natal care and normal delivery. SAJIDA opened an Operation Theatre (OT) at the static centre to facilitate essential obstetric care. As the number of patients and concurrently their availing of services increased further, SAJIDA set up a hospital. The new 50-bed premise was set up at Keraniganj of Dhaka District. Once the hospital was opened, a range of specialist services such as Obs. & Gynae, Medicine, Pediatric, Orthopedic and ENT were also made available. In 2005, SAJIDA started an eye-care unit in the hospital in collaboration with [ORBIS International](#)³. The new alliance provided proper



³ ORBIS prevents and treats blindness by providing quality eye care to transform lives by providing the tools, training, and technology necessary for local partners to develop their own capacity to provide quality eye care services that are affordable, accessible and sustainable. ORBIS is dedicated to saving sight and eliminating avoidable blindness worldwide.

eye care services to the community with special focus given to refractive errors and cataract surgeries. In 2006, the hospital was upgraded to a 70-bed hospital, which today provides nearly all specialist services.

Along with this hospital in Keraniganj, the 70-bed hospital in Narayanganj was started in February 2010. In addition, SAJIDA's mobile health teams provide healthcare services to achieve MDG 6 (to combat HIV/AIDS, malaria and other diseases). These services are provided to the ethnic minority groups at Chittagong Hill Tract (CHT) districts of Rangamati and Khagrachari to combat malaria. Similar services are provided at Narayanganj and Sunamganj districts to combat tuberculosis. Micro-Health insurance has also been introduced for its microfinance beneficiaries, which provides healthcare at a discounted rate at its own facilities. Outpatient treatment and physician consultation is free of charge. This scheme also has a special benefit package that reimburses beneficiaries for out-of-pocket expenditure irrespective of where the services have been received. On provision of the related documents, SAJIDA's claim settlement department ensures remittance of the reimbursement at the earliest.

In February 2010, SAJIDA introduced a unique health card concept that ensured proper institution-based healthcare for people from all walks of life. The health card offers annual health services at a minimal cost of BDT 150 per person (USD 2.04) to encourage institutional health seeking behavior. The individual health card allows general and outpatient treatment free of charge. It also provides a 30% discount on all pathological tests conducted at any of SAJIDA's hospitals. Significant discounts on various other services including specialist physician consultation, ultrasound test, x-ray and surgical care are also given.

Today, SAJIDA's health program covers about 1.6 million beneficiaries in greater Dhaka, Narayanganj, Gazipur, Sunamganj and Chittagong districts. The hospital has an employee strength of 161 people that includes 60 percent female staff, 19 specialist doctors, twenty-seven medical officers, three sonologists, three pathologists, forty-four paramedics and a field team of service promoters and supervisors.

The SAJIDA Bandhus are a non-formal cadre of SAJIDA's trained community health workers recruited from local villages. Using a software enabled mobile phone, the SBs link the patient's home to the hospital where information is passed to the doctor. Currently there are six SBs who work for mHealth in three microfinance branches at three locations in Nawabganj Upazila of Dhaka district. There are also some SBs who work for other SAJIDA interventions.



Click Diagnostic's mHealth intervention in Bangladesh

[Click Diagnostics](#) is a global mobile health (mHealth) social enterprise founded by international development activists from [Harvard University](#) and [Massachusetts Institute of Technology \(MIT\)](#). By creating an mHealth ecosystem, Click aims to address the following global healthcare challenges:

Lack of access: People living in the rural and remote areas of Bangladesh have no access to proper healthcare due to the geographical location of these areas and absence of proper transportation. Further, the accessibility to healthcare depends on other social factors including gender, poverty, social taboos, etc.

Lack of funds: The rural population of Bangladesh is unable to afford the high cost of healthcare. There is also an added cost of the transportation to reach the health centers, which are usually located in the city. The government and NGOs are unable to subsidize under-served populations entirely with their existing provisions and facilities.

Lack of medical resources: As in many other developing countries, Bangladesh faces a severe shortage of trained healthcare professionals, especially medical specialists. This problem is further accentuated in rural areas, which lead to the absence of proper diagnosis and quality treatment. The government of Bangladesh has been trying to overcome this problem for a long time. However, retention of skilled medical professionals in rural areas still remains a challenge.

Globally, Click Diagnostic's mHealth platform comprises modules for:

- Medical services (primary care triage, risk-screening and tele-consultation)

- Patient management (electronic medical record, referral service and emergency response)
- Administration and planning (mobile accounting, remote monitoring, real-time data collection) and
- Purchasing (mPayment) and financing (micro-insurance) of health care services

Click Diagnostic's Partnership in Bangladesh

In Bangladesh Click Diagnostic has partnered with leading NGOs working towards good quality community health care. The following is a summary of those projects.

BRAC Health Program

BRAC, the largest development NGO in the world has partnered with Click to strengthen maternal, neonatal and child health (MNCH) program in six city corporations. This includes 64 branches or about 300,000 urban slum dwellers. This joint endeavor has incorporated the mHealth system into its existing patient management system. In this project, community-based health workers collect patient data, which helps to assess their risk level and then provide correct medical advice. The health workers get automated work scheduling with prioritized patient care, which helps to monitor and evaluate their work electronically.

Amader Gram (An Information Communication Technology for Development (ICT4D) Initiative of Bangladesh Friendship Education Society and Ohio State University)⁴

The health workers of Amader Gram's Breast Cancer Screening program use Click Diagnostics' mobile phone-based software for data collection. Data collected from 45,000 households is used to monitor patient management and information analysis system electronically. This could be of immense use in the screening of a culturally sensitive and tabooed conditions such as breast cancer for conservative societies like Bangladesh.

Friendship; the Mobile Boat Hospital

⁴ Amader Gram (Our Villages) is an ICT4D initiative of Bangladesh Friendship Education Society (BFES). The project is mostly centered and based on the village society and it is conceived/planned to build up as a demonstrative Social Innovation. In mid 2006 BFES/Amader Gram partnered with the International Breast Cancer Research Foundation (www.ibcrf.org) to become one of 9 countries participating in a clinical trial titled "Phase III randomized study of luteal phase vs. follicular phase surgical oophorectomy and tamoxifen in premenopausal women with metastatic hormone receptor-positive breast cancer." Amader Gram provides the oversight and administration of this trial at partnering Dhaka Medical College Hospital and Khulna Medical College Hospital.

Using Click's mobile platform, Friendship's Community Health Workers (CHWs) provide primary and MNCH care services on the remote riverine islands and riverbank areas of northern Bangladesh where people do not have any access to health care infrastructure.

SAJIDA Bandhu and Mobile Health

About the partnership - SAJIDA and Click have partnered a pilot that was initiated in mid 2010 for SAJIDA's micro-finance borrowers at three remote locations of its micro-finance branches in the sub-district of Nawabganj under Dhaka district. In this pilot partnership, SAJIDA is responsible for providing healthcare to its microfinance beneficiaries. It recruited SAJIDA Bandhus and provided two-week long training to them. SAJIDA supervises the day-to-day activities of the pilot and maintains records of it. Click diagnostic is the technology partner for installation of the software on the mobile phone and the computer. It also provided training to SAJIDA Bandhus, doctors and the management on the information technology to enable its effective use. It also carries out supervisory-visits to field areas to provide on-the-job training to the field workers to improve efficiency and troubleshooting.

SAJIDA Foundation recruited the SAJIDA Bandhus according to following criteria:

- A female who has completed at least secondary school certificate (SSC)
- Well informed about the community and is known/accepted by the community
- Competent to work in the villages freely without supervision
- Competent to use mobile phone and has good verbal communication skills.



SAJIDA provided training to the SBs based on the scope of work designed for them. Senior experts at SAJIDA headquarters developed a two-week training module for the SB. The training program is comprised of:

- Health education for the community to treat common ailments
- Reference of emergency and chronic illness cases.
- Identification of mothers and children who are at risk and how to refer them for prompt treatment.

- Participation in SAJIDA's Hospital promotional campaign for improved use of the hospitals by the villagers for primary and secondary healthcare.
- Community education on all aspects of Microfinance and Micro Insurance.
- Provision of information and other services to the community through the use of mobile/ laptop/ touch pad.
- Assistance in dissemination of all the activities of SAJIDA Foundation in the community.
- Use of Mobile Technology to enhance health solutions
- Linking doctors/medical assistant to enable proper diagnosis, treatment and timely referral from community level to satellite clinics or hospitals.

About the model: Three of the sixty-two microfinance branches⁵ of SAJIDA Foundation are implementing the piloting initiative of mHealth with Click Diagnostic. The pilot is integrated with SAJIDA's microfinance program. The funding is therefore from SAJIDA's own account. The

locations are rural areas of Nawabganj sub-district under Dhaka districts. The three branches include



- **Nawabganj**
- **Bandura**
- **Galimpur**

⁵ Branch is the lowest administrative unit of SAJIDA Foundation for micro credit program and basis of designing any intervention plan



The SB starts her daily work by visiting the centers⁶ assigned to her. Each SB visits two or three centers a day according to the scheduled morning meeting of the beneficiaries and the microfinance centre manager. As per SAJIDA's micro-finance process management, each borrower has a unique identification code. Borrowers are expected to attend a weekly meeting at the centre. During the morning session the SB collects the name and reasons of absenteeism, if any. She then visits the home of the absentee if the reason for absenteeism is due to sickness. In the case of any pregnant borrower, even if she has been present in the meeting, the SB makes time to carry out antenatal care (ANC). The SB is equipped with basic health care instruments that include a thermometer, weighing scale, a sphygmomanometer that measures blood pressure, stethoscope and test kits for blood sugar, albumin and pregnancy. During her home visit the SB carries out the health check-up and necessary tests and passes on the results to the doctor for appropriate treatment. The patient does not incur any cost except for any diagnostic tests that may have been carried out. If required, the SB makes a referral either to the SAJIDA hospital or to the closest satellite clinic. If the patient is pregnant, the SB must do a thorough check-up for antenatal care (ANC) according to a checklist supplied for ANC visit in the mobile phone software. On completion of the examination, she enters the results/data in to her mobile phone and sends it to doctor's computer at Keraniganj hospital for prescription and advice. She usually attaches the patient's photo along with the information. The doctor is able to see the patient's information and test result from his computer in real time, based on which



he sends the prescription and advice. The information is displayed on the mobile phone screen of the SB. She then communicates the doctor's advice to the patient. The patients find that this process is very convenient to get a doctor's advice while sitting at home.

In this manner, each SB can send the data of two or three patients each day using the mobile technology. On an average it takes approximately thirty minutes to complete processing of a patient's data and to receive feedback from the doctor. Doctors use the same mobile technology to treat neonates also.

Payment Mechanism

As mentioned earlier this pilot project is integrated with SAJIDA's micro-finance program and limited to the women who are micro-finance beneficiaries of SAJIDA. The beneficiaries also have a mandatory membership for health insurance activities from the organization. Beneficiaries having health insurance are entitled to free services for mHealth during home visits. The SBs charge only for diagnostic tests like diabetes testing, pregnancy testing or others during ANC/PNC. The tests are offered at a



discounted rate and the doctor's consultation is free for these mHealth patients. The SB maintains a record of all financial transactions and submits a report to SAJIDA's supervisor daily. The patients are willing to pay the services that have been provided right at home.

Impact of the initiative

The primary reason for the high morbidity and mortality in rural Bangladesh is due to the lack of awareness of antenatal and postnatal care. However, now a trained and empowered community worker is able to provide health services and information to the village mothers.

She links the doctor's advice through mobile phone in her own language (Bengali) helping the mother connect with a doctor and realize the importance of prenatal/ postnatal check-up.

The elderly family members and the husband of the patient are also reassured by the care provided at home. The patient can also avoid going out of home during the early stage pregnancy thereby reducing the health cost to the family including that for transportation as well as other related expenses. The mother no longer feels neglected or that she is a burden to her family. From this mHealth intervention the pregnant women or mother/neonate can connect directly with doctor using the SB's mobile phone. Often, the doctor talks directly with the village mother over the phone giving her reassurance and strengthening her trust in mHealth and its community workers.

The entire process takes place in a congenial family environment. While it will take time to showcase the broader impact of this young project, community participation and acceptance towards health care has been positive. The process has been found to have created a need for better healthcare for mothers during pregnancy and childbirth. In addition, the empowerment of community girls as SAJIDA Bandhus is an added benefit. These community girls are able to facilitate the decision-making process of the patients and doctors through effective linking. In addition their earnings improve their financial capacity as well as social responsibility.

This pilot intervention is directed towards SAJIDA's mission of improving quality of life of its members and their immediate families. The pilot is moving to achieve the overall goal and objective of the SAJIDA foundation's philanthropic development program.

Steps forward

1. **Continuum of Care-** Since the project aims towards achieving MDG 4 ([Reduce child mortality](#)) and MDG 5 ([Improve maternal health](#)), continuum of care is an area of improvement. Extension of mHealth platform with necessary services like vaccination, drugs and emergency care could be enabled with this technology.
2. **Knowledge Management-** The service providers and the community participate in a knowledge sharing and capacity improvement forum. Since the SBs are from community, continuing education graduated with an accreditation system would stimulate knowledge management for the services providers. The mHealth platform could be extended for e-knowledge sharing for providers through a separate link. Small messaging service (SMS) for mobile phone could be a learning method.

3. **Equity** – Inclusion of non-beneficiaries or those who have dropped-out of mHealth services system could be thought of in the case of maternal health. Receiving quality maternal health care should be equitable irrespective of microcredit participation. Addressing each of the women could help broaden the base to achieve MDG 4 and MDG 5 nationally.
4. **Increasing Government Involvement-** Involvement of the local wings of Ministry of Health and Family Welfare (MOH&FW) could create an avenue for complementing and supplementing national issues with dynamism.

Conclusion

This small-scale pilot project in rural areas is a learning venue for both partner organizations and other similar natured organizations. Joint learning from this intervention would beyond doubt help both organizations in the future and scaling up as desired. On completion of this pilot, in-depth research would be enhanced for better performance in the next phase of expansion with proper guidelines. The case study is therefore not conclusive.
