**Bangladesh Pharmacy Model Initiative**

**Technology Strategy**

**Background and Objective**

MSH is working with Bangladesh’s Directorate General of Drug Administration (DGDA) and the Pharmacy Council of Bangladesh (PCB) to ensure access to quality medicines and pharmaceutical services by developing an accreditation model for private sector medicine shops and pharmacies. The Bangladesh Pharmacy Model Initiative (BPMI) is funded by Joint Donor Technical Assistance Fund—a consortium of donors led by the UK Department for International Development. The first phase of this program includes designing the preliminary model, planning for targeted district implementation and evaluation, and building the capacity of national institutions, including DGDA and PCB, to move the BPMI implementation forward.

The BPMI builds on what is currently in place and working well in Bangladesh’s pharmaceutical sector. Changes have only been proposed when needed to meet the country’s objective of ensuring access to quality medicines and pharmaceutical services. During the first phase of BPMI, DGDA, PCB, and other stakeholders have approved the classification of two levels of accredited private sector drug outlets: Level 1 pharmacies attended by grade A pharmacists and Level 2 medicine shops attended by grade B or C pharmacists.

As DGDA and PCB prepare to implement the BPMI program by training personnel and accrediting qualified pharmacies and medicine shops, we sought input from DGDA, PCB, and key stakeholders on priority data management systems and mobile tools to enhance regulation, improve transparency, and promote the program’s sustainability. We have worked with the DGDA IT team and the Director of Management Information Systems at the Directorate General of Health Services to ensure that the BPMI technology strategy is compatible with the Ministry of Health and Family Welfare’s overall technology strategy and existing eHealth initiatives in Bangladesh.

**Objective and Overview of the BPMI Technology Strategy**

The objective of the BPMI technology strategy is to strengthen and connect DGDA and PCB databases and develop related mobile applications to enhance DGDA and PCB’s ability to introduce, regulate, and sustain the BPMI program.

MSH and a local technology consultant will work with DGDA and PCB to design and implement system upgrades to their current databases and websites. These upgrades will prepare PCB and DGDA to strategically collect, store, and share information on Level 1 pharmacies and Level 2 medicine shops during the upcoming BPMI pilot phase.

The DGDA’s current database contains basic information on registered pharmacies, including pharmacist and proprietor name and national identification number, pharmacy registration number, address, phone number, license number and date of last license renewal. The database is linked to DGDA’s external website, which allows the public search for information on retail pharmacies. We plan to strengthen DGDA’s already functional database by adding key fields that will improve regulation of the BPMI program, such as information on fee payment, inspection, and shop geocode. We will also work with DGDA to link the database with interactive mobile and web-based applications that can be accessed by DGDA, inspectors, pharmacy and medicine shop owners, and the public, as appropriate (Figure 1). The upgraded system and related applications will be fully integrated with DGDA’s existing system and DGDA’s existing tools, such as the drug database.

PCB’s current website has a searchable database of pharmaceutical professionals, but the database is not functional and does not appear to be populated with pharmacist records. MSH will work with PCB to populate the database with pharmacist registry data, so that non-sensitive data is available to prospective employers and regulators. Additionally, we will add relevant fields to the database, including information on personnel training, registration, and fee payment status. Finally, as with the DGDA database, we will connect PCB’s database with mobile and web-based applications to digitize recurring processes in order to enhance efficiency, facilitate transparency, and improve communication between PCB and pharmacy personnel (Figure 1).

**Figure 1.** Overview of DGDA and PCB database and related mobile and web-based applications

**PCB Database**

* Information on pharmacy professionals, including licensing and payment status
* Searchable via website

**Related applications**

* Online portal for pharmacist or medicine shop dispenser registration
	+ Application forms, status updates, mobile money fee payments, record review and update form
* Training information
* Helpline for owners/dispensers to contact PCB

**DGDA Database**

* Pharmacy and medicine shop information, including registration, licensing, and accreditation status
* Searchable via website

**Related applications**

* Online portal for pharmacy/medicine shop registration and license renewal
	+ Application forms, status updates, SMS/email alerts prior to expiration, record review and update form
* Inspection portal
	+ Inspectors submit reports via Android application, automated analysis and report generation
* Helpline for owners/dispensers to contact DGDA

Since DGDA and PCB regulate pharmaceutical retail outlets and personnel, respectively, it is critical that the two agencies can share data. Together, the two systems provide a holistic data management system for the BPMI program. We will therefore coordinate improvements to DGDA and PCB’s systems so that the two systems are complementary and interoperable. DGDA will be able to access relevant pharmacist data from PCB’s database rather than duplicate already available data, and PCB will be able to pull medicine shop information from DGDA’s database. MSH will work with a local consultant, PCB, and DGDA in order to determine the best way of linking the two systems.

After introducing the strengthened databases and related mobile applications, resulting non-sensitive data will be made accessible on DGDA and PCB’s website. Currently, most information on the websites is available only in English, so the information will also be available in Bangla in order to enhance accessibility for the general public. The databases will generate automated reports to provide useful and easily interpreted data that can be used for decision-making.

**Rollout and Sustainability**

MSH and the local technology consultant will work closely with DGDA and PCB while designing and implementing system upgrades to ensure that the product suits the agencies’ needs and is compatible with existing work processes. Once system upgrades are completed DGDA and PCB central-level staff will be trained in how to utilize all aspects of the system. As the BPMI pilot begins, pharmacy and medicine shop inspectors will be trained to submit data with DGDA’s mobile inspection application. Pharmacy and medicine shop owners and dispensers will be oriented to the online portals for registration, licensure, helpline, etc.

To enhance the system’s sustainability, PCB and DGDA will each appoint a systems administrator responsible for the operation and maintenance of the technology system. The systems administrator will provide on-going training and technical support to users, make improvements and updates to the system as further needs are identified, and monitor system security. Technology training for pharmacy and medicine shop owners and dispensers will be included in the BPMI training program, so that all personnel are trained to utilize the mobile applications and web-portals prior to working in an accredited outlet.

Table 1 details an illustrative timeline for the technology strategy.

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| **Table 1: Illustrative Timeline** |
| November 2016 | DGDA and PCB system design complete |
| January 2017 | DGDA and PCB systems upgraded and related mobile and web-based applications developed |
| February 2017 | Training materials for DGDA, PCB, inspectors, and outlet owners and dispensers complete |
| March-July 2017 | Users trained and begin utilizing system |
| March 2017- August 2018 | Users supported, technology system updated and improved as needed |