A quiet revolution

Strengthening the routine health information system in Bangladesh

This publication describes efforts by Bangladesh's Ministry of Health and Family Welfare, with support from the German Federal Ministry for Economic Cooperation and Development (BMZ), to strengthen the country's routine health information system (HIS).

Situation

Despite significant health achievements in recent years, the absence of a well-functioning HIS has prevented policymakers in Bangladesh from monitoring population health in real time and targeting interventions accordingly. Reflecting the country's pluralistic health service delivery arrangements, Bangladesh's HIS is highly fragmented. Data generated by private and public sector providers are not linked and, within the public sector, data from urban and rural areas, and from family planning programmes, are handled separately. Multiple overlapping reporting systems result in heavy paperwork burdens and poor data quality.

Approach

Since 2009, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), on behalf of BMZ, has been supporting the Management Information Systems (MIS) unit in the ministry's Directorate General of Health Services, which has emerged as a champion in efforts to strengthen and modernise Bangladesh's HIS. The comprehensive approach to HIS strengthening promoted by GIZ focuses not only on improving systems and software, but also on building local capacity to maintain and use the HIS infrastructure, promoting a culture of information use at all levels of the health system, and strengthening HIS governance.

Key Messages

Situation. Bangladesh's fragmented and inefficient health information system (HIS) does not provide policymakers with timely, comprehensive and quality data for monitoring population health and targeting health interventions.
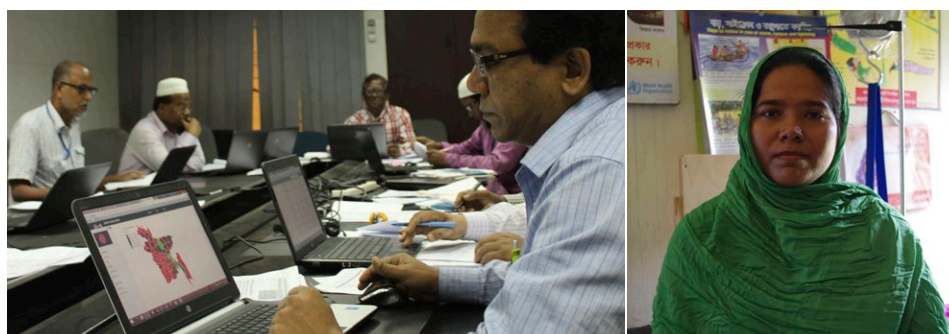
Approach. The Ministry of Health and Family Welfare, with support from GIZ, has enabled public health facilities to report routine health information electronically through an internationally renowned open source software, DHIS2. It also promotes the use of routine information for decision-making by training health managers in health informatics.

Results. Dramatically reduced administrative burdens as more than 7,000 health facilities now report routine information electronically, and better services as health workers use individual records to track pregnant women and children. An openly accessible electronic data repository with 33 interoperable datasets from different departments and vertical programmes enhances the work of health policymakers, while growing adoption of this common reporting platform is streamlining HIS governance.

Lessons learned. It is possible to bring about a more harmonised health information system even in the absence of an overarching HIS policy and framework. Bangladesh's HIS has been strengthened incrementally, in part through the introduction of low-cost technologies which enjoy widespread use in developing countries.

GIZ facilitated the establishment of a so-called National Data Warehouse which made existing electronic health datasets from different directorates and vertical programmes interoperable for the first time. It also supported the introduction of two open source software products developed specifically for the collection and management of health information in developing countries.

The District Health Information System (DHIS2) software is used to collect and analyse aggregate data from health facilities.

left: Staff at the Management Information Systems unit of the Directorate General of Health Services at the Ministry of Health and Family Welfare in Dhaka monitor the status of health reporting from public facilities nationwide.

right: As part of the efforts to strengthen Bangladesh's health information system, more than 20,000 Health Assistants based at community clinics across the country are being trained to capture health information data in DHIS2 on tablet devives during their household visits.

It also includes an individual record function which helps health workers to track pregnant women and children. OpenMRS is an electronic medical record system for use in hospitals.

Technical advisors from GIZ supported the customisation of DHIS2 and OpenMRS for use in public health facilities in Bangladesh and worked with the MIS unit to train health personnel at all levels to submit routine data electronically, via DHIS2. Through on-the-job capacity building, technical staff at the MIS unit have learned to manage the servers, maintain and update the software, and address hardware and software queries from thousands of users.

The MIS unit makes routine data collected via DHIS2 available through a public access server (www.dghs.gov.bd), uses it as the basis for the annual *Health Bulletin* and more than 500 local health bulletins, and has established a short course on health informatics for mid-career professionals, offered jointly by BRAC University in Dhaka and the University of Oslo. It also advocates the adoption of DHIS2 among departments and programmes both within and outside the ministry as a way of harmonising the country's HIS through use of a common platform.

Results

Two independent reviewers have confirmed that the comprehensive approach to HIS strengthening in Bangladesh has generated valuable results. These include:

- **Dramatically reduced administrative burdens – and more time for patients – through digitisation of routine reporting.** The ministry has distributed laptops and wireless modems to almost 15,000 government-run health facilities countrywide. Some 7,000 facilities now report routine information electronically, using DHIS2; the remainder should be doing so by the end of 2015.
- **A national electronic data repository signals the end of information silos.** Thirty-three previously separate electronic datasets are now linked together in the National Data Warehouse, which uses the DHIS2 platform. The steady adoption

of DHIS2 by vertical programmes inside the ministry – and growing interest from health providers outside it – is leading to a more harmonised information environment.

- **Use of individual health records improves patient care.** Health workers at community clinics are using individual electronic records in DHIS2 to capture health information about pregnant women and children and to track them over time. Along with hospital records created with OpenMRS, these records support the ministry's goal of creating an electronic shared health record system for the entire population.
- **Better quality and more comprehensive routine information now available from the public sector.** Data collected in DHIS2 at public sector facilities can now be used to monitor the progress of Bangladesh's national health sector reform programme. Better information is enhancing project management, improving local-level health planning and allowing quicker detection of emerging issues, such as outbreaks of foodborne illnesses.
- **Improved capacity at Bangladesh's Ministry of Health and Family Welfare and growing international contributions in eHealth.** As a result of long-term on-the-job capacity building efforts, managers, statisticians and technical staff at all levels of the MIS unit are now better placed to manage HIS systems and infrastructure and to work with the information it generates. Bangladesh has emerged as an active contributor to the global DHIS2 and OpenMRS open source communities and as a leading eHealth innovator internationally.

Lessons learned

The comprehensive and systemic approach to HIS strengthening in Bangladesh has shown that it is possible to bring about a more orderly, harmonised information environment even in the absence of an overarching HIS strategy or policy framework. By adopting a pragmatic and incremental approach to modernising the HIS infrastructure, the MIS unit at the Directorate General of Health Services has catalysed a process of change which is leading to a more effective health information system. The main focus for the future will be on building local capacity to work with routine information in health planning and policymaking.