

MoTeCH Reports

Issue 1

Simplifying Health Information Management

Mobile Technology for Community Health

The Ghana Health Service & Columbia University

Simplifying Health Information Management

In 2000, the Government of Ghana launched the national scaling-up of a community-driven approach to health care services. Based on proven approaches to reducing maternal and childhood mortality, this program relocates nurses from clinics to communities and mobilizes volunteerism and social support for their work. Known as “CHPS” for the *Community-based Health Planning and Services Initiative*, the program utilizes strategies that have been shown to reduce childhood mortality. While CHPS works where it is implemented, the program has yet to achieve its full promise as a scaled-up service system. Needs associated with pregnancy, delivery, and early infancy are sometimes neglected, in part because information available to nurses and volunteers is inadequate for supporting home-based services to newborns. The District Health Information Management System (DHIMS) that was developed to support the decentralization of Ghana’s health care system is clinic-focused and inadequate to the sometimes urgent health needs of newborns. Under the current DHIMS, community-based health care workers spend a large amount of time recording service encounters on patient cards and registering insurance forms. Despite their efforts, almost none of this information is ever used to enhance health worker’s own daily work. As a result, these community-based health care workers—the individuals who are critical to successful CHPS programming—do not receive the feedback they need to implement their programs with the greatest level of efficiency and cost effectiveness.

While these problems are significant, they are not insurmountable. The MoTeCH Project is testing whether the adaptation of existing mobile phone technology can help address these challenges through significantly easing information capture and feedback for community-based health care workers thereby improving their efficiency and effectiveness.

The MoTeCH Project is a collaboration between the Ghana Health Service, Columbia University’s Mailman School of Public Health, and the Grameen Foundation and is currently operating in two districts of the Upper East Region.

The first step in developing mobile phone technology for health information was designing a uniform paper-based platform for the collection of health information at CHPS zones. Prior to the introduction of MoTeCH, the number and content of the registers used for collecting health information varied greatly by facility. In several cases, the registers were blank notebooks that had been formatted by hand by health workers, resulting in vast discrepancies in the types of indicators captured by different facilities. In addition, the format of the registers made it difficult to identify clients that defaulted for critical care events and to complete facilities’ required monthly reports. The MoTeCH team understood these limitations and sought to design a standard set of registers for collecting health information at CHPS zones.



Cecilia Ada, midwife of Wuru CHPS Zone, with her registers prior to MoTeCH

Figure 1: Conceptual framework for developing, implementing, and evaluating the Simplified Registers

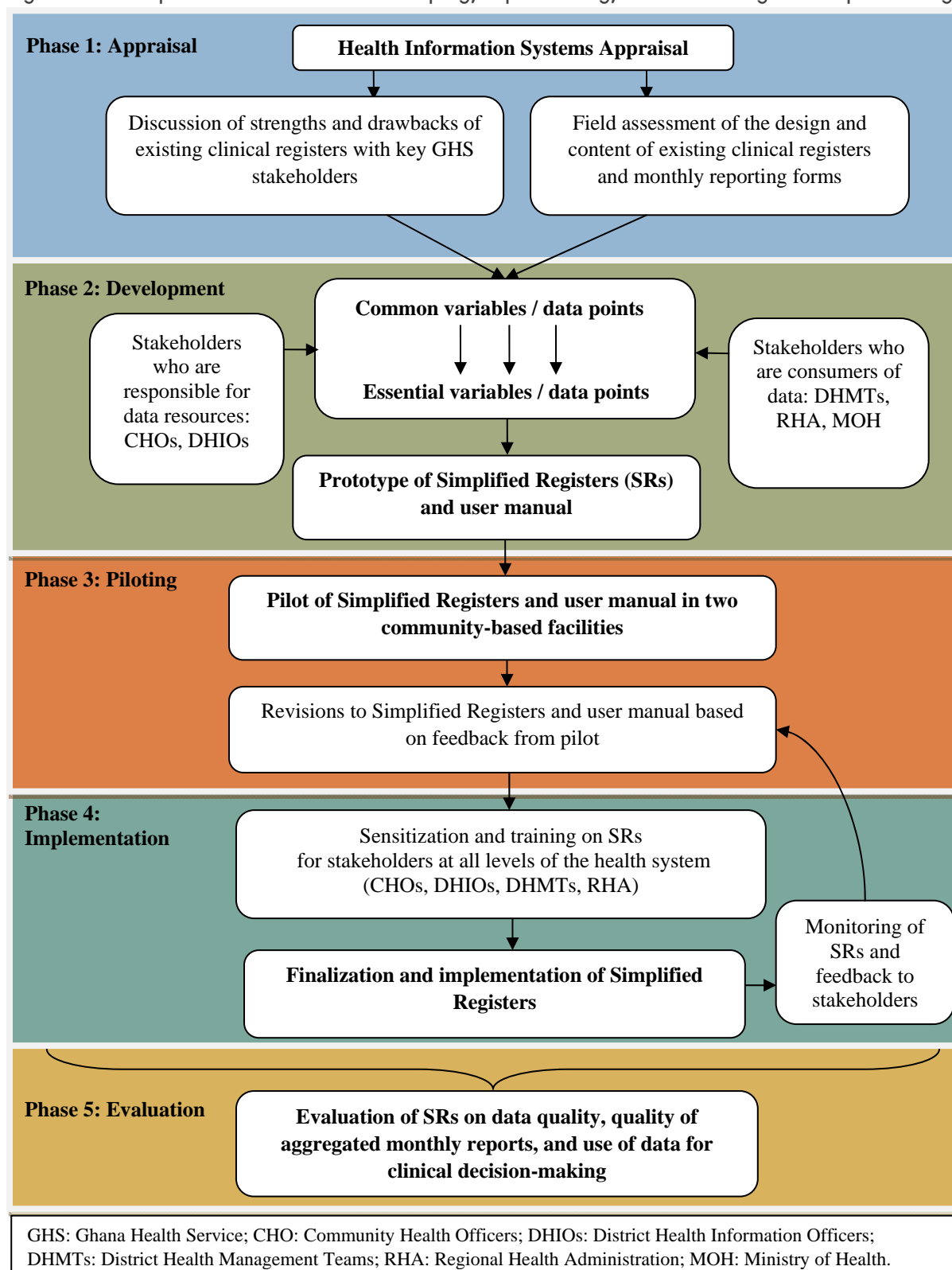


Figure 1 illustrates the various phases for designing a new data collection system for the MoTeCH districts, including: an appraisal of the design and content of the existing clinical registers and monthly reporting forms, substantiating the need for a new scheme that would facilitate service delivery and provide data for planning and monitoring; engaging stakeholders in developing a prototype of a new data collection system; piloting and modifying the Simplified Registers based on feedback from piloting; training, implementing, and continuous monitoring (by GHS supervisors), making adjustments to the registers as necessary to refine the system and adapt to evolving health information needs; and the evaluation of the simplified registers on the quality of data collected, aggregation of data for monthly reporting, and the use of data in decision-making on care delivery.

The Simplified Registers were designed over several months of consultation with the Regional Health Administration, the District Health Management Teams (DHMTs), Sub-District leaders, and CHPS personnel in the Upper East Region. After careful review of the health information needs for CHPS zones, the MoTeCH team consolidated health information into five different registers:

- 1) **The Consulting Room Register**, to capture client encounters related to illness or injury
- 2) **The Maternal Health Register**, to capture all services related to antenatal, delivery, & postnatal care
- 3) **The Child Health Register**, to capture immunization and growth monitoring services
- 4) **The Family Planning Register**, to capture the provision of family planning services
- 5) **The School/Home/Community Visiting Register**, to capture community outreach, home visiting, and school health activities conducted by CHPS health workers

The Simplified Registers were piloted in two CHPS zones in the Bongo District in order to observe how Community Health Officers (CHOs) reacted to and utilized the new register prototypes for data capture activities. Following revisions from this pilot, the Simplified Registers were introduced to the CHPS zones of Kassena-Nankana (KND) and Kassena-Nankana West (KND-W) Districts in May, 2010. As part of their introduction, two CHOs from each CHPS zone in the MoTeCH project districts participated in a comprehensive training on the use of new registers. DHMT members and Sub-District supervisors also took part in the training in order to become familiar with the new registers being introduced to their catchment areas. The training was conducted by Mr. Kwame Bimpeh, the Regional Health Information Officer, Madam Evelyn Adda, the Regional CHPS Coordinator, Madam Bibiana Anati, the KND-W District Public Health Nurse, and Madam Janet Aweh, a Sub-District Leader in KND. A detailed review of the information included in each register and instructions on the process for completing the required monthly reporting forms using the new registers was covered during the training. Two days of supervised transfer of client/patient data from the CHOs' existing registers into the Simplified Registers was also incorporated into the training agenda.

Initial Lessons at Implementation

One principle guiding the development of the Simplified Registers was the need for health workers to have easily accessible information on previous services provided to clients including children, mothers receiving antenatal, delivery, or postnatal care, and family planning clients, as a means to facilitate an effective continuum of care. When implementing a new system of health information capture, this necessitates the transfer of client data from existing registers into the Simplified Registers. Data transfer includes patient background information and services previously delivered to the client, such as all immunizations received by Child Health clients to date or all antenatal visits for women currently pregnant. For two of the simplified registers, the Consulting Room register and the School/Home/Community Outreach register, there is no need for transferring information from the old

registers into the new registers because these types of client encounters do not require continuum of care as do maternal, child, and family planning services.

The transfer of data from facilities' former child health, maternal health, and family planning registers was a tedious and time-consuming procedure. Depending on the facility's patient volume, this process has required from a few days to almost an entire month to complete. This task was usually divided up amongst the health workers at each facility. Understandably, health workers were not enthusiastic about this additional work and complained that it was taking up too much of their time. Frequent field monitoring by the MoTeCH clinical monitoring team following the introduction of the simplified registers encouraged staff to complete data transfer as quickly as possible so that they could begin to use the registers to record current client encounters.

The MoTeCH team is investigating possible ways for reducing the burden of data transfer into the Simplified Registers. One potential solution could be to computerize this process and employ data entry clerks to enter all relevant patient information into a database, which would be used to print the simplified registers with this information already completed. The establishment of a database of patient information would also facilitate the roll-out of the MoTeCH mobile phone component, which will be discussed in forthcoming notes.

Other challenges experienced with the new registers stemmed from the consolidation process, especially when it was necessary to enter previous data from multiple existing registers into a comprehensive Simplified Register. The Regional Health Administration developed standardized policies towards consolidation of existing register but did encounter some difficulties. For example, the introduction of the Child Health register sometimes involved the merging of several existing child health registers at a given facility, in which clients were divided by age group or home community. Such alterations lead to some challenges regarding clients' registration numbers and client encounter serial numbers. Condensing multiple registers into the one Child Health register meant that multiple registration and serial number schemes also had to be merged. Complicating this matter further was the fact that these numbers are recorded on Child Health Records, held by the client, and are used to locate clients in their facility's register(s). Therefore, health workers assigning new serial or registration numbers in the consolidation process also had to make plans for updating the numbers on all Child Health Records. These very specific obstacles were not foreseen in the development phase of the Simplified Registers, but were crucial issues at implementation for maintaining existing client information while transferring it to a new recording system.



Simplified Register Training: Transferring client data from former registers into the MoTeCH Simplified Registers

Next Steps

The development and implementation of the MoTeCH Simplified Registers were the first steps in the pilot of a new health information system in two districts in the Upper East Region. Following the introduction of the registers was a program of routine monitoring in project districts to ensure appropriate use of the registers, clarify any misconceptions on their use among health workers, and solicit feedback on the new system for health information. Using feedback from frontline health workers and Sub-District, District, and Regional health managers, the Simplified Registers will be revised as needed to best suit the information requirements of CHPS zones. Furthermore, now that the paper-based health information system in the MoTeCH pilot districts has been standardized, the stage is set for the development and introduction of MoTeCH's mobile phone data capture system.

Partners

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For more information, contact:

Dr. Koku Awoonor-Williams

Regional Director of Health Services,

Upper East Regional Health Administration

GHS PMB, Bolgatanga, UER

kawoonor@gmail.com

Ms. Allison Stone

Department of Population and Family Health

Mailman School of Public Health

Columbia University

as3870columbia.edu