

## PAPER HEALTH REGISTERS PROJECT CASE STUDY:

### ETHIOPIA'S FAMILY FOLDERS

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UNIVERSITY OF WASHINGTON GLOBAL HEALTH START PROGRAM  
REPORT TO THE BILL AND MELINDA GATES FOUNDATION

MAY 2014

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## EXECUTIVE SUMMARY

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Ethiopia's Federal Ministry of Health has trained a cadre of community health workers, called Health Extension Workers (HEW), to delivery primary health care services at the household level. Health extension workers provide prenatal care for pregnant women, certify that children complete the vaccination cycle, and ensure access to basic preventative and curative health services. Data is collected through a non-traditional paper health register called the Family Folder (FF) which encompasses both individual and household level indicators The FFs were designed to standardize data collection and provide relevant information for decision-making at the health post. This updated system to delivering primary care is currently being implemented nationwide.

Lessons learned from this case study include: 1) operational research can optimize the design and implementation process, 2) including a unique identifier can improve the use of tally sheets for reporting, 3) parallel reporting systems are burdensome and reduce indicator comparability, 4) tickler files promote improved patient care.

## PURPOSE

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The Bill & Melinda Gates Foundation's Vaccine Delivery Team engaged the University of Washington's Global Health Strategic Analysis and Research Training (START) Program in the *Paper Health Registers Project* in September 2013. Case studies were identified to fill gaps in knowledge about best practices for implementation and use of paper health registers. Innovative register systems in Ethiopia, Ghana, South Africa, Uganda, and Uruguay illuminate opportunities for improving paper health register systems and identify approaches to both strengthen support for patient care and optimize reporting mechanisms.

This case study is one of five case studies developed as a part of this effort. Case studies from both Ethiopia and Uruguay were limited by a paucity of peer-reviewed literature and minimal access to other reports and experts. These cases illustrate key themes and innovations in paper health register systems, but are less detailed than case studies on Ghana, South Africa, and Uganda.



## BACKGROUND

### COMMUNITY HEALTH

In 1978 the World Health Organization (WHO) announced a global commitment to the model of “Health for All” with the formalization of the Alma Ata accord (WHO 1978). Global initiatives to improve community health include the Millennium Development Goals (MDGs), which reinforce the need to strengthen primary health care as a means to reduce child mortality, improve maternal health, and combat HIV/AIDS, malaria, and other diseases. Community health delivery has become the cornerstone of public health practice in Ethiopia.

### ETHIOPIA

In the decades following Alma Ata, Ethiopia underwent many changes to reshape health care delivery including decentralization of the healthcare sector in 1992 and a pledge to provide integrated health care delivery with \$100 million (USD) grant from World Bank in 1997 (World Bank 2007). As a continuation of these efforts, Ethiopia’s Federal Ministry of Health (FMOH) launched the Health Extension Program (HEP) in 2003 as an innovative strategy to deliver primary health care services at the community level (Karim et al. 2013). HEP utilizes existing health infrastructure and provides comprehensive health services.

Ethiopia is divided into 11 regions, which are further subdivided into zones, woredas, and kebeles – the smallest administrative unit. In each kebele, two female Health Extension Workers (HEWs) are the first point of contact between the community and the formal health sector. Almost all HEWs are women recruited and vetted through the community. HEWs receive one year of comprehensive training, and then return to their communities. As of April 2014, there were more than 35,000 HEWs administering door-step care, including preventive and curative health services with a focus on maternal and child health (Halperin 2014).

### ETHIOPIA’S FAMILY FOLDER INNOVATION

Delivering family-based services in Ethiopia through the HEP necessitated the reorganization of information systems to collect and use information for action at local levels. The FMOH recognized data quality and use as the weakest components of the HEP. A lack of standard definitions for data elements and basic indicators resulted in inconsistent and unreliable HEP data. The FMOH initiated reform of the health information system and corresponding monitoring and evaluation components in 2005 to address gaps in data collection and reporting. In 2008, the FMOH published a strategic framework to harmonize data requirements and improve use of information at all levels (Federal Ministry of Health 2008).

## COUNTRY PROFILE: ETHIOPIA

**Population (2011):** 91,729,000

**GNI (PPP int. \$ 2012):**  
\$1,110

**Life expectancy at birth (2012):**  
(M/F) 52/65 years

**Top causes of under-5 mortality (2010):**

1. Acute respiratory infection
2. Diarrheal disease
3. Prematurity

**Measles immunization coverage (2012):**  
66%

**Births attended by skilled health personnel in preceding 3 years (2011):**  
Urban: 55.8%  
Rural: 5.1%

(WHO 2013)



The resulting Community Health Information System (CHIS) was designed to standardize data collection and integrate data systems to provide relevant information for decision-making at the health post (Chewicha et al. 2013). The core of CHIS redesign, the family folder (FF), is a data collection tool designed by the FMOH for HEWs to document both individual- and household-level data. Traditional registers attempt to collect information on services provided within a single health domain, often requiring a large suite of registers to cover all health domains relevant to a population. In doing so, they must inform patient care at the point of delivery, provide a mechanism for identifying which patients need care, and supply decision-makers with crucial information on the health of populations. The FF is not a traditional register, instead providing a set of tools optimized to fulfill the specific needs traditional registers attempt, but often fail, to address. The FF informs patient care through the data contained in individual and family records, identifies patients in need of care through a set of tickler files, and enables reporting through supplementary tally sheets. One key informant highlighted that the overall design of the FF innovation was to simplify the workflow of the community health worker and focus health care delivery at the community level (Abbruzzese 2014).

The FF is a collection of individual records at the family level that encompasses the primary health domain. It has five basic parts: (1) Identification, (2) Household description, (3) Household characteristics, (4) HEP training status, and (5) Household implementation status. On the outside of the folder, household level information is recorded including drinking water sources, number of insecticide-treated bed nets, and latrine characteristics. Inside the FF are individual health cards for household members where health services including immunizations, family planning, and tuberculosis treatment are recorded (Lemma et al. 2010).

A tickler file system orders patient records according to the future date that requires a follow-up visit. After each household visit the HEW records a date for the next follow-up visit for the specific household member. At the health post, the health card is removed from the FF and placed in a box corresponding to the month of the next appointment. At the beginning of each month, the HEW reviews the cards in the box and prepares an agenda that includes providing appointment reminders or conducting household visits (Regional Health Bureau 2014). When the health service is provided to the client the HEW returns the patient card to the FF or re-files according to the follow-up appointment. If there are remaining cards in the tickler file system at the end of the month, the HEW knows that the client has defaulted and they can follow-up with appropriate action (Chewicha et al. 2013).

HEWs compile CHIS indicators from the FF using tally sheets. At the woreda administrative level, reports are aggregated and results are sent to the FMOH quarterly. Monthly reports are also sent to the Kebele Council in order to inform community leaders of important health outcomes. As of February 2014, 76% of health posts (2,523/3,302) had fully implemented the FF and the new reporting system (Regional Health Bureau 2014). This case study will focus on the key lessons from the implementation phase of the FF. Lessons learned from this case study may be applicable in the context of improving the delivery of primary health care and focusing on the basic health needs of the community, particularly in remote areas.



## KEY LESSONS

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### OPERATIONAL RESEARCH CAN OPTIMIZE THE DESIGN AND IMPLEMENTATION PROCESS

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Prior to the FF, paper health registers were used at the health post level to capture data from patient visits. There was no standard register; the registers in use were provided either by woreda health officers or NGOs. HEWs were expected to carry notebooks to record health services in the community and then transfer the information to the register at the health post (Damtew et al. 2013). The project stakeholders, including FMoH, MEASURE Evaluation, and John Snow Institute (JSI), recognized the importance of evidenced-based guidelines for implementing the FF on a large-scale. Operational research was the first step to gather evidence on best practices for recollecting and reporting data.

A pilot implementation was designed for four communities located in the Amhara region (Damtew et al. 2013). HEWs in the designated pilot communities underwent a two-day training on the FF in July 2010. The first step in implementation of the FF is to register all the households in the community and generate a family folder based on a unique identifier. Two strategies for household registration were piloted in these communities. The first strategy was to sequentially number all the households in the kebele with a 4-digit unique identifier. The second, and more successful strategy, broke the kebele into smaller units called gotes and sequentially number the households with a 5-digit unique identifier. The result was that HEWs who numbered the households using the gote-wise system registered 99 houses per day compared to 85 households registered per day by HEWs in communities that used the kebele-wise system (Lemma et al. 2010).

The next operational research question was to determine the best method to collect data from the household visit. In two pilot communities, the HEWs did not carry the FF while conducting household visits; rather they used a detailed field notebook with the specific health services printed and patient care was recorded by ticking the corresponding service. At the health post, HEWs transferred the information to the FF. HEWs in the other two communities carried the FF for the households they were scheduled to visit and used a field notebook for recording data on 'unexpected' household visits. At the end of the pilot, HEWs preferred carrying the FF for scheduled household visits because this eliminated the data transfer at the health post (Lemma et al. 2010). Field testing ways to operationalize the FF was an effective strategy to gather feedback from the HEWs on the best way to optimize implementation of the FF (Lemma et al. 2010). Success of any data collection tool will depend on health workers using the registers to accurately record data. Conducting operational research with emphasis on what worked for the register user was critical to optimizing the overall design of the FF. Incorporating HEW feedback helped standardize guidelines and strengthen HEW ownership of the program.

### INCLUDING A UNIQUE IDENTIFIER CAN IMPROVE THE USE OF TALLY SHEETS FOR REPORTING

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A final operational research question focused on the reporting mechanism. In the two communities that used a detailed field notebook, reports were compiled from the notebook. The other pilot communities used a tally sheet that recorded services and patient care. At the end of each day, the number of services was reported. However, the traditional tally system did not provide a method for quality assurance by comparing data in the FF and data in the tally sheets. The solution was to record the household number on the tally sheet. Upon assessment, the data quality in the FF was similar between HEWs using detailed field notebooks and the HEWs recording services on the tally sheets with household numbers. After the pilot, feedback from the HEWs indicated that a simple tally sheet that



records household number and services provided was the preferred system (Lemma et al. 2010).

Currently, tally sheets are filled out by HEWs on the services they provide to individual family members. The patient encounter is also recorded on the individual health record in the FF. With the unique identifier, supervisors can confirm that the data reported matches what is recorded in the FF or the supervisor can use the tally sheet to directly follow-up with the household to confirm specific services were delivered (Chewicha et al. 2013). Another benefit is that HEWs use the tally sheets to plan follow-up visits. This unique combination of individual records grouped by family with supplementary tally sheets simultaneously satisfied the patient care and efficiency needs of HEWs and the reporting needs of decision-makers.

#### PARALLEL REPORTING SYSTEMS ARE BURDENSOME AND REDUCE INDICATOR COMPARABILITY

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The FF contains patient-level records for primary health care. However, for diseases such as tuberculosis or established programs such as Prevention of Mother to Child Transmission of HIV/AIDS, HEWs are required to record information in both the FF and in additional registers (Damtew 2013). These requirements are instituted from outside partners and departments within the FMOH. This places a large time burden on the HEW to continue to input duplicate information in multiple records and registers. At other health posts, HEWs have not fully adopted the FF as the primary data collection system, which may result in data elements that are not comparable for evaluation of primary health programs (Chewicha et al. 2013).

The CHIS has the potential to accurately collect and report the information necessary for these other programs (Chewicha et al. 2013). A concerted effort should be undertaken by stakeholders to align data elements, reduce reporting requirements, and adapt the family folders to accommodate other health programs. One possible solution would be to select a core set of indicators for established programs and harmonize reporting requirements. The data could be aggregated at the district level when it is entered into the electronic system and sent to the appropriate partner or department for monitoring purposes.

#### TICKLER FILES PROMOTE IMPROVED PATIENT CARE

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The FF innovation allows for a consolidation of vertical health programs and individual/household level indicators. The FF is able to capture all this information in a single place that can be extracted to the CHIS. The CHIS guidelines indicate that the FF should be updated with data from the household visit and then filed according to the unique gate number. This process requires the HEW to accurately record information from the household visit and to use the information in the FF to improve patient care. One way HEWs have used the information recorded in the FF is to plan household visits and to track defaulters. One facility used folders hanging on the wall that were labeled with different services. The HEWs would add patient records from the FF to the folder when a follow-up service was required. Other HEWs used their notebooks to record when follow-up services were required. The system was standardized to a simple form of the tickler file system (Chewicha et al. 2013). An important function of paper health registers is to track defaulters and ensure timely patient care. The tickler file system satisfies these needs for the FF system.



## OPEN QUESTIONS

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The current case study was limited by Ethiopia's FF is currently scaling nationwide and a full program evaluation has not been completed. Open questions that should be explored include how well the FF is able to verify patients complete the continuum of care or how well HEWs track defaulters. Another challenge will be how the FF can adapt to changes in family structure, from marriages to migration, to ensure individual health records as well as family records are properly updated. Finally, as the FF and CHIS mature, an internal evaluation should be conducted to monitor data quality and comparability across regions. The FMOH is engaged in the rollout of the FF and committed to ensuring that primary health care continues to make progress towards MDGs. This political engagement is critical to sustain a successful paper register and to support primary health care delivery.



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