Implementing the Urban Community Health Information System in Ethiopia: Lessons from the pilot-tests in Addis Ababa, Bishoftu and Hawassa

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Abstract

Background: The Strengthening Ethiopia's Urban Health Program (SEUHP), supported by the United States Agency for International Development (USAID), initiated the pilot testing of the Urban Community Health Information System (UCHIS) in three sites (Addis Ababa, Bishoftu and Hawassa) to support the Ethiopian Federal Ministry Health (FMOH) in its efforts to standardize and expand the Health Management Information System (HMIS) to urban areas. This paper aimed to document the lessons learned and the challenges encountered in the implementation process of UCHIS.

Methods: UCHIS implementation guidelines, service delivery cards, monitoring tools, registers, data quality assessment, and progress reports were reviewed. To further understand the UCHIS implementation process, five key informant interviews and four focus group discussions were held between March and April 2018.

Results and Discussion: The pilot program identified improvements in data quality and use at the urban health extension professional (UHE-p) level for decision-making and for reporting to city/town health offices and health centers. The prioritization of households according to their economic status and health needs helped UHE-ps to target health services and perform activities optimally. The development and standardization of health service cards for various communicable and non-communicable diseases and maternal, neonatal, and child health services enabled UHE-ps to provide health services in a comprehensive manner.

Conclusions: The initiation of UCHIS as a pilot test enabled the UHE-ps to collect high-quality data and report to city/town health offices and health centers. Additionally, UCHIS helped UHE-ps to comprehensively focus on the 15 health service packages and target the neediest sections of the population. [*Ethiop. J. Health Dev.* 2020; 34(Special issue 2):49-53]

Key words: Urban community health, information system, pilot testing.

Introduction

To make informed decision-making on health-related matters, high-quality, relevant and timely data need to be collected from relevant sources, analyzed, and converted into useable information (1). A Health Management Information System (HMIS) has been in place in Ethiopia since 2008; however, the focus has been on rural health facilities and communities. Although the HMIS is expected to be used routinely by health workers, managers, and planners for informed decision-making and, in turn, improve the health status of the Ethiopian population, the use level of HMIS for decision-making is quite low across the country (2). Three main factors (technical, behavioral, and environmental/organizational) have an impact on the use of HMIS data (3). Based on these factors, the routine use of HMIS for decision-making among health facilities in Ethiopia ranges from 33% to 58% (4-6).

Cognizant of the low level of HMIS use, the Ethiopian Federal Ministry of Health (FMOH) introduced the concept of an 'information revolution' in its Health Sector Transformation Plan in 2015 (3). The FMOH developed a roadmap for implementing the information revolution to maximize data availability, accessibility and quality, and the use of information for decision-making. The information revolution approach is intended to increase access to data and improve the quality and equity of health care delivery at all levels throughout the country (7).

The Urban Health Extension Program (UHEP) services are being rendered by urban health extension professionals (UHE-ps), who are clinical nurses with an additional three months of pre-service training on the urban health extension service packages (8). The deployment of the UHE-ps has been successful and accepted by urban communities (9,10). However, a standardized national health information system to monitor the performance of health services being delivered by UHE-ps has been lacking. To fill the gap and support the FMOH, Strengthening Ethiopia's Urban Health Program (SEUHP), supported by United States Agency for International Development (USAID), initiated the pilot testing of the Urban Community Health Information System (UCHIS) in three sites (Addis Ababa, Bishoftu and Hawassa) in July 2017. The UCHIS was designed to improve data collection and documentation and meet the information needs for providing promotive, preventive and environmental health services at the family level in urban communities. The aim of this paper is to document and widely share the lessons learned and the challenges encountered in the implementation process of UCHIS.

Methods

Study design, data collection, and study participants: The study employed both a review of documents and qualitative approaches. For the review, SEUHP project documents (including quarterly and semi-annual progress reports) were examined, focusing on UCHIS, community folders, service delivery cards, monitoring tools, registers (field book and health education) and data quality assessment reports. To further understand the UCHIS implementation process, the qualitative approach employed key informant interviews and focus group discussions. Three teams of JSI staff were

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formed to collect the data from Addis Ababa, Bishoftu and Hawassa. The data were collected by audio-taping the focus group discussions and key informant interviews, and through note taking. Five key informant interviews and four focus group discussions were held between March and April 2018. Key informant interviews were conducted with city/town health officials familiar with the UCHIS. Key informants were selected purposively based on their UCHIS knowledge and experience in implementing the UCHIS pilot test program. Four focus group discussions were held with a total of 27UHE-ps, who were selected purposively based on their experience with the pilot UCHIS program.

Data collection tools: For the key informant interviews and focus group discussions, tools were used which incorporated open-ended questions.

Data storage and analysis: The audio-taped focus group discussions were transcribed and the results were translated from the local language into English and presented qualitatively. Similarly, the data collected from key informants were carefully summarized thematically and the results were translated into English and presented qualitatively.

Ethical considerations
The JSI Institutional Review Board (IRB) provided ethical clearance for this study. The purpose of the study was explained to all study participants, and the participants were informed that taking part in the study

was based only on their willingness. Furthermore, before every audio-taped session, the consent of every study participant was sought; where permission for recording was not obtained, the data were collected through note taking. Two participants consented to audio-taping while three of them declined. Three of the four focus group discussions conducted were audio-taped.

Results and Discussion
UCHIS tools, training and baseline data collection: SEUHP, in collaboration with the FMOH, developed the guidelines, health service cards, and training manuals. The UCHIS package was prepared in the form of a community folder that serves five to 12 families. With financial and technical support from SEUHP, a training of trainers (TOT) session on UCHIS implementation was organized by the FMOH for SEUHP staff and HMIS officers from the three regional health bureaus (in Addis Ababa; Oromia Region; and Southern Nations, Nationalities, and Peoples' Region (SNNPR)). After the TOT, the training was cascaded to UHE-ps and their supervisors. In total, 122 participants attended the training. Following the training, baseline data were collected from the respective communities by UHE-ps (data collection took from one month to two months), which helped the standardization and categorization of households in accordance with the UHEP implementation manual (8). See Table 1 for UCHIS tools.
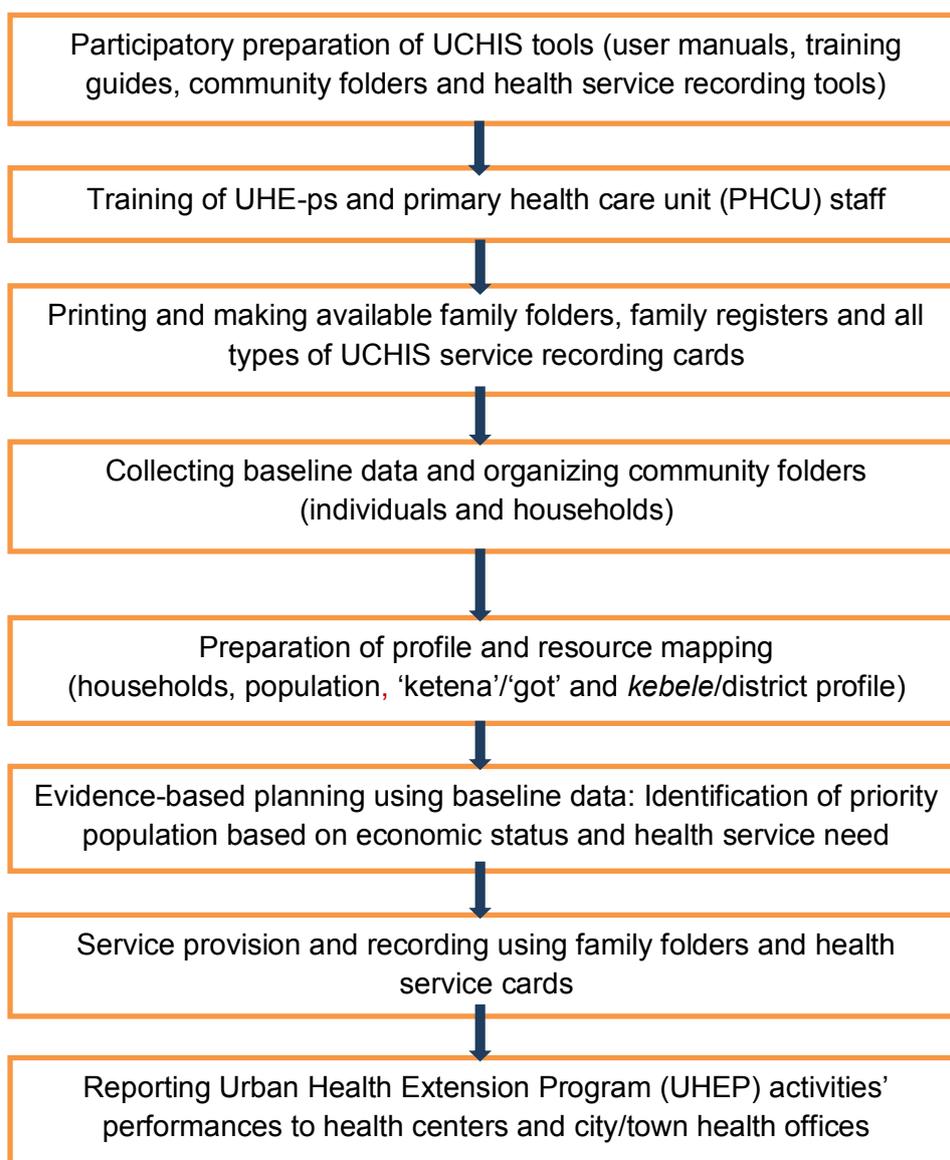
Table 1: UCHIS tool

Kebele Profiling	Family/household health information recording tools	Tally sheets	Reporting formats
• Kebele demographic profile • Kebele resource mapping • Kebele household environmental sanitation profile	• Family health profile • Family planning service recording • Identification of pregnant mothers and antenatal care service recording • Child health and nutrition recording • Non-communicable diseases screening and management forms (diabetes, cardiovascular diseases including hypertension, mental illnesses, asthma, prostate cancer, breast cancer, cervical cancer) • HIV/AIDS counseling and testing • Referral register • Referral and feedback slip • Tuberculosis (TB) screening and treatment follow-up • Community health education register • Field book	• Urban Health Extension Program (UHEP) monthly disease and service delivery • UHEP quarterly disease and service delivery • Tracer drug availability • Family planning method dispensed count	• Monthly service delivery and disease report • Quarterly service delivery report • Annual report

Implementation process of UCHIS: Using the UCHIS tools, UHE-ps have been routinely collecting data, compiling it, and regularly reporting to the health centers and town health offices. UHE-ps have also been providing home-based health services. Since the pilot implementation began, 10,400 individuals (Bishoftu=3,906;Hawassa=1,964; Addis Ababa=4,530) were visited by UHE-ps and received various health services, including family planning; the identification of pregnant mothers and referral to health facilities for focused antenatal care services; the provision of early postnatal care services to newborn babies and their mothers (this is not vital event registration); the screening of children under 5 years of age for malnutrition and referring those malnourished to nutrition support centers and health facilities; hypertension screening and referring to health facilities those suspected of hypertension for further diagnosis and treatment; screening for other cardiovascular diseases (other than hypertension) and referral services; screening for diabetes and referral; screening for asthma and referral; the screening of individuals for various types of cancer (breast, cervical and prostate cancers) and referral to health facilities for further diagnosis; and screening for mental illnesses and referral services.

Figure 1: **UCHIS implementation process**

| Participatory preparation of UCHIS tools (user manuals, training guides, community folders and health service recording tools) |

| Training of UHE-ps and primary health care unit (PHCU) staff |

| Printing and making available family folders, family registers and all types of UCHIS service recording cards |

| Collecting baseline data and organizing community folders (individuals and households) |

| Preparation of profile and resource mapping (households, population, 'ketena'/'got' and *kebele*/district profile) |

| Evidence-based planning using baseline data: Identification of priority population based on economic status and health service need |

| Service provision and recording using family folders and health service cards |

| Reporting Urban Health Extension Program (UHEP) activities' performances to health centers and city/town health offices |

Kebele is the administrative structure under a district (woreda).Ketena is the administrative structure under kebele that is used in some places for administrative purpose to categorize kebeles into smaller units (ketena). Got is the structure used in some places to divide ketenas into smaller units (Gots), which is also for administrative purpose.

Major lessons learned during the implementation process of UCHIS pilot testing: The categorization of households helped UHE-ps to focus on the most needy populations. One of the UHE-ps who participated in the focus group discussion in Addis Ababa city noted that in using the:

"UCHIS program [which helped to utilize the revised UHEP implementation manual], we are visiting the households in the neediest parts of the community, rather than reaching out to all the households in the community, which minimized the waste of our time in visiting all community members."

Another UHE-p from Bishoftu remarked that the UCHIS helped prioritize populations:

"The previous data management was very traditional, and data were not being updated regularly; UCHIS helped us to prioritize our clients for service provision and it enabled us to update the data on a regular basis."

Health service cards were used to record the health services provided, which allowed the UHE-ps to carry out and document all 15 packages of the UHEP. Ensuring the UCHIS forms were printed and made available at UHE-p duty stations made their use more likely. In addition, the UCHIS played a pivotal role in improving data quality. When asked about the data quality, one of the UHE-ps from the focus group discussion in Bishoftu responded:

"... the tally sheet supports us a lot in minimizing errors and improving the data quality."

One of the male key informants from SNNPR seconded this:

"... data quality improved, as UHE-ps are using the tally sheets regularly and filling it immediately after the service provision takes place."

Respondents also noted the baseline mapping of communities allowed the UHE-ps' work to be more fairly evaluated by UHE-ps supervisors. As one UHE-p noted:

"...target setting is [now] based on the actual population [as result of baseline data collection as part of UCHIS implementation], unlike previously, when targets were being set for performance based on an estimated population (using the conversion factor determined by the Central Statistical Agency of Ethiopia)."

The major key stakeholders during the UCHIS implementation process included: city/town health offices, sub-city and district offices (in the case of Addis Ababa), community leaders, regional health bureaus, FMOH, JSI/SEUHP (for technical and material support) and health centers. Key informants noted that the involvement of some stakeholders, such as other local and international non-governmental organizations operating in the towns, was inadequate and in the future their involvement needs to increase.

What will be needed to take the UCHIS to scale?
UHE-ps noted that although health service cards ensured the coverage of services, they found the handling of 'too many cards' challenging. UEHP must work to increase community awareness of the program, as some households were unwilling to provide information and receive health services. There is currently no system for tracking services that need follow-up, including family planning, immunization, antenatal care and postnatal care.

Key informants also suggested some areas of improvement if UCHIS is to be scaled-up, including having a well-thought-out plan for resources; creating awareness of UHEP in communities using mass media; creating a platform in which all stakeholders come together and discuss UHEP on a regular basis; reducing the number of cards; clearly defining the roles and responsibilities of all stakeholders; and recruiting and training new UHE-ps so that the ratio of UHE-ps to the number of households is 1:500 (the standard set by the FMOH).

A well-established and regularly monitored HMIS within health care systems can aid timely and informed decision-making, program evaluation, and the improvement of health service performance (11-16). Maintaining data quality is a challenge in developing countries, but the FMOH is expected to strengthen regular supportive supervision and data quality audits along with partners to address this challenge (17-19).

Resources and infrastructure limitations, along with the lack of a workforce trained in health informatics, are the major reasons cited in developing countries for the absence of an electronic HMIS (20,21). Shifting an HMIS from a paper-based system to an electronic system has been found to be effective in enhancing the data quality in terms of completeness, timeliness and accuracy (22,23). Based on lessons learned from program implementation, a four-day workshop under the leadership of the FMOH was organized to revise the UCHIS training manual, guidelines, and health service cards. The FMOH is planning to scale-up the paper-based UCHIS to the major cities in the country, and based on the gaps identified during the implementation process, guidelines, training manuals and health service cards were revised. The FMOH should also mobilize the necessary resources to scale-up the UCHIS using an electronic form.

Conclusions
The initiation of UCHIS as a pilot test in three sites enabled the UHE-ps to comprehensively focus on the15 health service packages. The use of health service cards and tally sheets helped UHE-ps to collect high-quality data and report it to city/town health offices and health centers. The systematic categorization of households, based on their economic status and health service needs, also allowed UHE-ps to manage their time effectively and to deliver services to the most vulnerable populations.

Using the revised UCHIS tools, the FMOH plans to scale-up the program in the major cities in the country. It is also recommended that FMOH should shift from the paper-based UCHIS to the electronic form.

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