

Massachusetts Institute of Technology | GlobeMed at MIT | Hope Through Health

Traveling Team Members: Laura Stilwell ('14), Madeline Jenkins ('17), Maggie O'Grady ('16)

Non-traveling Team Members: Sherry Fu ('14), Guillaume Kugener ('15), Iris Zhuang ('16), Jordan Downey ('15)

Dates of travel: June 20 – August 20

Community Partner - *Health is a Human Right*

GlobeMed at MIT is partnered with Hope Through Health (HTH), a non-profit organization that works to improve health care services with the belief that health should not be denied to an individual simply because of inability to pay. Since 2004, HTH has led an association of HIV clinics that serve over 1,700 patients and is the leading HIV health care provider in northern Togo. HTH initiated a community-led model that provides comprehensive health care services to adults and children living with HIV. This community-led model has two distinct features: (1) 98% of HTH's Togo-based employees are Togolese and over 50% of them are also patients living with HIV. (2) HTH maintains a Community Health Worker (CHW) Program, in which trained community members regularly visit patient homes to provide health center referrals and ensure proper medication adherence. The CHW model reduces barriers to health care by extending clinic services into a patient's home.

As members of GlobeMed at MIT, we have worked closely with the CHW program at HTH since August 2013. Previously, our teammates have observed CHWs on home visits and have witnessed the devastating effects of social stigma on many HIV patients. For instance, they met a woman who was unable to work because of her physical illness combined with the prejudice against HIV patients that she experienced in her workplace. She faced the same discrimination at home, where her parents would throw meager rations of food on the ground for her to eat. She was so malnourished and iron deficient that the CHW referred her immediately to the clinic for a medical consultation. We learned that cases such as this are not outliers. CHWs play an invaluable role in helping patients overcome the adversity and prejudice that individuals living with HIV face in Togo. CHW care allows patients to regain control over their health, shows the community that HIV is a manageable disease, and demonstrates that HIV patients can themselves work in healthcare and be of great value to the community. Improving the CHW program through CommCare will increase the quality of patient care and reduce the prejudice and discrimination faced by HIV patients.

Community Needs and Past Progress - *Data Management*

The CHW program has shortcomings due to a lack of technical infrastructure. 15 CHWs are spread across 5 distant clinic sites and visit patients every 2 weeks or once a month. Currently, CHWs take notes on personal notebooks or paper forms, to turn into the CHW program director each week. However, without data entry, aggregation, and analytical tools, opportunities for data analysis are limited. This is an urgent issue, as the CHW program director and clinic-based staff must know about referrals and hospitalizations immediately, in order to follow-up appropriately. For emergencies, the information collected by CHWs needs to reach other areas of the clinic, such as the medical department.

In January 2014, our teammates Sherry Fu (MIT '14), Guillaume Kugener (MIT '15), and Iris Zhuang (MIT '16) began to set up a mobile data collection system for the CHW Program using a platform called CommCare (www.dimagi.com). The team transformed the program's paper forms into CommCare forms so that CHWs can collect data on Android phones. CommCare has many benefits: (1) CommCare supports images, videos and audio, which we have used to build education modules on topics such as hand washing, malaria, and tuberculosis. (2) CommCare saves time for CHWs during data collection. Previously, many CHWs spent afternoons writing notes on morning visits from memory, which not only reduces the time they can spend with patients, but also risks workers forgetting details about an encounter. (3) Forms are immediately submitted to a server via 3G network. Thus, the CHW program director does not have to manually sort through paper forms to organize information and has access to the data immediately after each home visit. This is especially useful for data collected by CHWs working in satellite villages, far from the main clinic. These tools promote peace by empowering CHWs and the program director to reach their full potential as community-based health care providers, leaders, and role models for other individuals living with HIV.

Our team confirmed the feasibility of using phones to collect data in the field and tested the capacity of CommCare as a software platform. The team found CommCare to be versatile, easy to modify,

easy for CHWs to learn, and fun for patients and CHWs to use as an educational medium. In one month, our team built all the forms needed for the CHW program. We were able to train 9 of 15 CHWs on how to use Android devices and CommCare.

Continuation and Follow-up - *Long-term partnership*

For long-term sustainability, it is our responsibility to work alongside HTH local staff to ensure the success and sustainability of all tools for the CHW program. As previously described, our teammates successfully worked with the CHW Supervisor and Program Director to pilot CommCare and established its feasibility as a data collection tool. CommCare is now set up to collect data, but clinic staff still lack the tools to aggregate and analyze the data in order to inform clinic actions. Furthermore, not all CHWs have adequate training and practice with CommCare. Also, lack of transportation to remote areas is a significant barrier to the efficiency of the CHW program and prevents CHWs from reaching the patients most affected by stigma. Thus, a second visit to Togo to complete phase two of this project is necessary to ensure CommCare's long-term success as an effective tool for the clinic. For summer 2014, we have the following work plan:

(1) We will establish tools for viewing and analyzing CommCare data. CommCare data exports into a large Excel file, but it is difficult to make sense of the data without stronger filtering and query tools. Our team will set up a means to view and analyze CommCare data by writing queries in STATA, a data analysis and statistical software. For example, a STATA query can let us view all patients referred to the local hospital on a given day, so that the CHW Director can follow-up on all those patients on that day. On site, we will train the CHW program director in how to run saved STATA queries.

(2) We will design a protocol for managing the schedule of home visits and referral follow-up. For example, when a patient has been hospitalized or referred to departments at the HTH clinics, the CHW Director needs to know immediately when and where to follow-up on the patient. While CommCare collects these dates, the CHW Director still needs an organized protocol for filtering out dates and communicating with other departments.

(3) We will run final rounds of testing for every CommCare form. A GlobeMed member will observe each CHW on home visits and evaluate their use of CommCare with the patients to inform further improvement.

(4) For the program to reach its full capacity, we will also set up a bicycle checkout system to improve transportation for CHWs and equip CHWs with essential materials such as rain gear. Currently CHWs travel on foot, often walking 5+ miles just to visit 2 patients. Furthermore, during the rainy season, home visits are impeded by frequent rainfall in Togo. As the wet season collides with our summer travel, this would allow our team and CHWs to carry out a higher number of home visits and test-runs. This gear, along with a more effective scheduling protocol, will allow CHWs to visit more patients in need.

(5) Together with the CHW Supervisor and Program Director, our team will host a week-long training summit that includes the CHWs from all satellite locations. The summit will include training on (a) CommCare and cell phone use, (b) the strategic plan of CHWs in interdepartmental data sharing and communication, and (c) the new bike system.

As communication between departments and the CHW program director is currently limited, the quality of patient care is not optimal. With the completion of the CommCare project and adequate transportation for CHWs, the HTH clinics can operate more seamlessly and focus attention on comprehensive patient care. Implementing a higher standard of patient care, as well as a bicycle transportation system, will allow CHWs to better serve and socially support HIV patients. Ultimately, reducing stigma will help foster peace for HTH's patients by increasing acceptance from their family members, friends, and the broader community.

Qualifications

Our team is comprised of 3 traveling members and 4 non-traveling members. All team members will contribute to CommCare form development. Laura Stilwell ('14) conducted projects with the CHW Program at the HTH clinics in August 2013 and has extensive experience working alongside clinic staff in Togo. Madeline Jenkins ('17) and Maggie O'Grady ('16) are outstanding members of GlobeMed at MIT. As both are proficient in French, they will translate all documents, facilitate discussions with staff and observe home visits.

Sherry Fu ('14), Guillaume Kugener ('15) and Iris Zhuang ('15) spent January 2014 in Togo working on CommCare with the CHW program. From February through June, they will train the traveling team on CommCare and program details. Jordan Downey ('15) has led various development projects and will assist with project management. All team members will collaborate with HTH staff to establish tools for scheduling, viewing and analyzing data, and help plan the CHW training summit.