Luke Maillie
Tanzania, ETW
Summer 2015

The first night I arrived in Shirati, after a six hour bus ride and another two hour ride in a car from the city of Mwanza, I was called in by the director of the hospital to watch two emergency surgeries: a Cessarian Section and the removal of an intestinal obstruction. While watching the surgeries in an operating room illuminated only by a dim solar-powered light with an out-of-date ventilator providing the background noise to the doctors' conversation in Swahili, I began to realize just how differently the hospital operated from Penn State Hershey Medical Center where I had spent my high school summers working (or any American hospital for that matter).

My Experiencing the World Fellowship was meant to provide me with an opportunity to evaluate the role that telemedicine, the interconnecting of rural doctors with specialists in other locations by Internet or phone, could play at a rural hospital. Shadowing surgeries as I did on my first day was just one of the many opportunities I had to see how healthcare was carried out at the hospital. This understanding later informed all of my evaluations about the potential efficacy of telemedicine. Other such opportunities included spending time at the HIV/AIDS clinic that is permanently situated at the hospital, working in the Cervical Cancer Screening Room, and watching the process for filing patient paperwork and standard disease reports.

After spending about three of my ten weeks shadowing these operations, it became difficult to just evaluate telemedicine. Soon, I started to see how much I had overestimated not only how close the hospital was to implementing telemedicine, but any sort of Information Communication Technologies (ICT) that the Tanzanian National eHealth Strategy had recommended. This document, written in 2012, called for implementation of ICT in all

Tanzanian healthcare facilities, representing a drastic move forward for the Tanzanian health system on all levels. However, while the first step of the program was to provide the technology for the program to all healthcare facilities, these provisions only came to urban healthcare centers. Upon realizing this, my goals turned from focusing on telemedicine to the broader scope of all ICT. This included a range of technological approaches to healthcare including telemedicine, electronic medical records (EMRs), mobile health (m-Health), and communication with referral hospitals.

With this new framework to focus on, I began working with different departments on a variety of projects, which made things more difficult but rewarding. To address telemedicine needs, I tried to discern if there was any need for specialist consultations at the hospital. After attending morning reports where the staff summarized the patient cases from the previous day, it quickly became evident that while there were several doctors who specialized in certain areas, including maternal health, prosthetics, and pediatrics, there were still many areas in which there were no specialists available on-site.

While specialist cases occurred rarely, when one came up whether a psychiatric, oncological, or neurological problem, I saw that the doctors at the hospital had to decide between trying a surgery themselves that they were undertrained for or referring the patient to the nearest urban healthcare center, Bugando Hospital, located four hours of rough roads away. The problem became more acute in the event of emergency situations such as motorcycle accidents, in which doctors feel even more pressure to decide whether or not to attempt the surgery themselves or risk sending the patient the four hours away. In a few cases, doctors had specialist doctor friends who they could call at the other hospital, but especially in emergency situations, calling was often to no avail, as the doctor may not pick up or be too busy.

After seeing all of these problems, I found a platform for telemedicine currently being used at hospitals in rural Tanzania called iPath and showed the platform to the head doctor and his partners. After they established that there was a need for the platform, I had the chance to work with a computer technician to help implement the platform. Now, doctors there have the opportunity to refer specialist cases to the platform through the computer technician, helping to prevent anyone from not using the platform due to computer difficulties.

I also had a chance to work with the HIV/AIDS clinic. The other hospital computer technician works here, and although it was difficult to find him most of the time, he eventually showed me how patient information is collected. He also explained that patients often do not return for their follow-up visits and stop taking their medications, only coming back when they are too sick to treat. In addition to these observations, I also observed the ubiquity of cell phone usage by the hospital staff and by many patients, which suggests that a m-Health platform in which phones are used to keep in touch with patients could be effective.

Along with telemedicine and mobile phones, I studied the government online reporting system that has been introduced at the hospital. It collects data on diseases to monitor outbreaks as well as patient deaths. Interestingly, the platform requires Internet yet no funds are provided for Internet access. Finally, I was able to observe the patient referral system in the Cervical Cancer Room where patients are tested. If patients test positive for cervical cancer, they are referred to Bugando Medical Centre for treatment. However, they rarely go due to the high cost of travel. Additionally, the hospital has a referral sheet that is ideally brought back by the patient after they are treated, but this rarely happens, resulting in no communication between Bugando and Shirati hospitals. The staff at Shirati thus remains in the dark about whether patients actually seek treatment.

While conducting my project, there were a number of difficulties, including the language barrier with many patients and even some doctors, although most of the medical staff spoke English. During the morning report, the staff would sometimes switch from English to Swahili, making it rather difficult to follow patient cases. Finding times when people were available to speak also proved very difficult, as the staff were not always present and were only sporadically free. Meetings with the head doctor would often require upwards of three hours of wait time beforehand. Finally, accessing the internet and phone proved somewhat difficult, as it required purchasing a scratch-off card every day and experiencing slow connections and signals. Despite these difficulties, the fellowship provided me with an invaluable opportunity to be immersed in healthcare in rural Tanzania while meeting incredible people, seeing the culture, and beginning to learn the language.