Project Proposal: Rural Emergency Medical Communication System

UCLA Global Citizens Fellowship

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Pader, Uganda
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Proposal

Executive Summary

The following project seeks to establish an emergency communication system in the rural communities of Pader, Uganda. Currently, access to quality healthcare in the district of Pader is incredibly lacking—the dilapidated and unpaved roads connecting to the nearest hospital in Kolongo, 60 kilometers away, render a hospital trip impossible for most. Medical doctors are available at the various government clinics only sporadically, and the cost of private clinic care is prohibitive as well.

I seek to undertake the establishment of a beneficial and sustainable emergency communication system within Pader District, under the umbrella of the Northern Uganda Medical Mission (NUMEM), a community-based organization that seeks to build the first nonprofit hospital in the area. The system will follow the model of the organization Question Box, an international nonprofit that installs call boxes that answer general inquiries within rural communities.

I plan to establish ten of these call boxes in various Pader sub-districts, and connect them to the planned NUMEM clinic, or a partner government clinic. For one hour a day, community members will have the chance to ask general medical inquiries to a designated nurse. However the call boxes will primarily serve as 24-hour emergency lines, to summon a medical professional and treatment if possible, or at the very least to provide vital information and advice. NUMEM is undertaking a separate emergency transportation initiative to complement this communication system.

The chief goal of this project is to provide readily available and affordable medical care to areas where untreated emergencies often lead to preventable deaths. Secondly, the program will empower communities with medical information and with answers to their most urgent questions. Ultimately, I hope to break the cycle of poverty that often results from a poor healthcare infrastructure—should community members fall sick, they will now have a way to receive the medical attention they need to recover, and to return to work.

I hope to spend approximately three days in each community, installing and testing the call boxes, as well as educating residents about the box and surveying them for feedback. According to Question Box estimates, the cost of the entire communication system, shipping included, will total about $6000. The monthly cellular service, which will total approximately
$116 a month, will be covered by NUMEM funds—however, the initial cost of SIM cards and the toll free line, covered by the fellowship, will total about $187. Overall, the estimated budget of my trip, with transportation, lodging, and project expenditures, will total about $10,310.
Context

Pader refers to both a district and a town in northern Uganda. Pader District has a population of over 240,000. Pader Town Council (TC), with a population of 14,100 people, is located approximately 130 km east of Gulu (the largest city in northern Uganda) and is the location of the planned Northern Uganda Medical Mission clinic. Pader borders Pajule, Parabongo, Lira Palwo, Purango, and Awere Town.

Problem Statement

In 2012 the Ugandan Ministry of Health ranked Pader 94th for healthcare service delivery out of the 112 districts in Uganda.²

The people of Pader TC are approximately 60 kilometers away from the nearest hospital in Kolongo. Although 60 kilometers may not seem like a far drive on the paved roads of the United States, this trip to the hospital could take anywhere from two to three hours on the unpaved dirt roads of the region. In an emergency situation in which a patient needs immediate medical treatment, this lengthy travel time severely lessens the chance of survival. Additionally, the cost of transportation places a large burden on the people who are already of very low socioeconomic standing: for most, this trip is simply unfeasible.

With no accessible hospital, the people of Pader are forced to rely on private clinics and the government-operated Health Center III (HCIII), located adjacent to Pader Town Council. Although the HCIII is equipped with a small procedure room, maternity ward, laboratory, and the ability to check patients in for the night, the doctor’s visits are quite sporadic. On those days that the doctor does visit, the lines to see him are extremely long. Unfortunately, this inefficient system of patient care ensures that not everyone who needs medical care receives it.

The private clinics in Pader are the only other option for healthcare in the region. Unfortunately, the high cost of service at the few private health clinics available renders them useless to the vast majority of people in Pader, among whom money is scarce.

Poverty and access to healthcare are significantly interrelated. When communities cannot attain access to medical treatment due to poor transportation, lack of services, high fees, or lack of health education, families and entire communities are likely to fall into a viscous cycle of poverty (See Appendix A).

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Proposed Approach

To enable community development in Pader, I propose the implementation of an emergency medical communication system, which will complement and enhance the Northern Uganda Medical Mission’s (NUMEM) pre-existing community programs. Establishing a communication system in ten Pader sub-districts will drastically increase the level of community access to healthcare services, by acting as a source of medical information and as a 24-hour emergency hotline.

This would be the first affordable emergency medical response system in the area. The system is an innovative approach toward maximizing the relative utility of pre-existing health care services and breaking the vicious cycle of poverty in the region (See Appendix B). Additionally, under the auspices of NUMEM, this system will be capacity-building, ultimately leading to the government’s direct investment in their community programs and clinic. According to Pader’s district leader, Akena Alfred, as local communities increasingly associate health care delivery with NUMEM, the Ugandan government will be more inclined to fund organizational salaries and infrastructure.

Approach Rationale

Providing communicative access to rural villagers is risky—for example, designating a point person to hold a village cell phone or answer questions requires a lot of trust, and is not necessarily sustainable. A system is also limited financially: the vast majority of community members do not have cell phones, or the funds to pay for them.

Question Box, an international nonprofit, has provided mounting evidence that their call box system, which they tested in India, and their point-person trials, which they tested in Uganda, have been extremely helpful to members of the poor and rural communities. Question Box trials have also produced a vast number of questions addressing healthcare, specifically from the target population, demonstrating the evident need for more readily available medical information (See Appendices C & D).

This form of communication has little upkeep, and absolutely no cost to the communities involved. If the box breaks, neighborhood electricians will be trained to fix. Absolutely no previous infrastructure is needed to sustain the call boxes due to their durability, GSM capability,

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3 Atanga, Laguti, Acholibur, Pajule, Lapul, Awer, Puranga, Kilak, Pader TC, and Ogum
solar-powered interface, and mounting capability. In short, the box’s effectiveness has a noteworthy and reputable precedent with Question Box. We simply hope to extend the box’s use into the healthcare sector.

This plan has been advised and guided by Rose Shuman, CEO of Question Box, Danny O’Farrel, Africa Partnership Officer of Riders for Health, Oyoo Benson, Executive Director of NUMEM, and Akena Alfred, the District Chairperson of Pader.

Project Partner: Northern Uganda Medical Mission

I am pursuing this project as my individual focus within the greater goals of the Northern Uganda Medical Mission (NUMEM). I helped found this registered community-based organization, along with six Ugandan clinicians. NUMEM is especially focused on the “people for the people” approach—all six clinicians on the board come from the target communities, and thus have a deep understanding of and passion for assisting them.

The organization’s goal is to provide access to quality healthcare for communities in Northern Uganda. Its ultimate goal is to develop a fully functioning hospital in an area where none currently exist. Expanding from that, NUMEM focuses on sustainability programs, and hopes to drastically expand the Ugandan emergency response system, beginning with this project.4

Project Objectives and Expected Results

My objective is to improve access to healthcare with affordable emergency call centers and emergency transportation vehicles. Ultimately, I hope to increase the number of community members with access to healthcare by 45%, because of the implementation of our system.

In the long term, I hope that the emergency communication system can set a precedent for Ugandan healthcare infrastructure as a whole, by gaining enough momentum that NUMEM attracts government funding. In a social sense, the overall goal of improving healthcare is to decrease the mortality rate in Northern Uganda, as well as to empower community members to break the cycle of poverty (See Appendix B).

**Project Implementation**

The first step that I will take either prior to leaving the United States or once I get to Uganda will be to acquire cellular SIM cards and cellular service through Uganda Telecom. Once I make the initial purchase, NUMEM will handle monthly fees.

For each government-proposed location for the call box, I will evaluate certain needs: how to handle exposure to sunlight, what kind of shelter is available for the provided wall, and whether we need to install a base to mount the box (See Appendix E for image of mounted call box).

I will conduct a brief education and information session for each target community. These sessions, which I, Oyoo Benson, and community volunteers will conduct, shall include detailed background information about the call box, instructions about how to use it, and basic education about box maintenance. The first wave of community education should not take more than two days in each community.

A wall-mounted, well-sheltered box installation will take around four hours, by my estimate. I will obtain supplies, such as electrical connections and a screwdriver, both from home and from local hardware stores. I also will be working with a committed local volunteer contractor, who has electrical and construction experience—I will also be accepting any willing volunteers. Installation mainly includes assembling the box, bolting it to the wall, and hooking up the solar power system to the box itself (See Appendix F for call box blueprint).

I estimate each community test-run to take a total of three days. Within the first three days each call box is in place, we shall record all questions, survey, and retrain the community, and make adjustments based on community input.

At this point, all boxes shall be installed and communities debriefed. The NUMEM clinic should also be established by now. A fulltime receptionist will field questions, and be trained to identify and relay emergency calls to the medical staff. The call box will be open for overall medical questions one hour a day, although emergency calls will be fielded 24 hours a day. Should community members ask questions outside of the allotted question hour, they will be advised to call back the next day, and their questions will be recorded. In the off chance that the NUMEM clinic is not yet established, the district chair of Pader, Akena Alfred, has already expressed that HCIII government facilities would be more than willing to partake in the program and receive these calls.
Once the clinic receives an emergency call, the on-call clinician will have time to assess the situation, and devise a treatment strategy. NUMEM’s emergency transportation will most likely start out as a motorcycle, although one of their long-term goals is to invest in a flatbed truck that can act as an ambulance. In the meantime however, the clinician will be able to transport medication and any other necessary supplies to the location of the emergency.

Depending on the clinician’s assessment of the situation once he arrives at the location, he may conclude that the patient must be taken to the closest health center for increased attention. As a government clinician, Oyoo Benson for example is legally allowed to operate or treat a patient in any government health center for free (See Appendix G for project implementation itinerary).

Note: Anyone who drives the motorcycle will undergo extensive training, dictated by the guidelines that Riders for Health uses for their award-winning programs all over the world. This training will include basic maintenance, defensive driving skills, and bush driving skills. The driver will also be required to use all necessary safety equipment. Improved emergency transport is an important NUMEM goal, and its fiscal responsibility.

**Monitoring & Evaluation**

We will distribute baseline and follow-up surveys to the Pader community, first asking about individuals’ and families’ current healthcare access, and later asking if and how the emergency system has affected this access. We will then compare the results to find out how many people benefit from the system. Our goal is to increase the number of people with access to healthcare by at least 45%, and the surveys will indicate how close we are to attaining this goal.

I also plan to follow several families more carefully, asking them detailed questions about their experiences with the emergency response system and using their answers to measure my progress and to make changes to the proposed budget, ensuring that the system is as effective as possible.

In the long-term, success of these programs can be measured in the Ugandan Ministry of Health’s annual health assessment report—ideally, Pader’s ranking as 94th in the country for healthcare service delivery will rise drastically. I also hope to receive government funding for NUMEM, based on the community’s interests. Lastly, I hope to keep track of the number of patients treated and calls received with the system—this number will give me a good idea of the overall impact that this project has on the communities.
Further, no matter what stage NUMEM is at initially with its transportation system, the communication system will still provide community members with access to information. At the very least, I hope this system will give community members the basic knowledge they need to handle otherwise deadly situations. With this system in place, we will save lives.

**Reporting**

I plan to report the progress of my project periodically throughout my stay in Uganda. I plan to keep a blog, where Internet allows, and regularly update the NUMEM Facebook and Twitter accounts. I also plan to use a dynamic Gantt chart to personally track my progress (See Appendix G).

Upon my return, I plan to write a cumulative paper or article about my experiences, observations, and conclusions about Ugandan healthcare. I hope to use my connections with various UCLA student groups, such as GlobeMed, Hillel, and Alpha Epsilon Pi to increase knowledge about these issues, and hopefully continue to expand NUMEM’s overseas volunteer base and attract potential Global Citizens.
### Budget

Project: Rural Emergency Medical Communication System  
Location: Pader, Uganda  
Trip duration: 7 Weeks

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| **Room and Board** |       |       |
| Lodging (Free Breakfast included) | $998 | Christian Counseling Fellowship Guest House |
| Lunch + Dinner | $343 | Christian Counseling Fellowship Guest House |
| **Room and Board Total:** | $1,341 | |

| **Communication (personal)** |      |       |
| MTN Voice and Data service | $50 | |
| **Communication Total:** | $50 | |

| **Health & Insurance** |      |       |
| Malaria Pills (Chloroquine) | $62 | |
| Travelers' diarrhea (Ciprofloxacin) | $30 | |
| Mosquito Repellent | $50 | |
| Traveler's Insurance (medexassist) | $95 | |
| **Health & Insurance Total:** | $237 | |

| **Village Communication System** |      |       |
| Communication Boxes (10) + Shipping | $6,000 | Question Box |
| Installation Supplies | $500 | |
| Electrician (6 Hours) | $45 | |
Sim Cards (10) No minutes required due to Toll Free Clinic Number
Toll Free Line in Clinic+ One time fee - Uganda
Phone $0 Telecom
Land for Towers $187 Uganda
Village Communication $0 Supplied by Government
System Total: $6,732

Net Trip Total: $10,310
*Flight can be covered by airline miles
**I am already current for: Hepatitis A & B, Typhoid,
Yellow fever, Polio,
Meningococcus