Access to Health Trip Report March 2016

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I. Executive Summary

In March 2016, Northwestern University Access to Health (ATH) faculty and students traveled to Lagos for 7 days to begin a community based health partnership with Justice & Empowerment Initiatives (JEI) and partner communities in slum/informal settlements based in Lagos. These partner communities are organized around a growing community-based organization called the Nigerian Slum/Informal Settlements Federation ("Federation").

Through ongoing engagement with JEI co-Directors Megan Chapman and Andrew Maki and the Federation during the prior 2 months, core health priorities for partner communities had been identified and researched. These were: maternal health, infectious disease (focusing on malaria), emergency care (focusing on fire safety), sanitation (focusing on toilets) and HIV/AIDS. As the first time was ATH engaging in urban-health context, and the first collaboration in Nigeria, the students and faculty paid special attention to understanding the unique nature of urban-slum and Nigeria-specific cultural and systemic barriers to health.

<u>Trip goals included:</u>

- Assess community members' views on key health issues in their communities;
- Investigate whether identified strategies for HIV/AIDs education and stigma reduction would be feasible and of interest in the Lagos, Nigeria context;
- Better understand how maternal health and family planning work together, identify education gaps, and research differences between the urban slum experience and the experience of rural and/or middle-class urban women (the two areas with significant literature from Nigeria);
- Connect with Malaria No More to better understand work being done to address Malaria in Nigeria, while also seeking information from communities on their understanding of malaria, how they try to prevent it (if at all) and how they treat it;
- Investigate emergency responses to fire - both from the angle of preventing/stopping them and the way burns are handled in the community;
- Discuss sanitation issues with communities to understand what options exist for better toilet and other infrastructure and whether communities understand why poor sanitation is an issue;
- Respond to the JEI request to better investigate the recent outbreak of measles in a potential partner community, and help identify ways for communities to prevent and/or respond to such occurrences;
- Meet with potential partners working on health issues in Lagos including the Ministry of Health, the Lagos University Teaching Hospital (LUTH), YEDI, and Malaria No More; and
- Identify potential long-term interventions for the Access to Health project.

With the help of JEI and the Federation, ATH either met or furthered these goals, ending with a large set of ideas and possible next steps. These ideas were distilled into short-term interventions (the 'low-hanging

fruit') and some first steps for long-term and more nuanced interventions (see the full report for other interventions that are still being discussed):

Short-term Interventions:

- Research current traditional medicine approaches to treating malaria used by majority of interviewed communities to understand 1) the effectiveness and 2) how these approaches should be handled in the context of a larger intervention.
- Research and identify strong health education curricula prepared for low-literacy, low-education, low-health access environments, looking for language (English, Pidgin, Yoruba, Egun, Hausa, French), scalability (can it be incorporated into a step-down training for community health advocates) and evaluations of materials.
- Summarize and distill existing health laws and policies, identifying areas in which such laws/policies might be used to further access to specific types of care such as maternal health, family planning, vaccinations, malaria testing, and HIV/AIDs medicines.

Long-term Interventions:

- Build strategy for long-term health education/assistance in partner communities, including adapting best community-training materials to the Nigeria context, conducting step-down trainings of community health advocates to disseminate health education, supporting JEI/Federation identified leader to head-up health education and identify priorities, identify concrete ways to buttress education so participants maintain interest and see changes as a result of education.
- Leveraging existing partnerships-we would like to examine potential partnerships around malaria education and bed net/RDT provision with Malaria No More, HIV education and testing with Karale, and bioengineering and community medicine practicum projects with Lagos University Teaching Hospital/College of Medicine (LUTH).
- Supporting health data collection/analysis with Ministry of Health, JEI and the Federation.

II. Health Issues

Overall, two of the five key areas focused on during the health and human rights course were top priority issues for partner communities. These were malaria and sanitation. Maternal health care - as suspected by the team - was less of a focus than general reproductive health education, including family planning, sexually transmitted diseases, and anatomy. Fire safety was identified as a core issue in about half of the communities - all mainland, while the island communities and those with more space between structures were generally not as interested in fire safety. While answers to HIV/AIDs questions revealed a lack of understanding and a need for greater education, people generally did not raise it as a priority. Measles, vaccines, and fake medicines were new priority areas discovered during the interviews.

A. Malaria

Malaria was a core concern for all communities. However, despite fear and concern about malaria, people did not treat it as a serious illness - rather, it is generally reacted to like a common cold or flu. Additionally, many people shared misinformation about malaria - for instance, most people interviewed were aware that malaria is caused by mosquitoes but many also believed it could also be caused by exposure to the sun (likely because a significant symptom of malaria is fever, which can also be caused by heat exhaustion).

Few people reported a reliable prevention option. Many interviewees knew that bed nets may help, but few hang them - several members noted that their environment, housing structures, and working conditions renders the nets quite ineffective from preventing mosquito bites, and subsequently, malaria.[1] Very few communities were the subject of a bed net campaign, and those that were reported that the last time was three to four years ago. Pregnant woman are supposed receive free nets under Lagos State policy, however only a few women reported receiving one while pregnant. People can also purchase nets of varying quality from the local market, store, or clinic - the cheapest being approximately $1 and prone to ripping immediately, which was another deterrent to investing in a net. All communities had stagnant water, and most people spend most time outdoors until they are ready to sleep. Thus, even if community members use nets, they are likely just as exposed by the time they spend out doors in mosquito full areas.

[1] Note: some sleep-away schools require nets.

When community members experience symptoms of malaria, such as chills, fever, and fatigue, they often immediately start treatment - no one interviewed reported taking tests for malaria. Malaria is so common that taking a test every time they have malaria-like symptoms can be expensive (700N-1500N) and time consuming. Lack of easy access and information as to why this would be useful also influences decisions no to test for malaria when symptomatic.[2]

Most people reported treating their malaria with traditional medicine.[3] There are several factors that influence this choice. Some members prefer herbal remedies due to cost (20-30 N/10cents) as opposed to pharmaceuticals (500-600 N/2$) and a number of people reported that the traditional herbs worked when medicine from a pharmacy did not.[4] A few interviewees did report taking quinine if it was free and easily accessible.

B. Water and Sanitation

Communities lack clean water - for drinking, bathing, or cleaning. Many people use polluted water sources near them for basic cleaning, and have to buy and transport potable water for drinking and cooking. A few communities were close enough to the Lagos public water supply that they had set up illegal pumps to access the pipes - but the police shut these down often. The lack of clean water impacts basic health strategies such as washing hands on a regular basis.

Lack of sanitation is also a major issue - there are no sewage pipes or dedicated disposal areas, toilets empty directly to open water in and around the community, and waste is used for land reclamation or put in loosely designated areas in and around the community. While people know this is an issue, few people understand the direct correlation between these issues and health problems.

[2] While they reported that clinics and pharmacists also often skip tests and provide anti-malarials, Dr.Olusodo said that he thinks as little as 5% of people coming in with fever actually have malaria – the misdiagnosis is high.

[3] Community members took some students to see a bark called agoo and awopa. In response to this reliance, ATH has conducted a survey of traditional medicine's effectiveness in treating malaria and found that several studies have found many of the medicines almost as effective as prescription drugs.

[4] This could be due to misdiagnosed illness or counterfeit medicine. During ATH's interview with Malaria No More, Dayo Oluwole explained that one approach has been to urge people to take pharmaceuticals; however, she noted that language barriers and lack of access to media outlets, this message is often unheard by poorer communities.

Even understanding that this is a problem, it is not clear to the community members how to resolve these issues. Those that do know the connection were able to link cholera and the recent outbreak of measles to unsanitary conditions, though they were not clear on the distinction between the diseases and knowing this linkage did not facilitate identification of solutions.[5] Water and sanitation issues across all communities is linked to high rates of diarrhea, typhoid, and other diseases that pass through water or lack of hygiene. This can have a disproportionate impact on children.

C. Reproductive Health

Reproductive health priorities were closely linked to family planning, malaria, and emergency access. Most women reported going to a local midwife of birth attendant rather than a hospital. Reasons for this included language, cost, discrimination, and access.[6] Generally, women lacked a lot of basic information about pregnancy, family planning, and how the body functions. Due to cultural bias, stigma, and rumors of causing infertility, most women also have a negative opinion of birth control.

Most women reported paying between 10-15,000 Naira to go to a midwife/birth attendant in the community, with the possibility of the cost increasing with complications. Clinics and hospitals could range from 10-60,000 Naira, with cost increasing with complications. However, even when costs would have been the same, most women felt that a birth attendant was more affordable because they could be paid back in installments rather than having to pay the full fee all at once. The cost of accessing a hospital is also a deterrent - in some cases, the trip could cost as much as 4,000 Naira.[7]

D. Fire Safety

The main causes of fires in communities are: the use of gas, candles, stoves, and small generators with petrol. Few communities have fire extinguishers, firefighters are slow, if they can come at all, and there is low education on what to do when a fire occurs. In general, there is a sense that people do not take fires very seriously despite being relatively common, and often resulting in large property destruction and occasionally, deaths. The communities that do take fires more seriously tend to be built much more compactly, with a lot more wood building materials.

[5] i.e. One spreads through water, and one spreads more quickly when there is no way to wash hands. Not knowing the different way these diseases pass limits the types of solutions that can be built, even if they both related back to accessing clean water.

[6] In Egun speaking communities, language was a huge barrier, where most hospitals did not have people who could easily communicate with them. Discrimination - either based on ethnicity, education, or poverty - also was a common experience, and acts as a strong deterrent. For more information, see section III. Barriers.

[7] Emergency transportation via boat and drop from one of the islands.

One of the communities visited had a "fire bomb" - an extinguisher that is in the form of a ball that explodes when exposed to fire, and one community reported that the local government authority had distributed mobile extinguishers. Some people said they would support a requirement for people to have fire extinguishers - so long as they were low cost. One Chief even said that with a low cost option, he could require all households to have one.

E. HIV/AIDs

There was very mixed feedback about knowledge and treatment of HIV. Many people associated it with sex work because it "can be passed with sex." However, others reported that once contracted, HIV/AIDs could spread through any number of ways - combs, cups, wind, etc. This resulted in a fair amount of stigma.

There is a general fear around testing - even though a number of focus groups reported that they would get tested if they were offered for free, the Health Board reported that people sometime run away from visiting testers. Even when people do get tested, they tend not to seek care in the hospitals - either because they think they can treat it through traditional medicines, they do not understand the seriousness of it, or they are afraid of the stigma in the hospital. In general, most outreach seems to be focused on sex workers, who know to get tested and understand the transmission.

There was a relatively low level of knowledge in the communities about transmission and prevention. Some communities had received basic HIV/AIDs outreach or even free testing,[8] and a number of the more educated (usually leaders or health workers in a community) knew that medication is supposed to be free at the hospital.[9] However, many communities had not been reached by any HIV/AIDs campaigns, and this was reflected in the misinformation and lack of knowledge. People generally thought better education in schools about HIV/AIDs would be useful - and that trying to associate education to something like soccer would not be particularly useful as it is predominately adult men who play. Some also suggested that the Chief of the community would be a good person to teach the community about HIV/AIDS.

F. Infectious Disease

Measles was a big issue across all communities, likely because of the recent outbreak in Otodo Gbame. People were scared, and felt that they did not know how to address it. Due to limited clean water, most people do not wash hands on a regular basis, and it is easy for diseases like measles and typhoid to spread quickly - especially with the high number of children and adults suffering malnutrition.

[8] Heartland Alliance has mobile clinics in a few of the communities and Pfander Corp has offered free HIV testing. Almost no government testing is offered in communities. These services are not associated with education on HIV/AIDs

[9] ARVs are free at the Mainland General Hospital and the Lagos Island Women's Hospital. They also offer free testing every 3 weeks. For a while, the Russian Embassy distributed up to one year of medication for free. There have been periods when these places have just stopped distributing for months a time though, leaving patients without money in limbo.

G. Vaccines

Very few people reported getting vaccines for their children - polio, measles, etc. Some reported that this was due to the cost of the vacine,[10] while others explained that the cost to reach the clinics that provide the free services can be too expensive. However, a few people who had gone reported free vaccines and easy services. When asked if they would take their kids to get vaccinated if the service came to the community, a number of women in communities reported they would not – because they had heard bad thing about vaccines, including that they kill children.[11] Some of the men reported that even if they would get vaccines for themselves, it was up to their wives to decide for the child.

H. Fake or Expired Medication

Fake medicines are a real problem, allowing issues to go untreated, causing mistrust of pharmaceuticals, and costing money where people have very little. One anti-fraud approach has been to create codes that can be entered in by phone to verify the drug. However, these codes can only be accessed by scratching off a foil cover, and pharmacists will only allow you to do this after purchase. You also have to have a phone that can access internet, and have purchased data for the phone to use. These pose financial barriers that prevent it from being a particularly helpful tool.

[10] Even though vaccines for children are supposed to be free according to Lagos State policy, many people reported charges of 3,000N to 4,000 Naira at clinics and government hospitals. Some of these were people who had gotten their children vaccinated despite the cost, while others were people who had gone and left due to the cost or were relaying information they had been told by neighbors. It is not clear how often this was misinformation spread through rumor and how often this was based on recent experience.

[11] This was reported across communities and in meetings with the Health Board. In some cases, people initially reported an interest in vaccines, but after further conversation explained that it was a common belief that vaccines kill children. JEI and ATH talked at length with the island community of Ikon Agon to better understand the fear, which appears to be based largely in not understanding vaccines, poor reactions to vaccines, and the death of a few at an unknown point resulting in rumors of the death of many every time there is a vaccine.

III. Barriers

Many of the existing problems and barriers were anticipated - but far more severe than ATH had expected, while others were completely new.

A. Geographic Access

> ***" In an emergency, members of geographically isolated communities like Tarkwa Bay (only accessible by a 15 minute boat trip), would need to hire a private boat (often quite expensive: the average fare in a shared boat is N300, whereas a charter can range between N3,000 - N7,000) to take them to the mainland, after which they would need to hire a car to transport them the nearest facility (Tarkwa Bay 2016). Communities such as Otodo Gbame face accessibility issues even within its own community: the only mid-wife in the community is an elderly woman with limited mobility, and the only way for a woman in labor to reach her is to walk across a 9-inch wide cement beam, transfer to a small wooden boat, and then climb a ladder to her home (Otodo Gbame 2016). Community members all stressed that they agree it is important for women in these communities to be able to access healthcare facilities since this is the only place they can receive medical care for complicated health problems not easily addressable by community healthcare workers (Oko Agbon Community 2016). "***
>
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Very few of the partner communities have health centers within or close by; many face 1-2 hours (or more depending on the time of day and traffic) of travel time to a health center. Many communities are accessible only by boat, or are difficult to reach. Almost none of them have roads that connect outside of the communities. Some of the communities are only accessible by foot and were created by compacting heaps of trash together, resulting in a spongy and unsanitary environment

Research prior to the trip had revealed that many communities faced issues regarding physical access to healthcare facilities outside of the community, however ATH students and faculty did not fully appreciate the extent of this barrier until reaching Lagos. Lagos' overpopulation and chaotic roads can cause extreme delays and it can take hours to go a very short distance. This problem is further exacerbated by the geographical isolation of many of the slum communities.

B. Financial Barriers

Residents lack resources to pay for transport. If able to get to a health center, they then must pay a fee for a 'facility card' – this does not cover the cost of visiting the doctor or the medicine. Even for purportedly free services such as pediatric care or antenatal care, residents will often be asked to pay for linens and supplies or told the medications are not in the government facility and must be purchased elsewhere. These financial barriers are one of the main reasons people do not seek hospital or clinical care more often. Within the settlements, private nurses and midwives do have home-based informal "clinics". Like clinics or hospitals these are fee-for-service and people must pay for their medications; unlike clinics, they do require people to pay the full amount at the time of the service. These informal providers have varying degrees of training, and none are regulated or follow government safety proceedures.

C. Linguistic Barriers

There are a variety of languages spoken in the partner communities. These include Egun, Yoruba, English, Pidgin, French, and Hausa. Research prior to the trip did not reveal the extent of diversity within communities, and this lack of information and understanding of slum communities was also seen during conversations with government officials ATH met with during the visit. As a result, linguistic barriers exist within the community and between community members and non-community members, and it is not uncommon for neighbors to have difficulty communicating. These linguistic barriers deter many people in the partner communities from seeking healthcare outside of the community. Egun speakers in particular often do not find government or Nigerian licensed health care providers fluent in their language. This was even the case with a clinic based in one of the predominantly Egun communities we visited – no one at the clinic spoke Egun, and as a result, the clinic had almost no clients from the community and was largely distrusted.

D. Government Discrimination

> ***"Government officials referenced [slum and informal settlements] as "illegal settlers" even though they have resided in Lagos for several generations. Their ancestry can even be traced back to the early 20th century when Lagos was still indigenous (UNILAG Provost of Medical College 2016). Since these communities have been classified as "illegal," and have been discriminated against by the government repeatedly, it has made it difficult for them to integrate in to Lagos' society. This includes getting an ID card that would allow them to access healthcare services provided by the government (Maki 2016). Therefore, even in***

the cases where the government is offering "free" services, most community members cannot take full advantage."

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Due in part to government policy identifying these communities as illegal and residents as lawbreakers without recognized property rights, and due to government practice of demolishing homes without compensation, there is extreme mistrust of the government. Communities were largely formed when people from outside of Lagos – non-indegenes of Lagos state, as well as via migration from other countries. Even if legally people could be considered citizens, many do not have any official identity documents and are treated as non-citizens. In addition, many communities also house first and second generation migrants from Benin who may or may not have crossed the very porous borders with valid documentation and permissions.

Additionally, police harassment and failure to respond to community issues lowers security, increases crime, and reduces community expectation of lawful engagement and treatment in any government agency. This in turn decreases the belief that formal mechanisms will be useful for asserting rights, reducing the likelihood that someone will complain when charged for services they know are supposed to be free.

E. Tensions between types of Care

Students observed tensions between community healthcare workers and outside healthcare facilities. Research had indicated that the cost of healthcare outside of the community can be many times more expensive than receiving care within the community. However, the cost discrepancy between certain types of services (such as maternal care) within and outside of the community was smaller than anticipated. As a result, in some instances it appears that cost may be less of a factor—as compared to physical accessibility, linguistic accessibility, and cultural comfort— in determining where a community member seeks healthcare. However, as noted above - price is not the only factor in determining cost, and in some instances interviewees reported that the decision was not based on preference but rather whether the amount could be repaid in installments.

Additionally, a competitive dynamic appears to exist between community healthcare workers and those formally trained through a university or technical college (Dr. Olusodo of Star Clinic 2016). Community healthcare workers are deemed "not qualified" to be providing medical advice and no one outside of the slum communities wants to partner with them.

F. Low education rates

" One of the federation members, Bimbo Oshobe said that "you can take the horse to the water, but you cannot force her to drink." She used this quote with regards to the fact that even when community members were given free medication and nets, they did not them due to lack of awareness on malaria."

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Residents of communities lacked access to health information; they also had many questions about reproductive health, family planning, febrile illnesses, chronic conditions such as hypertension and asthma. They seemed unsure of how to access health information and health resources.

Community members knew relatively little in terms of both the reproductive process and reproductive health. However, there seemed to be a great thirst for this knowledge as evidenced by the active community engagement during various question and answer sessions. When discussing reproductive health, many questions were raised around (1) menstruation and ovulation cycles, (2) sexual education and basic anatomy, (3) family planning options, (4) pregnancy and the female body. These questions were asked by both men and women. However, due to gender norms, women seem to respond and engage more effectively when men are not part of the group.[12]

G. Culture

Communities were primarily male-dominated, with a high level of active disempowerment of women participants in focus group.[13] There was also an established class system. Educated women, like medical nurses and midwives, perceived themselves as superior to other women and did not actively socialize with other women within the community. This dynamic – between men and women, and among men and among women, makes it difficult for education and other benefits to become a communal good.

H. Policy and Legal Considerations

Health policies are constructed for the good of Nigeria citizens – and in the case of Lagos State, are directed at Lagos indegenes. As discussed above, this is a grey area for many residents in informal settlements and thus they are often overlooked or excluded from health interventions. In addition, it should be noted that the national Nigerian healthcare budget for 2016 is 28 Billion Naira; the lowest has been in years, and near the bottom of the government budget.[14] Even for those policies that apply to all – vaccinations for young children, bed nets for pregnant women, etc, this reduced budget is going to make meeting even basic health needs more difficult.

[12] Note: They did not seem to have trouble with male translators or teachers, however when a man from the community was in the focus group, women tended to speak less or not at all, be uncomfortable discussing reproductive health.

[13] In a number of the Egun Communities, students only met with male midwives and nurses, or saw female interviewee's stop talking once a male counterpart arrived. Across all of the groups, women were far more comfortable speaking when not joined with men.

[14] Dr. Ogunsola - UNLAG LUTH Provost

IV. Partners and Potential Partnerships

A. Core Partners

ATH's core non-governmental partner in Lagos is Justice and Empowerment Initiative's (JEI) and community based partner is the Nigerian Slum/Informal Settlements Federation.

Justice & Empowerment Initiatives: JEI helps build accountability and community empowerment through various strategies, including paralegal training and support, advocacy for the legal rights of informal settlement residents, and supporting Federation activities. Co-Directors Andrew Maki and Megan Chapman organized, facilitated, and joined all of the ATH meetings over the 6-day period, helping to guide conversations, provide clarity and insight, and feedback on history, politics and other prevailing issues within each community. Through conversations throughout the trip, they helped shaped a more nuanced understanding of what and where JEI, the Federation and partner communities might be able implement, while also sharing ideas and excitement around new information and potential collaborations.

Nigerian Slum/Informal Settlements Federation: The Federation is made up over 52 communities in Lagos, and all Federation members are part of Federation supported savings groups. The Federation, with assistance from JEI, does community profiling, supports local community empowerment, and assists with directing and organizing the services provided by JEI. During the trip, ATH engaged primarily with Samuel ... and Bimbo Oshobe, two core Federation members who helped to organize many of the meetings. The Federation Health Board is made up of Federation members who are interested/invested in health for their communities, most of whom have had some sort of basic health training (though not all).

B. Potential Partnerships

ATH, JEI, and the Federation met with and explored several potential partner(ships) over the 6-day period. These included NGOs, the University of Lagos, and the Ministry of Health. Each had a slightly different potential outcome.

Malaria No More: Malaria No More is an international NGO working on malaria - and in Nigeria is primarily focused on mass media education. ATH met with MNM consultant Dayo Oluwale to discuss their interventions. MNM in Nigeria focuses primarily on mass media education campaigns, but does not focus on the urban poor - rather they have an urban and rural split. Urban focuses on using radio, TV, and social media tools to campaign for people to use nets, while they use town criers, midwives, and chiefs to access rural communities. While the MNM campaign ultimately was not a good fit for the slum communities, they are a good resource for 1) learning more about how the educational campaigns have been targeted and 2) learning how 'local means' outreach through criers, etc., have distributed malaria education/messaging.

Ministry of Health: ATH, JEI and the Federation met with Minister Jide Idris of the Lagos State Ministry of Health to discuss possible collaborations with government in collecting data and building targeted health interventions for the communities. For this initial meeting, the core interest was around data collection. JEI and the Federation facilitate a bi-annual community led 'profiling' process that allows them to gather basic data on the communities - including number of residents, priorities, health concerns, and recent issues. With help from ATH, JEI, the Federation and the Ministry of Health could reconstruct some of the health questions to collect valuable and relevant medical data. This information could help insure that communities in need of vaccinations and other immediate services are not overlooked, and could help build better long-term health interventions.

Lagos University Teaching Hospital/College of Medicine (LUTH): Northwestern's partner on two NIH funded capacity-building grants; Bioinformatics Framework grant and Medical Education Partnership Initiative Lagos. This meeting was predominately to learn about prior community based work and see where opportunities for partnerships between ATH and LUTH could support the other projects with JEI/Federation. Sunny Aigbefo was interested in seeing where his LUTH supported HIV education NGO might fit in, and the Biomedical Engineering department was interested as they focus on malaria alternatives in slum communities at the moment.

YEDI: YEDI works on creative models for HIV/AIDs education for youth - predominately through football. A very interesting structure and the Director is very open and helpful. This is an organization useful to keep in mind for communities suffering high levels of youth STD issues or for the possibility of future collaborations.

V. Potential Next Steps

" There seemed to be a great thirst for this knowledge as evidenced by the active community engagement during various question and answer sessions (Otodo Gbame 2016; Tarkwa Bay 2016)."

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The next steps have been divided into immediate and longer term. These next steps will grow and change as new information or ideas come to light.

A. Short-Term interventions:

Research current traditional medicine approaches to treating malaria used by majority of interviewed communities to better understand 1) effectiveness and 2) how these approaches should be handled in the context of a larger intervention: Literature review on efficacy of traditional medicines-as herbal and traditional medications are widely used, community members asked for a review of what evidence exists for these remedies; especially in malaria, antibiotics and pain relief. ***Completed and Attached.***

Research and identify strong health education curricula prepared for low-literacy, low-education, low-health access environments, looking for language (English, Pidgin, Yoruba, Egun, Hausa), scalability (can it be incorporated into a step-down training for community health advocates) and evaluations of materials. ***In process.***

Summarize and distill existing health laws and policies, identifying areas in which such laws/policies might be used to further access to specific types of care such as maternal health, family planning, vaccinations, malaria testing, and HIV/AIDs medicines: Summary of current Nigerian health policies—given JEIs strength in education and mobilizing around legal rights, providing the current government health policy to community members would allow community members and paralegals to at least advocate for services promised under the current policy, including free pediatric and antenatal care. ***Completed and Attached.***

B. Long-Term Interventions:

Build strategy for long-term health education/assistance in partner communities, including adapting best community-training materials to the Nigeria context, conducting step-down trainings of community health advocates to disseminate health education, supporting JEI/Federation identified leader to head-up health education and identify priorities, identify concrete ways to buttress education so participants maintain interest and see changes as a result of education: Education campaign-given the low levels of health and medical literacy, and the extreme interest in learning more, we propose to pilot a community level, low literacy general health curriculum. We will review current curricula that could be adapted to the partner communities. Topics should include reproductive health, malaria, and water borne illnesses. This could include some sort of basic assistance trainings as well, such as the BLSO proposed by the Maternal Health group - which could help support questions and increased interest in medical assistance that will likely result from educational outreach. At present HIV education is not as pressing a need.

Leveraging existing partnerships-we would like to examine potential partnerships around malaria education and bed net/RDT provision with Malaria No More, HIV education and testing with Karale, and bioengineering and community medicine practicum projects with Lagos University Teaching Hospital/College of Medicine (LUTH).

Supporting health data collection/analysis with Ministry of Health, JEI and the Federation: Current census data is out of date and has been subject to a lot of critique. There has never been an attempt to understand the health data of slum communities in Lagos. However, after the very public and very tragic death of over 35 children to measles in Otodo Gbame, the Ministry of Health has reached out to JEI/Federation to assist with data collection in the community as an addition to the profiling work that JEI/Federation already does (see Appendix D for more information on this). ATH is superbly situated to identify the types of health data that should be collected and to help figure out 1) the best ways to collect this data and 2) how the ATH/JEI collaboration can leverage this information with the Ministry of Health and elsewhere to improve access to health for partner communities.

C. Other Possibilities

Access to a Doctor: Access to someone who can answer basic medical questions and direct people to take next steps - testing, medication, etc., would be very helpful. This could look like a one day a week visit to the Federation where all the communities know that this doctor will be available to visit, or rotating from community to community. This could be the outcome of a LUTH partnership, or even through the Northwestern University's work in Nigeria. This would need to be free or very low cost, perhaps on a sliding scale or for a daily rate that the community could contribute to.

Testing: If one purpose of education is the increase the likelihood of testing for malaria, then ensuring that access to free or low cost testing at the same time is incredibly important to maintaining interest and buy-in to the education component - otherwise, it may feel like the offered information is not relevant to the communities context and alienate rather than mobilize. This could look like assistance with developing a low-cost business model in the community for a community health worker to run.

Designing a Campaign and Business Model for a Functioning Composting Toilets for Savings Groups Interested in Investing in a Toilet/Sanitation Model for Community: It is clear that the toilet business already functions in some areas, however a composting toilet is more complex and having a functioning process takes more investment on many levels. A functioning business plan and pitch designed for the community context would help those interested to design a working model.

Students also suggested a Mobile Clinic, Refresher Trainings for Community Based Health Workers, Media, SMS, and Town Criers to support education outreach, Connecting Communities to Free Medications, Conducting Trainings in How to See if Medication is Counterfeit, Setting up Business Strategy for Distribution of Low Cost Fire Extinguishers.