# PROJECT CASCADE

Summer 2022 Village Health Team (VHT) Research Report
*May through June, 2022*

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# Key Abbreviations

**AIDS**: Acquired immunodeficiency syndrome

**HA**: Health Assistant

**HC**: Health Center

**HIV**: Human immunodeficiency virus

**MC**: Municipal Council

**MoH**: Ministry of Health

**MHM**: Menstrual hygiene management

**NGO**: Non-governmental organization

**ODF**: Open-defecation-free

**RDT**: Rapid diagnostic test

**RUN**: Raise Uganda Now

**STI**: Sexually-transmitted infection

**TB**: Tuberculosis

**UGX**: Ugandan Shilling

**UTI**: Urinary tract infection

**VHT**: Village Health Team

**WASH**: Water, Sanitation, and Hygiene

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# 1. Executive Summary

## 1.1 Raise Uganda Now

Raise Uganda Now (RUN) is a 501(c)(3) non-profit organization founded in 2015 whose mission is to establish a safe and sustainable environment for the health, education, and future of orphans and other vulnerable children in Uganda. On a larger scale, RUN's vision is to establish a sustainable model that is self-sufficient, replicable, and scalable in rural Uganda and beyond.

## 1.2 Project Cascade

Project Cascade was founded by the RUN Health team, which formed in 2020 as a group of undergraduate students at Harvard University researching rural Ugandan public health. There is a current heavy reliance on volunteer networks that link community members to a respective hierarchy of Health Centers (HCs). Cascade's vision of sustainable, community-driven public health serves as a baseline for expanding the impact of these networks to more vulnerable members of the population that have the most difficulty benefiting from their services, including, but not limited to, the orphans supported by RUN.

Current one-time approaches aiming to combat sanitation and health disparities often see an effect that lasts only as long as the intervention. In order to combat this, we have identified Village Health Team (VHT) members as crucial components of local community health networks that demonstrate tremendous value in facilitating the expansion of proper health education.

## 1.3 VHT overview

A VHT is a volunteer that serves as the link between HCs and the general community with two major roles. First, while physically interacting with their fellow community members, they are responsible for making referrals upon the detection of any disease or health concern. In addition, they disseminate health and sanitation-related education (that comes from the Ministry of Health (MoH) or non-governmental organizations (NGOs)) to their community members utilizing a variety of strategies. Each sub-county has 5 local VHTs who are elected by their community and trained by the MoH before being expected to report community health information to VHT coordinators and trained medical professionals such as Health Assistants (HAs).

VHTs prove to be the best candidate for Cascade's goal and for advancing the overall RUN mission, largely due to their reliance on community engagement and education when serving as conduits to promote public health.

### 1.4 Cascade-VHT interaction

This report presents VHT-specific baseline information that was gathered during a field visit in May and June, 2022 to five sub-counties within the Bugiri District of Uganda. The goal of this visit was to interview VHTs in rural villages in order to gain further insight into the scope of Ugandan public health networks, specifically those that will interact with the RUN operation, and to clarify the mission of Project Cascade. The primary takeaway from our baseline field research is that there is already a well-established health network set in place in Uganda, but with significant gaps and challenges. Ultimately, VHTs are open to embracing partnership opportunities with NGOs and other outside organizations in order to work towards overcoming such challenges, both those faced by communities as well as those faced by the VHTs themselves. Cascade will serve as a bridge between existing NGO operations and VHT services to fill these gaps, extend the reach of VHTs to even more vulnerable populations, and enhance the organic flow of health education for and by the local rural communities.

Through our baselining interviews, we found communities in which VHTs are already imparting their knowledge upon citizens, but through the health challenges and gaps that we identified firsthand, we envision that Cascade will be able to enhance the network's potential by facilitating the onset of an even more powerful "cascade" of health knowledge, ultimately empowering entire societies to become more independent and self-sustaining.

# 2. Field Research: Logistics

### 2.1 Our team

- Colby Weiss - *Harvard College Student, RUN International Team*
- Lauren Kim - *Harvard College Student, RUN International Team*
- Kadondi Betty Burungi - *RUN Chief Director*
- Asiku Patrick Murungu - *RUN Legal Council*
- Mwanja Gerald Steven - *Bugiri District Village Health Team Consultant, Representative at CHRISTFOLDEM*
- Natocho Willimina - *Bugiri District Village Health Team Consultant, Translator*

Mwanja Gerald Steven (Steve) organized meetings at five HCs in four different sub-counties within Bugiri District, Uganda: Nabukalu (HCIII), Nankoma (HCIV), Naluwerere (HCIII), and Kapyanga. Two different villages within the Kapyanga sub-county were visited: Kayango (HCIII) and Bugoyozi (HCII). For context, the general hospital hierarchy in Uganda follows a decentralized referral system that is further explained in Figure 1 (appendix).

2.2 **Interview questions**

Participants in our five unique discussions included members of our team (outlined above), Village Health Team (VHT) Volunteers, VHT Coordinators, HAs, MoH representatives, and nurses — totaling 157 participants across the span of the study. Interview questions were drafted by the RUN International Team, approved by the Bugiri District VHT Consultant, and then adapted as needed by the RUN International Team. The RUN international team provided funding for meals and transportation costs for each VHT that attended the interviews.

Chronologically, the main questions that were asked of the VHTs in each interview are as follows:
1. Outside of your volunteer work, what do VHTs do for a living? More specifically, how do you manage and incorporate volunteering into your daily jobs?
2. What kind of information or guidelines are you given to follow when carrying out your jobs? What does a typical VHT-community member interaction look like?
3. What is the layout and content of the trainings that are attended by VHTs upon election, specifically the identity of your educators, methods of learning, any materials or support provided, as well as core skills acquired?
4. What are some of the most common and pernicious health-related challenges that you witness among your fellow community members?
5. What tactics do VHTs learn to use in order to best disseminate information throughout the communities that you serve? Are there any other methods currently being used to promote health education in these places?
6. We realize that despite this dissemination of sanitation knowledge and disease prevention education, there are many gaps that continue to persist between the VHT and the community members. What are some of these gaps that, if addressed, may help better integrate the healthcare network into communities and improve disease mortality rates?
7. Apart from the state of health in your communities, what are some of the key challenges that you find yourself facing regularly as a VHT?

8. What are some examples of outside organizations that have partnered with VHTs in the past, and how were you incentivized to work with them? If another organization were to propose a partnership, what would the collaboration process look like, and who would be in charge at the reporting level?
9. What do you enjoy most about your role, and what initially inspired or motivated you to seek VHT training?
10. What are some of the qualifications necessary to be eligible for, and ultimately elected, a fully-fledged VHT?

The majority of VHT responses were provided in their respective vernacular languages (primarily Lusoga or Luganda), so the help of RUN-affiliated translators was requested on-the-ground to obtain the information on the following pages:

# 3. Life of a VHT

### 3.1 VHT professions

The most common form of making a living for the interviewed VHTs is through farming. The Uganda Bureau of Statistics estimates that 70% of the Ugandan workforce consists of farmers,[1] supported by the fact that the majority of VHTs interviewed identify themselves as peasant farmers who sell crops or rear animals (pigs and poultry). Additionally, some VHTs are business owners, mostly operating salons, bars, or market stands to sell food. Some VHTs earn income as boda-boda (motorcycle taxi) drivers. A few VHTs already interact with many of their community members as pastors, teachers, and counselors, making it easier for them to merge VHT teaching with their daily roles. However, this is less common.

VHTs are exposed to another potential source of income as "outreach workers." Although their VHT role is unpaid, there are additional roles that involve working with HAs that VHTs can receive trainings and payment for. Examples of these tasks include administering immunizations and distributing drugs. This is slightly different from everyday VHT work because it is contracted and requires specific qualifications and abilities.

### 3.2 Accommodation of volunteer work

Physical incorporation of VHT volunteering into a VHT's daily schedule is overall inconsistent and subject to each individual VHT's job, largely due to the fact that VHT work

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[1] "Uganda - Agricultural Sector," International Trade Administration | Trade.gov, November 12, 2021, https://www.trade.gov/country-commercial-guides/uganda-agricultural-sector.

is volunteer-based and these individuals must prioritize a stream of income. VHTs create their own working plans that most accommodate their daily jobs, specifically the hours they must be responsible for their primary job (such as farming during the morning hours) as well as who can take over the daily job responsibilities when a VHT is mobilizing the community (such as spouses, children, or neighbors). Some VHTs create a weekly schedule that allocates certain hours of certain days to VHT work. Others rely more so on the community's current health situation, increasing frequency of their VHT work during public health crises and decreasing their monthly presence when appropriate. A common example schedule provided by peasant farmers was 3 days per week of harvesting crops in the morning, resting at home mid-day, and conducting VHT work for about 3 hours in the evening.

### 3.3 Resonating impact of VHTs

Beyond physical incorporation into their schedule, the knowledge and practices of being a VHT organically persists in a VHT's daily life. For example, nutrition standards help guide farmers with which crops to prioritize as well as the quality and quantity of their crops. Most importantly, the VHTs are everyday citizens who interact with others in the community on a daily basis. These organic interactions allow for a continuous stream of health-related advice, information about health meetings, and identification of individuals who may have fallen ill or below sanitation standards. Even if VHTs are not specifically conducting their VHT work, they are always role models for community health within their villages.

# 4. VHT Selection Criteria

### 4.1 Required qualifications

A VHT is required to be a Ugandan citizen from the sub-county that they will be representing, largely in order to minimize language barriers. An ideal VHT is able to maintain objectivity when it comes to political matters as well as a clean record of zero previous criminal activity. It is crucial that a VHT is literate to be able to read and write reports, explaining the criteria of being 18 years of age and having completed Senior 4 in school (equivalent to 11 total years of schooling). Literacy is assessed in a pretest upon VHT election.

### 4.2 Ideal traits

A large part of the VHT nomination process happens during town meetings in which community members discuss which of their neighbors would make ideal candidates for the

position. When considering nominees, the community looks to sociability, commitment, trustworthiness, and physical fitness as determining attributes. Specifically, a VHT must be approachable and demonstrate initiative to undertake their role without a salary. Additionally, an ideal VHT will undoubtedly respect worker-patient confidentiality when dealing with sensitive medical information or diagnoses. Finally, physical fitness is an important consideration because a large responsibility of a VHT is covering long distances walking house-to-house.

Disqualifications of VHTs are possible at any time, and the position is not permanent. If a particular VHT no longer exhibits the aforementioned qualities and has been deemed to be performing poorly by a political leader or HA, they may be fired and replaced.

# 5. VHT Onboarding

## 5.1 Training topics

### 5.1.1 *Healthcare knowledge*
VHTs are taught the MoH's standards for household sanitation, specifically how to monitor and guide the presence of clean latrines, adequate rubbish pit locations, a drying rack for dishes, a drying line for clothes, a separate house for animals, ect. inside a home. Additionally, they learn how to promote food security and nutrition, specifically proper food cultivation, storage, and consumption. VHTs learn the importance of family planning and child spacing, as well as effective tools that can prompt family planning within their communities. Finally, VHTs gain a well rounded understanding of the various diseases that they will most commonly come across within their communities, including (and elaborated in Section 7) malaria, human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS), diarrhea, COVID-19, and tuberculosis (TB).

VHTs are also taught how to assist with immunizations, with the important clarification that they do not administer immunizations themselves without proper training or without a HA. VHTs are taught how to record relevant information and track patients immunization records, providing important logistical support regarding who in the community needs which immunizations.

### 5.1.2 *Social skills important for community interactions*
In addition to the general health and sanitation knowledge acquired by VHTs in their trainings, they also learn important social skills that will facilitate their community interactions. Because they interact with every community member, VHTs must be able to

acknowledge the need to deliver different guidance to different groups of individuals, whether it be children, pregnant mothers, HIV positive patients, ect. This skill allows VHTs to be precise, specific, and concise, which was noted to lead to higher rates of community member knowledge retention.

Community members are not always aware that they may have a certain disease, or may incorrectly diagnose themselves. Therefore, social observational skills prove to be very relevant to a VHT that must detect illnesses based on visual and behavioral cues indicative of certain symptoms in order to make correct diagnoses and/or referrals. Certain diseases, such as malaria, diarrhea, and COVID-19 especially require quick and correct diagnoses that may rely on a VHT's observation skills.

VHTs are trained on the "skill of approach" in order for their peers to be as receptive as possible. Various examples of "skill of approach" were provided, including physically helping the people they are teaching, being open minded, being respectful, and acting as a role model. One VHT mentioned that if he is teaching his community how to construct proper washing facilities or latrines, he will actually help construct them himself. It is important that a VHT learns to interact with *any* community member, with the ability to put aside any differences or assumptions in age, gender, career, religion, language, or beliefs in order to be relatable and approachable. VHTs can also serve as role models by using their own households as examples. For example, one VHT used her own family as an example of family planning strategies in order to exemplify the benefits of proper family planning.

## 5.2 **Training logistics and methodologies**

### 5.2.1 *Trainers*
VHT trainings are conducted by national trainers sponsored by the MoH, and are attended by all VHTs after their election. HAs receive the highest level of training from the central government, and then pass it down to their respective VHTs on the local level. VHT-specific trainings are dependent on how a VHT can most effectively assist HAs with their jobs. The three major responsibilities of HAs, as relayed by a nurse at the Bugiri Municipal Council (MC) are disease prevention, treatment, and control. Prevention mostly relies on employing education strategies and mobilizing the community to disseminate sanitation education. This proves to be one of the largest areas of responsibility delegated to VHTs. Treatment involves drug administration and immunization distribution, in which VHTs may assist with spreading the news of a new drug delivery or properly guiding immunizations to be administered to the most appropriate groups within the community. Finally, a HA will monitor all referrals coming from VHTs to monitor and control any disease outbreaks.

5.2.2 *Logistics*

Upon election, VHTs participate in an initial training that generally runs all day for about 5-7 days. For this initial training, the government provides a training allowance, meals, and covers transportation costs for the VHTs in order to maximize the incentive to become a trained VHT. The initial week-long training can occur in two formats: residential and nonresidential. For residential trainings, VHTs are taken on a retreat for a week or so. The exact allocation of time depends on what topic they will be taught, and how much time the medical professional deems necessary. This type of training is preferable because it minimizes distraction from the topics being taught and promotes camaraderie among VHTs who are participating together. Additionally, it enhances a VHTs credibility, implying more time was spent training for their role. Despite these advantages, residential trainings are becoming less common due to limited funds. Nonresidential trainings, on the other hand, involve the VHT to commute to their training site everyday rather than spending the entire week uninterrupted at the training.

After their initial training, VHTs are reminded and retrained in their roles in responsibilities in less frequent, less time intensive *refresher trainings*. Generally, refresher trainings are supposed to occur every quarter of the year, but in practice, the frequency is inconsistent and varies with the public health needs of a community, the availability of funds, and the complexity of the topic being taught. For example, health services that are less common, such as polio immunization administration, may be a recurring topic in refresher trainings. If VHTs are not able to reinforce their knowledge by practicing it on a consistent basis, they can rely on refresher trainings to retain the knowledge relating to that particular topic. Refresher trainings are taught by technical health personnel from the respective district or by HAs from the nearby health facility. An important distinction between initial and refresher trainings is the level of NGO involvement. While initial trainings are government sponsored and have little to no NGO involvement, NGOs may fund or even completely run refresher trainings for VHTs if they are specific to the project they are employing. The general sentiment of refresher trainings among the interviewed VHTs is that they are absolutely necessary to retain the knowledge a VHT is responsible for as well as continuously adapt how they conduct their role. NGO-led refresher trainings also allow for knowledge specificity, reinforcing whichever health knowledge is important to that particular NGO as the VHTs priority for an upcoming project. Despite their importance, the interviewed VHTs overwhelmingly agreed that refresher trainings do not happen as often as they should, as elaborated in Section 8.8.

5.2.3 *Methodologies*

During trainings, VHTs are exposed to a variety of different teaching strategies to learn both new information themselves as well as strategies that they may use when teaching their communities. *Surveys and questionnaires* are effective at gauging what the target audience, whether it be the VHTs themselves or the general public, is already familiar with so that training/teaching can specifically target less comfortable areas. During their trainings, VHTs work in groups to discuss and prepare a presentation of ideas. *Group collaboration* proves to be a relevant skill for a VHT to acquire, especially for future participation in "dialogue meetings," in which VHTs from different areas meet to share their best practices, ideas, strategies, and the most relevant challenges they face. *Guided Discovery* makes use of charts and handouts and follows a progression of observing and learning a new topic via a demonstration or lecture, practicing the new skill, and then presenting and teaching others how to accomplish the new task (observe, practice, teach). VHT trainings overall do not just teach VHTs health knowledge, but, more importantly, *how to teach* this knowledge to the rest of their communities. Finally, VHTs take a posttest after 7 days of training, and if the prospective VHT excels and scores above 50% on the posttest, then they are promoted to become fully-fledged VHTs.

## 5.3 Physical facilitation of VHT work

A VHT's job would be very difficult without certain physical tools that assist with processing demographic information, dividing responsibilities, conducting health check ins, and teaching. However, it is important to note that not every VHT is able to receive each of the following materials. Because not every VHT attends every training, some do not physically receive the distributed materials. It was estimated in one of the interviews that as little as 2/5 of VHTs in a sub-county physically have all of the necessary materials, as elaborated in Section 8.1.

The primary reference for a VHT is the *VHT manual.*[2] The manual highlights the roles and responsibilities of a VHT followed by the following six main tasks of a VHT and subsequent activities that guide the completion of each task:

1. Record and examine health-related data of the village, its homes, and its families. This is done by mapping the village and then updating a *village register* with relevant health information for each home. The manual explains which health information should be included in the register. The register itself has an array of all the homes in the village and indicates whether each house has basic household information and sanitation

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[2] "Participants Manual for Village Health Team Members," Participants Manual for Village Health Team Members § (n.d.), pp. 1-112.

necessities, such as proper facilities, up to date vaccinations, and proper prenatal care if relevant. A sample village register page is included as Figure 2 (appendix).

2. Visit village members to observe behavior, practices, and hygiene and share information, education, and advice regarding healthy habits.

3. Help save lives by guiding community members to recognize the dangerous initial signs as certain diseases (outlined in the manual) as well as referring individuals with these danger signs to HCs. A blank example VHT referral form is included as Figure 3 (appendix). VHTs also save lives by encouraging parents to immunize their children, pregnant mothers to attend regular check ups, and ensuring that newborns receive proper care.

4. Serve as a link between HCs and the broader community, carrying important information and explanations between health workers and village members. VHTs facilitate the dialogue between health workers and the village. They support the organization of health activities and lessons as well as notify health workers of any reportable diseases.

5. Mobilize the village. VHTs must have the ability to mobilize every community member that should participate in a specific health discussion, often going on foot house-to-house (other strategies elaborated in Section 6.4).

6. Participate in monthly meetings with fellow VHTs to share information and plan collaboratively.

A VHT's *job aid* [3] is another crucial physical tool that specifically supplements a VHT educating village members about certain signs of disease or proper healthy habits. The job aid is a flip book with cartoon images, flow charts, and discussion-provoking questions that aids a VHT's visit. The image on the front faces outward toward the audience (during a home visit), and the questions on the back are posed by the VHT as a way to facilitate a discussion about what the image is demonstrating. It is important that a VHT only provides information that is relevant to their particular target audience in a given interaction, and the job aid allows for a VHT to choose specific and concise lessons that will be most beneficial for their audience. This timed and targeted counseling prevents the village members from being overloaded with information and instead provides them with advice that is most pertinent to their lives at the time of the teaching. Specific groups of people that VHTs frequently encounter, and must tailor their teaching to, include children under 5, pregnant mothers, disabled individuals, breastfeeding mothers, HIV-positive individuals, and TB-infected individuals. An example page from the MoH's VHT job aid is included as Figure 4 (appendix).

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[3] "Integrating Nutrition Assessment, Counselling, and Support into Health Service Delivery," Integrating Nutrition Assessment, Counselling, and Support into Health Service Delivery § (2016), pp. 1-34.

In addition to reporting and teaching tools, physical tools also facilitate information gathering about the health status of individuals. *Mwaka tape* is a band to measure a childs' arm that is color coded to indicate malnourishment.[4] After the band is wrapped around the childs' arm, it indicates a certain color through which the VHT is then able to gauge the nourishment of that child depending on their age.

The VHTs at the Bugiri MC noted their smartphones as one of their most important physical tools for both reporting and educational purposes. They often show video demonstrations or explanations of specific healthy habits to the village members when interacting with them on a daily basis. However, smartphones for VHTs were much less common in the other 4 villages visited, suggesting that while smartphone use may be useful, it is scarce in practice.

# 6. Community Interaction

6.1 **Mapping the village**

The first task VHTs must accomplish in order to effectively disseminate information to their entire villages is to map their village to divide responsibilities. This physical layout of the houses, churches, schools, and other important landmarks assists each of the 5 VHTs to claim responsibility for a portion of the village. They may travel house-to-house within their portion to teach certain lessons using their job aid, conduct check-ins and update the register, or mobilize their community members for a meeting with health workers (all VHT responsibilities are mentioned in Section 5.3).

6.2 **House-to-house visits**

Once responsibilities are assigned, house-to-house visits are the most common way for VHTs to spread information throughout the community. VHTs make it a priority to approach each and every home, especially since certain homes may not have a relationship with each other in which the VHTs can assume information spreads from family to family. It may be risky to assume that there would be a sufficient amount of organic knowledge transmission amongst all of the houses even if only a couple of them were directly educated by VHTs.

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[4] "Testing Weight Measurement Tapes," UNICEF Office of Innovation, Supply Division, March 10, 2015, https://www.unicef.org/innovation/stories/testing-weight-measurement-tapes.

During VHT check ins, the register guides VHTs to assess if the household has facilities and behaviors that are up to standard. If a particular house doesn't meet given sanitation/hygiene expectations outlined in the register, VHTs are expected to urge its members to fix the deficiencies within a set period of time, after which they are required to go back and check to see if the issues were attended to. If the households can't afford to fix their problems or need additional support, VHTs will work to combine 5-10 houses into one "group" and to help build whatever structure is needed. However, there is generally not enough funds to do so for every individual household or incentivize this extra human labor required to update facilities.

## 6.3 **Uncooperative community members**

At times, if households are uncooperative, VHTs also seek the intelligence of their HAs or superiors to add a voice to homes that fall short of the register checklist. They may rely on other village leaders, such as local government or religious heads. A family who may not welcome advice from a VHT may be more prone to listening to local and religious leaders. Many existing education initiatives involve political leader(s) at the local council level. As a last resort, VHTs rely on local councils to provide legal enforcement. Police can become involved in order to enforce what the VHTs are suggesting. For example, individuals can be arrested for continuous open defecation practices.

## 6.4 **Additional mobilization techniques**

Beyond health check ins and updating the register, VHTs rely on different teaching methods to effectively disseminate health information. The job aids facilitate discussion based sessions that have the end goal of improved health behavior, as seen in Section 5.3. Additionally, VHTs use a "counseling method," which is similar to coaching. The VHT will ask the individual to perform or task (for example, a mother caring for her disabled child), and will observe the process until there is a mistake, then respectfully correcting the mistake or advising a more appropriate behavior.

While not always the case, individual VHTs often find themselves specializing over time and with experience. Everyone learns certain pertinent topics (such as COVID or general sanitation standards), but other topics are sometimes more specific to the VHT, such as who is intensively taught antenatal care versus who is taught about HIV/AIDS, for example.

For mobilization of the community, besides traveling house-to-house to spread the word, VHTs can rely on mass media (radio, TV) or political and religious leaders to convey a

meeting time and/or topic. VHTs can also utilize spoken word, relying on friendships and everyday human interactions. Finally, megaphones and cell phones prove to be the most useful tools for spreading the word of an upcoming meeting in order to mobilize the desired participants.

# 7. Identified Community Health Issues

## 7.1 **Direct community health issues**

A wide variety of health issues continue to persist within the rural communities that VHTs serve, many of which are conditions brought about by poor hygiene, natural disease carriers, and even just a lack of emphasis or education pertaining to topics such as menstrual health. Interviews with VHTs provided further insight into some of the most common health issues that *directly* plague rural Ugandan communities. These findings, in no particular order, are summarized below.

### 7.1.1 *General hygiene and open defecation*
The primary end goal of many rural villages in Uganda was found to be the promotion and encouragement of "Open-Defecation-Free (ODF) Villages." Open defecation, or the practice of defecating in the open rather than in a toilet or proper latrine, is a tremendous propagator of waterborne, insect-borne, as well as parasitic diseases. In Uganda and other regions of sub-Saharan Africa (SSA), open defecation largely takes place in fields, forests, bodies of water, and bushes or shrubs.[5] And while open defecation rates have been declining over the course of the last few decades, the practice itself continues to be a risk to community health, children's nutrition, and the dignity of the people.

In order to promote the expansion of ODF villages and improving general hygiene practices throughout Uganda, VHTs and healthcare workers suggest building stronger education programs regarding safe water protection measures (such as boiling or filtering), clearing bushes and covering pit latrine holes, regularly cleaning compounds, dishes, and utensils, implementing proper waste disposal measures for every home, and teaching children effective handwashing techniques. Increasing community collaboration and excitement surrounding latrine-building projects could also help supply the manpower required by each village to install private latrines for a greater number of households.

### 7.1.2 *Malaria*

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[5] "Open Defecation," JMP, accessed July 16, 2022, https://washdata.org/monitoring/inequalities/open-defecation.

Despite being one of the most well-known diseases to plague Ugandan citizens, malaria continues to be one of the most, if not the most, common cause of disease-related deaths in the country. The uncontrollable nature of the mosquito population in weather conditions as tropical and humid as the Ugandan rainy season is likely the largest driving factor behind the prevalence of this mosquito-infesting parasite. Poor drainage systems and the accumulation of water in maize stalks create many opportunities for stagnant water and therefore, perfect breeding grounds for swarms of new mosquitoes. While issues such as this are largely infrastructural, other factors that make community members more vulnerable to malaria include resistance to government-sponsored house insecticide treatments, as well as the improper use of or lack of maintenance of mosquito nets. The government may provide insecticide-treated mosquito nets, but many lesser educated families elect to use these nets for fishing purposes instead. Proper utilization of these nets remains the top preventative solution for malaria to date, however these nets are not always error-prone. Poor quality mosquito nets are often prone to ripping and bearing holes that allow mosquitoes to enter and spread malarial infections.

While there are still no apparent solutions to malaria that are being implemented on-the-ground, there are many prominent ongoing research efforts at both the Uganda Virus Research Institute as well as the Uganda National Health Research Organization.

### 7.1.3 *HIV and other sexually-transmitted infections (STIs)*
VHTs emphasized that in Uganda, there is an overall lack of precaution or preventative measures taken by community members prior to engaging in sexual activity. Factors such as maintaining poor personal hygiene or electing not to test for active STIs before sex can greatly increase the likelihood of contracting and spreading STIs like wildfires within villages. There is also an inherent lack of emphasis placed on STI testing in general throughout the country, leading many of its community members unaware of its importance. Even with diagnosed and treated cases of primarily female diseases such as urinary tract infections (UTIs) or pelvic inflammatory diseases, there remains the concern that poor hygiene on the part of males could cause unending cycles of transmission, proving to be a rather unsustainable solution. Sex work is also very common in Uganda, and it was found that because unprotected sex is valued at higher costs, many women resort to this option and allow themselves to be more vulnerable to HIV and STI contraction in return. Or more simply speaking, condoms are not always readily available or distributed by government entities or VHTs. It is also interesting to note that HIV not only affects adults and sexually-active people in Uganda, but also young children. Such vertical (mother-to-child) transmission of HIV can be brought about in many ways, but is most commonly caused by

poor or nonexistent antenatal care, prematurely falling out of antiretroviral therapy, or becoming infected with HIV during pregnancy or breastfeeding.[6,7]

While solutions to STIs and HIV/AIDs in Uganda are not immediately obvious, VHTs recommend focusing a lot more effort on adolescents and younger generations to first try and combat preventable cases of vertical transmission. In addition, increasing the accessibility of condoms and birth control measures for people in rural areas could open up more avenues to preventative sex. Programs that facilitate safe male circumcisions are also thought to be effective, as correlations have been found between circumcision and reduced risks of acquiring and transmitting HIV and other STIs during heterosexual sex. Not only this, but the Centers for Disease Control and Prevention (CDC) has reported that male circumcision could also lower the risk of penile cancer, cervical cancer in female partners, and male infant urinary tract infections.

### 7.1.4 *Diarrhea*

Diarrhea as a healthcare concern is life threatening primarily for children and infants, but still affects people of all ages. Its causes are closely tied to poor hygiene and sanitation practices, including a lack of access to soap and improper handwashing techniques. The poor distribution of safe water sources throughout the nation also causes the transmission of diarrhea and a variety of other waterborne diseases such as elephantiasis and bilharzia. Another cause that is largely specific to many African countries is that new mothers often don't practice exclusive breastfeeding for children under 16 months, meaning that they stop breastfeeding too early. VHTs note that if this weren't the case, child diarrhea rates would drop dramatically. Exclusive breastfeeding is defined as limiting feeding to only human milk with no other liquids or foods.[8] As natural breast milk is rich in immunoglobulins, breastfeeding can protect newborns against a variety of diseases including pneumonia, ear infections, asthma, and diarrhea.[9] Breastfeeding right after birth is especially important because newborn babies have weak and immature immune systems.

### 7.1.5 *Respiratory diseases*

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[6] Unaids.org, "How Are Babies Becoming Infected with HIV in Africa?," UNAIDS (UNAIDS, February 11, 2020), https://www.unaids.org/en/resources/presscentre/featurestories/2020/february/20200211_babies-becoming-infected-with-hiv-in-africa.

[7] "HIV and AIDS," UNICEF Uganda, accessed July 16, 2022, https://www.unicef.org/uganda/what-we-do/hiv-aids.

[8] Cristina Mitchell, "Paho/WHO: Breastfeeding - Benefits," Pan American Health Organization / World Health Organization, February 21, 2014, https://www3.paho.org/hq/index.php?option=com_content&view=article&id=9328%3Abreastfeeding-benefits&Itemid=42403&lang=en.

[9] Christie G. Turin and Theresa J. Ochoa, "The Role of Maternal Breast Milk in Preventing Infantile Diarrhea in the Developing World," *Current Tropical Medicine Reports*, 2014, https://doi.org/10.1007/s40475-014-0015-x.

An array of other infectious diseases can be transmitted via human interactions, many of which are respiratory in nature. The diseases identified by VHTs as being especially important to note include TB, pneumonia, COVID-19, and general coughing. The migration of infected people within communities can also bring diseases and promote further transmission. This is especially problematic if some of these community members are unaware that they are infected. Preventative measures for airborne diseases include masking, proper handwashing, frequent testing, and refraining from sharing drinks.

7.1.6 *Maternal and child mortality*
Maternal and child health are intrinsically intertwined, as one can greatly impact the other. SSA boasts the highest child mortality rates in the world, and a lot of these deaths are triggered by poor maternal health and choices. Ineffective or inaccessible antenatal and postnatal care services are driving factors behind maternal mortality and the transmission of potentially fatal diseases to infants during and shortly after childbirth. Abnormal bleeding in pregnant mothers also sometimes causes death of both the mother and the unborn child. Not only this, but the lack of emphasis on family planning and child spacing causes household resources to be drained quickly and each child to receive insufficient care, even following a healthy birth. Many instances of underage marriage and a strong cultural emphasis placed on marriage in general often lead to very young pregnancies. Bearing a child at such a young age increases the risks of running into obstructed or difficult labor during childbirth that may then require dangerous surgical interventions. In order to circumvent some cases of teen pregnancy, Article 31 of Uganda's Constitution prohibits marriage and childbirth for women under the age of 18.[10] Even still, around 46% of all Ugandan women have already been forced into marriage by the age of 18.[11]

As maternal and child mortality have so many underlying causes, VHTs framed potential solutions by categories. To address malnutrition that may lead to higher child mortality rates, they recommend the establishment of home gardens for vegetables and other nutritious fresh foods. To better advance antenatal and postnatal care services for mothers, VHTs suggest following up with families who have given birth, teaching proper breastfeeding practices and timelines, as well as increasing distribution of "Mama Kits." These kits are already being distributed by the government to some extent and sold in some pharmacies, but VHTs believe they should be distributed free of charge altogether as they are considered post-labor / nursing necessities. More information about Mama Kits can be found in Section 8.5.2. And to address the prominent problem of early pregnancies, potential solutions

[10] "Uganda," Legal Information Institute (Legal Information Institute, 1995),
https://www.law.cornell.edu/women-and-justice/location/uganda.
[11] "Child, Early and Forced Marriage: A Multi Country Study" (Joy for Children Uganda), accessed July 16, 2022,
https://www.ohchr.org/sites/default/files/Documents/Issues/Women/WRGS/ForcedMarriage/NGO/WLUML2.pdf.

proposed include supplying more basic needs at home, involving local leaders in encouraging the enforcement of Article 31, pushing daughters to stay in school and complete their education, as well as creating and maintaining resource centers where younger generations can be sensitized to such issues.

### 7.1.7 *Menstrual hygiene management (MHM)*

An estimated one in ten menstruators in Uganda skips 5 days of school for each of their 28-day cycles. This menstruation-related absenteeism thus yields significantly higher dropout rates for females than males, with nearly 25% of adolescent girls choosing to leave school after experiencing their first menstrual cycle.[12] However, it is important to note that this decision is rooted not so much in autonomy or volunteerism, but rather is made the inevitable and obvious choice due to poor menstrual hygiene management (MHM) in schools, a lack of access to proper menstrual products, as well as an overwhelmingly insufficient awareness about the biological process in itself. An estimated 4 million school-aged females in Uganda live without proper sanitary care — a phenomenon that can be attributed to a variety of factors, including the fact that the rate of new latrine construction has not paralleled the recent growth in school enrollment numbers, with there currently being only one accessible toilet per 71 students on average.[12] This obviously does not lend itself to creating a safe space for girls to care for their cycle, instead propagating issues of insufficient privacy, water supply, and locations to properly dispose of sanitary waste products.

Many girls are afraid of sharing their experiences with healthcare workers and VHTs, yet there aren't really any measures currently being taken to relate personal hygiene to menstrual hygiene anyways. There is only very limited information available related to MHM because there is no special training for any school teacher or healthcare worker that is specific to menstrual health. While some older teachers and volunteer workers with experience try to help out at schools, there is no formal curriculum or educational plan set in place. To further exacerbate the MHM situation, VHTs are not trained in sanitary pad making, and only well-off families are able to reliably afford modern sanitary pads. For this reason, many women resort to using old garments or even newspapers to care for their cycles, which greatly increase the chances of contracting STIs or other diseases caused by poor sanitation. Unfortunately, when stakeholders and NGOs congregate about what trainings VHTs should partake in, MHM-related ones definitely do not fall high on their list of priorities.

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[12] "Study on Menstrual Management in Uganda - Menstrual Hygiene Day," accessed July 16, 2022, https://menstrualhygieneday.org/wp-content/uploads/2016/12/Menstrual_Management_-study-report_Uganda.pdf.

It was brought up during an interview that expanding access to courses in midwifery could help expose more healthcare workers and VHTs to MHM trainings. Not only this, but it was a very popular request that VHTs be taught how to use local or easily accessible materials to make sanitary pads. They proposed to have technical personnel on-the-ground supervising such trainings to ensure that they occur regularly, as MHM was found to be one of the most under-addressed yet most pressing needs of the rural Ugandan communities. More information about a leading cause of MHM issues can be found in Section 7.2.7.

### 7.1.8 *Visual health*

Due to financial constraints, prioritizing visual health in Uganda is challenging. As community members are still grappling with affording medications and stays at hospitals, many stakeholders and healthcare workers believe that the country does not really have the bandwidth to be spending time on non-life-saving (although extraordinarily important) procedures like eye surgeries. Itchy eyes, cataracts, and trachoma are among the most common visual health disorders in Uganda, and both near- and far-sightedness are prevalent in all age groups. Itchy eyes are largely caused by poor sanitation and hygiene practices, and are more frequently seen in children. Risk factors for eye diseases such as diabetes and hypertension are also common, although more so in adults — which may at least partially explain the prevalence of cataracts and trachoma in older Ugandans. And while spectacles are technically needed by the vast majority of the elderly population, accessing them can be very difficult as they are not prioritized at all.

VHTs are not formally trained on visual health and its implications or treatments, so the extent of their involvement is limited to simply referring those who show obvious signs of eye disorders to the hospital. For the most part, however, by the time their symptoms are so obvious, these diseases have reached an irreversible or untreatable stage. There is a demand among VHTs to be taught at least a little bit more about cataracts and trachoma so that they could be better equipped to encourage vulnerable groups (such as those with diabetes and hypertension) to schedule routine preventative eye exams. VHTs were reminiscent about working with a particular visual health NGO called "SightSavers," under whom they were taught and tasked to recognize symptoms in people with visual health problems and take them to designated health facilities staffed by technical personnel. A similar partnership with an NGO could be worth pursuing in the future to improve visual health in Uganda.

### 7.2 Socioeconomic issues that challenge community health

In addition to these direct community health issues, an array of *socioeconomic* — or more indirect — issues also bring about challenges for the overall health of communities. VHT

interviews elucidated the most urgent and far-reaching social issues that currently cause poorer health conditions as well as present a tough barrier for healthcare workers to overcome. Findings from these interviews, in no particular order, are summarized below.

### 7.2.1 *Inability to reach facilities*

The poor distribution of health facilities throughout Uganda inhibits many rural community members from physically being able to reach or commute to them. Each parish in Uganda does not have its own independent HCIII or HCIV, and the distribution of centers is often based on politics. This means that long distances between a community member's home and the nearest health facility can greatly hinder them from acting on their referrals, even if VHTs were able to successfully refer them. As of 2021, 71.7% of Ugandans live within a one-hour walking distance to the nearest HCII, but this drops to 53.05% for the nearest HCIII.[13] VHTs mention that enhancing the services provided at the more local (and often smaller) HCs, such as improving HCIIs into HCIIIs by hiring more professional healthcare workers, is proposed as a strong potential solution. This way, people in rural areas would not have to travel as far after receiving a referral, as most localities do at least have lower-tiered HCs staffed by VHTs.

### 7.2.2 *Hesitancy to seek healthcare*

There are a variety of reasons why individuals may be hesitant to visit healthcare facilities or actively seek out health-related resources that may be at their disposal.

> *Physical barriers: domestic violence*
> Domestic violence in the home setting often prevents the implementation of Water, Sanitation, and Hygiene (WASH)-related topics due to an existing feeling of shame about their living situation. Not only this, but families with domestic violence issues also hold women and children back from seeking treatment, as wives often do not wish to admit that their husbands are abusing them. There is also often a lot of uncertainty surrounding whether certain HCs will have specific medications in stock. It is typically very difficult to communicate with HCs by telephone in advance of a visit, so many people are hesitant to subject themselves to traveling long and gruesome distances without knowing whether or not their prescribed medications would actually be provided to them.

> *Distrust of VHTs and healthcare personnel*

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[13] Nicholas Dowhaniuk, "Exploring Country-Wide Equitable Government Health Care Facility Access in Uganda," *International Journal for Equity in Health* 20, no. 1 (2021), https://doi.org/10.1186/s12939-020-01371-5.

Members of many communities find themselves having a hard time fully trusting healthcare workers with information that they consider private or confidential, particularly if the healthcare worker in question is a volunteer VHT. For this reason, valuable information that may be crucial for diagnostic or treatment purposes is often withheld from healthcare personnel, or inaccurate information is purposefully given. This is a primary reason underlying inaccurate diagnoses and results, as well as incorrect or nonexistent referrals to hospitals. Being uncooperative with healthcare workers like VHTs can be especially detrimental for community members in the long run, as VHTs are involved in disseminating health *education* and knowledge that may help communities better sustain themselves and manage their own health in the future. VHTs mention that sensitizing communities to their work is crucial to being able to build more trust within these relationships.

Not only this, but VHTs brought up many cases where community members would routinely refuse to get immunized against certain diseases, making them more likely to ignorantly act as carriers who infect more people around them. Such stubbornness to receive immunizations and seek out preventative healthcare is commonly rooted in biases surrounding health-related information, which may be propagated by political leaders or family distrust of new technologies. Certain political leaders speak poorly about certain healthcare programs, and new technologies such as vaccines may not have been around or fully trusted when parents were younger.

### 7.2.3 *Inaccessibility of resources*

Sometimes the problem is rooted not in the community's hesitancy to seek healthcare, but rather on the inaccessibility of these resources in the first place. This means that even if people knew what they wanted to access and were eager to do so, they would not have anywhere to go to be able to obtain them. From the responses we received from VHTs during their interviews, we were able to categorize this inaccessibility into two broad underlying causes: government shortages in services and supply, and economic poverty.

#### *Government shortages*

The frequent untimely provision of social services by the government perpetuates the problem of healthcare inaccessibility, as it causes large numbers of people to miss out on important immunizations and other government-supported programs. There is also an interesting trend and habit amongst community members that exacerbates the already existing shortages in prescription drugs — many families resort to sharing drugs. This happens because not everyone is able to get their hands on the medications that they need, so a mother could mistakenly believe that giving some of

her share to her daughter, for example, might be better than her daughter receiving no dose at all. However, in reality, what this sort of behavior enables is a large waste of resources, as nobody ends up getting the dosage that they actually needed in the first place.

*Economic poverty*

There is a rampant inability to afford proper latrines in the house, sufficient amounts of food for the entire family, proper insecticide treated mosquito nets, vessels for clean water storage, and tip taps for handwashing. Without the financial capability to follow proper sanitation standards and purchase basic life needs, the fight to expand health education remains largely futile and inconsequential, as there is no practical application for what the community members are being taught. There is no reason to emphasize proper handwashing techniques, for example, if there is no hardware (like tip taps) set in place to practice these techniques in the first place.

VHTs mentioned that recently, there has been a general effort to use slabs of concrete in latrine construction as this strategy has been proven to combat swells and erosion over time, making the latrine more permanent and resistant to damage. USAID projects have spearheaded such initiatives in the past, but rural Ugandan villages are typically left out of the effort. A potential solution to consider is to develop a way in which to deliver the actual hardware or tools that go along with teachings or trainings. In a sense, it seems that the knowledge — or the software — is set in place, but the tools with which to implement this knowledge — the hardware — remain inaccessible.

### 7.2.4 *Living conditions*

Many families struggle with acquiring homes that are spacious enough to truly accommodate all of their children. Small rooms are often shared amongst large families, leaving them more prone to spreading communicable diseases and developing psychological health disorders. Due to family breakdown and increasing premarital child bearing, more families are being left under the care of a single parent, and others are tied to polygamous relationships — both of which inevitably entail less care and attention towards children. This lack of child care from fathers often means that mothers have to raise their children alone or with little help, on top of having to work to provide food and money for the family. Single motherhood has long been found to be a predictor of both morbidity and mortality of women and children, as single mothers are more vulnerable to heart disease, diabetes, and mental health disorders. Children raised in single mother households have higher infant mortality rates as well as a higher likelihood to be malnourished, have low grades, or drop

out of school.[14] VHTs suggest that placing a greater emphasis on family planning and encouraging more marriage counseling sessions across the country may help to improve such living conditions.

### 7.2.5 *Peer pressure and social influence*

Single mother households are also more likely to raise children who become delinquents or engage in risky behaviors as adolescents. Drug and alcohol abuse are becoming increasingly problematic in Uganda, and are especially common with adolescent males. As such, peer pressure and social influence of friend groups also play a significant role in the health of children, whose brains are still developing and should instead be finishing up their educational journey. A major root of this particular issue is the lack of education surrounding the long-term health implications of such drugs in schools. As VHTs explained these issues, they pointed out that integrating a unit on drugs and alcohol in middle school curricula could help raise awareness on their negative health effects and encourage more children to think twice about substance abuse in the future.

### 7.2.6 *Physical disabilities*

Members of the community who may be physically disabled often find themselves being prevented from acting upon VHT guidance, even if they may want to. For example, if a VHT were to suggest building a latrine in their house, a person who is unable to use his legs would not physically be able to help out with latrine construction. This greatly limits their ability to maintain a household that meets the VHT-recommended standards for hygiene and sanitation. And while certain technologies such as wheelchairs or artificial limbs may be able to improve the quality of life for such disabled individuals, the lack of funding across the nation means that these technologies are either unavailable or unaffordable.

### 7.2.7 *Unavailable or ineffective education*

Like many other countries in SSA, Uganda has long grappled with being able to provide accessible, effective, and equitable education to those of its younger generations. While the past few decades have seen relatively remarkable increases in both primary and secondary school enrollment across the country, this same trend does not hold true for the ultimate completion of schooling. While there are nearly 10 million Ugandan children currently enrolled in primary schools, only 2 million of them make it onwards to secondary school, and less than half of this subset ends up successfully graduating. Interestingly, these statistics are exacerbated for the young female population of Uganda, who struggle with an even higher rate of dropping out of secondary schools as well as a lower enrollment rate to begin

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[14]Nyasha Chadoka-Mutanda and Chidimma M Mbanefo, "Correlates of Single Motherhood in Sub-Saharan Africa Region ," accessed July 16, 2022, https://uaps2015.princeton.edu/papers/150595.

with. This knowledge gap is perpetuated by high illiteracy rates, as many women are found marrying as early as age 12 — leaving them uneducated about health issues, which then in turn makes them more vulnerable to suffering from them.

In terms of attempted solutions, very few schools have teachers who are formally trained by various organizations about hygiene and sanitation, MHM, how to handle puberty, or what to expect from adolescence. Schools receive minimal support on this end because there are simply too many students at each school compared to the number of teachers that can feasibly be hired for health education purposes. So even in regions where these designated teachers do exist, the teacher to student ratio is far too small to be able to make much of an impact. VHTs suggested that schools be allocated VHTs — just as villages are — so that they could assist with and urge more teachers to complete health-related trainings to be able to teach such topics on their own. A more detailed explanation of MHM as a broader community health issue can be found in Section 7.1.7.

# 8. VHT Challenges

Besides the health challenges that rural communities were identified to be struggling with the most, VHTs elaborated upon the most pressing concerns associated with being a volunteer health worker in Uganda, whether those challenges be based in finances, training inadequacies, unrealistic expectations, or unreliable partnerships. The information gathered from VHTs regarding their own personal challenges are summarized below, grouped into appropriate categories.

8.1 **Lack of preparation**

VHT trainings as a whole are focused primarily on providing exposure to the fundamentals and basics of a wide variety of topics. While the product of this mindset is that VHTs end up having an impressively well-rounded understanding of the basic diseases and health challenges of Uganda, it also means that VHTs are left with a gap in knowledge on many more complicated cases. Consequently, many VHTs feel that they are unprepared to deal with such scenarios, especially those pertaining to social issues. As trainings are mostly restricted to WASH-related topics, VHTs may not be familiar with the health implications of instances concerning topics such as domestic violence, for example. More information about the VHT training and onboarding process can be found in Section 5.

Not only are VHT trainings lacking in and of themselves, but sometimes VHTs are not even able to fully grasp what they are being taught due to the limited time that they spend in

trainings. As such, the answers that they provide community members may sometimes be based in conjecture or assumptions, and therefore be inaccurate or insufficient. It does not help that the HAs running these trainings are sometimes known to rush and gloss over certain details without always making sure that VHTs understand what they are teaching. This problem of summarizing or condensing training sessions is largely under-monitored, and causes their already insufficient trainings to be even more confusing or difficult to grasp.

At times, the issue lies in access — not so much in availability. VHTs are often unable to find the means to travel to sites where refresher trainings are being held, even if they are aware of their existence. This means that such VHTs would miss out on reviewing pertinent material and/or receiving physical tools that may have helped them in their work. Not only this, but such physical tools like job aids or training manuals may not be made available to the VHTs during training in the first place, as elaborated in Section 5.3. Another scenario that was presented as a common issue was that certain VHTs would only attend a few days out of a 5-day long refresher training session due to other responsibilities, causing them to fall behind.

## 8.2 Lack of community buy-in

The nature of the work that VHTs are involved in requires a lot of cooperation on the part of the communities, as most services (like referrals) provided by VHTs require community members to follow through and take action. Many communities, however, refuse to take ownership of their own facilities. For example, VHTs may successfully influence a particular community to build tip taps or latrines, but the community may construct them only to appease the VHTs and avoid legal punishments, instead of actually using them to improve the sanitation landscape of their own community. In this sense, the stubbornness of communities stands in the way of effectively incorporating the help that VHTs offer into the behaviors and habits of families.

Apathy as a whole is a tremendous limiting factor amongst members of the population, and it largely stems from the fact that many individuals expect VHTs to singlehandedly amend all of their community's health-related problems, without requiring any additional effort or cooperation on their part. A prototypical example of when this sort of apathy would cause problems is for latrine-digging projects, as digging latrines requires a lot of community resources and involvement of community members for maximal efficiency. If such resources and effort were to be unavailable, then important projects such as these would not be feasible. Sometimes, individuals are so uncooperative and defiant that they even try to distract the VHTs themselves from carrying out their projects, especially for topics like

family planning, which many families are known to be rather vehemently against. And since there is a lack of sanctions and proper punishments for defiant households who fail to fix the WASH-related deficiencies identified by VHTs, communities do not see much of an apparent reason to change their uncooperative behavior.

This problem of community apathy may be curbed through prior community sensitization towards VHT-related programs. It could also help to remind communities that VHTs are unpaid volunteer health workers, just to earn them a little more respect and dignity from families. Cross-learning visits were also proposed as a potential strategy to improve community involvement, as having VHTs routinely swap sub-counties to give new faces and strategies to their communities could help their work feel more dynamic and engaging to otherwise apathetic individuals. This innovative strategy of utilizing cross-learning visits may also be applicable to other challenges as well.

## 8.3 **Distrust of VHTs**

Potentially even worse than apathetic community members is the prospect of having distrustful community members. And many factors beyond the control of the VHTs themselves are responsible for driving such distrust within communities. For example, many health facilities are often undersupplied with medications and resources, meaning that sometimes a community member may travel to a health facility with a VHT referral, only to find that the facility had run out of stock on the particular medication they were looking for. In such cases, it becomes easy for community members to fault the VHTs for referring them to an undersupplied health facility, and their conclusion is often that the VHTs must have lied to them. Further distrust is found in relationships between older community members and younger VHTs, as many don't trust younger VHTs to be able to keep themselves from divulging information due to their "naivety." Because of this, valuable health information may be withheld from VHTs, or inaccurate information given to healthcare workers, causing collected information to be skewed or misleading.

VHTs suggest potentially recruiting the chairman of the local council, HAs, and more technical personnel along with the VHTs and have them work together for given projects. Collectively, they would be considered more credible and potentially be able to clear some of this distrust in an organic fashion.

8.4 **Other barriers to educating community members**

Distrust and apathy unfortunately are not the only reasons causing community members to resist change or be unresponsive to health education. A variety of other barriers exist that may be even more difficult to overcome, simply due to their deeply ingrained nature. Certain *religious beliefs*, for example, cause some individuals to be adamantly against the use of medications, condoms, blood transfusions, or other unnatural sources of healing, resuscitation, or birth control. *Cultural beliefs*, such as myths or generations of superstitions, may also cause some families to be skeptical of certain practices. An example that VHTs brought up was the belief that if a pregnant woman were to use a latrine, she would find herself infertile and unable to carry another child afterwards. And still others mistakenly believe that certain health programs will play a role in shortening their life expectancies. Many homes have quarrels over health-related issues, especially in cases where family members have different cultural beliefs or believe in different myths. These quarrels often hold back or slow down many health-related initiatives on the part of the VHTs.

*Language* barriers are also rampant throughout Uganda, where more than 40 living languages exist today.[15] While VHTs are required to be fully literate, many still find it difficult to communicate with some rural communities due to the extraordinarily specific tribal dialect that may be indigenous to that region. *Illiteracy* amongst the general population is also an educational barrier, as some posters or educational pamphlets may then be deemed useless.

VHTs have previously utilized a variety of strategies to attempt to overcome some of these barriers, a few of which saw some success, and others of which may need to be improved. In order to better enforce what they are teaching, VHTs consult higher authorities such as the police or local religious leaders, hoping for better receptivity from the communities. More information about this strategy can be found in Section 6.3. In terms of educating an illiterate person, VHTs make sure that they are being precise and specific with their teaching in order to avoid misinterpretation regarding what is being taught. It is also crucial to keep interacting with the community members in the form of a dialogue or conversation in order to gauge whether they have understood the crux of the lesson. And overall, VHTs stress the importance of being persistent in creating true friendships and establishing trust with community members. This formation of social trust will, in the long run, make individuals more receptive to adopting learned behaviors and understanding the benefits of change.

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[15] Medadi Ssentanda and Judith Nakayiza, "English Rules in Uganda, but Local Languages Shouldn't Be Sidelined," The Conversation, November 5, 2021,
https://theconversation.com/english-rules-in-uganda-but-local-languages-shouldnt-be-sidelined-49381.

## 8.5 Overwhelming community expectations of VHTs

### 8.5.1 *Misconceptions of VHT work*
Many community members do not entirely understand the role of VHTs in the greater context of the Ugandan healthcare system, and as such, are prone to making assumptions about their responsibilities. Some of the most common misconceptions of VHTs is that they are compensated for their time, they pick and choose which homes to visit, they are supposed to facilitate transportation from homes to HCs, and that they are expected to supply physical inputs to complement their teaching. These misconceptions can be detrimental to the goals of the VHTs not only because they can cause communities to want to avoid them, but also because it destroys the trust in their relationships and paints them in a negative light. For example, some communities expect VHTs to supply nutritional goods for lactating mothers, and when they fail to do so, are assumed to be scammers or untrustworthy intruders.

### 8.5.2 *Lack of expected materials*
Some of the health-education topics that VHTs teach households require "hardware" to complement the "software" that is being taught, but very rarely do VHTs have any of this hardware to distribute. For example, a common topic of teaching concerns family planning and birth control, yet VHTs do not have any condoms or pills to provide at the end of their visit. While some inputs *are* already being provided to VHTs to distribute to communities, poor government planning often leads to insufficient quantities being given to the VHTs in the first place. For example, VHTs run into a shortage of insecticide-treated mosquito nets nearly every time they are mobilized to serve a particular village.

VHTs provided insight into inputs that are currently being given to them by the government vs those that are not currently being provided but would like to be able to hand out. These inputs are summarized in a list format below:

Inputs provided to VHTs (but typically in insufficient quantities):
- Insecticide-treated mosquito nets
- Malaria testing kits: rapid diagnostic tests (RDTs) for those under age 5 (<5)
- First-line antimalarial drugs or meds (<5)
- Antidiarrheals (<5)
- Pills (handed out sporadically, and on a huge shortage)
    - Pneumonia
    - Oral rehydration
    - Trachoma

- Elephantiasis
- Deworming
- Bilharzia
- Vitamins (commonly Zn)

Inputs not provided to VHTs (but that would be helpful):
- Condoms
- Sanitary pads or napkins for MHM
- Mama Kits, including diapers, razor blades, cotton wool, towels, umbilical cord cutters, plastic sheets, gloves, soap, child health certificates (the uses and importance of Mama Kits is elaborated in Section 7.1.6)
- Birth control pills
- Malaria RDTs for adults and older children
- Antimalarials and antidiarrheals for adults and older children
- Human papillomavirus (HPV) vaccines
- Tetracycline ointment (for bacterial infection of the eyes)
- Neosporin (antibiotic ointments for dressing wounds)
- Pills
    - Paracetamol (acetaminophen: painkiller)
    - Amoxicillin / penicillin (antibiotics)
    - Anticonvulsants
    - Anemia

It is important to note that many older family members often expressed feelings of being neglected in the treatment of malaria because VHTs were only equipped to treat infants below the age of 5 (<5), as stated above.

## 8.6 Lack of compensation

Because VHTs are volunteer healthcare workers, they are not entitled to any fixed salary from the government, and allowances offered by NGOs or partner organizations are typically meager or unpredictable. Not only this, but they do not receive any form of recognition for completing their trainings — such as a certificate of completion or participation — which does not help foster trust or credibility. Receiving labeled attire or uniforms to put on during work hours may help VHTs to be able to be identified for the work that they do, which may also help the healthcare system gain more visibility across communities.

8.7 **Lack of facilitation**

The lack of *transportation* resources and funds can greatly hinder the dissemination of information by VHTs, especially when they are trying to reach families who may be far from their place of residence or occupation. Because they are unable to come across more convenient means of traveling to these rural areas, VHTs often find themselves walking upwards of 10 kilometers just to reach these communities by foot. There was a strong request for private bicycles or boda-boda stipends amongst VHTs to aid with the lack of transportation facilitation.

The nature of the work that VHTs do requires them to have to disseminate information, rain or shine. But because they lack proper personal *protective gear* to keep them dry during unexpected thunderstorms, reporting materials, training manuals, and shoes often get irreparably spoiled during transport. Rain boots (commonly known as "gum boots" in Uganda), rain coats, umbrellas, and waterproof bags were frequently requested by the VHTs, potentially as part of some "VHT Kit" that could be given out during orientation or trainings.

Because VHT work involves a lot of mobilization, refreshments and incentives such as *meals* are appreciated as tokens of gratitude for their help at any given location. However, they are very rarely provided with such incentives, and mobilization is almost always requested abruptly and never well in advance. The lack of proper *technology for mobilization*, such as phone credits (commonly known as "air time" in Uganda), means that VHT coordinators often have to mobilize VHTs last minute and have to pay out of pocket for additional air time.

*Reporting* can also get tough, as most VHTs rely solely on pen-and-paper to record all of the important information that they gather from their home visits. Such manual reporting is vulnerable to problems and delays, as many VHTs end up skipping some pertinent information because of how tedious it can be to copy answers verbatim by hand. The provision of tablets or smartphones was requested by VHTs to allow for easier and quicker data organization — through digital data collection and organized "virtual filing cabinets" where everything can be found in one place.

8.8 **Lack of check-ins and refresher trainings**

The bulk of what VHTs are taught in trainings is rooted in theories and facts, but rarely the practical applications of the knowledge. As such, many VHTs struggle to translate their newly learned skills to the in-person setting, and would thus benefit greatly from frequent

check-ins or refresher trainings to remind them of their roles and responsibilities. VHTs noted that "demonstration kits" provided by the government would be extraordinarily helpful for translational learning, especially to complement the Guided Discovery training methodology introduced in Section 5.2.3. An ideal schedule would consist of conducting monthly check-ins to go over collected data and reports, making the necessary adaptations to village maps, conducting refresher trainings on rusty topics, and voicing any challenges encountered. Due to an inherent lack of funds and stakeholder support, however, refresher trainings are especially sporadic and understaffed, despite the fact that VHTs seem to have an overwhelmingly high demand for them. As such, VHTs are always open to working with NGOs that may be receptive to helping run refresher training sessions for them. More information about refresher trainings can be found in Section 5.2.2.

## 8.9 **Frustration with NGO partnerships**

VHTs are known to work very closely with a variety of NGOs in order to carry out projects at hand, as elaborated in Section 9. However, many NGOs have set bad precedents when working with VHTs through overworking them or simply exploiting their knowledge to identify a target audience, and then abandoning their relationship before implementing the promised project. By refusing to offer incentives or benefits to the VHTs that they work with, these NGOs can be demoralizing and cause VHTs to be hesitant to work with similar organizations in the future. To mend this poor impression that many VHTs may have of NGOs, future NGOs should consider coming up with new challenges with which to first stimulate the morale of the VHTs that they wish to work with. VHTs encourage NGOs to think of them as their equals when deciding how to implement a solution, especially if the information that VHTs are providing is a critical tool in helping to identify target audiences. As such, VHTs appreciate, and to some extent, expect NGOs to fairly compensate VHT cooperation, whether that be in the form of monetary allowances, refreshments, or transportation facilitation.

Another point of conflict between VHTs and NGOs is that NGOs often do not give VHTs enough time to prepare for mobilization, or cancel meetings unexpectedly at the last minute. VHTs explained that they would appreciate working with groups that would at least respect their time and work schedules, as well as refrain from calling abrupt meetings unless absolutely urgent or necessary. Respecting VHTs also comes hand-in-hand with addressing their proposals in a timely manner. Sometimes, delays by stakeholders to implement solutions proposed by VHTs can be up to 8 months in length — so long that by the time the project is ready to be carried out, the landscape of the situation may have already changed

altogether. Delayed payments of allowances also contribute further to the demoralization of VHTs in their work, causing them to be unable to make sound financial decisions.

# 9. Outside Organizations

Similar to Project Cascade, any health-related project in the visited villages would come to little fruition without VHT support. It is imperative that an outside organization contact these individuals in order to be successful with a given project. Historically, this has been true, with nearly twenty different outside NGOs identified as working directly with VHTs. These NGOs provide trainings and facilitation in exchange for the access and health knowledge that VHTs have for their villages. With that said, NGOs are not able to access VHTs directly, as they are government volunteers. They must go through the proper chain of authority in order to be put into communication with VHTs. *Mwanja Gerald Steven facilitated this step for Project Cascade.*

9.1 **VHT incentives to work with an NGO**

Because the VHTs are not salaried employees, it is crucial that NGOs incentivize and acknowledge how to maximize their VHT assistance. Facilitation (in the form of money, transportation cost, or food) is one of the biggest factors in determining VHT cooperation. Open communication, transparency, and constant follow up were identified as the three biggest factors in gaining the trust of VHTs as an outside organization. Additionally, VHTs described their appreciation of the ability to gain expertise in new training, almost acting like a consultant between the organization and their community. Finally, VHTs are most likely to volunteer for projects which have the most relevance to their community, or for which they have the most personal buy-in. For example, one VHT interviewed was a young woman, and the NGO and project she was most passionate about assisting was a program that provided health protection and education specifically to young women.

9.2 **Active NGO-VHT partnerships**

*World Vision* was the most common NGO working with the interviewed VHTs. The international organization has a variety of programs, including child sponsorship, sustainable health education, and access to clean water.[16] It also assists with immunizations and oral rehydration therapy awareness in combating diarrhea. When working with VHTs, World Vision has provided them with a stipend that facilitates their cooperation. Some VHTs received and appreciated a World Vision uniform and bag.

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[16] "Our Work," World Vision, September 8, 2021, https://www.worldvision.org/our-work.

*RHITES-EC*, or "Regional Health Integration to Enhance Services in East Central Africa," is involved with family planning services.[17] VHTs are guided with delivering and explaining condom usage, giving birth control injections, and leading maternal and child HIV health workshops. VHTs are mostly encouraged by RHITES-EC's provision of a monthly motivation. The interviewed VHTs distinguished motivation from salary by explaining that motivation is payment only upon desired results whereas salary is consistent payment. Many NGOs that interact with VHTs provide *financial motivation*.

The *International Potato Center (CIP)* is a consultative group on international agricultural research,[18] uniting organizations that are engaged in research to promote food security. VHTs focus on programs that combat malnutrition, hunger, and poverty through agricultural solutions.

*Mothers2Mothers (M2M)* employs women living with HIV as "mentor mothers," which are community health workers that work at health facilities and travel door to door delivering health services,[19] very similar to VHT work. M2M provides monthly motivation to their mentor mothers.

*GOAL Global - Uganda division* delivers humanitarian and sustainable development programs targeting community development and economic growth.[20] Specifically, GOAL focuses on WASH and agricultural programs.

*UMURDA*, or "Ugandan Muslim Rural Development Association," facilitates different WASH programs, training VHTs to assist.[21] VHTs noted the provision of bicycles, backpacks, shirts with logos, water guards / filters, and mosquito nets. In addition, VHTs are provided with a monthly salary of 3,000 Ugandan Shillings (UGX) and transportation and meals are facilitated.

*MUCOBADI*, or "Multi-Community Based Development Initiative," facilitates capacity building and community health education specifically for individuals living with HIV,[22] providing trainings for VHTs that serves to further their careers as health worker volunteers.

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[17] "Regional Health Integration to Enhance Services in East Central Uganda Activity (Rhites-EC)," URC, June 20, 2022, https://www.urc-chs.com/projects/rhites-ec/.

[18] "CIP," International Potato Center, April 30, 2021, https://cipotato.org/.

[19] "Mothers2mothers - What We Do," accessed July 16, 2022, https://m2m.org/what-we-do/.

[20] Tomas Pikšrys, "Uganda," GOAL Global, June 3, 2022, https://www.goalglobal.org/countries/uganda/.

[21] "Uganda Muslims Rural Development Association-UMURDA," Facebook, accessed July 16, 2022, https://www.facebook.com/UMURDA5/.

[22] "About Us," MUCOBADI, accessed July 16, 2022, https://mucobadi.org/about-us/.

9.3 **Past NGO-VHT partnerships**

*Marie Stopes Uganda* focused on sexual and reproductive health services,[23] particularly relevant to the many family planning initiatives facilitated by VHTs.

*UPHOLD*, or "Uganda Program for Human and Holistic Development," was a program that enhanced social services in health, education, and HIV/AIDS treatment and prevention.[24]

*PACE*, or "Program for Accessible health, Communication and Education," is another local NGO that specifically focused on HIV/AIDS and malaria treatment and prevention, WASH behavior and sanitation education, and reproductive health and family planning.[25]

*Reproductive Health Uganda* (RHU) also offered family planning services, incentivizing VHTs with financial motivation and transportation facilitation.[26]

*Water Mission Uganda* employed a WASH project with the goal of widespread community education regarding personal hygiene.[27] This NGO also provided some VHTs with shirts, bicycles, boots, and umbrellas, which are all top priority items for the VHTs as elaborated in Section 8.7.

9.4 **Additional NGO-VHT partnerships**

*STAR-EC*, or "Strengthening Tuberculosis and HIV/AIDS Responses in East Central Africa," is a program under USAID that aims to increase coverage and use of TB and HIV/AIDS prevention and treatment services.[28] One of the specific programs involved VHTs mobilizing their community members for circumcision educational workshops and services. The VHTs appreciated STAR-ECs provision of bicycles, with one even mentioning she still uses hers to this day even though it has been years since receiving it.

*BRAC Health* has intervened in the Bugiri community, providing VHTs with smartphones in order to assist their strengthening of healthcare services, even repairing the smartphones as needed.[29] Additionally, the VHTs appreciate being able to volunteer for such a global

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[23] "Marie Stopes UG," Home | Marie Stopes UG, accessed July 16, 2022, https://www.mariestopes.or.ug/.

[24] "Uganda Program for Human and Holistic Development (Uphold)," The Communication Initiative Network, March 21, 2011, http://comminit.com/hiv-aids/content/uganda-program-human-and-holistic-development-uphold.

[25] "Interventions for Health Impact," PACE (Programme for Accessible health Communication and Education -PACE, May 10, 2022), https://pace.org.ug/.

[26] "About Us," Reproductive Health Uganda, accessed July 16, 2022, https://www.rhu.or.ug/.

[27] "Water Mission," Water Mission, June 9, 2022, https://watermission.org/.

[28] "Strengthening HIV/AIDS and Tuberculosis Responses in East Central Uganda," Star-EC, accessed July 16, 2022, https://starecuganda.jsi.com/.

[29] "Powering People to Rise above Poverty," BRAC USA, July 15, 2022, https://bracusa.org/.

community, with hopes of gaining valuable experience and building vast networks of similar workers.

*MJAP*, or "Makerere University Joint AIDS Program," is a private, non-profit company under Makerere University College of Health Sciences, and has been working towards strengthening community health by consolidating models for the provision of HIV/AIDS and TB prevention, care, and treatment in Mulago and Butabika National Teaching Referral Hospitals and Makerere University Hospital.[30] Student researchers from Makerere University benefit from learning from VHTs because they are able to conduct research on real diseases that might not be as prevalent in the cities as it is in rural areas.

*Assist Community Initiatives* is an NGO that specifically aims to improve the lives of vulnerable and/or marginalized children in rural areas, starting with ensuring access to basic healthcare services.[31]

*Uganda Health Marketing Group* works in more than 30 districts and mobilizes funds from donor partners to implement projects targeted at addressing community health.[32] Specifically, it hopes to expand markets for health products for HIV/AIDS, family planning, child health, malaria prevention and control. It actively involves women, men, and youth of reproductive age, working at a grassroots level with no religious or political affiliations to appeal to and mobilize people around the country to live "healthier lifestyles".

*Healthy Entrepreneurs* employs trained health workers to sell health care products, supplemented with education regarding their use, specifically in "mini-pharmacies" in isolated, rural villages in efforts to improve their healthcare access. and health knowledge.[33]

# 10. The Appeal of Being a VHT

VHTs come from many different backgrounds and all walks of life, but many of their motivations for volunteering in the healthcare sector are interconnected. Upon speaking with VHTs, their inspiration and motivation stories were roughly grouped into five umbrella categories: Health, Community, Honor, Social Connections, and Education, as follows:

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[30] "Makerere University Joint AIDS Program," Makerere University Joint AIDS Program (MJAP), accessed July 16, 2022, https://mjap.mak.ac.ug/.

[31] "Assist Community Initiatives (U)," About, accessed July 16, 2022, http://aci-uganda.org/about.html.

[32] "Uganda Health Marketing Group," Uganda Health Marketing Group, March 5, 2018, https://ugandahealthmarketinggroup.wordpress.com/.

[33] "Healthy Entrepreneurs," Healthy Entrepreneurs, accessed July 16, 2022, https://www.healthyentrepreneurs.nl/.

## 10.1 Champions for healthy living

Due to the poor health environment within rural Ugandan communities, many VHTs felt the importance of championing WASH promotion and therefore decided to pursue a role as a volunteer health worker. Having grown up in such environments, they were exposed to the fact that so many citizens were ignorant about crucial health information surrounding topics such as vaccinations, antenatal care, and general hygiene. These VHTs focus on sourcing information from healthcare workers and relevant trainings that they believe would benefit their communities, such as data pertaining to health and keeping up-to-date with current nationwide health-related news.

## 10.2 Community service

Perhaps the trait that is most central to all VHTs alike is their authentic and selfless desire to serve their people and communities, especially those who grew up in rural areas of Uganda and fully understand the implications of seeking healthcare in poverty-stricken regions. For VHTs that especially emphasize this trait, their main priority is to understand this gap in healthcare accessibility firsthand and to learn about community health from healthcare workers themselves.

## 10.3 Honor

Working in a healthcare profession comes with a lot of responsibilities, but universally also respect and honor. When deciding to work as a VHT, many individuals look up to the dignity that comes with working in healthcare, and hope to gain some respect from fellow members of their community. As they had admired medical professionals growing up, they see the role of the VHT as being the closest avenue related to the medical route, and recognize the valuable potential to learn from healthcare leaders during VHT training and onboarding. Prospective VHTs also commonly desire becoming WASH role models, striving to help build out exemplary communities through advocating for ODF villages, the implementation of drying racks, and constructing rubbish pits, among other responsibilities.

## 10.4 Social networking

The desire to interact with others, meet new people, and forge new friendships is also a common motivation for seeking VHT status. Oftentimes becoming a VHT comes with increased popularity in social circles and greater opportunities for networking. VHTs that value social connections the most are inspired by the ability to meet many people from

outside organizations and to feel even more connected to their fellow community members than they already are.

## 10.5 **Educational and career opportunities**

Many VHTs recall having a previous lack of knowledge on health issues, and were motivated to undergo VHT trainings in order to become more knowledgeable about an unfamiliar field. Not only this, but these VHTs were most excited by the prospect of then going out and teaching this newly acquired knowledge to their respective communities. One particular VHT discussed her lifelong goal of becoming a doctor, but mentioned that she had never been able to afford a proper university education. For her, she was able to achieve her lifelong vision of helping others' health through the shoes she filled as a VHT in serving as a point of referral for many people.

The potential for VHTs to become connected with outside organizations is also commonly seen as a conduit through which personal educational goals could be achieved. In this sense, many people compared VHT work to a long-term investment, wherein working as a VHT could serve as a stepping stone for further educational and career development opportunities.

# 11. Recommendations

## 11.1 **Use of funding**

Project Cascade recognizes the delineation of a healthcare intervention into either provision of "hardware" or "software." With hardware, we are referring to physical tools, materials, or construction that facilitates healthy living. For example, mosquito nets, latrines, and even drugs would constitute hardware. Software, on the other hand, is the explanation and education regarding these physical tools. For example, VHT-conducted lessons or home check ins would be software services to further healthy living in their communities. A main focus of the conducted field research was to explore the synergy between health hardware and software in Bugiri district, and to identify gaps in the relationship between health materials and health education. Furthermore, these identified gaps help us provide very specific and guided recommendations regarding where Project Cascade, and outside, funding should be directed.

The overwhelming consensus from the information provided is that while the software (framework for health education) may be in place, the hardware to support it is severely

lacking. Many of the issues discussed revolve around insufficient amounts of materials or tools to either facilitate healthy home living or facilitate VHT volunteering.

### 11.1.1 *Community health hardware*

Economic poverty is a leading inhibition of accessible healthcare. Regardless of whether families may be or may not be receptive to a meeting or check in with VHTs, they often do not have the financial means to make the suggested changes to their healthy habits. As a result, they begin to rely on the VHTs for the provision of these materials in addition to education and guidance, as explained in Section 8.5.2. This becomes an issue when VHTs are not able to meet these expectations, leaving just health education without any physical means to facilitate change. Providing VHTs with the inputs listed in Section 8.5.2 should be a priority because community members could actually practice what they are taught. There will be less of a chance of VHT education falling short if, for example, guidance regarding how to properly use a mosquito net is actually coupled with the provision of a mosquito net. Or, as another example, VHTs should have enough anti-diarrheal kits to distribute when educating their community members about how to treat diarrhea. Whether or not some of the inputs listed are currently being provided by the government, they are still lacking in quantity. Funding should first secure larger quantities of the inputs that would directly coincide with VHT education in order for the education to have a more sustainable impact and allow community members to more easily improve healthy behavior.

In addition to coupling VHT education with the specific hardware that VHTs teach about, drug shortages can be combated with additional funding. VHTs have records of who in the village needs what drugs as well as the means to mobilize the village for drug and immunization delivery. These services fall short when drug shortages inhibit community members from receiving proper health care, as explained in Section 7.2.3. With the framework already in place, additional funding to increase drug availability will directly lead to enhanced treatment and prevention of disease.

Finally, additional funding can be directed toward enhancing lower level health facilities by hiring professional workers and updating infrastructure. This would combat one of the most common grievances that proper health facilities are too far away, which inhibits certain community members from receiving services, as explained in Section 7.2.1.

### 11.1.2 *VHT services hardware*

Since house to house visits are the most common form of VHT-community interaction, enhancing this interaction will most effectively improve VHT outreach. Section 8.7 specifically identifies facilitation measures that VHTs prioritize in completing their

responsibilities, suggesting where funding will be maximally effective. The most important facilitation in the eyes of a VHT is protective gear, uniforms, and transportation

Protective gear such as umbrellas and rain boots ensures that weather does not have to dictate whether or not a VHT can provide important services during the rainy season.

VHTs often lack a uniform or bag to give them credibility when completing their services. As elaborated in Section 8.6, funding the provision of uniforms would enhance the visibility and legitimacy of VHT work, and in turn a more effective provision of services.

Traveling house-to-house becomes less effective the more spread apart a village is. Bicycles would reduce transportation time and allow VHTs to stay in touch with their assigned households quicker. Funding should be targeted to ensure that the bicycles being sold at shops in Kampala, for example, make it to rural areas where they are less common.

We suggest that the above information could be compiled into a "VHT Kit." With proper funding, this kit could be distributed to VHTs, and would result in increased protection and credibility on the job. Since delivering clothing to these areas is logistically the easiest, funding should prioritize the uniforms and protective gear, and additional funding may add bicycles to the VHT Kits.

Additional requests from VHTs include updated mobilization and reporting tools, specifically with the provision of smartphones. Smartphones, and phone credits, or "air time," would allow VHTs to communicate with each other and with their villages more easily, and they would allow for quicker reporting of information, as elaborated in Section 8.7.

### 11.1.3 *Discussion of targeted funding*
VHTs have identified specific inputs that, if they had the funding, would enhance the education they provide to their community members. We suggest funding be first allocated to this list in efforts to maintain sustainability of the education provided, allowing community members actually being able to *practice* changes suggested by VHT education rather than simply *learn*. The next priority for funding should be facilitating the VHTs interaction with their communities in the form of a VHT Kit. As a result, VHT education will be enhanced, which we see as one of the most important ways to combat the community health challenges identified in this report.

After enhancing VHT education and services, drug shortages should be addressed. We see a theme of strong health services frameworks being present, such as drug delivery and community mobilization. Additional funding will ensure the integrity of these frameworks, which fall primarily due shortages of the physical material being distributed.

## 11.2 **NGO-VHT interaction**

The involvement and cooperation of NGOs and outside organizations on-the-ground is critical for furthering the mission of Project Cascade, as we seek to expand the VHT community health network to more vulnerable populations across Uganda. NGOs are what provide the means to create such an impact in a maximally reliable and credible fashion. As a major component of our field research, we sought to gain a better understanding of what the NGO-VHT partnership entails and looks like in practice — but largely through the perspective of the VHTs themselves. This understanding is crucial to the implementation and long-term success of collaborative NGO-VHT projects, as a multitude of NGOs rely on VHT support for proper mobilization and on-the-ground operations. Thus, in this section, we aim to provide prospective NGOs and other outside organizations with consolidated, evidence-backed recommendations surrounding how best to work with VHTs based on their personal desires and expectations.

### 11.2.1 *Pull factors for NGO-VHT partnerships*

Generally speaking, VHTs have historically been very eager to work in conjunction with NGOs to implement projects that seek to improve community health. When deciding whether or not to partner with a certain NGO, VHTs mentioned that they were particularly interested in evaluating the presence of the following factors, which we recommend organizations to bear in mind when proposing projects or reaching out to VHTs:

1) The relevance of the NGO's proposed initiative, both to the community at hand as well as to the particular VHT's personal mission and passions (further elaborated in Section 9.1)
   a) **Community**: Speaking with the given sub-county's VHTs before proposing a project will allow NGOs to scope out rather than assume the community's true needs. This also demonstrates respect for the VHTs through showing interest in their role and opinions, ultimately fostering trust, breaking down bad precedents set by previous NGOs, and increasing VHT excitement for the project.
   b) **Personal mission**: For example, a young woman who is raising two daughters as a single mother is more likely to be interested in working with MUCOBADI (a program providing protection and education for young girls)

than an old man who may instead feel as if the program lies outside of his scope of knowledge.

2) The transparency of the NGO in outlining the roles, objectives, and expectations of the partnership

3) The NGO's ability to act as a consultant-adjacent role, in order to effectively relay two-way information between the VHTs and their community

4) The opportunity for the VHT to gain valuable skills or specialized knowledge in the healthcare field, whether through hands-on experience or mentorship opportunities offered by the NGO

5) The prospect of cultivating a long-lasting educational relationship, whereby follow-ups and refresher trainings are both valued and offered past the duration of the project

6) The partnership's provision of remuneration or incentives, for which the following examples were mentioned (see full description in Section 8.7):
   a) **Facilitation**: uniforms, protective gear (rain equipment), transportation costs, meals, technology (such as smartphones) for reporting
   b) **Compensation**: stipends to cover living expenses, certificates of training

### 11.2.2 *Push factors for NGO-VHT partnerships*

Apart from the above factors that VHTs find particularly important in a prospective NGO-VHT relationship, interviewed VHTs also mentioned many common mistakes and examples of distasteful behavior that they had come across while working with NGOs in the past. As the following actions (further elaborated in Section 8.9) both have been and can be deal-breakers for NGO-VHT partner projects, we recommend potential outside organizations to carefully strategize around them and consider our workaround solutions in order to achieve maximal success:

1) The demoralization of VHTs, whether consciously or subconsciously, not only ruins the current NGO-VHT relationship but also sets a bad precedent for future organizations to come.
   a) Overusing VHTs or exploiting them solely for the personal benefit of the NGO is a common demoralizing behavior exhibited by outside organizations. These NGOs often extract information from VHTs and then abandon them without providing any incentives or value in return.
   b) **Potential solution**: Prospective NGOs should seek out *new* challenges with which to stimulate the morale of the VHTs before proposing a project. Keep in mind that a VHT may be particularly sensitive to working with outside organizations at a given time due to an unfruitful experience that they may have recently encountered with another NGO.

2) Failing to show respect for the VHT's status as unpaid volunteers often causes VHTs to feel underappreciated and therefore, unmotivated to work or cooperate.
    a) Such disrespect manifests itself in many ways, including through the delayed payment of allowances or incentives, as well as being unmindful of VHTs' schedules and personal lives.
    b) **Potential solution**: Prioritize compensation and remuneration of VHTs, as well as fully respect that VHTs are working their volunteer role on top of their full-time jobs. This means that meetings should not be convened or canceled at the last minute, unless absolutely necessary.
3) Failing to implement proposed solutions in a timely manner runs the risk of their obsolescence, thereby necessitating major modifications and additional research on the part of the VHTs in order to re-adapt them to the new setting.
    a) **Potential solution**: Since this mistake is mostly rooted in a faulty *mindset*, we recommend being more conscientious about the urgency and dynamic nature of many issues in developing countries. What is a problem today may evolve to become another problem tomorrow if not addressed in a timely manner, meaning that solution prototypes are often effective only for fleeting amounts of time. Realizing this and respecting it will hopefully encourage NGOs to be more proactive when responding to the solutions suggested by VHTs.

11.2.3 *Discussion and summary of NGO-VHT partnerships*
In summary, the NGOs that came up the most often in our discussions with VHTs were World Vision, RHITES-EC, Mothers2Mothers, MUCOBADI, and Marie Stopes Uganda — all of which are still active partnerships except for Marie Stopes Uganda. While a handful of previously impactful NGOs are no longer working with VHTs or the greater Ugandan healthcare system, VHTs are likely still open to collaborating on new projects with them if the need or interest arise. Currently active NGOs should also feel free to propose additional projects and missions to undertake with VHTs, as VHTs mentioned their eagerness to simultaneously take on multiple projects as long as the push and pull factors mentioned above are consciously taken into consideration.

The full list and descriptions of NGOs and outside organizations mentioned by the VHTs is included in Section 9.

# 12. Appendix

**National Referral Hospital**

Expected population (*national level*): **10,000,000**
All services, but most advanced and comprehensive

**Regional Referral Hospital**

Expected population (*regional level*): **2,000,000**
Includes specialized services like surgery, OB/GYN, pediatrics, etc. Has researchers, nurses, & blood banks

**General Hospital**

Expected population (*district level*): **500,000**
More comprehensive services than HCIV. Also provides medicine, X-ray services, and sometimes, surgery

**Health Center IV**

Expected population (*county level*): **100,000**
More comprehensive services than HCIII. Also provides emergency surgery, blood transfusion, and laboratory services. Supervises HCII and HCIII

**Health Center III**

Expected population (*sub-county level*): **20,000**
More comprehensive services than HCII. Also provides inpatient, maternal, and laboratory services

**Health Center II**

Expected population (*parish level*): **5,000**
More comprehensive services than HCI. Concerned primarily with "preventative, promotive, and outpatient curative services, and emergency maternal deliveries"

**Health Center I**

Expected population (*village level*): **1,000**
Staffed by VHTs. Unpaid by government and not based in buildings or physical infrastructure, but involved with diseases such as malaria, diarrhea, and pneumonia

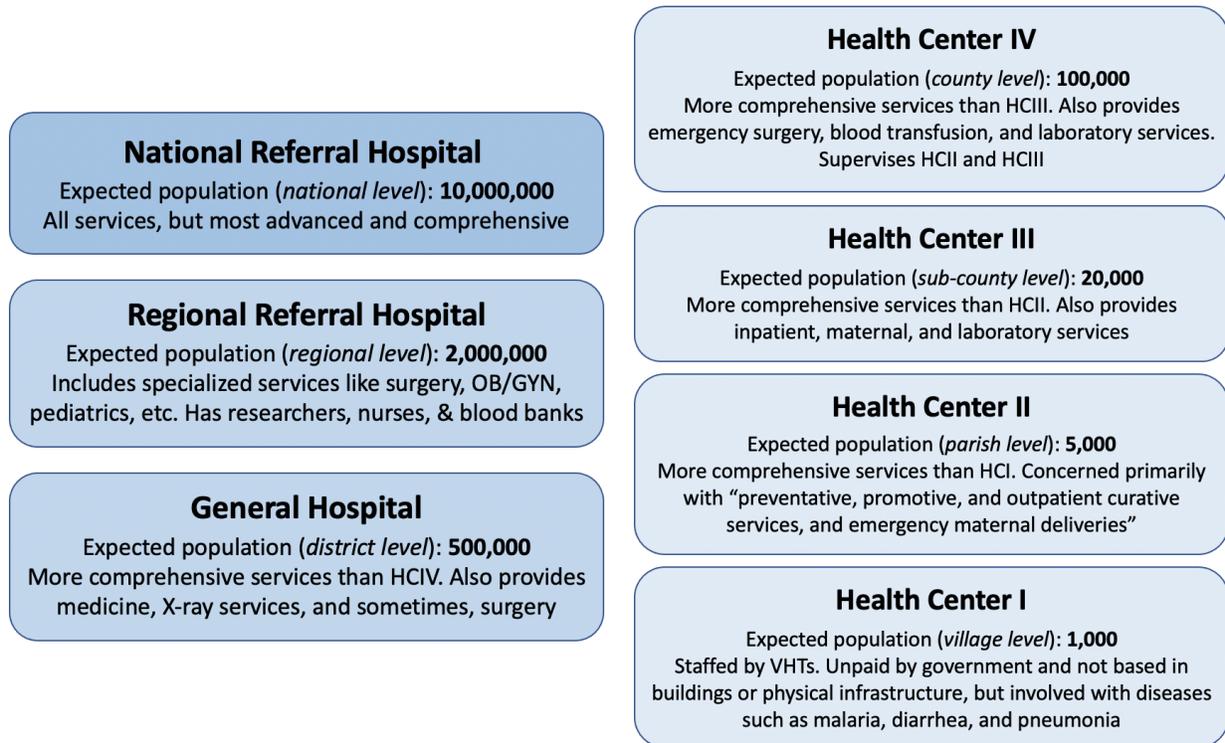**Figure 1.** Hierarchy of the Ugandan healthcare system: The decentralized referral system and expected population capacities at each level[34]

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[34] Nicholas Dowhaniuk, "Exploring Country-Wide Equitable Government Health Care Facility Access in Uganda," *International Journal for Equity in Health* 20, no. 1 (2012), https://doi.org/10.1186/s12939-020-01371-5.

**QUARTERLY HOUSEHOLD REGISTER**

Village: _Lubongali_  Household Number: _59_

Name of VHT Member: _Katuuba Julius Ceaser_  Head of Household: _Ssalongo Kabugo Abdallah_

Reporting Period: _April - June 2010_

## GENERAL INFO: All Household Members Above 5 Years

| Household Members (Above 5 Years) | Sex M | Sex F | Age | Died | Children not in School | ADULTS Using FP Method | ART Treatment |
|---|---|---|---|---|---|---|---|
| Ssalongo Kabugo Abdallah | ✓ | | 47 | | | | |
| Nnalongo Nalumaasi Sarah | | ✓ | 42 | | | ✓ | ✓ |
| Ssentongo Yusuf | ✓ | | 23 | ✓ | | ✓ | ✓ |
| Nassali Shifa | | ✓ | 21 | | | X | X |
| Nawudda Sharifa | | ✓ | 18 | | | X | |
| Ssenuddu Al-Hakim | | ✓ | 13 | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

## GENERAL INFO: Children 5 Years and Below

| Household Members (5 years and below) | Sex M | Sex F | Age | Died | ART Treatment | Immunisation Has Card | Immunisation Up-to-date |
|---|---|---|---|---|---|---|---|
| Babirye Nantongo Baker | | ✓ | 2 yrs | | | ✓ | ✓ |
| Katto Ssentongo Bashir | ✓ | | 4 yrs | | | ✓ | ✓ |

## PREGNANT WOMEN

| | Antenatal Care Visits to H.C. 1 | 2 | 3 | 4 | Danger Sign | Referred | Delivered at Home | Post Natal Check at H.C. 6 hours | 6 days | 6 weeks | Using ITN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ✓ | ✓ | | | ✓ | ✓ | | | | ✓ | |

## CHILDREN: 5 Years and Below

| | Delivery Month | Received Deworm 1st | 2nd | Received Vitamin A 1st | 2nd | Yellow MUAC | Red MUAC/ Oedema | Using ITN |
|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | X | X | ✓ | X | ✓ |
| | October | ✓ | ✓ | X | X | X | X | |

## HOUSEHOLD: Water, Food and Sanitation

Find out if the household is using the following methods to prevent sickness. Tick the boxes for the things the family has:

| | | | |
|---|---|---|---|
| Protected water source ☑ | Safe drinking water ☑ | Kitchen ☑ | Drying rack for dishes ☑ |
| Rubbish pit ☑ | Latrine ☑ | Hand-washing area with soap near latrine ☐ | |

*Follow up on anything the family is missing.*

## NEEDED FOLLOW-UP BY VHT

*Make note of any household members or problems that need follow-up.*

1. The pit latrine is almost full so the family has stopped using it. They need to construct a new one.

2. Babirye and Katto need to get a last dose of Vitamin A

3. Need to do health talk about nutrition since Babirye has yellow MUAC.

4. Nassali Shifa has swelling. Follow-up to be sure she went to the health centre. Also need to remind about next ANC visit.

5. Son Yusuf recently died in accident. Need to follow-up with family.

## ADULTS SUMMARY

| Using Family Planning Method | ART Treatment | No ANC Visits |
|---|---|---|
| 2 | 2 | 0 |

## PREGNANT WOMEN SUMMARY

| Died during Childbirth | Delivered at Home | No Post Natal Check | Using ITN |
|---|---|---|---|
| 0 | 0 | 0 | 1 |

## CHILDREN SUMMARY

| Immunisation Up-to-date | Red MUAC/ Oedema | Using ITN | ART Treatment |
|---|---|---|---|
| 2 | 0 | 1 | 0 |

## GENERAL INFO SUMMARY

| | Less than 1 month M | F | 1 - 11 months M | F | 1 - 5 years M | F | 6 - 14 years M | F | 15 - 49 years M | F | 50 years and older M | F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Household Members | | | | | 1 | 1 | 1 | 1 | 1 | 3 | 1 | |
| Died | | | | | | | | | | | | |

**Figure 2.** A sample village register page that has been filled out[2]

**HMIS 032: VHT REFERRAL FORM**

**PART I**

Date:..................................................

Name of Health facility referred to: ........................................................

Village [LC]:............................... Parish:................................. Sub county:............................

Patient Names:............................................................................................................

Age:...................... Sex [Male/Female] (√): Household Number:...........................

I have referred to you this patient for the following reason(s) (complaints):

    1.

    2.

    3.

    4.

Action already taken................................................................................................................

Name [VHT]:............................................ Signature:.......................................

**PART II**

.....to be completed at the referral site and given back to the patient............

Date:.................................

Name of the patient:...........................................................

Description of follow-up care needed:

    1.   .................................................................

    2.   .............................................................

    3.   .................................................................
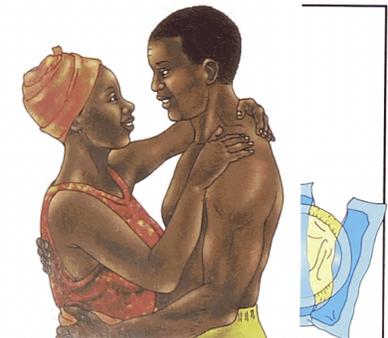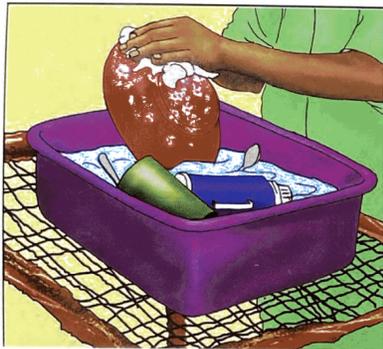
Date when the patient should return to the health unit:....................................................

Name of the Health worker: ........................................ Signature:................................

**Figure 3.** A blank example VHT referral form[2]

# Preventing Infections
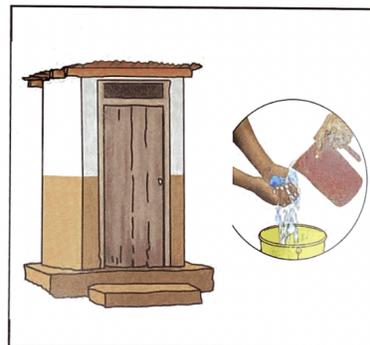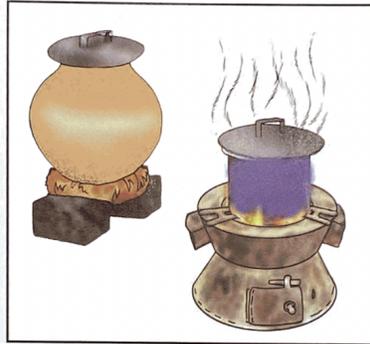


Why is good hygiene and the prevention of infections important?

- HIV-positive people are more at risk of being infected by disease because their bodies are weak.
- Infections make a person weak and sick; they may cause loss of appetite, poor absorption, and poor utilization of the food we eat.

How can you improve hygiene and prevent food-related infections?

- Always wash hands with soap and flowing water before handling food (preparing food or eating food).
- Always wash hands with soap and flowing water after using the toilet or handling faeces (washing baby's bottom or cleaning the compound).
- Only use boiled or treated water for drinking, taking medicines, and mixing juices.
- Keep treated drinking water in narrow-neck, covered, clean containers.
- Keep food covered.
- Keep homes, their surroundings, and areas where food is prepared clean. Have proper disposal.
- Sweep compound daily and keep free of animal faeces (put in latrine).
- Wash all fruits and vegetables with treated water before preparing and eating.
- Cook food thoroughly. Avoid eating raw or semi-cooked foods, including semi-cooked eggs, fish, or meat.
- To kill germs, heat leftover food until it is steaming or bubbling.

How can you prevent other infections?

- Sleep under insecticide-treated mosquito nets.
- Get dewormed at least every 6 months.
- Keep warm during cold weather.
- Stay in a well-ventilated house.
- Practice protected sex or abstain.

**Figure 4.** An example page from a VHT's job aid[3]

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