KWITANDA COMMUNITY HEALTH
ANNUAL EVALUATION 2011

VillageReach
Going the Las

ACKNOWLEDGEMENTS

VillageReach would like to thank the District Health Office of Balaka, Malawi and the staff of the Kwitanda Health Centre, including the Health Surveillance Assistants who collected the data, for their support and hard work for the evaluation. Without the tireless efforts of these staff and the support ofthe Ministry of Health, the project would not be possible. We also extend our gratitude to Invest in Knowledge (IKI) for their assistance with data entry and to Carol McLaughlin of the Center for High Impact Philanthropy for her guidance and review of the report. Finally, we thank the project donor for the generous support and commitment to the health and development of the Kwitanda community.

EXECUTIVE SUMMARY

In 2007, VillageReach began planning for a rural health systems strengthening program in Balaka District in Malawi, focusing on the community of Kwitanda. Initiated in 2008, this project combines efforts to strengthen the network of community health workers as well as provides interventions to reduce malaria and diarrheal diseases. Specifically, VillageReach's program aims to reduce levels of malaria and diarrheal disease in the Kwitanda catchment area by 35 percent by the end of 2011. To accomplish this goal, VillageReach facilitates distribution of existing cost-effective preventative measures, manages community health worker training, and provides infrastructure support for the health center and community.

The results of the 2011 evaluation indicate that VillageReach is making progress toward meeting its goals to reduce incidence of malaria and diarrhea and to increase treatment of malaria and diarrhea in the Kwitanda community. This is the second annual evaluation of the project and included a general household census and sample survey, review of health facility records and programmatic records, and interviews with key program staff. Highlights of the evaluation include:

- **Household net ownership has increased** from 74% of households reporting ownership of a net in 2010, to 82% of households in 2011. This is much higher than the national average of only 67.3% of households reporting ownership of a net.[1]

- **Mosquito net use increased** overall from 40% of individuals reporting sleeping under a mosquito net in 2010 to 58% in 2011. Among children under-5, mosquito net use increased as well from 65% in 2009 to 71% in 2011.

- **More than 83% of pregnant women sleep under a mosquito net.** This is a new indicator in this year's evaluation so no comparison is available from 2010, but this is much higher than the national average of 43.3%.

- **The highest proportion of mosquito nets in use in the Kwitanda catchment area were distributed by VillageReach.** Of the individuals sleeping under a mosquito net, nearly half of them reported the net was received from VillageReach.

- **The proportion of households reporting a clean drinking water source increased from 2009.** However the proportion of households fell slightly from last year. In 2009, 82% of households reporting clean drinking water, 91% in 2010 and 86% in 2011.

- **Malaria incidence is declining.** The proportion of households reporting at least one case of malaria in the three months prior to the survey has declined from 91% in 2010 to 72% in 2011. The percentage of individuals reporting suffering from malaria in the three months prior to the survey declined from 30% in 2010 to 26% in 2011, with an average monthly incidence of 6.7%.

- **Diarrhea incidence is declining.** The proportion of households reporting at least one case of diarrhea in the three months prior to the survey has declined from 61% in 2010 to 18% in 2011. The percentage of individuals surveyed reporting at least one case of diarrhea in the three months prior to the survey declined from 12% to less than 6%.

- **Access to care has increased** for children under-5 as well as for the general population. 70% of households surveyed reported a village clinic in their area and nearly half had used a village clinic. Overall treatment rates for malaria and diarrhea have increased and most people access care at the Kwitanda Health Center or village clinics.

[1] DHS Preliminary Report 2010

The evaluation also highlighted some areas for improvement, specifically: increasing mosquito net utilization especially among children under-five, proximity to sanitary latrines, availability of hand washing facilities in addition to soap and water, and utilization of the bicycle ambulances. In addition, health promotion in the community will continue to be necessary in order to increase demand and use of preventive health services such as hand washing and ITN use.

The respect and trust established in the past three years of activity have not only positioned VillageReach as a vehicle of change in Kwitanda, but is directly responsible for the impact it has had to date. Any future activity should strive to continue to involve all levels of the community including health service users and community leaders in order to promote the local investment in all health promotion efforts. This investment in turn makes all VillageReach programming more sustainable and will enable future reductions in the burden of disease. VillageReach should continue to connect and network between interventions to improve the cohesiveness of existing services as well as reduce the number of individuals who fail to access the health care system at all. Continuing to develop communication channels between levels of health personnel as well as between community members and the various services available will aid in this effort.

From the qualitative and quantitative analysis in this evaluation, it is clear that VillageReach's efforts have contributed to reductions in the incidences of malaria and diarrhea in the Kwitanda community. It is currently meeting its aims and is on track to reduce disease incidence and relieve morbidity and mortality burdens through expanded efforts. This report provides evidence that the HSAs are capable of dramatically benefiting health outcomes and should continue to be utilized as a vehicle for change in the community as future directions for the Kwitanda Community Health Project are explored.

BACKGROUND

In 2008, VillageReach began planning for a rural health systems strengthening program in Balaka District in Malawi, focusing on the community of Kwitanda. This project combines efforts to strengthen the network of community health workers as well as provides interventions to reduce malaria and diarrheal diseases. Specifically, VillageReach's program aims to reduce levels of malaria and diarrheal disease in the Kwitanda catchment area by 35 percent. To accomplish this goal, VillageReach facilitates distribution of existing cost-effective preventative measures, manages community health worker training, and provides infrastructure support for the health center and community.

Working together with community members and leaders, VillageReach designed a health system strengthening program focused on reducing the burden of malaria and diarrhea. The program includes a comprehensive package of interventions aimed at improving prevention and treatment of malaria and diarrhea through the distribution of existing cost-effective preventive measures, management of community health worker training and providing infrastructure support for the Kwitanda Health Center and community.

Access to Health Services

There are 14 health facilities in Balaka district one of which is Kwitanda Health Center. VillageReach has been working to support Kwitanda Health Center since 2008. The health center has two buildings for health care provision: a dispensary and a building for the Under-5 clinic and antenatal clinic, which are conducted weekly. The health center and the accompanying four staff houses and latrines were built in 2004 through the Malawi Social Action Fund (MASAF). With the MASAF program, the community decided they wanted a health center and they organized their resources to build the center (e.g. cleared the land, made the bricks, gathered sand, etc.) and the government paid to complete what could not be done by the community, such as labor costs and cement. VillageReach has provided the health center with essential equipment such as a refrigerator for vaccine storage, furniture and support for building repairs and maintenance.

Like most health facilities in Malawi, staffing at Kwitanda Health Center is not sufficient to meet the demand. The facility has one medical assistant, one nurse, and supporting staff. In addition to the staff posted at the health center, there are 23 Health Surveillance Assistants (HSAs) who work with the catchment population, six of whom are employed by VillageReach. HSAs are the lowest cadre of health worker in Malawi's health system. These individuals live in the villages and oversee the delivery of community-based preventive and curative health services. They are the community's first point of contact with the health system and are therefore the backbone of community health. In addition to the employment of six HSAs, VillageReach provides support to all 23 HSAs in Kwitanda through the provision of bicycles and bicycle ambulances, training, equipment and uniforms.

HSAs in Kwitanda provide services in Under-5 clinics and village clinic operations, health education and advocacy, home visits for sanitation and hygiene education and advice, disease surveillance, and maternal and neonatal health and family planning services. Under-5 and village clinic operations are some of their activities that are supported by VillageReach.

Emergency medical care is a necessity in preventing excess death and improving mortality and morbidity rates. One of the major barriers to successfully accessing emergency medical services in resource-limited environments is the lack of reliable and affordable transportation between the location of the emergency and the nearest health facility equipped to handle such emergency. Bicycle ambulances are an innovative and cost-effective solution that can provide emergency transportation without the fuel and upkeep costs of a motorized vehicle. VillageReach has outfitted Village Health Committees with bicycle ambulances for community members to use in case of a medical emergency for transport to the nearest health facility.

Under-5 Clinics

Every month, each HSA holds an Under-5 clinic in their catchment area. In addition, Kwitanda Health Center has Under-5 clinics every Monday staffed by some of the HSAs whose catchment areas are near to the health center. At the Under-5 clinics, HSAs provide immunization services to children, monitor growth of the children and counsel women on family planning and other maternal and child health topics. Some of the HSAs have been trained to administer family planning services, which they also provide at the Under-5 clinics. VillageReach supports the Under-5 clinic operations by providing the vaccine refrigerator at the health center and also by assisting the HSAs with transportation.

Village Clinics

Pneumonia, malaria, and diarrhea account for three of Malawi's top five causes of death for children under-five. Village clinics are a strategy supported by the Ministry of Health to increase access to health services in remote and hard to reach areas that are typically under-served by the health system and reduce under-five mortality. There are currently fourteen village clinics operating in the Kwitanda catchment area. Village clinics are staffed by HSAs who have been trained by the Ministry of Health (MOH) to provide basic diagnostic and treatment services using the Integrated Management of Childhood Illness (IMCI) protocol to children under-five. HSAs typically operate village clinics two times per week and provide services for common childhood ailments such as malaria, diarrhea, and pneumonia. VillageReach has worked to establish seven additional village clinics in the remote villages of the Kwitanda catchment. It has supported the training of HSAs and furnished the village clinics with equipment, supplies, and the first round of medicines.

Malaria and Diarrhea Prevention

In addition to health center and HSA support, the VillageReach Kwitanda Community Health Project is involved in the reduction of malaria and diarrhea in the community by increasing access to cost-effective prevention measures. In Malawi, malaria is the third leading cause of death in both children under-five and Malawians of all ages. Despite high numbers of children and adults dying from malaria, malaria is a preventable disease. Free or highly subsidized distribution of insecticide-treated nets (ITNs) is one of the most effective ways to prevent infection and is endorsed by the World Health Organization, USAID, and UNICEF. ITNs can reduce the incidence of malaria by 50% and it is estimated that the use of ITNs could reduce all-cause child mortality by 18% in Sub-Saharan Africa. Additionally, ITNs are very cost-effective and are significantly cheaper than other malaria prevention strategies such as indoor residual spraying.

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[2] (WHO, 2006).
[3] (WHO, 2006).
[4] (WHO, n.d.; UNICEF, 2011l USAID, 2011
[5] (WHO, n.d.).

According to WHO, access to drinking water and improved sanitation are fundamental needs and human rights vital for the dignity and health of all people. Unfortunately, nearly a quarter of Malawians still do not have access to improved water sources. Boreholes are a WHO-approved source of improved water and are the most common type of improved water source in Malawi. One of the main areas of concern found in VillageReach's needs assessment was that people in Kwitanda did not have safe sources of drinking water. To this end, VillageReach works together with community leaders to identify appropriate sites for the construction of boreholes and for the repair of broken boreholes. In addition, VillageReach trains water point committees in basic borehole maintenance to ensure continued access to safe drinking water.

Safe disposal of human excrement is crucial to thwarting the transmission of infectious disease.[5] Improved sanitation can reduce the incidence of diarrheal diseases by 36 percent.[6] Improvements to sanitation will also decrease incidence of other infectious diseases including Ascaris spp., Trichuris spp., hookworms, and trachoma. In an effort to improve sanitation and hygiene, VillageReach supports the building of pit latrines with cement sanitation platforms (sanplats) for households in Kwitanda. A slab of concrete that can be placed over the hole of an existing latrine, Sanplats are a simple and low-cost technology used to improve the safety and sanitation of traditional pit latrines. Elevated footrests are included for ease-of-use. To date, VillageReach as trained 159 village health committee (VHC) members (three per village) on SanPlat casting, cast more than 950 SanPlats, and installed more than 120 SanPlats for households to use. Additionally, VillageReach is currently sponsoring the building of a ventilated improved pit (VIP) latrine at Mangombo Primary School. VIP latrines have an improved design that increases air flow and decreases flies and odors. The community approached VillageReach about the need for better sanitation at the school. The Village Health Committee agreed to mobilize the community to dig the pit latrine and supply some local materials if VillageReach would supply the cement and other building materials and also pay the builder.

Program Objectives

The goal of the Kwitanda Community Health Project is to reduce the morbidity and mortality of the Kwitanda population by implementing community-driven, proven cost-effective health interventions that improve the prevention of disease and increase access to health care. To accomplish this goal, VillageReach is working to achieve the following two objectives:

- Objective 1: Reduce new malaria cases in Kwitanda by 35% within 3 years.
- Objective 2: Reduce new diarrhea cases in Kwitanda by 35% within 3 years.

The above stated objectives are met by accomplishing the following aims:

- Aim 1: Improve the prevention of disease, specifically malaria and diarrhea.
- Aim 2: Increase access to health services

VillageReach conducted several key activities in the calendar year 2010 aimed at reducing malaria and diarrhea in the Kwitanda community including the distribution of approximately 1,800 insecticide treated mosquito nets to households with vulnerable populations such as children under five years, elderly, orphans, "poorest of the poor", and disabled individuals, and the establishment of nine village clinics in

[6] (National Statistics Office [NSO] & UNICEF, 2008).

Kampeni, Nthundu (Bwanali), Sitima, Makande, Bisani, Nasiyaya, Chimwala, Kambwiri, and Kasonya villages. The HSAs at these village clinics saw and treated over 12,000 cases of malaria, diarrhea, pneumonia and malnutrition in children under-five years old, reducing barriers to access to care for these children and their families. In addition, over 500 children were referred from the village clinics to the health center for the treatment of more serious ailments.

In 2010, VillageReach also drilled three additional boreholes at Kambwiri, Kananji and Nkuli giving over 2,500 people to access clean water and trained sixty people to comprise six water point committees to maintain these new boreholes. In addition, VIllageReach continued training community members to mold SanPlats and install them in improved latrines. To date, 159 village health committee members have been trained in making SanPlats, resulting in the casting of 829 SanPlats and the installation of 468 in new latrines. Finally, VillageReach distributed cell phones to all HSAs and Health Coordinators based at the district hospital in order to enhance communication between the health center and the HSAs and to strengthen the network of community health workers.

Evaluation Questions and Study Aims

This evaluation was conducted roughly two years following the implementation of program activities in early 2009 and one year after the previous evaluation. This is the second annual evaluation conducted to measure program impact and specifically any changes in outcomes since the 2010 evaluation from the continuation of previous activities and new activities conducted in the 2010 calendar year. The purpose of this evaluation is to assess whether or not the Kwitanda Community Health Project is on track to meet its objectives to reduce new malaria cases and new diarrhea cases. This evaluation specifically examines the intermediate steps toward meeting the objectives as outlined in the project plan and if the program is meeting its aims to improve prevention of disease and access to health services. In addition, this evaluation will provide feedback to program managers for the design and revision of program activities.

The following questions are addressed in the evaluation in order to determine if the program is meeting its objectives to reduce malaria and diarrhea:

1. Has there been a trend toward the reduction of new malaria cases since the program started?
2. Has there been a trend toward the reductin of new diarrhea cases since the program started?

The following questions are addressed in the evaluation in order to determine if the program is meeting its intermediate aims to improve access to prevention and treatment of disease:

1. Is there an improvement in the prevention of malaria? Specifically,
    a. Is there an increase in the number of households reporting ownership of an ITN?
    b. Is there an increase in the use of ITNs?
    c. Are target households of the project reporting ownership and use of ITNs?
2. Is there an improvement in the prevention of diarrhea? Specifically,
    a. Is there an increase in households reporting safe drinking water?
    b. Is there an increase in households reporting use of sanitation and hygiene?
    c. Are households in Kwitanda reporting access to a safe drinking water source?
3. Is there an increase in access to health services in Kwitanda? Specifically,
    a. Has there been a trend toward the utilization of health services since the program started. More specifically, is there an increase in utilization rates at Kwitanda Health Center and at village clinics?
    b. Are individuals with malaria obtaining treatment?
    c. Are individuals with diarrhea obtaining treatment?
    d. Are households reporting use/knowledge of bicycle ambulances?

Methods

Key indicators for the measurement of the intermediate aims to improve prevention of disease and increase access to health services were identified in the previous study.[7] The indicators were measured and compared to the same indicators collected in 2009 and 2010 (when available). The evaluation included a general household survey conducted in every household in the Kwitanda catchment, a disease incidence survey conducted in a smaller sample of households, analysis of health center indicators, and a series of key informant interviews.

Instruments for the household surveys were developed to collect information on the indicators using the previous studies as a template. The instruments were reformatted and new questions were added based on feedback from the previous study. Instruments were pilot tested by the HSAs and refined based on the results of the pilot tests. The final instruments are included in the Appendix.

The general household survey was conducted in every household in the Kwitanda catchment. The HSAs acted as enumerators for the administration of the surveys. HSAs received training in data collection prior to administering the survey. Informed consent was obtained from the head of the household or equivalent and a structured interview was conducted with the head of household or another adult in the household. A second survey was administered in a random sample of households. The HSAs and were instructed to administer the additional survey in every 10th household. The survey collected information regarding individuals who had a malaria and/or diarrhea episode between December 2010 and March 2011.

The household surveys were administered between March 19 and April 16, 2011. Survey responses were entered by trained data entry specialists into an excel database created by VillageReach. Data were analyzed using STATA statistical software version 10. The results of the 2011 survey were then compared to the 2009 and 2010 study results to identify progress made on the outputs, outcomes and impact of the Kwitanda Community Health Project.

Malaria and diarrhea trends were measured in the Kwitanda community as well as the communities served by other health centers over a three year period using information from the Malawian MOH's Health Management Information System (HMIS) and the Kwitanda Patient Register Book (PRB). Key informant interviews were conducted with program and project managers, and HSAs.

Finally, the Demographic and Health Survey (DHS) and Multiple Indicator Cluster Survey MICS reports and statistical tables provided rough estimates for comparison regarding mosquito net availability and use, drinking water sources, incidence of malaria and diarrhea of children under five, and the estimated proportions of individuals with malaria or diarrhea receiving treatment across multiple districts and regions of Malawi. National, regional, and district level data on malaria and diarrhea incidence rates were collected from various published reports.

[7] (Kwitanda Community Health 2010 evaluation).

RESULTS

A total of 5,498 households were surveyed with the general household survey. In every household, the head of household or an equivalent decision maker was surveyed. All participants were asked for and provided their consent to the survey. The total population covered by the survey was 24,007 people with an average of 4.37 persons per household. A total of 497 households were included in the malaria and diarrhea sample survey covering a population of 2,298. The average household size included in the sample was 4.62, slightly higher than the overall average household size in Kwitanda. Characteristics of the general household survey and sample survey are summarized in Table 1 along with sample characteristics from previous years.

		2009	2010	2011
General household survey	Number of households	4,997	5,034	5,498
	Population	21,678	21,949	24,007
	Average number of persons per household	4.34	4.36	4.37
Sample survey	Number of households		382	497
	Population		1,901	2,298
	Average number of persons per household		4.97	4.62

Table 1. Summary of results from the household surveys over time

The results of the general household survey from 2009, 2010, and 2011 are summarized in Table 2 below. The number and percent of households/individuals are reported for each indicator where available. A few of the indicators included in the 2011 evaluation were new to this study and data were not collected in previous years. These include: ITN use among children under 5 and pregnant women, latrine availability and type, and hand washing facility availability and use. The remaining indicators are reported below for each year.

Indicator	2009 N (%)	2010 N (%)	2011 N (%)
Household Net ownership *Households with at least one net (any type)*	3,880 (78)	3,722 (74)	4,465 (82)
ITN Ownership *Households with at least one ITN or LLITN*	780 (16)	2,371 (47)	4,154 (76)
Mosquito Net Use *Individuals who sleep under any type of net*	8,712 (40)	10,955 (50)	13,707 (58)
ITN use *Individuals who sleep under an ITN*	2,064 (10)	5,461 (25)	12,311 (51)
Mosquito Net Use – Children U-5 *Individuals who sleep under any type of net*	2,591 (65) *(n=3998)*	2,602 (66) *(n=3953)*	2,978 (71) *(n=4170)*
ITN use – Children U-5	N/A	N/A	2,613 (63)
Mosquito Net Use – Pregnant Women	N/A	N/A	195 (83) *(n=234)*
Clean Water *Households reporting clean drinking water*	4,097 (82)	4,587 (91)	4,710 (86)
Latrine *Households reporting presence of latrine*	(57%)[8]	*N/A*	3,963 (72)
Sanitary Latrine *Households reporting VIP or pit latrine with SanPlat*	(22%)[3]		1,319 (24)
Hand washing Facility *Households reporting facility for hand washing (at latrine)*			555 (14)
Soap and Water Availability *Of those with hand washing facility households with soap and water always available*			237 (47%)
Bicycle Ambulance Availability *Households reporting a bicycle ambulance available*			5,445 (99.5%)
Bicycle Ambulance Use *Households reporting bicycle ambulance use*		138 (2.7%)	455 (8.4%)

Table 2. Summary of results from the census survey over time

[8] This number is taken from the Kwitanda Proposal

Household ownership of mosquito nets

The absolute number of households reporting ownership of any type of mosquito increased from 3,722 in 2010 to 4,465 in 2011. The proportion of households reporting ownership of any type of mosquito net increased significantly from 74% in 2010 to 82% in 2011. Among households reporting ownership of a net, the mean number of mosquito nets per household was 1.59, slightly up from the previous year at 1.36. Overall, the mean number of nets per household increased from 1.02 in 2010 to 1.48 in 2011. Ownership of at least one mosquito net of any type is higher in Kwitanda than the national average of 67.3%. [9]

The number of households reporting ownership of an ITN or a long-lasting insecticide-treated net (LLITN) increased significantly from the previous two years. In 2009 only 780 households reported ownership of an ITN or LLITN. In 2010, this number grew to 2,371 households. Currently, 4,154 households reported ownership of an ITN or LLITN. Likewise, the proportion of households reporting ownership of an ITN or LLITN increased from 15.6% in 2009 and 47.1% to 2010 to 75.5% in 2011. Overall, household ownership of at least one ITN or LLITN is higher than the national average of 56.8%. Figure 1 demonstrates the proportion of households reporting ownership of at least one mosquito net and the proportion of households reporting ownership of an ITN or LLITN over time.

More individuals reported sleeping under a net received from VillageReach than from any other source. Of the individuals sleeping under nets, 45% were sleeping under a net provided by VillageReach. Conversely, 35% of individuals reported sleeping under a net from the health center and 12% of individuals reported sleeping under a purchased net. Figure 2 shows the distribution of individuals sleeping under nets by the source of the net.

Household ownership of a mosquito net was not associated with vulnerable populations such as children under five, orphans, poorest of the poor, elderly, and the physically handicapped. In the previous study, households with a child under five years of age were nearly two times more

[9] 2010 DHS Preliminary Report

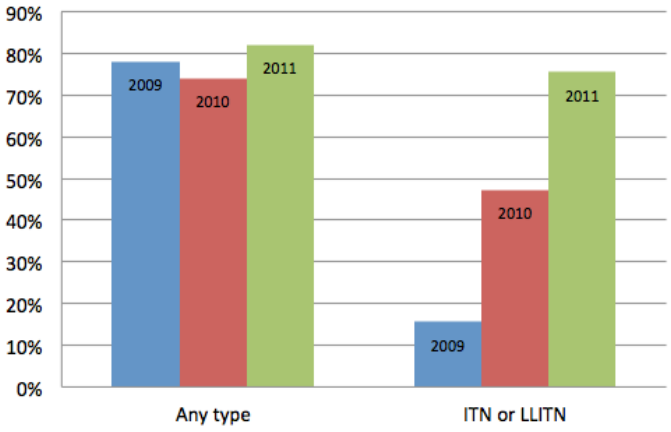


Figure 1. Household ownership of mosquito nets by year and type

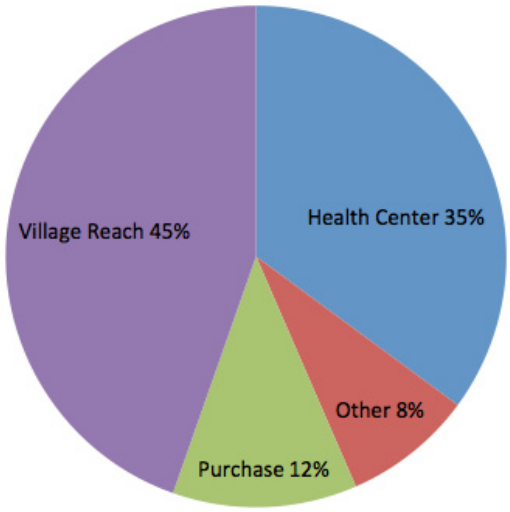


Figure 2. Net source for indivduals sleeping under a net

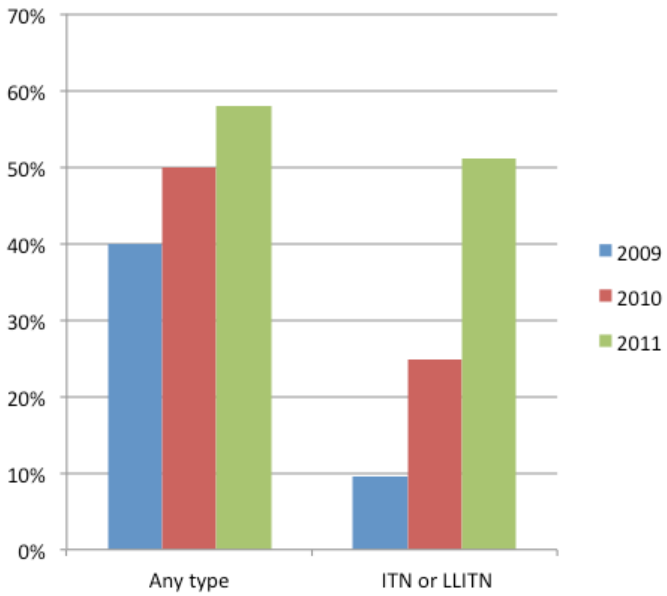


Figure 3. Percent of individuals who sleep under a bednet, ITN, or LLITN in Kwitanda, per year

likely than households without a child under five to report ownership of at least one mosquito net. However, in this study, there was no association. When other vulnerable populations are included, there appeared to be a negative correlation between household ownership of a net and the presence of an individual from a vulnerable populations (OR=.52 95% CI: .46 .60). This may be partially explained by the HSAs asking whether or not individuals are a member of a vulnerable population only for individuals who do not sleep under a net.

Use of mosquito nets

Not only is ownership of a mosquito net a prerequisite for malaria prevention, it is important to also ensure that the mosquito nets are being used in the community. In this study, use of mosquito bed nets was calculated as the number of individuals reporting use of a bed net divided by the total population included in the study. Use of mosquito bed nets significantly increased overall, particularly the use of ITNs or LLITNs. Figure 3 demonstrates the increase in use of mosquito nets in Kwitanda. Use of mosquito nets of any kind increased from 40% of individuals in 2009 and 50% in 2010 to 58% in 2011. The proportion of individuals seeping under an ITN increased from 9.5% in 2009 and 24.9% in 2010 to 51% in 2011. The DHS does not have a similar data point so a comparison with the national average is not possible.

Use of mosquito nets by vulnerable populations is also increasing in Kwitanda and is higher than the national average. For instance, use of mosquito nets among children under-five increased from 65% in 2009 and 66% in 2010 to 71% in 2011. Overall, 63% of children under-5 in Kwitanda sleep under an ITN compared to 39.5% of children under-five nationally. While not directly measured previously, the use of ITNs by pregnant women in Kwitanda is more than 83%, much higher than the national average of 43.3%.

Similar to findings from the 2010 evaluation, incidence of fever[10] (as a proxy for malaria) among children under-five was negatively associated with the use of a bed net the previous night. Of the children that were reported to have slept under a bed net the previous night 46% had reported symptoms of a fever within the last two weeks. Of the children who did not sleep under a bed net the previous night, 65% had reported symptoms of a fever within the last two weeks. Bed net use among children under-five is therefore significantly associated with a reduction in the odds of reporting symptoms of malaria by more than half (Crude OR = .47, 95% CI: .29 .75).

Water, Sanitation and Hygiene

Boreholes are the primary source of clean drinking water in the Kwitanda community. In 2011, more than 85% of households reported using a borehole. The number of households reporting accessing a clean water source as their primary drinking water has increased from 4,097 in 2009 and 4,587 in 2010

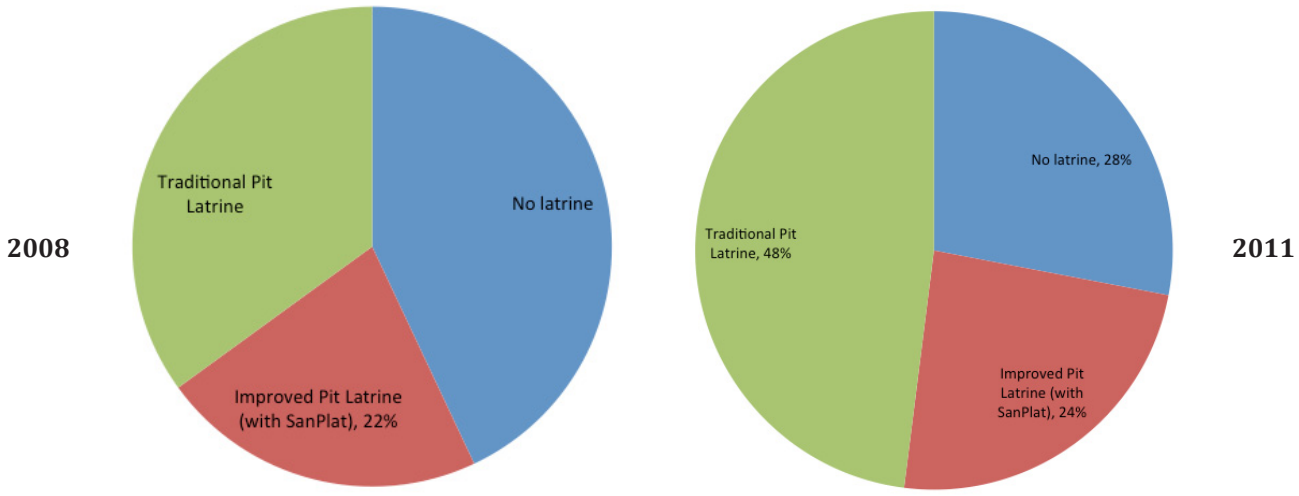


Figure 4. Proportion of households by latrine type, 2008 and 2011

[10] Incidence of malaria was measured as symptoms of a fever reported with the previous two weeks

to 4,710 in 2011. However the proportion of households accessing a clean water source fell slightly from 91% in 2010 to 86% in 2011. Of the households reporting a clean source of drinking water, 98% report a borehole as their primary drinking water source.

Distance to boreholes varies by community and the current recommendation in Malawi is for households to be within 500 meters of a clean water source. In Kwitanda, a little more than half (54%) of households report the distance to the nearest borehole to be less than 500 meters. The average distance reported was 581 meters. Among households reporting use of a borehole, specifically, the distance averaged approximately 590 meters compared to 286 meters among individuals who used a protected shallow well. Among those reporting a river or surface water as their primary drinking water source, the average distance traveled was 602 meters.

Figure 4 indicates the proportion of households with latrines by type in 2008 and 2011. Overall, 72% of households surveyed this year report the presence of a latrine of any type. The majority of latrines are traditional pit latrines. Only 24% of households surveyed indicate the use of a pit latrine with a SanPlat or VIP. The overall proportion of households without a latrine has decreased from before the project began from 43% in 2008 to 28% in 2011.

Households without a latrine were nearly three times more likely to report cases of diarrhea than households with a latrine (OR = 2.88 95% CI: 1.7 4.8). Households with an improved pit latrine (with SanPlat) were less likely to report diarrhea cases than households with a traditional pit latrine (OR = .911), although the findings are not significant (p=.662).

Hand washing facilities are rare in Kwitanda. Only 14% of households reported the presence of a hand washing facility near a latrine and of those only 47% reported the presence of soap and water available. The presence of a hand washing facility was not associated with the likelihood of a household reporting a case of diarrhea.

Malaria and Diarrhea (Incidence and Treatment)

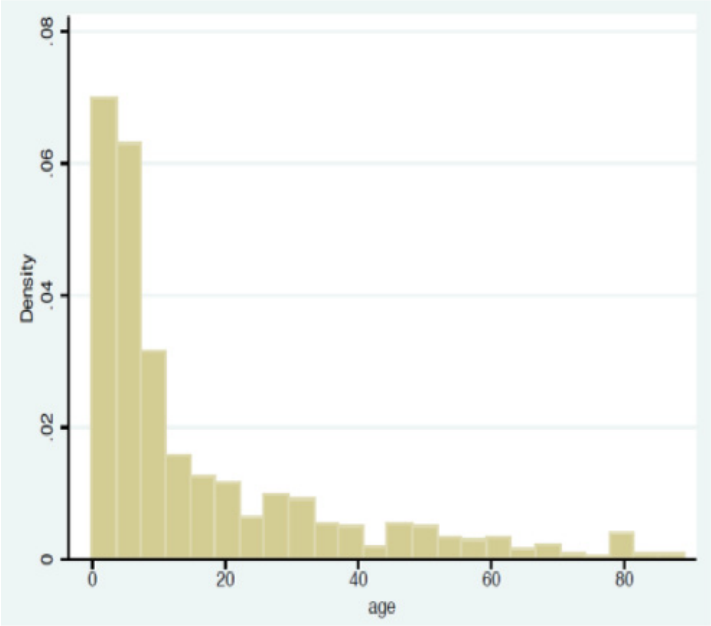
Table 3 below presents a summary of the key indicators regarding malaria and diarrhea cases reported among a sample of households in Kwitanda over time.

		2010	2011
Malaria cases	Households reporting at least one person with malaria	91%	72%
	Individuals reporting malaria	30%	26%
	Received treatment for malaria*	77%	95%
	Received treatment for malaria* (children under-5)	74%	99%
Diarrhea cases	Households reporting at least one person with diarrhea	61%	18%
	Individuals reporting diarrhea	12%	6%
	Received treatment for diarrhea*	71%	90%
	Received treatment for diarrhea* (children under-5)	74%	97%

Table 3. Summary of sample household survey key indicators
*Includes only those who received treatment for all episodes of disease

Malaria Incidence

Results from the household survey indicate that malaria cases have decreased in Kwitanda from the same time last year. Of the households included in the sample, 72% report at least one person with malaria during the past four months compared to more than 90% of households at the same time last year. The number of people per household reporting malaria ranged from 0 to 5 with an average of 1.14 persons per household (compared to 1.47 in 2010). Incidence rates were higher during the months of February and March at 8.4% and 11.3% of individuals in the sample. These rates are lower than the monthly rates found



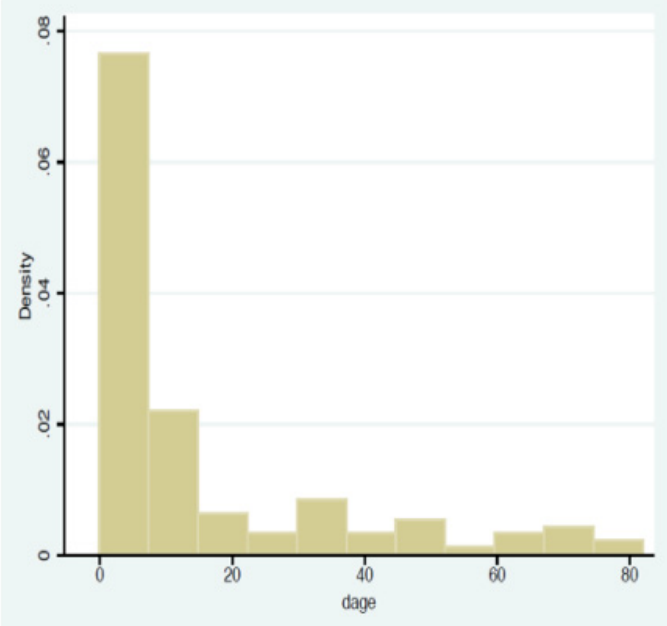


Figure 5. (left) Age-distribution of malaria cases, December 2010 - March 2011

Figure 6. (right) Age-distribution of diarrhea cases, December 2010 - March 2011

in the 2010 study. For instance, in February of 2010, the rate was reported as 17.4% of individuals in the sample.

Malaria rates were highest among the youngest population. Figure 5 show the distribution of reported malaria cases by age. Nearly 40% of all malaria cases reported in the survey were among children under-five.

Among children under-five, incidence of malaria (within the two weeks prior to the survey) appeared to decrease from 55.3% last year to 50.3% with statistically significant results (Chi2 4.17 $p<.05$) and an odds ratio of 0.82 (95% CI: .67, .99). Despite a decreasing trend, malaria incidence continues to be high with more than half of all children surveyed reporting a fever within the past two weeks.

Diarrhea Incidence

Results from the household survey indicate that diarrhea cases have also decreased in Kwitanda from the same time last year. Of the households included in the sample, 18% report at least one person with diarrhea during the past four months compared to 61% of households at the same time last year. The number of people per household reporting diarrhea increased from 2010, ranging from 0 to 4 with an average of 1.26 persons per household (compared to 1.02 in 2010). Incidence rates were highest during the months of January and March at 1.9% and 1.7% of individuals in the sample. These rates are lower than the monthly rates found in the previous study. For instance, in February of 2010, the rate was reported as 4.1% of individuals in the sample.

Diarrhea rates were also highest among the youngest population. Figure 6 shows the distribution of reported diarrhea cases by age. More than 50% of all diarrhea cases reported in the survey were among children under-five. Among children under-five, incidence of diarrhea (within the two weeks prior to the survey) increased slightly from 15.9% last year to 16.9%, however results were not significant (Chi2 0.37, p-value >.1)

Access to Health Services

Access to health services is increasing. Nearly every household surveyed (99.5%) indicated that a bicycle ambulance was available for use in their community and 455 households (8%) reported ever using a bicycle ambulance, more than three times the number of households from the previous year.

	2008	2009	2010*
Malaria children under-5	2,141	5,165	10,633
Diarrhea children under-5	650	1,060	2,947
Malaria over 5	2,155	8,300	6,243

Village clinic access	
Village clinic in area	69%
Use of village clinic[11]	70%
Treatment	94%
Satisfaction	94%

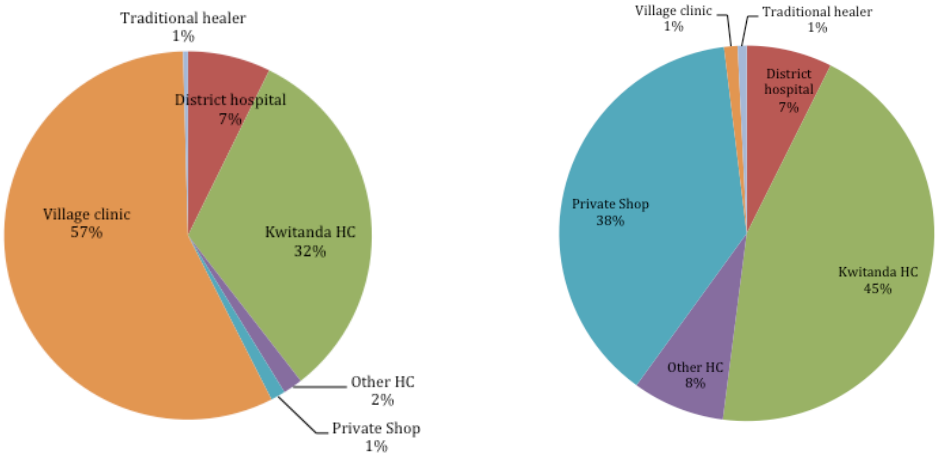
Table 4. (left) Total number of patients seen by year and diagnosis type in Kwitanda
* including village clinic visits

Since the operation of village clinics increased, access to care for children under-5 has increased dramatically. Table 4 below shows the absolute number of patients seen each year by diagnosis type. In 2010, nearly twice as many children were diagnosed with malaria and nearly three times the number of children were diagnosed with diarrhea than in the previous year.

Questions pertaining to the availability, use, and satisfaction of village clinics were asked in a sample of households. Of the households included in the sample, 69% report there is a village clinic in their area and 70% of households with a child under the age of five report use of a village clinic at any time. Of the households reporting use of a village clinic, 94% reported receiving treatment for the child and 94% reported satisfaction with the services received. The most common reasons cited for not receiving treatment or dissatisfaction were lack of drugs (43%) and supplies not ready (34%).

Overall treatment rates for malaria and diarrhea have increased in Kwitanda. An estimated 95% of all malaria cases in the Kwitanda community between December and March 2011 were treated, an increase from 77% in 2010. Among children under-5 with malaria, the treatment rate increased to 99% from 74% last year. The majority of children under-5 (88%) received treatment at either a village clinic or from the Kwitanda Health Center. More than half (57%) of the malaria cases for children under-5 were treated at village clinics. Nearly half of all malaria cases among individuals over five years of age are treated at the Kwitanda Health Center. Without the option of treatment at a village clinic, it appears that 38% of individuals over the age of five seek treatment from a private shop compared to only 1% of children under-five.

The majority of individuals not accessing treatment were over the age of five (92%) with an average age of 28. The most common reason cited for not seeking treatment was that the health center was too far. Figures 7 and 8 show the distribution of treatment locations for all cases of malaria in children under-5 and all others in Kwitanda.



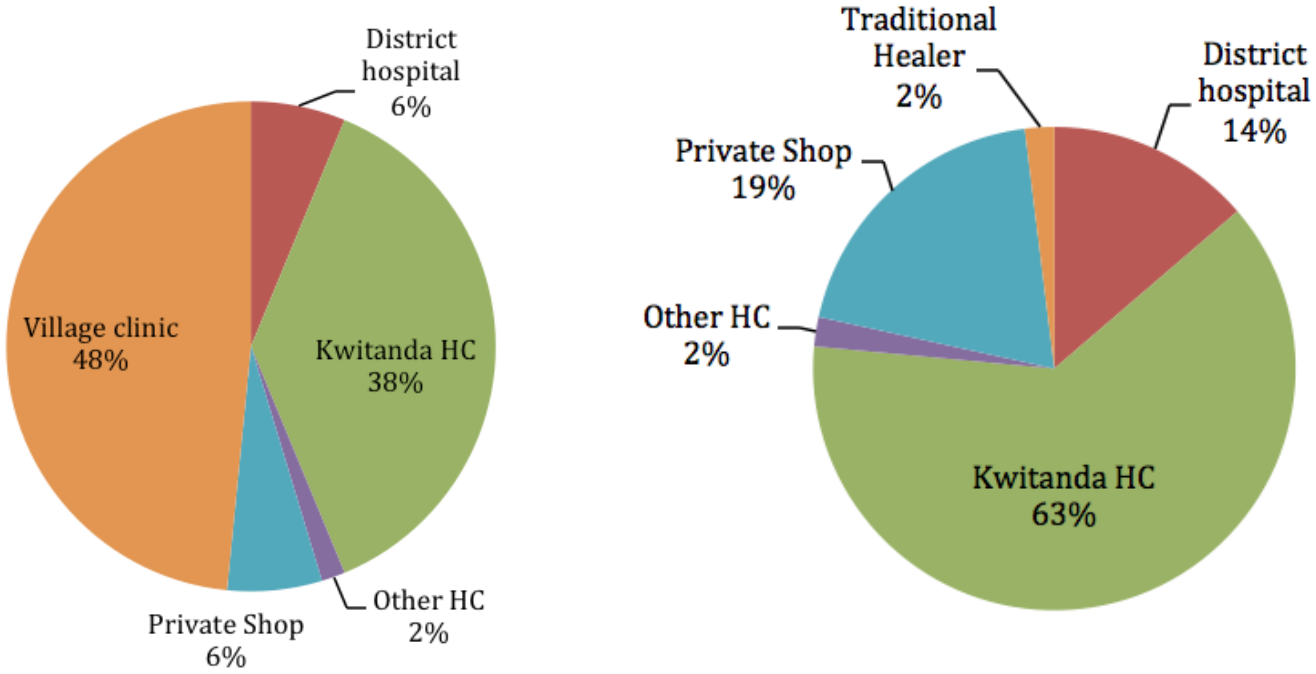
Figures 7 and 8. Treatment location for children under-5 and all other with malaria

[11] Among households with children under-5

Nearly 90% of diarrhea cases occurring between December and March were treated, an increase from 71% in the previous year. Among children under-5 with diarrhea, the treatment rate increased to 97% from 74% in the previous year. Of those not accessing treatment, the majority were over the age of five (87%) with an average age of 26. Among children under-5 with diarrhea, 86% received treatment for their diarrhea at either a village clinic or the Kwitanda Health Center. Nearly half (48%) of the diarrhea cases among children under-5 were treated at a village clinic. This represents a smaller proportion of children accessing village clinics for diarrhea treatment than for malaria treatment. Because village clinics only serve individuals under-5 years of age, the majority of diarrhea cases among the older population are treated at the Kwitanda Health Center. In addition, a larger proportion of the older population received treatment from a private shop (19% compared to 6% among children under-5) and from the district hospital (14% compared to 6% among children under-5). Figures 9 and 10 show the distribution of treatment locations for all cases of diarrhea in children under-5 and all others in Kwitanda.

Figures 11, 12, and 13 show the quarterly cases of malaria and diarrhea reported at Kwitanda Health Center compared to cases at all the health centers in Balaka district over a three-year period. The numbers have been adjusted to represent the number of cases per person in the catchment area. Figure 11 shows that while diarrhea cases in Kwitanda fluctuated greatly in 2008 and 2009, they steadied in 2010, becoming more similar to the numbers of diarrhea cases seen in Balaka district as a whole. Figures 12 and 13 show that there are seasonal trends in malaria cases in both Kwitanda and Balaka, with the most cases being reported in the first quarter, from January through March. This peak, however, was notably lower in 2010, compared to 2009, in both Kwitanda and Balaka.

It is also of note that in 2010 Kwitanda saw similar amounts diarrhea and malaria cases in children under-5 as were seen in Balaka district. However, Kwitanda saw more malaria cases in patients over five than the Balaka average. It is possible that the introduction of additional village clinics in Kwitanda to treat patients under-5 accounts for this difference as the patients seen at village clinics are not included in these figures.



Figures 9 and 10. Treatment location for children under-5 and all others with diarrhea

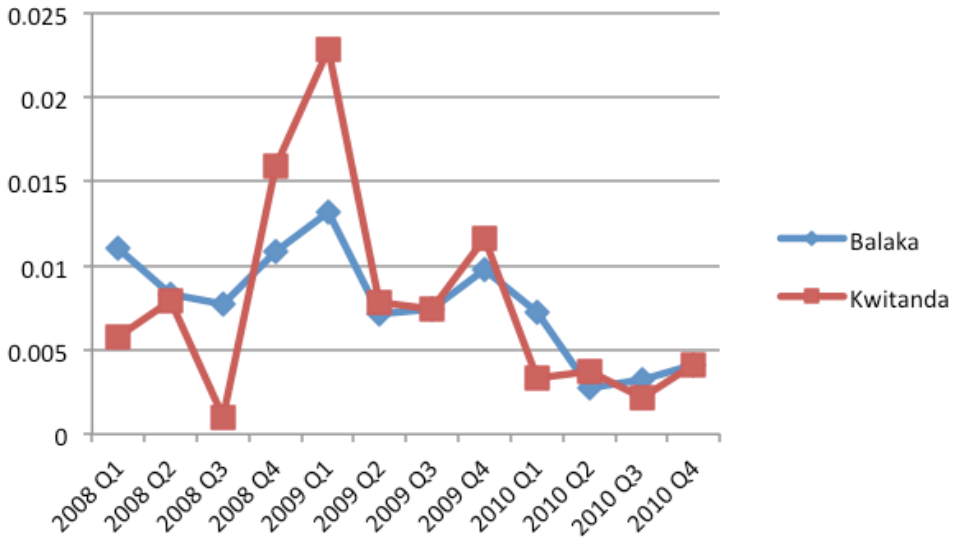


Figure 11. Adjusted Under-5 Diarrhea Cases by Quarter, 2008-2010

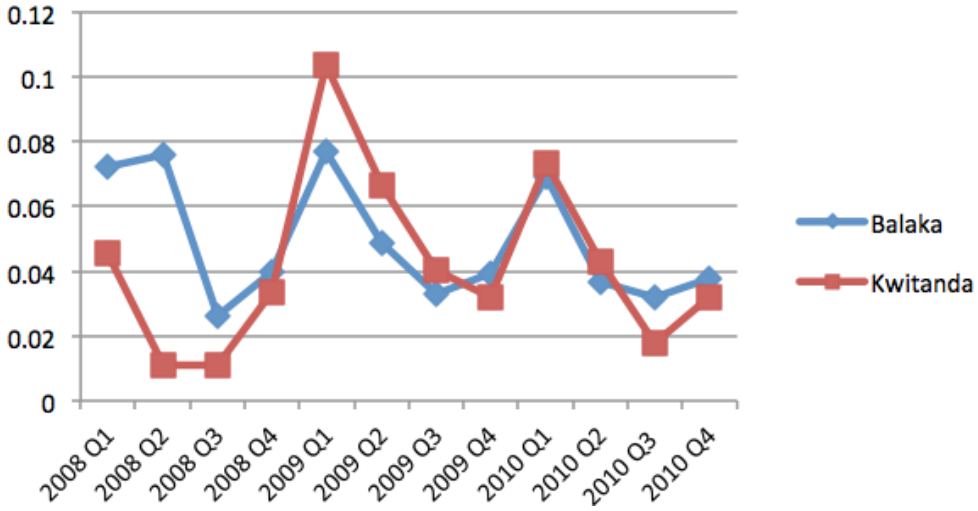


Figure 12. Adjusted Under-5 Malaria Cases by Quarter, 2008-2010

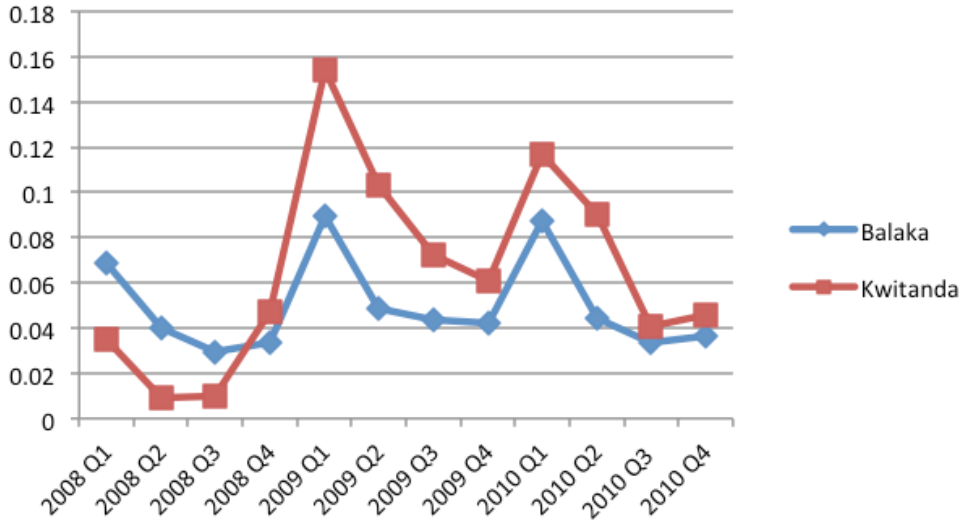


Figure 13. Adjusted Over-five Malaria Cases by Quarter, 2008-2010

LIMITATIONS

There are a number of limitations that should be explicitly mentioned when interpreting these results. First, it is important to note that there is no control group in this study and thus, any change over time cannot be directly attributed to the program. However, the evidence strongly suggests that there have been unusual gains made in Kwitanda compared to the national average, and the gains are significant, particularly regarding ITN ownership and use, and declines in malaria and diarrheal disease.

While data quality significantly increased from last year, there continued to be a number of missing values on each survey, particularly the sample survey and details on the mosquito nets in the census survey. The missing data were not included in the analysis and reporting of the results. Unfortunately, it is impossible to determine from this data what the characteristics of the households with missing data points are and whether or not the estimates reported here are biased and in what direction. Furthermore, each survey response is based on recall of the individual being surveyed, which presents a number of concerns. For instance, an individual may not know the response to some of the questions posed such as what type of mosquito net they have. This may be one of the reasons there were a number of missing entry points.

The instruments were changed slightly based on feedback from the prior year, and it is possible that the changes allowed for better understanding of the questions and thus more accurate responses. This may result in instrument bias where the comparisons from previous year may be different because the question was asked differently. For example, the survey this year simply asked whether or not the net an individual slept under was treated with an insecticide or not, while the previous year the question asked for the specific type of net. Only two questions were altered although the overall structure of the questionnaire was changed to be focused on the individual rather than on the mosquito net.

Utilizing the HSAs as enumerators presents a concern for data validity. The HSAs were trained on the instruments in depth and were experienced from the previous year. Furthermore, they piloted the surveys and contributed to some of the questions on the final instrument based on their pilot results. The HSAs, however, are not unbiased enumerators and are acquainted with the families that they are surveying. They are responsible for the community education regarding use of nets and clean water. It is therefore possible that the surveys are biased toward positive results to reflect good performance of the HSAs. It is also possible that households would respond to questions about water use and mosquito net use with the belief that a negative response might in fact earn them a closer borehole or a free mosquito net as was the case following the survey a year prior. These limitations regarding HSAs as enumerators were well known prior to the evaluation. It was felt by the program managers and the evaluators that the benefits of using the HSAs as enumerators – such as additional training and experience for the HSAs, their familiarity with the villages, and their general duties of ongoing data collection in their communities – far outweighed the limitations. Thus, the decision was made again this year to use the HSAs as enumerators.

The associations measured between ownership of mosquito nets among households with and without a child under-five, incident cases of malaria among children under-five and mosquito net use, and incident cases of diarrhea and household drinking water source, latrines, and hand washing facilities are only crude associations and potential confounding variables were not taken into consideration in the design of this study.

The disease incidence surveys were administered in a sample of households in Kwitanda. While the sample was randomly chosen, there may be differences between the households surveyed and the community of Kwitanda as a whole. For instance, the average number of persons per household is slightly higher in the sample than the average for Kwitanda. In addition, only the households are directly interpretable as the unit of randomization. For example, households with one child reporting malaria will likely have more than one individual in the household reporting malaria. Furthermore, treatment patterns would likely be the same among household members.

CONCLUSION

The results of the 2011 evaluation provide promising evidence that the VillageReach program in Kwitanda is on track to meet its two primary objectives. To this end, the aforementioned survey results indicate, specifically, that the Kwitanda Community Health Project is achieving its intermediate aims to improve the prevention of disease as well as increase access to care. Nearly every key indicator showed improvement over the past year, and this conclusion is a result of corroborating both qualitative and quantitative results. As a result, the organization is closing in on its overall objectives to reduce new cases of malaria and diarrhea in the community by 35% by the end of 2011. Incidence of malaria and diarrhea fell dramatically from rates measured at the same time last year.

Among preventative measures, mosquito net ownership and use increased overall and especially among vulnerable populations which typically bare the greatest consequences of illness (including children under-five). This increase in coverage and utilization is likely attributable to increased distribution and community outreach and education. Regardless of causation, increase in the use of ITNs means that fewer individuals are exposed to malaria, which should directly decrease the incidence of disease and contribute to the project's primary objective. Considering the implications that contracting malaria could have on a developing fetus, this result is particularly significant in the case of pregnant women, of whom 83% are currently sleeping under a mosquito net. This number is nearly twice as high as the national average and considering VillageReach has provided more than half of the community's nets, this impressive indicator is likely in part the product of the Kwitanda Community Health Project and Kwitanda Health Center's effort to specifically target vulnerable populations.

Unfortunately, the survey showed that more than a third of children in Kwitanda still do not sleep under an insecticide treated net. In reports interviews with HSAs, it appears there continues to be an emphasis on education for care givers of children. For instance, one HSA indicated that if parents come to a village clinic or under-5 clinic, she encourages them to sleep under a net. If they don't have a net, she encourages them to get one. While the report showed that only an additional 5% of children slept under a net of any kind this year as compared to last, it is possible that VillageReach was able to contribute more dramatically to the number of children sleeping under an ITN, specifically. Without information on this indicator from previous years, it is in the best interest of the community to focus malaria prevention on this particular population and continue to monitor progress. In the interest of reducing the burden of curative treatment provided by the HSAs' IMCI responsibilities, in addition to achieving the programs objective of reducing disease incidence by 35%, VillageReach should consider a campaign to specifically promote the utilization of ITNs by young children.

A surprising finding this year was a lack of an association between households with vulnerable populations and likelihood of owning a mosquito net. This may be due to a misunderstanding as to when the question should be filled out. However, the lack of association may be an indication that the program should assess whether or not is adequately targeting vulnerable populations in the net distribution practices.

In both populations (children under-five and pregnant women) this year's evaluation has provided VillageReach with a baseline against which to measure future successes. A focused effort to reach neglected households and vulnerable populations with both ITN distribution and education will be imperative to successful attainment of VillageReach's primary objective to reduce incidence of disease by 35%.

With regards to sanitation, the proportion of households reporting proximity to a latrine increased overall as did the number of households specifically reporting a latrine with a sanitary platform. It is unclear why access to sanitary latrines only increased by 2% between 2009 and 2011 considering the breath of efforts by VillageReach. Evaluation of specific barriers to access will provide future direction to reach the remaining majority of the community. Additionally, the workforce trained by VillageReach to construct and maintain SanPlats will continue to reduce the incidence of diarrhea as additional facilities are constructed and old ones are retrofitted. This investment in local capacity should serve the Kwitanda community well into the future.

In order to reduce the burden of diarrhea, it is important that this increase in latrine coverage be complimented by access to clean water and increased prevalence of hand washing. Unfortunately, VillageReach saw a decrease in the proportion of households accessing clean drinking water, which highlights an opportunity for improvement. Despite an increase over the 2009 proportion, the project has yet to reach 14% of the population with this vital service. One potential factor contributing to the suboptimal use of boreholes as a primary drinking water source is the distance between households and boreholes. Nearly half of all households are more than a half kilometer away from a borehole making closer options more appealing. Another reason cited during a key informant interview was that some of the boreholes produced water with a salty taste:

> ***"When they went to the village to see where they should drill a borehole they found that there were boreholes there but people were not using them because the water was salty. So they would go to the shire river and get attacked by crocodiles and they would also have unclean water."***

This year's effort to strengthen the health system and the workforce capacity has resulted in dramatically increased health services utilization and treatment rates in Kwitanda, particularly among children under-5. Both Kwitanda Health Center and village clinics documented these increases, which attests to the value of diverse points of contact by which the Kwitanda community can access the health system. The village clinics have been well received in the community, opening up access to treatment in remote places where travel to the health center is difficult and long. In the first year of village clinic operations, over 12,000 cases of malaria, diarrhea, pneumonia, and malnutrition were seen in children under-5. In addition, over 500 children were referred to an appropriate health center for the treatment of more serious ailments. In interviews, HSAs who operated the clinics expressed great pride in their work and their ability to help people in their community. For instance, one HSA said:

> ***"Many people come to the village clinic. Since I started no one in my village has died. This is because of the village clinic. It has allowed people in my village to get treatment for disease that they would normally not treat in their home."***

HSAs report operating clinics officially twice per week but will often see patients more than that:

> ***"If people come to visit me on a day other than Tuesday or Friday I will treat them."***

The additional training for HSAs will ultimately make the Kwitanda community more robust against the burden of both diseases, particularly for children under-5. In addition, village clinic HSAs are also trained in prevention and treatment of other childhood ailments such as pneumonia and eye infections. Qualitative reports indicate that infrastructure development and capacity-strengthening efforts, including HSA trainings, have benefited the community immensely.

Increasing communication channels between HSAs and the Kwitanda Health Center has helped to create a coordinated network of care for this rural community. Furthermore, the 2011 survey indicated an increase in the use of bicycle ambulances, which is likely a product of increased awareness considering that the specific number of bicycles did not increase between 2010 and 2011. This service provides an important link to the health system, which will inherently increase access to services as utilization of this particular intervention increases. To this end, continued employment of the bicycle ambulances will directly increase VillageReach's aim to increase access to health care and should be considered an important

component of any future activity.

In addition to the aforementioned quantitative analysis, qualitative reports reaffirm the productivity of VillageReach's activity in Kwitanda. Reoccurring themes include: pride on the part of HSAs as a result of their expanding skill set, the incorporation of local knowledge into health interventions, eagerness to identify additional opportunities to expand services, decrease in disease as a result of village clinics, and finally the need for additional resources to continue to serve the community. Most importantly, VillageReach has been successful in collaborating with the community to bring about positive change:

> ***"People in the community know VillageReach because they involve health committees and chiefs."***

The respect and trust established in the past three years of activity have not only positioned VillageReach as a vehicle of change in Kwitanda, but is directly responsible for the impact it has had to date. Any future activity should strive to continue to involve all levels of the community including health service users and community leaders in order to promote the local investment all health promotion efforts. This investment in turn makes all VillageReach programming more sustainable and will enable future reductions in the burden of disease.

RECOMMENDATIONS

The 2011 evaluation of the Kwitanda Community Health Project indicated that VillageReach has seen positive improvements to all indicators since the program's conception in 2008. While there is no way to know whether these improvements are a product of the intervention or of improved data reporting, the end result is the same: coverage of preventative and curative services is increasing while burden of disease – namely malaria and diarrhea – is decreasing. Despite the aforementioned successes, the evaluation highlighted some areas for improvement, specifically: increasing mosquito net utilization especially among children under-five, proximity to sanitary latrines, availability of hand washing facilities in addition to soap and water, and utilization of the bicycle ambulances.

Through diverse efforts, VillageReach has successfully contributed to the increase in household ownership of mosquito nets (82%), household ownership of ITNs (76%), mosquito net use by pregnant women (86%), borehole utilization (85%), and bicycle ambulance availability (99%) to more than three-quarters of the Kwitanda population. With these huge strides comes the challenge to serve the remaining quarter of the community. Expanding services to reach the most detached quarter of Kwitanda will require the revision of historic tactics. Solutions to close this gap may include: broader net distribution strategies, incentivizing health service utilization, and innovative communication campaigns.

Considering that household ownership of ITNs is high and only half of the population reported sleeping under the nets, there appears to be a need for education around the significance and utilization of this commodity, particularly among vulnerable populations such as children under-5. VillageReach should consider a campaign to specifically promote the utilization of ITNs by young children. Behavior change interventions could benefit the community in this regard. Qualitative reports, however, have reiterated the cultural context in which HSAs and VillageReach staff are working to promote this change:

> ***"One of the myths is the women in the child bearing group that they believe if they sleep under this net they will not have children, so when you ask them they will say that they are sleeping under net but in reality they are not."***

Reports such as these highlight the need for VillageReach not only to continue to refine data collection methods for improved accuracy, but also to engage in an effort to understand the cultural determinants of decisions to better promote healthy behavior. Fortunately, qualitative results also indicate that HSAs recognize the duration of time required to perpetuate this behavior change and that they remain eager to engage in this effort. Increasing ITN distribution and an additional push to increase utilization should remain an integral component of VillageReach's effort in Kwitanda, and will ultimately require additional qualitative inquiries into local determinants of behavior.

With more than 75% of the community reporting a lack of access to a sanitary latrine, there is explicit need to improve coverage of this preventative intervention. VillageReach has an opportunity to retrofit facilities belonging to the 50% of the population reporting use of a traditional latrine, as well as extend access to the remaining 25% through construction of new SanPlats or VIPs. Ideally this effort should be carried out in conjunction with an effort to increase the number of households with access to soap and water for hygienic practices. This survey revealed that only 14% of households report the presence of a hand washing facility near their latrine. Of those with hand-washing facilities, less than half reported the presence of soap and water. Because households without these basic structures were more likely to report cases of diarrhea than those without, VillageReach should strive to close this gap by directing efforts first to home-based hygiene, and then to the development of latrine-located facilities.

VillageReach should continue to connect and network between interventions to improve the cohesiveness of existing services as well as reduce the number of individuals who fail to access the health care

system at all. Continuing to develop communication channels between levels of health personnel as well as between community members and the various services available will aid in this effort. One specific example of this focus would be to reinforce the emergency transportation system including developing a process for vehicle maintenance and reliable referrals. While nearly everyone (99.5%) in the community reported knowing that the ambulances were available, less than one in ten reported use. VillageReach could benefit from additional information regarding the cause of this lack of use (i.e. whether it is attributable to a low incidence of emergency, a high standard for referral, or vehicular functioning) prior to rolling out any additional efforts.

As VillageReach closes the gap on its primary objectives, the organization should consider a comprehensive needs assessment to identify additional opportunities for impact. Augmenting its current efforts with innovative interventions to address additional health outcomes would not only strengthen the entire health system, but would diversify the project to impact additional sectors of society. For instance, the Kwitanda Community Health project is expanding to provide active case finding and TB screening in the community during the 2011 calendar year.

If the Kwitanda Community Health Project is successful at reducing morbidity and mortality among children under-five, the next step will be to focus on newborn and maternal health interventions for the Kwitanda community. In Malawi, 62% of under-five mortality occurs during the first year of life and 27% during the first month of life. Of the country's 149,000 annual neonatal deaths, one-third are attributable to infection, another third to preterm delivery, and almost one-quarter from birth asphyxia. Conversely, major causes of maternal mortality include postpartum sepsis, abortion, postpartum hemorrhage, and eclampsia. Reducing these rates of maternal and neonatal mortality could be done through community and out-reach based interventions implemented through Kwitanda's current framework of HSAs, village clinics, and the community health center. Considering the workforce and delivery systems in place, VillageReach is well positioned to rollout a diverse package of cost-effective interventions to dramatically reduce these mortalities. These interventions should include improved antenatal care and maternal nutrition, promotion of safe and hygienic deliveries, and improved postnatal care including support for early and exclusive breastfeeding.

In spite of the limitations and opportunities for improvement mentioned in this report, it is clear that VillageReach's efforts have contributed to reductions in the incidences malaria and diarrhea in the Kwitanda community. It is currently meeting its aims and is on track to reduce disease incidence and relieve morbidity and mortality burdens through expanded efforts. This report provides evidence that the HSAs are capable of dramatically benefiting health outcomes and should continue to be utilized as a vehicle for change in the community as future directions for the Kwitanda Community Health Project are explored.

APPENDIX A: FINAL INSTRUMENTS (ENGLISH AND IN CHICHEWA)

GENERAL INFORMATION ON THE HOUSEHOLD/VILLAGE:

Name of HSA conducting the survey…… HSA's code……

Name of GVH …….. Name of Village……..Name of Household……..

SECTION 1: GENERAL HOUSEHOLD INFORMATION	
1. Today's Date (dd/mm/yy):	[ ]/[ ]/[ ]
2. I'd like to ask you some questions about the people in your household and their health. This information is confidential. Do you agree to participate in this survey?	[ ] Yes [ ] No If No please conclude the survey
3. How many people live in this household?	[_____]
4. What is the main source of drinking water for your family? *(Please mark only one response).*	[ ] Borehole (name of borehole) _____| [ ] Protected shallow well [ ] Unprotected shallow well [ ] Water pump [ ] River | Surface water [ ] Other (specify) _____
5. How far (in km) do you travel one-way to fetch water?	[_____]
6. How long does it take to go there, get water, and come back? Number of minutes.	[_____]
7. Does your household have a latrine?	[ ] Yes [ ] No [ ] Don't Know
8. If yes, what type of latrine is it?	[ ] Traditional pit latrine [ ] Pit latrine with sanplat [ ] VIP [ ] Other (specify)_____
9. Is this latrine used by just your household or by many households?	[ ] Just my family [ ] Many families [ ] Don't Know
10. Do you have a hand washing facility at the latrine?	[ ] Yes [ ] No [ ] Don't Know
11. If yes, how often does it have water and soap for hand washing?	[ ] Always [ ] Frequently [ ] Rarely [ ] Never

	[ ] Don't know
12. Is there a bicycle ambulance in your village that you or your family can use for transport to the health center?	[ ] Yes (if yes, continue to question 13) [ ] No (skip to question 14) [ ] Don't Know
13. (If yes to number 12) Has any member of your household ever used a bicycle ambulance to get to the health center?	[ ] Yes [ ] No [ ] Don't Know
14. Does your household have any mosquito nets that can be used while sleeping?	[ ] Yes [ ] No [ ] Don't Know
15. If yes, how many?	[_____]

SECTION 2: MOSQUITO NET USE AND NEED *Please list the names and ages of the individuals who live in your household. I will ask you about the mosquito net use of each member of your household.*

16. Name	Age *(in years)*	Sex (M/F)	Does this person sleep under a net?	Is the net treated with insecticide?	Where did the net come from? *(Select one response)*	In what year did you get this net?	Please indicate if this individual fits any of the following descriptions:
1. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Physically challenged [ ] Orphan [ ] Pregnant [ ] Chronically ill
2.[_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Physically challenged [ ] Orphan [ ] Pregnant [ ] Chronically ill
3. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Physically challenged [ ] Orphan [ ] Pregnant [ ] Chronically ill
4. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Physically challenged [ ] Orphan [ ] Pregnant [ ] Chronically ill
5. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Physically challenged [ ] Orphan [ ] Pregnant [ ] Chronically ill
6. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased	[_____]	[ ] Physically challenged [ ] Orphan [ ] Pregnant

					[ ] Other (specify) _____		[ ] Chronically ill
7. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Physically challenged [ ] Orphan [ ] Pregnant [ ] Chronically ill
8. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Physically challenged [ ] Orphan [ ] Pregnant [ ] Chronically ill
9. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Physically challenged [ ] Orphan [ ] Pregnant [ ] Chronically ill
10. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Physically challenged [ ] Orphan [ ] Pregnant [ ] Chronically ill

GENERAL INFORMATION ON THE HOUSEHOLD/VILLAGE:

Name of HSA conducting the survey…… HSA's code……

Name of GVH …….. Name of Village……Name of Household……..

SECTION 1: GENERAL HOUSEHOLD INFORMATION	
1. Today's Date (dd/mm/yy):	[ ]/[ ]/[ ]
2. Ndikufuna ndikufunseni mafunso okhudza za anthu apakhomo pano ndi moyo wawo. Zimene titacheze pano ndizisunga mwachinsinsi. Kodi mukuvomera kuti ticheze nanu?	[ ] Yes [ ] No If No please conclude the survey
3. Kodi pakhomo pano pamakhalapo anthu angati?	[_____]
4. Kodi nthawi zambiri pakhomo pano madzi okumwa mumatunga kuti?	[ ] Borehole (name of borehole) _____| [ ] Protected shallow well [ ] Unprotected shallow well [ ] Water pump [ ] River | Surface water [ ] Other (specify) _____
5. Kodi mumayenda mtunda wautali bwanji kukafika komwe mumatunga madzi?	[_____]
6. Zimankutengerani nthawi yaitali bwanji kukatunga madzi ndi kubwelerako?	[_____]
7. Kodi pakhomo pano muli ndichimbudzi?	[ ] Yes [ ] No [ ] Don't Know
8. NGATI MULI NACHO: Kodi muli ndi chimbudzi chamtundu wanji?	[ ] Traditional pit latrine [ ] Pit latrine with sanplat [ ] VIP [ ] Other (specify)_____
9. Kodi chimbuzichi chimagwiritsidwa ntchito ndi khomo lanulokha kapena ndi makomo enanso?	[ ] Just my family [ ] Many families [ ] Don't Know
10. Kodi muli ndi malo osamba m'manja potuluka m'chimbudzi?	[ ] Yes [ ] No [ ] Don't Know
11. NGATI EYA: Kodi ndi kawirikawiri bwanji kukhala ndi sopo ndi madzi osamba m'manja pachimbuzi chanu?	[ ] Always [ ] Frequently [ ] Rarely [ ] Never [ ] Don't know
12. Kodi mmudzi muno muli ndi njinga ya ambulasi yomwe mumagwiritsa ntchito popita kuchipatala?	[ ] Yes (if yes, continue to question 13) [ ] No (skip to question 14)

	[ ] Don't Know
13. (NGATI EYA MUFUNSO 12) Alipo munthu wina aliyense pakhomo pano yemwe anagwiritsapo ntchito njinga ya ambulasi kupita kuchipatala?	[ ] Yes [ ] No [ ] Don't Know
14. Kodi pakhomoo pano muli ndi masikito omwe mutha kugwiritsa ntchito pogona?	[ ] Yes [ ] No [ ] Don't Know
15. Muli nawo angati?	[_____]

SECTION 2: LEMBANI MAYINA A ANTHU ONSE OMWE AKUKHALA PAKHOMOPO NDI ZAKA ZAWO. Ndikufunsani mafunso okhudza ma masikito komanso anthu omwe akuwagwiritsa ntchito pakhomo pano?

16. Dzina	Zaka	Ndiaamuna/aakazi (M/F)	Kodi (dzina) amagona mu masikito?	Kodi masikito a (dzina) ananyikidwa m'mankhwala a m'bwezera chitetezo?	Kodi masikitowa anachokera kuti? SANKHANI YANKHO LIMODZI	Kodi munawapeza chaka chanji?	Mundiuze ngati (Dzina) ali ndi zina za zomwe nditchule apazi?
1. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Olumala [ ] Wamasiye [ ] Oyembekezera [ ] Odwala matenda amgonagona
2. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Olumala [ ] Wamasiye [ ] Oyembekezera [ ] Odwala matenda amgonagona
3. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Olumala [ ] Wamasiye [ ] Oyembekezera [ ] Odwala matenda amgonagona
4. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Olumala [ ] Wamasiye [ ] Oyembekezera [ ] Odwala matenda amgonagona
5. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Olumala [ ] Wamasiye [ ] Oyembekezera [ ] Odwala matenda amgonagona
6. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Olumala [ ] Wamasiye [ ] Oyembekezera [ ] Odwala matenda amgonagona
7. [_____]	[____]	[____]	[ ] Yes [ ] No	[ ] Yes [ ] No	[ ] Health Center [ ] VillageReach	[_____]	[ ] Olumala [ ] Wamasiye

			[ ] Don't Know	[ ] Don't Know	[ ] Purchased [ ] Other (specify) _____		[ ] Oyembekezera [ ] Odwala matenda amgonagona
8. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Olumala [ ] Wamasiye [ ] Oyembekezera [ ] Odwala matenda amgonagona
9. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Olumala [ ] Wamasiye [ ] Oyembekezera [ ] Odwala matenda amgonagona
10. [_____]	[____]	[____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Health Center [ ] VillageReach [ ] Purchased [ ] Other (specify) _____	[_____]	[ ] Olumala [ ] Wamasiye [ ] Oyembekezera [ ] Odwala matenda amgonagona

Health and Health Services Questionnaire

Today's Date: *dd/mm/yy* [__]/[__]/[___] Name of HSA conducting the survey…… HSA's code……

Name of GVH …….. Name of Village……..Name of Household……..

SECTION 1: GENERAL HOUSEHOLD INFORMATION	
1. I'd like to ask you some questions about the people in your household and their health and use of health services. This information is confidential. The survey should take about 30 minutes of your time. Do you agree to participate in this survey?	[ ] Yes [ ] No If No please conclude the survey
2. Is there a Village Clinic in your area?	[ ] Yes [ ] No [ ] Don't Know
3. Have you at any time taken a child from this household to the Village Clinic?	[ ] Yes [ ] No [ ] Don't Know
4. Did the child receive treatment at the Village Clinic?	[ ] Yes (if yes, skip to question 7) [ ] No [ ] Don't Know
5. Were you satisfied with the services you received at the Village Clinic?	[ ] Yes [ ] No [ ] Don't Know
6. If no, why not?	[ ] Lack of drugs [ ] Child did not need treatment [ ] Referred to health center [ ] No HSA available [ ] Other (specify)_____
7. Are there any children under the age of five that live in your household?	[ ] Yes (please complete section 2) [ ] No (please skip to section 3) [ ] Don't Know

SECTION 2: CHILDREN UNDER FIVE *Can you give me the names of the children under five in your household?*

8. Name	Did (*NAME*) sleep under a mosquito net last night?	In the last two weeks, has (*NAME*) had diarrhoea? (diarrhoea is 3 or more episodes of loose or watery stools)	In the last two weeks, has (*NAME*) had a fever at any time?
[_____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know
[_____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know

[_____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know
[_____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know
[_____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know

SECTION 3. MALARIA. *I'd like to ask you about the occurrence of malaria in your household. Symptoms of malaria include fever, diarrhea, vomiting, and body aches.*

9. Did you or any member of your household suffer from malaria at least one time in the last 3 months: (December, January. February)?	[ ] Yes [ ] No (*please skip to section 4)* [ ] Don't Know
10. If yes, how many people in your household suffered from malaria in the last 3 months? Please tell me their names:	[_____]

11. Name	Age (in years)	Sex (M/F)	In what month(s) did (*NAME*) suffer from malaria (check al that apply)	Did (*NAME*) receive treatment for the malaria?	If yes, where did (*NAME*) receive treatment for the malaria?	If no, why did (*NAME*) not receive treatment for the malaria?
[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____
[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____
[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____

[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____

SECTION 4. DIARRHEA I'd like to ask you about the occurrence of general diarrhea in your household. General diarrhea is at least 3 episodes of loose or watery stools. Please only report incidences of Diarrhea that were not accompanied by a fever.

12. Did you or any member of your family suffer from diarrhea at least one time in the last 3 months: (December, January. February)?	[ ] Yes [ ] No (please skip to section 5) [ ] Don't Know
13. If yes, how many people in your household suffered from diarrhea at least one time in the last 3 months? Please list their names:	[_____]

14. Name	Age (in years)	Sex	In what month did (*NAME*) suffer from diarrhea (check all that apply)	Did (*NAME*) receive treatment for the diarrhea?	If yes, where did (*NAME*) receive treatment for the diarrhea?	If no, why did (*NAME*) not receive treatment for the diarrhea?
[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____
[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____
[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____

[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____
NOTES:						

Health and Health Services Questionnaire

Today's Date: *dd/mm/yy* [__]/[__]/[___] Name of HSA conducting the survey…… HSA's code……

Name of GVH …….. Name of Village……..Name of Household……..

SECTION 1: GENERAL HOUSEHOLD INFORMATION	
1. Ndikufunsani Mafunso okhudza anthu apakhomo pano, miyoyo yawo ndi momwe amagwiritsira ntchito chipatala. Zomwe ticheze pano ndi zachinsinsi ndipo kucheza kwathu kutenga mpindi makumi atatu. . Kodi mukuvomera kuti ticheze nanu?	[ ] Yes [ ] No If No please conclude the survey
2. Kodi mdera lino muli ndi chipatala cha m'mudzi choyendetsedwa ndi alangizi azaumoyo?	[ ] Yes [ ] No [ ] Don't Know
3. ***Kodi munayamba mwapitako ndi mwana wapakhomo pano kuchipatala cha m'mudzi muno choyendetsedwa ndi alangizi azaumoyo?***	[ ] Yes [ ] No [ ] Don't Know
4. ***Kodi mwanayo analandira chithandizo kuchipatalako?***	[ ] Yes (if yes, skip to question 7) [ ] No [ ] Don't Know
5. ***Kodi munali wokhutitsidwa ndi chithandizo chomwe munalandira kuchipatalako?***	[ ] Yes [ ] No [ ] Don't Know
6. **NGATI AYI:** ***Chifukwa chani?***	[ ] Lack of drugs [ ] Child did not need treatment [ ] Referred to health center [ ] No HSA available [ ] Other (specify)_____
7. ***Kodi pakhomo pano mukukhala ndi ana osapitilira zaka zisanu (5)?***	[ ] Yes (please complete section 2) [ ] No (please skip to section 3) [ ] Don't Know

SECTION 2: CHILDREN UNDER FIVE *NDIUZENI MAYINA A ANA A ZAKA ZOSAPITILIRA ZISANU OMWE AMAKHALA PAKHOMO PANO?*			
8. ***Dzina***	***Kodi (dzina) anagona mu masikito usiku wathawu?***	***Musabata ziwiri zapitazi, kodi (dzina) watsegulako m'mimba?*** (kutsegula	***Musabata ziwiri zapitazi, kodi (dzina) watenthapo thupi?***

		m'mimba ndikuchita chimbuzi chamadzimadzi motsatana kokwana katatu kapena kupitilira apo***)***	
[_____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know
[_____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know
[_____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know
[_____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know
[_____]	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know	[ ] Yes [ ] No [ ] Don't Know

SECTION 3. MALARIA. *Ndikufuna ndikufunseni mafunso okhudza matenda a malungo pakhomo pano. Zizindikiro zamalungo ndi: kutentha thupi, kutsegula m'mimba, kusanza ndi kuphwanya m'thupi.*

9. *Kodi inuyo kapena wina aliyense wapakhomo pano wadwalako malungo mu miyezi itatu yapitayi? (December, January, February)*	[ ] Yes [ ] No (*please skip to section 4)* [ ] Don't Know
10. *Ngati eya, ndi anthu angati pakhomo pano omwe adwalapo malungo mmiyezi itatu yapitayi chonde mundiuze mayina awo*	[_____]

11. ***Dzina***	***Zaka***	***Ndiwama muna/wa mkazi (M/F)***	***Kodi (dzina) anadwala malungo mwezi/miyezi yanji?***	***Kodi (dzina) analandira mankhwala amalungo?***	***Kodi (dzina) analandira kuti mankhwala amalungowo?***	**NGATI AYI:** ***Chifukwa chani (dzina) sanalandire mankhwala amalungo?***
[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____

[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____
[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____
[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____

SECTION 4. DIARRHEA *Ndikufuna ndikufunseni mafunso okhudza matenda otsegula m'mimba pakhomo pano. Tikamati kutsegula m'mimba ndikuchita chimbuzi chamadzimadzi motsatana kokwana kapena kupitilira apo katatu.*

12. ***Kodi inu kapena wina aliyense pakhomopano watsegulako m'mimba mu miyezi itatu yapitayi?*** **(December, January, February)**	[ ] Yes [ ] No (please skip to section 5) [ ] Don't Know
13. **NGATI EYA:** ***Kodi ndi anthu angati pakhomo panu pano omwe adwalapo matenda otsegula m'mimba m'miyezi itatu yapitayo.***	[_____]

14. ***Dzina***	***Zaka***	***Wamamuna/Wamkazi (M/F)***	***Kodi (Dzina) anatsegula m'mimba mwezi wanji?***	***Kodi (Dzina) Analandira mankhwala othetsa kutsegula m'mimba?***	**NGATI EYA:** ***Kodi (dzina) analandira kuti mankhwalawa?***	**NGATI AYI:** ***Chifukwa chiani (dzina) sanalandire makhwala?***
[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____

[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____
[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____
[_____]	[____]	[____]	[ ] December [ ] January [ ] February [ ] This month (March)	[ ] Yes for all episodes [ ] Yes for <u>some</u> episodes [ ] No	[ ] Kwitanda HC [ ] Other HC_____ [ ] District Hospital [ ] Traditional Healer [ ] Private Shop [ ] Village Clinic [ ] Other _____	[ ] Did not want treatment [ ] Distance to health center is too far [ ] Drugs were not available [ ] Wait time was too long [ ] Other (specify) _____
NOTES:						

APPENDIX B: LIST OF KEY INDICATORS

Proportion of households with at least one ITN.

- Proportion of individuals who sleep under an ITN.
- Proportion of households who received an ITN from VillageReach who report ownership/use of ITN.
- Proportion of households with a safe drinking water source.
- Proportion of households that travel more than 500m to a safe drinking water source.
- Number of households/borehole.
- Proportion of households with a pit latrine with sanitary platform.
- Proportion of households with a pit latrine with sanitary platform who report good sanitation / hygiene practices
- Utilization rates at Kwitanda Health Center and Village Clinics (outpatient visits, malaria diagnosis, diarrhea diagnosis etc.)
- Proportion of individuals with malaria symptoms receiving treatment.
- Proportion of individuals with diarrhea symptoms receiving treatment.
- Number of households reporting use of the bicycle ambulance.
- Number of households reporting knowledge of bicycle ambulance
- Proportion of children experiencing fever/diarrhea within past two weeks
- Proportion of individuals reporting episodes of malaria/diarrhea in prior three months (Dec – Feb) and of those, proportion who seek care, receive treatment, and the location at which they receive treatment.