



**WATER & SANITATION ASSESSMENT OF
HOME-BASED CARE CLIENTS
IN MALAWI**

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The cover photo is by Dave Snyder taken in Northern Malawi.

ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ARV	Anti-retroviral
CADECOM	Catholic Development Commission in Malawi
CBO	Community Based Organization
CORDAID	Catholic Organization for Relief and Development Aid
CRS	Catholic Relief Services
DHS	Demographic & Health Surveys
FAO	Food and Agricultural Organization
FBO	Faith-Based Organization
FGD	Focus Group Discussion
HBC	Home-Based Care
HBCV	Home-Based Care Volunteer
HIV	Human Immunodeficiency Virus
IDSR	Integrated Disease Surveillance Response
IMF	International Monetary Fund
IFPRI	International Food Policy Research Institute
MDG	Millennium Development Goal
MMIWD	Malawi Ministry of Irrigation and Water Development
MNSO	Malawi National Statistics Office
MTCT	Mother-To-Child Transmission
MWA	Millennium Water Alliance
NAC	National AIDS Commission
PLHA	Person Living With HIV and/or AIDS
QOL	Quality of Life
SD	Standard Deviation
SOB	Shortness of Breath
SWS	Safe Water System
T/A	Traditional Authority
TB	Tuberculosis
UNAIDS	United Nations AIDS Office
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
VCT	Voluntary Counseling and Testing
Watsan	Water & Sanitation
WHO	World Health Organization

EXECUTIVE SUMMARY

Malawi remains one of the poorest countries in the world. Currently ranked 165 out of 177 on the Human Development Index (UNDP, 2005), Malawi also has an adult HIV prevalence rate of 12%. Estimates of the sero-prevalence rate for adults 15 to 49 years old in the Northern Region disaggregated by city, urban and rural sectors are as follows: Mzuzu 23.3%, semi-urban areas 21.9%, rural areas 9.5% (NAC, 2001). Meanwhile, only 20% of Malawian households have access to piped water (only 9% of rural households). On average, rural households are required to travel 19.4 minutes to the nearest water source, while urban households travel an average of 4.9 minutes.

Malawi's poverty, combined with its steady HIV prevalence, means that regular water and sanitation problems become even more acute. Catholic Relief Services (CRS), with financing from the World Health Organization (WHO), initiated a water and sanitation assessment of home-based care (HBC) clients in Northern Malawi.

CRS, with the Catholic Development Commission in Malawi (CADECOM), responded to an announcement by WHO to conduct an assessment on the adequacy of water, sanitation and hygiene in relation to home-based care strategies for people living with HIV&AIDS. The assessment was commissioned by the WHO with the goal of producing evidence-based guidance on water and sanitation needs in home-based care strategies, particularly in resource-poor situations. In addition, WHO desired the assessments to lead to both practical and strategic recommendations to be made at programme and policy level, while also identifying the most critical measures to be taken by the health sector and the water and sanitation sector to provide short and medium-term solutions in the area of water, sanitation and hygiene support to home-based care.

CRS was selected by WHO to conduct the assessment in Malawi, and the work for this assessment began in January 2006 and continued until July 2006. The assessment was conducted in the northern districts of Malawi: Mzimba and Nkhata Bay. The assessment collected information from various sources including:

- District and National Level Interviews: Meetings and interviews with district and national level government representatives in the health, social services, and water and sanitation (watsan) sectors were conducted in order to identify whether there are existing policies and strategies in Malawi that can provide support to HBC clients.
- Community Focus Group Discussions (FGDs): Focus group discussions were conducted with various stakeholders within the chosen survey sites including HBC volunteers, community leaders, and caregivers of PLHA. Discussions addressed the involvement of all the various players in the fields of HBC and watsan.
- Household Surveys: CRS and CADECOM interviewed 15 households in each of the four research sites, for a total of 60 households in all. For each of the households a standard questionnaire (see Annex 1) was used and questions were posed to the HBC client in the household. The questionnaires addressed key facts including: duration and stage of illness, access to health services, type and frequency of caring assistance, access to water supply and sanitation facilities. Other questions

addressed access to water sources, availability of hygiene education, impact of water and sanitation availability on patient care, coping mechanisms and strategies of PLHA in responding to their current water and sanitation situation, household expenditure on water and sanitation services, knowledge, practices and attitudes of households towards water and sanitation, and the households' perceived barriers to improved care.

The findings indicate that the water and sanitation needs of HBC clients are severely unfulfilled. The already vulnerable HBC population is regularly falling ill due to diarrhea. Other illnesses and effects of poor water quality are also evident among the HBC clients. In addition, the HBC households are often required to travel long distances to their water sources, which is exceptionally difficult for ill clients. This assessment demonstrates the multiple interactions between water and sanitation and home-based care clients in Malawi.

Full results are provided within this report. The following are some of the key findings:

- Urban communities have trouble accessing water due to expensive water fees, while rural communities face a distance barrier to accessing potable water.
- Sandy soil is found in all four survey areas, which makes it difficult to construct pit latrines. In the rainy season the latrines often collapse.
- Some boreholes provide only salty water and are not available for drinking water consumption.
- Deforestation is a problem for communities where wood is used to construct the latrines. This may increase barriers to improved sanitation practices, as wood for fire and water boiling may not be readily available.
- 78% of surveyed households indicated that it was the head of their household who was the HBC client. Previous research has found that the head of household falling ill is especially harmful to the overall livelihood and health of the entire household.
- All surveyed clients reported health problems of some sort. Of the 60 respondents, 43.3% had experienced diarrhoea in the past week. Of those experiencing diarrhoea, 26.9% had diarrhoea with blood, 26.9% had diarrhoea in the previous 24 hours, and 69.2% had visited a clinic due to their diarrhoea.
- Nearly 67% of clients reported having to walk at least 20 minutes to their sources of drinking water. On average, clients reported having to walk 25.33 minutes to their water source ($SD=20.38$).
- More than half (56.7%) of the respondents reported that the water they used was safe when taken directly from the source; yet only 16.7% reported having treated their drinking water within the previous 24 hours. Of those who treated their water, the primary treatment method was boiling (90%); 10% added chlorine tablets.
- Only 41.7% of clients reported having soap available for washing their hands on the day of the survey. However, 55% reported washing their hands with soap during the previous 24 hours. Only 21.7% of respondents reported using soap for washing hands after defecating, but 80% reported knowing that it was important to wash hands after defecating, indicating a large gap between existing knowledge within the households and corresponding behaviour.
- Nearly all (96.7%) of the HBC clients had a latrine. However, 21.7% had fecal matter present in the external areas around the latrine, indicating that those latrines were not well maintained and that the spread of diarrhoeal disease could be more

common. 88.1% of respondents did not have access to hand washing by the latrine facility.

- Only 15% of households reported hygiene demonstrations or meetings in the last two months. 13.3% of households reported having been visited by hygiene promoters in the last two months. An overwhelming majority (98.3%) reported not having access to pamphlets or visual aids depicting hygiene promotion.

The findings from the assessment verify that watsan is indeed an intervention area, which merits additional attention within HBC programming. In addition, the findings indicate that national policy and attention is required to respond to these needs, as well as attention within HBC programming. A full list of recommendations and related explanations is included within this report. Key recommendations include:

- Encourage the timely production and dissemination of a national sanitation policy
- Development of HBC standards to include watsan components
- Mobilize implementing agencies to integrate the sectoral interventions
- Provide additional oversight to government and community volunteers
- Train community water committees in water treatment techniques and water point maintenance
- Provide additional water point sources for communities
- Treat/disinfect the water points for communities
- Capacity building reinforcement
- Community mobilization
- Additional community demonstrations
- Household visits by hygiene promoters
- Introduce new water collection technologies
- Introduce new water treatment options and technologies
- Education and training for HBC households and clients
- Promotion of hand washing facilities in the home
- Training on contamination avoidance
- Enhanced training of HBCVs
- Enhanced tools in the HBC kits

This assessment is the first known work of its kind to examine the current watsan situation of HBC clients in Malawi. The work presented here provides the foundation for future efforts to integrate watsan activities within HBC programs. Numerous recommendations are provided here to guide future interventions that may follow this assessment. However, these recommendations are based on the results of this assessment sample, which is relatively small and is not representative of PLHA throughout Malawi, as the sample here is already accessing HBC services through CRS and CADECOM. Other PLHA may be accessing different services through other HBC providers, and many PLHA may not be benefiting from HBC services at all.

Recommendations are offered based on the findings of the assessment. However, additional work is needed to determine how best to advance many of these recommendations. This assessment focused explicitly on identifying the current watsan situation as it relates to HBC clients. An additional national assessment, which focused on existing and planned interventions in both sectors, would add to the knowledge base that is forming on this

subject matter. A follow-on assessment that identified the major organizations involved in these sectors and their geographic focus would strengthen future intervention in this area. In addition, there is a need for a lead organizing body to carry this agenda forward.

BACKGROUND

Malawi is a nation currently located at the epicentre of the HIV/AIDS pandemic. As it enters the 21st century, the nation faces some daunting challenges. Malawi is ranked 165 out of 177 on the Human Development Index (UNDP, 2005). Sixty-five percent of the 11 million inhabitants of Malawi live below the poverty line (IFPRI, 2000). Almost 80% of the population relies on subsistence farming, which leaves them vulnerable to unstable climactic conditions. The average life expectancy at birth is 37.5 and 38.2 years for men and women, respectively¹. The infant mortality rate is reported as 76 deaths per 1,000 live births as of 2004 (MNSO, 2004). These staggering life expectancy and infant mortality rates are in large part due to the onset of the HIV/AIDS epidemic in Malawi.

The Malawi Poverty Reduction Strategy Paper (IMF, 2006) revealed that the spread of HIV/AIDS threatens to undermine attempts to reduce poverty in Malawi. Poverty reduction strategies are threatened both directly due to the prevalence of HIV/AIDS and indirectly due to the resulting shortage of skilled human resources in all sectors. Approximately three quarters of all HIV/AIDS cases occur among people in the most economically productive age group, aged 25-45 years. By 1998, an estimated 210,000 Malawian children under the age of 15 had lost their mothers as a result of AIDS. It is projected that the number of children without mothers will triple in the next six years. Other studies have shown that approximately 2.2%, or some 88,847 children in this group are estimated to be living with HIV/AIDS (CORDAID, 2001).

The first case of AIDS in the country was diagnosed in 1985. Since then, the epidemiological data show an escalating epidemic. For example, in a sample of pregnant women attending antenatal clinics in urban Blantyre, HIV sero-prevalence rose from 2.6% in 1986 to over 30% in 1998, decreasing only slightly to 28.5% in 2001 (NAC, 2001). In 2004, Malawi's national adult prevalence (aged 15-49 years) was estimated at 12%, translating into almost 740,000 adults living with HIV/AIDS (MNSO, 2004). Prevalence is higher in urban areas than in rural areas. For instance, urban men are nearly twice as likely to be infected as rural men (16 and 9 percent, respectively) (MNSO, 2004). Annual deaths due to HIV/AIDS are estimated at over 80,000 people. This annual amount results cumulatively in about 555,000 deaths since 1985.

HIV infection in people aged 15-49 is concentrated in the younger age groups, and particularly in women. Women have a higher HIV prevalence rate than men (13 and 10 percent, respectively). There is evidence that HIV infection in younger females aged 15-24 is about four to six times higher than the infection rate in their male counterparts. The highest prevalence rate by age group is found among 30-34 year olds, at 19 percent (MNSO, 2004). These already high infection rates continue to grow in spite of the near universal awareness of HIV/AIDS amongst the general population. Furthermore, most of these HIV infected individuals do not yet know their status.

¹ Life expectancy data comes from the CRS Malawi Country Program Briefing Book, produced in May 2004.

In the Northern Region, as in the other two regions of Malawi, HIV/AIDS also poses a very serious threat to the livelihoods of individuals, families, and communities. According to the Sentinel Surveillance Report published by the NAC (2001), about 17% of adults aged 15 to 49 years in the Northern Region were living with HIV. Estimates of the sero-prevalence rate for adults 15 to 49 years old in the Northern Region disaggregated by city, urban and rural sectors are as follows: Mzuzu 23.3%, semi-urban areas 21.9%, rural areas 9.5% (NAC, 2001).

Understanding the pervasiveness of the HIV epidemic and initiating a widespread multi-sectoral response are keys to the development of the country. This report will touch on how the water and sanitation (watsan) sector is one that is intricately linked to Malawi's HIV/AIDS epidemic. By providing watsan services to those who are chronically ill, the quality of life for people living with HIV/AIDS (PLHA) improves dramatically.

INTRODUCTION

“No matter how much effort one may put in maintaining good hygiene practices around an AIDS patient, without adequate water supply and sanitation facilities it becomes very difficult for the effort to be effective... It is worthy to note the high rate of HIV infection amongst those communities with poor water and sanitation facilities... Given the percentage of the African population without adequate water and sanitation facilities, we need to start thinking seriously about how the water and sanitation situation in our countries may impact our efforts to deal with HIV/AIDS.”

--Kumbulani Murenga
Water and Sanitation Program Officer for Inter-County People's
Aid, Zimbabwe

Water and Sanitation in the context of HIV/AIDS

Access to safe water and sanitation is not only a vital need but it is also widely considered to be a basic human right. Clean water is crucial for maintaining the quality of life of PLHA and for the success of home-based care (HBC) to AIDS patients. However, in many of the countries most affected by the HIV/AIDS pandemic, Watsan services are extremely limited (MWA, 2004). The poor represent the fastest-growing segment of the HIV/AIDS community and are also the most likely to suffer from unsafe water and inadequate sanitation (MWA, 2004). In addition to improving the quality of water, it is necessary to improve the sheer quantity of water available for drinking. Inadequate water quantity can be a result of either drought or the great distance necessary for women and children to travel to a watering point, severely limiting the amount of water available to each household (MWA, 2004).

The provision of safe watsan services will benefit the whole population, but will be particularly useful in the treatment and care of the millions of people living with HIV/AIDS (PLHA). Providing safe water to people with HIV/AIDS can be significant in reducing AIDS-related morbidity (Lule et al, 2004). With enhanced access to watsan services, treatment options for PLHA as well as the prevention of AIDS related deaths may be improved. For these reasons, some agencies, such as UNICEF, have incorporated water and sanitation efforts as an integral part of HIV/AIDS programming in certain countries (UNICEF, 2006). Due to the potential adverse effects of poor water quality and inadequate sanitation services on PLHA, governments and organizations should consider ways to integrate water and sanitation services with ongoing HIV/AIDS interventions.

There are five areas in which water and sanitation issues have an impact on PLHA: opportunistic and other infections, home-based care (HBC), infant feeding, labour saving, and food security (adapted from Wegelin-Schuringa M, Kamminga, 2003). Each of these will be discussed in more detail below.

Opportunistic and other infections

Promoting improved hygiene practices and increasing access to water and sanitation facilities helps to reduce the occurrence of opportunistic infections (particularly diarrhoea) among PLHA (UNICEF, 2006). Reports have demonstrated that the use of safe water sources by households results in a 35% reduction in the risk of contracting diarrhoeal disease. The simple practice of hand-washing with soap can reduce diarrhoeal incidence by over 40%. Hand-washing, combined with improved drinking water quality and sanitation services, can bring this figure up to a 50% reduction in diarrhoeal disease (USAID/CDM). The prevalence of chronic diarrhoea in PLHA tends to be highest in areas with poor sanitation and overcrowding (Katabira 1999). The quantity of water available is often low in these areas as resources are strained to meet the needs of many people. This shortage of clean water can exacerbate poor personal hygiene, characterized by limited or no hand washing, which increases the chances that caregivers and PLHA contract diarrhoeal disease (MWA, 2004). A consequence of the HIV pandemic is that diarrhoea has become a major cause of morbidity in adults and a leading reported cause of death in Sub-Saharan Africa (Ndubani et al. 1998).

Home-based care (HBC)

The HIV/AIDS epidemic has placed a large burden on public health facilities in developing countries, often stretching them beyond their capacities. As a result, the burden of care has shifted to families and communities in the form of HBC (Ncama, 2005, Nstutebu et al, 2001). Research evidence demonstrates that most people would rather be cared for at home. Effective home care can improve the quality of life for both ill people and their family caregivers (WHO, 2002). But, for the care of PLHA to be effective, access to safe water and sanitation is indispensable (see textbox). Hygiene education must be integrated into training given on home-based care.

Special Water & Sanitation Needs for HBC

- Water for bathing AIDS patients and washing soiled clothing and linen
- At least 1.5 litres of clean potable water for PLHA taking certain antiretrovirals (ARVs) is needed to mitigate side effects (Lesho and Gey, 2003)
- Easy access to latrines or other sanitation facilities for patients weakened by the ravages of AIDS
- Access to water and sanitation services increases the sense of dignity of both PLHA and their caregivers
- Water to keep the house environment and latrine clean in order to reduce the risk of opportunistic infections

(Adapted from Wegelin-Schuringa M, Kamminga, 2003 and MWA, 2004)

Infant feeding

Breastmilk is the best source of nutrition for a child during the first six months of life and it contains all the child's nutritional needs. Breastmilk also contains important antibodies which help prevent disease later in life (UNICEF, 2002). However, babies of HIV positive mothers can be infected through breast milk ("vertical transmission") (UNICEF, 2002). The WHO states that "when replacement feeding is accessible, feasible, affordable, sustainable and safe, avoidance of breastfeeding by HIV-infected mothers is recommended". The most widely used and most effective method to prevent mother-to-child transmission (MTCT) of HIV through breastfeeding is complete substitution of formula for breast milk (Hartmann et

al, 2006). However, in many high-prevalence countries, the use of formula is not a viable option, due to a lack of clean water supplies to reconstitute powdered formula, and a lack of a readily available heat source for boiling the unsafe water.

Labour saving

Improved access to water supply provides important labour-saving benefits to households affected by HIV/AIDS. Less time spent on fetching water allows the caregivers – who are usually women and girls – more time and energy for coping with the disease, for obtaining an education, or for working outside the home (UNICEF, 2006).

Food security

Access to water increases food security (FAO, 2002a), which in turn helps people to remain healthy. Where people have difficulty eating solid foods due to HIV/AIDS associated soreness of the mouth, nutrition can be improved by mixing food with safe water to make it softer and easier to eat (FAO, 2002b). Water is also necessary for certain income-generating activities such as beer brewing, food production and tending of livestock (Wegelin-Schuringa M, Kamminga, 2003).

Not only do poor water and sanitation affect PLHA, but the epidemic can affect water and sanitation improvement strategies. HIV/AIDS is jeopardizing the watsan sector's target under the UN Environmental Millennium Development Goal (MDG #7) to halve the proportion of people who are unable to access safe drinking water (Wegelin-Schuringa M, Kamminga, 2003).

Ashton and Ramasar (2001) identify some issues through which HIV/AIDS hinders water resource management:

- Inaccurate estimates of population growth and mortality rates, which hinders proper planning of future water supply systems;
- Changes in the socio-economic profiles of communities lead to difficulties in paying for urban water and sanitation services;
- Loss of skilled water resource staff due to death or illness leads to increased costs for recruitment and training, and possible production delays;
- Decline in productivity as more water resource staff members and their families become infected; and
- Decline in drinking water quality caused by inadequate treatment and inadequate sanitation leads to increased public health risks, particularly for infected individuals.

Malawi and Water & Sanitation

The Government of the Republic of Malawi considers the conservation, management, development, and utilization of water resources as one of the priorities on its national development agenda (MMIWD, 2005). It has articulated this idea in the newly released vision statement of the National Water Plan: “Water and Sanitation for All, Always”. The watsan sector faces a number of challenges in Malawi as it works to bring about this vision (see textbox).

These challenges have limited the percentage of Malawian households having access to improved water to somewhere between 64-67% (20% from piped water and 44% from protected wells). A huge gap exists between urban and rural households in the access to piped water (74 and 9%, respectively). Another discrepancy is in the average travel time to the nearest water source: 4.9 minutes for urban households vs. 19.4 for rural ones. In addition, modern sanitation facilities are not yet available to large proportions of Malawian households. Traditional pit latrines are still common in both urban and rural areas, used by 79% of all households. Overall, 16% of the households in Malawi have no toilet facilities (MNSO, 2004). While these statistics are roughly comparable to those in most of the developing world, Malawi suffers more than most poor countries because of an acute combination of poverty, lack of opportunity, and the ravages of disease.

Challenges facing the Malawi Water & Sanitation Sector

- The degradation of water resources
- Inadequate service coverage
- Insufficient funds
- Increasing water demand as a result of an increasing population
- High HIV/AIDS prevalence
- Insufficient capacity
- Lack of integrated approach to water resources management and development,
- Climate change and variability
- Lack of mitigation measures for water-related disasters
- Inadequate promotion of hygiene and sanitation

(adapted from MMIWD, 2005)

In spite of the work that remains in order to improve access to safe water and sanitation services in Malawi and the numerous challenges, the relatively abundant water resources and political will, as well as active women and youth, donor support, the willingness of private and public sectors’ participation, and the existence of regional and international initiatives all are helping to improve the current water and sanitation services in Malawi (MMIWD, 2005). The government of Malawi has given great emphasis to and made progress in water and sanitation services in recent years. During the period between 1990 and 2002, national coverage of improved drinking water sources increased from 41% to 67%, while improved sanitation coverage rose from 36% to 46% during that time (WHO/UNICEF, 2004).

Among Malawi’s water resources are Lake Malawi (Africa’s third largest freshwater lake), Lake Malombe, and Lake Chilwa. These water ecosystems cover over 21% of the country’s territorial area. In addition, there are vast groundwater resources associated with multiple aquifers of varying yield.

METHODOLOGY

The study was conducted in the northern districts of Malawi: Mzimba and Nkhata Bay. Both districts are located within Mzuzu Diocese. Mzimba district hosts the third largest city in Malawi, Mzuzu City. The city of Nkhata Bay is located adjacent to Mzuzu City and is situated on Lake Malawi. Two urban and two rural sites were selected from program areas that are well known to CADECOM-Mzuzu: one of each type of site from both St. Joseph's and St. Augustine's parishes. The rural communities in St. Joseph's parish are engaged in both fishing and subsistence farming, while those in St. Augustine's parish are mainly subsistence farmers. In both urban sites (St. Joseph's and St. Augustine's), the majority of people engage either in trading or they have some other formal employment.

The differences in the quality of life between the urban and rural sites chosen for this assessment in Malawi could not be more striking. While the urban sites contain most of the features of cities around the world, namely electricity and water services, shops, employment opportunities and access to health services, the rural sites have no electricity, poor water supplies, few shops, little or no employment opportunities and almost no access to government services. The services available to the urban residents may be poor and of low quality, but they exist, which is something that cannot be said for the rural inhabitants surveyed.

Nkhata Bay District – St. Joseph Parish	
Urban site	Rural site
T/A Mkumbira Area – Chondoza Village name – Mkwaya – 45 km from Mzuzu City	T/A Fukamalaza Area – Chiziya Village name – Jumbo – 65 km from Mzuzu
Mzimba District – St. Augustine Parish	
Urban site	Rural site
T/A Mtwalo Area 1B Village name – Luwina – 7 km within Mzuzu City	T/A Mtwalo Village name – Kaweche – 25 km from Mzuzu

District and National Level Interviews

Meetings and interviews with district and national level government representatives in the health, social services, and watsan sectors were conducted in order to identify whether there are existing policies and strategies in Malawi that can provide support to HBC clients. The interviews with government representatives also explored whether any existing policies and services address the availability of and access to a safe water supply, adequate sanitation services and hygiene education around the country. The government interviews also sought to identify any current areas of linkages and overlaps between the health and watsan sectors.

Community Focus Group Discussions (FGDs)

Focus group discussions were conducted with various stakeholders within the chosen survey sites including HBC volunteers, community leaders, and caregivers of PLHA. Discussions addressed the involvement of all the various players in the fields of HBC and watsan. The FGD respondents were recruited through volunteer groups and local leaders. The FGDs were conducted within the targeted villages. The discussions were facilitated by two staff from CADECOM Mzuzu: one a facilitator and the other a note taker. Notes were transcribed immediately after every FGD. Each FGD lasted approximately 1.5 hours.

Household Surveys

CRS and CADECOM interviewed 15 households in each of the four research sites, for a total of 60 households in all. The households were selected based on the following method: Names of clients in each site were recorded and from this list names were drawn randomly, out of a hat, for a total of 15 in each site.

For each of the households a standard questionnaire (see Annex 1) was used and questions were posed to the HBC client in the household. The questionnaires were adapted from the Johns Hopkins University Bloomberg School of Public Health, Department of International Health, Water and Sanitation survey developed for the Safe Water Systems Project of the Islamic Republic of Afghanistan and the CRS I-LIFE Development Assistance Program Baseline Survey. The questionnaires addressed key facts including: duration and stage of illness, access to health services, type and frequency of caring assistance, access to water supply and sanitation facilities. Other questions addressed access to water sources, availability of hygiene education, impact of water and sanitation availability on patient care, coping mechanisms and strategies of PLHA in responding to their current water and sanitation situation, household expenditure on water and sanitation services, knowledge, practices and attitudes of households towards water and sanitation, and the households' perceived barriers to improved care. Clients were advised of the study by the interviewer and signed an informed consent prior to commencing the discussion. Each questionnaire took approximately one hour to administer.

Data Analysis

FGD and interview data were synthesized by CRS in Malawi. Interviewers were available to respond to questions and provide assistance. Qualitative analysis was conducted first by CRS in Malawi, and then verified by CRS headquarters. Quantitative household data was entered into SPSS and analyzed by CRS staff. Data was verified as it was entered and test queries were carried out by the entry clerk.

RESULTS

The assessment was very broad in scope and thus garnered a variety of data and results. All of the main findings are highlighted on the following pages. However, there were some key results:

- Urban communities have trouble accessing water due to expensive water fees, while rural communities face a distance barrier to accessing potable water.
- Sandy soil is found in all four survey areas, which makes it difficult to construct pit latrines. In the rainy season the latrines often collapse.
- Some boreholes provide only salty water and are not available for drinking water consumption.
- Deforestation is a problem for communities where wood is used to construct the latrines. This may increase barriers to improved sanitation practices, as wood for fire and water boiling may not be readily available.
- 78% of surveyed households indicated that it was the head of their household who was the HBC client. Previous research has found that the head of household falling ill is especially harmful to the overall livelihood and health of the entire household.
- All surveyed clients reported health problems of some sort. Of the 60 respondents, 43.3% had experienced diarrhoea in the past week. Of those experiencing diarrhoea, 26.9% had diarrhoea with blood, 26.9% had diarrhoea in the previous 24 hours, and 69.2% had visited a clinic due to their diarrhoea.
- Nearly 67% of clients reported having to walk at least 20 minutes to their sources of drinking water. On average, clients reported having to walk 25.33 minutes to their water source ($SD=20.38$).
- More than half (56.7%) of the respondents reported that the water they used was safe when taken directly from the source; yet only 16.7% reported having treated their drinking water within the previous 24 hours. Of those who treated their water, the primary treatment method was boiling (90%); 10% added chlorine tablets.
- Only 41.7% of clients reported having soap available for washing their hands on the day of the survey. However, 55% reported washing their hands with soap during the previous 24 hours. Only 21.7% of respondents reported using soap for washing hands after defecating, but 80% reported knowing that it was important to wash hands after defecating, indicating a large gap between existing knowledge within the households and corresponding behaviour.
- Nearly all (96.7%) of the HBC clients had a latrine. However, 21.7% had fecal matter present in external areas around the latrine, indicating that those latrines were not well maintained and that the spread of diarrhoeal disease could be more common. 88.1% of respondents did not have access to hand washing by the latrine facility.
- Only 15% of households reported hygiene demonstrations or meetings in the last two months. 13.3% of households reported having been visited by hygiene promoters in the last two months. An overwhelming majority (98.3%) reported not having access to pamphlets or visual aids depicting hygiene promotion.

As the assessment was divided into four levels, as described in the methodology section, the results are reported in the same manner. The results section is broken into the following summaries: National Level Interviews, District Level Interviews, Community FGDs, and Household Surveys.

National Level Interviews

At the national level, focus group interviews were conducted individually with the Chief Environmental Health Officer of the Ministry of Health & Population and two officials from the Ministry of Irrigation and Water Development.

Water

It was mentioned that the Ministry of Irrigation and Water Development had a national water policy, but the water policy did not incorporate issues related to water needs in the context of HIV/AIDS. The men interviewed were not sure if the National AIDS Commission collected any data on water and sanitation or how that information could be used in the context of HIV/AIDS.

Barriers to Accessing Potable Water

The water board fees in the urban areas were mentioned as a barrier to accessing safe water. It was also mentioned that in the cities there are regulations against having an open well and that all residents are expected to be connected to the piped public water supply. However, it was acknowledged that the government fails to provide running water on a constant basis. In the rural areas, it was thought that poor maintenance of the watering points and the increased dependence on government support acted as barriers to accessing safe water. The major barriers were thought to be resource constraints and a lack of government-provided services. It was noted that the chronically ill have more difficulty collecting water if the watering point is 500 meters or more away.

Sanitation

There was conflicting information at the different ministries as to whether there was a national policy on sanitation. At the Ministry of Public Health it was noted that there was a section within the national environmental health policy regarding sanitation, but it was not related to HIV/AIDS. It was thought to be a broad policy allowing for a latrine for every household. At the Ministry of Irrigation and Water Development, it was said that there is no current policy on sanitation, but one is currently being developed by the Ministry and should be completed soon. There is no mention of HIV/AIDS-related issues in the current draft of the new sanitation policy.

Barriers to Accessing Improved Sanitation

It was mentioned that donors can be less interested in funding sanitation projects as opposed to water-related projects. There were some concerns over the acceptance of the new sanitation policy by the Ministry of Irrigation and Water Development by all stakeholders involved, and that there is a lack of capacity to implement the policy at the district level. It was perceived to be important to keep sanitation issues separate from water

concerns and to sensitize communities and raise awareness in order to increase the demand for improved sanitation services. At the Ministry of Health, sandy soil type, economic hardship, and cultural beliefs were all mentioned as other barriers to accessing improved sanitation. Cement-lined pit latrines may be too expensive for people in the rural areas. In the urban areas, there are laws promoting use of and payment for the sewage system, which again hurt the poorest segments of Malawian society.

District Level Interviews

At the district level, focus group interviews were conducted individually with the District Environmental Officer, District AIDS Coordinator, District Social Welfare Officer and District Planning Officer. It was noted in the interviews with district officials that all issues concerning water and health policies are addressed at the national level, and therefore the district officers did not perceive them to be under their jurisdiction.

Water

Both District Water Development Departments for Mzuzu and Nkhata Bay noted that there was a national water policy that directs department operations; however, the respondents were not aware of how the national policy related to HIV/AIDS, if at all. The Malawi national water policy is thought to enable Malawians to have access to potable water. It was thought that the policy states that boreholes are to serve at least 250 people, and shallow wells are to serve not more than 70 people. It was also thought that the policy addressed treatment of piped water in the urban areas.

Barriers to Accessing Potable Water

The respondents mentioned a number of barriers to community access to safe drinking water. It was felt that paying for water in the urban areas is expensive and can be prohibitive. The increased cost to the government to develop new water systems was mentioned as a barrier. Vandalism of the watering point is also a problem. In the rural areas, it was thought that the long distance required to travel to water points as well as poorly managed water points were the major barriers. Cultural beliefs were also mentioned.

Sanitation

A policy on sanitation has been introduced in town assemblies in both districts. It is thought to address cleanliness in general and not necessarily sanitation/hygiene education in particular.

Barriers to Accessing Sanitation

It was discussed that the lack of access to clean water is a major barrier to improved sanitation services. Also thought to be lacking was adequate sanitary equipment/facilities in both urban and rural areas. The government is perceived as not doing enough, mainly in urban communities, to address the things that are currently lacking. Also, the sanitation rules are inadequately enforced in the urban areas. In the rural areas, additional barriers to accessing sanitation services were thought to be cultural beliefs and high illiteracy levels.

HBC

Respondents indicated that the Mzuzu Town Assembly is in the process of formulating an AIDS Mainstreaming Policy. The formulation of this new policy provides the opportunity to integrate watsan interventions within AIDS mainstreaming in the future. There is also a policy on the management of ARVs for a few clinics in the north. However, it was not clear if watsan was included as a component of ARV management within this policy.

Coverage of HBC Services

Respondents indicated that HBC coverage was very low from the Ministry of Health and that most communities were covered by services from Community Based Organizations (CBOs) and Faith Based Organizations (FBOs) like CADECOM. Respondents understood that HBC coverage works best at a local, individualized level. Services offered under HBC were perceived to be: home care nursing, provision of food supplements, bedding and clothing, and counselling services. The need for more education for this community based care service was discussed, as some communities were thought to not understand HBC service and were perceived to insist that their sick ones should be hospitalized.

Benefits of HBC to the communities

The district officers interviewed believed that the HBC program has relieved congestion in hospitals, increased community involvement in HBC and caring for the ill members of the community, and improved access to basic drugs. They also mentioned that the HBC program has contributed to improved nutrition status in PLHA and has increased the community social support for households hosting PLHA.

Barriers to Accessing ARVs

There was a discussion about the discrepancy between the great number of people who are supposed to be receiving ARVs and the few who do actually receive them. There was a conversation about the barriers that PLHA face. Barriers mentioned were that there are very few voluntary HIV counselling and testing (VCT) centres, and that there are fees attached to being tested. The clinics performing HIV tests and CD4 counts are considered to be long distances from the villages. The clinics are faced with inadequately trained and qualified staff as well as limited drug supplies. An increasing problem is the lack of available medicines to treat opportunistic infections.

Disease Surveillance Tracking Systems

The two districts have what they call IDSR (Integrated Disease Surveillance and Response). Respondents could not elaborate further.

Community FGDs

Water

Issues with Quality – Rural Areas

It was mentioned repeatedly that in the rainy season, the shallow unprotected wells used in both of the rural areas participating in this study become unsafe to use due to contamination. Typically in the rainy season, rotting leaves, sticks and worms are brought out of the wells along with drinking water. Green algae usually grow inside the wells during this time, and the water is bailed out so that the well sides can be cleaned. The majority of

residents use these open unprotected wells most of the time. Communities without shallow wells collect drinking water from the river or collect rainwater as it falls. A few boreholes were constructed in some areas of the villages interviewed, but some of those are drawing salty water and are not used for drinking. Some boreholes were drilled near pit latrines and thought by the community to be contaminated. Those wells are also not used for drinking water. A common theme was that public boreholes break down frequently. Some communities have functioning well-funded water committees organized to maintain water points and seem able to contribute the nominal fees associated with minor repairs, while other communities did not have the funds or the training necessary for performing borehole maintenance. It was mentioned often that a local borehole might be privately owned, and therefore there was a fee for drawing water that many people could not afford to pay. People do not usually treat their drinking water due to lack of fuel (firewood) necessary for boiling. They may lack the education necessary for other ways to treat unsafe water or they lack the necessary resources to purchase chemical solutions (typically bleach or the socially marketed solution “Waterguard”) for water treatment. In Chiziya, Nkhata Bay, bilharzia (schistosomiasis) is a common problem. In the dry season, people find water wherever they are able, whatever condition it is in.

Quality – Urban Areas

People collect water from shallow wells or boreholes. There is contamination in the rainy season, just as in the rural areas. If people can't pay their water bill, the water board will disconnect the water source.

Issues with Access – Rural Areas

The long distance to reach a water point was mentioned as a barrier to accessing potable water in Nkhata Bay. Due to the hilly terrain in Nkhata, drilling additional boreholes is difficult. Drilling equipment cannot be transported to some areas. More than one respondent noted that their village had been approached by nonprofit organizations to collect all the necessary community inputs (bricks, sand, etc.) and then the villages would be provided with new wells. And, although the communities built the bricks as requested, the organizations never came back to do the work. A lack of a sufficient number of water sources was also mentioned. For example, in the Kaweche area, 3 water sources serve 22 villages. In the dry season streams, rivers, and wells all can become dry and communities that rely on them must use other sources, which might mean travelling very long distances to find water. Alternatively, in the rainy season the few sources that are available for potable water are used more frequently and may become the primary source for a larger population than is practical and sustainable. In all the areas interviewed, there was no mention of chronically ill or HIV/AIDS affected persons being unable to access water points due to discrimination. Access to the drinking water supply is therefore similar for all the members of a community. The problem chronically ill persons are facing is that if their caregiver has to travel long distances to fetch water, then there may not be enough water collected to adequately meet the needs of the entire household. Additionally, if the caregiver is old or also sick, and has any difficulty moving about, then collecting water for the household of a chronically ill patient is extremely difficult.

Access – Urban Areas

The biggest issue discussed was having trouble accessing the public water supply due to lack of money for the water board fees. Another issue mentioned was that the taps in Luwinda, Mzuzu serve too large a population, therefore they are constantly crowded and people waste a lot of time waiting in line to get water. In one interview, it was mentioned that there was only one public tap for the entire town, and the water stopped running for a period of time every day. In Mkwinda, Nkhata Bay, it was noted that over 4000 households accessed a single borehole with only two taps. In both urban areas surveyed, more people were consuming water than the current water supply could sustain.

Coping

Different mechanisms were mentioned as coping strategies in both the rural and the urban areas. In some rural areas, people collect rainwater off of rooftops to compensate for lack of wells or boreholes. Some people boil shallow well water in order to treat it. Filtering water through a cloth to remove visible debris during the rainy season was mentioned as a strategy in Chiziyi. It was also mentioned that the whole community might pool money together to buy a part or fix a problem with a dysfunctional well.

Sanitation

Issues with Quality

Respondents believed that most households do not have their own pit latrine. Sandy soil is the dominant soil type in the four areas surveyed, making it difficult to construct stable pit latrines. In the rainy season, the latrines often collapse. People use the bushes, tall grassy areas, agricultural fields or the lake as toilets in the rainy season. Deforestation is also a problem in communities where wood is used in constructing latrines and/or for covering up the pit. The wood rots quickly in the rainy season, and termites are also a problem in some areas, also contributing to latrine collapse.

Issues with Access

In the urban site of Luwinda, Mzuzu, respondents believed that many people have access to pour flush latrines but the water supply is not steady, so the toilets rarely work. In all the areas surveyed, the sharing of a toilet by up to five households is a common practice. Urban residents do not have the land or the means to build latrines, so latrines are mostly a rural sanitation practice. In Chiziyi it was noted that when a father/male in the household becomes ill or dies there might not be anyone to dig the pit latrine. It was mentioned that female-headed households have a harder time acquiring latrines. Additionally, in chronically ill households money for the construction of latrines is lacking. Funds are often diverted to other priorities, such as direct care or purchasing medications. It was also mentioned that chronically ill patients may have insufficient facilities, or may not be able to leave the home to find adequate facilities.

In all areas sanitation education was done in communities between 1-2 times per year. Education sessions were given by either hospital or health centre staff. The topics vary, but often target the prevention of cholera and malaria in the rainy season. One HBC Volunteer in Kawechi mentioned conducting training on water treatment, general sanitation, and HIV/AIDS for heads of households in his community. In Chiziyi, the HBC volunteers mentioned visiting every household to promote sanitation and hygiene to improve the QOL

of the chronically ill. One respondent mentioned learning how and where to dig a pit latrine and learning about composting from the district hospital team in Nkhata Bay. It was discovered that there is less sanitation education being conducted in Luwinga.

Coping

Where toilet facilities are not available, people use the bush, maize fields, or areas close to the lake as toilets.

HBC

Quality

In all areas there was mention of the HBC kits missing drugs and other key items. In some interviews, it was reported that not all the HBC volunteers are trained in water treatment/storage or in hygiene education. In other interviews, it was reported that some HBC volunteers receive training in HIV/AIDS counselling and ARV dosage, and others do not. In the urban area of Nkhata Bay, HBC volunteers were perceived to not be well trained or well equipped. According to respondents, a surveillance system for managing HBC clients and their quality of care, as well as tracking disease outbreaks in the community was not maintained in any of the four areas surveyed. The main reason cited for not implementing surveillance was respect for the confidentiality of HBC patients. Another reason cited for the lack of surveillance was that the health care worker could be blamed for “witchcraft” when anyone listed in the surveillance system died. There is a local belief that writing down the name of someone sick may actually cause the person to die. However, it should be noted that the household surveys were conducted with households from the HBC program and were identified from a central surveillance system maintained for the HBC program.

Access

ARVs are available in Mzimba District (Mzuzu City) but not Nkhata Bay. In Mzuzu, the public central hospital and a private mission hospital (Ekwendeni) have supplies of ARVs, however in Ekwendeni, clients must pay a nominal fee for access to drugs. Local community health centres are definitely closer than the hospitals to almost all the communities surveyed, but these centres do not currently supply ARVs. In Nkhata Bay, a lack of VCT was mentioned, as well as a lack of transportation. The walking distance to local health facilities was thought to be prohibitive, yet the lack of bicycles and ambulance bicycles was noted by most of the respondents. Costs of transport from the rural areas to a health centre were thought to be prohibitive. Bicycles are used to transport ill community members to hospitals or health centres. They can also be used by HBC volunteers to visit clients and replenish items in the HBC kits.

Coping

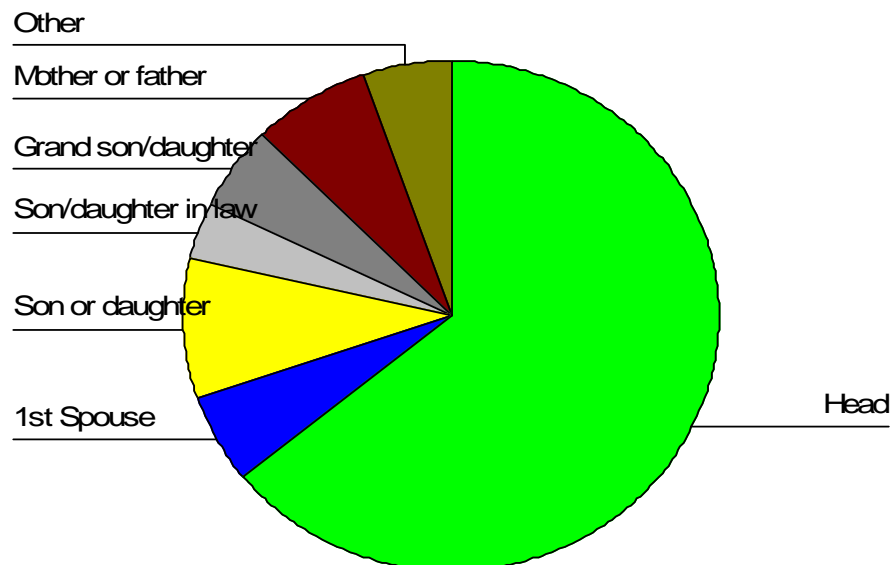
Due to the lack of ARVs and other drugs in these communities, herbal remedies are used to treat illnesses and relieve symptoms. Volunteers have been known to carry a sick person on their back and walked them to the health centre. Local stretchers are made with poles. Sometimes the health records are kept “by heart” by the community HBC volunteers so that the information does not need to be written down.

Household Survey

A total of sixty (60) households of HBC clients were surveyed. Of these, 60% indicated that they were HBC clients due to AIDS-related illnesses. Other reasons for being clients of an HBC program included: tuberculosis (TB), asthma, elderly, orphans, and other undetermined reasons. Less than half (38.3%) of respondents were male; 61.7% were female.

The mean household size of the clients was 7.1 (SD=2.8). The mean age of clients surveyed was 46.18 (SD=17.85). A large percentage (78.3) of clients were the heads of their households. The fact that the majority of the clients are the heads of household is especially worrisome, as one would then expect the income levels in the household to drop, which could cause the household to rely on risky coping strategies and de-prioritize issues such as water and sanitation.

Figure 1: Client Relationship to Household Head



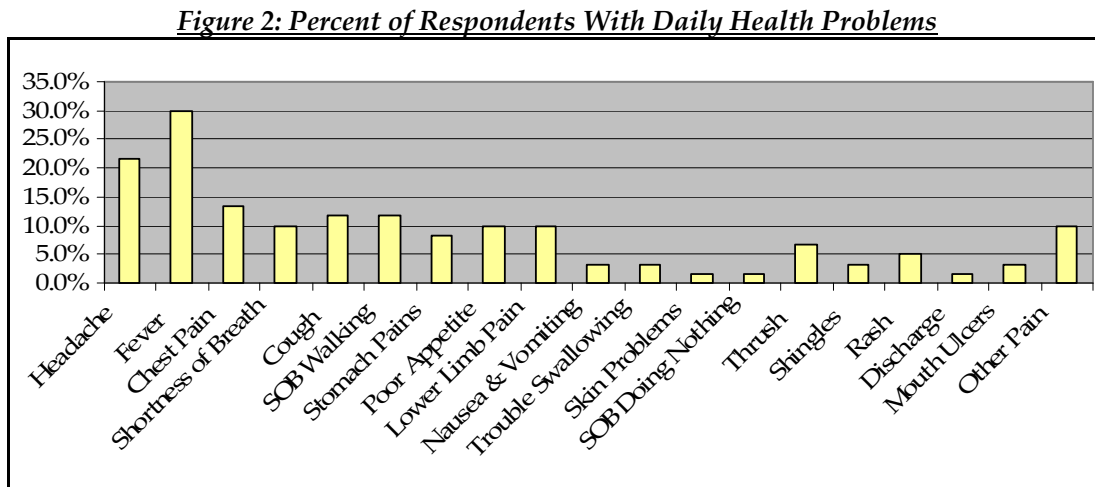
The majority of respondents were either single (26.7%), married (28.3%) or widowed (21.7%). A small percentage (3.3%) were divorced, and 15% reported being separated from their spouses. Only 25% of the respondents had finished secondary school; 8.3% had finished primary, while 50% had not finished primary, and 16.7% had no formal education at all.

Only 35% of respondents reported being able to continue with normal activity, while the remaining 65% reported their illnesses interfering with their normal activities. While 76.7% reported being about to walk around the house on their own, 78.3% reported needing help for normal living. 50% reported needing help with washing, and 15% reported needing help with dressing. Only 6.7% reported needing help with eating, and 20% of clients reported needing help both with walking and using the toilet.

	Normal Activity	Walking Around the House	Normal Living	Washing	Dressing	Eating	Walking	Using the Toilet
Yes	35	76.7	78.3	50	15	6.7	20	20
No	65	23.3	21.7	50	85	93.3	80	80

All clients reported health problems of some sort. Of the 60 respondents, 43.3% had experienced diarrhoea in the past week. Of those experiencing diarrhoea, 26.9% had diarrhoea with blood, 26.9% had diarrhoea in the previous 24 hours, and 69.2% had visited a clinic due to their diarrhoea.

Nearly 22% of clients reported suffering from headaches daily. 13.3% of respondents reported suffering from chest pain on a daily basis, while 10% of respondents reported suffering from shortness of breath on a daily basis. The following table demonstrates the common daily ailments that HBC clients reported.



More than two-thirds of clients (71.7%) reported receiving visits from home-based care volunteers (HBCV) at least once per month. Nearly 44% of clients reported receiving at least two visits from HBCV per month. The services provided by these volunteers included administering medications and drugs, fetching water, bathing, and providing food. 68.3% of clients reported that these HBCV visits were beneficial to them. However, clients also identified additional services that were needed within HBC programs including: income-generating activities, provision of boreholes, material goods, provision of safe water, nutritional support, and provision of additional medication.

During the dry season, the majority of respondents (53.33%) reported obtaining their water from a protected tube well or borehole. However, during the rainy season, only 40% cite protected tube wells as their primary water source, and the majority (41.66%) of respondents reported obtaining their water from unprotected dug wells during the rainy season. The

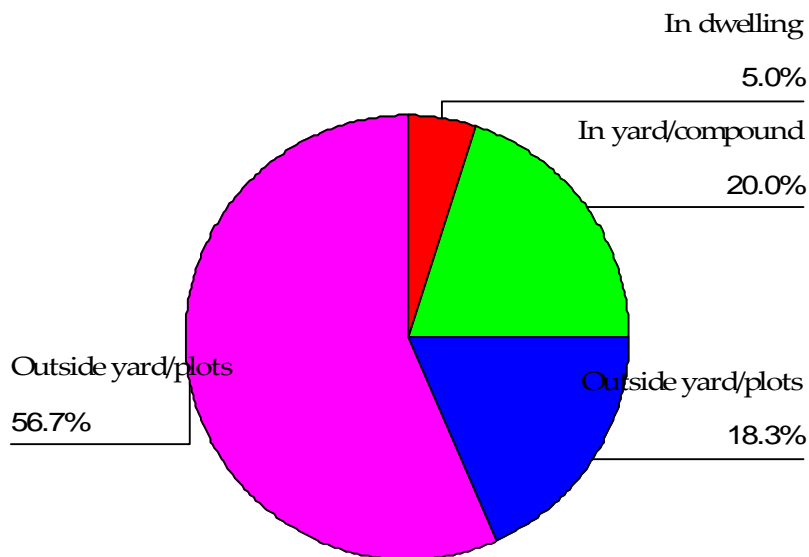
following table demonstrates the sources of water for the HBC clients in both dry and rainy seasons.

Table 2: HBC Client Water Sources

	Rainy Season	Dry Season
Protected tubewell or borehole	40%	53.33%
Unprotected tubewell or borehole	10%	8.33%
Protected dug well	3.33%	3.33%
Unprotected dug well	41.66%	31.66%
Spring	1.66%	
Surface water	3.33%	3.33%

The majority of clients (55%) reported that the location of their drinking water was outside their plots in a shared public source. A small minority of clients (6.7%) reported having drinking water within their dwellings. Nearly 67% of clients reported having to walk at least 20 minutes to their sources of drinking water. On average, clients reported having to walk 25.33 minutes to their water source ($SD=20.38$).

Figure 3: Location of Source of Drinking Water



Only 6.7% of respondents reported collecting only one vessel of water per trip to the water source. The mean number of vessels collected was 3.9. The following table demonstrates the number of vessels of water collected according to the location of the source of drinking water for the client households. Clearly, those households with water sources outside their plots are collecting more vessels of water per trip to the water source in order to make the long distances travelled more worthwhile.

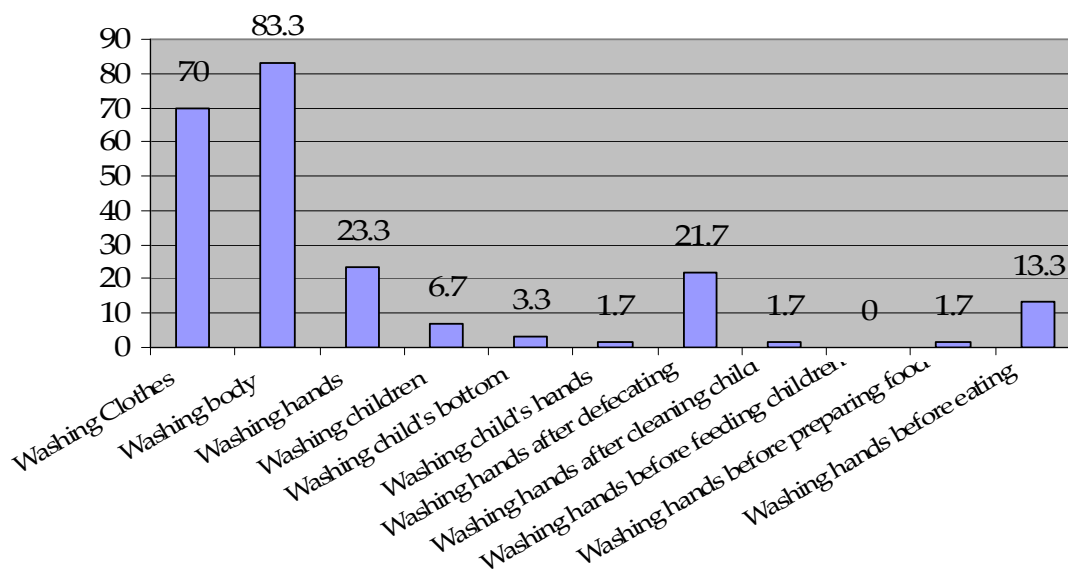
		<i>Table 3: Number of Vessels of Water Collected</i>											Total
		1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	10.00	12.00	Other	
Location of source of drinking water	In dwelling			2		1							3
	In yard/compound	2	3	1	1	3	1	1					12
	Outside yard/plot, shared private source		1	1	4	2			1	1	1		11
	Outside yard/plot, shared public source	2	9	6	7	5	1		1	1		2	34
Table Total		4	13	10	12	11	2	1	2	2	1	2	60

The respondents reported using primarily 5 litre or 20 litre containers for transporting their water. Nearly half of respondents (48.3%) reported storing their water in clay jars, with 41.7% reporting using plastic containers, and the remaining 8.3% using metal containers. Regardless of which type of container was used, only 16.7% of respondents reported not using a cover on the container. When describing the type of neck of the vessel, respondents reported their vessels as having a narrow neck (26.7%), being covered (30%), or being left open (41.7%). The majority of respondents (83.3%) reported dipping a cup into the storage container for drinking water, while 10% reported pouring water out from the storage container for drinking, and 5% reported using both dipping and pouring methods. Only 1.7% of the respondents reported that the container had a spigot.

More than half (56.7%) of the respondents reported that the water they used was safe when taken directly from the source; 3.3% reported that they did not know if the water was safe. Only 16.7% reported having treated their drinking water within the previous 24 hours; an additional 15% of respondents reported having treated their water within the previous two weeks. Of those who treated their water, the primary treatment method was boiling (90%); 10% added chlorine tablets.

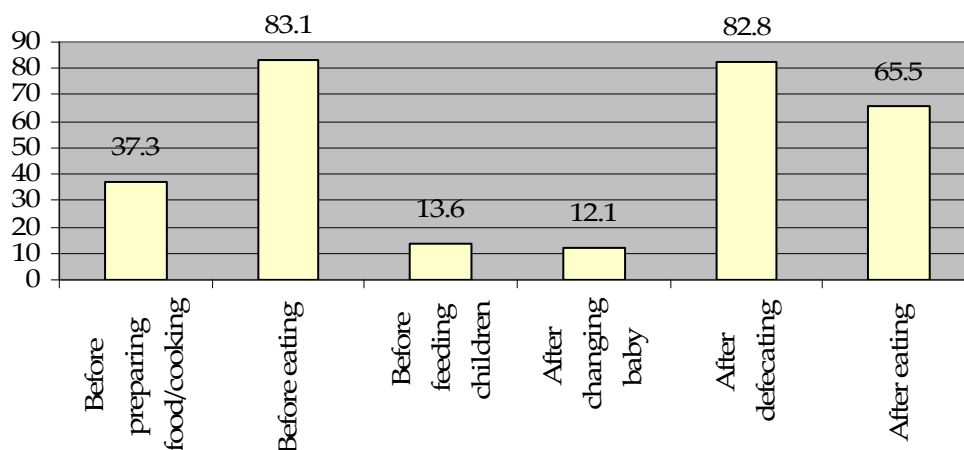
Only 41.7% of clients reported having soap available for washing their hands on the day of the survey. However, 55% reported washing their hands with soap during the previous 24 hours. Only 21.7% of respondents reported using soap for washing hands after defecating, but 80% reported knowing that it was important to wash hands after defecating. The following table demonstrates what percentage of clients used soap per activity in the 24 hours prior to the administration of the survey.

Figure 4: When Clients Used Soap in the Previous 24 Hours



Clients reported a variety of times when they believed hand washing was important including before preparing food or cooking (37.3%), before eating (83.1%), before feeding children (13.6%), after changing a baby (12.1%), after defecating (82.8%), and after eating (65.5%).

Figure 5: When Clients Feel Hand Washing Is Important



More than half (56.7%) of respondents did not have a place where they usually washed their hands. Of those that did have a location for hand-washing, 46% indicated that this was inside the house next to the kitchen, and 26.9% reported that their hand-washing location was outside in the yard.

In addition to asking the respondents questions about their sanitation, enumerators also observed the sanitary environment of the homes of the HBC clients. Only 23.3% of the homes had water available in the hand washing place, and an additional 3.3% had water brought to them by a caregiver within one minute. 15% had soap, detergent or ash in the

hand washing location; 28.3% had a hand washing device (i.e. tap, basin, bucket, sink). A minority (10%) had a cloth to dry hands.

Nearly all (96.7%) of the HBC clients had a latrine. Types of latrines included pit latrines (85%) and pour-flush latrine (11.7%). Three-fourths of the households (75%) had no fecal matter present inside the latrine facility (i.e. on the floor). However, 21.7% had fecal matter present inside the latrine (i.e. on the floor), indicating that those latrines were not well maintained and that the spread of diarrhoeal disease could be more common. 88.1% of respondents did not have access to hand washing by the latrine facility. The majority of households did not share their latrines (56.9%). But, if latrines were shared among households, an average of 8.4 people shared the latrine ($SD=7.1$).

Only 15% of households reported hygiene demonstrations or meetings in the last two months. Those households that did know of demonstrations reported 1 (44%), 2 (33.3%), or 3 (11.1%) meetings. Nearly 19% of clients reported attending such meetings when they were available within the communities. 13.3% of households reported having been visited by hygiene promoters in the last two months. Of these, 75% reported having been visited once, and 25% reported two visits. Topics covered during these meetings and/or visits included: use of sanitation, water treatment, and hygiene. Proper sanitation was the most popular training topic of the participants. In addition to the training topics identified, respondents indicated their desire to see more training on nutrition and food related topics. An overwhelming majority (98.3%) reported not having access to pamphlets or visual aids depicting hygiene promotion.

RECOMMENDATIONS

The following pages detail the preliminary recommendations that emerged from this initial assessment. These recommendations are general and are targeted at the national level and then at how HBC programs can better integrate watsan. Organizations that are involved with HIV&AIDS and watsan may be able to select from these recommendations based on their level of involvement with responding to the needs of HBC clients. This list of recommendations is not meant for one organization only; rather this list is designed to highlight the gaps that exist and provide some initial guidance on how these gaps could be filled.

National Level Recommendations: The findings of this assessment demonstrate that additional focus on watsan for HBC clients is required at a national level, as many of the identified issues are larger than any single HBC program. In addition, thousands of PLHA in Malawi do not currently have access to an HBC program and will thus require a broader policy to ensure that their needs are met.

- **Encourage the timely production and dissemination of a national sanitation policy:** It was apparent by interviews with key informants that if such a policy existed, it was not widely known about. Interviewees indicated that the Ministry of Irrigation and Water Development was releasing a draft policy soon, but as of the time of this report, the draft had not yet been seen. This draft sanitation policy needs to take into account the special water and sanitation needs of PLHA.
- **Mobilize implementing agencies to integrate the sectoral interventions:** A central forum within Malawi to discuss the integration of the two programming interventions would enable more CBOs, FBOs and other implementing agencies to begin examining how they can best integrate these sectors.
 - Workshop: A central workshop or conference on this topic would serve to mobilize many agencies to begin thinking about integration.
 - Central affirmation of problem: A central workshop or other forum could serve to produce a general affirmation regarding the water and sanitation needs of HBC clients in Malawi.
- **Development of HBC standards to include watsan components:** The Ministry of Health and the National AIDS Commission in Malawi both work on technical documents to guide home-based care and support. National attention on a revised standard of HBC to include watsan interventions would ensure that additional programmatic focus is paid to the integration of these two sectors.
- **Provide more oversight to community volunteers:** Health workers and water technicians employed by the government need to provide more supervision to community volunteers to ensure that hygiene and sanitation education is given frequently and the information is accurate.

- **Train community water committees in water treatment techniques and water point maintenance:** In the FGDs there was mention of some maintenance issues for safe water points and more frequently mention of contaminated sources. Water committees appear to function well and should be used to disseminate information on water treatment as well as maintenance of water points. Refresher training is important and as mentioned above water committees should be properly supervised. A water inventory carried out by Water Aid in Malawi show that there are as many water points which are functioning as those that are not functioning. Most of the non-functional water points are as a result of simple mechanical problems such as worn out valves which can easily be replaced. However, the communities are not trained on how to do this. Therefore, provision of water sources should also include training of community based water management committees and the provision of starter-pack repair toolkits.
- **Provide additional water point sources for communities:** Respondents reported having to travel an average of 20 minutes to the nearest water source. This is a nearly impossible task for many HBC clients, meaning the burden of caring for HBC within the household is increased, as this task falls to another household member. Although it would be extremely expensive, additional water point sources for communities would alleviate the travel burden within the affected households.
- **Treat/disinfect the water points for communities:** The results of this assessment demonstrate that the majority of HBC client households are obtaining their water from shared sources. In addition, this water is not being regularly disinfected at the household level. Ideally, central water point sources for communities could be treated and/or disinfected. When this is not possible, there is a need for additional emphasis on point-of-use water treatment within the homes where the water is being used.
- **Capacity building:** Assist in capacity building to implement water and sanitation policies.

Integrating Water & Sanitation and HBC Programming Recommendations: Very clearly, this assessment demonstrates a need to better integrate watsan services within HBC programs. Specific recommendations for watsan services for home-based care clients include:

- **Community Mobilization:** Proper sanitation can decrease the frequency of diarrhoea. Yet, communities do not often demand sanitation or sanitary facilities like they do with water sources. There is a need to sensitize the community to advocate for safe water and work with donors and implementers to stress the importance of sanitation in conjunction with water development.
- **Additional community demonstrations:** Only 15% of households reported community hygiene demonstrations during the two months prior to the survey. This low level indicates that either there are not enough demonstrations occurring at the community level or that the HBC client households are unaware of these

demonstrations when they do occur. Thus, additional community demonstrations are needed, which include HBC client households as a target group.

- **Household visits by hygiene promoters:** With only 13% of HBC clients reporting a visit by a hygiene promoter in the previous two months, there is a clear need to scale-up these home visits.
- **Introduce new water collection technologies:** such as rainwater catchments and retention basins. For example, in the rainy season, collection of rain water can be promoted. It is cost and time efficient as it is done at the household level.
- **Introduce new water treatment options and technologies:** As deforestation emerged as an issue in the assessment sites, there may be a need to introduce additional water treatment options outside of boiling water, especially as 90% of those who had treated their water listed boiling as their method. If wood is hard to find in many areas, there may be a need to introduce additional treatment options, such as cheaper JIK, or to introduce alternative options, such as wood-burning stoves, which use less wood.
- **Education and Training:** The assessment results clearly demonstrate a lack of knowledge and understanding surrounding watsan issues. Knowledge and practices both need to be reinforced through increased education and training.
 - Provide community-based water treatment education and training, as well as personal hygiene promotion.
 - Provide household-level training on water treatment so that if households are forced to collect water from an unsafe source, people will still be able to drink the water after proper filtration and treatment
 - Focus on behaviour change methodologies for additional trainings. The assessment demonstrated that practices still lagged even when the knowledge was present. Knowledge-level trainings are important for many basic facts, but additional focus should also be on using effective behaviour change methodologies. These trainings should explore cultural beliefs that may prohibit safe water practices and explore how these beliefs can be transcended to incorporate the safest practices possible.
- **Training on contamination avoidance:** Provide training on handling domestic water in order to prevent contamination. Such training should be complimented with chlorination of drinking water collected from unprotected sources.
- **Enhanced training of HBCVs:** Include safe water collection, storage and treatment practices in HBCV training so that the volunteers know the best practices and can teach them to HBC clients as well
- **Enhanced tools in the HBC kits:** Provide bleach bottles in the HBC kits, as 2 drops of bleach per litre of water is known to make water microbiologically safe for drinking.

- **Promotion of hand washing facilities in the home:** With over half (56.7%) of HBC clients not having hand washing facilities at home, an opportunity to reduce infection is being missed. Introducing low-cost technologies near latrines or washing areas is needed.

CONCLUSION

This assessment lays the groundwork for integrating HIV&AIDS and watsan interventions in Malawi. This is the first known work of its kind to examine the current watsan situation of HBC clients in Malawi. There are very clearly explicit needs for this target population, which have yet to be met.

Numerous recommendations are provided here to guide future interventions that may follow this assessment. Recommendations from this study are generally applicable to many parts of Malawi and some surrounding southern African countries. However, certain technologies may need to be adapted based on varying terrain and available materials in an area.

In addition, these recommendations are based on the results of the assessment presented here. The sample here is relatively small and is not representative of PLHA throughout Malawi, as the sample here is already accessing HBC services through CRS and CADECOM. Other PLHA may be accessing different services through other HBC providers, and many PLHA may not be benefiting from HBC services at all.

While this assessment lays the groundwork for future interventions, there is also a need to more closely examine the impact that watsan interventions have on HBC clients and households. Certain HBC projects may wish to self-nominate to begin incorporating water and sanitation more whole-heartedly into their on-going activities. These projects could be established as pilot projects and closely monitored to determine the actual impact of water and sanitation interventions on HBC affected households.

The recommendations offered here are based on the findings of the assessment. However, additional work is needed to determine how best to advance many of these recommendations. This assessment focused explicitly on identifying the current watsan situation as it relates to HBC clients. An additional national assessment, which focused on existing and planned interventions in both sectors, would add to the knowledge base that is forming on this subject matter. A follow-on assessment that identified the major organizations involved in these sectors and their geographic focus would strengthen future intervention in this area. In addition, there is a need for a lead organizing body to carry this agenda forward.

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ANNEXES

ANNEX 1

Household Survey²

Informed Consent

➔ **IMPORTANT NOTE TO ENUMERATOR:** Please get consent BEFORE you start filling in the questionnaire

Moni, dzina langa ndine _____ ndipo ndimagwira ntchito ndi bungwe la _____ (PVO). Bungwe limeneli lili pakafukuku wofuna kudziwa momwe mabanja a m'dela lino amakhalila poganizira momwe amapezera madzi amd kukhala aukhondo wabwino. Nyumba yanu ndi imodzi mwa nyumba zomwe zasankhidwa mudela lino kuti mutenge nawo mbali pakafukufukuyu. Ine ndikukutsimikizilani kuti ndidasunga chininsi pazokambilana zathu makamaka zokhudza banja. Ndipo mukhale omasuka pazokambilana zathu chifukwa zomwe tikambilane pano zithandiza pokonza mapulani a zachitukuko chokhudza mabanja a m'dela lino kuphatikizapo banja lanu lino. Sindidziwa ngati muli omasuka kuti tipilile kukambilana?

Hello, my name is _____ I am working with _____ (PVO). Your household has been randomly chosen to participate in this study. We are trying to learn more about how families are coping with life in light of access to water and proper sanitation. The survey is a confidential exercise and your name will not be disclosed anywhere. Please feel free to answer these questions as they will help in future community development. Would you be willing to have a discussion with me?

If **NO**, check here and end interview.

If **YES**, check here to acknowledge that consent for respondent was given.

² Adapted from the Johns Hopkins University Bloomberg School of Public Health, Department of International Health, Water and Sanitation survey developed for the Safe Water Systems Project of the Islamic Republic of Afghanistan and Malawi's I-LIFE DAP baseline survey.

Household Identification

District (name): _____ CODE: |__|__|

Traditional Authority (name): _____ CODE: |__|__|

Group Village Headman (name) _____

Village name: _____ CODE: |__|__|

Questionnaire Number |__|__||__|__|

Date of interview D D M M Y Y Y Y
|__|__||__|__||__|__|__|__|

Sex of respondent: Female [] Male []

Enumerator (Name) _____

..... **To be completed after interview has been done**

Name of supervisor _____

Checked : _____ D D M M Y Y Y Y
|__|__||__|__||__|__|__|__|

Data entry clerk _____

Date of data entry _____

Head of household _____ Final total # in HH _____

Household Information

Identify primary caregiver for CI member of HH

Member ID	Mungandiize maina a anthu a m'banja lino? (Name of HH member) (write names)	Nanga zaka za anthu amenewa zili motani Age		Sex M = 01 F = 02	Pali ubale wotani pakati pa inu ndi anthu mwandiuza wa? Relation to Household Head [see code]	Mwa anthu omwe mwnditc hulilawa alipo omwe ali pabanja? (Marital status) Ask for those >12yrs [see code]	Literate Ask for those >5yrs 0=No; 1=Yes	Kodi ana omwe zaka zawo ndi zobzyola zisanu amapita kusukulu? If age >5 years is the person attending school? 0 = No 1 = Yes	Nanga sch analekela pati? (Education level (highest achieved) [see code]
		<= 5 years Write age in yrs Y Y	> 5 years Write age in yrs						
1		2	3	4	5	6	7	8	9
01									
02									
03									
04									
05									
06									
07									
08									
09									
10									

Marital Status ()	Education Level ()
01. HH Head	06. son or daughter
02. 1 st spouse	07. son/daughter in law
03. 2 nd spouse	08. grand son/daughter
04. 3 rd spouse	09. mother or father
05. Inherited wife	10. father/mother in law

Household Diarrhea in Past Week

HH member number	Diarrhoea in the past week		No. of days with diarrhea in past week	Blood Y / N		Diarrhoea in past 24 hours		Visited clinic for diarrhea	
	Yes	No		Yes	No	Yes	No	Yes	No

↓
 No more than 7 days per person
 "Ever" = 7 days
 "Sometimes" = 3 days

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP			
10	<p>What is the principal source of drinking water for members of your household?³ (CHECK ONE)</p> <p>If more than one is circled, use code 51</p>	<p>A(Rainy season) Protected tubewell or borehole 11 Unprotected tubewell or borehole 12 Protected dug well..... 13 Unprotected dug well 14 Spring 15 Surface Water.....41 Other _____ 88 (specify)</p> <p>Don't know.....99</p> <p>B(Dry season) Protected tubewell or borehole 11 Unprotected tubewell or borehole 12 Protected dug well..... 13 Unprotected dug well 14 Spring 15 Surface Water.....41 Other _____ 88 (specify)</p> <p>Don't know..... 99</p>				
11	Where is your principal source of drinking water located?	In dwelling 1 In yard/compound 2 Outside yard/plot/, shared private source 3 Outside yard/plot/, shared public source.. 4 Don't know..... 99				
12.	How long does it take to go to your principal water source, get water, and come back? (RECORD IN THREE NUMBERS ONLY)	MINUTES <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 30px; height: 30px;"></td> <td style="width: 30px; height: 30px;"></td> <td style="width: 30px; height: 30px;"></td> </tr> </table>				

Water Storage, Handling and Treatment

13.	Yesterday, how much water did you collect? Please show vessel(s).	Number:..... ____ Don't know..... 99	
14.	Container volumes (AFTER OBSERVING VESSEL(S), CIRCLE ALL THAT APPLY) If multiple sizes circled, use code 4	2.5 liters..... 1 5 liters 2 20 liters..... 3 Other: number of liters ____	

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
15.	<p>What is the primary vessel(s) you use for storing water? Ask to see the vessel(s).</p> <p>MATERIAL</p> <p>If multiple types circled, use largest</p> <p>Does the container have a cover ?</p>	<p>Clay jars 1</p> <p>Plastic containers 2</p> <p>Metal containers 3</p> <p>Other 88</p> <p>_____ (specify)</p> <p>Yes.....1</p> <p>No.....2</p>	
16.	<p>VOLUME of primary vessel(s)</p> <p>If multiple sizes circled, use largest</p>	<p>2.5 liters 1</p> <p>5 liters 2</p> <p>20 liters 3</p> <p>Other: number of liters ____</p>	
17.	<p>What types of neck do they have? (CONFIRM AND CIRCLE ALL THAT APPLY)</p> <p>If multiple responses, use lowest code number</p>	<p>Narrow necked 1</p> <p>Covered 2</p> <p>Open 3</p> <p>Other 88</p> <p>_____ (specify)</p>	
18.	<p>*How do you get water from the drinking water container?</p> <p>*For these questions, do not give the answers, let them answer.</p> <p>If 1 and 2 circled, use code 3</p>	<p>Pouring 1</p> <p>Dipping 2</p> <p>Both pouring and dipping 3</p> <p>Container has a spigot 4</p> <p>Other 88</p> <p>(specify)</p> <p>Don't know 99</p>	
19.	<p>Do you think the water you drink is safe directly from the source?</p>	<p>Yes 1</p> <p>No 2</p> <p>Don't know 99</p>	
20.	<p>In the past 2 weeks have you done anything to your household drinking water to make it safer?</p> <p>Note: people may still treat even if they believe water is safe</p>	<p>Yes 1</p> <p>No 2</p> <p>Don't know 99</p>	<p>→21</p> <p>→21</p>

No.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
21.	<p>In the past 24 hours, have you done anything to your household drinking water to make it safe?</p> <p>If 2 or 99 circled on #18, this should be blank</p>	<p>Yes 1 No 2 Don't know 99</p>	→21
22.	<p>What did you do to the water to make it safer to drink? Don't prompt here.</p> <p>(CIRCLE ALL THAT APPLY)</p> <p>If multiple responses, add new column(s)</p> <p>If 2 or 99 circled on #18, this should be blank</p>	<p>Boil 1 Bleach/chlorine (other than Chlorine) 2 Add Chlorine..... 3 Filter it through cloth..... 4 Water filter (ceramic, sand, composite) ... 5 Solar disinfection 6 Other _____ 88 (specify) Don't know _____ 99</p>	

Household hygiene practices

23.	<p>Do you have a bar of soap for hand washing in your household today?</p>	<p>Yes..... 1 No 2 Don't know 99</p>	
24.	<p>Have you used soap for handwashing during the past 24 hours?</p>	<p>Yes..... 1 No 2 Don't know 99</p>	
25.	<p>When you used soap during the past 24 hours, what did you use it for? If for washing hands is mentioned, probe what was the occasion, but do not read the answers. (DO NOT READ THE ANSWERS, ASK TO BE SPECIFIC, ENCOURAGE "WHAT ELSE" UNTIL NOTHING FURTHER IS MENTIONED AND CHECK ALL THAT APPLY)</p>	<p>Washing cloths 1 Washing my body 2 Washing my hands 3 Washing my children 4 Washing child's bottoms 5 Washing my children's hands..... 6 Washing hands after defecating 7 Washing hands after cleaning child 8 Washing hands before feeding children ... 9 Washing hands before preparing food ... 10 Washing hands before eating 11 Other _____ 88 (specify) Don't remember 96</p>	

32-	What type of latrine facility is available to this household? (CHECK ONE)	Type : Pit latrine 11 Pour-flush latrine 12 Other _____ 88 (specify) Don't know 99	
33.	Location of latrine facility (CIRCLE ONLY ONE) If multiple sites circled, use code 5	In dwelling1 In yard/compound2 Outside yard/compound, shared private facility3 Outside yard/compound, shared public facility.....4 Don't know99	
34.	State the condition in which the latrine is found.	Fecal matter present inside facility1 No fecal matter present.....2 Cannot assess.....8	
35.	Hand washing available in/by latrine facility	Yes.....1 No.....2	
36.	How many households share this latrine facility? How many people use this latrine?	_____ Households _____ people	

Hygiene Education

37	Are there any hygiene demonstrations/meetings available/that were conducted in the last two months.	Number: Don't know99	
38	Does this HH participate in hygiene meetings	Yes.....1 No2	
39	Have you ever been visited by hygiene promoters to this HH in the last two months.	Yes.....1 NO.....2 If yes No. visits/Month.....	
40	Mention the topics that were covered during the demonstration/visit/meetings	

41	Are there any pamphlets/visual aids in this house depicting hygiene promotion.	Yes.....1 No.....2 If yes, please ask to see them and record below what the cover.
42	What topics were of great interest to you?	List of topics. Give reasons for your answers
43	What topics were of least interest to you?	List of topics. Give reasons for your answer
44	What topics do you want to be.....	1.added? Give reasons 2.Repeated? Give reasons
45	Were there any changes in behavior that have arisen following meetings/visits/demonstrations?	Yes.....1 No.....2 If yes, mention the behavior.

HIV Related questions

Interviewer : Explain the following instruction to the respondent

The following set of questions are meant to assess your physical health assuming you being a chronically ill person, so therefore try to be as precise as possible.

46	Are you able to continue your normal activity?	Yes.....1 No2
47	Are you able to leave (walk around)your house on your own?	Yes.....1 No2

48	Do you need help for normal living?	Yes.....1 No2
49	Do you need help with washing?	Yes.....1 No2
50	Do you need help with dressing?	Yes.....1 No2
51	Do you need help with eating?	Yes.....1 No2
52	Do you need help with walking?	Yes.....1 No2
53	Do you need help when you want to use a toilet?	Yes.....1 No2

Illnesses – duration and frequency Find out if client has the following medical history.

Interviewer instruction : The following is a list of possible conditions that I would like to find out if you may have suffered in the course of your illness; this is a multiple response question. I will read out each condition and I expect you to tell me whether you suffered from such a condition or not and how many times.

Illness	Duration	Frequency
Headache		
Fever		
Chest pain		
Shortness of breath		
Cough		
SOB walking		
Stomach pains		
Poor appetite		
Lower limb pain		
Nausea or vomiting		
Problem swallowing		
Skin problems		
SOB doing nothing		
Thrush		
Previous shingles		
Other pain		
Itchy rash		
Genital ulcers		
Urethral discharge		
Mouth ulcers		

Home Based Care

Interviewer : Below are questions that are assessing the HBC services in the area.

How often does the HBC volunteer visit?	<i>List of possible responses.</i> Once a month.....1 Twice a month.....2 Once a week.....3 Twice a week.....4 Other(specify).....55
-----------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------

<p>What services does volunteer provide?</p>	<p><i>List of services:</i></p>
<p>Are these services beneficial to you?</p>	<p>Yes.....1 No2 (Please give reasons for your answer)</p>
<p>What other services would you like?</p>	<p><i>List of services:</i></p>

→end

ANNEX 2

Community HBC and Water/Sanitation Discussion Guide.

Script: We would like to find out from you your opinion on several issues regarding water and sanitation on home based care clients in your community .We would also like to ascertain your involvement in the field of home-based care and water and sanitation.

This guide is designed for volunteers, staff, community members, and caregivers involved with water/sanitation and HIV/AIDS implementation.

WATER

How many safe water sources are serving the community? What is lacking?

Does everyone including the chronically ill have access to safe water sources? What are the major barriers to accessing potable water?

What are the coping mechanisms put in place? (what happens when you experience break down with your current water source or any problem)

SANITATION/HYGIENE

What is the coverage of sanitation facilities in the community? What is lacking?

Does everyone including the chronically ill have access to sanitation facilities? What are the major barriers to accessing/owning sanitation facilities.

What are your strategies for managing good sanitation in the absence of sanitation facilities(coping mechanisms in place?)

Do you have Hygiene/Sanitation education sessions conducted in this area? If so, what are the topics? What is the frequency? Who gives the sessions? And who is the target?

HEALTH and HIV

Outline the composition of HBC Kit? What is your opinion on availability of supplies for kit?

What type of training to HBC volunteers and other community members receive specific to HIV and water/sanitation?

What is the situation like in terms of access to ARVs in this community? Explain what the major barriers to accessing health facilities are?

How far away are the health facilities? Can you please explain the major barriers to accessing health facilities?

How do people manage to stay healthy in light barriers to accessing health (Coping mechanisms in place?)

Do all HBC clients get reached by the HBC system of care? Is the all done by volunteers or persons in the home?

Does this community keep records of disease or illness in a systemic way? Are they reported to health clinic?

In your opinion what do you see as the Most Significant Change (Impact) of services, or lack thereof, on patient care?

ANNEX 3

Government HBC and Water/Sanitation Discussion Guide

This guide is designed for speaking with both district and national officials involved with water/sanitation and HIV/AIDS policies.

Need to ask about identified gaps, how identified and plans to address specifically regarding water and sanitation. This survey needs to see how the situation is currently perceived by government but more importantly where they feel they are able to respond given the concomitant issues of high HIV prevalence, community HBC and current wat/san systems.

WATER

What indicators are currently collected regarding water and sanitation by the national aids council.

Do you have a policy regarding water? How about regarding Water and HIV/AIDS?

What does the policy document address regarding access to water sources? Any major barriers you envisage to accessing water by the communities or some minorities or some sections of the community?

Is there any special section within the Policies regarding access to water?

What do you think is needed to improve HBC? Any additional water interventions?

Do you have HIV/AIDS mainstreaming in water development?

SANITATION

Do you have a policy regarding sanitation? How about regarding Sanitation and HIV/AIDS?

What does the policy address regarding access to sanitation services? Any major barriers you envisage to accessing sanitation services?

What do you think is needed? What should be done here to improve HBC?

Do you have HIV/AIDS mainstreaming in sanitation projects? What are they?

HEALTH and HIV

To be asked to representatives of MoHP at district level or National AIDS Commission

Are there any policy guidelines to the access of ARVs? What are the major barriers to accessing ARVs? What about the stocks levels of ARVs vis-a-vis the number of people with HIV?

What are the major barriers to accessing health facilities? What are the stock levels of drugs in health facilities? What kind of medicines are available, antibiotics, anti-fungals?

Do you have a surveillance system track incidence of diarrheal diseases (bloody), typhoid, cholera, bilharzias? Please explain.

What is the coverage of HBC clients? (Are we covering all HIV/AIDS patients with HBC services) What are the services being offered for HBC clients?

What has been the impact of HBC services, or lack thereof, on patient care?