

INTEGRATING SANITATION



INTO SERVICES FOR PEOPLE LIVING WITH HIV AND AIDS

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USAID
FROM THE AMERICAN PEOPLE

INTEGRATING SANITATION INTO THE BASIC CARE PACKAGE

C-Change is a USAID-funded project, implemented by FHI 360, to improve the effectiveness and sustainability of social and behavior change communication (SBCC) across development areas, including family planning and reproductive health, HIV prevention, malaria prevention, other health areas, civil society, and democracy and governance. C-Change works with regional and local partners to strengthen their capacity to implement effective SBCC programs. For information, visit www.c-changeproject.org.

WASHplus, a five-year (2010–2015) cooperative agreement managed by FHI 360 with CARE and Winrock International as core partners, is funded through USAID's Bureau for Global Health. WASHplus creates supportive environments for healthy households and communities by delivering interventions that lead to improvements in water, sanitation, hygiene (WASH) and indoor air pollution (IAP). WASHplus uses at-scale as well as integrated programming approaches to reduce diarrheal diseases and acute respiratory infections, the two top killers of children under five years of age globally. For information, visit www.washplus.org or email: contact@washplus.org.

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Acronyms

ART	Antiretroviral Therapies
BCP	Basic Care Package
CLTS	Community-Led Total Sanitation
COP	Country Operational Plan
HBC	Home-Based Care
HIP	Hygiene Improvement Project
OVC	Orphans and Vulnerable Children
PEPFAR	President's Emergency Plan for AIDS Relief
PLHIV	People Living with HIV
PMTCT	Preventing Mother-to-Child Transmission
POU	Point of Use
PWP	Prevention with Positives
WASH	Water, Sanitation, and Hygiene
WSP	Water and Sanitation Program

Be a Champion!

TIPS FOR EASILY INTEGRATING SANITATION INTO PEPFAR PROGRAMMING

The new PEPFAR (President's Emergency Plan for AIDS Relief) strategy calls for a comprehensive, multisectoral approach that expands access to prevention, care, and treatment in ways that promote sustainable country programs. The U.S. government's HIV approach now must respond to a diverse array of global health challenges requiring an integrated response with other health and development programs.

Investments in specific health programs have yielded important results, and interest has expanded in strengthening health systems to reduce mortality and morbidity, especially in maternal and child health programs.

Water, sanitation, and hygiene (WASH) activities and programs can be included in this integration framework. Outlined below are some quick, easy ways to integrate sanitation into existing PEPFAR¹ programs along with the rationale for doing so. In addition, this document provides some examples of how countries have integrated sanitation into their HIV programming. Guidelines and tools are available as annexes.

1. Review the basic care package (sometimes called the home care kit) in your country. Ensure the regular inclusion and adequate supply of soap and consider inclusion of other enabling products like a potty or washable menstrual pads/menstrual management kit. Include promotional reminder materials for households and facilities that focus specifically on feasible sanitation and hand washing options. (See materials in the annexes.)
2. Incorporate questions on sanitation and hand washing into assessments and visits to field programs. Assessment questions can be adapted from those in Annex 3.

As stated in the 2009 PEPFAR strategy, PEPFAR now has the opportunity to strategically plan programs with greater consideration for the larger health systems impact. PEPFAR holds great potential for better across-the-board integration with broader health systems and development assistance, such as food, nutrition, and economic strengthening activities.

¹ The President's Emergency Plan for AIDS Relief is a five year, \$15 billion dollar, multifaceted approach to combating disease that works with international, national, and local leaders worldwide to promote integrated prevention, treatment, and care programs for PLHIV.

INTEGRATING SANITATION INTO THE BASIC CARE PACKAGE

3. Build sanitation and hand washing activities into new and existing Orphans and Vulnerable Children (OVC), Home-Based Care (HBC), Feed the Future, Global Health Initiative, and other programs. Language to use in RFP/RFA solicitations can be adapted from the Country Operational Plan (COP) Toolkit developed by WASHplus for USAID Missions. (http://www.washplus.org/sites/default/files/COP_2012_Toolkit_Final.pdf). Include components to train outreach workers from government and NGO HIV programs.
4. Strengthen the evidence base for integrating various WASH activities into HIV programming by building a solid program evaluation component into PEPFAR-funded activities. Selected indicators for measuring WASH improvements are outlined in the above linked toolkit (#3).
5. Collect success stories of programming that support sanitation activities within PEPFAR. Circulate these stories widely to promote replication within other programs.
6. Ensure national HIV policy documents highlight sanitation and hand washing. Language can be adapted from the materials in Annex 5 or drawn directly from the USAID COP Toolkit developed by WASHplus for USAID Missions.

This publication has been designed with several key audiences in mind. Below are annexes and links to key resources for some of these audiences.

Audience	Annex	Description
USAID and CDC staff/ PEPFAR managers	4 3 6 <i>link</i>	WASH programming language for RFAs WASH assessment questions Infections affecting people living with HIV and AIDS Advocacy PowerPoint http://www.washplus.org/sites/default/files/sanitation-pepfar.pptx
Government/Ministry of Health staff and planners	5 1 2 <i>link</i>	WASH programming language Job aids Latrine construction/modification Advocacy PowerPoint (<i>see link above</i>)
Country program managers	1 2 3 <i>link</i>	Job aids Latrine construction/modification WASH assessment questions Advocacy PowerPoint (<i>see link above</i>)
Health workers (community and facility)	1	Job aids

Overview

Globally more than 33 million people now live with HIV and AIDS (UNAIDS 2009). This pandemic has dramatically changed patterns of disease in developing countries. In addition, previously rare “opportunistic” diseases have become more common. High rates of morbidity and mortality from endemic conditions such as tuberculosis (TB), diarrheal diseases, and wasting syndromes, formerly confined to the elderly and malnourished, are now common among young and middle-aged people in many developing countries.

With increasing availability of antiretroviral therapies (ART), more people live with HIV and AIDS and require comprehensive care, treatment, and preventative services to help boost their resilience to the endemic conditions in their environment and help them live longer and healthier lives. Recognizing the importance of safe water, sanitation, and hygiene promotion in protecting and caring for PLHIV, the trend is to integrate WASH improvement into HIV and AIDS policies and programs. As part of its palliative care approach,² PEPFAR has developed a preventive care package that summarizes evidence-based interventions for PLHIV and their families in resource-poor settings. The package identifies three key hygiene improvement practices—safe drinking water, washing hands with soap, and safe handling and disposal of feces—and suggests integrating these into all HIV and AIDS programs.

² “Palliative care aims to achieve optimal quality of life for PLHIV and their families and minimize suffering through mobilizing clinical, psychological, spiritual, and social care services throughout the entire course of HIV infection. Palliative care is focused on the patient and family, promoting the active anticipation, prevention, and treatment of pain, symptoms, and suffering from the onset of HIV diagnosis through death and bereavement.” (HIV and AIDS Palliative Care Guidance #1, U.S. Dept. of State, Office of the Global AIDS Coordinator, 2006.)
<http://www.state.gov/s/gac/partners/guide>.

Why WASH Matters

UNDERSTANDING THE HIV CONTEXT³

Many life-threatening opportunistic infections are caused by exposure to unsafe drinking water, inadequate sanitation, and poor hygiene. Diarrhea, a very common symptom that can occur throughout the course of HIV and AIDS, affects 90 percent of PLHIV, and results in significant morbidity and mortality, especially in HIV-positive children. A study of HIV-positive infants in the Democratic Republic of Congo found that the risk of dying from diarrhea is 11 times greater than for infants who were HIV-negative (Thea et al. 1993). Another study found that although common diarrhea-causing enteric pathogens are present in many babies, HIV-positive babies with acute diarrhea were six times more likely to develop persistent diarrhea. HIV-negative babies born to HIV-positive mothers also had a 3.5 times greater risk of developing recurrent bouts of diarrhea than babies born to HIV-negative mothers (Keuch et al. 1992).

Diarrheal illness in PLHIV can interfere with and compromise the absorption of antiretroviral drugs, which contributes to developing antiretroviral-resistant HIV strains. Available evidence suggests that diarrheal disease also reduces the absorption of essential

³ The information in these sections was adapted from: *Programming Guidance for Integrating Water, Sanitation and Hygiene Improvement into HIV/AIDS Programs*, USAID Hygiene Improvement Project (HIP), 2008, <http://www.hip.watsan.net/page/2479> and other HIP resources www.watsan.net.

CASE STUDY: KENYA INTEGRATES WASH INTO HEALTH TRAINING

Members of a support group formed by Kenyan widows decided to help each other build household latrines. They pooled their resources and started with the household most in need. It would take several weeks for them to dig a large enough pit in the compound. Once the digging was complete, they purchased materials to support the pit structure and constructed the latrine with a superstructure around the pit for privacy. Though the funds they accessed were not from the U.S. government, PEPFAR funding could support an activity such as this.

USAID has been funding other WASH efforts in Kenyan communities, including a WASH-HIV integration project to train provincial and district health and AIDS officers. Through the government's Community Strategy and community health system, the provinces and districts are reaching out to partners to assist in funding community health worker WASH training to help HIV-affected households, and indeed all families, improve their WASH practices. This communitywide effort helps to ensure that those participating are not stigmatized because of their HIV status.

--USAID/C CHANGE Project, 2012

nutrients, further exacerbating the impact of HIV and AIDS on both children and adults (Bushen et al 2004). Although the evidence base is just building, health practitioners have long made this connection between malnutrition and HIV. Anecdotally, OVC are often identified through their poor nutritional status, underscoring the pervasiveness of waterborne diseases and their nutritional impact on vulnerable children.

A significant proportion of diarrheal diseases could be prevented by integrating WASH approaches (e.g., sanitation promotion, treatment and safe storage of drinking water, and hand washing with soap) into existing HIV and AIDS programs.

“Diarrhea” is many things, and some diarrheagenic pathogens may cause other serious outcomes (e.g., campylobacteriosis can lead to Guillian-Barré syndrome). In addition to diarrhea, countless other diseases and opportunistic infections, including toxoplasmosis, parasites, non-TB mycobacterial infection, trachoma, Rotavirus, etc.) can be prevented or minimized with safe water, sanitation, and hygiene promotion. (See Annex 6 for a more detailed chart.)

WASH interventions are central to PEPFAR’s adult and pediatric basic care packages (BCP). A strong evidence base supports behavior change activities, reinforcement, and follow-up, coupled with product distribution, to achieve a positive health impact.

A key PEPFAR objective is to reduce HIV-related morbidity and mortality rates and to slow the progression of HIV disease in affected communities. It is necessary to identify and implement interventions targeted at the primary causes of HIV-related illness and death. Using antiretroviral therapy is one approach to slowing disease progression in PLHIV. But how often are life-saving medicines washed down with contaminated water that debilitates and kills; or nutritious food supplements served with unhygienic food in a feces-filled environment; or children and PLHIV cared for with dirty hands? Promoting a feces-free environment through safe water, hygiene, and sanitation interventions that prevent diarrhea and other diseases is critical to reduce HIV-related morbidity and mortality. The positive health outcomes also benefit families of PLHIV so they are better able to care for the sick and engage in schooling and income-generating activities.

ADVOCATING FOR SAFE WASH PRACTICES

Safe Disposal of Feces

Safe feces handling and disposal has been shown to reduce the risk of diarrheal disease by 30 percent or more (Fewtrell et al. 2005). Research in Uganda indicated that the presence of a latrine in the family compound was associated with fewer episodes of diarrhea, fewer days with diarrhea, and fewer days of work or school lost due to diarrhea in PLHIV (Lule et al. 2005). When people lack access to a range of basic sanitation options, simple efforts, like safe handling and disposal of feces, can have significant positive health implications. An average person produces about 150 grams of feces per day, and open defecation around the world results in enormous volumes of human excreta deposited in and around communities, creating an infectious disease environment for HIV-affected households (UN 2008). Moreover, PLHIV are more susceptible to contracting diarrhea when fecal matter is present in the environment. Additionally, in the case of chronic diarrhea, maintaining a feces-free home can be difficult. New approaches and renewed vigilance may be required to keep the home clean. For example, promoting portable potties/buckets, developing washable mats, or placing a cloth that can easily be washed over straw beds will help reduce exposure to pathogens from diarrhea.

All members of a household should handle and dispose of feces safely. This means encouraging all family members over the age of five to defecate in a hygienic latrine,⁴ supporting young children (three to five years) to defecate in a hygienic latrine, potty, or fixed place, and training caregivers to dispose of very young children's feces hygienically in a latrine. PLHIV who do not have indoor plumbing and are too sick or too weak to use a latrine may need special equipment or supports. For example, appropriate bedside potties may help those who are too sick to go to a latrine, and squatting poles or stools may support a weak person using a conventional latrine. These



A home-based care client demonstrates how to disinfect water and store it in a safe container.

⁴Improved sanitation is a term used to describe access to adequate excreta disposal, generally in the form of a latrine or a sewer system, rather than open fields or open water sources. A hygienic latrine is a clean, well-maintained toilet that will not spread microbes. Hygienic latrines include pit, ventilated improved pit, slab, and water seal latrines, pour flush, and double composting toilets. For other definitions see Bateman et al. 2002, p. 44 and WHO/UNICEF JMP 2004, p. 4.

technologies and approaches have been introduced by USAID-funded activities in Ethiopia, Kenya, Tanzania, and Uganda.

Additionally all health care facilities should have a sufficient number of clean, functional latrines for patients/caregivers and health care providers. In health care facilities latrines should be: 1) carefully located and separated for males and females with a sign post; 2) accessible in well-lit pathways and latrine interiors; 3) lockable by the user to protect people while in use; and 4) properly ventilated. Toilet paper should be available in latrines/toilets. If anal cleansing is common in the culture, then water and a container should be available inside the toilet. Hand washing points (e.g., tippy tap) and soap (or wood ash as an alternative) should be available near the latrine/toilet. Hand washing after using the latrine/toilet should be actively encouraged through health education and print materials, including a poster or job aids on the wall.

Optimal Hand Washing

Hand washing prevents diarrhea effectively when done properly and at critical times. A meta-analysis of hand washing studies conducted in developing countries concluded that hand washing can reduce the risk of diarrhea in the general population by 42 percent to 44 percent (Curtis et al. 2003). Hands should be washed before preparing food, before feeding a child or eating, after defecating, after cleaning a baby or changing a diaper, and after cleaning up the feces of a person who is chronically ill. Proper technique includes using soap, or an effective substitute such as ash, rubbing hands together at least three times, and then drying them with a clean cloth or by air. Proper hand washing at critical times will help prolong and improve the quality of life of PLHIV and will help ensure the health and safety of family members and caregivers. A study in Uganda demonstrated that the presence of soap in the house was associated with fewer days with diarrhea (Lule et al. 2005), inferring that washing hands reduces diarrhea.

At a health facility hands are a main pathway for germ transmission and hand hygiene is the key important practice to prevent transmission of harmful germs and to prevent health care-associated infections in clinics. Health care workers, caregivers, or any person involved in patient care need to encourage and practice hand hygiene. WHO recommends five critical times to wash hands in clinical settings: 1) before patient contact; 2) before an aseptic task; 3) after body fluid exposure; 4) after patient contact; 5) after contact with patient surroundings.

Treatment and Safe Storage of Water in the Household and in the Health Facility

Treatment and safe storage of drinking water at the point of use (POU) has been shown to reduce the risk of diarrheal disease by 30 percent to 40 percent (USAID 2004). The Uganda study mentioned above showed that the use of a simple, home-based safe water system consisting of a chlorine solution to disinfect⁵ water and storage in a container with a narrow mouth, lid, and a spigot reduced the frequency (by over 30 percent) and severity of diarrhea in PLHIV (Lule et al. 2005). Safe water in combination with a locally available antibiotic prophylaxis (cotrimoxazole) reduced diarrhea episodes by 67 percent. Evidence is now conclusive that simple, low-cost strategies for treating and safely storing water at the household level can greatly improve the microbial quality of water and result in diarrheal disease morbidity reductions comparable to those achieved by hand washing and safe feces handling and disposal (Sobsey 2002).

In health care facilities water is essential to normal daily functions. Used for drinking and in food preparation, cleaning, and laundry service, water can be easily contaminated with harmful germs, causing outbreaks of diarrhea and other serious diseases particularly among PLHIV. In resource-limited countries, health care facility water supply is often unreliable due to lack of financial and infrastructural resources, and limited capacity of the municipal water authority to supply water continuously. In some lower level health facilities piped water may not be available, and unhygienic handling during storage and serving at the point-of-use can re-contaminate treated water. Therefore, treating and safely storing drinking water is critical in health facilities as well as in homes.

An advocacy presentation on this material is found in Annex 8.

An annotated bibliography of studies comprising the evidence base is presented in Annex 7.

⁵ Disinfection is a water treatment method that inactivates bacteria in the water. Chemical disinfection provides a residual substance that continues to inactivate bacteria introduced later. Coagulation and flocculation are chemical processes for removing dirt and some microbes from water. Flocculation is adding substances to water that cause suspended particles (contaminants) to fall to the bottom of the container for removal. Filtration is passing water through filters made of ceramic or layers of sand to remove contaminants, and certain chemicals, tastes, and odors, etc. If water is very murky, water can be strained (pouring water through a piece of fine, clean cloth) before being filtered.

How

INCORPORATING WASH INTO THE BASIC CARE PACKAGE

Since PEPFAR began, different WASH-related products have been introduced and included in the BCP being distributed in many countries.

The BCP is an easy-to-use, patient-managed system that includes HIV prevention, care, and treatment products and information for PLHIV. The content of the package may differ in different countries, but common items include: two insecticide-treated mosquito nets, sodium hypochlorite (diluted bleach) solution to treat drinking water, a filter cloth for water, oral rehydration salts, and condoms. The BCP also includes information on accessing HIV counseling and testing services and using opportunistic infection prophylaxis (PSI 2010). Special HBC kits may also include items like plastic sheets and gloves.

Population Services International developed a home care kit in collaboration with USAID and the Centers for Disease Control and Prevention with PEPFAR funding. Implementers complement distribution with an information campaign targeted at HIV service providers and clients.

At present, safe water is an integral part of this home care kit. Despite the evidence base reviewed above, hand washing is mentioned but not emphasized, and references and products related to sanitation and safe feces disposal are virtually nonexistent.

Safe Drinking Water

Access to safe drinking water has been given particular attention within HIV programming and specifically within the BCP and/or Prevention with Positives (PWP) programs. Indeed, most basic care packages include bottles of hypochlorite solution (often under the WaterGuard brand or other local-language branding) to treat drinking water and sometimes a water storage container that has a narrow neck, cover, and a tap. This is a critical component of the package since drinking untreated water to take antiretroviral medicines can itself cause diarrhea that further debilitates someone living with HIV.



Placing a tippy tap outside of a latrine encourages hand washing at a critical juncture.

Promotional Hand Washing Materials

Most BCPs contain some information on the importance of hand washing, but the documentation is usually vague and does not give specific instructions about the critical times to wash hands. Soap is sometimes, but generally not, included in the BCP and/or PWP programs; it is often unavailable and not distributed regularly. Perhaps the most notable exclusions in the hand washing area are promoting the installation and use of a fixed hand washing station at key places—the bedside of bedbound PLHIV, outside latrines, in clinic examination rooms, and near food preparation areas—and providing guidance on how to build and install these hand washing stations. Tippy taps, simple water saving devices with a spout of some kind, enable proper hand washing and address the common barriers of no running water and limited availability of water.



A home-based care worker demonstrates simple modifications to make a latrine more accessible for a weak or disabled family member.

Sanitation and Safe Feces Disposal

As mentioned above, the entire subject of safe feces handling and disposal is, for the most part, absent from the BCP and/or PWP programs despite the fact that most households would benefit from simple sanitation improvements.

Where

OPPORTUNITIES FOR WASH/PEPFAR INTEGRATION

Critical opportunities abound for integrating safe water, sanitation, and hygiene into the full range of HIV focal areas. Some of these are outlined below, and two-page fact sheets are available on most of these topics.

(<http://www.pepfar.net/> for USG only and <http://www.washplus.org/sites/default/files/wash-cop2012.pdf>). Tools in the annex support integration into these topical areas, including Annex 1: Job Aids for Sanitation, Safe Disposal of Feces, & Hand Washing and Annex 2: How to Build and Modify Latrines. The WASH Integration Toolkit also includes a range of resources and capacity building materials. http://www.washplus.org/sites/default/files/COP_2012_Toolkit_Final.pdf

Home-Based Care (Basic Care Package)

The USAID/Hygiene Improvement Project (HIP) developed guidance and training materials for HBC workers in Ethiopia and Uganda. In Kenya, Mission-funded activities are bringing WASH and HIV integration into the country's Community Strategy with the ultimate intention to train

community health workers, many of whom are also HBC workers. A key addition to these materials is the importance of handling menstrual blood to prevent HIV transmission.

Facility-Based Care

At the health systems level USAID/AIDSTAR-One has a training resource that addresses WASH issues at health facilities to improve the quality of life of PLHIV. This comprehensive, three- to four-day curriculum builds the capacity of individual health care providers to adopt WASH practices and guides program planners and administrators to develop facilitywide WASH approaches. This work complements the BCP, which more specifically focuses on home care. http://www.aidstar-one.com/focus_areas/care_and_support/WASH

Prevention of Mother-to-Child Transmission (PMTCT) is an area of special focus in the PEPFAR guidance since reaching women to prevent HIV infection has a “triple life-saving benefit: saving the life of the mother, preventing HIV transmission to the baby, and preventing orphanhood.” Using existing maternal, neonatal, and child health platforms is a key strategy in PMTCT.

Critical WASH inputs can help USAID achieve its objectives related to PMTCT.

- Use treated water in weaning foods
- Train health workers and community health workers to negotiate improved WASH practices with women and families
- Promote improved sanitation and hygiene in antenatal care

Orphans and Vulnerable Children

Taking a holistic approach to hygiene is essential to reducing the infectious disease burden experienced by OVC. The combination of improving water treatment and handling, safe feces handling and disposal, personal hygiene (OVC and caregiver hygiene and cleanliness), food hygiene (safe cooking, mixing, storing, and disposing of food), and ensuring a hygienic environment where OVC spend time (schools, daycare, and homes) will effectively reduce WASH-related diseases.

Implementing WASH-friendly practices at early childhood development centers could significantly reduce diarrheal morbidity in OVC, increasing the chance that nutrients and antiretrovirals are absorbed. Equally effective is support for establishing WASH-friendly schools where high numbers of OVC study. This would include developing standards for centers; supporting model demonstration centers; including institutional water-saving tippy taps when no running water exists; and promoting

hand washing, sanitation alternatives, and safe water handling and treatment.

Hygiene education can be targeted to teachers, family members, caregivers, and volunteers involved in OVC. Hand washing at critical times, with soap and proper technique, is perhaps the most cost-effective and achievable measure to be integrated across all OVC programs, together with basic food hygiene where food supplementation is incorporated into programming.

Experience shows that children can act as potential change agents within their homes and communities through their knowledge and use of treated and safely stored drinking water, sanitation, and hygiene practices learned in daycare and school.

Nutrition

As mentioned previously, the links among WASH, diarrhea, and undernutrition are well established. A vicious cycle exists between diarrhea and undernutrition: children with diarrhea eat less and are less able to absorb the nutrients from their food; malnourished children are more susceptible to diarrhea when exposed to fecal material from their environment. Logically, this holds true for children with HIV and presumably would be exacerbated, though no studies have yet documented this for children with HIV. Children who are HIV+, as well as those who are HIV negative but cared for by HIV + mothers are at greater risk of poor nutritional status and health which can be caused or aggravated by enteric infection (Filteau 2009).

WASH should be systematically integrated into national nutrition guidance, nutrition assessments and supportive assessment tools, and nutrition counseling.

Counseling and Testing

Clients are tested and receive their HIV results in counseling and testing centers. Along with advice and suggestions related to nutrition, routine counseling for clients should include information on improved WASH practices and suggestions for implementing them.

What to Do

EXPLORING POSSIBLE SANITATION PROGRAMMING WITHIN PEPFAR

Although PEPFAR has traditionally been unable to fund the construction of simple, on-site waste disposal systems like latrines, PEPFAR programs can promote using and upgrading existing latrines and wrap-around support for latrine construction for clients and family members who are mobile and able to access latrines. Nothing in the PEPFAR guidance actually prohibits funding labor or materials for latrine construction. Programs should also consider safe feces handling and disposal methods for infants, young children, and incontinent adults who are unable to control the passage of stool and/or easily access a latrine.

Latrine Construction

Some programs have used PEPFAR funding to purchase materials for latrine construction.

Upgrade Hand Washing Materials

Though seemingly a simple act, hand washing technique is notoriously inadequate throughout much of the world. At best, improper hand washing reduces risk of infection; at its worst, hands can actually be coated with more disease-causing germs if dipped in a bowl of used water to rinse. Culture often dictates when hands are washed, but common practice rarely includes all the critical times for hand washing—after defecation or cleaning infant feces; before cooking, eating, and feeding or breastfeeding; and before and after caring for someone who is sick.

The current available information included in the BCP and/or PWP programs does not discuss HOW to wash hands and WHEN to wash hands. Materials included in the annex of this document provide counseling cards/job aids to help BCP distributors, health care providers, and community health workers discuss with families the proper technique and the critical times to wash hands to prevent diarrheal disease.



For PLHIV who have difficulties accessing latrines, a potty, like the one created by a home-based care worker, can significantly improve household hygiene.

Information on Tippy Taps

WASH-HIV integration programs can also promote tippy taps, simple, water-saving handwashing station with a flowing “tap” that can be made with minimal cost and placed in key areas where hand washing is critical, such as outside the latrine or next to the bed of a bedbound person.

Best practice in WASH improvement suggests that inextricably linking hand washing with sanitation increases uptake. A hand washing station outside of latrines not only facilitates hand washing after defecation, it serves as a reminder to wash.

While a few countries have experimented with commercial hand washing stations, such as the Happy Tap in Vietnam and the *Super Jaboncín* in Peru, tippy taps are essentially a do-it-yourself operation requiring a few items, such as a plastic bottle, readily available in most communities for little or no cost. Therefore, encouraging hand washing through the use of tippy taps is primarily a promotional/ educational endeavor, not an actual product giveaway.

Sanitation Access

Although latrines are sometimes available, in many cases they are not; and if they are, they are not used or properly maintained. Yet proper sanitation is a key factor in containing feces and thus controlling waterborne pathogens and maintaining a safe drinking water supply and a hygienic/clean environment. Programs can promote different types of activities to help families improve the safe management of feces, whatever the context. Some activities fall squarely under the PEPFAR mandate, some activities cost little or nothing to implement, and others can be partially covered with PEPFAR funds.

Identify and Promote Sanitary Options for

Defecation. Ending open defecation is a key factor in reducing feces from the environment. Community-led total sanitation (CLTS) programs have been sponsored by numerous organizations, including UNICEF and Plan International. These encourage entire villages to renounce the practice of open defecation and provide incentives for communities to become open-defecation free. While PEPFAR funding might not be used to sponsor CLTS initiatives, funding could be used to build on existing programming or to develop and disseminate materials to promote inclusive alternatives to open defecation for PLHIV. In Kenya, PEPFAR funding has been used to develop WASH-HIV integration training for community health workers.



Poles provide needed support to a weakened household member who is mobile enough to access the latrine.

Promote Inclusive, Patient-Friendly Latrines in the Household. Walking across uneven terrain and squatting are actions that can challenge weak and elderly people and may reduce PLHIV's ability to use the latrine. Yet, several simple solutions are available to make latrines more accessible. PEPFAR funding can be used to **develop materials** and to **train facility or HBC workers** to promote changes to latrine structures. The box on the next page contains a list of actions household members can take to make it easier for weak household members to use the latrine.

Promote Construction of Improved Pit Latrines at the Household Level. Simple latrine technologies such as the EcoSan latrine allow households to easily construct a safe, shallow latrine, with the added benefit of producing fertilizer for growing crops for dietary diversity or income generation.

Coordination with health extension workers or other community resources already engaged in promoting CLTS and ending open defecation can facilitate latrine construction, including rallying of labor to help dig the pit and build the superstructure. These approaches help to reduce stigma because of the communitywide focus on sanitation.

Improve WASH Practices at the Facility Level. Many practices identified above can be implemented at the health care facility. Under a health systems strengthening umbrella, WASH training is integrated into preservice training for health professionals; this can greatly improve quality of life of PLHIV and others visiting health clinics. As more health care workers are trained in basic WASH practices, the focus should be to identify easy and fast solutions to improve WASH practices at the health facility.

MAKING LATRINES ACCESSIBLE

- Ensure that the toilets or latrines and the entrance are wide enough to accommodate a person with a walking stick, or allow a caretaker to enter the latrine to assist unstable users.
- Recommend/provide alternative technologies such as installing poles or strengthening venting poles to serve as support; installing ropes, bars, or handrails; providing seats/stools and other devices; or constructing a ramp for easy access. (A photo catalog of options, as well as individual “how to” instructions, are available in the annexes.)
- Design latrines that use natural light and have adequate ventilation.
- Avoid stairs to latrines. If elevated, use gradually sloped ramps, preferably of cement or a stable plank, or packed dirt if other materials are not available.
- Identify and promote appropriate options for feces management when mobility is limited, such as commodes, potties (made of plastic or locally available materials), and squat pots. (Individual “how to” instructions are available in the annexes.)
- Empty potties into the latrine or bury the human waste.
- Provide a hand washing facility with soap or soap substitute (ash) near the latrine.

Possible Monitoring Indicators to Use for Sanitation

First collect data at the household level, then calculate as percentage of the total number of targeted households and/or facilities in the community.

Household Level Indicators

1. Presence of latrine in compound or shared between two compounds—none, unimproved (no slab, no pit, bucket), improved (washable platform, superstructure, covered pit, 5 meters away from house)
2. % of latrines in targeted households that are modified to address HIV/mobility issues (stools, grip pole/rope, double chamber for larger latrine, etc.)
3. % of households that put children's feces into a latrine
4. % of targeted households with presence of commode or bedpan
5. % of targeted facilities using a water saving device , e.g., tippy tap

Facility Level Indicators

1. Presence of latrines in facilities—none, unimproved (no slab, no pit, bucket), improved (washable platform, superstructure, covered pit, 5 meters away from facility/house)
2. % of latrines in targeted facilities that are modified to address HIV/mobility issues (stools, grip pole/rope, double chamber for larger latrine, etc.)
3. % of targeted facilities with gloves or bags used as gloves to protect caretakers from HIV exposure and maintain hygiene
4. % of targeted facilities with running water
5. % of targeted facilities using a water saving device, e.g., tippy tap

Sanitation Commodities to Include in BCP and/or PWP Programs

Consider including commodities in the BCP that support safe disposal and handling of feces in HIV-affected homes. These commodities include:

- Voucher for sanitation platforms (SanPlats) for latrines (can be produced at low cost by local masons)
- Rubber or mackintosh sheets to protect linen, mattresses, and skin
- Potties, bedpan, and/or commode (bedside structure) to assist clients who are unable to get to a latrine or toilet (can be created with local materials—for both infants and adults)
- Clean cloth, nappies, or diapers for incontinent clients (infants and adults)
- Gloves for safe handling of feces and body fluids
- Soap
- Hand washing stations (with soap)—can create a tippy tap
- Promotional materials such as how and when to hand wash, how to build a tippy tap, how to make a bedpan, install support ropes and poles, etc.

CASE STUDY: A TIPPY TAP REVOLUTION

Peeking through the bushes in the corner of the compound, a water bottle fitted with a straw hangs from a tree next to a latrine. “We use this to wash our hands. When we leave the latrine it reminds us to wash our hands,” said Fantaye Dessie, 36, an HIV-positive resident of the compound.



Tippy taps, water saving hand washing devices, were not used in communities in Bahir Dar, Ethiopia. But after WASH training from the USAID Hygiene Improvement Project, outreach workers learned how to make tippy taps and shared this knowledge with their clients—PLHIV. During the training, participants coined local Amharic terms for the tippy tap—*Woder-Yelesh* (extraordinary), *Asnakech* (cool), *Lakech* (excess), and *Kotabi* (water saver). But the most popular term was *Jog-Lemine* (Why use a jug?).

Now tippy taps are becoming more common. One organization said that since the training 80 percent of their clients have constructed one. In addition to teaching tippy tap construction, outreach workers demonstrate proper hand washing techniques. Soap is an inexpensive commodity locally, yet it is beyond the reach of the poorest community members. “I tell my beneficiaries that they can use ash if they don’t have soap,” noted Fasika, a home-based care worker.

Because these trained home-based care and support organizations regularly visit households with HIV-positive members, some families fear that a tippy tap would identify them as HIV-positive. “We have a plan to overcome this fear of stigma,” said Sr. Almaz Abebe, executive director of NGO Tesfagoh (Dawn of Hope). “When we bring the community together, we show everyone the benefits of a tippy tap and teach them how to make one. We think this will encourage even more people to adopt this practice.”

-- USAID, Hygiene Improvement Project, 2010

Who

COLLABORATING WITH POTENTIAL IN-COUNTRY PARTNERS

Nearly 2.6 billion people live without access to sanitation facilities. Sanitation initiatives can range from infrastructure improvements and construction to behavior change and education. Below is a guide to partner organizations with a sanitation focus, including a description of their current activities and areas of operation, if limited to a specific region. Some of these key WASH partners can be targeted to help implement WASH-HIV integration activities with a particular emphasis on sanitation.

AMREF in East and Southern Africa

www.amref.org/what-we-do/fight-disease/waterborne-diseases/

Together with communities and district health councils, AMREF is improving water and sanitation in Ethiopia, Kenya, Tanzania, Uganda, Sudan, and South Africa. AMREF works with some of the poorest and most marginalized people in Africa; those living in remote rural areas, urban slums, and areas affected by conflict as well as with nomadic populations. Using community-based strategies, it works in partnership to install latrines, bathrooms, and water tanks; clear drains and reduce refuse problems; and address school WASH.

PLAN International

<http://plan-international.org/what-we-do/water-and-sanitation>

Plan International works to increase access to hygienic latrines and safe water points. Plan uses the CLTS model and works with communities to end open defecation and promote 100 percent latrine use. Together with UNICEF, Plan has co-published useful manuals on CLTS and other sanitation issues.

UNICEF

<http://www.unicef.org/wash/>

UNICEF's WASH support is channeled through host-country governments. Its focus and resources include guidance on CLTS, menstrual hygiene management, school WASH, and orphans and vulnerable children.

IRC–Netherlands

<http://www.irc.nl/>

IRC International Water and Sanitation Centre facilitates sharing, promoting, and using knowledge to assist governments, professionals, and organizations to help poor individuals in developing countries obtain water and sanitation services that they can use and maintain.

USAID/AIDSTAR-One

http://www.aidstar-one.com/focus_areas/care_and_support/WASH

AIDSTAR-One piloted a training resource in Kenya and Ethiopia that aims to address WASH problems at health facilities to improve quality of life for PLHIV. The curriculum provides detailed activities to improve WASH systems in health facilities by ensuring a safe and sufficient supply of water, adequate sanitation facilities, and basic hygiene is being practiced appropriately by health care providers at the facility. The curriculum is divided into two parts: the Trainer Guide and the Participant Technical Resource Guide, which includes handouts, job aids, and other resource materials critical to improving WASH practices at the facility level.



USAID/WASHplus Project

www.washplus.org

The WASHplus project supports healthy households and communities by creating programming guidance and supporting interventions that lead to improvements in WASH and indoor air pollution practices. Funded by USAID, this five-year project (2010–2015) uses at-scale programming approaches to reduce diarrheal diseases and acute respiratory infections. Specific guidance and job aids focus on WASH-friendly schools and integrating WASH into HIV–home based care, OVCs, PMTCT, and more.

Home-based care workers are trained to incorporate WASH into their care and support of PLHIV.

Water and Sanitation Program/World Bank (WSP)

www.wsp.org/wsp/global-initiatives/global-scaling-sanitation-project

WSP is a multi-donor partnership administered by the World Bank to support poor people in obtaining affordable, safe, and sustainable access to water and sanitation services. It works directly with client governments at the local and national level in 25 countries through regional offices in Africa, East and South Asia, Latin America, and the Caribbean. WSP combines CLTS, behavior change communication, and sanitation marketing to generate sanitation demand and strengthen the supply of sanitation products and services.

WaterAid

www.wateraid.org/international/what_we_do/how_we_work/equity_and_inclusion/

WaterAid takes a rights-based approach to water and sanitation and focuses attention on “inclusive sanitation,” making sanitation accessible to all. WaterAid is engaged in numerous countries and activities that bring sanitation access to those with disabilities, the elderly, people living with HIV, and the very young.

Integrating Sanitation

ACCESSING SANITATION & OTHER WASH PROMOTION MATERIALS

Much of the “how” has been woven throughout this short document. The annexes provide more thorough references, how tos, and language that can be modified for context and directly inserted into RFAs as well as policy and monitoring documents.

Annexes

1. Job Aids for Sanitation, Safe Disposal of Feces, and Hand Washing (Most of these job aids are available in English, Amharic, Kiswahili, Acoli (Northern Uganda/Southern Sudan), Ateso (Uganda/Kenya), Lugandan (Southern Uganda including Kampala), and Runyankole-Rukiga (Southwest Uganda.)
2. How To Build and Modify Latrines
Planning a Pit Latrine: Seven Key Considerations to Meet Minimum Standards
Simple Latrine Modifications to Facilitate Latrine Use and Improved Sanitation for the Elderly, Mobility Challenged, & Disabled
3. Sanitation/WASH Questions to Include in Assessments
4. WASH Programming Language to Include in RFAs
5. WASH Programming Language to Include in HIV and/or Nutrition Policy Documents
6. Table outlining opportunistic infections affecting PLHIV, and evidence of role of WASH in transmission or prevention
7. Annotated Bibliography of Major HIV/WASH Citations

The USAID/Hygiene Improvement Project developed numerous policy guidance documents and training materials on integrating WASH into HIV programs. This includes the COP Toolkit developed to assist Missions to incorporate WASH into their Country Operational Plans. These materials are excerpted in the annexes and also available from the HIP website www.hip.watsan.net or http://www.washplus.org/sites/default/files/COP_2012_Toolkit_Final.pdf

USAID and the World Health Organization developed a guidance document that provides extensive documentation of the evidence base, programming options, job aids, and examples of language to use in developing policy and guidance documents. This can be accessed at: http://www.who.int/water_sanitation_health/publications/9789241548014/en/index.html

Several USAID projects have developed training materials and participant manuals for integrating WASH into home- and facility-based care. These provide more detailed “how tos,” both how to improve sanitation and hand washing through behavior change, and how to build capacity of professional and lay cadres. USAID’s AIDSTAR I program has developed a comprehensive training guide and materials for health workers in facilities. This guide is available from the AIDSTAR website: www.aidstar-one.com/focus_areas/care_and_support/WASH

USAID/HIP, C-Change, and T-MARC (Tanzania Marketing and Communications) developed training materials, participant guides, and job aids for use in Kenya, Ethiopia, Tanzania, and Uganda. The training manual and counseling cards developed for Kenyans to use with their community health workers are available on the C-Change website www.c-changeproject.org and the WASHplus website www.washplus.org. Other country materials are found at: www.hip.watsan.net/page/4542.

The TEAR Fund Learning Zone maintains a database linking to hundreds of water and sanitation resources: <http://tilz.tearfund.org/admin/Search/default?contentsearch=water+and+sanitation&category=Publications>

The Water, Engineering and Development Centre of Loughborough University (WEDC) and WaterAid have extensive materials on meeting the WASH needs of people with disabilities that are relevant to PLHIV. WaterAid has an ever-expanding focus on WASH equity and inclusion. Resources and information are found at:

http://www.wateraid.org/international/what_we_do/how_we_work/equity_and_inclusion/default.asp. The WEDC link is <http://wedc.lboro.ac.uk/research/project.html?p=12>.

Lastly, the Water and Sanitation Program maintains a database of tippy tap hand washing variations at: <http://www.wsp.org/wsp/global-initiatives/Global-Scaling-Up-Handwashing-Project/Enabling%20Technologies%20for%20Handwashing%20with%20Soap>

Annex I: Job Aids for Sanitation, Safe Disposal of Feces, and Hand Washing

Readers are encouraged to duplicate and use the following job aids, developed by WASHplus's predecessor project the USAID Hygiene Improvement Project (HIP) and its country partners, with proper attribution.

1. Sanitation and hand washing for HIV-affected families
2. Feces disposal
3. Feces management for all stages of mobility
4. Help a weak person safely dispose of feces
5. How to build a latrine
6. How to make a bedpan
7. Making a commode
8. Making plastic pants
9. How to wash your hands
10. Critical times to wash hands
11. Different kinds of tippy taps
12. Building a hand washing device

Sanitation and Hand Washing are KEY for HIV- affected Families

Diarrhea affects 90 percent of people living with HIV and AIDS, causing significant illness and even death

- Diarrheal disease reduces antiretroviral absorption
- Diarrhea reduces absorption of nutrients
- Burden on caregivers in clinics and at home
- Cause of humiliation and lower quality of life



Removing feces from the environment makes a critical difference in reducing diarrhea

<p>Hand washing can reduce the risk of diarrhea by 42-44% (Curtis et al 2003)</p> <p>Presence of soap in PLHIV households was associated with reduced number of days of diarrhea (Lule et al. 2005)</p>	A photograph of a brick latrine structure with a thatched roof and a cloth hanging over the entrance.	<p>Improvements in excreta disposal reduce diarrheal morbidity by 22% (Curtis and Cairncross)</p> <p>Presence of a latrine was associated with 31% reduced diarrhea and 37% reduced number of days ill in homes of PLHIV (Lule)</p>
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Many program opportunities are within the reach of PEPFAR programming

- Home-Based Care
- Orphans and Vulnerable Children
- Counseling and Testing
- Prevention of Maternal to Child Transmission
- Nutrition and HIV

Guidance, job aids and visual materials, and technical assistance are available at:



www.hip.watsan.net/page/3442

Most PEPFAR partners are familiar with safe storage and treatment of water



Treatment and safe storage of drinking water at point of use reduces severity of diarrhea in PLHIV by 35% (Lule et al. 2005)

How to Integrate Sanitation & Hand Washing into PEPFAR Partner Programming

For the bedbound PLHIV:



Plastic
Pants



“Home-made”
Bedpans



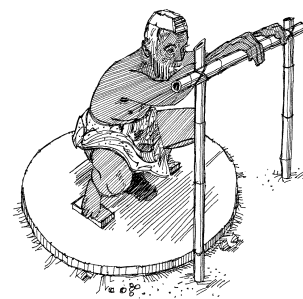
Bedside
Commode



For the weak and those fully mobile:



- Build a simple hygienic latrine if one is not available
- Clear the path of rocks and holes
- Put in a guide rope or designate a walking stick
- Enlarge the door and / or latrine housing for assistant to enter & stabilize the weak but mobile PLHIV
- Install ropes, poles, other supports



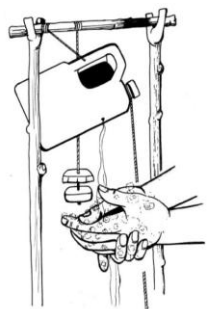
ALWAYS build a hand washing station when running water is not available at the household



It allows for hand washing at the designated times, even in the absence of running water...

.. and makes it easier to do, when water is scarce

Build them by the bedside, outside the latrine, where people prepare food, and at child care centers...

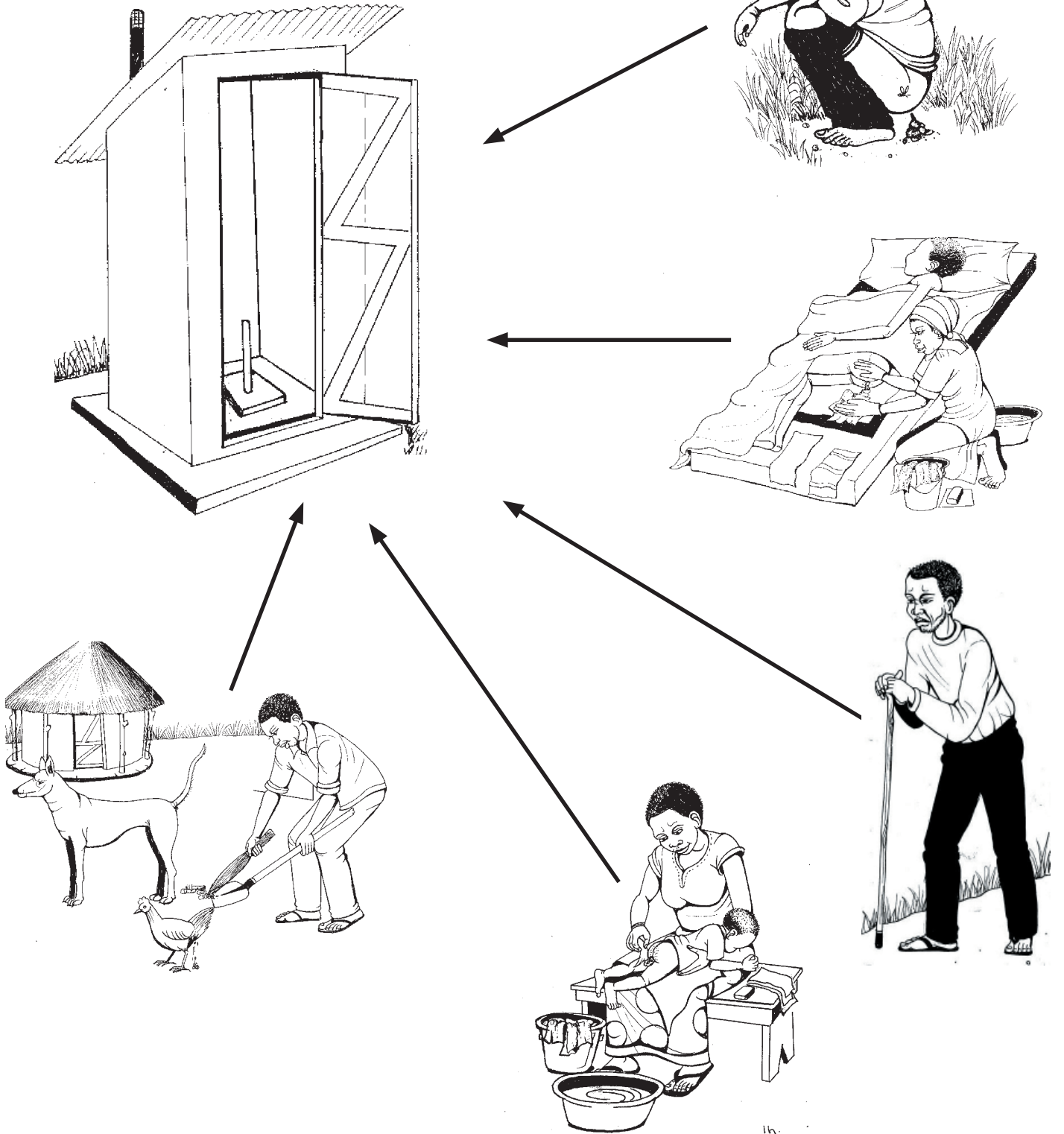


WASH MATTERS!

FAECES DISPOSAL

Counselling Card

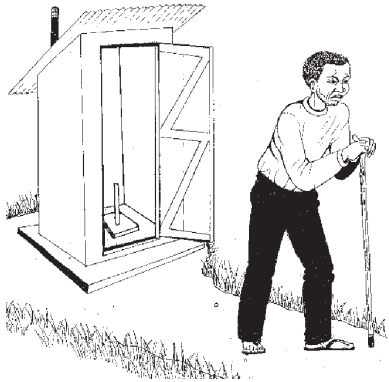
Put faeces of sick people, adults, children, babies, and animals (including birds) in a latrine.



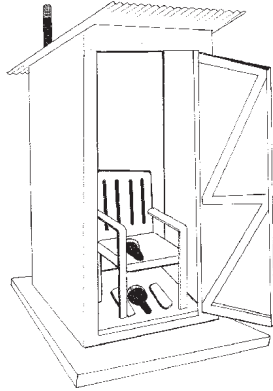
FAECES MANAGEMENT

WEAK BUT MOBILE PATIENT

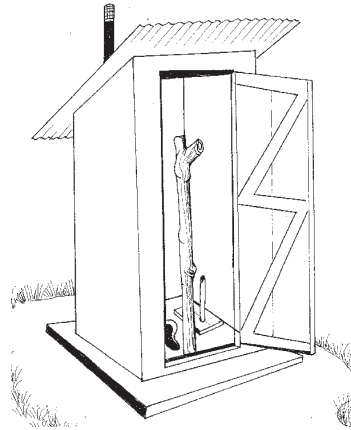
Counselling Card



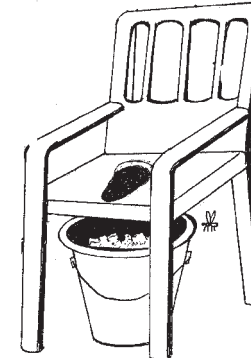
Use walking stick.



Cut hole in chair to help weak person use latrine.



Add pole (or handles on wall) to latrine to help weak person squat or stand up.

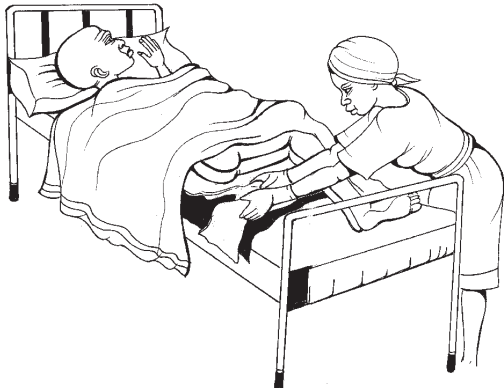


Put bucket under chair with hole in seat for indoor use.



Put hand washing supplies near where sick person defecates.

BEDRIDDEN PATIENT



Put plastic sheet (mackintosh) with a cloth on top under sick person's hips. Change cloth when soiled.



Use potty (bedpan).



Put water, soap (or ash), and clean rags next to sick person's bed.

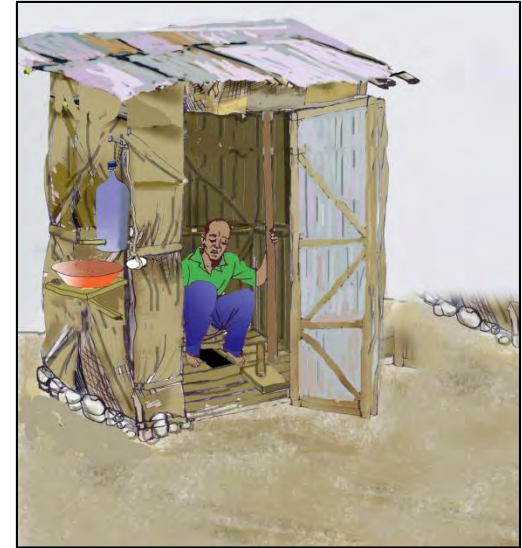
Help a Weak Person Safely Dispose of Feces



1. Clear the path to the latrine.



2. Use a cane to go to the latrine.



3. Have a pole in the latrine.



4. Use a Potty Chair.



5. Use a bedpan – female.



6. Use a bedpan – male.

የመጠጥጫ ቤት ስራ

የጉድጓድ አቆፋፈር፣ መክደን፣ ከለላ አሰራርና የመታጠቢያ ዝግጅት

1. የጉድጓድ ስቅፋፈር



ጉድጓድ የሚቆፈረው ከመኖሪያ ቤት ጓሮ 6 ሜትር ራቅ ብሎ ሊሆን አቆፋፈሩም የዋንጫ ቅርፅ እንዲኖረውና ስፋቱ 90 ሳንቲ ሜትር ጥልቀቱም እንደአፈሩ ሁኔታ ቢወሰንም ከ3 ሜትር መብለጥ የለበትም።

2. ጉድጓዱ ስንዳይናድ ማጠናከር



ጉድጓዱ ተቆፍሮ ካለቀ ቡኋላ ዙሪያውን ሰፋ አድርጎ በመቆፈር በድንጋይ ካብና ጭቃ እየገነቡ ከመሬት በላይ ብቅ ብሎ እስከሚታይ መገንባት በላይ ላይ እንጨት መረብረብ።

በጉድጓዱ ልክ ሳጠራ ሰርቶ የጉድጓዱን አፍ መገንባት።

3. ስንዳይናድ መክደኛና ከሳሳ መስራት



ጉድጓድ እንዳይናድ የሚደረገውን ካድረጉ ቡኋላ ጠንካራና ቁመታቸው ከጉድጓዱ አፍ ቢያንስ 50 ሳንቲ ሜትር ወጣ ባሉ እንጨቶች በቅድሚያ በማዘጋጀት ለሰገራ መውጫ 20 ሳንቲ ሜትር በ15 ሳንቲ ሜትር የሆነ ቀዳዳ በመተው መክደን።

ዙሪያውን ግድግዳ ሰርቶ ለጣሪው ክዳን አበጀቶ ወለሉንና ግድግዳውን በጭቃ ወይም በእበት መምረግ።

4. የሸንት ቤት ቀዳዳ ክዳንና የእጅ መታጠቢያ መስራት



ለሰገራ መውጫ ክዳን በመስራትና የእጅ መታጠቢያ በማዘጋጀት መጠቀም።

መፀዳኛ ቤቱን በየግዜው ማፅዳት ከለላውን መጠገንና ከሸንት ቤት መልስ እጅን በአመድ ወይም በሳሙናና በውሃ መታጠብ አይርሱ። መፀዳኛ ቤቱ እንዳይሸት በየቀኑ ትንሽ ትንሽ አመድ መጨመር አይርሱ።

ስጤናችን ስክብራችን በመጻፍ ሌት መጠቀም ይሁን ባህሳችን!!

1. መጻፍ ሌትን በየአለቱ ማዕዳት።
2. መጥፎ ሽታ ለመከላከል ከሌት ውስጥ የሚፈጠር አመድ ሁልጊዜ መጻፍ ሌት ውስጥ መጨመር።
3. መጻፍ ሌትን መላው ቤተሰብ እንዲጠቀምበት ማድረግ።
4. ህፃን ልጅዎን አይንምድር በፖፖ ከማስወጣትዎ በፊት ፖፖው ውስጥ አመድ ወይም ቅጠል ይጨምሩ የተወጣንም ሰገራ ወዲያውኑ መጻፍ ሌት ውስጥ ይጨምሩት።
5. ለመጻፍ የተጠቀሙበትን ወረቀት ወይም ቅጠላቅጠል መጻፍ ሌት ውስጥ ሁልጊዜ መጨመር።
6. ተፈላጊውን ከለላና ምቹት እንዲሰጥ የመጻፍ ሌትን ግድግዳና ጣራ ሁልጊዜ መጠገን ያሰፋልጋል።
7. በመጻፍ ሌት ከተጠቀሙ በኋላ እጅዎን በሳሙና ወይም በአመድ መታጠብ ሊረሳ የማይገባው ተግባር ነው።

(ውሃ ቆጣቢ የእጅ መታጠቢያ አስራርን በተመለከተ ተያይዞ የሚገኘውን መመሪያ ይመልከቱ።)

HOW TO USE A BEDPAN

Counselling Card

1

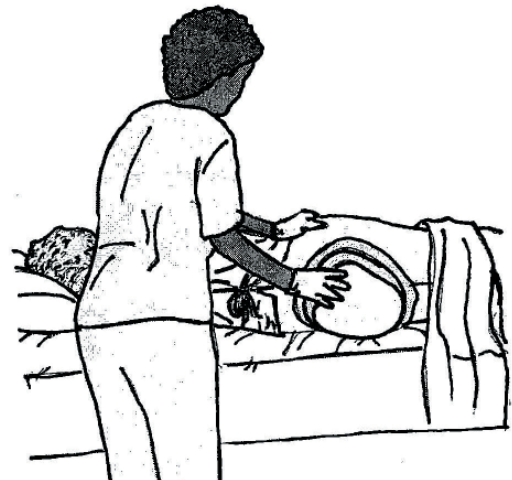
If person can lift hips, slide the bedpan under the buttocks.



2

If person cannot lift hips:

- Turn person onto side
- Place bedpan against person's buttocks
- Assist person to roll onto bedpan



3

- After person has finished (defaecated – urinated), carefully remove bedpan without spilling
- Clean person
- Immediately put faeces – urine in latrine



MAKING A COMMODE (POTTY CHAIR)

Counselling Card

1

Make a wooden stool or chair.



2

Cut an oval hole in the middle of the stool that “fits” the user (not too big, not too small). Smooth the edge of the hole to avoid bruising.



3

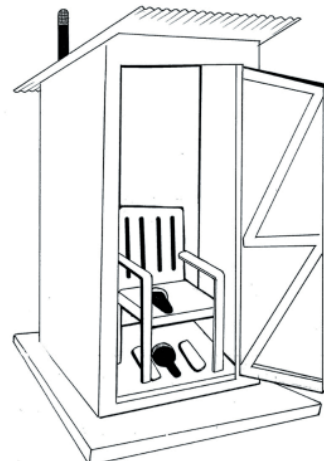
To use commode (potty chair):

- put a bucket beneath the hole in the stool/chair



OR

- put the stool/chair over the hole in the latrine.



Instructions adapted from “Making Adaptations Commode/Potty Chair,” Hospice Africa (Uganda).



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PLASTIC PANTS

Counselling Card

- Used to protect bedding and clothing from urine and feces.
- Made from medium weight plastic (like plastic sheets for delivery).
- ALWAYS put cotton cloth between patient's skin and plastic pants.

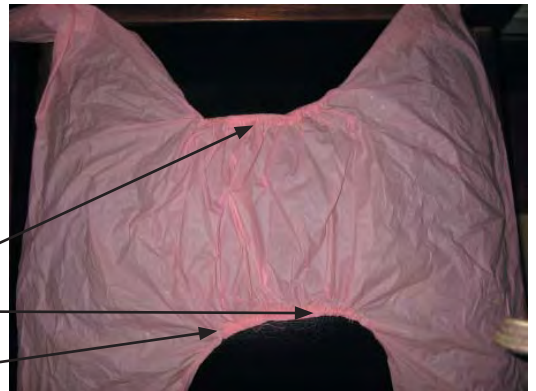
Making Plastic Pants

1 Cut plastic sheet into shape of a pant (that is opened up to lay flat). Cut a size appropriate for client.



2 Have local tailor sew gathers with an elastic band on inside of edges that go between the legs (to prevent gaps that can leak).

gathers
made by
tailor



3 Place a cotton cloth over plastic pant and put them on client making sure that only cotton cloth comes in contact with client's skin. Tie sides of pant to hold in place.



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HOW TO WASH YOUR HANDS

Counselling Card

1

Wet your hands and lather them with soap (or ash).



2

Rub your hands together and clean under your nails.



3

Rinse your hands with a stream of water.



4



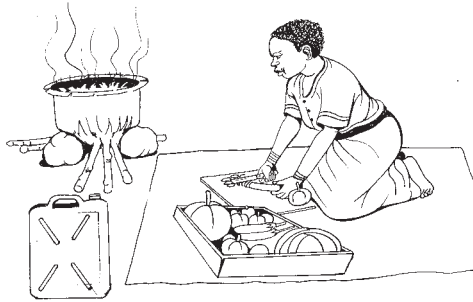
Shake excess water off your hands and air dry them.

CRITICAL TIMES TO WASH HANDS

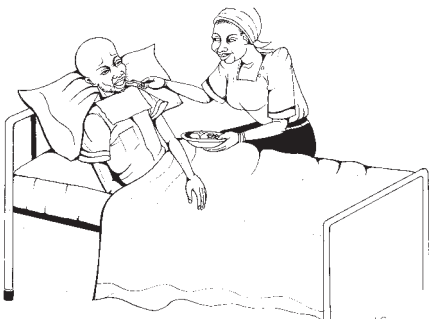
Counselling Card



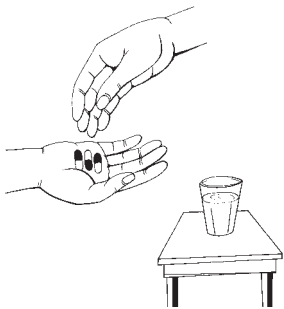
Wash hands with soap (ash)...



Before cooking



Before eating, feeding patient, or breastfeeding

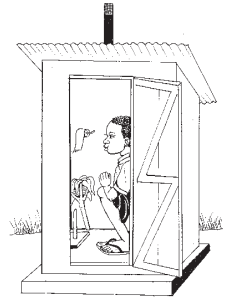


Before giving/taking medicine

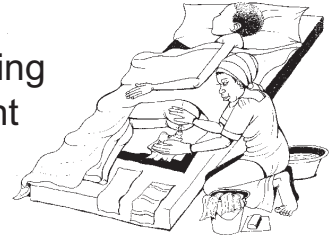


Before touching body fluids

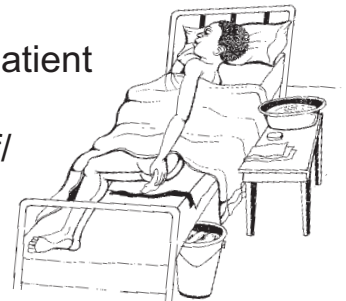
After defecating



After cleaning patient



After patient cleans himself/herself



After cleaning baby



After touching body fluids



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DIFFERENT KINDS OF TIPPY TAPS

Counselling Card

Tin Can

- Make hole on side of tin can near bottom
- Hang can
- To start water flow: pour cup of water in can
- To stop water flow: let water run out



Hollow Tube

- Make hole in container
- Insert hollow tube (pen casing, pawpaw stem...) in hole
- Find plug/cover for tube (pen cap, stick, ...)
- To start water flow: remove plug/cap
- To stop water flow: cover/plug tube



Screw Top with Hollow Tube

- Make hole in side of screw top bottle
- Insert tube into hole
- To start water flow: loosen screw top
- To stop water flow: tighten screw top



Hole in Cap

- Make hole in container cap
- Hang container so can tip over
- To start water flow: tip container
- To stop water flow: put container upright



Tilting Jug

- Make hole in jug side or handle
- Hang so can tilt
- To start water flow: tilt container
- To stop water flow: put container upright



BUILDING A HANDWASHING DEVICE CAN HELP TO WASH HANDS AT THE CRITICAL TIMES

EVEN WHEN WATER IS SCARCE



follow the easy steps below

TO MAKE A HANDWASHING DEVICE,
FIND AN AVAILABLE VESSEL



.... AND A HOLLOW TUBE to make the spout....

...you can use a pen casing, a madewuria, a pawpaw stem ...anything that is hollow.

You will also need a sharp knife, a nail, or a screw driver to make a hole in the vessel for the tube.



1. Decide on the design of your handwashing station before you begin working. Will your tippy tap sit, hang, hang and tip?
2. Wash the container and tube so they are free from visible dirt.

3. Heat the knife, nail or screwdriver to make piercing a hole for the tube easier.
4. Make a small hole for inserting the tube. Make it as low on the container as you can, about 2 cm. (two finger widths) from the bottom. Be careful to make it smaller than the tube.
5. Slowly and carefully push the tube into the hole. Be very careful not to push the hole so big that it leaks.
6. Test the water flow

When using a Highland bottle: Water is delivered when the cap is unscrewed and stops flowing when the cap is tightly shut.

When using a Jerry can or gourd: Water comes out when the cap on the pen or plug in the tub is removed. If you don't have the original cap, just find an old stick to „plug“ the flow.

Set up the handwashing station:

- Set up the station right by the latrine. Make another near where you cook and eat, if possible!

After you have tested your handwashing bottle to make sure it functions, “set it up” by hanging it from a string around the neck, or setting it on a stable platform.

- Hang or place an old, shallow can or plastic bowl for soap or ash for washing.



HOW TO WASH

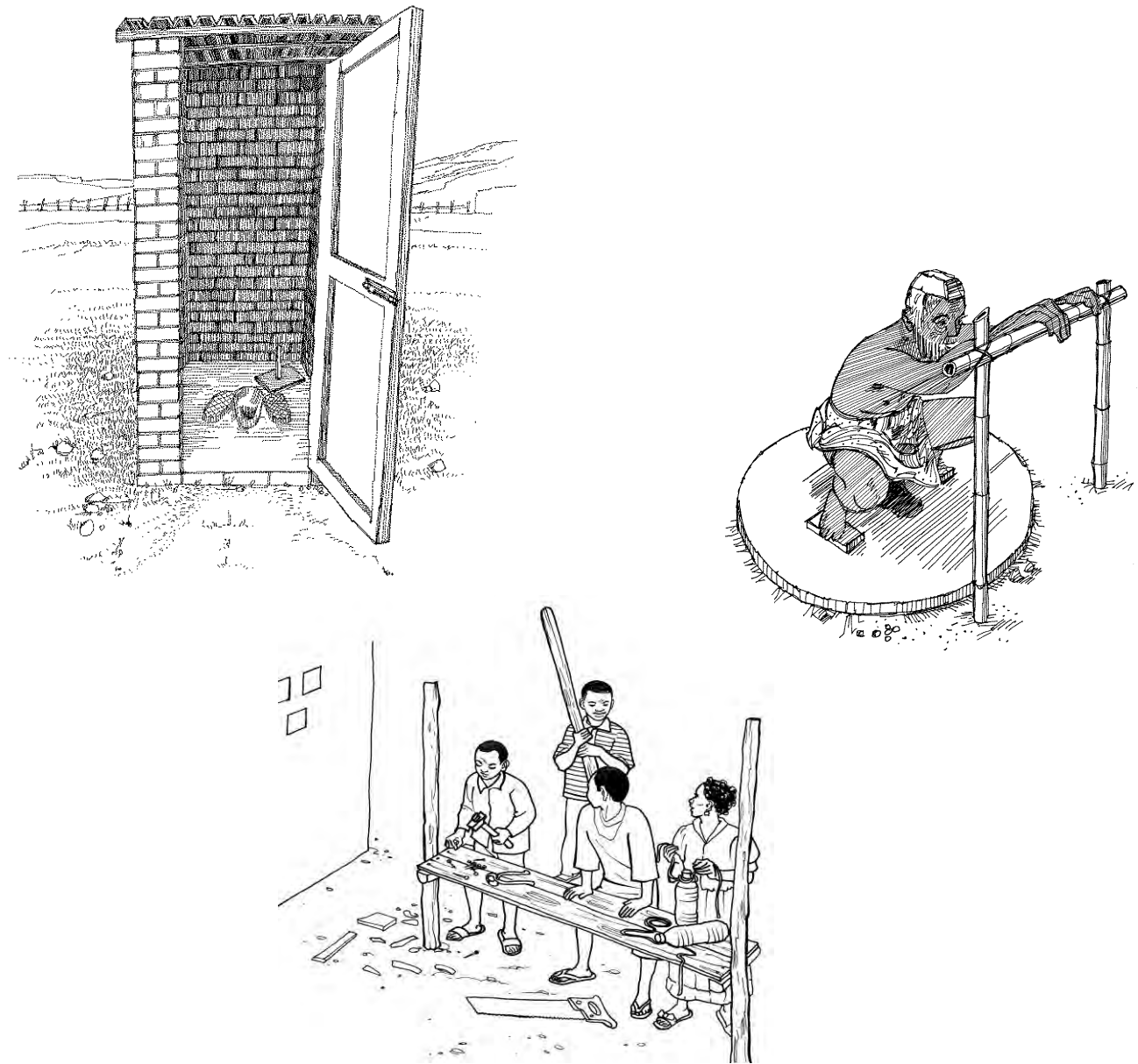
1. To wash, wet hands with running water.
2. Rub your hands with the soap or ash for about 30 seconds, about the time it would take to sing the Happy Birthday song.
3. Clean between the fingers, under your fingernails, and up to your wrists to help control germs.
4. It is the soap or ash combined with the scrubbing action that helps dislodge and remove germs.
5. Rinse your hands well with running water (pour from a jug or tap)
6. Dry them in the air to avoid recontamination on a dirty towel.

IMPORTANT INFORMATION: You can wash your hands with „dirty“ water, and still get clean hands, as long as you POUR it over your hands (no dipping in a bowl!) The soap or ash “lifts” the dirt, and the water then washes off the visible and invisible germs, much like shaking your dried teff to clean off the husk.

Annex 2: How to Build and Modify Latrines

Planning a Pit Latrine:

Seven Key Considerations and Guidance on How to Meet Minimum Standards, Increase Access and Safely Dispose of Feces



Adapted from the TEAR Fund website publication, compiled by Brian Skinner, Richard Franceys & Isabel Carter, August 2005. Supplemented with material from the Catalogue of Affordable Latrine Options, March 2010, USAID/Hygiene Improvement Project, PLAN, UWASNET (Uganda Water & Sanitation NGO Network). Compiled by USAID - C CHANGE and WASHplus Projects.

Planning a pit latrine

Before the decision to build a latrine is made, there are many things to consider.

1. Type of latrine
2. Where to build your latrine
3. Digging and lining the pit
4. The covering slab (sanitation platform)
5. Size of squat hole
6. Covering the squat hole
7. Including a handwashing station

Get some expert advice if you can. Consult resource partners with experience.

1. The type of latrine

We will look at four types of hygienic latrines...

- 1.1. a ventilated improved pit latrine (VIP)
- 1.2. a sealed-lid pit latrine
- 1.3. an arbor-loo latrine
- 1.4. a pour-flush latrine – suitable where people use water or for cleaning themselves

1.1. VIP latrines

VIP latrines must have a vertical pipe, ideally at least 150mm diameter, or brick chimney connected to the pit. The top of the pipe should be covered with mesh to stop flies using the vent to enter or leave the pit. To prevent the mesh from deteriorating due to the sunlight or corrosive gases from the latrine it should be of glass fibers or stainless steel and not plastic or normal steel mesh. The holes should be about 1.2–1.5mm square.

Wind blowing across the top of the vent pipe sucks air out of the pit while fresh air flows into the pit through the squat hole. This flow of air is helped if the door faces the direction from which the wind normally blows.

The VIP shelter needs to be fairly dark to discourage any flies that enter the pit from leaving it through the squat hole, carrying disease-causing organisms with them. This works on

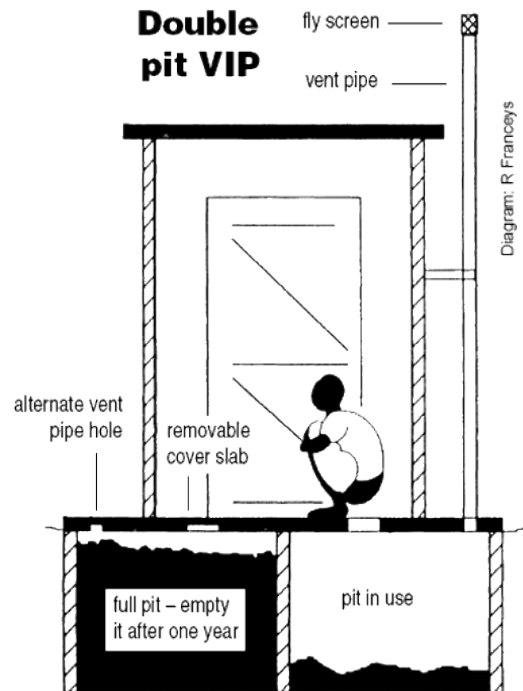


the principle that flies are attracted to light. To a fly in the pit, the squat hole will not be brightly illuminated so it will try to leave by going up the vent towards the sunlight shining down into the pit. The mesh will stop it escaping and it will eventually die.

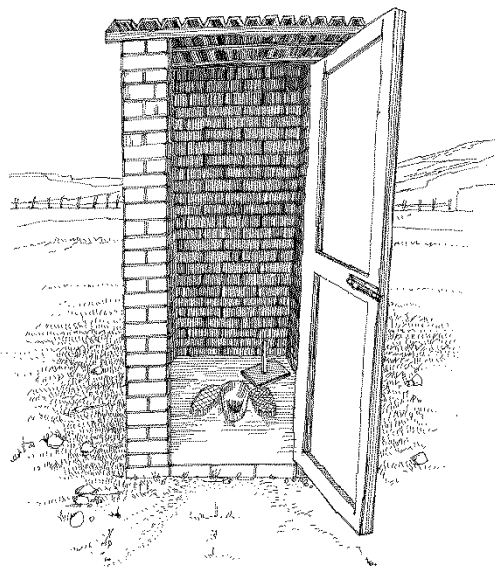
One or two pits?

You can dig a single pit about 3m deep (or deeper if you want it to last longer). If you cannot dig so deeply, then you can dig two shallower pits. With a pour-flush latrine these pits can be outside the shelter, connected to it by pipework. With the sealed-lid latrine or the VIP latrine the shelter has to be partly over both pits.

Digging two pits means that first one pit is used until it is nearly full. Then it is sealed while the second pit is used. After at least a year the material in the first pit can be safely emptied and used to improve the soil in a garden. The emptied pit is then ready for use again.



1.2. Simple pit latrines

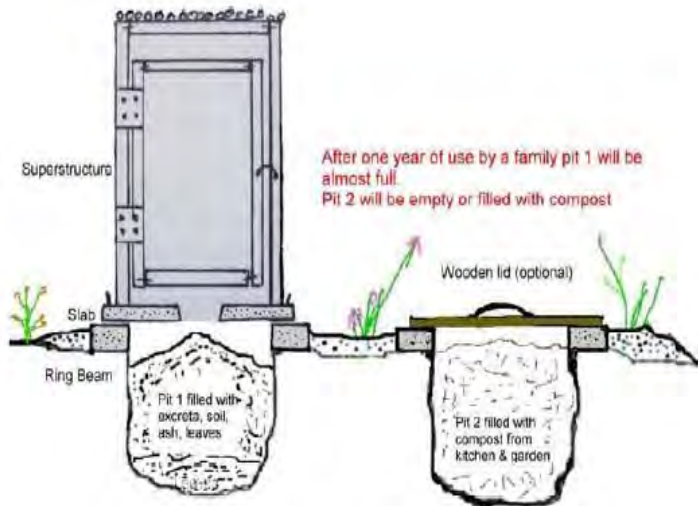


Advantages:

Can be constructed from available local materials with household or community labor



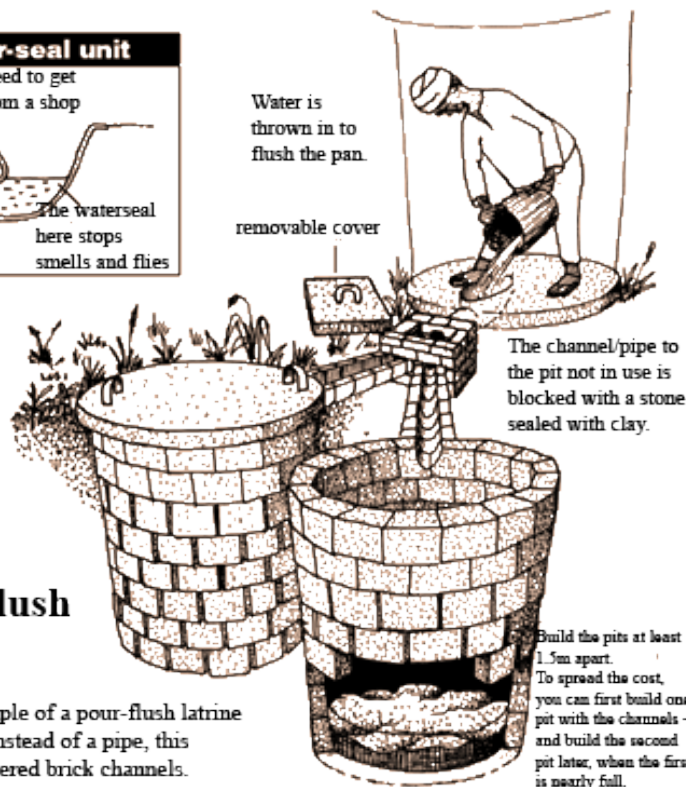
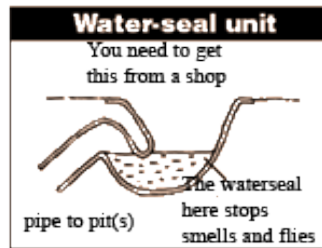
1.3. Arbor-loo



After one year of use by a family pit 1 will be almost full
Pit 2 will be empty or filled with compost

- Can use in conditions that prohibit deep pits, e.g., hard to excavate rock, collapsible sand or high water tables
 - Small pits are inexpensive
 - Slab to be movable
 - Framed superstructure with reed walls can be moved
 - Trees can be planted in pit after 1 year of pit closure
- Alternating Pits
- After 1-2 years, old pit is emptied, waste used for gardens

Pour flush latrines



A pourflush latrine

This is an example of a pour-flush latrine with two pits. Instead of a pipe, this design uses covered brick channels.

2. Where to build your latrine

It is convenient to build your latrine near to the home but it must be at least 6m away from a kitchen or homestead, and at least 15m from a well or a spring source or it may pollute the water.

This can be challenging in urban areas, but is usually quite feasible in rural areas. For urban sanitation solutions, consult WSSUP or the Water and Sanitation Program/World Bank.

3. Digging and lining the pit

At least 0.5m depth of lining is recommended at the top of a pit in all types of soil. This supports the squatting slab and may also support part of the shelter. For the rest of the pit the need for lining will vary depending on the soil strength...

Hard firm soil – may not need lining below the top 0.5m

Rocky ground – You can build some of the pit above ground surrounded with a mound of earth and steps leading up to the latrine.

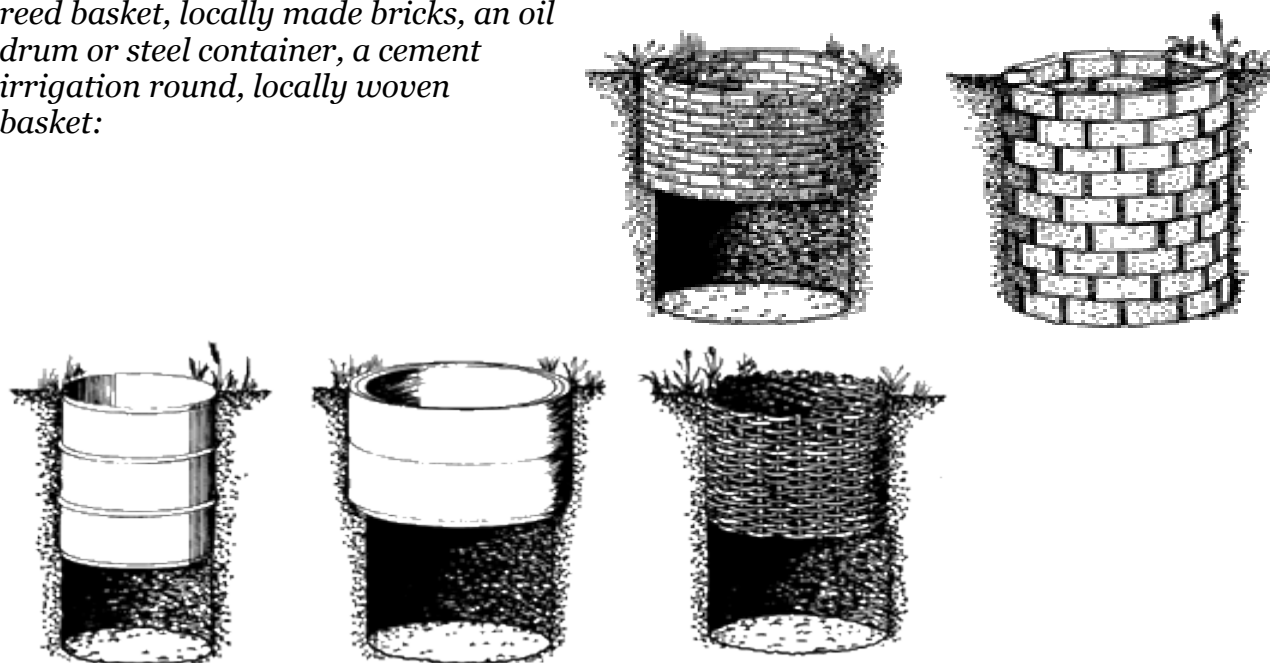
Soft loose soil – You will need to line the pit to prevent the sides from falling in.

The lower part of a lining should have small holes so that liquid can seep through the holes and out of the pit. Circular pits are stronger than other shapes.

If you have firm soil and do not need to line the whole pit, first dig only to the depth of the lining and then build up the lining wall. When the lining wall has hardened you can continue to dig a slightly smaller pit inside the wall. A guide frame and a plumb bob (e.g., a stone on a piece of string) are useful aids for obtaining the right size of hole with vertical walls.

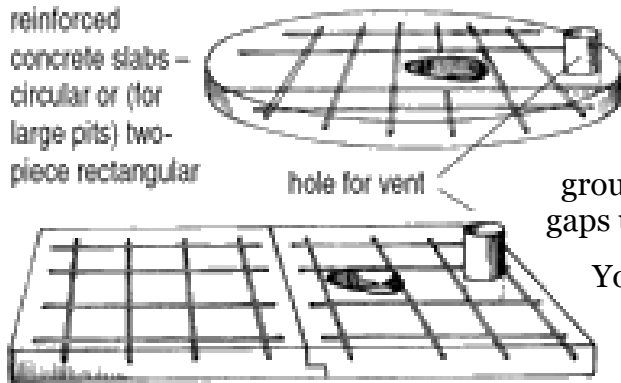
An octagon (8 sides) is a good guide for a round hole.

Beside and below are examples of how to line the pit with locally available materials – a reed basket, locally made bricks, an oil drum or steel container, a cement irrigation round, locally woven basket:



4. The covering slab

For sealed-lid and VIP latrines, the best material for the squat slab is concrete, since this is strong, rot-proof and easily cleaned. Flat slabs will need to be at least 80mm thick with 6mm diameter bars every 150mm in both directions. (See page 15 for thinner kinds of slabs.)



The size of the slab can be the same size as the outer lining if this is built of brick. If the lining is made from an oil drum or basketwork it needs to be slightly larger so that at least 200mm of the slab rests on the ground all round the pit. There should not be any gaps under the slab to let flies or smells leave the pit.

You can also build a floor out of traditional materials like wood covered with mud – but add a sanplat so that the area around the squat hole can be washed clean.

Dome slab (non-reinforced)



Advantages

- Inexpensive
- Easy to clean
- Long lasting
- Reusable
- Easily rolled to new location

Disadvantages

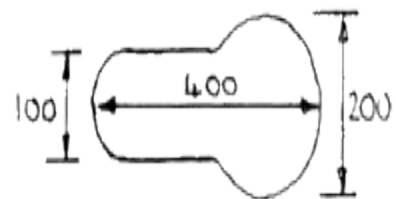
- Requires skilled labor
- Fragile to transport; should be made on site

If concrete is not available, local materials such as logs and mud or locally produced bricks can be used, but it is essential that the slab is cleanable and completely sealed so that flies and smells do not pass.

Pour-flush pans can be placed directly above a pit in which case the floor needs to be strong. If two pits are used the pan and shelter floor do not need to be directly over the pits and can be unreinforced. Concrete slabs will still be needed to cover the pits.

5. Size of squat hole

The hole should not be too large, or small children can fall into the pit. A keyhole shape 100mm wide and 400mm long with a 200mm diameter circular hole at one end is a good size.



Raised foot pads to either side of the squat hole help keep feet and shoes hygienic and clean. If pouring a cement sanitation platform, these footpads should be built into the design. If making a more “do it yourself” latrine and platform, flat rocks can serve as adequate footpads. Be sure to anchor them firmly in the dirt floor.

6. Squat hole cover

A squat hole cover should only be used with the sealed-lid type of latrine (it would stop proper ventilation of a VIP latrine). This cover (lid) needs to be tightly fitting to control smells and flies.

When a concrete cover with a handle is not available, local clay pot lids with a strong rope to lift, and other “do it yourself” covers are acceptable.

“Inclusive latrines” for the elderly, people with disabilities or limited mobility

Access to latrines can be greatly enhanced by simple “do it yourself” adaptations to the latrine. Below are some options:

- Clear the path to the latrine of stones and objects that might create an obstacle.
- Provide a cane or walking stick to ease the journey. Alternatively, run a guide rope if possible.
- Enlarge the door to the latrine to allow for a companion to enter the latrine and assist.
- Add a pole, handle or rope for the user to hold onto for balance and ease of squatting.
- Construct a raised seat or commode. (construction visual aid available)

Square Slab with Raised Seat

(for the elderly or those with mobility challenges)



Materials

- Cement (as above for slabs) , Pre-cast raised seat

Advantages

- Easy to clean (seat interior will require cleaning also)
- Long lasting
- Reusable
- Comfort and accessibility for elderly and handicapped

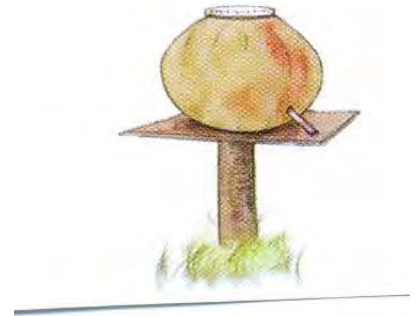
Disadvantages

- Requires skilled labor
- Needs to be made near site
- Drop hole size may need to be adjusted to be flush with bottom of raised seat

7. Include a handwashing station, with soap or ash

A fixed handwashing station facilitates handwashing and serves as a reminder to wash when leaving the latrine.

The tippy tap handwashing station (pictured right and below) overcomes major barriers to handwashing: they provide running water for proper rinsing and allow for a thorough wash with about one fourth of the water quantity of other handwashing methods.



Children's latrines

Young children are often afraid to use a latrine, or find it difficult to manage. An alternative idea for very young children is to dig a shallow pit (0.5m deep) with a small slab with a cover (just like the sealed-lid latrine but smaller). No shelter is needed. Encourage children to use this and always to replace the lid. If you find that this shallow latrine becomes smelly, you may find that adding some ashes will help. Move the slab to a new hole when the bottom 200mm is used and fill the used hole with soil.



Keep the latrine clean!

Wash the latrine slab regularly with a brush and soapy water. (Rinsing water left from washing clothes is ideal.) Make sure that hands are washed each time the latrine is used.

Take pride in your latrine. The benefits to your family's health are enormous! Encourage all your neighbors to follow your example.

**Checklist of Minimum Standards
for School or OVC Child Center
Sanitation & Hygiene Facilities**

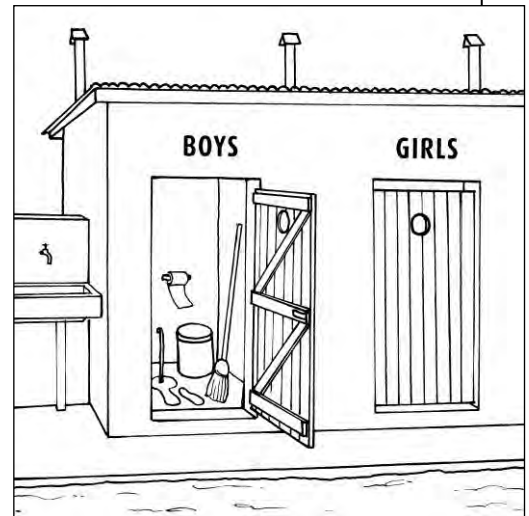
- Separate latrines for boys and girls
- “Child friendly” facilities with smaller pit sizes and no fear of falling in
- Latrines for male and female teachers
- 1 latrine per 25 girls and 1 for female staff
- 1 latrine + 1 urinal per 50 boys and 1 for male staff
- Handwashing stations next to latrines

Latrines should have:

- Walls and roof
- Ventilation
- Doors that lock from the inside, not the outside
- Washable slabs
- Anal cleansing material (paper, leaves, water)
- Waste basket for used wiping material
- A place to wash hands after use
- Cleaning items such as broom, scrub brush etc

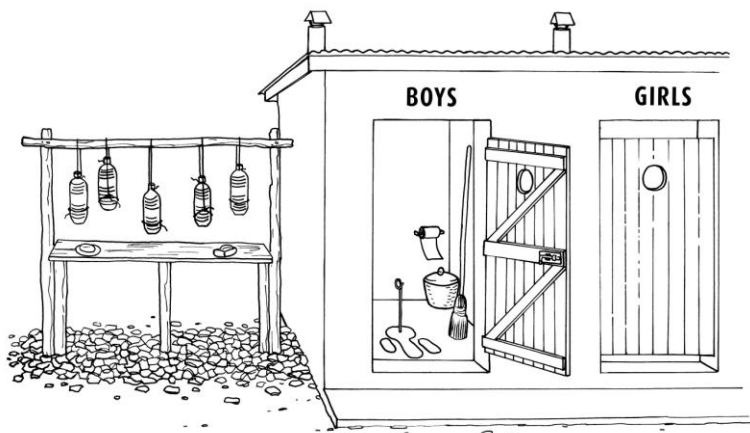
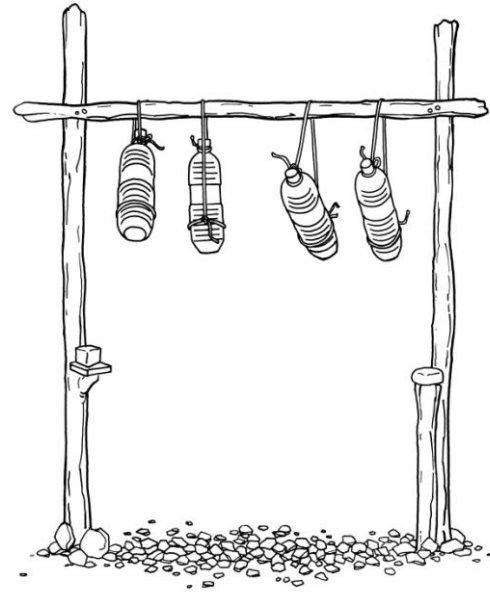
Handwashing stations should have (at least)

- Basin
- Source of running water for rinsing (tap, jug)
- Soap, ash, clean sand or mud
- Soak pit to avoid standing water



See: *Water, Sanitation and Hygiene Standards for Schools in Low-cost Settings (WHO, UNICEF 2009)*

School or OVC Child Center Tippy Tap Designs



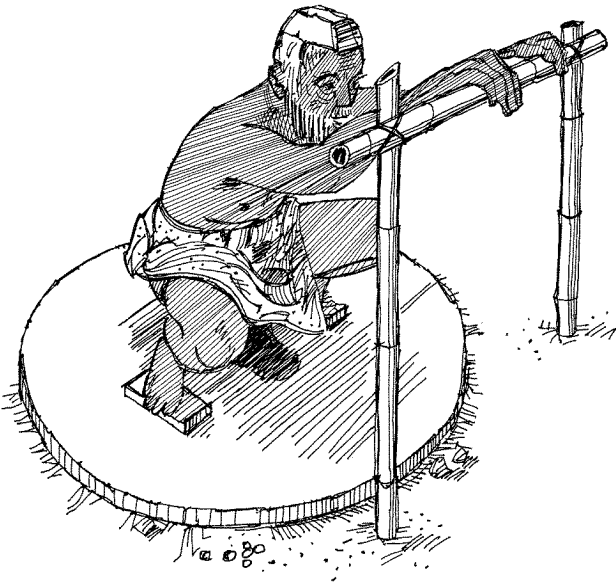
Simple Latrine Modifications

to Facilitate Latrine Use and Improved Sanitation
for the Elderly, Mobility Challenged, & Disabled

The following examples can serve as designs and inspiration to use local materials to build latrine supports that help the weak to squat and stand, enabling them to more easily use a latrine.

*Most images were provided by WEDC from their publication *Water and Sanitation for Disabled People and Other Vulnerable Groups – Designing Services to Improve Accessibility*, WEDC, Loughborough University, UK. ISBN Paperback 1 843800799. The full document can be downloaded from <http://www.lboro.ac.uk/wedc/publications/>*

Simple Rails and Poles



Raised Seats



Rope Supports



Annex 3: Sanitation/WASH

Questions to Include in Assessments

The following list of assessment questions may be too exhaustive to include in a nutrition assessment, but it is important to ask some questions from each of the categories to get people to think about different areas of WASH. The questions highlighted in **bold** are the ones to ask if you have only limited time. These questions originally appeared in a document HIP prepared for FANTA2 to assess integration of WASH in nutrition programming.

WASH Assessment Questions

1. Where do you get your drinking water from?
2. **Do you treat your drinking water? If so, how? Can you show me?**
3. **Where do you store treated drinking water? Can you show me?**
4. How do you serve/give people water to drink (pour from jug, dipper, etc.)?

5. **Do you have a latrine? Can you show it to me?**
6. **Who uses the latrine?**
7. **How often would you say family members use this latrine?**
8. Does anyone in your house need help to use the latrine?
9. Do your children use the latrine? If not, where do they defecate?

10. **Where do you wash your hands? Can you show me?**
11. **When do you wash your hands?**
12. How do you wash your hands?
13. Do you use soap or ash for hand washing? Can you show it to me?

14. Where do you prepare food for cooking?
15. **Do you wash your food before cooking? What foods do you wash before cooking?**
16. Are there foods you wash before cooking? Do you wash your food before cooking?
17. **Where do you store (cooked/prepared) food? For how long?**

18. How do you take care of menstruation?
19. **What kinds of materials do you use to soak up the blood from menstruation? Where do you dispose of or clean these materials?**

Annex 4: WASH Programming Language to Include in RFAs

Excerpted from: *Programming Water, Sanitation and Hygiene (WASH) Activities in U.S. Government Country Operational Plans (COPs): A Toolkit for FY2012 Planning*.
http://www.washplus.org/sites/default/files/COP_2012_Toolkit_Final.pdf

SAMPLE RFA LANGUAGE

EXAMPLE #1: COP Entry for a Comprehensive WASH Package (Technical Assistance, Training, Commodities and Supervision), for Adult PLHIV and their Families in a Home Setting

Program Area: Adult Care and Treatment

Budget Code: HBHC Care

Program Area Code: 08

Mechanism/Prime Partner: TBD (see suggested USG mechanisms section)

Planned Funds: TBD (insert \$ amt)

Secondary Budget Attribution for “Safe Water” Activities: TBD (insert \$ amt)

Sample Language: Addressing the water, sanitation, and hygiene needs of HIV-positive clients and their families is an important part of a comprehensive palliative care approach. Through healthy living and disease prevention, these interventions can substantially improve quality of life, reduce diarrheal disease, and protect the health of HIV-positive individuals and their families. The *(insert name of your adult care and support program or partner)* will be supported to adapt and implement a comprehensive package of water, sanitation, and hygiene interventions for HIV-infected individuals reached via home-based care (HBC) programming. The interventions are a part of the program’s delivery of the preventive care package for all HIV-positive clients and include the following: commodities for household safe water system (water purification with bleach/hypochlorite, storage vessels) and safe drinking water, hand washing stations (soap, jerry cans, small bottles for tippy-tap construction), and safe handling and disposal of feces (household bleach, jerry can, rubber sheet, and gloves).

Coupled with product distribution, USG/*(insert country name)* will support evidence-based behavior change activities and technical assistance that will result in the following: an in-service training curriculum for HBC providers that is locally adapted,

translated, and implemented; pictorial counseling cards to assist HBC providers in counseling family members on WASH actions and improved hygiene behaviors; safe water systems and hand washing stations placed in PLHIV homes; upgrading hygienic latrines to facilitate use; and food hygiene promotion in the community. This intervention will also include approaches that support a proportion of PLHIV who are bedridden, immobile, and/or incontinent, including the appropriate use of household bleach, rubber sheets, jerry cans, and gloves for safe feces handling and disposal and a clean environment. Ongoing technical support and training will be provided to home-based care providers, PLHIV, and their families on improved hygiene behavior practices with an emphasis on treating and storing water at the point of use, washing hands with soap at critical times and with proper technique, and safe handling and disposal of feces for the chronically and terminally ill clients. Logistics support will also address the appropriate use, storage, and replenishment of commodities. Funding will primarily be used to train home-based caregivers, PLHIV, and family members and procure commodities needed for household safe water systems, hand washing, and safe feces handling and disposal; monitoring program implementation; and evaluating program outcomes.

EXAMPLE #2: COP Entry for a Sanitation and Hand Washing Intervention (Technical Assistance, Training, Commodities and Supervision) for Orphans and Vulnerable Children in Schools

Program Area: Orphans and Vulnerable Children

Budget Code: HKID Care

Program Area Code: 13

Mechanism/Prime Partner: TBD (see suggested USG mechanisms section)

Planned Funds: TBD (insert \$ amt)

Secondary Budget Attribution for “Safe Water” Activities: TBD (insert \$ amt)

Sample Language: Sanitation and accompanying hand washing are an important part of comprehensive OVC care. Through healthy living and disease prevention, sanitation and hand washing interventions can substantially improve quality of life, reduce diarrheal disease, and protect the health of vulnerable children. The (*insert name of your OVC program*) will be supported to adapt and implement a sanitation and hand washing component for OVCs in primary school settings. The intervention is part of the program’s delivery of a menu of OVC interventions and includes the following: separate child-friendly latrines for boys and girls and male and female teachers and hand washing stations (soap, jerry cans, small bottles for tippy-tap construction in water-scarce areas, and buckets or jerry cans with taps in areas with adequate water). Coupled with product distribution, USG/(*insert country name*) will support evidence-based behavior change and education activities and technical assistance that will result

in the following: a school-based training curriculum (including suggested learning activities) for teachers, school staff, and children that is locally adapted, translated, and implemented; a pictorial, primary school reader to reinforce hygiene actions; and water saving hand washing stations (tippy taps or jerry cans or buckets with taps) placed in the schools; and hygienic latrines and food hygiene promotion in the school setting. Schools will receive ongoing technical support and training on improved hygiene behavior practices with an emphasis on building and maintaining a minimum standard of latrines for the center and washing hands with soap at critical times and with proper technique. Logistics support will also address the appropriate use, storage, and replenishment of commodities. Funding will primarily be used for training and to procure commodities needed for school-based latrine construction and maintenance and hand washing stations; monitoring program implementation; and evaluating program outcomes.

EXAMPLE #3: COP Entry to Support Integrating Water, Sanitation, and Hygiene in National HIV and AIDS Policy and Guidelines

Program Area: Health Systems Strengthening

Budget Code: OHSS

Program Area Code: 18

Mechanism/Prime Partner: TBD (see suggested USG mechanisms section)

Planned Funds: TBD (insert \$ amt)

Secondary Budget Attribution for “Safe Water” Activities: TBD (insert \$ amt)

Sample Language: A key objective of USG/(*insert your country name*)’s program is to reduce HIV-related morbidity and mortality rates and to slow the progression of HIV disease in affected communities. People living with HIV and AIDS experience unnecessary life-threatening opportunistic infections and orphans and vulnerable children experience unnecessary illness or death from exposure to unsafe drinking water, inadequate sanitation, and poor hygiene. A significant proportion of this burden could be prevented by integrating water, sanitation, and hygiene (WASH) programs, policies and guidelines into HIV and AIDS programming. Strong policy support is essential to integrating WASH and HIV and AIDS planning and implementation and to improving access to quality HIV prevention, care, and treatment services for HIV-infected and affected populations. The Government’s mandate is developing policies, standards, and technical guidelines for providing quality health services. Included in this is the responsibility to review, revise, develop and disseminate updated technical policies relating to HIV and AIDS to guide national health services and frontline service providers in offering comprehensive HIV and AIDS services.

In FY2010, the USG will support Government and other partners to review the current HIV and AIDS policy and guidelines on PMTCT, OVC, home-based care, ART and

clinical care for evidence-based water, sanitation, and hygiene strategies. The process will identify gaps and develop, revise, and update the national policy and guidelines for HIV and AIDS-related services to ensure that essential technical information on WASH is adequately addressed. All relevant policies and guidelines will be evidence-based, relevant, appropriate, and responsive to meet the demands for services to address the current epidemic in (*insert country name*) and to achieve program goals. During policy development, the program will consult widely with national and international experts, local stakeholders, service providers, non-governmental organizations, community-based organizations, other sectors whose activities impact on the program, and, most importantly, with the intended users of the services—persons infected with and affected by HIV. Emphasis will be placed on safe water treatment options and safe storage, hand washing with soap by providers, safe feces management and promoting a hygienic latrine, and food, personal, and household hygiene. The guideline development process will include country-specific estimates for water consumption for HIV-affected households and recommendations for improved point-of-use water quality and access and mainstreaming WASH planning in the health and HIV and AIDS sector. Activities will be aimed at preventing mother-to-child HIV transmission (effective maternal nutrition and safe infant feeding), extending and optimizing quality of life throughout the continuum of illness for HIV-infected adults and children, and improving the lives of orphans and other vulnerable children affected by HIV and AIDS.

Annex 5: WASH

Programming Language to Include in HIV and/or Nutrition Policy Documents

Excerpted from: *How to Integrate Water, Sanitation and Hygiene into HIV Programmes*, World Health Organization, 2010, pp. 27–38.

1. HOW to INTEGRATE WASH into GLOBAL HIV and AIDS POLICY and GUIDANCE

Key agencies such as UNAIDS, USAID, and WHO have developed key reference documents that are used by national AIDS programs and NGOs to set local policy and guidance. To assist countries in integrating WASH into HIV policies, these agencies also need to integrate WASH into these reference documents. The following list identifies the types of actions that should be taken at this global level.

- ✧ Modify reference documents used to develop country policies and guidelines.
 - Include necessary WASH behaviors in the minimum package and counseling sheet and supplies in the kits. Be specific, e.g., list key WASH practices, any equipment, supplies needed, and how to do each practice.
 - Include WASH in monitoring and recording forms.
- ✧ Revise “Minimum Packages,” “Home-based Care Kits,” school-based HIV education kits, indicator lists, and monitoring forms to include WASH.
 - For policies, provide a general description of any WASH package contents.
 - For guidelines, provide more specific descriptions of WASH topics.
 - For standards, explain each WASH practice in detail so providers know what to do and how to instruct householders in WASH practices.
- ✧ Ensure policies and guidelines suggest environmental health collaboration at all levels, as part of the multisectoral focus. This could include water, sanitation, and education program managers and others as appropriate.
- ✧ Learn from other multisectoral interventions. For example, food/nutrition security guidelines may already have highlighted important WASH behaviors.
 - Ensure WASH elements, indicators, etc. are integrated into food/nutritional security activities
 - Promote a WASH minimum package for home-based care and support services that emphasizes key hygiene behaviors and related enabling products and

infrastructure such as latrines, hand washing stations, soap, and chlorine solution.

- ✦ Develop list of key WASH behaviors for PLHIV
 - Develop generic assessment and counseling tools on the WASH behaviors.

2. HOW to INTEGRATE WASH into COUNTRY HIV and AIDS POLICY and GUIDANCE

This section aims to help countries identify where and how to include specific language on water, sanitation, and hygiene in guidance documents to minimize the spread of diarrhea throughout HIV-affected communities and beyond.

It is not necessary to develop a free-standing WASH and HIV Policy, but preferable to integrate WASH policies and guidance into overall HIV policies, whether general HIV or area specific (such as OVC, HBC, PMTCT, etc.). Provide a framework for integrating evidence-based WASH approaches into HIV and AIDS policies and guidelines. To support PLHIV, OVC, and their families further, foster linkages with other health and non-health programs that address water and sanitation insecurity and needs in targeted populations, etc. The table below provides criteria to assess the extent of WASH considerations in current country policy documents.

HOW to ASSESS COUNTRY POLICIES, GUIDELINES, & HANDBOOKS for SAFE WATER, SANITATION, and HYGIENE CONSIDERATIONS

Your overall objective is to assess the current level of WASH considerations in existing national policies, guidelines, and handbooks, and add or improve key sections as appropriate.

The following definitions are provided to clarify the general content of policies and guidelines, to guide the evaluation and/or modification of documents.

Policy: As a general rule, national or regional HIV and AIDS policies state a set of basic principles and [associated guidelines](#), formulated and enforced by the governing body, intended to influence and determine decisions, actions, and other matters.

Guidelines aim to streamline particular processes according to a set routine. By definition, following a guideline is not always mandatory ([protocol](#) would be a better term for a mandatory procedure). Guidelines are issued or adopted by an organization (governmental or private) to make the actions of its employees more predictable, and presumably of higher quality.

Standards are technical specifications or procedures that lay out characteristics of a product or procedure such as levels of quality, performance, safety, or dimensions.

Handbooks further elaborate guidelines to specify processes further, and often include job aids and/or counseling tools to support the quality implementation of processes.

Steps for Assessing and Strengthening Country Policies, Guidelines, and Handbooks:

1. If possible, obtain both printed AND electronic versions of any documents. If not available, it is possible to work with just print documents.

2. Start with the table of contents and chapter headings.
 - If the electronic version is available, literally do a word search (the “find” function under edit). Otherwise, visually scan the table of contents (TOC) and headings for the following key words:
Water, drinking, sanitation, toilet, latrine, hand washing, hygiene, feces (faeces for British English) and diarrhea (diarrhoea for British English).
3. Highlight these words in the TOC and headings.
4. Refer to the sections corresponding to the sections containing the key words.
5. Evaluate existing descriptions/statements associated with the key words.
 - Assess if the description or entry is adequate to precisely describe policy or guide a practitioner to implement the policy or practice.
 - Is it specific enough to serve as a recipe or formula?
 - Will it guide choices, when decisions are required or several options available?
6. Scan the document again, and note where entries should be added.
 - Appropriate places include any mentions of nutrition, feeding, supplementary feeding, home hygiene, personal hygiene, and sections pertaining to care and support, home-based care, prevention of mother-to-child-transmission of HIV, counseling and testing, etc.

Text from this document, particularly from the PRIORITY WASH PRACTICES for NATIONAL PROGRAMS can be added in appropriate sections.

The following sections provide suggestions for how countries can improve WASH guidance when they write or revise their HIV-related policies, guidelines, and handbooks.

Water Access

- ✦ Care and support guidelines should identify technologies to gather water more easily such as lengthening pump handles or installing cement platforms for children to stand on to pump water. Further, guidelines should identify water-saving techniques and describe how to install them. For example, instructions on rain water catchment systems and how to construct a “tippy tap” should be included in all care and support guidelines in resource-poor areas. Often made from a plastic jug, gourd, or other local material, a tippy tap regulates water flow to allow for hand washing with a very small quantity of water.

Water Quantity

- ✦ National HIV and AIDS guidelines should include estimates of water needed by HIV-affected households, which are greater than the “basic access” estimate of 20 liters per person per day for the general population. Evidence suggests that an additional 20 to 80 liters of water per day is required to support bedridden PLHIV (Ngwenya 2006). Home-based care guidelines should include a section on the amount of water needed to keep PLHIV and their environment clean. This should include an estimate of water quantity needed specific to the area as well as information on what to clean and how to clean. Care and support guidelines should provide specifications for water collection technologies such as water conservation and rain water catchment.

Water Quality

- ✧ Guidelines and training of care providers should include detailed instructions on water treatment techniques such as disinfection with sodium hypochlorite solution (chlorine), boiling, SODIS, and filtration, as well as information on proper storage and handling to reduce the potential for recontamination.
- ✧ Include sodium hypochlorite solution and information on other water treatment options as part of all ARV distribution to ensure medicines are taken with clean water.
- ✧ Include covered water vessel with taps (if commonly available) in a preventive care package distributed to PLHIV along with oral rehydration salts, soap, or other evidence-based interventions; use the most typical locally manufactured vessels available to avoid stigmatization. For the community at large, promote the same container and water treatment product that is included in ARV distribution or broader social marketing of water disinfection products.

Sanitation Access

- ✧ Identify and promote sanitary options for defecation.
- ✧ Promote construction of improved pit-latrines at the household level where space exists. In urban areas where space is limited, promote a feasible option such as “condominal” latrines/toilets connected to shared septic tank/system, privately managed pay-for-use public toilets, and above ground latrines, based on contextual and environmental factors.
- ✧ Promote client-friendly latrines in households that incorporate the following suggestions:
 - Ensure that the toilets or latrines and the entrance are wide enough to accommodate more than one person to assist unstable users.
 - Recommend/provide alternative technologies such as installing poles or strengthening venting poles to serve as support; installing ropes, bars, or handrails; providing seats/stools and other devices; constructing a ramp for easy access.
 - Design latrines that use natural light and have adequate ventilation.
 - Identify and promote appropriate options for sanitation when mobility is limited, such as bedside commodes or bedpans (made of plastic or locally available materials) and squat pots.
 - Provide a hand washing facility with soap or soap substitute (ash) near the latrine.
 - Provide detailed instructions on keeping the person, house, and surrounding environment clean.

Sanitation, Hygiene, and Hand Washing Knowledge and Practice

- ✧ Develop a comprehensive water, sanitation, and hygiene component to include in all care and support guidelines and training, including:
 - Guidance and technologies on hand washing in water-scarce settings;
 - Critical times for hand washing and proper technique;
 - Soap substitutes;
 - Proper disposal of waste water; proper use and maintenance of water and sanitation facilities;

- Household water treatment and safe storage; and
 - Clear communication of risks associated with and protective measures required for feces handling (e.g., when bathing clients and laundering soiled bedding/clothing).
- ✦ Develop hygiene promotion materials for care and support programs that use visuals and are suitable for low-literacy audiences; distribute them to caregivers and others who interact with HIV-affected households.
- ✦ Include water, sanitation, and hygiene in all nutrition guidelines for care and support programs as diarrhea prevents PLHIV from absorbing ARV medicines and essential nutrients.

3. ASSURING HIV and AIDS POLICIES and GUIDELINES SUPPORT WASH

Review current policies and guidelines and modify texts appropriately. The section above provided suggestions for topic areas to include when revising HIV policies, guidelines, and handbooks. This section provides examples of specific language that can be used to do this using safe drinking water as an example.

In a **national policy**, existing text might read:

All HIV-infected persons should drink safe water or all households without safe water should boil water for PLHIV to consume.

An improvement to this text would be to add:

All HIV-affected households should treat all drinking water and store in a narrow mouthed, covered container.

The text in **national guidelines** would include the text above from the policy, but include more details about safe hygiene practices.

Any containers provided at no cost should only be those that are commonly used and readily available in the marketplace. A container with a spigot is ideal but not always feasible for households. Items only available to PLHIV should be avoided because they identify recipients as HIV-positive and may be stigmatizing.

Sodium hypochlorite solution or tablets is the ideal water treatment method because the residual chlorine will protect the water from recontamination for 24 hours, but any of the four effective methods (hypochlorite solution) are acceptable.

Develop and implement national **Standards of Practice** that delineate the essentials of delivering WASH in HIV and AIDS settings at various practice levels and settings. This may include performance expectations for individuals responsible for WASH or HIV programming (e.g. nurses, volunteers, teachers), professional standards, etc. National standards should repeat the guidelines but also include language on “how-to” treat water, using each method. This language can be adapted from the WASH priority actions section at the beginning of this document.

Handbooks that are developed would repeat the language from the standards, but also include counseling tools and job aids for treating and safely storing drinking water.

National program managers are encouraged to understand the essential WASH actions for diarrheal disease prevention; to use this information to determine what types of water, sanitation, and hygiene approaches already exist in country programs (HIV or otherwise); to examine the types of potential WASH approaches, the cost of these approaches, and which programs might fit best into HIV and AIDS programming in your country; and to prioritize these activities for integration into country plans.

The following language could be included in its entirety or adapted and inserted into different documents such as guidelines, standards, handbooks, etc.

SAMPLE TEXT

Integrating WASH into HIV Care and Support Settings

Many life-threatening opportunistic infections are caused by exposure to unsafe water, inadequate sanitation, and poor hygiene. Diarrhea, a very common symptom that can occur throughout the course of HIV and AIDS, affects 90 percent of PLHIV and results in significant morbidity and mortality, especially in HIV-positive children. At least 30 percent of diarrheal diseases could be prevented through integrated programs involving the provision of water treatment and safe storage, safe feces disposal, and promotion of key hygiene practices. HIV and AIDS programs should consider building linkages among the health, water, and sanitation sectors to improve the number of safe water supply points and latrines that are accessible and close to where they are needed.

Hand Washing: Washing hands at critical times, with soap and with proper technique, is the most important hygiene measure to be integrated across all HIV and AIDS programs. Although hand washing studies are limited in HIV-positive clients, data support the benefits of hand washing in the general population, sometimes showing a reduction in diarrhea in Bangladeshi adults by 62 percent (Shahid 1996) and by 53 percent in a randomized controlled trial of children in Pakistan (Luby 2004). Programs can provide guidance and training on washing hands and proper technique, at a minimum. Programs should place hand washing stations with soap (or soap-substitute, such as ash) in facilities, community care points, and in the household. Some programs in water scarce situations should consider using a “tippy tap,” a simple plastic jug, gourd, or local material that regulates the flow of water to allow for hand washing with a very small quantity of water.

Safe Drinking Water: HIV and AIDS programs are encouraged to ensure PLHIV have access to safe drinking water in facility-based care settings and to support PLHIV with household water treatment and safe storage methods in communities where there is not a reliable source of safe water. Several technologies are viable for treating water in the home, including chlorination and storage in an appropriate vessel, various types of filters, proper boiling, solar disinfection (SODIS) using heat, and UV radiation and combined chemical coagulation, flocculation, and disinfection.

Sanitation: generally includes the collection and disposal of human excreta (feces, urine, sputum, and sweat) and management of trash, wastewater, storm water, sewage, and hazardous wastes. Most countries have poor access to a range of basic sanitation systems; therefore it is important to focus on simple efforts, like feces handling and disposal, which have the biggest health implications. Disposing of feces safely, isolating feces from flies and other insects, and preventing fecal contamination of water supplies would greatly reduce the spread of diseases. Studies have shown that those without easy access to latrines will often resort to open defecation methods.

Although HIV programs have not traditionally funded the construction of simple, on-site waste disposal systems like latrines, many sanitation interventions that will benefit PLHIV and their families can be supported. For example, health workers, caregivers, family members, and PLHIV need to learn how to build a latrine and be trained on how to use existing latrines safely. Further, installing poles or stools in a latrine will assist weak PLHIV to use the latrine. If a latrine is not available, feces must be collected in a bedpan and buried away from the facility, clinic, and home, and away from where animals can dig it up. If a client is weak, less mobile, or bedbound

and cannot use a latrine, programs can ensure access to simple commodes or bedpans that can be used by PLHIV to defecate in the bed or house and that can be emptied by caregivers. Adult treatment care programs can ensure that PLHIV with diarrhea are supported to protect their skin, sheets, clothing, and mattress from becoming soiled with feces. Strategies such as placing a plastic sheet covered by paper or a cloth under the client's buttocks are very simple and cost-effective measures that can ease the caregiving burden.

Ensuring **personal, nutritional, and environmental hygiene** is essential to reducing the infectious disease burden experienced by PLHIV. The combination of improved water treatment and handling, feces removal, personal hygiene (PLHIV & health worker hygiene and cleanliness), food hygiene (safe cooking, mixing, storing, and disposing of food), and ensuring a hygienic environment in clinics and in homes will effectively reduce water and sanitation related diseases. Hygiene education must particularly be targeted at caregivers and volunteers involved in home-based care and must be one element in home-based care training.

Annex 6: Infections Affecting PLHIV

Provided by Joe Brown. London School of Hygiene and Tropical Medicine, 2012.

Infection	Aetiologic Agent Type	Route of Transmission	Evidence for Role of WASH in Transmission or Prevention
Malaria	Protozoa	Water-related vector: mosquito	YES
Microsporidiosis–Diarrhea	Protozoa	Food and waterborne	YES
Isosporiasis – Diarrhea	Protozoa	Food and waterborne	YES
Cryptosporidiosis – Diarrhea	Protozoa	Food and waterborne	YES
Giardia – Diarrhea	Protozoa	Waterborne	YES
Leishmaniasis	Protozoa	Vector: sand flies and intravenous drug users	NO
Toxoplasmosis	Protozoa	Food, waterborne – zoonotic	YES
Parasites/worms (such as tapeworm, hookworm, Ascaris)	Helminth	Soil, food, and water related	YES
Schistosomiasis	Helminth	Food and waterborne	YES
Oral/esophageal candidiasis	Fungal	Natural flora – opportunistic	NO
<i>Pneumocystis</i> Pneumonia (PCP)	Fungal	Natural flora – opportunistic	NO
Coccidioidomycosis	Fungal	Soil	NO
Histoplasmosis	Fungal	Soil	YES

INTEGRATING SANITATION INTO THE BASIC CARE PACKAGE

Cryptococcosis	Fungal	Soil	NO
<p>Bacterial respiratory tract infections such as:</p> <ul style="list-style-type: none"> • <i>Streptococcus pneumoniae</i> • <i>Haemophilus</i> • <i>Pseudomonas aeruginosa</i> • <i>Staphylococcus aureus</i> 	Bacteria	<p><i>Streptococcus pneumoniae</i> and <i>Haemophilus</i> transmitted through close contact (related to WASH – hand washing and hygiene)</p> <p><i>Pseudomonas aeruginosa</i> and <i>Staphylococcus aureus</i> transmitted through water (related to WASH – waterborne pathogens)</p>	<p><i>Streptococcus pneumoniae</i> and <i>Haemophilus</i> evidence for WASH in prevention</p> <p><i>Pseudomonas aeruginosa</i> and <i>Staphylococcus aureus</i> evidence for WASH in transmission</p>
<p>Nontuberculous mycobacterial infection, such as:</p> <ul style="list-style-type: none"> • <i>Mycobacterium avium</i> complex 	Bacteria	Ubiquitous in soil, water, food (related to WASH – hand washing? water disinfection?)	YES

Annex 7: Annotated Bibliography of HIV and WASH Articles

April 5, 2012

Abukar I, et al. **Prevention and treatment of cryptosporidiosis in immunocompromised patients.** *Cochrane Database Syst Rev.* 2007 Jan 24;(1):CD004932.

Cryptosporidiosis is a disease that causes diarrhoea lasting about one to two weeks, sometimes extending up to 2.5 months among the immunocompetent and becoming a more severe life-threatening illness among immunocompromised individuals. *Cryptosporidium* is a common cause of gastroenteritis. Cryptosporidiosis is common in HIV-infected individuals. The objective of the review was to assess the efficacy of interventions for the treatment and prevention of cryptosporidiosis among immunocompromised individuals. Randomised controlled trials that compared the use of any intervention to treat or prevent cryptosporidiosis in immunocompromised persons were included. The outcome measures for treatment studies included symptomatic diarrhoea and oocyst clearance. Two reviewers independently assessed the trials for quality of randomisation, blinding, withdrawals, and adequacy of allocation concealment. No studies were found that assessed prevention. **AUTHORS' CONCLUSIONS:** This review confirms the absence of evidence for effective agents in the management of cryptosporidiosis. The results indicate that nitaxozanide reduces the load of parasites and may be useful in immunocompetent individuals. Due to the seriousness of the potential outcomes of cryptosporidiosis, the use of nitaxozanide should be considered in immunocompromised patients. The absence of effective therapy highlights the need to ensure that infection is avoided. Unfortunately, evidence for the effectiveness and cost-effectiveness of preventive interventions is also lacking.

Aragon TJ, et al. **Endemic cryptosporidiosis and exposure to municipal tap water in persons with acquired immunodeficiency syndrome (AIDS): a case-control study.** *BMC Public Health.* 2003 Jan 6;3:2.

In persons with acquired immunodeficiency syndrome (AIDS), *Cryptosporidium parvum* causes a prolonged, severe diarrheal illness to which there is no effective treatment, and the risk of developing cryptosporidiosis from drinking tapwater in non-outbreak settings remains uncertain. To test the hypothesis that drinking tap water was associated with developing cryptosporidiosis, authors conducted a matched case-control study among persons with AIDS in San Francisco. Among patients reported to the San Francisco AIDS Registry from May 1996 through September 1998, we compared patients who developed **cryptosporidiosis** to those who did not. Cases were individually matched to controls based on age, sex, race/ethnicity, CD4+ T lymphocyte count, date of CD4+ count, and date of case diagnosis. Population attributable fractions (PAFs) were calculated. The study consisted of 49 cases and 99 matched controls. In the multivariable analysis with

adjustments for confounders, **tap water** consumption inside and outside the home at the highest **exposure** categories was associated with the occurrence of **cryptosporidiosis** (inside the home: odds ratio (OR), 6.76; 95% CI 1.37-33.5, and outside the home: OR 3.16; 95% CI 1.23-8.13). The PAF was 85%; that is, the proportion of cases of **cryptosporidiosis** in San Francisco AIDS patients attributable to **tap water** consumption could have been as high as 85%. Although the results from this observational study cannot be considered definitive, until there is more data, we recommend **persons** with AIDS, especially those with compromised immune systems, consider avoiding **tap water**.

Barzilay EJ, et al. **Diarrhea prevention in people living with HIV: an evaluation of a point-of-use water quality intervention in Lagos, Nigeria**, *AIDS Care*. 2011 Mar;23(3):330-9.

Diarrhea is a leading cause of morbidity and mortality in people living with HIV (PLHIV) in Africa. The impact of a point-of-use water chlorination and storage intervention on diarrheal-disease risk in a population of HIV-infected women in Lagos, Nigeria was evaluated. A baseline survey was performed, followed by six weeks of baseline diarrhea surveillance consisting of weekly home visits, distribution of free water chlorination products and safe storage containers to project participants, and continued weekly home-based diarrhea surveillance for 15 additional weeks. To confirm use of the water chlorination product, during each home visit, stored water was tested for residual chlorine. About 187 women were enrolled. At baseline, 80% of women had access to improved water supplies and 95% had access to sanitation facilities. Following distribution of the intervention, water stored in participants' households was observed to have residual chlorine during 50-80% of home visits, a sign of adherence to recommended water-treatment practices. Diarrhea rates in project participants were 36% lower in the post-intervention period than during the baseline period ($p=0.04$). Diarrhea rates were 46% lower in the post-intervention period than the baseline period among project participants who were confirmed to have residual chlorine in stored water during 85% or more of home visits ($p=0.04$); there was no significant difference in diarrhea rates between baseline and post-intervention periods in participants confirmed to have residual chlorine in stored water during less than 85% of home visits. The percent change in diarrhea rates between baseline and post-intervention surveillance periods was statistically significant among non-users of prophylactic antibiotics (-62%, $p=0.02$) and among persons who used neither prophylactic antibiotics nor antiretroviral treatment (-46%, $p=0.04$). Point-of-use water treatment was associated with a reduced risk of diarrhea in PLHIV. Regular water treatment was required to achieve health benefits.

Biet F. **Zoonotic aspects of *Mycobacterium bovis* and *Mycobacterium avium-intracellulare* complex (MAC)**. *Vet Res*. 2005 May-Jun;36(3):411-36.

Pathogens that are transmitted between the environment, wildlife, livestock and humans represent major challenges for the protection of human and domestic animal health, the economic sustainability of agriculture, and the conservation of wildlife. Among such pathogens, the genus *Mycobacterium* is well represented by *M. bovis*, the etiological agent of bovine tuberculosis, *M. avium* ssp. *paratuberculosis* (Map) the etiological agent of Johne disease, *M. avium* ssp. *avium* (Maa) and in a few common cases by other emergent environmental mycobacteria. Epidemiologic surveys performed in Europe, North America and New Zealand have demonstrated the existence and importance of environmental and wildlife reservoirs of mycobacterial infections that limit the attempts of disease control programmes. The aim of this review is to examine the zoonotic aspects of mycobacteria transmitted from the environment and wildlife. This work is focused on the species of two main groups of mycobacteria classified as important pathogens for humans and animals: first, *M. bovis*, the causative agent of bovine tuberculosis, which belongs to the *M.*

tuberculosis complex and has a broad host range including wildlife, captive wildlife, domestic livestock, non-human primates and humans; the second group examined, is the *M. avium-intracellulare* complex (MAC) which includes *M. avium* ssp. *avium* causing major health problems in AIDS patients and *M. avium* ssp. *paratuberculosis* the etiological agent of Johne disease in cattle and identified in patients with Crohn disease. MAC agents, in addition to a broad host range, are environmental mycobacteria found in numerous biotopes including the soil, water, aerosols, protozoa, deep litter and fresh tropical vegetation. This review examines the possible reservoirs of these pathogens in the environment and in wildlife, their role as sources of infection in humans and animals and their health impact on humans. The possibilities of control and management programmes for these mycobacterial infections are examined with regards to the importance of their natural reservoirs.

Brantley RK, et al. **AIDS-associated diarrhea and wasting in Northeast Brazil is associated with subtherapeutic plasma levels of antiretroviral medications and with both bovine and human subtypes of *Cryptosporidium parvum*.** *Braz J Infect Dis.* 2003 Feb;7(1):16-22.

Advanced HIV infection is frequently complicated by diarrhea, disruption of bowel structure and function, and malnutrition. Resulting malabsorption of or pharmacokinetic changes in antiretroviral agents might lead to subtherapeutic drug dosing and treatment failure in individual patients, and could require dose adjustment and/or dietary supplements during periods of diarrheal illness. We determined the plasma levels of antiretroviral medications in patients that had already been started on medication by their physicians, in an urban infectious diseases hospital in northeast Brazil. We also obtained blood samples from patients hospitalized for diarrhea or AIDS-associated wasting, and we found reduced stavudine and didanosine levels in comparison with outpatients without diarrhea or wasting who had been treated at the same hospital clinic. There was a predominance of the protozoal pathogens *Cryptosporidium* and *Isospora belli*, typical opportunistic pathogens of AIDS-infected humans, in the stool samples of inpatients with diarrhea. We conclude that severe diarrhea and wasting in this population is associated with both protozoal pathogens and subtherapeutic levels of antiretroviral medications.

Bushen OY, et al. **Diarrhea and reduced levels of antiretroviral drugs: improvement with glutamine or alanyl-glutamine in a randomized controlled trial in northeast Brazil.** *Clin Infect Dis.* 2004 Jun 15;38(12):1764-70.

The effects of therapy with glutamine and alanyl-glutamine on diarrhea and antiretroviral drug levels in patients with acquired immune deficiency syndrome (AIDS) were examined in a randomized, double-blinded, placebo-controlled study in northeast Brazil. Patients with AIDS and with diarrhea and/or wasting were randomized into 4 groups to determine the efficacy of glutamine or high- or low-dose alanyl-glutamine given for 7 days, compared with isonitrogenous glycine given to control subjects. All patients in whom baseline antiretroviral drug levels were determined had low levels 2 h after dosing. Gastrointestinal symptom scores improved with receipt of high-dose alanyl-glutamine ($P < .05$) or glutamine ($P < .01$). Antiretroviral drug levels increased in patients given alanyl-glutamine ($P = .02$) or glutamine ($P = .03$) by 113% ($P = .02$) and 14% ($P = .01$), respectively. Antiretroviral drug resistance mutations were common in all groups. The dose-related efficacy of alanyl-glutamine and glutamine in treating diarrhea and in increasing antiretroviral drug levels shows that these supplements may help to improve therapy for patients with AIDS who have diarrhea and/or wasting in developing, tropical areas.

Ejemot, 2008 - **Hand washing for preventing diarrhea**, *Cochrane Database Syst Rev*. 2008 Jan 23;(1):CD004265.

Diarrhoea is a common cause of morbidity and a leading cause of death among children aged less than five years, particularly in low- and middle-income countries. It is transmitted by ingesting contaminated food or drink, by direct person-to-person contact, or from contaminated hands. Hand washing is one of a range of hygiene promotion interventions that can interrupt the transmission of diarrhoea-causing pathogens. To evaluate the effects of interventions to promote hand washing on diarrhoeal episodes in children and adults. Randomized controlled trials, where the unit of randomization is an institution (eg day-care centre), household, or community, that compared interventions to promote hand washing or a hygiene promotion that included hand washing with no intervention to promote hand washing. Two authors independently assessed trial eligibility and methodological quality. Where appropriate, incidence rate ratios (IRR) were pooled using the generic inverse variance method and random-effects model with 95% confidence intervals (CI). Fourteen randomized controlled trials met the inclusion criteria. Eight trials were institution-based, five were community-based, and one was in a high-risk group (AIDS patients). Interventions promoting hand washing resulted in a 29% reduction in diarrhoea episodes in institutions in high-income countries (IRR 0.71, 95% CI 0.60 to 0.84; 7 trials) and a 31% reduction in such episodes in communities in low- or middle-income countries (IRR 0.69, 95% CI 0.55 to 0.87; 5 trials). **AUTHORS' CONCLUSIONS:** Hand washing can reduce diarrhoea episodes by about 30%. This significant reduction is comparable to the effect of providing clean water in low-income areas. However, trials with longer follow up and that test different methods of promoting hand washing are needed.

Filteau S. **The HIV-exposed, uninfected African child**. *Trop Med Int Health*. 2009, Mar;14(3):276-87.

The increasing success of prevention of mother-to-child HIV transmission programmes means that in Africa, very large numbers of HIV-exposed, uninfected (HIV-EU) children are being born. Any health problems that these children may have will thus be of enormous public health importance, but to date have been largely neglected. There is some evidence that HIV-EU African children are at increased risk of mortality, morbidity and slower early growth than their HIV-unexposed counterparts. A likely major cause of this impaired health is less exposure to breast milk as mothers are either less able to breastfeed or stop breastfeeding early to protect their infant from HIV infection. Other contributing factors are parental illness or death resulting in reduced care of the children, increased exposure to other infections and possibly exposure to antiretroviral drugs. A broad approach for psychosocial support of HIV-affected families is needed to improve health of HIV-EU children. High quality programmatic research is needed to determine how to deliver such care.

Harris JR, et al. **Effect of a point-of-use water treatment and safe water storage intervention on diarrhea in infants of HIV-infected mothers**, *J Infect Dis* 2009, Oct 15: 200(8): 1186-93.

To reduce mother-to-child transmission of human immunodeficiency virus (HIV) in resource-poor settings, the World Health Organization recommends exclusive breast-feeding for 6 months, followed by rapid weaning if replacement feeding is affordable, feasible, available, safe, and sustainable. In the Kisumu Breastfeeding Study (trial registration: Clinicaltrials.gov identifier NCT00146380), infants of HIV-infected mothers who received antiretroviral therapy experienced high rates of diarrhea at weaning. To address this problem, mothers in the Kisumu Breastfeeding Study were given safe water storage vessels, hygiene education, and bleach for household water treatment. We compared the incidence of diarrhea in infants enrolled before

(cohort A) and after (cohort B) implementation of the intervention. Cohort B infants experienced less diarrhea than cohort A infants, before and after weaning ($P < .001$ and $P = .047$, respectively); however, during the weaning period, there were no differences in the frequency of diarrhea between cohorts ($P = 0.89$). Testing of stored water in cohort B homes indicated high adherence (monthly range, 80%-95%) to recommended chlorination practices. Among infants who were weaned early, provision of safe water may be insufficient to prevent weaning-associated diarrhea.

Hillebrand-Haverkort ME. **Generalized mycobacterium genavense infection in HIV-infected patients: detection of the mycobacterium in hospital tap water**, *Scand J Infect Dis.* 1999;31(1):63-8.

We describe 3 HIV-infected patients with disseminated *M. genavense* infection. The use of corticosteroids possibly favoured colonization and dissemination of atypical mycobacteria in these patients with low CD4 cell counts and may have masked symptoms of infection. The fact that these patients were treated with highly active antiretroviral therapy (HAART) together with antimycobacterial therapy may explain that 1 patient was free from mycobacteria 16 months after the end of specific treatment. Hospital tap water contained *M. genavense* at a concentration of >10 bacteria/l as examined by PCR. This species caused 12% of cases of non-tuberculous disseminated mycobacteriosis in HIV-infected patients at our hospital.

Isaac R, et al. **Malabsorption in wasting HIV disease: diagnostic and management issues in resource-poor settings**. *Trop Doct.* 2008 Jul;38(3):133-4.

In resource-poor countries with limited access to highly active antiretroviral therapy (HAART), the number of people dying from AIDS is expanding rapidly. The alarming death rates are a consequence of the combined effects of opportunistic infections, malnutrition and wasting in HIV disease. Several studies have shown that weight loss and wasting (usually defined as loss of at least 10% of body weight) is significantly associated with accelerated disease progression and increased mortality in HIV infection. In addition, with significant wasting, affected individuals are unable to carry out their normal activities which may worsen the stigma of already marginalized HIV-infected individuals.

Lule JR, et al. **Effect of home-based water chlorination and safe storage on diarrhea among persons with human immunodeficiency virus in Uganda**, *Am J Trop Med Hyg.* 2005 Nov;73(5):926-33.

Diarrhea is frequent among persons infected with human immunodeficiency virus (HIV) but few interventions are available for people in Africa. We conducted a randomized controlled trial of a home-based, safe water intervention on the incidence and severity of diarrhea among persons with HIV living in rural Uganda. Between April 2001 and November 2002, households of 509 persons with HIV and 1,521 HIV-negative household members received a closed-mouth plastic container, a dilute chlorine solution, and hygiene education (safe water system [SWS]) or simply hygiene education alone. After five months, HIV-positive participants received daily cotrimoxazole prophylaxis (160 mg of trimethoprim and 800 mg of sulfamethoxazole) and were followed for an additional 1.5 years. Persons with HIV using SWS had 25% fewer diarrhea episodes (adjusted incidence rate ratio [IRR] = 0.75, 95% confidence interval [CI] = 0.59-0.94, $P = 0.015$), 33% fewer days with diarrhea (IRR = 0.67, 95% CI = 0.48-0.94, $P = 0.021$), and less visible blood or mucus in stools (28% versus 39%; $P < 0.0001$). The SWS was equally effective with or without cotrimoxazole prophylaxis ($P = 0.73$ for interaction), and together they reduced diarrhea episodes by 67% (IRR = 0.33, 95% CI = 0.24-0.46, $P < 0.0001$), days with diarrhea by 54% (IRR = 0.46, 95% CI = 0.32-0.66, $P < 0.0001$), and days of work or school lost due to diarrhea by 47% (IRR = 0.53, 95% CI = 0.34-0.83, $P < 0.0056$). A home-based safe water system reduced diarrhea frequency and severity among persons with HIV living in Africa and large scale implementation should be considered.

Martins CA, et al. **Cryptosporidium and cryptosporidiosis.** *Parasitol Today.* 1995 Nov;11(11):434-6.

The tiny, iodine- and chlorine-resistant protozoan oocysts of *Cryptosporidium parvum*, long recognized by veterinarians, have become increasingly noted as a cause of watery diarrhea in developed and developing countries throughout the world. For immunocompromised patients, particularly those with AIDS, this diarrhea can be severe and life-threatening. Clovis Martins and Richard Guerrant here discuss the increasing recognition of this important pathogen in immunocompetent patients as well, and outline new challenges to improved water treatment, immunologic and antiparasite chemotherapy.

Xue J, et al. **Use of nutritional and water hygiene packages for diarrhoeal prevention among HIV-exposed infants in Lilongwe, Malawi: an evaluation of a pilot prevention of mother-to-child transmission post-natal care service,** *Trop Med Int Health.* 2010 Oct;15(10):1156-62.

OBJECTIVE: To evaluate a pilot prevention of mother-to-child transmission post-natal programme in Lilongwe, Malawi, through observed retention and infant diarrhoeal rates. Free fortified porridge and water hygiene packages were offered to mothers to encourage frequent post-natal visits and to reduce diarrhoeal rates in infants on replacement feeding. Participant retention and infant health outcome were assessed. Of 474 patients enrolled, 357 (75.3%) completed 3-month follow-up visits. Ninety-nine percent of women reported hygiene package use, and only 17.7% (95% CI 13.8-22.0%) of the infants had diarrhoea at least once over the 3-month period. Being 12 months or younger, confirmed HIV positive, access to tap water, and having a mother with diarrhoea were all associated with increased risk of infant diarrhoea. **CONCLUSION:** The majority of participants adhered to their scheduled visits and retention was favourable, possibly because of the introduction of hygiene and nutrition incentives. The infant diarrhoeal rate was low, suggesting benefits of regular medical care with hygiene package usage and reliable replacement feeding options. Continuation and expansion of the programme would allow further studies and improve the post-natal care of HIV-exposed infants in Malawi and in other resource-constrained countries.

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