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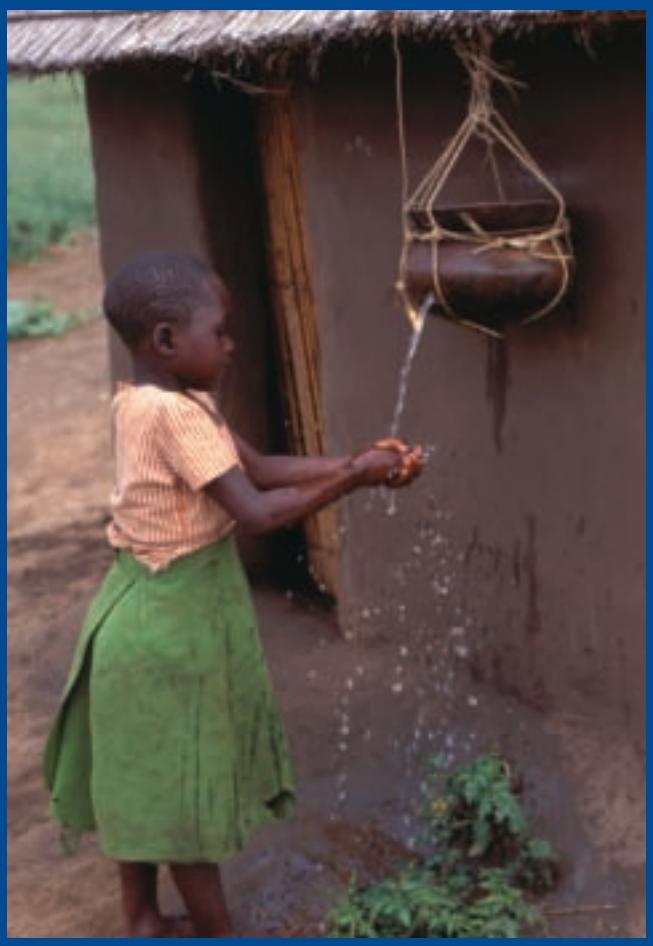
HIP HYGIENE IMPROVEMENT PROJECT

# PROGRAMMING GUIDANCE FOR INTEGRATING WATER, SANITATION, AND HYGIENE IMPROVEMENT INTO HIV/AIDS PROGRAMS



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USAID/HIP aims to reduce diarrheal disease prevalence in children under five through the promotion of key hygiene practices: hand washing, safe feces disposal, and safe storage and treatment of drinking water. This document supports a key HIP task, which is to promote the integration of hygiene considerations into health and non-health programs, such as HIV/AIDS, education, and nutrition. USAID/HIP is currently integrating water, sanitation, and hygiene programming into HIV/AIDS care and support programs in Ethiopia and Uganda and is developing tools and materials that can be adapted by other countries. Examples of USAID/HIP technical assistance activities include:

- Developing a strategy to integrate water, sanitation, and hygiene interventions into programs.
- Creating country-specific tools to help integrate water, sanitation, and hygiene into programs.
- Providing guidance and resources for program managers.
- Conducting training on integrating water, sanitation, and hygiene (WASH) into HIV/AIDS programs.



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Globally more than 33 million people now live with HIV/AIDS (UNAIDS 2007). This pandemic has dramatically changed patterns of disease in developing countries. In addition, previously rare "opportunistic" diseases have become more common. High rates of mortality due to endemic conditions such as tuberculosis (TB), diarrheal diseases, and wasting syndromes, which were formerly confined to the elderly and malnourished, are now common among young and middle-aged people in many developing countries.

As more people live with HIV and AIDS, comprehensive care, treatment, and preventative services are necessary to help them live longer and healthier lives. Recognizing the importance of safe water, sanitation, and hygiene promotion in protecting and caring for people living with HIV and AIDS (PLWHA), some organizations are integrating water, sanitation, and hygiene improvement into their HIV/AIDS programs. As part of its palliative care approach,[1] the President's Emergency Plan for AIDS Relief[2] has developed a Preventive Care Package that summarizes evidence-based interventions for PLWHA and their families in resource-poor settings. The package identifies three key hygiene improvement practices—safe drinking water, washing hands with soap, and safe feces handling and disposal—and suggests integrating these into all HIV/AIDS programs.

The purpose of this paper is to highlight discrete water, sanitation, and hygiene improvement activities that can be incorporated into HIV/AIDS programs in different settings to help mitigate the impact of diarrhea on PLWHA and their families—prolonging and improving the quality of life for PLWHA and protecting family members and caregivers from the debilitating effects of diarrhea on school attendance, livelihood, and caregiving.

## DIARRHEA AND HIV/AIDS

Diarrhea, a very common symptom of HIV and AIDS, affects 90 percent of PLWHA and results in significant morbidity and mortality (Katabira 1999; Monkemuller and Wilcox 2000). Research on co-infection of diarrhea and HIV and AIDS shows that morbidity and mortality due to diarrheal disease is even more severe in children with HIV and AIDS. 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 were also at 3.5 times greater risk of developing recurrent bouts of diarrhea than babies born to HIV-negative mothers (Keuch et al. 1992).

Globally, diarrheal disease is the second highest cause of mortality and morbidity in children under five years of age. According to the World Health Organization's (WHO) Global Burden of Disease 2004 estimates, diarrhea accounts for nearly 1.8 million deaths, or 17 percent of under-five mortality, each year in developing countries. WHO estimates that 85 to 90 percent of

[1] "Palliative care aims to achieve optimal quality of life for PLWHA 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/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

[2] 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 PLWHA.

diarrheal illnesses in developing countries can be attributed to unsafe water and inadequate sanitation and hygiene practices (Pruess-Ustun et al. 2004).

## KEY HYGIENE IMPROVEMENT PRACTICES

Hygiene improvement is a comprehensive approach to reducing diarrheal disease by promoting improvements in key hygiene practices (hand washing, treatment and safe storage of water, and sanitation/feces management), improving access to safe water and sanitation technologies and products, and facilitating or supporting an enabling environment (improved policies, community organization, institutional strengthening, and public-private partnerships). While the evidence base to document the relationship between hygiene improvement and reduction in diarrheal disease morbidity in PLWHA is just emerging, the evidence base regarding the impact of hygiene in reducing diarrheal disease overall is indisputable and impressive. Indeed, hand washing, sanitation, and water treatment and safe storage have each been proven to reduce diarrhea rates by 30 to 40 percent (Fewtrell et al. 2005; Curtis and Cairncross 2003). CARE/Bangladesh's Sanitary and Family Education project demonstrated a 65 percent decrease in diarrhea rates when all three components of hygiene improvement were present in a program (Bateman et al. 2002; USAID 2004). Further evidence suggests that diarrheal disease reduces the absorption of antiretroviral medicines and essential nutrients further exacerbating the consequences of HIV and AIDS (Bushen et al. 2004).

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Installing a tippy-tap made from local materials, such as this plastic jug, is an easy way to create a hand washing station that also conserves water.

Promoting these practices can prolong life and improve the quality of life for PLWHA and can also protect family members and caregivers from contracting diarrhea. In the later stages of AIDS, diarrhea becomes increasingly severe and persistent. Feces itself presents little risk of HIV infection though great risk of transmitting diarrhea-causing pathogens. HIV has never been isolated in urine or feces, and international guidelines all rate the risk of HIV infection from feces itself to be low to none, although blood and puss in stools can present some risk so universal precautions are recommended for handling feces. Nonetheless, other infectious agents that cause diarrhea are easily transmitted to caregivers and other household members unless fecal matter is cleared away quickly and thoroughly with water and a cleaning agent.

## OPTIMAL HAND WASHING

Hand washing prevents diarrhea effectively when done properly and at critical times. A recent 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 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 PLWHA 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.

## TREATMENT AND SAFE STORAGE OF WATER IN THE HOUSEHOLD

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 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 disinfect 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 PLWHA (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). 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.[3]

## SANITATION/FECES MANAGEMENT

Safe feces handling and disposal have been shown to reduce the risk of diarrheal disease by 30 percent or more (Fewtrell et al. 2005). Moreover, PLWHA are more susceptible to contracting diarrhea when fecal matter is present in the environment. Therefore, 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. PLWHA 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 technologies and approaches are being tested by HIP in project sites in Ethiopia and Uganda. In a recent field trial in Uganda, the presence of a latrine in a compound was associated with fewer episodes and fewer days of diarrhea in PLWHA (Lule 2005). Additionally, as diarrhea becomes progressively worse, keeping a home clean of feces can be difficult. This may require new approaches and renewed vigilance in cleaning the home. For example, promoting portable potties/buckets, developing washable mats, or placing cloth that can be easily washed over straw beds will help reduce exposure to pathogens from diarrhea.

JONATHAN ANNIS

Access to safe water is essential for PLWHA. Storing water after it is treated in covered vessels like this one ensures the water is not recontaminated. A spigot is also recommended for easy access.

[3] 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.

[4] Improved 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.

## RECOMMENDATIONS FOR INTEGRATING WATER, SANITATION, AND HYGIENE IMPROVEMENT INTO HIV/AIDS PROGRAMS[5]

While evidence is growing on the effectiveness of integrating safe water, hygiene, and sanitation interventions into HIV/AIDS programs, little specific programming guidance exists. The following recommendations on how to integrate water, sanitation, and hygiene into HIV/AIDS programs were developed through extensive consultations with HIV/AIDS and water sector researchers and program implementers and a broad review of the literature from different sectors (HIV/AIDS, water and sanitation, and disability) conducted by USAID/HIP and the World Bank Water and Sanitation Program in 2007. Additionally, these recommendations were vetted and refined during a workshop on the Integration of Water, Sanitation, and Hygiene into Home-Based Care Strategies for PLWHA held in Malawi in 2007—sponsored by USAID/HIP, the World Health Organization, and Catholic Relief Services—which aimed to develop country-specific policy and program recommendations both as inputs to national policy and to guide implementing organizations in the field.

### WATER QUANTITY

Research has shown that PLWHA households with access to more water have cleaner environments and therefore fewer routes for transmitting diarrhea-causing pathogens. A long term goal would be for every household to have a water source close to home, however, in the short term, water collection and saving technologies should be developed.

- National guidelines should include estimates for water consumption in HIV-affected households that are greater than the "basic access" of 20 liters per person per day. Evidence suggests that an additional 20 to 80 liters of water per day is required to support bedridden PLWHA (Ngwenya et al. 2006).
- Home-based care guidelines should include a section on the amount of water needed to keep PLWHA and their environment clean. This should include an estimate of water quantity needs as well as information on what to clean and how. Care and support guidelines should provide specifications for water collection technologies.

### WATER QUALITY

Safe drinking water is always important, but never more so than for people with compromised immune systems and PLWHA who have begun antiretroviral (ARV) treatment medication. In home-based care guidelines safe water may be mentioned, but caregivers need more details on how to provide safe drinking water:

- Promote water treatment at the point of use.
  - Guidelines and care provider training should include detailed instructions on water treatment techniques including boiling, disinfection with hypochlorite solution (chlorine), and SODIS, as well as information on proper storage and handling to reduce the potential for recontamination.
  - Include hypochlorite solution and information on other water treatment options as part of all ARV distribution

SVEN TORFINN/PANOS PICTURES

To keep a clean environment for PLWHA, households may require as much as 20 to 80 additional liters of water a day.

[5] These recommendations are derived from the 2007 USAID Malawi Workshop on Integration of Water, Sanitation and Hygiene into HIV Home-Based Care Strategies and compiled by USAID/HIP.

to ensure medicines are taken with clean water.

- Include covered water vessel with taps (if commonly available) in a preventive care package distributed to PLWHA 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 that is included in ARV distribution or broader social marketing of water disinfection products.

## WATER ACCESS

When water is accessible, it can have a profound impact on HIV-affected households: safe water is used more consistently, fewer resources are spent obtaining safe water, more time is available to engage in domestic chores and caring for PLWHA, and economic productivity is enhanced.

- Care and support guidelines should identify water-saving techniques and describe how to install them. For example, instructions on rain water catchment systems and how to install 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.

## SANITATION ACCESS

Although latrines are sometimes available, in many cases, they are not used or properly maintained. Yet proper sanitation is a key factor in controlling water-borne pathogens and maintaining safe drinking water and a hygienic/clean environment.

- Identify and promote sanitary options for defecation.
- Promote construction of improved pit latrines at the household level.
- Promote patient-friendly latrines in the household 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.

Treating water in the home and storing it in an appropriate container have been shown to reduce the risk of diarrheal disease.

JOHN BROOKS

  - 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 feces management when mobility is limited, such as potties (made of plastic or locally available materials) and squat pots.
  - Provide 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

Research indicates that good hygiene practices are not consistent among caregivers and PLWHA. Barriers of knowledge, skills, and supplies must often be overcome to promote proper hygiene 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; and 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 patients 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 PLWHA from absorbing ARV medicines and essential nutrients.

## RECOMMENDATIONS FOR WATER AND SANITATION SECTOR PLANS AND PROGRAMS

1. Mainstream HIV into water and sanitation planning and policies.

2. Identify and address issues specific to HIV-infected and affected families, such as needs for additional quantity of water, latrine access, etc.

3. Map access to water and sanitation points and target areas of HIV prevalence and/or vulnerability when constructing new water and sanitation points.

4. Integrate perspectives of PLWHA and affected families into community water management and planning by including PLWHA and community care organization representatives in decision making.

5. Assess effects of inability to pay on water and sanitation systems; develop alternative structures, such as focused subsidies, to ensure that vulnerable households have access to water and toilets/latrines.

6. Develop and promote new water collection technologies and strategies to bring water closer to the home (rainwater catchment systems, ergonomic pump designs using local materials, etc.).

7. Promote water-saving technologies such as "tippy taps" for washing hands and clothing/linens.

8. Include minimum standards for latrines that allow for an assistant to accompany a person LWHA to the latrine and options for outfitting latrines with support poles, squatting stools, or seats for greater comfort.

9. Promote community participation to provide support to vulnerable groups (digging the pit, constructing the superstructure).

10. Recommend hand washing stations as part of a twin design for all latrine construction.

11. Incorporate information on the special needs of PLWHA and other vulnerable populations into education and training for water and sanitation sectors.

12. Develop strategic partnerships with other sectors/stakeholders (e.g., HIV/AIDS, home-based care providers) to address the most vulnerable: women and children.

This latrine has a reinforced vent pipe that also serves as a support pole for easier use by PLWHA in a weakened state.

JULIA ROSENBAUM

## HYGIENE IMPROVEMENT ACTIONS FOR HIV/AIDS PROGRAM IMPLEMENTERS

This section outlines a full range of hygiene improvement actions that HIV/AIDS professionals working in different care settings can incorporate into their programs. Though similar to the recommendations, this section focuses on water, sanitation, and hygiene implications for different care settings. Certain actions may be repeated for more than one setting. These guidelines provide a menu of options, not a prioritized list of actions, which programs can adopt as appropriate and feasible.

### POLICY-MAKING BODIES

Before integrating hygiene improvement into HIV and AIDS care, treatment, and support activities, governments and official bodies will likely have to endorse such changes. Thus, program managers and others may have to advocate for improved and explicit policies and procedures to ensure water, sanitation, and hygiene improvement information is included in basic care and support materials.

- Review program policies (e.g., community and home-based care, palliative care, prevention of mother-to-child transmission, counseling, orphans and vulnerable children) and adapt them to include water, sanitation, and hygiene messages and programming.

- Review policies on subsidies for water and sanitation and develop options to help ensure access to adequate quantities of water, appropriate sanitation facilities, and improved hygiene practices.

- Disseminate existing information on efficacy and effectiveness of hand washing, household water treatment and safe storage, and sanitation practices that reduce diarrheal disease in PLWHA and supplement with new evidence as it becomes available.

- Involve the water and sanitation sectors to integrate needs of PLWHA into sectoral planning and programming.

### GENERAL HIV/AIDS PROGRAMMING

- Elaborate procedures to make policies operational.

- Develop or adapt appropriate guidelines, curricula, and communication materials/messages on proper hygiene practices for PLWHA, caregivers, community health workers, and others providing care and support.

- Ensure guidelines are appropriate and specific. For example, give complete instructions on the range of available treatment options rather than saying simply, "boil water." Highlight the importance of water storage and use, as well as treatment.

- Incorporate hygiene education and practices into daily, weekly, or monthly "living plans" to include such actions as "organizing a place close to the toilet where you can easily wash your hands and attach a pole to your latrine to hold onto to assist squatting while defecating."

- Promote available technologies: for example, include soap and instructions on hand washing and safe feces handling and disposal as well as guidelines on water treatment and safe storage in the basic preventive care package for PLWHA.

### HIV COUNSELING AND TESTING (HCT)

- Incorporate safe water, sanitation, and hygiene messages into post-test counseling.

- Where possible, ensure hand washing stations with soap at HCT sites to reinforce good practices, with prominent education/promotional materials at these hand washing stations.

### COMMUNITY AND HOME-BASED PALLIATIVE CARE

- Adapt or supplement care and support guidelines, protocols, and training manuals to include water, sanitation, and hygiene improvement.

- Adapt participatory approaches to improve water, sanitation, and hygiene behaviors within a community setting (e.g., Participatory Hygiene and Sanitation Transformation—PHAST).

- Promote optimal hand washing with soap or substitute at key times. Provide instructions on constructing hand washing stations and water saving tippy taps to overcome problems of water scarcity.

- Incorporate guidelines on water treatment and safe storage, hand washing with soap, and effective use of sanitation, as well as tips and resources for facilitating improved practices, into training programs for caregivers and health staff.

- Encourage using soap or an effective substitute such as ash or mud for hand washing.

- Promote hand washing stations located outside toilets.

- Adapt technology to meet PLWHA needs:
  - Promote use of bedside potties where needed.
  - Install poles in latrines to help PLWHA to squat while defecating.
  - Develop stools to assist PLWHA to use the latrine.
  - Ensure that children have a fixed place in which to defecate, and handle and dispose of the feces hygienically.
  - If a PLWHA is too weak to use a latrine or potty, use strategies to protect the skin, sheets, clothing, and mattress from becoming soiled by feces. For example, place a plastic sheet covered by paper or a cloth under the client's buttocks.

- Safely store and treat water for:
  - PLWHA and family members to drink.
  - PLWHA to take medicines.
  - Preparing food.
  - Preparing replacement/supplement feeding for infants.

## PREVENTION OF MOTHER-TO-CHILD TRANSMISSION (PMTCT) PROGRAMS

During Pregnancy Phase

- Promote mothers' use of clean water to prevent diarrheal episodes that may weaken the baby.

- Promote hand washing with soap, water treatment, and safe storage during antenatal and postnatal visits or through clinic services during prenatal and postnatal visits.

During Delivery Phase

- Identify and adhere to recommended hygienic birthing practices to prevent transmission of pathogens and infected blood.

During Infant Feeding Phase

- Promote and integrate safe storage and treatment of water practices into PMTCT programs.

- Advise caregivers on how to use treated water to prepare replacement feeding for infants.

- Provide soap and products for water treatment (where feasible).

- Counsel all mothers on optimal hand washing practices.

## PROGRAMS FOR CHILDREN AFFECTED BY HIV/AIDS

- Include hygiene promotion actions in educational materials targeted to orphans and vulnerable children.
  - Develop a package of interactive educational materials on water, sanitation, and hygiene improvement for use in schools and livelihood training programs.
  - Integrate water, sanitation, and hygiene improvement into the curriculum and create messages for pre-and in-service training programs that target teachers, health workers, and caregivers.
  - Integrate water, sanitation, and hygiene into peer education and child-to-child programs.

- Construct latrines, water systems, and hand washing stations at all facilities and schools that care for orphans and vulnerable children.

## CHALLENGES

### ACCESS TO WATER AND SANITATION

Meeting the water and sanitation needs of PLWHA underscores some of the biggest challenges in basic access. The people with the greatest needs often are the most disenfranchised and have the fewest resources available for solving problems in sustainable ways. Issues of water supply and urban sanitation must be addressed to meet the increasingly complex needs of PLWHA.

### COST IMPLICATIONS

Households that treat and store drinking water safely usually require access to a treatment method and a separate container for treating and storing drinking water. Different treatment methods have varying associated initial and recurring costs that can impact the uptake of these methods as can other behavioral factors such as taste, temperature, and proper practice.

### HIV/AIDS AND STIGMA

Great strides have been made in recent years to dispel myths and misconceptions around HIV transmission, especially in relationship to hygiene and casual transmission. Thus, it is imperative that such gains are not compromised by any activity that emphasizes the importance of hygiene and water in reducing the symptoms associated with AIDS. Moreover, the culture of stigma around HIV and AIDS presents another hidden epidemic that threatens to undermine prevention and care strategies. Indeed, some countries will need to address stigma issues around sharing latrines with PLWHA. Any integrated hygiene and HIV programming must be aware of these challenges and ensure that:

- Public fears/crises around water, hygiene, and HIV are not substantiated. Health practitioners have worked hard to dispel any myths that HIV and AIDS can be transmitted through water or casual contact such as through sharing utensils, toilet seats, etc. All programs must ensure that such myths are not revived through a focus on hygiene behaviors.

- Increased stigma associated with HIV and AIDS is avoided by serving the larger community rather than targeting only HIV-affected individuals and families with water, sanitation, and hygiene messages.

- Locally available products (e.g., water storage containers) are used so that households are not immediately identified as HIV-affected.

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