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# INTEGRATING HYGIENE IMPROVEMENT INTO HIV/AIDS PROGRAMMING TO REDUCE DIARRHEA MORBIDITY



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## HIP TECHNICAL ASSISTANCE

This document was prepared by the Hygiene Improvement Project (HIP), a five-year (2004-2009) project funded by the USAID Bureau for Global Health, Office of Health, Infectious Diseases and Nutrition and led by the Academy for Educational Development (contract # GHS-I-00-04-00024-00) partnering with ARD, Inc., the Manoff Group Inc. and the International Water and Sanitation Centre (IRC) based in the Netherlands. HIP's resource partners are: Aga Khan Foundation, Hindustan Lever and the International Rescue Committee. HIP aims to reduce diarrheal disease prevalence in children under five through the promotion of key hygiene practices: hand washing, safe disposal of feces, and safe storage and treatment of drinking water. Using a behavior change approach, HIP focuses on hygiene promotion, but ensures that adequate infrastructure and an enabling environment exist to support improved practices. HIP works at scale defined as the coordinated actions of many stakeholders working together on a common goal for the social benefit of targeted groups. It is the convergence of skills, interventions, and availability of products and services at the same time and in the same places reaching enough people to have a health impact. Key HIP tasks include: implementing hygiene improvement at scale in several countries, integrating hygiene considerations into other health and non-health programs (e.g., HIV/AIDS, education, nutrition), sharing USAID's global experience and knowledge and providing support and capacity strengthening to PVOs, NGOs, and networks in the field.

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**Globally almost 40 million people now live with HIV/AIDS (UNAIDS 2004). 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 (U.S. Department Health and Human Services 2003).**

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 PLWHA, some organizations are integrating hygiene improvement into their HIV/AIDS programs. The President’s Emergency Plan for AIDS Relief (The Emergency Plan)<sup>1</sup>, as part of its palliative care approach,<sup>2</sup> 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 disposal of feces—and suggests integrating these into all HIV/AIDS programs.

The purpose of this paper is to highlight discrete hygiene improvement activities that can be incorporated into HIV/AIDS programs in different settings to help mitigate the impact of diarrhea on people living with HIV and AIDS (PLWHA) and their families—prolonging and improving the quality of life for PLWHA and protecting family members and caregivers from contracting diarrhea.

### **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 (DRC) 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 found 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)

<sup>1</sup> The Emergency Plan 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.

<sup>2</sup> “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>

Global Burden of Disease 2002 estimates, diarrhea accounts for nearly 1.6 million deaths, or 15 percent of under-five mortality, each year in developing countries (WHO 2002). WHO estimates that 85 to 90 percent of diarrheal illnesses in developing countries can be attributed to unsafe water and inadequate sanitation and hygiene practices (Pruess-Ustun, A. 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, safe treatment and storage of water, and sanitation), 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 disinfection and safe storage have each been proven to reduce diarrhea rates significantly. CARE/Bangladesh's SAFE program 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).

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. Although becoming infected with HIV by touching an infected person's feces or by fecal-oral transmission is not possible, the increased presence of diarrhea-causing pathogens in feces of PLWHA puts caregivers and family members at greater risk of contracting diarrheal disease if improved hygiene practices are not followed.

### Optimal Hand Washing

Hand washing is an effective means of preventing diarrhea 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, V., 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. 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.

### Safe Treatment and Storage of Water in the Household

Safe treatment and storage of water at the point of use 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 safely treating and 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 disposal (Sobsey, 2002). Several technologies are available for treating water in the home, including chlorination and storage in an appropriate vessel, various types of filters, solar disinfection using heat and UV radiation (SODIS), and combined chemical coagulation, flocculation, and disinfection.<sup>4</sup>

<sup>4</sup> 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.

## Sanitation

Safe feces disposal has been shown to reduce the risk of diarrheal disease by 30 percent or more (Fewtrell et al., 2004). Given the prevalence of diarrheal disease in PLWHA, all members of a household should dispose of feces safely. This means promoting that all family members over the age of five should defecate in a hygienic latrine,<sup>5</sup> that young children (3-5 years) should defecate in a hygienic latrine, potty or fixed place, and that caregivers should 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, need special arrangements. 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. In a recent field trial in Uganda, 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.

## ACTIONS FOR INTEGRATING HYGIENE IMPROVEMENT INTO HIV/AIDS PROGRAMMING

This section outlines a full range of hygiene improvement actions that HIV/AIDS professionals working in different care settings can incorporate into their programs or suggest to householders as options to prevent diarrhea among PLWHA and their families. Because this document focuses on these different care settings, certain actions may be repeated for more than one setting. These are not guidelines for what

programs must do, but rather a menu of options, not a prioritized list, that 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 hygiene improvement is included in basic care and support materials.

- Endorse inclusion of safe water and hygiene as essential components of basic preventive care package for PLWHA.
- Review program policies (e.g. community and home based care, palliative care, PMTCT, counseling, OVC) and adapt them to include hygiene messages and programming.
- Review policies on subsidies for water and sanitation and develop options to help ensure access to improved hygiene practices.
- Disseminate existing information on efficacy and effectiveness of hand washing and sanitation practices on reducing diarrheal disease in PLWHA and supplement with new evidence as it becomes available.

### 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.
- Incorporate hygiene education and practices into

<sup>5</sup> 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.

daily, weekly, or monthly “living plans” to include such actions as ‘organize 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 hand washing instructions as well as guidelines on water disinfection and safe storage in the basic preventive care package for PLWHA.
- Examine and promote technologies for safe disposal of feces as part of the basic care package.

### **HIV Counseling and Testing (HCT)**

- Incorporate hygiene messages into post-test counseling.
- Where possible, assure hand washing stations at HCT sites to reinforce good practices.

### **Community and Home-based Palliative Care**

- Adapt or supplement home-based care guidelines, protocols and training manuals to include hygiene improvement.
- Adapt participatory approaches to improve hygiene and sanitation behaviors within a community setting (e.g. Participatory Hygiene and Sanitation Transformation–PHAST).
- Promote optimal hand washing at key times.
- Incorporate guidelines on water disinfection and safe storage, hand washing with soap and effective use of sanitation, as well as tips and resources for facilitating improved practices in 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 assist 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 dispose of the feces hygienically.
- Safely store and treat water for:
  - PLWHA and family members to drink.
  - PLWHA to take medicines.
  - Preparing food.
  - Preparing replacement 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 disinfection and safe storage during antenatal and postnatal visits or through clinic services for prenatal and postnatal services.

#### **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 products for water treatment and soap (where feasible).
- Counsel all mothers on optimal hand washing practices.

## Programs for Children Affected by AIDS

- Include hygiene promotion actions in educational materials targeted to orphans and vulnerable children.
  - Develop a package of interactive educational materials on hygiene improvement for use in schools and livelihood training programs.
  - Integrate hygiene improvement curriculum and messages into pre-and in-service training programs for teachers, health workers, and caregivers.
  - Integrate hygiene into peer education and child-to-child programs.
- Construct latrines, water systems, and hand washing stations at all facilities that care for orphans and vulnerable children.

## CHALLENGES

### Water Availability

Availability of water is critical for improving hygiene practices and for ensuring a clean, hygienic environment for PLWHA and affected families. A WHO study (Howard, G. et al, 2003) states that individuals need an average of five liters of water each day to adhere to improved hygiene practices. In AIDS-affected households, the amount of water needed will likely be greater (though exact quantities have not been measured) to ensure that fecal matter is adequately removed from bedding, clothes, etc. This added water requirement increases the burden on already-stretched families to collect greater quantities of water.

Several actions can be taken to conserve water and may be useful in AIDS-affected households in particular. Some examples are to

- Introduce water saving technologies (e.g., tippy tap—a closed vessel with a spigot that provides a slow, steady stream of water for washing hands).
- Practice water saving measures to increase water availability for bathing, washing hands, washing soiled material and clothing (e.g. use tippy taps, cover bedding with a cloth that can be easily washed).

## Economic 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 well as 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 hygiene messages.

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