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SUSTAINABLE DEVELOPMENT OF WATER RESOURCES, WATER SUPPLY AND ENVIRONMENTAL SANITATION

Integrating Hygiene Improvement into HIV/AIDS Programming to Reduce Diarrhea Morbidity

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This paper highlights discrete hygiene activities that organizations working in HIV/AIDS prevention and care can integrate into HIV/AIDS programs to help achieve the hygiene objectives outlined in the Preventive Care Package Guidance issued by the President's Emergency Plan. These discrete hygiene activities can help mitigate the impact of diarrhea on people living with HIV and AIDS (PLWHA) and their families thereby prolonging and improving their quality of and protecting family members and caregivers from contracting diarrhea.

Background

Globally almost 40 million people now live with HIV/AIDS. The pandemic has dramatically changed patterns of disease in developing countries. 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 the number of people living with HIV and AIDS increases, comprehensive care, treatment and preventative services are necessary to help them live longer and healthier lives. Some organizations have recognized the importance of safe water, sanitation and hygiene promotion in protecting and caring for PLWHA, and are beginning to integrate hygiene improvement activities into their HIV/AIDS programs. The President's Emergency Plan for AIDS Relief (The Emergency Plan)¹ has developed a Preventive Care Package² 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.

¹ 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.

² "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." (HIV/AIDS Palliative Care Guidance #1, U.S. Dept of State, Office of the Global AIDS Coordinator)

This document provides practical ideas on how the hygiene improvement practices covered in the President's Emergency Plan can be incorporated into HIV/AIDS programs. Incorporating these interventions into HIV and AIDS programs can help mitigate the impact of diarrhea on people living with HIV and AIDS (PLWHA) and thereby prolong and improve the quality of their life while protecting family members and caregivers from contracting diarrhea. However, the idea of incorporating these interventions into HIV/AIDS programming is relatively new and we need to begin to collect information on how effective they are in a field setting.

Diarrhea and HIV/AIDS

Globally, diarrheal disease is the second greatest cause of mortality and morbidity in children under five years of age. According to World Health Organization (WHO) 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, sanitation and hygiene practices (Pruess-Ustun, A. et al., 2004).

Diarrhea, 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).

Key hygiene improvement practices

Hygiene improvement is a comprehensive approach to preventing diarrheal disease by promoting improvements

in key hygiene practices (hand washing, treatment and safe storage of water, and sanitation), improving access to water and sanitation technologies and products, and fostering 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 still growing, the evidence-base regarding the impact of hygiene in reducing diarrheal disease overall is indisputable. Indeed, handwashing, sanitation, and water treatment and safe storage have each been shown to reduce endemic diarrhea by 30-45% (USAID, 2004). Promoting these practices can prolong and improve the quality of life for PLWHA and protect family members and caregivers from contracting diarrhea.

Optimal hand washing

Hand washing is an effective means of preventing diarrhea when done properly at critical times. A recent review of hand washing studies conducted in developing countries concluded that handwashing can reduce the risk of diarrhea in the general population by 42 to 47 percent (Curtis and Cairncross, 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 a substitute such as ash, rubbing hands together at least three times, and then drying them with a clean cloth or by air. Hand washing with soap 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.

Safe treatment and storage of water in the household

Evidence is now conclusive that simple, low-cost strategies for treating and storing water at the household level can greatly improve the microbial quality of water and result in reductions in diarrheal disease comparable to those achieved by hand washing and safe feces disposal (Sobsey, 2002). A review of water treatment and storage interventions at the household level showed a median reduction in endemic diarrheal disease of 42% (Clasen, 2003). A study in Uganda 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%) and severity of diarrhea in PLWHA (Lule et al., 2005). The same study showed that treated water in combination with an antibiotic prophylaxis (Cotrimoxazole) reduced diarrhea episodes by 67 percent. 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.

Sanitation

Safe feces disposal has been shown to reduce the risk of diarrheal disease by 30 percent or more (Fewtrell and Coleford, 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, that young children (3-5 years) should defecate in a 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. Appropriate bedside potties may help those who are too sick to go to a latrine. 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 et al, 2005).

Actions for integrating hygiene improvement into HIV/AIDS programming

This section outlines a 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. These are not guidelines for what programs must do, but rather a menu of options that programs may adopt as appropriate and feasible.

Policy-making bodies

Before integrating hygiene improvement into HIV and AIDS programs, 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.

- Review program policies (e.g. community and home based care, palliative care, prevention of mother-to-child transmission (PMTCT), counseling) 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

- Develop/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 "living plans" so they 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.’

- Examine and promote technologies for safe disposal of feces and treatment and storage of water 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.
- Incorporate tips and resources for facilitating improved practices in training programs for caregivers and health staff.
- Adapt technology to meet PLWHA needs:
 - Promote use of bedside potties.
 - Install poles in latrines to assist PLWHA while defecating.
 - Develop stools to assist PLWHA with latrine use.
 - Ensure that children have a fixed place in which to defecate
 - 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 and delivery phases

- Promote hand washing with soap, water treatment and safe storage during antenatal and post-natal visits or through clinic services for pre-natal and postnatal services.
- Identify and adhere to recommended hygienic birthing practices to prevent transmission of pathogens and infected blood.

During Infant Feeding Phase

- Promote/ 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 handwashing and water treatment and storage (where feasible).
- Counsel all caregivers 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. WHO estimates (Howard and Bartram, 2003) that individuals need an average of 7.5 liters of water each day to meet basic 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 particularly useful in AIDS-affected households.

- 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.

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