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PEPFAR
U.S. President's Emergency Plan for AIDS Relief

IMPROVING THE LIVES OF PEOPLE LIVING WITH HIV (PLHIV) THROUGH WASH: WATER, SANITATION, AND HYGIENE

PARTICIPANT TECHNICAL RESOURCE GUIDE

AIDSTAR-One
AIDS SUPPORT AND TECHNICAL ASSISTANCE RESOURCES

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Acronyms

ART	antiretroviral therapy
CDC	U.S. Centers for Disease Control and Prevention
HCW	health care waste
HCWM	health care waste management
KISS	keep it short and simple
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PG	participant guide
PLHIV	people living with HIV
RUTF	ready-to-use therapeutic food
SDA	small doable action
TB	tuberculosis
USAID	U.S. Agency for International Development
WASH	water, sanitation, and hygiene
WHO	World Health Organization

A Special Letter to the Participants Taking This Course

Dear Participants,

Welcome to this course on Improving the lives of people living with HIV (PLHIV) through water, sanitation, and hygiene (WASH). This training is different from many courses, and we believe that you will enjoy it a great deal. The goal is to help PLHIV live better and healthier lives.

For effective functioning of health care settings, it is important to include a safe and sufficient supply of water, sanitation, and basic hygiene practices. In resource-constrained countries, many of these essentials are lacking in the majority of health care facilities, making adequate patient care more difficult, particularly for PLHIV and others who are more likely to get an infection. Addressing the problems around WASH can substantially improve the quality of life of PLHIV and their families. Providing patients and caregivers with practical educational messages to promote safe WASH can reach homes and communities at large.

This *Participant Guide* (PG) is yours to keep. You may write notes wherever you like. The PG includes key technical resources and references for further reading that will be used in almost all of the sessions in the course. Additionally, you can place relevant handouts, including job aids, in the appropriate PG sessions. The PG provides detailed technical information you need to know, including suggested readings for each day of the course as well as useful reference work that you can include when you return to your clinic or hospital.

This course uses the training methodology known as adult learning theory. This means that it is very participatory. You will do many exercises in small groups, individually, and with the large group. You will learn from your colleagues, from this PG, and from your trainers. There will be very few lectures, and they will be short. You will not be writing many notes. This could be different from the courses you had when you were trained to be a nurse, a doctor, or a pharmacist. There is not much theory in the course. Most of what you will learn is practical material that you can apply very soon after you finish the course.

We realize that you are taking days away from your work for this training, but we believe that when you go back you will have new knowledge to improve the lives of an important group of your patients, and in particular PLHIV.

Thank you very much in advance for the contribution you will make.

Sincerely,

–Your Course Training Team

Course Schedule

Improving the Lives of People Living with HIV Through Water, Sanitation, and Hygiene

Day 1*

Time	Session	Activity/Note
8:30 a.m.	Official opening of WASH training and introduction to the course	Opening remarks, possibly from a local health official. [†] Welcome and introductions, ice-breaker, goal/objectives, norms, schedule.
10:30 a.m.	Break	
10:45 a.m.	Session 1: A Better Life for PLHIV through WASH	An introduction to WASH and its impact on PLHIV.
12:15 p.m.	Lunch	
1:15 p.m.	Session 2: Preventing Diarrhea and Other Infections	Standard precautions and simple ways to stop the spread of infections; handwashing demonstration and practice.
3:35 p.m.	Break	
3:45 p.m.	Session 3: Behavior Change for WASH in the Home	Introduction to communications for behavior change and critical efforts in the home.
6:00 p.m.	End of the day	Consultation with trainers, as desired.

* WASH trainers may modify the schedule according to the needs of the group.

[†] Remarks from a health official may be given at any time during the morning, but the course will begin at 8:30 a.m. The remarks from a health official are optional and depend on the policies of the country. There will be an ice-breaker/energizer each morning and afternoon.

Day 2*

Time	Session	Activity/Note
8:30 a.m.	Announcements, energizer	
8:45 a.m.	Session 4: Water Treatment, Safe Storage, and Handling at Point-of-Use	The importance of safe water for PLHIV; treatment and storage methods.
10:30 a.m.	Break	
10:45 a.m.	Session 4 continued	
12:00 p.m.	Lunch	
1:00 p.m.	Session 5: WASH and Safe Sanitation	Proper disposal of excreta and latrine hygiene.
2:20 p.m.	Session 6: Waste Management in Resource-Constrained Settings	The fundamentals of waste segregation and options for final disposal.
3:50 p.m.	Break	

Time	Session	Activity/Note
4:00 p.m.	Session 7: Cleanliness and Hygiene at Facilities	Cleaning and disinfecting key patient areas.
5:25 p.m.	End of the day	Consultation with trainers, as desired.

* WASH trainers may modify the schedule according to the needs of the group.

Day 3*

Time	Session	Activity/Note
8:30 a.m.	Announcements, energizer	Administrative information and preview of the day.
8:45 a.m.	Session 8: Food Hygiene	The basics of safe food preparation and storage.
10:00 a.m.	Session 9: WASH in Resource-Constrained Settings	Applying WASH principles at facilities with minimal resources.
10:45 a.m.	Break	
11:00 a.m.	Session 10: Small Doable Actions (SDAs) for WASH	Important actions for immediate implementation back at your facility.
12:15 p.m.	Lunch	
1:15 p.m.	Session 11: Facility Tour orientation[†]	Orientation prior to site visit.
1:35 p.m.	Session 11: Facility Tour[†]	Assessing good practices through a site visit.
2:55 p.m.	Break	
3:10 p.m.	Session 12: Summary Review and Evaluation	Reviewing key WASH concepts and course evaluation.
4:55 p.m.	End of core course and the day	

* WASH trainers may modify the schedule according to the needs of the group.

[†] This schedule assumes the tour takes place at the same facility the training is held.

Day 4 for Supervisors/Managers[‡]

Time	Session	Activity/Note
8:30 a.m.	Introduction to Day 4 for Supervisors/Managers	Preview of the day.
8:45 a.m.	Session 13: The Role of the Supervisor	Overview of the supervisor's leadership role on WASH; the basics of supportive supervision.
10:15 a.m.	Break	
10:30 a.m.	Session 14: Engaging Non-Clinical Staff in WASH Practices	Preparing training sessions for non-clinical staff, using job aids.
12:15 p.m.	Lunch	
1:15 p.m.	Session 15: Larger Doable Actions (LDAs) with WASH Impact	Identifying LDAs to support WASH at participants' own health facility/facilities.
1:55 p.m.	Session 16: Local Resource Mobilization (REMO)	Basic principles of local REMO; identifying resources needed for participants' LDAs and potential sources for those resources in their communities.
3:35 p.m.	Break	
3:50 p.m.	Session 17: The Way Forward—When You Return Home	Developing a list of priority WASH actions to apply when participants home.
4:55 p.m.	End of day	

[‡]This is an optional day for supervisors/managers, supplementing the one- to three-day training.

Course Goals and Objectives

Improving the Lives of People Living with HIV Through Water, Sanitation, and Hygiene: Core Course Goals and Objectives for Days 1 to 3

Course Goal:

The goal of this training is to reduce the incidence of disease among PLHIV through improved WASH practices at health facilities and in the home.

Overall WASH Training Objectives: Core Course (3 days)

The core course is designed for:

- HIV program managers at the facility, regional, city, or district levels
- Managers of infection prevention and control and/or hygiene at the facility, regional, city, or district levels
- Doctors, nurses, and others providing care for PLHIV or patients with infectious diseases in inpatient or outpatient facilities
- Supervisors and managers of doctors, nurses, and other health workers providing care for PLHIV or patients in infectious diseases departments.

By the end of the course, participants will be able to:

1. Explain WASH and its importance as a preventive health measure for PLHIV, their caregivers, family members, health workers, and others
2. Explain why communication for behavior change is important to improve WASH behaviors among PLHIV, their caregivers, and family members
3. Demonstrate effective communication for behavior change across all major WASH principles, using job aids
4. Demonstrate proper handwashing technique
5. Identify water treatment and safe storage options
6. Identify means to properly dispose of excreta and manage latrines/toilets to minimize the spread of disease
7. Demonstrate how to segregate health care waste and name options for disposal
8. Explain how to clean and disinfect patient care areas, including high-risk areas
9. Explain key steps for food hygiene
10. Identify WASH steps that are no-cost or low-cost to implement at participants' work places and at home.

Improving the Lives of People Living with HIV Through Water, Sanitation, and Hygiene: Core Course Goals and Objectives for Day 4 for Supervisors/Managers*

Course Goal:

The goal of this training is to reduce the incidence of disease among PLHIV through improved WASH practices at health facilities and in the home.

Course Day 4 (optional) is designed for:

- Supervisors and managers of doctors, nurses, and other health workers providing care for PLHIV or patients with infectious diseases in inpatient or outpatient facilities
- HIV program managers at the facility, regional, city, or district levels
- Managers of infection prevention and control and/or hygiene at the facility, regional, city, or district levels.

Note: Participants must have completed the core course in order to participate in Day 4 for Supervisors/Managers.

By the end of the course, participants in Day 4 will:

1. Be able to demonstrate brief workshop sessions on WASH topics for non-clinical staff at health facilities (waste handlers, cleaners, laundry staff, and kitchen staff), using job aids
2. Have developed a plan to put systems in place at their facility to enable non-clinical staff to follow WASH practices on the job
3. Be able to demonstrate supportive supervision on WASH topics
4. Have developed a prioritized list of specific actions they will do when they return to their facility, including an implementation plan and plan for local resource mobilization.

*This is an optional day for supervisors/managers, supplementing the one- to three-day training.

Session 1: A Better Life for People Living with HIV Through Water, Sanitation, and Hygiene

Technical Resource: Improving the Lives of People Living with HIV Through Water, Sanitation, and Hygiene

1.1 Introduction to Water, Sanitation, and Hygiene (WASH)

For safe and effective functioning of health care settings, it is important to include a safe and sufficient supply of WASH practices. In resource-constrained countries, many of these essentials are lacking in the majority of health care facilities, making adequate patient care more difficult, particularly for PLHIV and others who are more likely to get an infection. Addressing the problems around WASH can substantially improve the quality of life of PLHIV and their families. Providing patients and caregivers with practical educational messages to promote safe WASH can reach homes and communities at large.

The human body requires clean water, a safe environment, and basic hygiene for its maintenance and protection from disease. Yet people in developing countries struggle to get access to safe drinking water, basic sanitation, and hygiene. Almost 1 billion people still rely on unsafe drinking water, and 2.6 million lack adequate sanitation facilities.¹ In sub-Saharan Africa, only half of the population (55 percent) uses improved drinking water sources and only 37 percent of the population uses adequate sanitation facilities.² Globally, 4 billion cases of diarrhea occur annually, of which 88 percent are attributable to unsafe water, inadequate sanitation, and hygiene.³ Every day, approximately 4,500 children under age five die due to unsafe WASH.⁴

In resource-constrained countries, health care settings also often lack safe and sufficient supplies of water, sanitation facilities, and provisions for basic hygiene practices that are essential for the prevention and control of infection. These longstanding inadequacies are further challenged by the complexity of patient care due to an increasing proportion of clients with special needs, such as PLHIV, tuberculosis (TB), cancer patients, the elderly, and children, all of whom are more susceptible to infection.

WASH is an evidence-based disease prevention intervention that implements “small and doable” activities for improving quality of drinking water, providing sanitary latrines, and improving cleanliness and hygiene practices such as handwashing for patients and health care workers. Studies have found that WASH interventions reduce morbidity and mortality: for example, water treatment using chlorine products at the point-of-use can lead to a reduction of diarrheal episodes by 35 to 39 percent; improved sanitation can

¹ UN Children's Fund. 2008. *Soap, Toilets and Taps: A Foundation for Healthy Children*. New York: UN Children's Fund. Available at www.unicef.org/wash/files/FINAL_Showcase_doc_for_web.pdf (accessed December, 28 2011)

² UN Children's Fund. 2008. *The State of World's Children 2008: Executive Summary*. New York: UN Children's Fund. Available at www.unicef.org/sowc08/docs/sowc08_execsummary.pdf (accessed December, 28 2011)

³ World Health Organization. 2007. *Combating Waterborne Disease at the Household Level*. Geneva, Switzerland: World Health Organization. Available at www.who.int/household_water/advocacy/combating_disease.pdf (accessed December, 28 2011)

⁴ UN Children's Fund. 2009. “2009 World Water Week: ‘Responding to Global Changes: Accessing Water for the Common Good.’” Available at www.unicef.org/media/media_50821.html (accessed December, 28 2011)

reduce diarrhea by 32 percent; and promotion of handwashing can result in a decrease in diarrhea cases by as much as 45 percent.⁵

1.1.1 What are the Components of Water, Sanitation, and Hygiene?

Safe water, sanitation, and hygiene are the main components of WASH.

1.1.1.1 What is Safe Water?

Safe water is clean water that can be consumed or used without risk of getting a disease.

1.1.1.2 What is Sanitation?

Sanitation is the state of being clean. It generally refers to the facilities and services involved in the safe disposal of human waste.

1.1.1.3 What is Hygiene?

Hygiene is the practice of keeping yourself and the things around you clean (free of germs) in order to prevent disease. It refers to a range of practices, including personal hygiene and professional care, which reduce the incidence of disease.

1.2 Why is Water, Sanitation, and Hygiene Important for People Living With HIV?

The use of antiretroviral therapy (ART) is one approach to slowing disease progression in PLHIV. Because many life-threatening infections in PLHIV are caused by exposure to unsafe drinking water, inadequate sanitation, and poor hygiene, it is also necessary to identify and implement interventions to prevent the primary causes of HIV-related illness and death. A significant proportion of those infections could be prevented by supplementing existing HIV programs with WASH interventions.

⁵ Bartram, J. 2008. Flowing Away: Water and Health Opportunities. *Bulletin of the World Health Organization* 86(1):1–80. Available at www.who.int/bulletin/volumes/86/1/07-049619/en/index.html (accessed December 28, 2011); World Health Organization (WHO). n.d. "Facts and Figures: Water Sanitation and Hygiene Links to Health." Available at www.who.int/water_sanitation_health/publications/factsfigures04/en/ (accessed December 28, 2011)

WASH-Related Disease Burden in PLHIV

- Diarrhea affects 90% of HIV-positive people and results in significant morbidity and mortality.⁶
- Infectious agents may be found in up to 50% of HIV patients associated with diarrheal illness.⁷
- Chronic diarrhea is three times more common among adults infected with HIV than non-HIV-infected adults.⁸
- Progression of acute to persistent diarrhea was found to be six times greater in infected infants born to HIV-positive mothers.⁹
- Chronic diarrhea may contribute to HIV disease progression by impairing immunity, possibly by depleting body zinc concentrations with a secondary impairment of T-lymphocyte function.¹⁰
- Diarrheal illness in HIV-positive patients can interfere with the absorption of antiretroviral drugs and essential nutrients, further exacerbating HIV infection and illness.¹¹
- HIV-positive people are prone to various other opportunistic infections other than diarrhea, such as TB, bacterial meningitis, candidiasis, *Pneumocystis carinii* pneumonia, and herpes.

It was estimated that interventions for improving water quality can reduce diarrhea among HIV-positive patients by 25 to 65 percent and decrease the number of days with diarrhea by 33 percent.¹² The presence of soap (a proxy for handwashing) in the household of a person or persons affected by HIV was associated with fewer days of diarrhea and fewer lost days of work or school due to diarrhea in HIV-positive patients.¹³

⁶ Katabira, E. T. 1999. Epidemiology and Management of Diarrheal Disease in HIV-Infected Patients. *International Journal of Infectious Disease* 3(3):164–167.

⁷ Greenson, J. K., P. C. Belitsos, J. H. Yardley, and J. G. Bartlett. 1991. AIDS Enteropathy: Occult Enteric Infections and Duodenal Mucosal Alterations in Chronic Diarrhea. *Annals of Internal Medicine* 114:366–372.

⁸ Chintu, C., H. L. Dupont, T. Kaile, et al. 1998. Human Immunodeficiency Virus-Associated Diarrhea and Wasting in Zambia: Selected Risk Factors and Clinical Associations. *American Journal of Tropical Medicine and Hygiene* 59(1):38–41.

⁹ Keusch, G. T., D. M. Thea, M. Kamenga, et al. 2008. Persistent Diarrhea Associated with AIDS. *Acta Paediatrica* 81(s383):45–48. Available at www3.interscience.wiley.com/journal/121367867/abstract (accessed December 28, 2011)

¹⁰ Good, R. A., G. Fernandes, E. J. Yunis, et al. 1979. Nutritional Deficiency, Immunologic Function, and Disease. *American Journal of Pathology* 84(3):599–614.

¹¹ Bushen, O. Y., J. A. Davenport, A. B. Lima, et al. 2004. Diarrhea and Reduced Levels of Antiretroviral Drug: Impairment with Glutamine or Alanyl-Glutamine in Randomized Controlled Trial in Northeast Brazil. *Clinical Infectious Diseases* 38(12):1764–1770.

¹² Gundry, S., S. Wright, and R. Conroy. 2004. A Systematic Review of the Health Outcomes Related to Household Water Quality in Developing Countries. *Journal of Water and Health* 2(1):1–13; Lule, J. R., J. Mermin, J. P. Ekwaru, et al. Effect of Home-Based Water Chlorination and Safe Storage of Diarrhea Among Persons with Human Immunodeficiency Virus in Uganda. *American Journal of Tropical Medicine and Hygiene* 73(5):926–933.

¹³ Lule, J. R., J. Mermin, J. P. Ekwaru, et al. Effect of Home-Based Water Chlorination and Safe Storage of Diarrhea Among Persons with Human Immunodeficiency Virus in Uganda. *American Journal of Tropical Medicine and Hygiene* 73(5):926–933.

A key objective of the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) is to reduce HIV-related morbidity and mortality rates and to slow the progression of HIV disease in affected communities. It is critically important to provide adults and children with interventions that prevent the onset of illnesses such as diarrhea and other opportunistic infections, regardless of HIV status or eligibility for ART.

Session 2: Preventing Diarrhea and Other Infections

Technical Resource: Preventing Diarrhea and Other Infections

2.1 Introduction

Infection prevention and control are proven measures to eliminate and minimize the opportunity for transmission of pathogens among patients and health care workers in health care settings. Infection prevention and control interventions can range from following handwashing guidelines to creating and maintaining a safe work place environment through cleaning, disinfection, sterilization, safe handling of sharps, safe handling of linens, safe water and food supply, and appropriate disposal of health care waste. Ensuring safe WASH includes important infection prevention measures, particularly for vulnerable patients such as PLHIV.

Important elements of an effective infection prevention and control strategy include:

- Policy mandating specific practices and procedures to be followed by employees including health worker screenings and immunization, according to national or facility guidelines
- Training for different cadres of health care workers at regular intervals
- Behavior change of workers to adhere with certain practices
- Continuous provision of equipment and supplies for patient care and personal protective equipment for health care workers
- Work practice control to reduce the likelihood of exposure to pathogens (e.g., blood-borne pathogens) by altering the way a task or procedure is performed (e.g., not recapping a used needle after giving an injection)
- Infrastructure to ensure effective layout and patient flow
- Onsite supportive supervision and monitoring of staff in the health facility
- Education and awareness for patients, their families, and caregivers on safe water and personal hygiene.

For maximum impact of infection control activities, *all* health care workers, including cleaners, kitchen staff, and waste technicians, should be made aware of their responsibility in infection control and should be enabled to apply the basic infection control principles and standard precautions.

2.2 Mode of Infection Transmission in Health Care Facilities

The World Health Organization (WHO) estimates that 5 to 30 percent of patients develop one or more infections during their hospital stay. A significant proportion of these infections could be avoided through ensuring safe water, basic hygiene, and sanitation.¹⁴

¹⁴ WHO. 2005. *Health Through Safe Health Care: Safe Water, Basic Sanitation and Waste Management in Health-Care Settings*. Geneva, Switzerland: WHO; WHO. n.d. Healthcare Waste and Its Safe Management. Available at www.healthcarewaste.org (accessed December 28, 2011)

Modes of Transmission

The mode of transmission of a germ (causative agent) from a patient or health care worker (reservoir) to a new person (host) can occur in a number of ways, including the following.

Direct contact—The physical transfer of the germs occurs through direct physical contact between an infected person and a susceptible person. Contact includes touching or examining patients, and coming into contact with blood and body fluids (secretions and excretions). Examples of diseases transmitted through direct contact are common colds, HIV, and other sexually transmitted diseases.

Indirect contact—The transmission of germs occurs through contact with contaminated patient care equipment, tissue/gauze, or soiled laundry. Examples of diseases transmitted through indirect contact are diarrhea, hepatitis, and wound sepsis.

Droplet transmission—A droplet is a small volume of liquid (secretion) produced when an infected individual coughs or sneezes. The droplet usually travels about three feet before drying out or falling to the ground. People in close proximity to an individual who sneezes or coughs may inhale a droplet, which may result in transmission and subsequent infection. Examples of diseases transmitted through droplets are TB and pneumonia.

Airborne transmission—Dried respiratory droplets produce droplet nuclei that can remain suspended in the air and can travel farther than droplets. Nuclei can be inhaled by a host and may result in infection. Examples of diseases transmitted through air are influenza and chicken pox.

Vehicle—Germs may be transmitted through ingestion of contaminated water and/or food, and through transfusion of contaminated blood. Examples of diseases transmitted through vehicles are cholera, other diarrheal diseases, and HIV.

Vector—Animals, insects, or parasites can transport pathogens from one person to another person (new host). Malaria is an example of a disease transmitted through vectors.

A person with normal immune system function is described as **immunocompetent**. A person whose immune system is impaired due to illness, medication, or an age-related factor is said to be **immunocompromised**. For example, PLHIV, the very young and very old, people with chronic diseases like TB and diabetes, people receiving cancer treatment, and those taking certain drugs such as inflammatory medicines are all considered immunocompromised.

A **susceptible host** is a person or an animal lacking effective resistance to infectious agents. Examples of susceptible hosts include:

- People with preexisting illnesses or medical conditions
- People with invasive devices or tubes in place

- People who have undergone medical procedures that penetrate the skin
- People who are malnourished
- People who are immunocompromised
- People who are chronically tired and/or under high stress.

Most efforts to prevent infection are aimed at eliminating the mode of transmission by following standard precautions.

2.3 Standard Precautions

Standard precautions are the minimum infection control measures used in a health facility during the care of all patients, regardless of suspected or confirmed infection status. In addition to adequate staff and supplies, leadership and education of health care workers, patients, and caregivers/visitors is needed to implement standard precautions.

Key Elements of Standard Precautions¹⁵

<p>Hand Hygiene</p> 	<p>Hand hygiene is one of the most effective means for infection control in health care settings. Handwashing should be done:</p> <ul style="list-style-type: none"> • <i>Before</i> patient contact (e.g., shaking hands) • <i>Before</i> an aseptic task (e.g., drawing blood) • <i>Before</i> preparing food • <i>After</i> exposure to body fluids (e.g., cleaning feces) • <i>After</i> patient contact (e.g., taking pulse) • <i>After</i> contact with patient surroundings (e.g., changing bed linens) • <i>After</i> using the toilet • <i>After</i> cleaning a baby (e.g., changing a nappy).
<p>Gloves</p> 	<p>Gloves control infection and serve as a personal protective barrier for health care workers. Gloves should be:</p> <ul style="list-style-type: none"> • Used <i>before</i> performing a surgical procedure or an invasive procedure (e.g., phlebotomy) • Used <i>before</i> touching mucous membranes and/or non-intact skin • Used <i>before</i> touching blood, body fluids, secretions, and excretions • Changed <i>between</i> tasks and procedures on the same patient and before going to another patient. <p>Hand hygiene should be performed immediately after gloves are removed.</p>

¹⁵ Adapted from WHO. 2007. *AIDE-Memoire: Standard Precautions in Health Care*. Geneva, Switzerland: WHO. Available at www.who.int/csr/resources/publications/EPR_AM2_E7.pdf (accessed December 28, 2011)

<p>Facial Protection</p> 	<p>Use a face shield for protection of mouth, nose, and eyes during activities that are likely to splash and spray blood, body fluids, secretions, and excretions. Alternatively, use an eye visor or goggles for eye protection <i>and</i> a surgical or procedure mask for protection of the mouth and nose.</p>
<p>Gown</p> 	<ul style="list-style-type: none"> • Wear a gown to protect skin and avoid soiling clothes during activities that may splash or spray blood, body fluids, secretions, and excretions. • Remove soiled gown as soon as possible and perform hand hygiene. • Dispose of used gown or disinfect before next use.
<p>Needle-Stick Injuries Prevention</p> 	<ul style="list-style-type: none"> • Handle needles, scalpels, and other sharp instruments carefully. • Do not recap a needle after giving an injection. Complete this task using the one-handed scoop technique, but only if absolutely necessary. • Dispose of single-use syringe, needle, and other sharps immediately after use into a sharps box. • Place the sharps box within arm's reach of injection provider. • Clean used (reusable) instruments carefully.
<p>Respiratory Hygiene and Cough Etiquette</p> 	<p>Individuals with respiratory symptoms should:</p> <ul style="list-style-type: none"> • Cover nose and mouth when coughing and/or sneezing with elbow or with tissue/mask • Dispose of used tissue and mask • Wash hands after contact with respiratory secretions. <p>Health facilities should:</p> <ul style="list-style-type: none"> • Place patients who have fever and acute respiratory symptoms at least one meter (three feet) away from others in a common waiting area, if possible • Make hand hygiene resources, tissues, and masks available in common areas and areas used for examination of patients with respiratory illness • Post visual alerts (e.g., posters) at the entrance of the health care facility instructing persons with respiratory symptoms to practice respiratory hygiene and cough etiquette.

<p>Environment</p>	<p>Premises and buildings should minimize the spread of infection by:</p> <ul style="list-style-type: none"> • Ensuring appropriate handwashing facilities • Providing access to a regular, safe water supply • Safe excreta disposal • Ensuring adequate isolation facilities • Ensuring adequate ventilation • Minimizing exposure of patients and visitors to high-risk patients.
<p>Linens Care</p> 	<p>Handle, transport, and process used linens in a manner that:</p> <ul style="list-style-type: none"> • Prevents skin and mucous membrane exposures and contamination of clothing • Avoids transfer of pathogens to other patients and the environment. <p>Laundry workers must wear personal protective equipment.</p>
<p>Patient Care Equipment</p> 	<ul style="list-style-type: none"> • Clean, disinfect, and reprocess reusable equipment appropriately before use with another patient. • Handle equipment soiled with blood, body fluids, secretions, and excretions in a manner that prevents: <ul style="list-style-type: none"> ○ Skin and mucous membrane exposure ○ Contamination of clothing ○ Transfer of pathogens to other patients and environment.
<p>Waste Management</p> 	<p>Ensure safe management of health care waste by:</p> <ul style="list-style-type: none"> • Segregating health care waste • Disposing of sharps in sharps box immediately after use • Treating waste contaminated with blood, body fluids, secretions, and excretions as clinical waste, in accordance with facility protocol • Treating human tissue and laboratory waste directly associated with specimen processing as clinical waste.

2.4 Hand Hygiene

Hands are one of the main pathways of germ transmission during health care. Hand hygiene is the most important measure for avoiding the transmission of harmful germs and preventing health care–associated infections. Health care workers, caregivers, or any person involved in patient care needs to be aware about hand hygiene.

2.4.1 Five Critical Moments for Hand Hygiene¹⁶

1 Before patient contact: Wash hands before touching a patient to protect the patient from harmful germs on your hands. Examples include courtesy and gestures, including shaking hands or stroking an arm; direct physical contact, including helping a patient to move; and clinical examinations, including taking a pulse, measuring blood pressure, chest auscultation, abdominal palpation, and physical examination of patients.

2 Before an aseptic task: Wash hands immediately before performing any aseptic task to protect the patient from harmful germs entering into her or his body. Examples include contact with mucous membranes, including oral/dental care, giving eye drops, and aspirating or cleaning up secretions; contact with broken skin, including wound care, injections, and blood draws; and contact with medical devices including catheter insertion and opening a drainage system.

3 After body fluid exposure: Wash hands immediately after exposure to body fluids and after the removal of gloves to protect you, patients, and the health care environment from harmful patient germs. Examples include contact with medical devices and clinical samples including drawing and manipulating any fluid sample, opening a drainage system, and nasal cannula/oxygen tubing insertion and removal; cleaning up urine, feces, and vomit; handling waste, including wound dressings, intravenous tubing, and speculums; and cleaning of contaminated and visibly soiled materials or areas, including linens and medical instruments.

4 After patient contact: Wash hands after touching a patient and his or her immediate surroundings when leaving to protect yourself and the health care environment from harmful patient germs. Examples include courtesy and gestures, including shaking hands or stroking an arm; direct physical contact, including helping a patient to move around; and clinical examination, including taking a pulse, measuring blood pressure, chest auscultation, and abdominal palpation.

5 After contact with patient surroundings: Wash hands after touching any object or furniture in the patient's immediate surroundings (even without touching the patient) to protect you, patients, and the health care environment from harmful patient germs. Examples include changing bed linens; changing intravenous line perfusion speed; monitoring an alarm; holding a bed rail; and cleaning the night table.

¹⁶ WHO. 2006. *Hand Hygiene: Why, How & When?* Geneva, Switzerland: WHO.

Other important moments for hand hygiene:

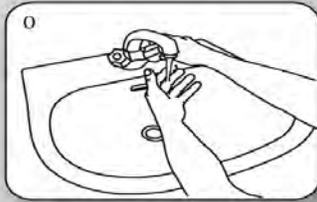
1. Before food preparation and feeding of a child/patient
2. After urinating and defecating
3. After cleaning a baby or changing a nappy.

2.4.2 Hand Hygiene Techniques

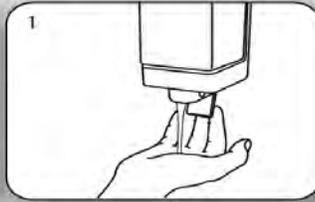
There are two accepted practices for hand hygiene:

1. Washing your hands with soap and water
2. Rubbing your hands with an alcohol-based formulation.

Handwashing Technique with Soap and Water



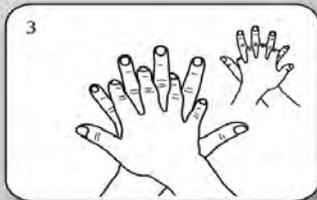
0 Wet hands with water



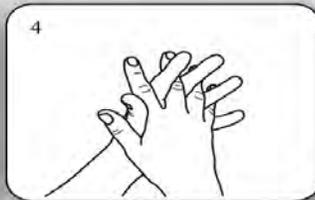
1 apply enough soap to cover all hand surfaces



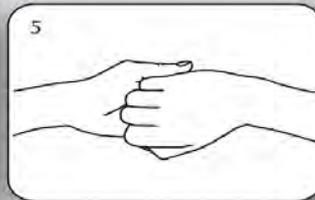
2 rub hands palm to palm



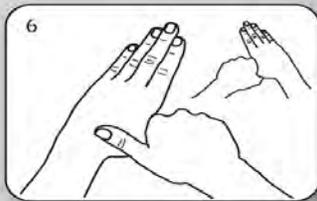
3 right palm over left dorsum with interlaced fingers and vice versa



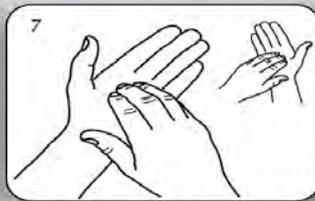
4 palm to palm with fingers interlaced



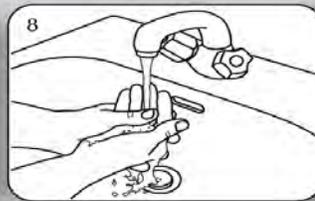
5 backs of fingers to opposing palms with fingers interlocked



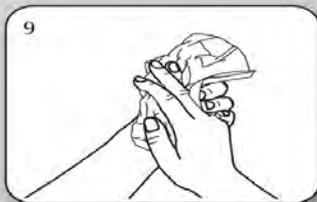
6 rotational rubbing of left thumb clasped in right palm and vice versa



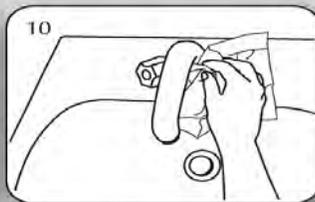
7 rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa



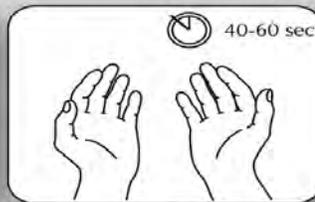
8 rinse hands with water



9 dry thoroughly with a single use towel



10 use towel to turn off faucet



...and your hands are safe.

Modified according to EN1500

Source: WHO. 2006. *Hand Hygiene: Why, How & When?* Geneva, Switzerland: WHO.

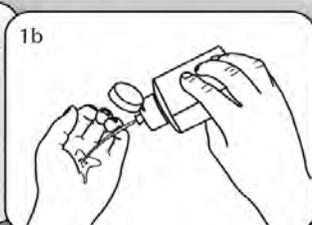
Alcohol rub is the best alternative when soap and water is not available. It is also faster, more effective, and better tolerated by the hands than handwashing with soap and water.¹⁷ However, handwashing with soap and water is the recommended method when hands are visibly soiled.

¹⁷ WHO. 2006. *Hand Hygiene: Why, How & When?* Geneva, Switzerland: WHO.

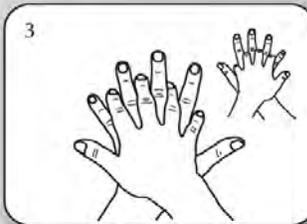
Hand Hygiene Technique with Alcohol-Based Formulation



1a
Apply a palmful of the product in a cupped hand and cover all surfaces.



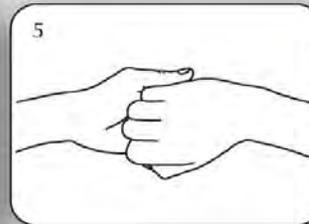
2
Rub hands palm to palm



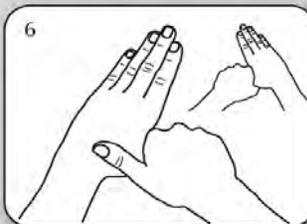
3
right palm over left dorsum with interlaced fingers and vice versa



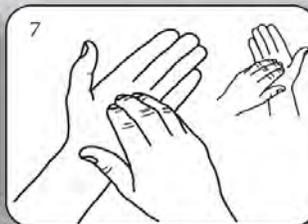
4
palm to palm with fingers interlaced



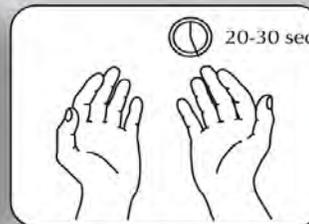
5
backs of fingers to opposing palms with fingers interlocked



6
rotational rubbing of left thumb clasped in right palm and vice versa



7
rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa



...once dry, your hands are safe.

Modified according to EN1500

Source: WHO. 2006. *Hand Hygiene: Why, How & When?* Geneva, Switzerland: WHO.

2.5 Tippy Tap for Handwashing

In resource-constrained countries, running water from a tap is not always available. In the absence of running water from a tap, a good alternative is to install a tippy tap at handwashing stations. The tippy tap (shown in the following pictures) can be made of locally available materials such as clay, metal, plastic, etc. Using a tippy tap can also save water, compared to the system of another person pouring water in someone's hands for handwashing.

2.5.1 How to Make Tippy Taps

Tippy taps can be made in different types and sizes depending on the availability of materials and frequency of handwashing to be done. For a handwashing station in a clinic where health care workers are likely to wash hands frequently because of the patient load, a medium- to large-size tippy tap should be constructed. For handwashing at the household level (with less frequency of handwashing), a small tippy tap should be acceptable. The construction of a few tippy taps are described in the following table.

<p>1. Clay vessel with spigot</p> <ul style="list-style-type: none">• Find a narrow-mouth, clay vessel with a lid• Make a hole in the lower part of the vessel• Insert a spigot into the hole• Find a three-/four-legged mount• Place the vessel in the mount• Place a bowl in the bottom to collect waste water.	
<p>2. Bucket with spigot</p> <ul style="list-style-type: none">• Find a metal or plastic bucket (preferably with a lid)• Make a hole in the lower part (side of bucket)• Insert a spigot into the hole• Find a four-legged mount with two openings to hold the bucket and the bowl• Place the bucket in the upper opening of the mount• Place a bowl in the lower opening/shelf of the mount for collection of waste water.	

3. Hollow tube*

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



4. Screw top with hollow tube*

- Make hole inside of a screw top bottle
- Insert a tube into hole
- To start water flow, loosen the screw top
- To stop water flow, tighten the screw top.



5. Tilting jug*

- Make a hole in the side or handle of a jug
- Hang the jug so it can tilt
- To start water flow, tilt the container
- To stop water flow, put the container upright.



* Source: U.S. Agency for International Development (USAID) Hygiene Improvement Project. n.d. "Different Tippy Taps Counseling Card." Available at www.hip.watsan.net/page/4244 (accessed December 28, 2011)

Session 3: Behavior Change for Water, Sanitation, and Hygiene in the Home

Technical Resource: Behavior Change for Water, Sanitation, and Hygiene in the Home

3.1 What is Communication for Behavior Change?

Communication is the face-to-face, verbal and non-verbal exchange of information, opinions, and/or feelings between two or more people. There are two major types of communication used in a health context:

1. **Group communication:** This occurs when a health worker meets with a small group of people to provide specific information and support them in adopting healthy behaviors.
2. **Counseling:** This occurs during a one-on-one encounter between a health worker and a patient (or a patient accompanied by a spouse, family member, or friend) to help the patient make a decision about his or her care and course of action.

Communication for behavior change includes both, and it aims to help people adopt healthy behaviors and avoid disease. It has been often referred to as information, education, and communication or public education. The use of “behavior change” reflects that the purpose of communication—whether group communication or counseling—is to inform and help people adopt healthier behaviors.

Established behaviors are hard to break. Helping people abandon old practices and adopt new, healthy behaviors requires conveying the right messages in the right way. Experience shows that providing people with information and telling them how to behave is not enough to change behavior. Providing information is an important part of behavior change, but communication for behavior change conveys information in a way that makes it appealing, so people see the advantages of the healthy behavior and understand how they can actually apply this behavior in their own lives.

In most parts of the world, health workers provide counseling for their patients and engage in group communication by giving talks in the health facility or the community. Often, however, they have had little preparation for these tasks. There are, however, many resources to help conduct effective communication for behavior change. This WASH training and this session in particular provide a brief introduction to effective communication techniques, with an emphasis on group communication.

3.1.1 Why Should Health Workers use Communication for Behavior Change?

A health facility and its staff have a professional responsibility to follow correct procedures of WASH. However, even when health facilities have good WASH practices, there will still be many cases of diarrhea and other diseases caused by poor WASH practices. This can happen because people do not spend much time in health facilities unless they are sick; therefore, people’s health is largely determined by what they do at home and at work—and much less by what happens at health facilities.

To help PLHIV and others lead healthier lives and prevent disease, it is important for them to adopt healthy behaviors at home. Following WASH practices at home is fundamental to staying healthy, especially in households where somebody is HIV-positive. Research has shown that:

- Correct handwashing practices can reduce the risk of diarrhea by 42 to 44 percent¹⁸
- Water treatment and proper storage has been shown to reduce the risk of diarrhea by 30 to 40 percent¹⁹
- Safe feces handling and disposal has been shown to reduce the risk of diarrhea by 30 percent or more.²⁰

While diarrhea is the most common result of poor WASH, there are many other diseases related to poor WASH practices. Because of the consequences of poor WASH practices, health workers have a responsibility to help PLHIV, their caretakers, and others in the community adopt and use healthy WASH behaviors at home.

3.1.2 What are Healthy Behaviors?

Healthy behaviors are practices that have been proven to keep people healthy and prevent disease. Some examples of healthy behaviors related to WASH are:

- Drinking safe water
- Washing hands correctly after going to the toilet
- Washing fruit and vegetables in clean water before eating.

Health workers have a responsibility to communicate healthy behaviors like these to PLHIV, their caregivers, and others in the community.

3.1.3 Barriers to Healthy Behaviors

Unfortunately, following healthy behaviors is not always easy. There are many reasons for this. Some examples of why people may not drink clean water include the following:

- It is expensive to buy.
- It is time-consuming to treat water properly (e.g., by adding chlorine or filtering it before drinking).

¹⁸ Curtis, V., and S. Cairncross. 2003. Effect of Washing Hands with Soap on Diarrhea Risk in the Community: A Systematic Review. *The Lancet* 3(5):275–281.

¹⁹ U.S. Agency for International Development (USAID). 2004. *Environmental Health: Technical and Program Background*. Washington, DC.: USAID. Available at www.usaid.gov/our_work/global_health/home/News/ehaad.pdf (accessed December 28, 2011)

²⁰ Fewtrell, L., R. B. Kaufmann, W. Enanoria, L. Haller, J. M. Coldord Jr. 2005. Water, Sanitation, and Hygiene Interventions to Reduce Diarrhea in Less Developed Countries: A Systematic Review and Meta-Analysis *The Lancet Infectious Diseases* 5(1):42–52.

People may not wash their hands after going to the toilet because:

- There is no place to wash their hands near the toilet
- They do not have soap
- They are in a rush to do something else.

Even if people have information about healthy behaviors, they may not actually practice them. There are barriers that prevent them from using the healthy behaviors, and people need to know how to overcome these barriers.

In communication for behavior change, the task is not only to provide information about healthy behaviors, but also to identify and address the barriers to using healthy behaviors.

3.1.4 Motivation for Healthy Behaviors

Adults can be reluctant to change the way they do things. That is particularly true if the change involves extra time, extra work, paying more money, or overcoming other barriers—as is often the case in adopting WASH practices. Adults need a strong motivation—or reason—for adopting the healthy behavior.

There are a number of potential motivating factors for using healthy WASH behaviors, including drinking clean water, washing hands correctly after going to the toilet, and washing fruit and vegetables in clean water before eating them. Examples of reasons that might motivate people to adopt these healthy behaviors include:

- Staying healthy themselves
- Avoiding diarrhea and other diseases caused by unsafe water
- Avoiding illness and consequential time away from work and lost income
- Helping an HIV-positive family member avoid diarrhea, thus possibly saving his or her life
- Keeping a young child or baby from getting sick, thus avoiding potentially serious consequences.

Key tasks for communication for behavior change include:

1. Providing information about healthy behaviors
2. Identifying and addressing barriers to using healthy behaviors
3. Identifying motivating factors—or reasons—to adopt the healthy behavior.

When health workers use communication for behavior change, they help people move from their current behavior to the desired behavior. That includes helping them overcome the barriers to using the desired behavior and providing motivation to adopt the desired behavior.

3.2 Techniques for Effective Communication for Behavior Change

3.2.1 The “KISS” Principle

One of the fundamental principles of effective communication for behavior change is KISS:

*Keep
It
Short and
Simple*

3.2.1.1 Using Simple Language

Health workers often use complicated medical language in their work, forgetting that PLHIV and others in the community do not understand most of the terminology. It is important to use the listener’s own language, if possible. The speaker should communicate in simple language that people can understand. That means using short words and sentences that the patient/group will understand. If people do not understand, communication efforts have failed and people will not change their behavior!

3.2.1.2 Keeping the Information Simple

KISS applies to using simple language and also keeping the information simple. There can be a tendency to talk to patients and community members about many different topics at once. For example, it is quite common for a health worker or health educator to talk to people about HIV prevention, safer sex, use of condoms, voluntary counseling and testing, and avoidance of unnecessary injections all in one session. While these are all important topics, it is highly unlikely that people will remember all of the information—and more unlikely still that they will adopt the many healthy behaviors the health worker is promoting. It would be more effective to focus on one topic at a time: discussing safer sex one day and voluntary counseling and testing another time.

This training covers many topics related to WASH, including handwashing, water treatment and safe storage, making food safe to eat, and keeping toilets clean. Covering all of these topics during one session may overwhelm the audience, making them less likely to remember key points or change their behavior. It is helpful to communicate one topic at a time: address handwashing today, water treatment next week—and so on.

The most important information within a particular topic must be communicated very simply and clearly. While it would be nice if people remembered everything they are told, the reality is that they will not. Therefore, it is important to emphasize the most important information and to communicate it simply and clearly.

Throughout this training, you will receive job aids for different WASH topics: one on handwashing, one on water treatment, one on keeping food safe to eat, one on keeping toilets clean, etc. By focusing on one topic, it is more likely that the audience will adopt healthy behaviors on that topic.

To make it easier to communicate effectively and change behavior, the job aids have the most important information on each topic to communicate to PLHIV, their caregivers, and other community members. Basic, simple, and clear messages are best communicated in writing and in pictures, so that people with vision problems or with low literacy can also understand.

3.2.2 Two-Way Communication

An additional basic principle of effective communication for behavior change is *two-way communication*. Two-way communication is like a conversation. It goes both ways: from the health worker to the patient or group—and the other way around. The patient or people in a group session are encouraged to talk as well (as much or even more as the health worker!).

A lecture or talk (one-way communication from the health worker to a patient or group) is not true communication for behavior change. The patient or group is unlikely to remember much new information and is even less likely to change behaviors. During one-way communication, the speaker will not understand the patient's or group's current level of knowledge, motivations to practice a healthy behavior, or barriers that may stand in the way of adopting the new behavior.

The key to effective two-way communication for behavior change is asking questions. Asking questions is a fundamental tool for communication for behavior change and allows the health worker to find out:

- What the patient/group knows or does not know about the healthy behavior
- What might motivate the patient/group to practice the healthy behavior
- What barriers might need to be overcome in order for the patient/group to practice the healthy behavior.

This, in turn, allows the health worker to tailor the communication for behavior change session. It gives him or her the information needed to help the patient/group actually adopt the healthy behavior.

In addition to the health worker asking questions, it is also important that he or she often encourage the patient or group to ask questions. When the patient/group is allowed to ask questions, they have an opportunity to clarify anything that remains unclear, leaving them with a better understanding of the session and helping them apply the information to change their behavior.

There are two types of questions:

1. *Open questions*, such as those in this chapter, stimulate conversation by inviting a thorough reply. Some examples include: “Why do you think it is important to wash your hands properly?” and “What prevents you from treating the water you use at home, to make it safe for drinking?”
2. *Closed questions* do not encourage discussion and invite very short answers. For example, the questions asked when taking a medical history are closed questions. Any question that calls for a “Yes” or “No” answer is a closed question. Examples of closed questions include: “Do you properly wash your hands?” or “Do you treat your water at home?”

3.2.2.1 Providing Motivation for Healthy Behaviors

By asking questions, health workers can identify what might motivate people to practice a new healthy behavior. Examples of the kinds of questions to use when identifying what might motivate people to practice a healthy behavior are:

- “Why do you think it is important to wash your hands properly?” or “Can you think of some reasons to wash your hands properly?”
- “Why do you think it is important to cover food?” or “Can you think of some reasons to cover food?”

Typically, these questions start with:

- “Why do you think it is important to...?”
- “Can you think of a reason (or some reasons) to...?”

When doing communication for behavior change with a patient or group, begin with finding out what might motivate them to practice a healthy behavior. Asking questions about motivation helps people understand why the session is relevant and important to them. If they consider a topic important, they will be more interested in what you have to say.

3.2.2.2 Addressing Barriers to Healthy Behaviors

Asking questions also allows health workers to determine what barriers might prevent a person from using a healthy behavior.

Examples of the kinds of questions to use when seeking to identify barriers to healthy WASH behaviors are:

- “Why is it hard for you, and others you know, to treat the water used at home to make it safe for drinking?”
- “What are the reasons you do not treat the water used at home to make it safe for drinking?”
- “What stops you from treating the water used at home to make it safe for drinking?”

or:

- “Why is it hard for you to wash your hands before preparing food?”

- “What are the reasons you do not wash your hands before preparing food?”
- “What stops you from washing your hands before preparing food?”

After identifying some barriers to the healthy behavior, solutions can be brainstormed to address these barriers. This WASH training provides a number of answers that should be helpful. For example, if people do not wash their hands properly because they cannot afford to buy soap, the health worker can explain that wood ash is a good alternative. If they only have one towel that is not always clean, the health worker can say that they can wave their hands in the air until they are dry.

In general, the best approach to addressing barriers is not for the health worker to tackle them, but to “bounce” the problem back to the person or group, asking how *they* think that problem could be tackled. When people suggest a solution to a problem, that solution is more likely to be practical, and they are more willing to try it. Local communities are enormously inventive, and their solutions are often better than those proposed by outsiders.

3.2.3 Listening Skills

Previously, it was made clear that asking questions is critical to good communication for behavior change because it allows health workers to find out important information that can help change behavior. When health workers use questions during communication for behavior change, they must be ready to listen attentively to the answers.

Often people hear, but they are not really listening to what people are saying. Studies about how providers interact with patients have shown they often interrupt patients when they are talking or they cut off an important exchange of information that can be critical for decision making about a patient’s condition. This sort of behavior shows a lack of respect toward other people and can even result in the provider missing information that is important for a correct diagnosis or treatment.

There may be times when you are face-to-face with just one or two people in health education session—maybe somebody living with HIV and/or the person most involved in caring for that person. This course cannot devote time and practice on both communication with small groups as well as counseling for just one or two people, but the basic principles of communication for behavior change, including listening skills, will help you provide support to one or two people.

Key points for individuals or groups of one to two persons include:

- The information about healthy behaviors that health workers need to convey is the same for just one or two people as for a larger group. Use the job aids to remind you of critical information: the healthy behaviors people should be using to prevent disease.
- The communication principles for counseling with one or two people are much the same as for small groups. Listening and two-way communication are critical. Ask questions, listen, and find out what your patient(s) are thinking. Ensure they

understand what you are saying. Invite questions and learn about their concerns. The discussion guides on the back of the job aids will give you ideas about helpful questions to ask.

- As you ask questions, discuss the following with your patient(s):
 - What would motivate them to adopt a healthy behavior?
 - What barriers do they see to adopting a healthy behavior?
 - Actively listen to reach a concrete conclusion that will help your patient(s) to adopt healthy behaviors.
- Be sure to follow the KISS principle. Communication is best when it is brief, clear, and to the point. Avoid complicated medical terms and lengthy explanations.

Good listening skills involve both verbal and non-verbal behavior.

Positive verbal behavior includes:

- Occasionally reacting to what somebody is saying, without interrupting
- From time to time saying, “yes,” “absolutely,” “good point,” or something similar
- Summarizing the key point, once the speaker has finished, while checking with the speaker that you have summarized correctly
- Politely asking the speaker to repeat or clarify a point that is not clear. This should be done in a positive way, by saying, for example, “That sounded like an important point, but I am not sure I fully understood. Can you please repeat it?”

Non-verbal behavior includes:

- Sitting or standing quietly in place, so the attention is on the person speaking
- Looking attentively at the speaker
- Nodding from time to time (where culturally appropriate)
- Smiling at something the speaker is saying (if appropriate)
- Leaning forward (where culturally appropriate)
- Not interrupting.

A number of behaviors make it very clear that we are *not listening* and should be avoided at all times:

- Not looking at the speaker
- Interrupting
- Completing the speaker’s sentence or thought
- Shuffling papers
- Paying attention to something else.

3.2.4 Using Job Aids, Visual Aids, and Demonstrations

Job aids are used to encourage stronger WASH practices at the facility as well as provide a communication for behavior change guide to help health workers conduct communication/educational sessions for PLHIV, their caregivers, and other groups to encourage adopting healthier behaviors at home. During the course, you will have plenty of practice in using job aids on WASH topics. Practice will focus on

communication with small groups of PLHIV, their caregivers, family members, and other community members.

Visual aids are materials such as job aids, posters, flip charts, brochures, or leaflets.

Visual aids in a communication for behavior change session can attract people's attention and make them more interested in the topic. When used properly, visual aids help to explain and reinforce key points clearly. This is particularly true if the patient or members of the group can take the material—like a brochure or flyer—home with them. Often, a series of pictures can portray all the steps in a process.

Some simple considerations for the use of visual aids include the following:

- Place the item where it can be easily seen.
- Stand *next to* it (not in front of it) and face the patient or audience.
- Point to the relevant pictures when talking.
- Involve the patient or group by asking them to point to a picture during the discussion; ask them what they see in a picture.
- The job aids in this training may include a session guide on the back. This text should serve as a reminder of key points to cover and not as something to be read out loud.

Visual Aids on WASH Provided in this Manual

This PG includes visual aids called job aids for communication for behavior change on key WASH topics.

The job aids are handouts and will be delivered throughout the training. They are designed to be enlarged to at least four times their current size and are to be used as follows:

- One side is a visual aid, with pictures and a few words to convey the most important points of WASH behavior to patients and the community
- The other side is a job aid for health workers, with key questions and information to use in conducting communication for behavior change sessions with small groups.

These job aids should be used with the text side facing the health worker to guide him or her through the session, and the picture side facing the audience.

These job aids can be reproduced and used individually. Alternatively, they can be assembled into a flip chart on WASH.

Demonstrations are when the health worker or somebody else in the group actually shows how to do something. For example, there might be a demonstration of correct handwashing, using real water, soap, and a towel; or there might be a demonstration of how to make a tippy tap out of a plastic jerry can.

A demonstration can be done by the health worker to *show how* a skill should be performed. Alternatively, it can be done by the patient or somebody in a group to *practice how* to perform a skill correctly. When the demonstration is practiced, the health worker and/or other members of the group should follow the steps of the process and point out any steps missed or that need improvement.

When used correctly, demonstrations are highly effective in giving people the skills to do something right. Seeing how to do something in real life is much more vivid to people than hearing about it, reading about it, or even seeing a picture of it. Doing a demonstration correctly involves:

- Planning the demonstration ahead of time, so it is broken down into steps
- Gathering all the required demonstration materials in advance
- Facing the patient or group, so they can see the demonstration clearly
- Demonstrating the skill slowly, at the same time as pointing out each step on the respective job aid
- Taking time after for the patient or group to analyze any difficulties or surprises encountered in the demonstration.

3.2.5 Ending a Session

Every communication for behavior change session should allow a few minutes to end the session. This wrap-up will ensure the patient or group understands key points. The visual aids in this PG provide the most important information in pictures and short messages. By working with these materials, health workers can be sure that they are communicating the key points.

When starting the wrap-up, it is best to announce the time has come to summarize what has been discussed and to refresh people's memory on the most important points. There are several approaches to conducting an effective wrap-up. Three common ways to end a session include:

1. Asking the patient or group what main points of the discussion they will take away with them. The health worker should commend people when they mention a key point and, ideally, repeat it for emphasis. If any key points are missing, he or she needs to add them and be sure the group remembers that part of the discussion.
2. Summarizing points of the session. (This tends to be somewhat less effective than asking the patient or group to do it, as it minimizes group participation.)
3. Using visual aids to reinforce the points made verbally. The WASH training visual aids can be used to visually reinforce key points. In settings where people are literate, writing the key points on a blackboard or on flip chart paper reinforces them, too.

Overall, asking the patient or group to summarize the main points of the discussion is the most effective way to end a session because people are made to think and get involved. It can also be used as a simple oral evaluation for the health worker as it

reveals the points that people did and did not understand. The health worker can then learn from experience and refine his or her technique before the next session.

Session 4: Water Treatment, Safe Storage, and Handling at Point-of-Use

Technical Resource: Water Treatment, Safe Storage, and Handling at Point-of-Use

Water is essential for the normal function of health care facilities and is used for patient and staff consumption, food preparation, cleaning, and laundry service. However, water can be easily contaminated with harmful germs, causing outbreaks of diarrhea and other serious diseases, particularly among immunocompromised patients. This is especially the case for PLHIV during the symptomatic phase, when lack of access to safe and sufficient water may result in skin infections, fever, and diarrhea.²¹ Additionally, PLHIV may have limited access to water due to discrimination resulting from myths and/or public fears that HIV can be transmitted through water or casual contact including sharing utensils.²²

In resource-constrained countries, the water supply to health care facilities is often unreliable due to lack of financial and infrastructural resources, and the municipal water authority may have capacity to only supply water intermittently. In some lower-level health facilities, piped water may not be available at all.

Though health facilities may have access to water supplies, challenges remain in providing safe water to patients. Unhygienic handling during transport, storage, and inappropriate use of utensils at the point-of-use can recontaminate treated water.

4.1 Safe Water Interventions

There are three ways to ensure safe water and to prevent waterborne infections in the health facility and the home:

1. Point-of-use water treatment
2. Point-of-use safe water storage and handling
3. Communication for behavior change.

These three components comprise the household-based safe water system, developed by the U.S. Centers for Disease Control and Prevention (CDC) and the Pan American Health Organization (PAHO). Implementation of the three components has proven to reduce the risk of diarrhea by 12 to 85 percent in developing countries.²³

Water should be treated at the point-of-use to make it safe for drinking. Caregivers and consumers should also use safe, treated water for taking medications, preparing food, and for replacement/supplemental feeding for infants and PLHIV.

²¹ Mahider, T., 2008. "Equal Access for All? Issues for People with HIV and with Disabilities in Ethiopia." Presented at the 33rd WEDC international Conference, Accra, Ghana: Access to Sanitation and Safe Water: Global Partnership and Local Actions. Available at http://www.wedc-knowledge.org/wedcopac/opacreg.dll/fullnf?Search_link=AAA:4826:88719063 (accessed December 28, 2011)

²² USAID Hygiene Improvement Project. 2009. *Program Guidance for Integrating Water, Sanitation, and Hygiene Improvement into HIV/AIDS Program, 2009*. Washington, DC: USAID.

²³ CDC. n.d. *Safe Water Systems for the Developing World: A Handbook of Implementing Household-Based Water Treatment and Safe Storage Projects*. Atlanta, Ga.: CDC. Available at www.cdc.gov/safewater/manual/sws_manual.pdf (accessed December 28, 2011)

Treated water should be stored at the point-of-use in a narrow-mouth storage container with a spigot and lid to avoid recontamination (examples of such containers are discussed subsequently). If no such container is available, caregivers should handle the treated water properly. Covering the storage container with a lid and safely handling the water by pouring from (rather than dipping) the storage container can prevent contamination.

4.2 Point-of-Use Water Treatment Options

A number of water treatment methods and technologies are available to improve the quality of water at the point-of-use. These include 1) chemical methods such as chlorination and coagulation-flocculation and 2) physical methods such as filtering, boiling, and solar heating.

4.2.1 Chlorination

Chlorination is the process of disinfecting water by mixing it with chlorine. Chlorine is an effective disinfectant; putting a few milligrams of chlorine per liter of water and waiting about 30 minutes will kill almost all bacteria and viruses.²⁴ However, water should not be turbid. In other words, the water should be free from organic and inorganic compounds that interfere with the chlorine's effectiveness. Chlorine also has a residual action quality, meaning it persists in water for some time (called residual chlorine) and kills germs (if contaminated later). This quality makes chlorine a potent water disinfectant. Residual chlorine is also used as an indicator to check the quality of water disinfection at the point-of-use. Chlorination should be done in a protected water container (a narrow neck container with a spigot) to prevent recontamination.

Chlorine is generally available even in remote, resource-constrained areas. Chlorine comes in a solid, powder form (calcium hypochlorite) or a liquid form (sodium hypochlorite). Commercially, chlorine is available in tablets, solution, and powder. Chlorine's effectiveness as a disinfectant reduces over time depending on the storage situation. Therefore, consumers should store chlorine products as recommended by the manufacturers and should check the expiration date before use.

Chlorine should be added in sufficient quantities, as specified by the product. To destroy all germs, chlorine should have contact time of at least 30 minutes from the time it is added to the water to the time the water becomes potable. Adding too much chlorine in water may adversely affect the taste.

Some benefits of chlorination include:

- Proven reduction of most bacteria and viruses in water
- Residual protection against contamination
- Acceptability to users because it is easy to use
- Proven health impact

²⁴ WHO. 2007. Combating Waterborne Disease at the Household Level. Available at www.who.int/water_sanitation_health/publications/combating_diseasepart3lowres.pdf (accessed December 28, 2011)

- Easy scale-up of implementation
- Low cost.

Some drawbacks of chlorination include:

- Relatively low protection against parasites
- Lower disinfection effectiveness in turbid waters
- Possible user objection to taste and odor
- Necessity of ensuring quality control of chlorine solution
- Potential long-term carcinogenic effects of chlorination byproducts.

PSI chlorination product for social marketing



Water Guard (Chlorine Solution)*

Water Guard is one type of chlorine solution for water treatment at the household level. Users add one cap of solution (two caps if water is dirty) to 20 liters of water in a storage container and wait 30 minutes for disinfection. Diarrhea reduction is 22 to 84%. Product cost is U.S.\$0.01 to U.S.\$0.05 per liter of water treated.

Water Guard is used in Nigeria, Kenya, Malawi, and Tanzania for disinfection of water.

For more information, see www.cdc.gov/safewater.

*Note that AIDSTAR-One and the U.S. Government do not necessarily endorse the products mentioned in this manual.

4.2.2 Flocculation/Disinfection

Flocculation is a water treatment process that thickens small particles (organic and inorganic) into a semisolid mass which then settles as sediment at the bottom of the container and finally is separated from water through straining with a clean cloth. The strained water is then disinfected with chlorine. Flocculent/disinfection powder is now commercially available in a sachet that contains ferric sulfate (thickener) and calcium hypochlorite (disinfectant).

Some benefits of flocculation and disinfection include:

- Proven reduction of bacteria, viruses, and protozoa, even in turbid water
- Removal of heavy metals and pesticides
- Residual protection against contamination
- Proven health impact
- Acceptable to users because of visual improvement in the water through flocculation
- Sachets are easily transported due to their small size and long shelf life
- Classified as non-hazardous material for air shipment.

Some drawbacks of flocculation and disinfection include:

- An extra step of straining water is necessary and requires a demonstration to teach new users
- Users need two buckets, a cloth, and a stirring device
- There is a higher relative cost per liter of water treated compared to regular household water chlorination.

PUR Purifier of Water™



Flocculation and Disinfection Powder

The Procter & Gamble Company developed PUR Purifier of Water™ in a sachet containing powdered ferric sulfate (a coagulant) and calcium hypochlorite (a disinfectant). The contents in one sachet is added to an open bucket containing 10 liters of water, stirred for five minutes, and set aside for the solids to settle in the bottom of the bucket. The water is strained through a cotton cloth into a second container where hypochlorite inactivates the microorganisms in 20 minutes.

PUR sachets are now centrally produced in Pakistan, and they are sold to nongovernmental organizations worldwide at a cost of U.S.\$0.035 cents per sachet.

For more information on the PUR Purifier of Water™, please visit www.csdw.org/index.shtml or www.pghsi.com/safewater.

4.2.3 Filtration

Filtration is a physical water treatment option, not a chemical treatment option like those previously mentioned. In this process, polluted water is passed through a porous medium (such as sand). When water flows through the filter, impurities come into contact with the surface of the particles in the filtering medium and are trapped. In some filters, granulated activated carbon is also used to remove chemical impurities.

Some benefits of filtration include:

- Proven reduction of bacteria and protozoa in water
- Acceptability to users because it is simple to use
- Proven reduction of diarrheal disease incidence in users
- Long life of filter (if not broken).

Some drawbacks of filtration include:

- Lower effectiveness against viruses
- Chance of recontamination of water (no residual protection) if treated water is stored or handled unsafely
- Quality of filters may vary widely (especially if locally produced)
- Filter wear and tear can occur over time, so spare parts are needed

- Filters and receptacles need to be cleaned regularly, especially when using turbid waters
- A long wait is required. The suggested flow rate is one to three liters *per hour* in non-turbid waters.



Placing the ceramic pot into the receptacle (PFP/Ron Rivera)

Ceramic Filter

A ceramic filter is designed by Potters for Peace. Local ceramic facilities produce these flowerpot-shaped filters, which can hold about 8 to 10 liters of water and sit inside a plastic or ceramic receptacle. The filter is impregnated with colloidal silver to ensure complete removal of bacteria in treated water and to prevent growth of bacteria within the filter itself. Locally manufactured, ceramic Potters for Peace—design filters range in cost from U.S.\$7.50 to U.S.\$30.00.

For more information on ceramic filtration, please visit www.pottersforpeace.org.



Filtration and chlorination system (CDC/D. Lantagne)

Filtration and Chlorination

Gift of Water, Inc., has designed a two-bucket system for filtration and chlorination, with a polypropylene string-wound filter in the top bucket and a granulated activated carbon filter in the bottom bucket. The water is collected in the top bucket and locally purchased chlorine (liquid or tablet) is added and set aside for 30 minutes. The top bucket is then placed on the bottom bucket, which activates a check-valve so water flows through the two filters and into the bottom bucket. The initial chlorination in the top bucket deactivates bacteria. As water flows through the filters, turbidity, chemical contaminants, some larger disease-causing protozoa, and chlorine are removed. Sometimes, a small amount of chlorine is added to the bottom bucket to provide residual protection. The initial installation cost of the Gift of Water, Inc., system is U.S.\$12 to U.S.\$15.

For more information on filtration and chlorination systems, please visit www.giftofwater.org or www.eaglespring.com.

4.2.4 Solar Disinfection

Solar disinfection uses the sun's ultraviolet rays to deactivate and destroy pathogens present in water. The process begins by filling transparent plastic containers with water and exposing them to full sunlight for about five hours in clear skies. On cloudy days, however, disinfection requires exposure for two consecutive days. Disinfection occurs

by a combination of radiation and thermal treatment. If the water temperature reaches at least 50 degrees Celsius, one hour of exposure is sufficient. Half-blackened bottles can be used to increase the heat gain, with the clear side of the bottle facing the sun.

Solar disinfection is one of the simplest and least expensive methods of purification. While it is only possible where enough solar radiation exists, this method can be an appropriate water treatment option for households when economic and sociocultural conditions in the community are not amenable to other treatment or disinfection alternatives, such as chlorination or filtration.

Some benefits of solar disinfection include:

- Proven reduction of viruses, bacteria, and protozoa in water
- Proven reduction of diarrheal disease incidence in users
- Acceptability to users because it is simple to use
- No cost to the user after obtaining the plastic bottles
- Minimal change in taste of the water
- Recontamination of safe water is unlikely because water often is served from bottles.

Some drawbacks of solar disinfection include:

- Water with higher turbidity must be filtered or flocculated first
- Low user acceptability because of the limited volume of water treated at any one time and because of the longer water treatment waiting time required
- Large supply of intact, clean, suitable plastic bottles is required.



A woman using solar disinfection
(Swiss Federal Institute for Environmental Science and Technology)

Solar Disinfection

Solar disinfection was developed by the Swiss Federal Institute for Environmental Science and Technology as a household water treatment and storage option to prevent diarrhea in developing countries. The process begins by filling 0.3- to 2.0-liter plastic soda bottles with low turbidity water, shaking to oxygenate water, and then placing the filled bottles on a roof or rack for six hours (if sunny) or two days (if cloudy). The combined effects of ultraviolet-induced DNA alteration, thermal inactivation, and photo-oxidative destruction deactivate disease-causing germs. Solar disinfection is a virtually zero-cost technology.

For more information on solar disinfection, please visit www.sodis.ch or www.fundacionsodis.org.

4.2.5 Boiling

Boiling is a disinfectant method that destroys various pathogens such as viruses, spores, cysts, and worm eggs. The recommended boiling times vary significantly to

make water safe for consumption. WHO recommends heating water until it reaches the boiling point. Water should be stored in the same container in which it was boiled, handled carefully, and consumed within 24 hours to prevent recontamination.

To date, there is no peer-reviewed study assessing the health impact associated with boiling water. However, some case control studies in cholera outbreaks have noted that boiling is protective against cholera.²⁵

Some benefits of boiling include:

- Many materials needed to boil water already exist in households
- Proven deactivation of all bacteria, viruses, and protozoa, even in turbid or contaminated water
- Sociocultural acceptance, particularly in tea-consuming cultures.

Some drawbacks of boiling include:

- Water can be recontaminated (lack of residual protection)
- Insufficient epidemiologically confirmed health impact
- Potential for burn injuries and increased risk of respiratory infections from indoor stoves or fires
- Potentially high fuel cost
- Potential user taste objections
- Potential for incomplete water treatment if water does not reach boiling temperature.

Factors to Consider in Selecting Water Treatment Options

In deciding which treatment option would be appropriate for your health facility, consider the following factors:

- What option is most effective in eliminating all type of germs: viruses, bacteria, and protozoa?
- What option is feasible for your health facility?
- What treatment technology is available in the country?
- What option is affordable within your health facility budget?
- What method will be culturally acceptable by patients?
- How difficult is it to change behavior in order to implement this water treatment method (among health workers, patients, and caregivers)?

4.3 Point-of-Use Safe Water Storage Options

Water that was previously disinfected can be recontaminated by unhygienic handling, during transportation, during storage, and by utensils used at the point-of-use. Evidence

²⁵ CDC and USAID. Household Water Treatment Options in Developing Countries: Boiling. Available at www.ehproject.org/PDF/ehkm/boiling2009.pdf (accessed December 28, 2011)

suggests that safe storage containers are effective at preventing contamination of drinking water during transport and storage.²⁶

Safe water storage options fall into three general categories:

1. Existing water storage containers used in the household/health facility
2. Water storage containers used in the community that can be modified
3. Commercial safe storage containers purchased by a program and distributed to beneficiaries.

Available containers might already be safe or could easily be modified into safe water storage containers. A review of the options for safe water storage containers presented here can also help determine the most appropriate ones for use. For more information, email safewater@cdc.gov.

Examples of Point-of-Use Safe Water Storage Containers²⁷

<p>The Oxfam Bucket</p> 	<p>The 14-liter Oxfam Bucket was designed to provide a safe storage option to organizations working on water safety in the home or refugee camps. Manufactured in England, it is sold unassembled to nongovernmental organizations for use in program implementation. The lids snap on to prevent entry of hands or objects into the container. The Oxfam Bucket costs about U.S.\$5, excluding transport from England to the program site. A minimum order of 200 is required.</p> <p>Email fieldlog@Oxfam.org.uk to order.</p>
<p>Jerry cans</p> 	<p>Initially used to hold vegetable cooking oils, 20-liter jerry cans can be cleaned and used to transport and store safe water. They are a good option for safe storage and easy to carry on the head. The opening is too small to allow hands or utensils into the safe water. A hole can be drilled into the plastic to add a tap, which offers easier access to the treated water and a handwashing station in the home. Used jerry cans cost approximately U.S.\$1 to U.S.\$5 on the open market in Africa.</p>

²⁶ CDC and USAID. 2008. Preventing Diarrhea in Developing Countries: Safe Storage of Drinking Water. Available at www.ehproject.org/PDF/ehkm/safe-storage2009.pdf (accessed December 28, 2011)

²⁷ Latagne, D.S., and Gallo, W. "Safe Water for the Community: A Guide for Establishing a Community-Based Safe Water System Program." Available at www.cdc.gov/safewater/publications_pages/Safe_Water_for_the_Community.pdf (accessed December 28, 2011)

<p>The CDC container</p> 	<p>In the initial safe water system programs, the CDC designed 20-liter modified jerry cans and provided them to users. This jerry can is now produced in Uganda, Afghanistan, Kenya, and the United States. Each jerry costs approximately U.S.\$5, excluding transport.</p> <p>Email safewater@cdc.gov for more information.</p>
<p>Bucket with lid and tap</p> 	<p>Five-gallon (19-liter) buckets are widely available and are often used for safe water transport and storage. Buckets can be modified for safe storage by ensuring there is a tight-fitting lid, drilling a hole through the plastic and installing a sturdy tap, and placing a label with instructions for water treatment on the bucket. Additionally, it is important to teach people to use the tap instead of dipping into the bucket. In Haiti, this is an easy educational message, because families take pride in using the tap since it is seen as a sign of higher educational status.</p>
<p>Modified clay pots</p> 	<p>Clay pots are the preferred storage container in many cultures, because as water evaporates through the clay, the water inside the container is cooled. In some rural areas, safe water is transported in clay pots, but in most areas water is transported in plastic containers and then stored in clay pots. By working with local potters, it is possible to modify clay pots to have a tap, as seen in the example.</p>

Factors to Consider in Safe Water Handling

Treated water should be stored in narrow-mouthed plastic, ceramic, or metal containers that serve as physical barriers to recontamination, especially if using water treatment options that do not leave residual protection.²⁸

The water storage containers should have the following characteristics:

- A small opening with a lid or cover that discourages users from placing potentially contaminated items such as hands, cups, or ladles into the stored water
- A spigot or small opening to allow easy and safe access to the water without requiring the insertion of hands or objects into the container
- A size appropriate for the household/facility with permanently attached instructions for using the treatment method and for cleaning the container.

If containers with these characteristics are not available, efforts should be made to educate health workers and caregivers to access the water from the container by pouring the water rather than dipping into the container with a possibly contaminated object.

Treated water in a narrow-neck container with tight fitting lid can be used for up to seven days. If the water is stored in wide-neck container or without tight fitting lid, it can be used for only 24 hours.

Care should be taken to avoid using any container to store drinking water that was previously used to transport toxic materials (such as pesticides or petroleum products).

²⁸ CDC and USAID. 2009. *Preventing Diarrheal Disease in Developing Countries: Safe Storage of Drinking Water*. Available at www.hip.watsan.net/content/download/2811/16708/file/Factsheet%20on%20Safe%20Water%20Storage.pdf (accessed December 28, 2011)

Session 5: Water, Sanitation, and Hygiene and Safe Sanitation

Technical Resource: Water, Sanitation, and Hygiene and Safe Sanitation

5.1 What are Excreta?

Excreta are the waste matter the body gets rid of. Examples include urine, feces, menstrual blood, etc.

5.2 Why is Safe Disposal of Excreta Important?

Everyone, including PLHIV, is more susceptible to contracting diarrhea when fecal matter is present. Ensuring safe handling and disposal of fecal matter has been shown to reduce the risk of diarrheal disease by 30 percent or more.²⁹

5.3 How is Excreta Disposed of Safely?

People in the community should be encouraged to build and use latrines (toilets) for safe disposal of excreta so it does not become a source of contamination, particularly for the drinking water. People who are too sick to go to latrines may need special excreta disposal arrangements and equipment.

Health care settings should have a sufficient number of clean, functional latrines for patient/caregivers and health care providers.

5.4 Important Privacy and Security Conditions for Latrines

Latrines should be appropriately constructed and designed to be safe and secure for the users to minimize the risk of violence, including sexual violence. For example, 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 to protect people who are using the latrine/toilet, and 4) properly ventilated.

5.5 Cleaning Materials and Handwashing Facilities

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. Handwashing points (e.g., tippy tap) and soap (or clean wood ash as an alternative) should be available near the latrine/toilet. Handwashing after using the latrine/toilet should be actively encouraged through health education and print materials including a poster or job aids on the wall.

²⁹ Fewtrell, L., R. B. Kaufmann, D. Kay, W. Enanoria, L. Haller, and J. M. Colford Jr. 2005. Water, Sanitation and Hygiene Interventions to Reduce Diarrhea in Developing Countries: A Systematic Review and Meta-Analysis. *The Lancet Infectious Diseases* 5(1):1–13.

To make sure that toilet paper and soap are not taken from the latrine/toilet, you could post a sign inside the latrine/toilet, such as “Do not remove toilet paper and soap from the toilet.” You may also consider securing the latrine/toilet (with a lock and key). If you lock the latrine/toilet, make sure patients are aware that latrine/toilet keys are available in a fixed place, like a nursing station.

5.6 Cleanliness of Latrines

Latrines and toilets should be cleaned at least two times a day, as well as whenever they are dirty. A full supply of cleaning products is necessary: brush, disinfectant, gloves, and napkins or towels. If liquid disinfectant is not available, bleaching powder (7 gram/liter with 70 percent available chlorine) may be used for cleaning. Disinfectant should also be used on all exposed surfaces of the toilet, and a brush can be used to remove visible soiling.

A written daily cleaning schedule on the wall where latrine/toilet is located can also be helpful, for example:

Latrine/Toilet Cleaning Schedule

Date/Time		Signature of Cleaner	Supervisor	
			Remarks	Signature
01/01/2009	8 a.m.			
	8 p.m.			
01/02/2009	8 a.m.			
	8 p.m.			

5.7 Addition/Modification to Latrines to Assist Special Users

Children, the elderly, and disabled, pregnant, and sick people need special support to be able to use latrines/toilets. Some PLHIV need frequent use of latrines/toilets because of related diarrhea, but they may have difficulties using latrines/toilets. Toilets and latrines can be equipped to meet the specific needs of PLHIV and patients with disabilities by simple additions and design modifications as suggested³⁰ in the following diagrams.

³⁰ Jones, H. E., and R. A. Reed. 2003. *Water Supply and Sanitation Access and Use by Physically Disabled People*. Loughborough, UK: Water, Engineering and Development Centre. Available at www.tddf.or.th/tddf/library/files/pdf/library-2008-05-02-444.pdf (accessed December 28, 2011)

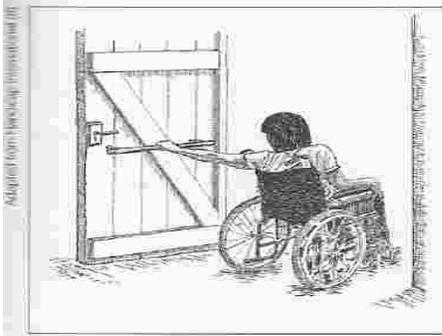


Figure 5.21. Door-rail extending the full width of the door.

Hand Rail for Opening Toilet/Latrine Door

A hand rail across the width of the door can be easier to hold onto than a single handle.

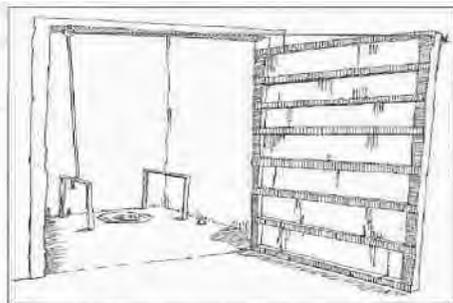


Figure 5.22. String attached to the door threads through a hook. User pulls the string to close the door and ties the end to the handrail.

Pulley to Close Latrine/Toilet Door

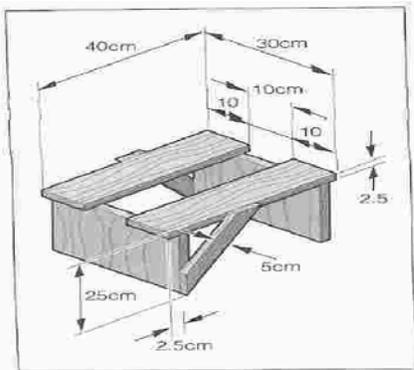
A rope tied onto the hand rail and fed through a pulley to the door; it can be pulled by the user to close the door.



Figure 7.9. Single horizontal bamboo rail in front of latrine.

Support for Squatting in Latrine

A simple bamboo hand rail helps with bending and squatting.



Stool for Children

This small stool can be used by children to place over the latrine hole. If the child sits with his or her legs by the side of the solid wood, this will act as a splash guard.

5.8 Individual Facilities for People Who are Bed-Bound

People, like some PLHIV, who are too sick to be able to go to the latrine or persons immobilized in hospital due to sickness or an operation, should be provided with individual facilities such as commode chairs or bed pans and urinals.



Commode chair



Urinal



Bed pan

Bed pans, potties, and urinals made of metal or plastic materials are often available in local markets. For both bed pans and urinals, the user must have adequate provision of cleaning materials, clean water, and soap to enable good hygiene practice; the caregiver needs a facility to wash the bed pan, potty, and urinal. Providing a screen can also ensure the patient's privacy.

A commode chair is a chair, often with a wood or metal frame, that has a seat with a hole in it and a pot supported underneath which can be removed for emptying and cleaning. A commode chair can be used for PLHIV who are too weak to use the latrine/toilet. Make the commode chair strong and not slippery so the user can sit on it easily. The pot should be deep enough to prevent splash and overfilling.³¹

³¹ Oxfam. n.d. *Excreta Disposal for Physically Vulnerable People in Emergencies*. Available at http://www.oxfam.org.uk/resources/learning/humanitarian/downloads/TBN1_disability.pdf (accessed December, 28, 2011)

How to Make a Commode (Potty Chair)³²

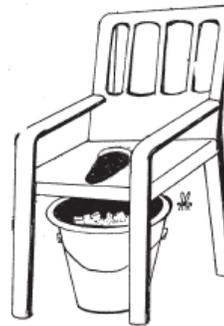
1. Make a wooden stool or chair.



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 of the latrine.



³² USAID Hygiene Improvement Project. n.d. *Job Aid: Making a Commode (Potty Chair)*. Washington, DC: USAID.

Advantages of individual facilities: It is easier for both the patient and the caregiver because the patient does not have to be carried to the latrine/toilet. Only the pot needs to be taken away for emptying and cleaning.

Disadvantages of individual facilities: Privacy may be an issue as there may be other patients or caregivers in the room. Hygiene may be an issue as patients are living, eating, and sleeping in the same room.

5.8.1 Disinfection of Bed Pans, Commode Chairs, Potties, and Urinals

Use 0.5 percent bleach or hot water to disinfect bed pans, urinals, and vomit bowls. The item must be dry before reuse.

5.8.1.1 Disposal of Diapers

Consider diapers as infectious waste and dispose of them accordingly. Collect the used diapers in a container with a lid to avoid foul smells. Make a hole in the ground to bury the diapers. See Session 6 for more information on infectious waste disposal.

5.9 Stigma Related to Latrines/Toilets

PLHIV often have limited access to latrines/toilets due to stigma in the community and, sometimes, even in the family. This is often because people have a misunderstanding that HIV can be transmitted from the latrine/toilet seat after it is used by PLHIV.

HIV has never been isolated in feces and urine. International guidelines rate the risk of HIV infection from feces as low or none. However, blood and pus in stools can present some risk, so universal precautions should be followed during handling. Other infectious agents that cause diarrhea can easily be transmitted to cleaners or caregivers unless fecal matter is cleaned quickly and thoroughly with water and a cleaning agent.³³

5.10 Disposal of Materials Used in Menstruation

Sanitary pads or other materials used by women during menstruation (monthly bleeding) should be considered infectious waste and should be handled and disposed of according to the guidelines for HCW management (see Session 6).

5.11 Construction of Pit Latrines

In resource-constrained countries, two kinds of latrines are usually constructed: household (family) latrines or community latrines. The materials and structures for both

³³ USAID Hygiene Improvement Project. n.d. Programming Guidance for Integrating Water, Sanitation, and Hygiene into HIV/AIDS Programs. Available at www.aed.org/Publications/upload/Programming-Guidance-for-Integrating-Water-Sanitation-HIV.pdf (accessed December 28, 2011)

kinds are often the same. The exact design of latrines varies according to local conditions and availability of materials. Design also differs by geographical areas; for example, in Africa the latrines are usually constructed as dry pit latrines, whereas in Asia they are often constructed as pour-flush latrines, with a U-bend and water seal. In fact, different organizations/institutions have designed different models of latrines to promote and support national programs in latrine construction. These groups have also developed fact sheets and job aids, which include steps for the construction of latrines.³⁴

The following is a description for constructing one type of pit latrine used in Ghana.

Steps for Constructing Pit Latrines³⁵

<p>Stage 1: Buy Materials</p> <p>Buy six bags of cement for each latrine: 3.5 bags for molding the blocks, 1.5 bags for lining the pit, and 1 bag for molding the squat slab. Also, buy some iron rods to reinforce the squat slab.</p>	
<p>Stage 2: Mark Out a Rectangle</p> <p>Using pegs and string, mark out a rectangle 3.5 × 1.8 meters on the ground.</p>	
<p>Stage 3: Dig Pit</p> <p>Dig a pit with previously marked (in Stage 2) length and width and a depth of three meters.</p>	

³⁴ For more information, visit www.wateraid.org/international/what_we_do/where_we_work/ghana/2802.asp.

³⁵ Source: WaterAid website.

Stage 4: Mold Curved Blocks

Mold curved concrete blocks using river sand and cement. One hundred and five pieces are needed for each latrine. Dry the blocks one week before use.



Stage 5: Mix Cement

Mix cement with sand to begin building the latrine.



Stage 6: Build Up Concrete Blocks

Build up the curved concrete blocks within the rectangular pit for lining of two latrine pits; each latrine pit has a diameter of 1.5 meters.



Stage 7: Construct Squat Slab

Construct the squat slab, using a wooden mold for the squat hole and a vegetable tin for the access hole that will be used as the sludge sucker, and make a smaller hole for a vent pipe.



Stage 8: Fill Space

Fill the space around the latrine pits with earth and place the squat slab on top of the latrine pits.



Stage 9: Build Superstructure

Build the latrine hut or “superstructure,” which may vary from a simple dried grass enclosure to a more elaborate design.



Stage 10: Educate People

Educate members of the community to wash hands with soap and water (or with wood ash) after visits to latrine to maximize hygiene benefits from the new latrine.



Session 6: Waste Management in Resource-Constrained Settings

Technical Resource: Health Care Waste Management

6.1 What is Health Care Waste?

Health care waste is a byproduct of health care and includes sharps, non-sharps, blood, body parts, chemicals, pharmaceuticals, and medical devices that can cause adverse health effects if they are not properly handled and disposed of safely.

Most health care waste (75 to 90 percent) is similar to domestic waste (general waste) and is made up of paper, plastic packaging, and food, etc. A smaller proportion (10 to 25 percent) of health care waste includes sharps and other infectious and hazardous waste, which pose a higher risk to health.

6.2 Why is Proper Management of Health Care Waste Important?

All individuals exposed to health care waste are potentially at risk of being injured or infected, including the following individuals:

- **Medical staff:** Doctors, nurses, sanitary staff, and hospital maintenance personnel
- **Patients:** Both hospitalized and ambulatory, as well as patient visitors
- **Workers in support services:** Waste handlers, cleaners, and laundry workers
- **The general public:** Specifically children playing with items they find in the waste outside health care facilities.

Dumping health care waste in unprotected areas can cause major public health problems in the population. This is because there are reports of “recycling” practices, particularly of used syringes, that can pose a serious threat in transmitting blood-borne pathogens such as HIV, hepatitis B, and hepatitis C.

6.3 Steps of Health Care Waste Management

Health care waste management (HCWM) refers to safe handling and managing of waste from the point of generation (“cradle”) to the point of final disposal (“grave”). There are five main steps in the pathway between these two points, as follows.

Step 1: Waste minimization—Minimization of the most dangerous health care waste (such as sharps waste) by rational use of injection (prescribing injections only when necessary) and promoting oral medication for treatment of patients.

Step 2: Waste segregation—Identification and separation of health care waste into different waste containers in accordance with the categorization chosen. Segregation must be done at the point where it is generated in the health facility or the home.

Step 3: Storage—health care waste must be collected on a daily basis in order to avoid accumulation and decomposition. Infectious waste should be kept in a separate storage

room (in the health facility) that is not accessible to unauthorized persons such as patients and visitors.

Step 4: Transportation—Transportation from storage to the final disposal site should be done using a dedicated vehicle. It should be fully enclosed to prevent any spillage on the hospital premises or on the road during transportation.

Step 5: Treatment and final disposal—Final disposal of waste should be done at a protected site inaccessible to scavengers. It should be done using a method that is not harmful to the community or the environment.

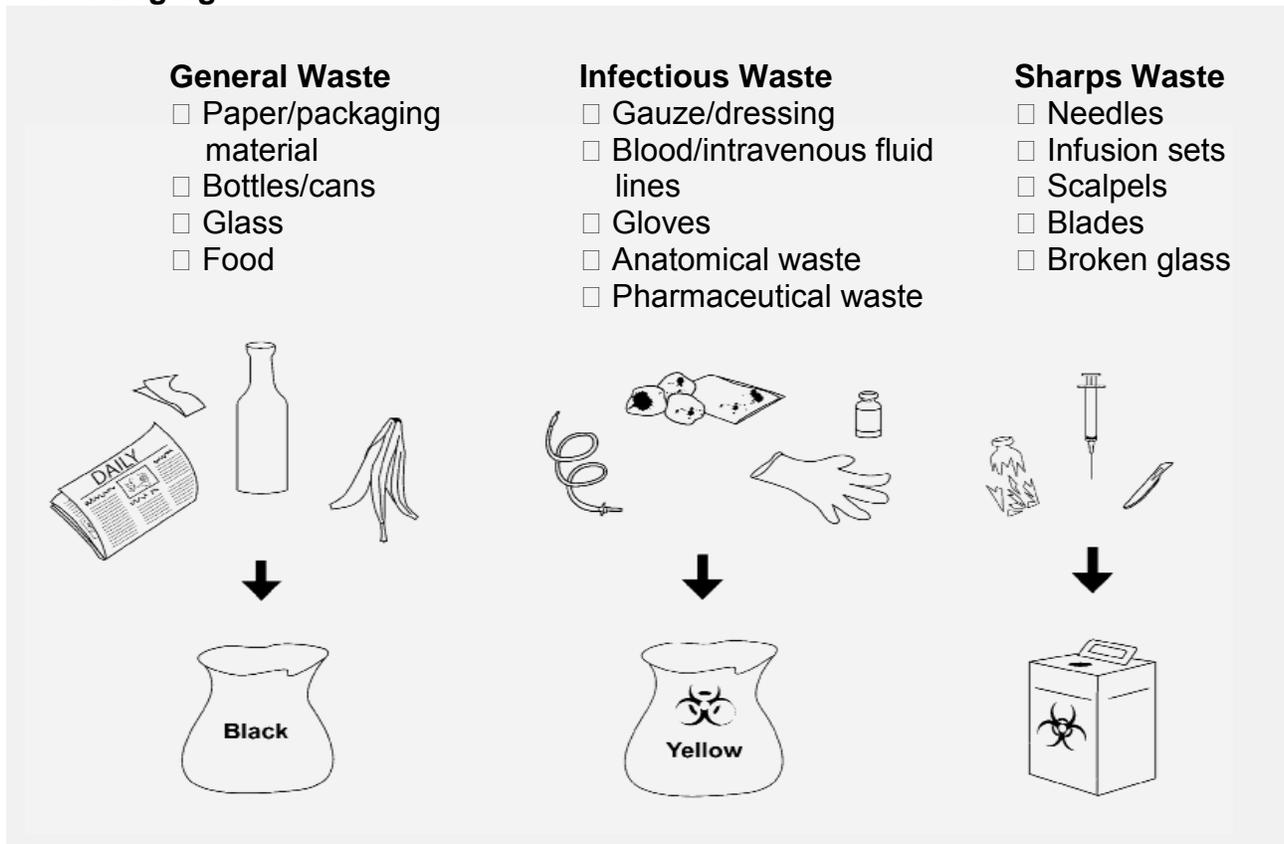
6.4 Waste Segregation

The following categories of waste should be segregated:

- **General waste** (non-infectious waste) such as paper, package materials, and fruit peels, etc.
- **Sharps waste** such as syringes and needles, lancets, and scalpels.
- **Infectious waste** such as blood-soaked cotton, gauze, and used gloves.

To encourage segregation at the source, safety boxes (or sharps boxes) and containers or bins with liners of correct size and thickness should in place at the point of generation. The bins should be properly color coded (e.g., black for general waste and yellow for infectious waste).

Waste Segregation³⁶



Sharps boxes and infectious waste containers should have biohazard signs as shown in the following figure.

Biohazard Sign

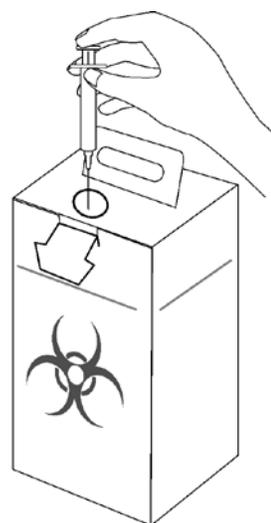


6.5 Safety Box

Safety boxes are puncture-resistant and leakproof boxes used for disposal of sharps such as syringes and needles, vacuum blood collection sets, lancets, and other sharps. Safety boxes are generally made of plastic or cardboard and are tested to meet WHO standards. Safety boxes have a small opening at the top of the box for insertion of used sharps.

³⁶ The United Republic of Tanzania. 2009. *Do No Harm: Injection Safety in the Context of Infection, Prevention and Control*. Dar es Salaam, Tanzania: John Snow, Inc.; 148.

The Five-Liter Safety Box



The following directions instruct on how to use a safety box:

- Follow the assembly instructions on the side of the box (if assembly is required).
- A safety box must be placed within arm's reach of the injection provider.
- Place used syringe and needle in the safety box immediately after injection is given.
- Fill the box until it is three-quarters full, then close it. Overfilling a safety box beyond this point can lead to a needle-stick/sharps injury.
- Mark and seal the box and remove it from the injection room to a secure storage area or disposal site immediately to prevent or minimize the risks of injury to health workers.
- Do not empty or reuse safety boxes.

Note:

- Do not put other waste in the safety box.
- Infusion sets should be disposed of in an infectious waste bin.

Specifications for waste bins for infectious waste are as follows:

- Leakproof with well-fitting lid
- Made of non-corrosive material (reusable polypropylene bins)
- Lined with color-coded non-polyvinyl chloride plastic or disposable polyethylene liner bags
- Bins disinfected and washed after each use
- Portable (fixed with handle and volume of 25 to 40 liters)
- Made of material that prevents emission of radiation if used for radioactive waste

- Placed at convenient locations for use
- Not used for any other purpose in the health facility.

To avoid needle-stick injuries, waste handlers should never sort through waste after it has been placed in the waste bins.

Chemical and pharmaceutical waste should be disposed of by following both national guidelines and those provided by the manufacturers of each substance.

6.6 Treatment and Disposal of Waste

HCW is treated to make it germ-free. Non-infectious waste does not need to be treated. The treated waste is disposed of in the last step of HCWM to ensure waste is permanently eliminated from the facility and no longer poses a risk to the health worker or the community.

6.6.1 Treatment of Waste

There are many options for treating HCW; some examples include incineration, autoclave, and chemical disinfection. Choosing which option depends on 1) the amount of sharps and other infectious waste generated by the health care facility and 2) the availability of resources to install a treatment option suitable for the health facility.

For a small health center that produces a small amount of sharps and infectious waste, waste can be treated using a chemical disinfectant such as household bleach (0.5 percent chlorine solution).

For a medium-sized hospital such as a district hospital that produces a moderate amount of waste, a good treatment option would be to install a small- to medium-sized, high temperature (that operates above 800 degrees Celsius) incinerator.

A large hospital producing a large volume of waste may consider installing a large, heavy-duty incinerator or autoclave.

6.6.1.1 Incineration

Incineration is the use of high-temperature burning to eliminate pathogens and reduce the volume of waste. Incinerators that reach very high temperatures (above 800 degrees Celsius) are preferred.

The largest concern with small-scale incineration is pollution. Incinerators that operate at temperatures below 800 degrees Celsius may lead to the production of pollutants like dioxins, furans, and other environmental pollutants that are carcinogenic or cancer-causing, and long-term exposure to these pollutants may impair the immune, nervous, and reproductive systems.³⁷

6.6.2 Disposal of Waste

The ashes from the incinerator should be removed regularly and placed in an ash pit. When the ash pit is full, the pit should be covered with mud and a new pit should be dug.

Chemically disinfected waste should either be buried or first burned and then buried.

6.6.2.1 Burying

Burying is placing waste into a pit and covering it with earth. The burial pit should be constructed at least 50 meters away from any water source, free from standing water, and should be located in an area that does not flood. Also, it should not be located on land used for agriculture. The pit should be 1 to 2 meters wide and 2 to 5 meters deep, but at least 1.5 meters above the water table. Every time waste is added in the pit, it should be covered with a 10- to 30-centimeter layer of soil. When the waste level in the pit reaches within 30 to 50 centimeters of the surface, the pit should be filled with soil and another pit should be dug.

6.6.2.2 Burning and Burying

A pit for burning should be of the same size and location as mentioned for burying. In addition, a pit for burning should be away from public areas. The waste should be placed into the pit on a daily basis. You may add kerosene *before* starting the fire to ensure thorough burning of waste. Do not add kerosene *after* starting the fire because it may explode. Burning reduces the volume of the waste. After waste is completely burned, cover the ash with a 10- to 30-centimeter layer of soil. When the ash level in the pit reaches 30 to 50 centimeters from the surface, the pit should be filled with soil and another pit should be dug.

A waste disposal area should be fenced in to restrict unauthorized access by the public and scavengers.

³⁷ WHO. 2006. *Safe Healthcare Waste Management: Policy Paper*. Available at www.healthcarewaste.org/fileadmin/user_upload/resources/WHO-HCWM-policy-paper-2004.pdf (accessed December 28, 2011)

6.7 Personal Protective Equipment

Waste handlers should wear protective clothing when working with health care waste. This includes aprons, heavy duty long gloves, footwear, goggles, and masks. Hands should always be washed with soap and clean water after removal of gloves.

6.8 Home-Based Health Care Waste Management

Home-based caregivers should avoid using injections as a method of treatment. However, injections may be necessary for certain conditions like diabetes. In such a situation, caregivers should obtain a safety box along with the supply of syringes and needles from a health center. When the safety box is three-quarters full, it should be returned to the health center during the next visit and replaced with a new one.

If safety boxes are not available, the used syringes and needles and other infectious waste (such as cotton, soaked with blood) should be placed in a plastic bottle that has a narrow neck and a cap. The used sharps and infectious waste should be disinfected with household bleach (0.5 percent chlorine solution) before disposing of them.

For disposal of treated waste, construct a burial pit at least 50 meters away from any water sources, in a location free from standing water and in an area that does not flood and is not on agricultural land. The pit should be 1 to 2 meters wide and 2 to 5 meters deep, but at least 1.5 meters above the water table. Every time waste is added into the pit, it should be covered with a 10- to 30-centimeter layer of soil. When the waste level in the pit reaches within 30 to 50 centimeters of the surface, the pit should be filled with soil and another pit should be dug.

Be careful! Children should not have access to used syringes and needles!

Session 7: Cleanliness and Hygiene at Facilities

Technical Resource: Cleanliness and Hygiene

Hygiene is the practice of keeping yourself and the things around you clean (free of germs) in order to prevent disease. Hygiene refers to a range of practices from personal care to professional care that reduce the incidence of diseases.

Ensuring hygiene and cleanliness in care and support programs for PLHIV will reduce diarrhea and other opportunistic infections. Good hygiene will also protect health care workers and caregivers from contracting germs.

In addition, educating and promoting basic hygiene practices among caregivers and patients will help them to practice these behaviors at the household level, and thus will improve quality of life of PLHIV at home. For example, educating and promoting handwashing practices among patients and caregivers is one of the most important measures in avoiding transmission of harmful germs and preventing infection at home (see Section 2.4 of this manual for a detailed description of hand hygiene).

7.1 Cleanliness and Disinfection of Patient Care Spaces

Ninety percent of microorganisms are present in visible dirt, which should be eliminated by routine cleaning and disinfection of patient care spaces. Disinfection methods for patient care areas depend on 1) the likelihood of contamination and 2) the necessary level of asepsis (or elimination of germs) required. Health care areas are classified as follows by their required cleanliness and disinfection:

- **Administrative and office areas (non-patient areas):** Administrative areas and offices that do not normally have patient visitors can be considered a normal domestic area and should be swept daily.
- **Most patient care areas:** These areas include the consultation room, general wards, laboratory, pharmacy, and waiting areas, and should be wet mopped daily rather than swept.³⁸ Hot water and detergent should be used for wet mopping of the patient care area floors. If hot water is not available, a 0.2 percent bleach solution (or other suitable disinfectant) in cold water should be used. Beds, bed frames, mattresses, furniture, and pillows should be cleaned with a 0.2 percent bleach solution between patients and as otherwise needed. Mattresses should have waterproof protective covers for easy cleaning. To disinfect metal surfaces, table tops, and other surfaces on which bleach cannot be used, 70 percent alcohol (isopropyl, ethyl alcohol, methylated spirit) should be used.
- **High-risk areas:** These areas include infectious disease or isolation wards, operating and surgical areas, procedure rooms, delivery rooms, intensive care units, premature baby units, and emergency and dialysis units. High-risk areas should be cleaned daily, after each intervention (in the case of operating suites and delivery rooms), or whenever soiled using a 1 percent bleach solution. If only a 5 percent bleach solution is available, add one cup of the solution to five cups

³⁸ WHO. 2002. *Prevention of Hospital-Acquired Infections*. Geneva, Switzerland: World Health Organization. Available at www.who.int/csr/resources/publications/whocdscsreph200212.pdf (accessed December 28, 2011)

of water. For high-risk areas, use separate cleaning equipment (buckets and brooms) for each room.

- **Spaces contaminated with blood and body fluids:** Any areas with visible contamination of blood or body fluids must be disinfected with a 1 percent bleach solution.
- **Cleaning soiled linens:** Use securely-closed, impermeable bags for transporting soiled linen away from patient care areas for sorting. Sorting should be done with minimal agitation to avoid releasing pathogens. Clean soiled linen with warm water and detergent before reuse.
- **Insecticide-treated bed nets:** Insecticide-treated nets should be washed and re-impregnated every six months if used for patients with non-infectious diseases. If used for patients with infectious diseases (HIV, TB, cholera, hemorrhagic fevers, etc.), they should be washed and re-impregnated between patients and whenever soiled. Non–insecticide-treated bed nets should be impregnated.

Bacteriological testing of the environment is not recommended unless indicated on epidemiological grounds when seeking a potential source of an outbreak.

7.2 Cleanliness and Disinfection at Home

Caregivers at home should always wash their hands at critical moments, as described in the hand hygiene section in Section 2.4 of this manual.

The floor of the patient’s room should be cleaned using wet mopping. Any visible blood or body fluid on a patient care surface should be cleaned using household bleach and water. The cleaner should use rubber gloves while cleaning to protect him- or herself from contracting blood-borne diseases.

Clothes and linens should be changed when dirty and washed with soap and water. Solid waste (such as feces) from the linens should be disposed of in the latrine. Heavily soiled clothes, linens, and bedsheets with feces and blood should be disinfected by soaking them with warm water and household bleach then rinsed in regular water.

Session 8: Food Hygiene

Technical Resource: Food Hygiene

8.1 Introduction

Dangerous germs are found in soil, water, animals, and people. During food preparation and handling, germs can be carried on hands, wiping cloths, and utensils. The slightest contact by an unclean item can transfer these germs to food, causing food-borne diseases especially among children, the elderly, and immunocompromised patients like PLHIV.

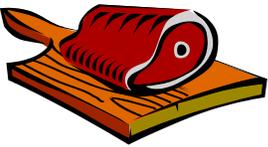
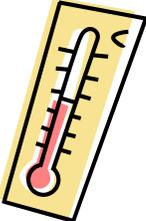
Raw meat, poultry, and seafood may contain dangerous germs that may be transferred to other foods during food preparation and storage. Vegetables and fruits may also contain germs and can cause food-borne infections if eaten raw without proper washing or cooking. Simple measures like washing and peeling these fruits and vegetables helps reduce risk. Proper cooking kills almost all dangerous germs and ensures safe consumption of food items.

Germs can multiply very quickly if food is stored at room temperature. By keeping food at temperatures below 5 degrees Celsius or above 60 degrees Celsius, the growth of germs is slowed down or stopped; note, though, that some dangerous germs still grow below 5 degrees Celsius.

8.2 Five Keys to Food Safety

Food safety can be ensured by following the “five keys to food safety,” as described by WHO guidelines.³⁹ These key safety guidelines will keep everyone healthy, including PLHIV.

³⁹ WHO. 2006. *Five Keys to Safer Food*. Available at www.who.int/foodsafety/consumer/5keysmanual/en/ (accessed December 28, 2011)

<p>1 Keep Clean</p>		<ul style="list-style-type: none"> • Wash your hands before handling food and often during food preparation. • Wash your hands after going to the toilet. • Wash and sanitize all surfaces and equipment used for food preparation. • Protect kitchen areas and food from insects, pests, and other animals.
<p>2 Separate Raw and Cooked Foods</p>		<ul style="list-style-type: none"> • Separate raw meat, poultry, and seafood from other foods. • Use separate equipment and utensils, such as knives and cutting boards, for handling raw foods. • Store food in separate containers to avoid contact between raw and prepared foods.
<p>3 Cook Thoroughly</p>		<ul style="list-style-type: none"> • Cook food thoroughly, especially meat, poultry, eggs, and seafood. • Cook foods like soups and stews to boiling to kill germs. Studies have shown that cooking a food to a temperature higher than 70 degrees Celsius can help ensure that it is safe for consumption. For meat and poultry, make sure that juices are clear, not pink. • Reheat previously cooked food thoroughly before eating.
<p>4 Keep Food at Safe Temperatures</p>		<ul style="list-style-type: none"> • Do not leave cooked food at room temperature for more than two hours. • Promptly refrigerate all cooked and perishable food (preferably below 5 degrees Celsius). • Keep cooked food hot (more than 60 degrees Celsius) prior to serving. • Do not store food too long, even in the refrigerator. • Do not thaw frozen food at room temperature.
<p>5 Use Safe Water and Raw Materials</p>		<ul style="list-style-type: none"> • Use safe water or treat it to make it safe. • Select fresh and wholesome foods. • Choose foods processed for safety, such as pasteurized milk. • Wash fruits and vegetables, especially if eaten raw. • Do not use food beyond its expiration date.

Other tips for food hygiene include:

- Food should be protected from insects, rodents, and other animals, which frequently carry pathogenic germs and are a potential source of food contamination.
- Soap and water should be available at all times during food preparation and handling to ensure that handwashing can be done conveniently.
- Eating utensils should be washed immediately after each use with hot water and detergent, and air dried. The sooner utensils are cleaned, the easier they are to wash. Drying cloths should not be used, as they can spread contamination.
- In many inpatient settings, caregivers bring food for patients or may prepare food at the health facility. In these cases, staff should seek to ensure that food is prepared hygienically and that cooked food is consumed immediately.
- Kitchen staff and caregivers with colds, influenza, diarrhea, vomiting, and/or throat and skin infections within the past 48 hours should not handle foods. All infections should be reported, and sick staff should be treated before resuming their function.

8.3 Food Supplements for People Living with HIV

Food and nutrition interventions are critical components of care and support of PLHIV. Malnutrition has been recognized as a significant problem and correlates directly to mortality for HIV patients. PEPFAR policy is to provide nutritional support to the following populations:

- Orphans and vulnerable children born to an HIV-positive parent
- HIV-positive pregnant and lactating women in programs to prevent the transmission of HIV to their children
- Adult patients in ART and care programs (depending on their nutritional status).

A revised policy, in line with WHO guidance, has been in effect for PEPFAR programs since 2008.⁴⁰

The U.S. Agency for International Development (USAID) and other key stakeholders have promoted the use of the Food by Prescription, also known as the Nutritional Assessment and Counseling Services (NACS) programs, designed to improve clients' health and nutritional status and improve adherence to and efficacy of ART in several countries, including Kenya, Haiti, Uganda, Zambia, Ethiopia, and Tanzania. Food products used in Food by Prescription are categorized into two groups: therapeutic foods and supplementary foods.

Therapeutic foods are prescribed for severely malnourished children and adults at both the health facility and community levels. They include ready-to-use therapeutic food (RUTF) and therapeutic milks. RUTF is an energy-dense, mineral- and vitamin-enriched food specifically designed to treat severe acute malnutrition.

⁴⁰ USAID. 2009. *A Wholesome Approach: Nutrition and HIV/AIDS*. Available at www.usaid.gov/our_work/global_health/aids/TechAreas/caresupport/nutrition.html (accessed December 28, 2011)

Supplementary foods (i.e., fortified blended food) are flour blends made from soy, wheat, and/or corn that are fortified with nutrients such as calcium and iron. They are prescribed in conjunction with RUTF as a palatable complement that is compatible with local diets.

While details of the supplemental foods are beyond the scope of work of this training manual, participants of this training should be made aware that safe water should be used during preparation of supplemental foods. Also, utensils used for preparing and feeding supplemental foods should be cleaned with soap and clean water. The caregiver should wash hands with soap and clean water before preparing, handling, and feeding supplemental foods to PLHIV.

8.4 Breastfeeding and HIV Transmission

Evidence indicates a risk of HIV transmission through breastfeeding. However, there are many benefits to breastfeeding; it provides all the nutrient needs of infants younger than 6 months old and contributes more than 50 percent of the nutrient intake of children 6 to 11 months old in developing countries. Also, it helps develop immunity in children against diarrhea and respiratory diseases.

There is also evidence to suggest that there are risks of death from infections caused by unhygienic artificial feeding in resource-constrained countries. Undernutrition is a major underlying cause of child mortality, and poor infant feeding practices contribute to undernutrition. Therefore, the risk of HIV transmission in children must be weighed against the risk associated with replacement feeding, and HIV-positive mothers must make an informed choice considering the benefits and risks of breastfeeding before making infant feeding choices. National programs should provide all HIV-exposed infants and their mothers with a full package of child survival and reproductive health interventions⁴¹ with effective linkages to HIV prevention, treatment, and care services.

While the details of breastfeeding policy are beyond the scope of work of this training manual, the participants should be made aware that safe water should be used in preparing the replacement foods for children. The caregiver should wash hands with soap and clean water before preparing, handling, and feeding children the replacement foods.

⁴¹ WHO. 2007. *Guidance on the Global Scale-up of the Prevention of Mother-to-Child-Transmission of HIV*. Available at http://whqlibdoc.who.int/publications/2006/9789241594660_eng.pdf (Accessed December 28, 2011)

Session 9: Water, Sanitation, and Hygiene in Resource-Constrained Settings

Note to participant: There is no technical resource text for this session.

Session 10: Small Doable Actions for Water, Sanitation, and Hygiene

Technical Resource: Small Doable Actions

10.1 What Are Small Doable Actions?

Small doable actions (SDAs) are simple, easy-to-adopt WASH-related activities or practices to reduce the risk of diarrhea and other opportunistic infection in PLHIV.

10.2 Why Are Small Doable Actions Important?

SDAs are evidence-based practices that can be implemented at a minimum cost to improve WASH, and the service providers can promote the SDAs with the PLHIV and their caregivers/family members to practice them at home.

10.3 Who Can Perform the Small Doable Actions?

As indicated previously, health service providers can integrate the SDAs in the programs/practices at their health facility and during home-based care. The PLHIV and their caregivers/family members can practice them at home.

10.4 Can the Small Doable Actions be Done in All Areas of Water, Sanitation, and Hygiene?

SDAs are applicable in all areas of WASH, including making water safe for drinking, handwashing, and excreta disposal.

Examples of SDAs in different WASH areas are listed in the following boxes.⁴²

⁴² Adapted from USAID Hygiene Improvement Project. 2009. *Small Doable Actions for HIV/AIDS Programs in Ethiopia*. Washington, DC: USAID.

Water Management SDAs

Drinking water source and container:

- Provide a narrow-mouth 20-liter jerry can or clay pot with proper cover for drinking water.
- Treat drinking water contained in the 20-liter jerry can with chlorine solution.
- Use narrow-mouth 20-liter jerry can with a cover to store drinking water.

Serving drinking water:

- Pour water from jerry can into a clean glass or cup, or pour into a clean jug with cover and then pour into a clean glass. If a jug is used, cover the jug and reserve it for drinking water purposes. For serving water, do not put hands in the water.
- Wash the jug and its cover with soap and water every day.

Keep drinking water safe and glass/cup clean:

- Keep the jerry can covered during the day and night.
- Put the clean glass/cup upside down on a clean tray.

Handwashing SDAs

- Wash hands properly with water and soap or wood ash at critical patient care times, before eating or cooking, after using toilet, after cleaning a baby's bottom, after cleaning the toilet, and disposing of waste.
- If you come into contact with blood, feces, urine, or vomit while attending a patient, wash your hands immediately after cleaning up. Do not wait.
- If running water is not available, make and use a tippy tap for handwashing. Place a bucket below the tippy tap to catch the water. Pour more water in the tippy tap before it is completely empty so that water is always available for handwashing.
- To save water when washing hands, do not let the water pour while rubbing hands.
- Tie the soap so that no one can take it away. If soap is not available, use wood ash in a plastic container for handwashing.
- Dry hands in the air if a clean towel is not available. Do not use a dirty towel.

Excreta Management SDAs

Infrastructure/equipment:

- Place a hand rail across the door of the toilet to help patients in wheelchairs to open the toilet.
- Place a hand rail inside the toilet to help weak patients in bending or squatting.
- Repair/replace toilet flush when broken.
- Tie the toilet paper inside the toilet so that no one can take it away.

For bed-bound patients:

- Provide a commode chair or bed pan/potty.
- Spread a plastic sheet across the part of the bed under the buttocks and completely cover the plastic with a bed cover.
- Use gloves when caring for PLHIV suffering from diarrhea.
- Immediately dispose of the feces in the potty or bed pan into the latrine.
- Wash the potty or bed pan with household bleach and water.

For washing hands after defecation:

- Tie the soap so that no one can take it away. If soap is not available, use wood ash in a plastic container for handwashing.
- If tap water is not available, place a tippy tap for handwashing. Pour more water in the tippy tap before it is completely empty so that water is always available for handwashing.

10.5 What are the Barriers or Constraints to Implementing Small Doable Actions?

Barriers in implementing the SDAs could include:

- Equipment/materials not available or affordable (e.g., 20-liter jerry can, soap, etc.)
- Limited access (e.g., chlorine solution, materials to make tippy tap, etc.)
- Limitation (e.g., no separate latrine for men and women)
- Lack of awareness/training (e.g., lack of awareness about critical times for handwashing or knowledge of the risks of HIV transmission)
- Stigma (e.g., cases where the household with an HIV-positive member is not allowed to empty feces from a potty into the common-use/landlord-owned latrine)
- Lack of priority (e.g., health facility administrator is not interested in WASH program).

10.6 Ways or Suggested Actions to Overcome the Barriers of Small Doable Actions

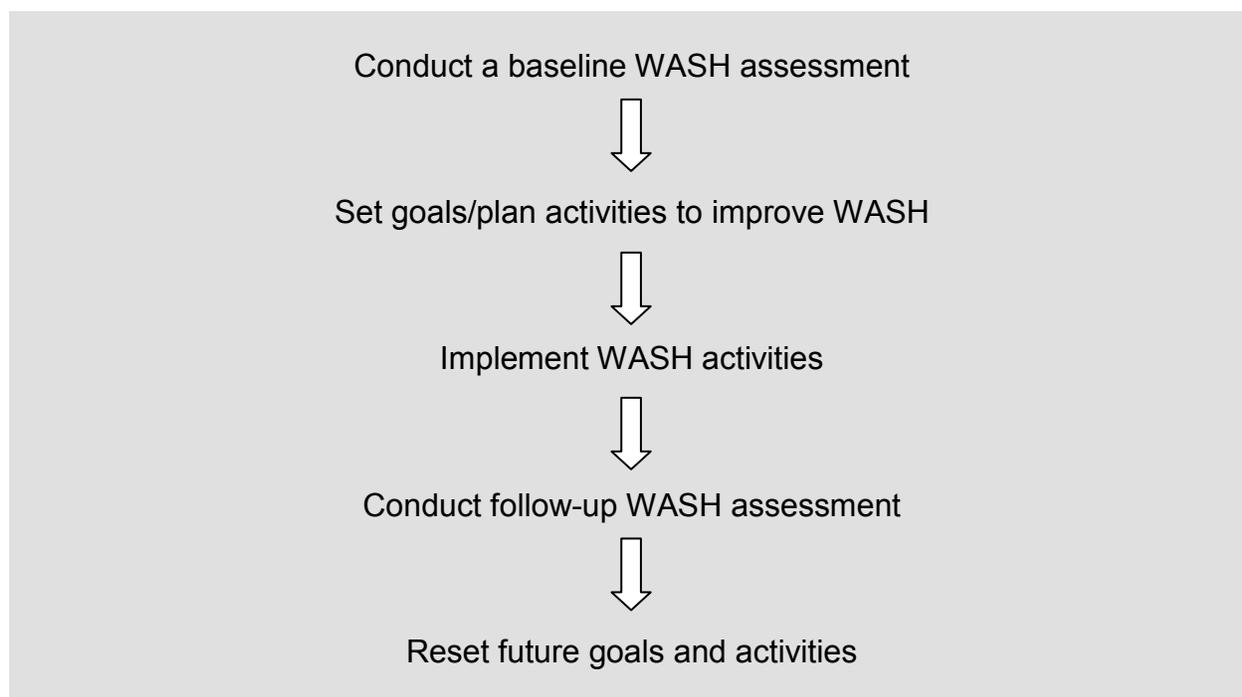
Some suggestions include the following:

- To improve access and availability of equipment and materials, look at what is already available and used in the community, and improvise when/where necessary.
- Contact local nongovernmental organizations implementing WASH in home-based care and support programs.
- Raise funds (e.g., ask for donations from the well-off patients).
- Consider starting income-generating activities (if feasible).
- Train health care workers including support staff about SDAs.
- Educate/sensitize PLHIV and caregivers/family members about SDAs.
- Advocate with the policymakers/administrators to include WASH SDAs in national policy guidelines and for budgetary provisions.
- Advocate for integration of WASH into HIV programs including prevention, care and support, treatment, prevention of mother-to-child transmission, and orphans and vulnerable children.

Session 11: Facility Assessment Tour for Water, Sanitation, and Hygiene Observations

Technical Resource: Assessing Water, Sanitation, and Hygiene Practices

While planning WASH interventions and setting goals for WASH improvement, it is important to know the existing situation of WASH in the facility. A WASH assessment is conducted to collect data used to inform planning interventions, monitor progress, and reset future goals and activities. This process is outlined in the following schematic.



11.1 Conduct a Baseline Water, Sanitation, and Hygiene Assessment

Conduct a baseline assessment to know the WASH situation of your health facility. Also, obtain additional WASH-related information, if available, from other existing data sources such as surveillance reports, outbreak investigation reports, study reports, and laboratory reports (e.g., water testing). Analyze data and identify shortcomings related to each area of WASH.

11.2 Set Goals/Plan Activities to Improve Water, Sanitation, and Hygiene

Based on the current WASH situation, set goals for improving WASH in your facility. Identify evidence-based SDAs to improve WASH that are “appealing” and that can be done at a minimum cost. Plan activities that are not only best-suited for your health care setting, but also feasible, affordable, locally available, culturally acceptable, and facilitate bringing desired behavior change among health workers, patients, and caregivers.

Estimate the required inputs including personnel, commodities, and funds that are required to implement your WASH initiatives. Explore the availability of funds and WASH-related technical resources in your country.

11.3 Implement Water, Sanitation, and Hygiene Activities

Implement WASH improvement activities. Start with SDAs (see Session 10) and small-scale practices. Provide necessary training and logistics to staff. Develop WASH indicators (select indicators are available in Session 13). Provide supportive supervision to staff and closely monitor the progress.

11.4 Conduct Follow-Up Water, Sanitation, and Hygiene Assessment

Conduct a follow-up assessment (once per year) to see improvement in the WASH situation. Compare the progress against the previously set WASH improvement goals.

11.5 Reset Future Goals and Activities

Using the follow-up assessment data, refine activities and reset new WASH goals. Use data to support future planning and decision making that includes the next level of improvement and scaling up of WASH activities.

During the assessment, observe the WASH situation/practices in the following hospital areas:

1. Outpatient areas (adult male and female)
2. Outpatient area (children)
3. Ward for PLHIV
4. Maternity ward
5. Children's ward
6. Kitchen
7. Waste disposal site.

For outlying health facilities (with no ward) visit the following areas:

1. Patient waiting area
2. Patient consultation area
3. Procedure room
4. Laboratory
5. Waste disposal site.

In each area visited, participants should observe the availability and/or practices of following topics:

1. General cleanliness
2. Handwashing facility and practices
3. Source and storage of safe drinking water

4. Toilets/latrines and excreta disposal facility/cleanliness
5. Waste management practices.

Analyze the WASH assessment data. The key points for analysis are:

1. Strengths/enabling factors for WASH: For example, what is available and working? What best practices are prevailing among workers?
2. Weaknesses (gaps) for WASH: What is not available or not working?
3. Make a list of SDAs to improve WASH in the facility.

Examples of SDAs include:

1. Providing chlorine to treat water at the point-of-use
2. Arranging “tippy taps” at the handwashing stations (if tap water is not available)
3. Providing rubber or Mackintosh sheets to protect linen, mattresses, and skin
4. Placing a support in the toilet room to help sick patients
5. Providing rubber gloves for safe handling of feces, body fluids, and HCW
6. Providing bins for collection of infectious waste.

Session 12: Summary Review and Evaluation

Note to participant: There is no technical resource text for this session.

Session 13: The Role of the Supervisor

Technical Resource: Supportive Supervision for Water, Sanitation, and Hygiene

13.1 What is Supervision?

Supervision takes place when one oversees the job performance of a person, a group, or a facility. The supervisor may be a more senior staff member from the same health facility, may come from another facility, or may come from a district (or other) health authority. Supervisors traditionally inspect the work being done (and usually the facility itself, too) and send a report with recommendations for correction and in some cases with suggested disciplinary action for any fault(s) found. There is usually no real discussion between the supervisor and the staff supervised.

13.2 What is Supportive Supervision?

In supportive supervision, the supervisor shifts from the role of “inspector” to a role of “facilitator” by focusing on problem solving rather than fault finding. The supervisor helps the staff he or she supports to improve performance by using on-the-job training.

The principles of supportive supervision are as follows:

- **Teamwork:** Be a colleague and work together to meet common program goals and objectives.
- **Practice mentorship** rather than fault-finding. Listen more than you speak (see the criteria in the following text box).
- **Joint problem identification and problem solving:** Do not take away responsibility.
- **Two-way communication** can help solve the problems or barriers staff face in implementing the program.
- **Learning experiences for both supervisor and supervisee:** Assume they know more than you do. They are more experienced in their work place context and community, and you can share technical knowledge and experience from other workplaces.
- **Keeping staff motivated to do their work:** Bring good news. Praise and recognize the good work of the staff.
- **Focus on priorities:** Give attention to tasks that are absolutely necessary and small and doable.
- **Do not let lack of resources stop you:** Many things can be done with no or little resources
- **End on agreement with next steps:** Follow-up actions are important.

Criteria for Receiving Feedback

1. Listen carefully.
2. Do not be defensive.
3. Summarize what you have just heard.
4. Feel free to discuss the feedback.
5. Build a plan of action.

13.3 What are the Benefits of Supportive Supervision?

Using supportive supervision increases workers' job performance and improves compliance with service standards. Using supportive supervision makes the health care system more efficient in delivering services to clients.

Specific benefits of supportive supervision include:

- As a guide or mentor, the supervisor works with staff in achieving the necessary education and behavior change to improve compliance to best practices.
- The supervisor makes a consistent effort to identify and eliminate staff shortcomings in a non-threatening environment.
- The supervisor actively encourages staff to seek inexpensive, doable solutions to program implementation problems/barriers.
- The supervisor motivates staff by offering regular feedback and rewards for appropriate behavior/practices.
- The supervisor acts as a "role model." For example, when a physician or a nurse actively adopts and performs a recommended practice, he or she becomes a model of appropriate behavior for other staff tasked with the same duty.
- The supervisor makes the recommended practice appropriate and easy for staff to use.

13.4 Why is Supportive Supervision Important in Water, Sanitation, and Hygiene?

As discussed elsewhere in this training course, staff at various levels (from managers to support staff) have a role in improving the quality of life for PLHIV by performing SDAs that relate to ensuring safe drinking water, keeping the environment clean in the health care facility, and safely preparing and serving food.

WASH-related activities are simple, easy to do, and not costly, yet staff may face various challenges. They will need active support, mentorship, and continuous reinforcement from the supervisors and administrators in implementing those tasks.

13.5 Who are the Water, Sanitation, and Hygiene Supervisors?

Often, there is not an appointed person to serve as WASH supervisor in the health facility. Any senior staff who oversees the work of other staff in his or her respective department can be a WASH supervisor. For example:

- A senior nurse in the ward or clinic can support the other nurses in performing WASH activities.
- A senior doctor in the ward or clinic can support the other doctors to improve WASH practices.
- A nutritionist or cook can guide the kitchen staff to adhere to WASH practices.
- A sanitarian can oversee the activities of cleaners and waste handlers.

In facilities where an infection prevention and control committee already exists, the committee can include WASH in its scope of work. You can also establish a WASH committee in the facility to oversee WASH activities.

13.6 What Type of Water, Sanitation, and Hygiene—Related Support can a Supervisor Provide to Staff?

Supervisors can help make WASH actions doable for staff by:

- **Training:** Supervisors can train staff to be aware of and develop skills to perform WASH-related tasks.
- **Motivating:** Supervisors can motivate staff for WASH activities by explaining the benefits of WASH practices for PLHIV, patients, and for the staff themselves.
- **Providing supplies:** Supervisors can ensure the necessary WASH-related supplies are available for staff to perform WASH activities.
- **Monitoring:** Supervisors can regularly observe staff practices, encourage staff to continue good practices, and correct any shortcomings in staff practices.
- **Providing on-the-job training:** Supervisors can train new staff to perform WASH tasks. Some examples include helping them install a tippy tap in the handwashing station, showing them how to make water safe for drinking at the point-of-use with chlorine, and showing them correct containers for storing safe drinking water.

13.7 Steps to Conduct Supportive Supervision for Water, Sanitation, and Hygiene

Supportive supervision of staff should be done regularly. Regular supportive supervision will help to identify and address gaps and weaknesses among staff before they negatively impact WASH practices in the facility. Apply the following steps in conducting supportive supervision for WASH:

1. Make supportive supervision part of regular work—it should not just be a one-time follow-up after this workshop. In consultation with staff, you may plan supportive supervision visits in advance.

2. Prioritize visiting certain sites and staff during supportive supervision, based on gaps/weaknesses you observed during previous visits.
3. Observe practices and listen to staff to learn about deficiencies in knowledge, skills, or supplies.
4. Update and refresh staff knowledge and skills.
5. Reinforce knowledge and skills in using existing job aids.
6. Develop a checklist to help you make your observations in a systematic and consistent way.
7. Always check the condition of products and equipment (e.g., water filters, tippy taps, etc.).
8. Provide feedback to staff:
 - Always begin by presenting positive feedback about what is being done (see the criteria in the following text box)
 - Tell or show how the activity should be done (if a gap is observed)
 - End the feedback on a positive note
 - Keep a written log or record of gaps and weaknesses for future use
 - Discuss resource requirements (e.g., for training or supplies) with higher level authorities.

Criteria for Giving Feedback

1. Pay attention to timing and location.
2. Describe rather than judge.
3. Make clear and unambiguous statements.
4. Describe the impact of any actions.
5. Focus on modifiable behaviors.
6. Involve the individual.
7. Summarize the conversation and then follow-up.

13.8 Monitoring the Water, Sanitation, and Hygiene Program

13.8.1 Why is Monitoring of the Water, Sanitation, and Hygiene Program Important?

Monitoring of WASH activities is important in order to track the progress of WASH-related interventions. This will help to identify what is working and what is not working so that appropriate actions can be taken to address the identified weaknesses or shortcomings.

13.8.2 What Should be Monitored?

Based on annual WASH program goals, you may develop WASH indicators to measure progress in achieving the goals. The following indicators may be useful for monitoring WASH activities:

1. Proportion of health care units where water is disinfected at the point-of-use

2. Proportion of health care units where disinfected water is stored properly at the point-of-use
3. Proportion of staff who wash hands during critical times of care provision
4. Proportion of handwashing stations where water is available from tap (or tippy tap)
5. Proportion of handwashing stations where job aids on handwashing are posted
6. Proportion of health care units where no visible dirt (including blood and body fluids) was observed in patient care areas
7. Proportion of health care units where staff segregate health care waste at the service points
8. Proportion of health care units where a safety box is available for disposal of sharps waste
9. Proportion of health care units where a clean toilet/latrine is available for patients
10. Proportion of toilets where washing facilities (water, soap or wood ash) are available.

13.8.3 Indicator Calculations to Monitor Progress

These calculations will produce percentages of health care units in compliance.

1. Proportion of visited health care units where water is disinfected at the point-of-use =

$$\frac{\text{Number of health care units that disinfect water at the point-of-use} \times 100}{\text{Total number of health care units in the facility}}$$

2. Proportion of visited health care units where disinfected water is stored properly at the point-of-use =

$$\frac{\text{Number of health care units that store water properly at the point-of-use} \times 100}{\text{Total numbers of health care units that disinfect water at the point-of-use}}$$

3. Proportion of observed staff who wash hands during critical times of care provision =

$$\frac{\text{Number of staff who wash hands during critical times of care provision} \times 100}{\text{Total number of staff observed}}$$

4. Proportion of visited handwashing stations where water is available from tap (or tippy tap) =

$$\frac{\text{Number of handwashing stations where water is available from tap} \times 100}{\text{Total number of handwashing stations observed}}$$

5. Proportion of visited handwashing stations where job aids on handwashing are posted =

Number of handwashing stations with job aids on handwashing × 100
Total number of handwashing stations observed

6. Proportion of visited health care units where no visible dirt (including blood and body fluids) was observed in patient care areas =

Number of health care units with no visible dirt (and blood/body fluids) × 100
Total number of health care units observed

7. Proportion of visited health care units where staff segregate health care waste at the point of service =

Number of health care units that segregate health care waste × 100
Total number of health care units observed

8. Proportion of visited health care units where a safety box is available for disposal of sharps waste =

Number of health care units with safety box for sharps waste disposal × 100
Total number of health care units observed

9. Proportion of visited health care units where a clean toilet/latrine is available for patients =

Number of health care units with a clean toilet/latrine for patients × 100
Total number of health care units observed

10. Proportion of visited toilets where handwashing facilities (water, soap or wood ash) are available =

Number of toilets with handwashing facilities (water, soap or wood ash) × 100
Total number of toilets/latrines seen

Session 14: Engaging Non-Clinical Staff in Water, Sanitation, and Hygiene Practices

Note to participant: There is no technical resource text for this session.

Session 15: Larger Doable Actions with Water, Sanitation, and Hygiene Impact

Note to participant: There is no technical resource text for this session.

Session 16: Local Resource Mobilization

Technical Resource: Local Resource Mobilization

Implementation of WASH at health facilities will be supported by national policy, responsibility and commitment of facility administrators and staff, development of WASH goals, identification of SDAs, advocacy, and local resource mobilization for WASH.

16.1 Developing National Policy for Water, Sanitation, and Hygiene

A supportive policy environment will be beneficial for implementation of WASH interventions at the health facilities. A WASH policy will help stakeholders at all levels (national, district, and health facility) to plan, fund, implement, and coordinate WASH activities. It will also help establish effective governance for WASH by health managers and facility administrators.

The Ministry of Health, intergovernmental departments, implementing partners (such as PEPFAR partners), and nongovernmental organizations may work together to develop a framework and activities using evidence-based WASH interventions and practices for the development of a national WASH policy.

16.2 Develop Roles and Responsibilities for Water, Sanitation, and Hygiene Implementation

All parties, including patients, health care workers, and national/international organizations, have a role and responsibility in implementing WASH in health care facilities.

Roles and Responsibilities of Different Stakeholders in WASH

Who	What
Patient	<ul style="list-style-type: none"> Comply with appropriate hygiene measures and procedures for use and care of water, food, and sanitation facilities.
Patients' families and caregivers	<ul style="list-style-type: none"> Follow hygiene measures and comply with procedures for use and care of water, food, and sanitation facilities. Encourage patients to do the same.
Health care worker	<ul style="list-style-type: none"> Carry out WASH intervention duties (such as providing safe water, cleaning, hand hygiene, asepsis in health care, food hygiene, safe handling of laundry, and communication for behavior change) consistently and well. Care for and maintain water and sanitation facilities. Encourage patients and caregivers to adopt appropriate behaviors.

Who	What
Facility managers	<ul style="list-style-type: none"> • Plan and implement programs to set, achieve, monitor, and maintain targets. • Create conditions in which staff are motivated to meet and maintain targets. • Ensure the availability of needed supplies and resources.
Health authorities	<ul style="list-style-type: none"> • Provide resources and directions for setting, achieving, and maintaining WASH targets. • Provide monitoring/supervision.
Environmental health services	<ul style="list-style-type: none"> • Collect and dispose of health care waste in a centralized facility. • Provide advice for identifying problems and recommend solutions for water supply, sanitation, and hygiene.
Medical education sector	<ul style="list-style-type: none"> • Raise awareness in medical schools and other sectors. • Provide training for the health sector.
Politicians	<ul style="list-style-type: none"> • Provide and mobilize political and financial support for WASH improvements.
National and international funding bodies	<ul style="list-style-type: none"> • Provide funding and policy guidance for new WASH initiatives (for new technology and/or upgrading and maintaining existing ones).

16.3 Set Water, Sanitation, and Hygiene Goals

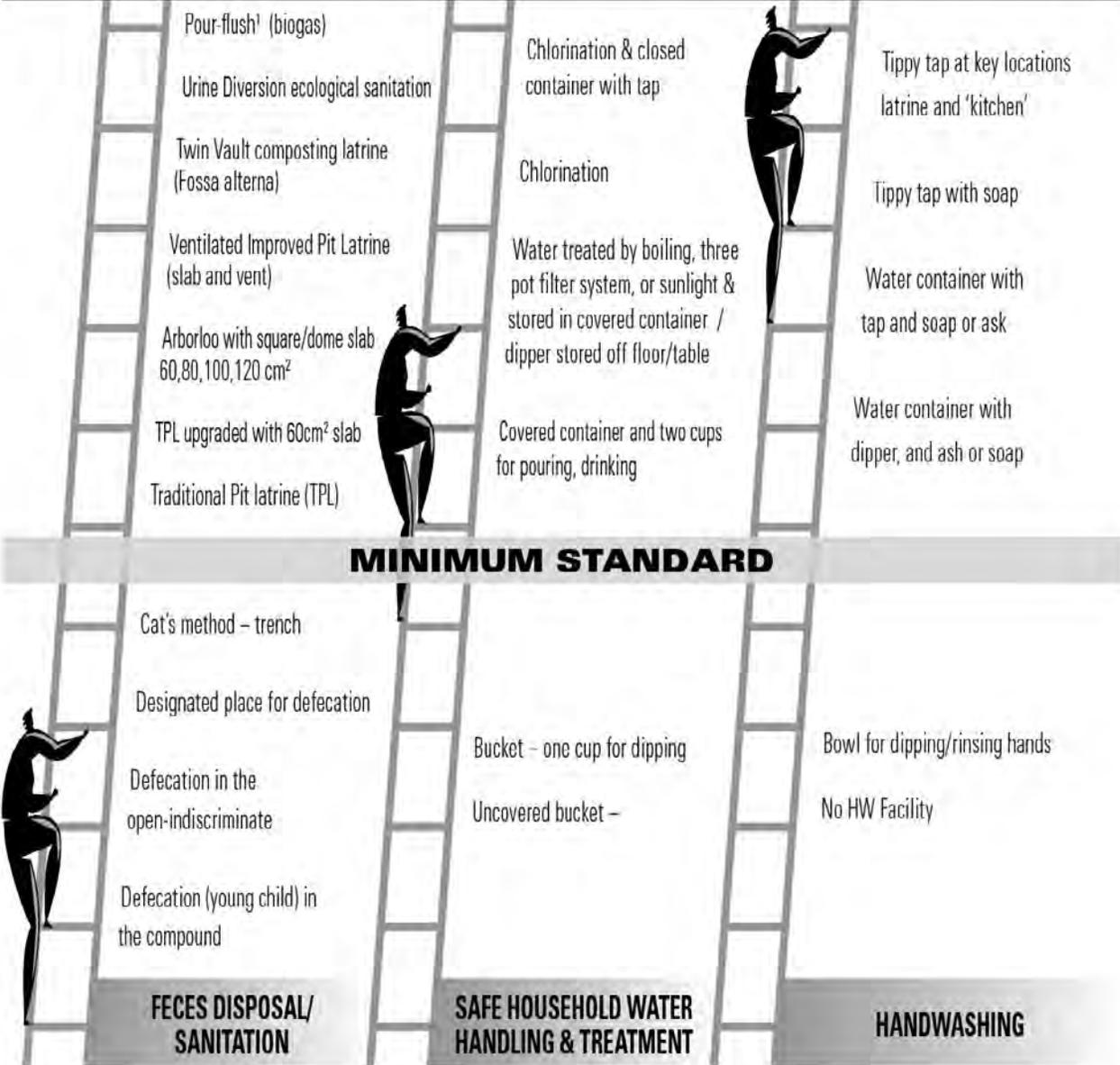
Each facility can set their individual WASH goals annually. Starting with activities on a small scale, facilities may consider improving WASH through step-by-step implementation of activities that are doable at little or no cost. Facilities may choose to move to higher-level WASH goals in the second year and thereafter.

The USAID/Hygiene Improvement Project developed the following tool (Hygiene and Sanitation Ladder) for setting goals for community-based WASH program.⁴³

⁴³ USAID Hygiene Improvement Project. 2009. *Training Manual on Hygiene and Sanitation Promotion and Community Mobilization for Volunteer Community Health Promoters (VCHP)*. Accessed at http://pdf.usaid.gov/pdf_docs/PNADP828.pdf. (December 28, 2011)

Hygiene & Sanitation Ladder of Options

Climbing towards feces-free communities, one small do-able action at a time



Pour-flush can either be linked to septic tanks or via small bore sewerage to biogas digesters.

Estimate the required inputs including personnel, commodities, and funds that may be required to implement your WASH-related activities. Also estimate a budget for skills-based training for key facility staff who will be responsible for implementing WASH interventions. Integrate WASH actions into your annual workplan and budget.

Explore the availability of WASH-related technical resources in your country. You may adapt the interventions and materials of local nongovernmental organizations that implement community-based WASH interventions. You may also encourage integrating WASH interventions as part of a preventive care package for PLHIV.

You may receive technical assistance from USAID's Supply Chain Management System (SCMS) project to determine commodity requirements, negotiate prices and procurement, and plan for storage, transport, and distribution of commodities.

You may talk with partners to include WASH initiatives into all HIV service delivery trainings, other professional trainings, school-based curricula, job aids, and communication for behavior change materials.

WASH activities may be incorporated into any quality improvement activities at your facility, especially if you have an infection control committee, as this is an integral part of their set of activities.

Session 17: The Way Forward—When You Return Home

Note to participant: There is no technical resource text for this session.

For more information, please visit aidstar-one.com.

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