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AIDSTAR-ONE WASH PILOT CURRICULUM ASSESSMENT IN ETHIOPIA



AIDSTAR-One
AIDS SUPPORT AND TECHNICAL ASSISTANCE RESOURCES

OCTOBER 2012

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AIDS Support and Technical Assistance Resources Project

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Cover Photo

Example of a tippy tap observed at a health facility during the assessment.

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ACRONYMS

FMOH	Federal Ministry of Health
NACS	nutrition assessment, counseling, and support
PEPFAR	U.S. President's Emergency Plan for AIDS Relief
PLHIV	people living with HIV
RHB	Regional Health Bureau
SDA	small doable action
SNNPR-RHB	Southern Nations, Nationalities, and People's Region Regional Health Bureau
USAID	U.S. Agency for International Development
WASH	water, sanitation, and hygiene
WHO	World Health Organization

EXECUTIVE SUMMARY

Low access to safe drinking water, insufficient quantities of water for basic hygiene, and inadequate access to sanitation create a high burden for people living with HIV (PLHIV), who are vulnerable to opportunistic infections.

In April 2011, AIDSTAR-One with support from the Federal Ministry of Health (FMOH) piloted a training curriculum in Ethiopia that aims to address water, sanitation, and hygiene (WASH) at health facilities to improve the quality of life of PLHIV and their families. The FMOH was integral to the development of the curriculum and multiple reviewers provided comments before the curriculum was finalized. During implementation of the pilot training, AIDSTAR-One engaged the Regional Health Bureau of the Southern Nations, Nationalities, and People's Region in the selection of health facilities and the provision of the training to health care providers and administrators.

To determine the impact of the training and to provide guidance on how to improve WASH knowledge and practices at the facility level, AIDSTAR-One conducted a mixed-methods assessment in June 2012 examining the evidence in eight health facilities one year after AIDSTAR-One's WASH training. Collecting both qualitative and quantitative data, the assessment examined existing WASH approaches at the eight clinic sites, focusing on overall integration into the health clinic operations. Although WASH integration with nutrition assessment, counseling, and support (NACS) services was outside the mandate of the original pilot training, AIDSTAR-One was tasked to explore how WASH is incorporated into the technical area of NACS in the assessment phase to examine if integration into a technical area produces more sustainable WASH results.

At the training, each health facility was asked to select small doable actions (SDAs), simple, easy-to-adopt WASH-related activities or practices to reduce the risk of diarrhea and other opportunistic infections in PLHIV, to implement upon return to their facilities. Of the 27 SDAs, 16 (59 percent) were implemented, 8 (30 percent) were partially implemented, and 3 (11 percent) were not implemented. All of the health facilities reported that the knowledge gained at the training and the implementation of the SDAs assisted in improving WASH standards at their facilities. Two facilities added a handwashing station at the latrines (via tippy tap) as a result of the training. Seven of the eight facilities reported improved waste segregation and disposal practices. These results demonstrate the effectiveness of identifying SDAs during the actual training because it holds participants accountable to implementing actions learned during the training.

All staff interviewed post-training from the eight facilities reported that the AIDSTAR-One training was the only standalone WASH training that had ever been offered to the facilities. Attendance at the WASH training increased trainees' WASH knowledge compared to their untrained colleagues one year post-training. At follow-up, trainees' average score was 69 percent compared to an average of 54 percent for their untrained colleagues. Facility management and staff who attended the WASH training repeatedly expressed the need for more WASH training for all of their facility staff, both technical staff as well as waste handlers and cleaners. The trainees strongly agreed that the WASH training improved their WASH knowledge. Moreover, the trainees reported strong agreement that the WASH training led to changes in their personal behavior related to WASH.

Trainees reported that WASH improvements were aided by the support of facility heads with increased WASH knowledge post-training. Where turnover of trained facility heads was experienced, trainees reported that the new untrained facility heads were less supportive.

These results, although from a small sample size, reflect the fact that water, sanitation, and hygiene are key components of all health care. It is recommended that the FMOH select facilitators and use a training of trainers model to benefit health facilities across the country. Additionally, it is recommended that a key stakeholder meeting is convened to share the promising results of this assessment and discuss next steps. This would benefit PLHIV and keep facility-level WASH practices at the forefront in Ethiopia because WASH is integral to all health care.

INTRODUCTION

BACKGROUND

The World Health Organization (WHO) estimates that between 5 to 30 percent of patients in the general population develop one or more infections during their hospital stay, a significant proportion of which could be avoided through safe water, basic hygiene, and good sanitation (WHO 2012). Unsafe drinking water, inadequate sanitation, and poor hygiene can lead to an increase in incidence of life-threatening opportunistic infections (U.S. Agency for International Development [USAID] and U.S. Centers for Disease Control and Prevention 2011). Diarrheal illnesses are estimated to affect 90 percent of people living with HIV (PLHIV). In addition to being responsible for significant morbidity and mortality, such illnesses can compromise the absorption of life-saving antiretroviral treatment as well as contribute to the development of antiretroviral-resistant HIV strains. Diarrheal illnesses are also known to cause or aggravate malnutrition and reduce the absorption of essential nutrients. Malnutrition has been attributed to increasing progression of HIV, elevating susceptibility to opportunistic infections, and decreasing adherence and retention of antiretroviral drug regimens and treatment for opportunistic infections (U.S. President's Emergency Plan for AIDS Relief [PEPFAR] 2011).

AIDSTAR-ONE WASH CURRICULUM

Responding to this reality, in fiscal year 2011 AIDSTAR-One, in collaboration with USAID, the Ethiopia Federal Ministry of Health (FMOH), and the Southern Nations, Nationalities, and People's Region Regional Health Bureau (SNNPR-RHB), and funded by PEPFAR, developed and piloted a training resource to introduce water, sanitation, and hygiene (WASH) initiatives at health facilities. The curriculum is divided into two parts: a Trainers Guide and a Participant Technical Resource Guide.

The FMOH was integral in the development of the curriculum; multiple reviewers provided comments before the curriculum was finalized. Reviewers included staff from the Health Promotion and Disease Prevention General Directorate, the National Hygiene and Sanitation Task Force, and the FMOH WASH department. The response was positive and the comments were integrated into the curriculum. AIDSTAR-One/Ethiopia participated in a workshop organized by the FMOH in collaboration with other WASH partners to establish a technical working group related to HIV/WASH integration. As a member of the technical working group, AIDSTAR-One/Ethiopia introduced the pilot curriculum to stakeholders at the FMOH and advocated for its inclusion in the development of guidelines for the integration of WASH into HIV care and treatment in Ethiopia. During implementation of the pilot training, AIDSTAR-One engaged the SNNPR-RHB in the selection of health facilities and the provision of the training to health care providers and administrators.

A pilot training was conducted in April 2011 in Ethiopia. The SNNPR-RHB identified 13 facilities, and selected one to two staff, including facility heads, from each facility to attend the comprehensive three- to four-day curriculum training. During the training, the 21 participants selected three to four

small doable actions (SDAs) requiring little to no financial input to help improve WASH standards at their health facilities.

ASSESSMENT PURPOSE

To determine the impact of the training and to provide guidance on how to improve WASH knowledge and practices at the facility level and in the training curriculum, AIDSTAR-One conducted an assessment by gathering quantitative and qualitative data from health facility stakeholders, management, and providers. The assessment examined the evidence in eight facilities in Ethiopia one year after the WASH training.

AIDSTAR-One examined the existing types of WASH approaches at the select clinic sites. The assessment was two-pronged: 1) focusing on overall WASH integration into health facility operations and 2) focusing on the specific technical area of nutrition assessment, counseling, and support (NACS) to examine if integration into a technical area produces more sustainable WASH results.

ASSESSMENT OBJECTIVES

Objective 1: Assess knowledge and action outcomes following the WASH curriculum pilot training in Ethiopia and measure the impact on integration of WASH into selected health facilities.

Objective 2: Create a roadmap for integration of the WASH curriculum and possible additional WASH packages and interventions, country ownership, and sustainability.

Objective 3: Examine the level of WASH integration into the key technical platform of NACS. Although WASH integration with NACS was outside the mandate of the original pilot training, AIDSTAR-One was tasked to explore how WASH is incorporated into the technical area of NACS in the assessment phase to examine if integration into a technical area produces more sustainable WASH results.

METHODOLOGY

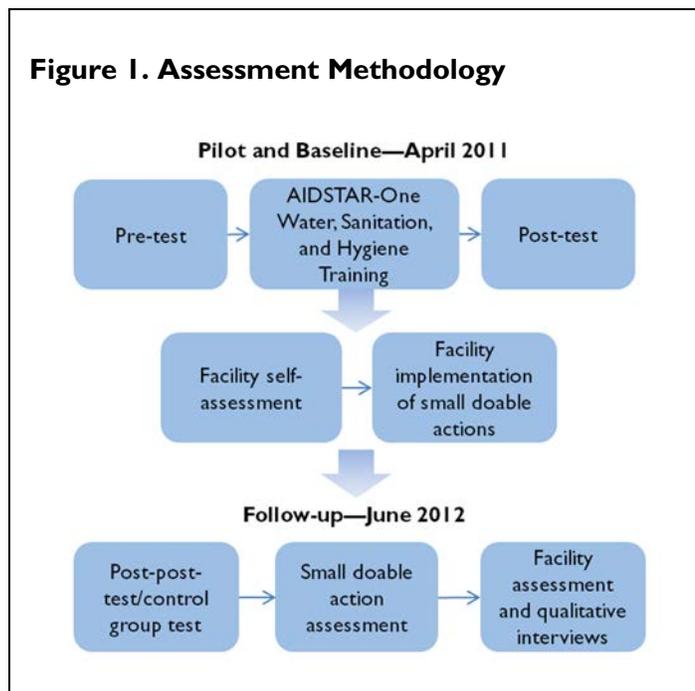
METHODS

AIDSTAR-One conducted a mixed-methods assessment to analyze the outcomes and to identify next steps to package the training materials for impact and scale-up. The assessment team consisted of one AIDSTAR-One researcher and one monitoring and evaluation technical expert from AIDSTAR-One/Ethiopia.

A WASH concept knowledge assessment was conducted using a pre-post-post design (see Figure 1). Of the 21 trainees, 10 were assessed at follow-up due to transfer of the others to new facilities post-training. Trainees' scores were compared to their untrained colleagues to understand overall facility WASH knowledge levels and to examine the different levels of knowledge between the two groups. At follow-up, an assessment of the implementation status of the SDAs chosen by each facility for their action plan was conducted to examine the feasibility of the SDAs, what contributed to facility success in implementation, and what challenges were faced.

A facility assessment was also conducted at follow-up to identify the implementation status and the impact of the SDAs at each facility that participated in the pilot training. Additionally, the facility assessment examined the levels of WASH practice integration within the existing NACS program. NACS was only assessed at the one year post-training follow-up. The results provide evidence as to the level of integration of WASH, nutrition, and infection prevention at the facility level. The facility assessment addressed:

- Policy and supervision
- Hand washing facilities and practices
- Water treatment, safe storage, and handling at point-of-use
- Safe sanitation
- Waste management
- Cleanliness and hygiene
- Food hygiene
- NACS services
- Human resources and training
- Reporting



Qualitative interviews were conducted with key stakeholders, including WASH training participants and health facility heads and staff using a standard protocol.

FACILITIES

Thirteen facilities were initially selected in collaboration with the SNNPR-RHB to participate in the 2011 pilot. The follow-up assessment required that at least one trainee was still a staff member at the facility. Due to staff turnover, only eight facilities participated in the post-training follow-up assessment one year after the training. These facilities include: Hosanna Health Center, Funko Health Center, Worabie Health Center, Morsito Health Center, Belessa Health Center, Gimbichu Health Center, Bonosha Health Center, and Tuka Health Center.

LIMITATIONS

The WASH curriculum was piloted in 13 facilities in Ethiopia. These 13 facilities were selected by SNNPR-RHB and were not intended to be representative of all health facilities in Ethiopia, nor representative of all health facilities in the Southern Nations, Nationalities, and People's Region.

Facility-level observation was not conducted prior to the April 2011 pilot training to create a baseline for WASH activities at the facility level. However, trainees created an SDA plan specific to their facility needs and individual challenges. The facility assessment that was conducted relied on provider report and current observations when assessing WASH improvements compared to the needs reported during the training and that was documented in the SDA plans.

Staff turnover was a primary limitation of the WASH training assessment. In total, 12 of the 21 trainees had been transferred in the year since the training was conducted. Five health facilities were not assessed because no trainees remained on staff. Staff turnover affected the assessment methodology by limiting the ability to document outcomes due to a reduced sample size. This turnover may have also greatly reduced the impact of the pilot training in Ethiopia by decreasing the transfer of knowledge and implementation of the SDA plans.

The WASH training was conducted in English, with discussion sometimes in Amharic. Because the pre-/post-test was conducted in English, the post-post-test was also conducted in English. The assessment team observed that some providers appeared to struggle with the knowledge assessment due to language. Most providers also preferred to respond to the assessment qualitative questions in Amharic, thus requiring translation via the bilingual assessment team member. Some providers also required translation of the questions before they were able to provide a response.

The Hawthorne effect, when subjects improve or modify their behavior in response to the fact that they know they are being studied, may also have been a limitation. Facilities were aware ahead of time that the assessment team would be observing WASH activities. Additionally, when activities could not be directly observed, the assessment relied on self-reporting.

FINDINGS

Facility-level observation was not conducted prior to the April 2011 pilot training; therefore, no formal baseline for WASH activities at the facility level was available. However, trainees created an SDA plan to implement post-training that was specific to their facility needs and individual challenges. The facility follow-up assessment conducted in May 2012 relied on provider reports and observations by the assessment team when assessing WASH improvements compared to the needs reported during the training and what was documented in the SDA plans. Although not all results can be directly attributed to the curriculum training, trainees and facility management reported no additional WASH training or dedicated supervision in the year since participating in the AIDSTAR-One pilot.

SMALL DOABLE ACTIONS

Small doable actions are simple, easy-to-adopt WASH-related activities or practices to reduce the risk of diarrhea and other opportunistic infections in PLHIV. During the WASH training, there was a strong emphasis on SDAs, and the trainees were asked to select SDAs to implement when they returned to their health facilities. Each facility created an SDA plan that was applicable to their individual facility. The most common focus was on improving health care waste management (waste segregation and disposal) and increasing handwashing facilities and awareness. The eight facilities that were assessed selected a total of 27 SDAs during the training. The training's focus on SDA action planning resulted in 100 percent of the facilities reporting that those implemented SDAs assisted in improving WASH standards at their facilities.

Of the 27 SDAs, 16 (59 percent) were implemented, 8 (30 percent) were partially implemented, and 3 (11 percent) were not implemented. Implemented SDAs were defined as SDAs implemented after the training and still functioning at the time of the assessment. Partially implemented SDAs were defined as those SDAs that had been implemented post-training but were not sustained until the time of the assessment or whose implementation was not fully attained. A list of SDAs by facility and their implementation status is shown in Table 1.

Facilities reported the primary reasons the SDAs were implemented successfully include increased awareness of WASH after the training and staff cooperation and involvement after trainees oriented non-trained providers. Facility head attendance in the training leading to their increased awareness was cited as a key factor for success. On return to the health facility, they were willing to increase focus on WASH and provide funding when possible. The primary challenges to implementing SDAs were due to water availability, lack of supplies/resources, and staff turnover. Some SDAs that were implemented could not be sustained, such as preparation of alcohol-based hand sanitizer and water treatment. These were classified as partially implemented.

Table 1. SDAs by Facility and Implementation Status

Facility	SDA	Implementation Status
Hosanna	Prepare and practice using alcohol-based hand sanitizer	Partially
	Teach PLHIV and their families WASH techniques	Implemented
	Put up posters in key locations	Implemented
	Tippy tap for handwashing where there is no pipe water	Partially
Funko	Put up handwashing posters in key locations	Partially
	Improve health care waste segregation and disposal practice	Implemented
	Tippy tap for handwashing where there is no pipe water	Implemented
	* Preparation of alcohol-based hand sanitizer	In addition to SDA action plan
Worabie	Tippy tap for handwashing where there is no pipe water	Partially
	Improve health care waste segregation and disposal practice	Implemented
	Put up handwashing posters in key locations	Implemented
	* Health education for PLHIV and community members	In addition to SDA action plan
Moristo	Tippy tap for handwashing where there is no pipe water	Partially
	Improve health care waste segregation and disposal practice	Implemented
	Put up posters in key locations	Implemented
	Cover latrine opening	Partially
Belessa	Tippy tap for handwashing where there is no pipe water	Implemented
	Facility level drinking water treatment and storage	Implemented
	Put up handwashing posters in key locations	Implemented
	* New waste pit (to replace full pit)	In addition to SDA action plan
	* Implement three-bin waste system	In addition to SDA action plan
Gimbichu	Prepare and practice using alcohol-based hand sanitizer for alternative use for handwashing	Not implemented
	Put up handwashing posters/reminders in key locations	Implemented
	Improve health care waste segregation and disposal practice	Implemented
	Teach PLHIV and their families WASH techniques	Implemented
	* New waste pit (to replace full pit)	In addition to SDA action plan
	* Add fencing around waste pit	In addition to SDA action plan
	* New placental pit with cover	In addition to SDA action plan
Bonosha	Tippy tap for handwashing where there is no pipe water	Implemented
	Improve health care waste segregation and disposal practice	Implemented
	Facility level drinking water treatment and storage	Not implemented
	* Preparation of alcohol-based hand sanitizer	In addition to SDA action plan
Tuka	Put up handwashing posters in key locations	Implemented
	Improve health care waste segregation and disposal practice	Implemented
	Tippy tap for handwashing where there is no pipe water	Not implemented
	* WASH counseling for PLHIV and health education sessions on WASH	In addition to SDA action plan

* Six facilities achieved SDAs in addition to the SDAs in their action plan created at the training.

All eight facilities (100 percent) cited reports of increased staff satisfaction as a result of implementation of the SDAs (see Figure 2). Examples include:

- Satisfaction with availability of tippy tap handwashing facilities near toilets
- Satisfaction with ease of handwashing inside the health center without the need to go outside and use a spigot
- Staff reports of provision of higher quality care
- Staff reports of satisfaction with increased safe conditions after WASH improvements.

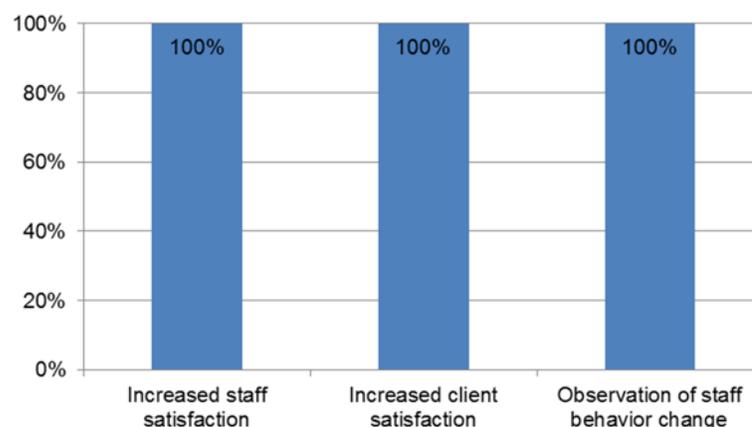
All eight facilities (100 percent) cited reports of increased client satisfaction as a result of implementation of the SDAs. Examples include:

- Satisfaction with availability of tippy tap handwashing facilities near toilets
- Observation of increased cleanliness of health center compound
- Clients reported construction and use of tippy taps in their homes after seeing tippy taps/receiving handwashing counseling at the health center.

All eight facilities (100 percent) reported observed staff behavior change as a result of implementation of the SDAs. Examples include:

- Increased awareness and appropriate practice of waste segregation
- Increased handwashing, particularly after latrine use
- Waste handlers requested personal protective equipment after trainee orientation, and increased use of personal protective equipment where available
- Provider use of hand sanitizer (where available)
- Providers reminded waste handlers to wash hands.

Figure 2. Reported Results of Implementation of Small Doable Actions



SATISFACTION WITH TRAINING

Facility management and staff who attended the WASH training repeatedly expressed the need for more WASH training for all facility staff, including waste handlers and cleaners. All 10 trainees assessed (100 percent) at the eight facilities reported strong agreement that the training improved their WASH knowledge. All trainees expressed satisfaction and would recommend the training to

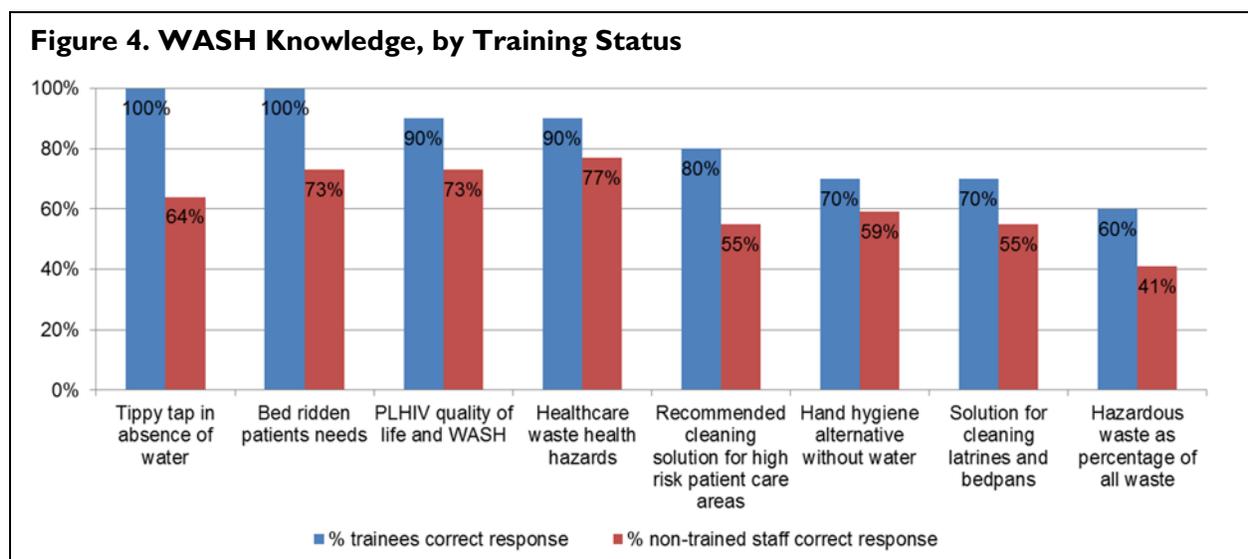
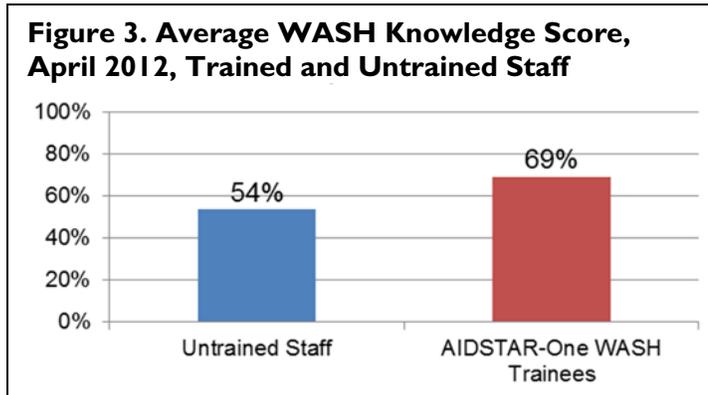
other providers or colleagues. All trainees also reported agreement that the WASH training led to changes in their personal behavior—90 percent reported strong agreement.

WASH KNOWLEDGE

A pre-test and post-test was administered to trainees in April 2011 to assess their WASH knowledge before and after the curriculum training. Directly after the training, the post-test showed an immediate increase in WASH knowledge, with the trainees’ score increasing from 56 percent (pre-test) to 76 percent (post-test) at the end of the three-day training.

After one year, the post-test was re-administered to those who attended the 2011 WASH training (n = 10) and administered to their peer colleagues at the facility (n = 22). A total of 17 questions remained the same across the three tests. Additional questions were added to the test taken one year after the training. The averages of the April 2011 tests were compared to the average scores from the test taken one year later. The results also show that over one year later trainees’ average score was 69 percent compared to an average of 54 percent for their untrained colleagues.

Figure 3 highlights the gap in the level of knowledge among staff who attended the AIDSTAR-One WASH pilot training and untrained staff. Specifically, all trainees were able to identify the utility of a tippy tap in absence of running water compared to 64 percent of untrained facility staff (Figure 4). Trainees were also more likely to identify how WASH improves the quality of life for PLHIV (90 percent) and identify who are affected by health care waste health hazards (90 percent) compared to untrained staff (73 percent and 77 percent, respectively). Trainees also identified the recommended cleaning solution for high-risk patient care areas (80 percent) compared to untrained staff (55 percent).



POLICY AND SUPERVISION

The WASH training curriculum emphasizes the importance of supportive supervision to increase workers' job performance and to improve compliance with service standards. WASH-related activities are often simple and not costly, however, staff need active support, mentorship, and continuous reinforcement from supervisors and administrators in implementing those tasks. Supervisors were encouraged to incorporate WASH activities and supervision within existing infection prevention and control committees and if committees do not exist to establish a committee to provide regular internal supportive supervision.

All facilities reported receiving external supervision that included WASH elements during the past 12 months, and integrated supervision is conducted two to four times per year by the district-level governments, known as *woredas*. Although the supervision checklist includes observation of some WASH facilities and behaviors, it is not the focus of the supervision. Most facilities (seven) have an infection prevention and control committee that generally meets monthly to quarterly, and they report providing internal infection prevention/WASH supportive supervision (Table 2).

Table 2. Received Policy

	Yes	No
Policy/guidelines for infection prevention and control	4	4
Committee (infection prevention and control, etc.) that addresses WASH issues	7	1

HANDWASHING FACILITIES

All eight facilities chose to include at least one SDA related to handwashing in their SDA action plan, including the construction of tippy taps, which are portable water containers that can be placed at a convenient location for handwashing or drinking. Other SDAs related to handwashing included the preparation of alcohol-based hand sanitizer and providing job aids related to handwashing for providers.

Tippy taps were added in four of the eight facilities post-training. The training provided instructions on how to construct tippy taps using no-cost materials. In two health facilities, no-cost tippy taps



were constructed post-training. Two other facilities purchased or received donations of water dispensers for handwashing use.

Three of the eight facilities provided handwashing stations within five feet of the latrine/toilet, two of the three with soap available. Two of the three facilities added the handwashing station (via tippy tap) as a result of the training.

Three facilities implemented preparation of alcohol-based hand sanitizer for an alternative handwashing option; however, because preparation requires the purchase of alcohol, two of the facilities were unable to sustain this SDA.

Overall, 21 functional handwashing stations (with water available) were observed in six of the eight health facilities. Four of the 21 handwashing stations (19 percent) had liquid or bar soap available (Table 3).

Table 3. Functional Hand Washing Stations

Facility	With Soap	Total Observed
Hosanna Health Center	-	-
Funko Health Center	-	3
Worobie Health Center	-	1
Morsito Health Center	1	2
Belessa Health Center	1	5
Gimbichu Health Center	-	6
Bonosha Health Center	2	4
Tuka Health Center	-	-
Total	4	21

WATER TREATMENT, SAFE STORAGE, AND HANDLING AT POINT-OF-USE

Two facilities included water treatment and safe storage in their SDA action plans, and one facility was able to successfully implement water treatment and the provision of a dedicated container for safe drinking water for clients post-training. Four of the eight facilities had at least one source (a spigot or sink) of running water available. Three of the four with running water did not provide any alternative water storage and did not provide any water treatment. One facility stores drinking water in a plastic jerry can and treats the drinking water with chlorine (such as AquaTab) when available. Of the four health facilities without running water, one facility boils water for drinking for clients to take medications. The water is kept in the tea kettle and used as need. The other three facilities without running water did not provide drinking water for clients. Table 4 shows water treatment, storage and handling practices used at the facilities.

Table 4. Water Treatment, Storage, and Handling

	Yes	No
Water storage source of drinking water for patients	2	6
Covered drinking water container	2	-
Narrow neck container (water cannot be scooped out)	2	-
Drinking water for this facility treated in the past 30 days	2	6
Water treatment supplies currently available	1	7
Sign on drinking water source (to separate from non-potable)	-	2

SAFE SANITATION

All of the facilities provided a functional toilet/latrine for clients (Table 5). Most facilities provide separate facilities for clients and staff. At seven of the eight facilities (88 percent), the latrines included a washable (cement) platform and a superstructure. One facility had locked off the doors to their modern bathrooms due to lack of rain (making cleaning difficult because the facility lacks running water). Instead, clients use an unsanitary latrine constructed of a wooden floor and plastic sheeting for walls and no roof.

No facilities observed had a latrine pit cover. One facility included covering the pit as a SDA in their action plan, and although the facility was able to provide a cover post-training, they found changing client behavior to be a challenge. The pit was rarely covered and eventually the cover disappeared from the latrine.

Three of the eight facilities (38 percent) provide a handwashing station within five meters of the latrine, two of which were added post-training (Table 6). Two of the three handwashing stations provide soap.

Table 5. Toilet/Latrine

	Yes	No
Functional toilet/latrine available for clients	8	-
Clean latrine (no visible feces or urine)	1	7
Latrine has washable platform	7	1
Latrine has superstructure	7	1
Latrine has a covered pit	-	8

Table 6. Latrine Hand Washing Station

	Yes	No
Hand washing station within five meters of latrine	3	5
Soap available at the handwashing station	2	1



WASTE MANAGEMENT

Seven of the eight facilities included waste segregation and disposal in their SDA action plans because waste management is a key challenge for most of the facilities. Most health care waste is non-infectious waste. But when waste that carries harmful germs or dangerous chemicals is mixed

with ordinary waste, the mixed waste can pose a health risk for the health workers, clients, and the surrounding community. For these reasons, waste segregation at the point of generation is critical.

Most facilities lack bin liners but have used local materials (generally buckets) to create a waste segregation system. Some buckets or bins are color coded and/or labeled as “infectious”/“non-infectious.” Several facilities remarked that waste segregation and management continues to be a challenge, although improvements have been made since the WASH training due to increased awareness and, in some facilities, increased availability of the three-bin system throughout the health facility.

All eight health facilities had safety boxes available and seven within reach of the injection provider in all rooms (Table 7). Stockouts of safety boxes were uncommon during the past six months and was reported at only one facility (14 percent). No improperly disposed of sharps were observed within the health facilities, although one safety box in one facility was observed to be overfilled and nearly overflowing. One facility was utilizing an unsafe reusable safety box in one injection room (the plastic box was filled, then opened, and dumped, an unsafe task for the waste handler).

Waste should be segregated and disposed of by category of waste, and while general waste can be burned in a hole, sharps require careful handling. All eight facilities reported that waste generation has improved as a result of the WASH training; however, they also report that segregation and disposal remains a challenge. One facility reported that after providing orientation to the waste handlers about proper waste handling and disposal, the waste handlers requested necessary personal protective equipment from the facility head and expressed their concern about their unsafe working conditions without personal protective equipment. The facility head reported that he is currently budgeting for the purchase of personal protective equipment in response to the waste handlers’ requests.

Table 7. Safety Boxes

	Yes	No
Safety box available for disposal of sharps	8	-
Stockout of safety boxes in the last six months	1	7
Sharps container within provider unobstructed arm reach	7	1
Overflowing or pierced safety boxes	1	7
Used sharps in trash	-	8
Used sharps loose inside health center	-	8
Used sharps loose outside health center	1	7



Color coded bins.



Labeled infectious waste bin.



Three bin system.

Six of the eight facilities (75 percent) had a functional incinerator, all six of which were single-chamber, low temperature incinerators (Table 8). All eight facilities have a waste disposal pit, although they varied in depth, and four were completely unprotected and easily accessible by both humans and animals thus creating a safety hazard, particularly for children. At one facility, an observer commented that a group of small children recently tried to access the waste pit in order to play with the disposable gloves visible inside.

All eight facilities had a placental pit for the disposal of placentas after delivery. Two facilities created new placental pits as a result of the WASH training. However, three of the eight placental pits (38 percent) did not meet correct standards and may pose a safety risk through contamination of the ground water.

Although six facilities have an incinerator, two use the incinerator incorrectly. One health facility with an incinerator uses the incinerator to dump sharps, rather than for burning. Another facility with an incinerator had used sharps dumped on the ground behind the incinerator and inside the ash pit. Table 9 shows the methods of disposal of sharps and infectious wastes used at the facilities.

Table 8. Waste Disposal

	Yes	No
Functional incinerator	6	2
Waste disposal pit	8	-
Placental pit	8	-
Waste disposal area protected from entrance	4	4

Table 9. Methods of Disposal of Sharps and Infectious Waste

	Sharps: Main Disposal Method	Infectious Waste: Main Disposal Method
Open burning in hole or enclosure	2	4
Low temperature incineration (burning chamber)	5	-
Dumping/burial in a pit	1	4



Most safety boxes observed were appropriate and correctly placed.



Unsafe reusable safety box.



Unsafe overfilled safety box.



CLEANLINESS AND HYGIENE

Although none of the facilities selected an SDA related to facility cleanliness in their action plans, the pilot curriculum emphasized hygiene, cleanliness, and disinfection to protect health care workers as well as PLHIV within the facility. In addition, educating and promoting basic hygiene practices among caregivers and patients can help them to practice these behaviors at the household level, thus improving the quality of life of PLHIV.

Although six of the eight facilities reported daily wet mopping of floors (Table 10), some facilities noted that when bleach is not available, detergent or only water is substituted. The assessment team observed that floors in some of the facilities did not appear to be mopped the morning of observation, although no blood or body fluids were observed on the floors.

Five of the eight facilities (63 percent) did not use bed linens, and instead used water or water and bleach to wipe down or soak plastic sheeting used on patient beds. None of the health facilities with bed linens had a cart for transport of the linens, but

Table 10. Hygiene and Cleanliness

	Yes	No
Stockout of disposable gloves in the last six months	2	6
Daily wet mopping of floors	6	2
Visible blood or body fluid on patient linens and/or beds	1	7
Visible blood or body fluid on floors of patient care areas	-	8

instead had cleaners transport the linens by hand. Blood was observed on a bed in the delivery room of one facility.

Disposable gloves are essential for provider and patient safety, particularly where optimal handwashing is not practiced due to water challenges. All eight facilities had disposable gloves available; however, two facilities (25 percent) reported stockouts during the past six months.

FOOD HYGIENE

The pilot curriculum emphasized that safe water should be used during food preparation. 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. None of the facilities provided food preparation for clients, and no kitchens were observed.

NUTRITION ASSESSMENT, COUNSELING, AND SUPPORT

The fiscal year 2011 PEPFAR country operational plan guidance states that NACS, including WASH, is an important aspect of care and support for PLHIV and orphans and vulnerable children. The document, *Programming Water, Sanitation, and Hygiene (WASH) Activities in the U.S. Government Country Operational Plans (COPs): A Toolkit for FY2012 Planning* outlines a number of programming approaches to promote WASH interventions, including integrating and mainstreaming WASH across all HIV intervention areas, such as NACS.

WASH activities listed in the PEPFAR guidance for inclusion in care and treatment services include counseling on safe food preparation and storage, point-of-use water purification treatment, and other hygiene and sanitation practices. The guidance also encourages activities at the health facility level that support the provision of and advocacy for safe and sufficient supply of water, basic hygiene and sanitation practices, and adequate management of health care waste (PEPFAR 2011).

Although the original WASH training did not focus on WASH integration with NACS, AIDSTAR-One was tasked to explore how WASH is incorporated into the technical area of NACS. To accomplish this, AIDSTAR-One created a baseline to examine the levels of WASH integration into NACS. Every facility reported the provision of some form of nutrition counseling. A total of 25 staff at the eight facilities reported receiving nutrition training, which included WASH components such as handwashing and safe water counseling. All eight facilities reported the possession of written nutrition guidelines.

Hand washing and safe water counseling were the primary ways in which the NACS guidelines at the facilities included WASH. However, in practice, integration levels were found to be low. Although counseling guidelines included handwashing and safe drinking water counseling, providers reported that WASH was not the focus of their counseling.

HUMAN RESOURCES AND TRAINING

High staff turnover was observed. In total, 12 of the 21 trainees (57 percent) had been transferred to new health facilities in the year post-training. Determining whether transferred trainees implemented SDAs or transferred WASH knowledge to staff in their new facilities was beyond the scope of this

evaluation. However, if no knowledge was transferred, this is a loss that should be accounted for in future trainings.

Facility heads participated in the April 2011 pilot training, however, due to turnover, many have been replaced. Trainees reported that WASH improvements post-training were aided by the support of heads with increased WASH knowledge. Where facility heads were replaced, trainees reported that the new untrained facility heads were less supportive.

REPORTING

The pilot curriculum emphasizes monitoring WASH activities in order to track the progress of WASH-related interventions. The training provided examples of types of indicators that can be useful for monitoring WASH activities and how to calculate these indicators.

No WASH indicators were required by the Ministry of Health at the national or woreda level. Without an obligation to track WASH indicators, facilities are unable to track improvements and challenges systematically and may lack the initiative to prioritize and integrate WASH activities into services.

SELF-REPORTED WASH PRIORITIES

Facilities were also asked to share their perceived priorities to improve WASH standards at the facility level. Staff at all facilities requested additional WASH training for all staff, including for waste handlers and cleaners. However, most of the other identified needs go beyond SDAs, and include issues that facilities do not control, particularly the water supply. The needs that were reported are listed in Appendix 1.

RECOMMENDATIONS

To increase and sustain WASH improvements at the facility level, these recommendations require full country ownership. The following recommendations rest on the prioritization of WASH at the national level and support from at the Regional Health Bureau level, including the provision of essential WASH infrastructure and supplies.

TRAINING

All eight facilities that were assessed reported the need for more WASH training both for clinical staff and waste handlers/cleaners. The pilot facilities reported improved WASH standards, particularly related to waste segregation. Post-training facilities strengthened the use of the three-bin system for segregating waste at the point of generation. However, staff turnover is a major challenge. Turnover of waste handlers/cleaners requires constant supervision and training reminders.

Because staff at all facilities reported the need for more WASH trainings of all clinical staff, part of the scale up of the WASH training could include a training of trainers component. Adopting such a model would help to ensure transfer of knowledge and actions. The training of trainers could require each trainee to complete a set number of trainings and report back to the FMOH before a certificate of completion is provided. Although staff turnover is unavoidable, requiring training and reporting of the training can guarantee that even if a trained staff member is transferred to a new facility, knowledge transfer will still occur.

Additionally, pre-service training for health providers is an opportunity to emphasize WASH concepts as integral to all health services. Full integration of WASH into the nursing and medical curricula would provide a strong base for awareness of the importance of WASH to improve provider, client, and community safety and help to increase all staff members' involvement in improving WASH standards.

WATER AVAILABILITY AND TIPPY TAPS

Water availability is a major challenge at four of the eight facilities assessed. Even at the four facilities with running water, many sinks are non-functional and providers must walk to another room or outside the facility in order to wash their hands. This assessment showed that it is feasible to construct tippy taps for the provision of water where running water is not available at little to no cost using materials that are readily available within health facilities. Two facilities created these no-cost tippy taps. Two other facilities with running water challenges used purchased or donated taps. The inclusion of tippy taps into standard WASH practices and policies may reinforce the ease and affordability of this intervention. However, filling the tippy taps should not be considered simply the cleaner's or guard's responsibility. All staff benefit from increased handwashing and each person should therefore participate in its upkeep.

Research shows that a person washing hands under a tippy tap uses 40 to 50 mL of water as compared with 600 mL when water is accessed by other means (Hurtado 1993). This low level of water use could be particularly beneficial in a resource-constrained environment where facilities must purchase water daily with little to no dedicated funding. Tippy taps can serve both the practical

purpose of improving WASH standards at the facility level through increased handwashing, as well as serve as a model for community-based use. Training of community health workers on construction can ensure further adoption at the community level and can also reach those who cannot afford health services at the facility level. However, the presence of tippy taps is not enough. Priority must be placed on budgeting for and the purchase of water where running water is not available. The purchase of soap, as well as alcohol for hand sanitizer, for health provider hand hygiene also must be prioritized for the safety of both clients and providers. Some health facilities are using creative methods to fundraise for their internal budgets, including using facility land to plant crops and renting the land for cattle grazing. This model could help other facilities increase their ability to purchase WASH supplies.

SUPPORTIVE SUPERVISION

A cornerstone of supportive supervision is working with health staff to establish goals, monitor performance, identify and correct problems, and proactively improve the quality of service. Together, the supervisor and health workers identify and address weaknesses on the spot, thus preventing poor practices from becoming routine. Supervisory visits are also an opportunity to recognize good practices and to help health workers maintain a high level of motivation and performance. Reinforcing to supervisors that supportive supervision is more effective than routine supervision is essential. Supportive supervision can provide constant support to facilities to resolve WASH issues. It can also reinforce that WASH is the responsibility of all health facility staff. Using the training of trainers model and including woreda and zonal staff can improve their ability to provide quality supportive supervision.

REPORTING

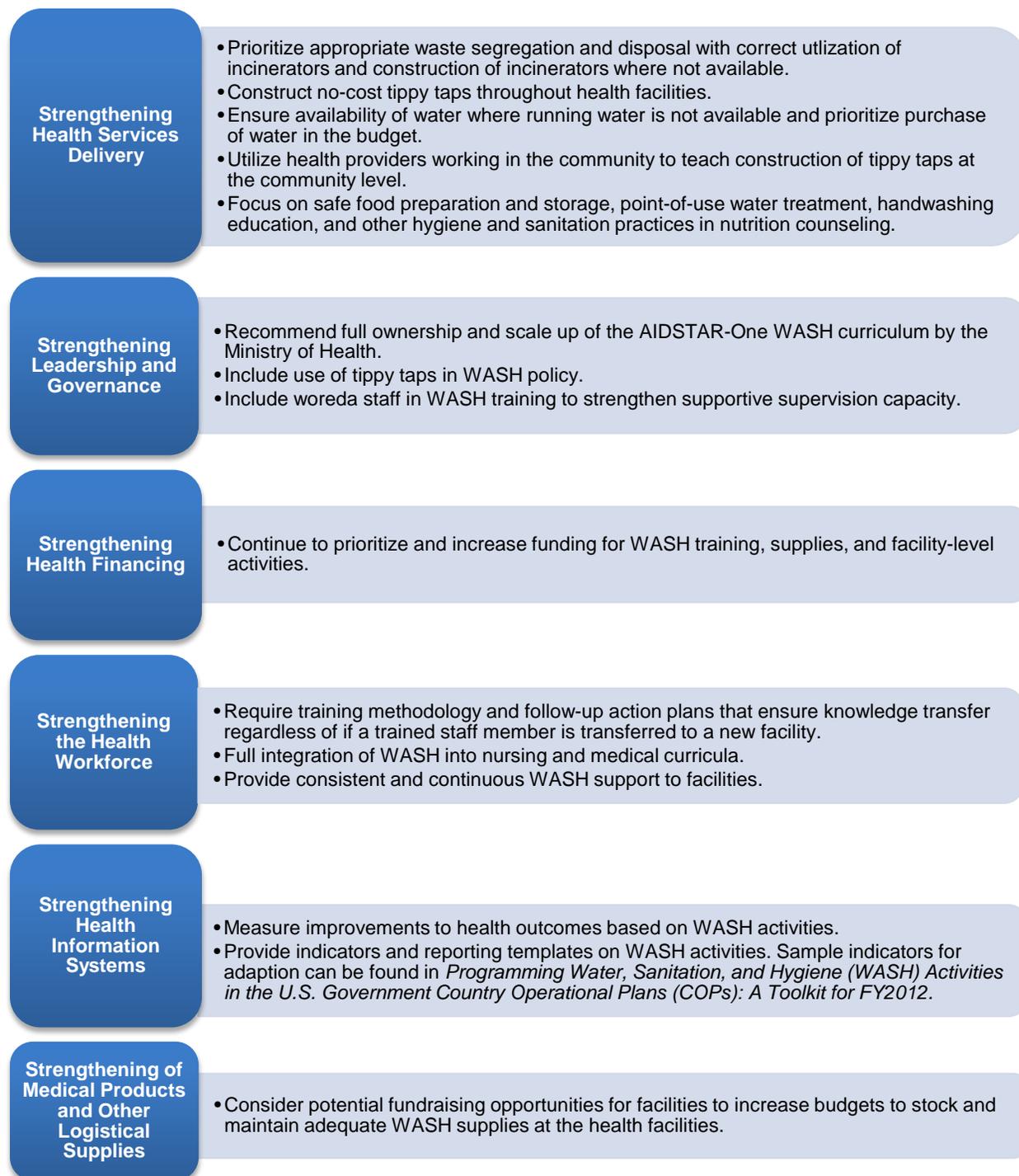
Without clear indicators, facilities are unable to systematically monitor WASH outcomes and progress. Emphasizing reporting requirements, as well as providing reporting templates, may increase prioritization of WASH at the facility level. Sample indicators for adaption can be found in the Programming Water, Sanitation, and Hygiene (WASH) Activities section in the *U.S. Government Country Operational Plans (COPs): A Toolkit for FY2012*.

NUTRITION ASSESSMENT, COUNSELING, AND SUPPORT

WASH is an integral component of NACS and should not be viewed as separate activities. Training for clinical staff providing nutrition counseling must include a focus on safe food preparation and storage, point-of-use water treatment, handwashing education, and other hygiene and sanitation practices.

ROADMAP FOR WASH CURRICULUM INTEGRATION IN ETHIOPIA

The following figure integrates WASH recommendations into the WHO building block strategic areas for health systems, thus providing a roadmap for policymakers and program implementers in Ethiopia to strengthen health systems as they relate to WASH services.



Strengthening health systems requires six strategies based on the WHO's building blocks of health systems (WHO 2007):

1. **Strengthening Health Services Delivery:** Good health services are those that deliver effective, safe, quality personal and non-personal health interventions to those that need them, when and where needed, with minimum waste of resources.
2. **Strengthening Leadership and Governance:** Leadership and governance involves ensuring strategic policy frameworks exist and are combined with effective oversight, coalition building, regulation, attention to system design, and accountability.
3. **Strengthening Health Financing:** A good health financing system raises adequate funds for health, in ways that ensure people can use needed services and are protected from financial catastrophe or impoverishment associated with having to pay for them. It provides incentives for providers and users to be efficient.
4. **Strengthening the Health Work Force:** A well-performing health work force is one that works in ways that are responsive, fair, and efficient to achieve the best health outcomes possible, given available resources and circumstances (i.e., there are sufficient staff, fairly distributed; they are competent, responsive, and productive).
5. **Strengthening Health Information Systems:** A well-functioning health information system is one that ensures the production, analysis, dissemination, and use of reliable and timely information on health determinants, health system performance, and health status.
6. **Strengthening Management of Medical Products and Other Logistical Supplies:** A well-functioning health system ensures equitable access to essential medical products, vaccines, and technologies of assured quality, safety, efficacy, and cost-effectiveness, and their scientifically sound and cost-effective use.

CONCLUSIONS

Water, sanitation, and hygiene is a key component of all HIV care and support services. Additionally, the larger benefits of improving WASH standards at the facility level extend beyond PLHIV. WASH cannot be limited to HIV services or to a specific staff member's job description.

The AIDSTAR-One WASH curriculum training led to increased staff and client satisfaction and to observed changes at the individual and facility levels. The training led to increased awareness of the importance of water, hygiene, and sanitation at the facility level, and the implementation of SDAs improved WASH standards at the eight health facilities. Training health workers as well as facility heads at health facility trainings positively impacts WASH knowledge, standards, and practice. It is imperative that WASH remains a priority for health facilities in Ethiopia. It is recommended that a stakeholder meeting is convened to share the positive results of this assessment and to discuss next steps to keep WASH and HIV integration at the forefront of health care.

REFERENCES

- Hurtado, E. 1993. "Hygiene behavior." Dialogue on Diarrhoea Online, No. 54. Available at <http://rehydrate.org/dd/dd54.htm> (accessed September 2012).
- U.S. Agency for International Development and U.S. Centers for Disease Control and Prevention. 2011. *Programming Water, Sanitation and Hygiene (WASH) Activities in U.S. Government Country Operational Plans (COPs), A Toolkit for FY2012 Planning*. Available at www.washplus.org/sites/default/files/COP_2012_Toolkit_Final.pdf (accessed October 2012).
- U.S. President's Emergency Plan for AIDS Relief. 2011. *FY 2011 Country Operational Plan (COP) Guidance*. Available at www.pepfar.gov/documents/organization/148826.pdf (accessed October 2012).
- World Health Organization. 2007. *Everybody's Business: Strengthening Health Systems to Improve Health Outcomes: WHO's Framework for Action*. Geneva: WHO. Available at www.who.int/healthsystems/strategy/everybodys_business.pdf (accessed October 2012).
- World Health Organization. 2012. "Health Through Safe Health Care: Safe Water, Basic Sanitation and Waste Management in Healthcare Settings." Available at www.who.int/water_sanitation_health/mdg3/en/index.html (accessed October 2012).

APPENDIX I: SELF-REPORTED WASH PRIORITIES

1. Hosanna Health Center
 - a. Consistent follow-up/supportive supervision/training
 - b. Water supply
 - c. Disinfectants, including hand sanitizer
 - d. Water tank
 - e. Hand washing station in every service delivery room
 - f. Need to coordinate cleaners and all staff to fill tippy taps.
2. Funko Health Center
 - a. Although most staff is trained in infection prevention, they need WASH-specific training
 - b. Water supply (connection of 2,000 L tank to sinks), promised by EngenderHealth
 - c. Replace corridor floor for ease of cleaning (currently cement is pitted).
3. Worabie Health Center
 - a. More tippy taps
 - b. Water supply
 - c. Alcohol-based hand sanitizer.
4. Morsito Health Center
 - a. Need functional sinks in all rooms
 - b. Continuous supply of water
 - c. Cleaners should be trained in infection prevention/WASH
 - d. More training for all staff (turnover)
 - e. Personal protective equipment for cleaners.
5. Belessa Health Center
 - a. Alcohol-based hand sanitizer
 - b. More job aids/posters for staff reminders and client education
 - c. Incinerator
 - d. Chlorine supplies for water treatment
 - e. More WASH training for health center staff to give trainees more support.
6. Gimbichu Health Center
 - a. Training for woreda office so they can provide more support and give more attention to WASH

- b. Training for all facility staff
- c. Supportive supervision from AIDSTAR-One or another partner
- d. Support for resources such as soap, personal protective equipment, and improved facilities.

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