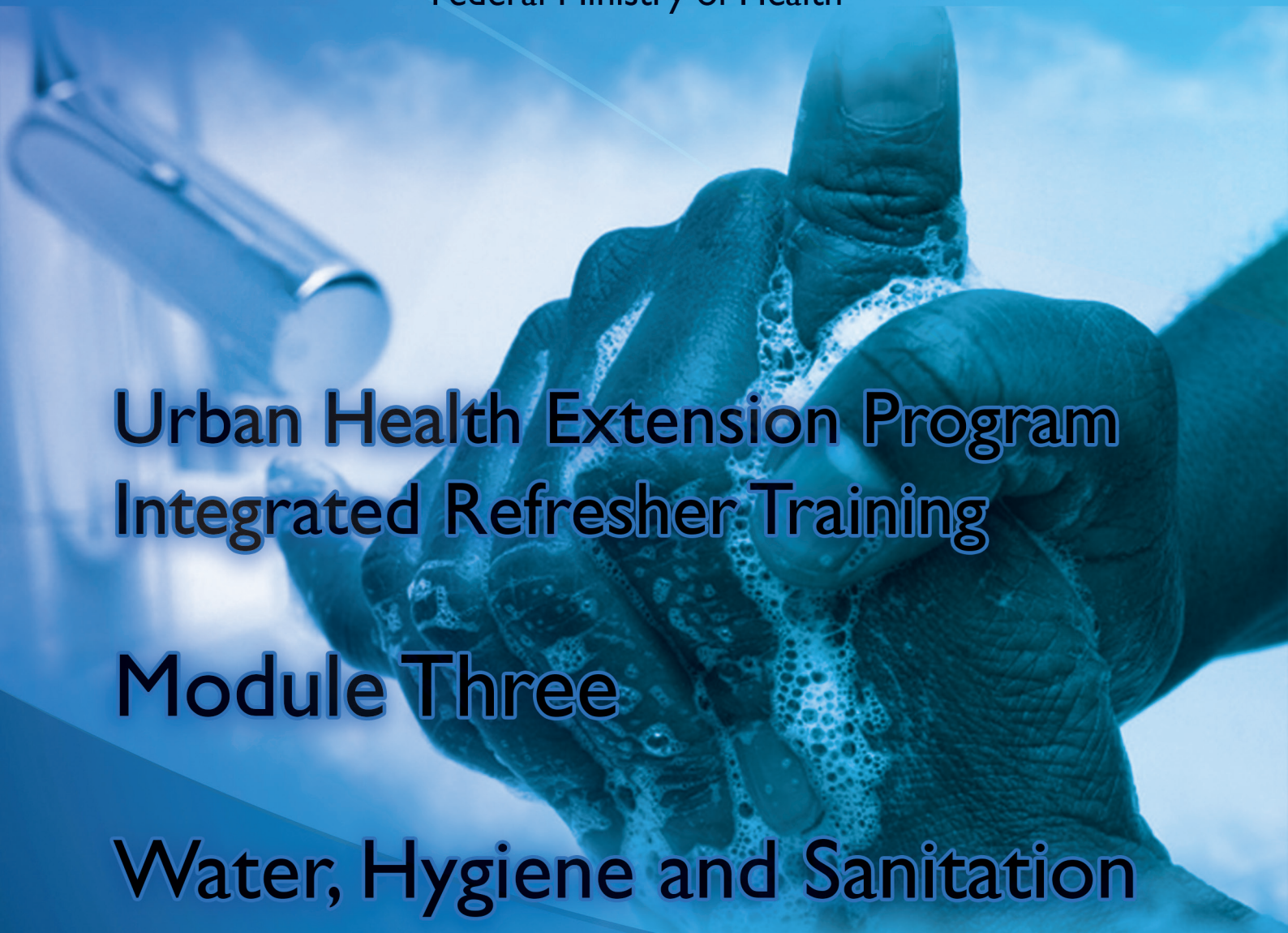
Federal Ministry of Health



Urban Health Extension Program Integrated Refresher Training

Module Three

Water, Hygiene and Sanitation

Facilitator's Guide

February 2017

Federal Ministry of Health

Urban Health Extension Program

Integrated Refresher Training

Module Three

Water, Sanitation and Hygiene

Facilitator's Guide

February 2017

Acknowledgement

The preparation and finalization of the integrated refresher training modules for Urban Health Extension Professionals (UHE-ps) has been made possible through a series of consultative meetings and workshops. During this process, the valuable contributions of our partners and program stakeholders have been crucial. This module is meant for UHE-ps in order to improve their attitude, skill and knowledge, which in turn help them provide quality health services to their clients. Therefore, the Federal Ministry of Health (FMOH) acknowledges all organizations for their contributions in the preparation, fine-tuning and finalization of this document.

FMOH is grateful to all partners involved and in particular USAIDJSI/SEUHP, JHU CCP, World Vision, Challenge TB, UNICEF, for the technical support provided to develop this Integrated Refresher Training(IRT) module in a harmonized approach.

Special acknowledgement is made by the FMOH to team of experts from the government and nongovernmental organizations who tirelessly involved in the entire processes of producing the module.

The FMOH also acknowledges the Joint leadership of the Health Extension and Primary Health Services Directorate (HEPHSD) and John Snow Incorporate (JSI) -Strengthening Ethiopia's Urban Health Program (SEUHP) for mobilizing resource and coordinating the development of the training module.

FMOH acknowledges JSI-SEUHP for providing financial support to organize a series of workshops and consultative meetings as well as to print the final version of all training modules.

Zufan Abera Damtew (BSc N., MPH, PhD)

Director, Health Extension and Primary Health Service Directorate

Federal Ministry of Health

Acronyms

BCC	behavioral change communication
EcoSan	ecological sanitation
HEAT	health, education and training
HWTSS	household water treatment and safe storage
TPL	traditional pit latrine
UHEP	Urban Health Extension Program
UHE-p	urban health extension professional
VIPL	ventilated improved pit latrine
VIPP	visualization in participatory program
WASH	water, sanitation, and hygiene
WHO	World Health Organization

Contents

Introduction

Urban Health Extension Program was introduced in Ethiopia in 2009, based on lessons learnt from successful implementation of the health extension program in rural areas. The program is designed with the aim of ensuring health equity by creating demand for essential health services through the provision of health information and basic health services at household level, school and youth centers and improving access to health services through referral to health facilities. Subsequent evaluations conducted on the program implementation have shown that, Urban HEP has contributed for increased health service awareness and utilization among urban dwellers. However, there was a wide disparity in implementation of the program and its achievements among cities. Low competency of Urban Health Extension Professionals (UHE-ps) and lack of integrated and continuous training has contributed for the discrepancy in implementation of the program.

Hence, a training need assessment was conducted to identify the competency gaps of UHE-ps when providing basic services. Therefore, considering the type of competencies that the UHE-ps need to have and identified competency gaps, six modules have been identified and developed based on Competency Based Training approach to provide in-service integrated refresher trainings. In addition, the modules were pre-tested and further refined. These modules are: -

Module 1: Social and Behavioral Change and Communication

It encompasses the health communication component to improve the knowledge and skill of UHE-ps to conduct effective health communication and improve UHE-ps attitudes affecting their performance in provision of health communication activities.

Module 2: Reproductive, Maternal, Neonatal, Child Health and Nutrition

The overall purpose of this module is to improve the attitude, knowledge and skills of UHE-ps to carry out quality family planning, maternal, neonatal, child health and nutrition services as well as enhance the UHE-ps understanding of attitudes affecting their performance in provision of family planning, maternal, neonatal, child health and nutrition services.

Module 3: Water, Hygiene and Sanitation

The overall purpose of this module is to improve the knowledge and skills of UHE-ps to carry out quality Water, Sanitation and Hygiene services as well as enhances the UHE-ps understanding of attitudes affecting their performance in provision of Water, Sanitation and Hygiene services.

Module 4: Major Communicable Diseases Prevention and Control

This module prepares Urban Health Extension professionals (UHE-ps) to provide TB/HIV and malaria-related services including reaching vulnerable populations with key TB/HIV prevention messages, HIV/STI counseling and testing (HCT), TB case detection, TB and HIV/AIDS care and support, referrals to services and malaria prevention and control in malarias areas.

Module 5: Non Communicable Diseases Prevention and Control and Mental Health

The Purpose of the module is to enable the participant s (UHEPs) explore and use their Attitude, Skill and knowledge to improve their performances in terms of providing quality health services related to major NCDs and mental health

Module 6: Basic First Aid

The purpose of this module is to improve the knowledge, attitude and skill of UHE-ps to provide quality first aid service and injury management. The module will also consist of transferring information regarding first aid and injury management to household and communities. This module also includes pre hospital cares.

MODULE SYLLABUS

Module description: This module contains theoretical and practical lessons to give trainees the knowledge, skills, and attitude to plan, implement, and monitor hygiene and environmental health interventions in households, youth centers, and schools. It focuses on causes and potential health effects associated with poor hygiene and sanitation. It provides understanding and demonstration of proper urban latrine construction, utilization, and management approaches; household water management and food hygiene practices; solid and liquid waste management; and personal hygiene including menstrual.

Goal: The goal of the module is to enable participants to cultivate attitudes, skills, and knowledge to improve their ability to promote hygienic behavior and demonstrate proper hygiene and environmental health services based on the defined packages and competencies.

Module Specific Objectives: At the end of the training the participants will be equipped with the necessary knowledge, attitude and skills and will be able to;

- Understand and demonstrate proper latrine construction, utilization and management approaches in urban setup
- Understand and demonstrate proper household water management and food hygiene practices
- Understand and demonstrate proper personal hygiene, a healthy living environment and practices
- Understand proper solid and liquid waste management approaches at household, youth center and school level

Training methods

- Brainstorm
- Facilitator presentation
- Role play
- Discussion (general and group)
- Practical activities (demonstration)
- Field visit
- Case study

Materials required

- Facilitator's guide and UHE-p resource on WASH

- Flipchart
- VIPP cards
- Markers
- Flipchart stand
- Masking tape
- LCD/projector (optional)
- Water treatment chemicals
- Dish washing equipment

Participant selection criteria: Those who work on the UHEP with position of UHE-ps and UHEP supervisors/coordinator

Module assessment: Assessment of the module (pre-test, post-test, and practical and continuous assessments) should be based on attainment of the learning outcomes with reference to the performance criteria indicated in the course objectives.

Time allocated: 4 days

Optimum class size

- Participants: 25–30 trainees per class
- Trainer: two trainers per class and with environmental health background and who have taken TOT on IRT.

Module Outline

Module units:

- Unit One: Latrine Construction, Utilization, Management, and Technology Options
- Unit Two: Food Hygiene and Household Water Treatment
- Unit Three: Personal Hygiene and Healthy Housing
- Unit Four: Solid and Liquid Waste Management

Module Schedule

Date	Activity	Time	Methods
Day 1	Introduction • Module description • Goal • Specific objectives of the module	5 Minutes	Brain storming and PPT
	Unit 1: latrine construction, utilization, management, and technology options • Unit description • Main objectives • Specific objectives	5 Minutes	Brainstorming and PPT
	Session 1: latrine construction and factors that needs to be considered for latrine construction • Primary objectives • Enabling objectives	5 Minutes	Brainstorming and PPT
	Enabling objective 1: Describe the main features and requirements of properly designed/constructed latrine	30 minutes	Brainstorming
	Enabling objective 2: Describe factors that need to be considered during latrine site selection and construction	80 Minutes	Group works based the case study
	Session 2: latrine utilization • Primary objectives • Enabling objectives	5 Minutes	Brainstorming and PPT
	Enabling objective 1: Promote proper utilization of latrines for all family members	60 minutes	Group work
	Enabling objective 2: Identify community action to condemn open defecation	60 minutes	Group work
	Enabling objective 3: Understand proper way to handle and dispose children's feces	60 minutes	Case study/role play
	Session 3: latrine operation and management • Primary objectives • Enabling objectives	5 Minutes	Brainstorming and PPT
	Enabling objective 1: Explain the operation and management of private and shared latrines available in urban areas	70 minutes	Case study/role play
	Enabling objective 2: Explain how to operate and manage a latrine	80 minutes	Group work

Day 2	**Session 4: latrine technology options** • Primary objectives • Enabling objectives	5 Minutes	Brainstorming and PPT
	Enabling objective 1: Describe sanitation ladder options on feces management to counsel households	60 minutes	Group work/card sort
	Enabling objective 2: Identify different latrine technology options available in urban areas	40 minutes	Gallery walk
	Enabling objective 3: Briefly describe the key factors to consider when selecting a latrine technology option	60 minutes	Group work using a case study
	unit 2: food hygiene and safe water treatment and storage • Unit description • Main objectives • Specific objectives	5 Minutes	Brainstorming and PPT
	SESSION 1: FOOD HYGIENE • Primary objectives • Enabling objectives	5 Minutes	Brainstorming and PPT
	Enabling objective 1: Explain the principles of food hygiene and safety	30 minutes	Brainstorming
	Enabling objective 2: Describe the various types of diseases associated with food	45 minutes	Group discussion using a case study
	Enabling objective 3: Explain food preservation methods and five features of food safety and hygiene.	45 minutes	Group discussion
		15 Minutes	agree/disagree
	Enabling objective 4: Demonstrate food utensils and equipment cleanness	45 minutes	Demonstration
	Session 2: household water treatment and safe storage • Primary objectives • Enabling objectives	5 Minutes	Brainstorming and PPT
	Enabling objective 1: Describe sources of drinking water contamination	30 minutes	Gallery walk
	Enabling objective 2: Explain water-borne diseases and prevention methods	20 minutes	Brainstorming
	Enabling objective 3: Demonstrate household water treatment methods and safe storage and use of treated water	25 minutes	Agree/disagree
		35 minutes	Group work using case studies

Day 3	Unit 3: personal hygiene and healthy homes • Unit description • Main objectives • Specific objectives	5 Minutes	Brainstorming and PPT
	Session 1: personal hygiene • Primary objectives • Enabling objectives	5 Minutes	Brainstorming and PPT
	Enabling objective 1: Explain practices and components of maintaining personal hygiene	40 minutes	Group work
	Enabling objective 2: Demonstrate common hygienic practices	35 minutes	Demonstration using video and / or practical demonstration
		40 minutes	Brainstorming
	Enabling objective 3: overcome attitudes and misinformation that hinder UHE-ps ability to communicate sensitive personal hygiene information to clients	35 minutes	Agree/disagree
	Enabling objective 4: Describe public health importance of personal hygiene	15 minutes	Buzz group discussion
	Session 2: healthy house • Primary objectives • Enabling objectives	5 Minutes	Brainstorming and PPT
	Enabling objective 1: Explain the basic requirements of healthy housing	40 minutes	Group discussion
	Enabling objective 2: Demonstrate ability to identify and analyze risk factors associated with housing using hypothetical data	40 minutes	Group discussion
		15 minutes	Individual exercise using questions
	Enabling objective 3: Understand social ecology factors that affect healthy housing and apply them to solve problems	40 minutes	Group and brain storming
	Enabling objective 4: Explain common approaches to promote hygiene and sanitation	30 minutes	Brainstorm
	Unit 4: Solid and liquid waste management • Unit description • Main objectives • Specific objectives	5 Minutes	Brainstorming and PPT
	Session 1: understand solid and liquid waste , its management and their public health importance • Primary objectives • Enabling objectives	5 Minutes	Brainstorming and PPT
	Enabling objective 1: Understand the Definition of solid and liquid waste and their management	30 minutes	Brainstorm
		30 Minutes	Group discussion
	Enabling objective 2: Describe public health importance of proper solid and liquid waste	50 minutes	Group work using a case study

Day 4	**Session 2**: Sources of Solid waste and its management approaches and processes • Primary objectives • Enabling objectives	5 Minutes	Brainstorming and PPT
	Enabling objective 1: Describe the sources of solid waste and its management process	30 minutes	Group Discussion
		30 minutes	Brainstorming
		30 Minutes	Card sort
	Enabling objective 2: Describe Solid waste management approaches and processes	40 minutes	Group discussion
		80 minutes	Group work using Case study
	Session 3: Sources of liquid waste and its management • Primary objectives • Enabling objectives	5 Minutes	Brainstorming and PPT
	Enabling objective 1: Describe the sources of liquid waste and its management	30 minutes	Group discussion
		30 minutes	Brainstorming
		30 minutes	VIPP card exercise
	Enabling objective 2: Methods of liquid waste disposal	40 minutes	Group work using a case scenario
	Session 4: Understand urban WASH sector actors coordination mechanism • Primary objectives • Enabling objectives	5 Minutes	Brainstorming and PPT
	Enabling objective 1*: Describe major urban sanitation and waste management service providers*	40 minutes	**Group work**
	Enabling objective 2: Explain the required institutional arrangement for better sectorial integration	30 minutes	Brainstorming

UNIT 1: LATRINE CONSTRUCTION, UTILIZATION, MANAGEMENT, AND TECHNOLOGY OPTIONS

Unit description: As indicated in the revised urban health extension program (UHEP) implementation manual, UHE-ps counsel clients in areas where the UHEP is implemented on how to construct and/or improve the quality of their latrine. This unit will provide basic knowledge, skills, and attitudes for UHE-ps in latrine construction, uses, operation, management, and technology options to fulfill the needs and capacity of their client. It will also give them practical experience in their daily and follow up activities. Additionally, the participants will discuss barriers (social ecology) they encounter at various stages of latrine construction.

Unit major objective: Understand and demonstrate proper latrine construction, utilization and management approaches and technology options in urban setup.

Unit specific objectives: By the end of this training unit the participant will be equipped with the required knowledge, skill and attitude to:

- Explain proper latrine construction and factors taken into consideration during latrine construction
- Explain proper latrine management and promote community actions to condemn open field defecation.
- Identify latrines technology options that can be applicable in urban areas of Ethiopia and sanitation ladder.

Time: 670 minutes

SESSION 1: LATRINE CONSTRUCTION AND FACTORS THAT NEEDS TO BE CONSIDERED FOR LATRINE CONSTRUCTION.

Primary objective: By the end of this training session, participants will have the required knowledge, skills, and attitudes to understand and demonstrate proper latrine construction and describe factors that need to be taken into consideration from latrine site selection to construction.

Enabling objective of the session: By the end of this session, the participants will be able to;

- Describe the main features and requirements of properly designed/constructed latrine.

- ☛ Describe proper latrine construction and factors that needs to be considered during site selection and construction of a latrine. .

Time: 120 minutes

Enabling objective 1: Describe the main features and requirements of properly designed/constructed latrine

Activity: Brainstorming: 30 minutes

Step 1: Ask participants to form groups of 2–3 people set together and discuss. Each group will discuss ideas and experiences and note responses a flipchart:

- What are latrine design and construction defects?
- What are the roles and responsibilities of UHE-ps in latrine construction of the households in the community?
- What factors do you consider during site selection design and construction of latrines in your working areas? Why?

Summarize the discussion by asking the following questions and reviewing what is indicated in the UHE-p resources guide.

- What criteria do you consider during site selection design and construction of latrines in your locality?
- As a UHE-p, how do you help communities in addressing water, sanitation, and hygiene (WASH) services need by integrating different service providers at different level? Use social ecology model to analyze the situation
- Compare what is stated on the flipchart to your previous experience. What have you learned?

Enabling objective 2: Describe factors that need to be considered during latrine site selection and construction

Activity: Case study 80 minutes

Split participants into three groups. Ask each to pick a note taker and timekeeper. Each group will discuss the case study and questions for 40 minutes and come write notes on the flipchart.

Each group has 10 minutes to present the outcome of its discussion using flipcharts. Conduct general discussion by presenting issues indicated in the facilitator tip.

Case study

Sr. Abeba is a UHE-p working in Addis Ababa city administration. In the woreda where she works, many residents built their informal homes more than seven years ago. Most of the households didn't have private latrines, so people practice open defection in nearby green areas. Sr. Abeba counseled her clients repeatedly to construct a clean and safe latrine and for all family member to use it at all times. Although he didn't get official approval to construct his own latrine, a man named Dagmawi decided to construct a latrine and asked Sr. Abeba for technical support on:

a) Minimum distance of the latrine from his hand dug well that his family uses for domestic use (main house and kitchen).

b) Depth/size of the pit: Dagmawi had five families and wanted a latrine that would serve them all for at least five years.

c) Safety issues during construction

Facilitator tip: requirements and factors to consider during latrine site selection and construction

If a latrine is a dry on-site type—such as traditional pit latrines—it should be in the back yard of the house and away from an alley in the compound. It should not be nearer than 6m or farther than 50m from the main house. The direction of the wind should be away from the main house. If there is a well in the compound, the latrine should be located as far away as possible and on the uphill side to avoid seeping and groundwater contamination. Fecal microorganisms may migrate from the pit through the soil, but the extent to which this happens varies with soil type, moisture levels, and other environmental factors. It is therefore difficult to estimate the necessary distance between a pit and a water source, but 30–50m is recommended, with an absolute minimum of 15 m.

For safety and to reduce the risk of collapse, the shape of the pit should be conical. There are different factors that affect the size of the pit: number of people using it, fecal sludge accumulation rate and design period i.e., length of time before it is full.

Typically, the pit should be at least 3m deep for a family of five for a design period of 3–5 years. The diameter should be at least 1m; up to 1.2 m diameter will make it easier to dig but if it exceeds 1.5 m there is an increased risk of collapse, especially in sandy soils.

End of the box

SESSION 2: LATRINE UTILIZATION

Primary objective: By the end of this training session, participants will be able to explain proper latrine use.

Total time: 200 minutes

Enabling objective 1: Promote proper utilization of latrines for all family members

Activity: Group work- 60 minutes

Step 1: The facilitators write the words/phrases indicated in the boxes below for the visualization in participatory program (VIPP) card (one term each card).

Step 2: Ask the participants to form three groups.

Step 3: Prepare the following sentences on paper and post them on the wall:

1. Reasons that urban residents construct and use latrines
2. Reasons that urban resident don't use construct or use latrines
3. Misconceptions on latrine construction and use

Step 4: Distribute the VIPP cards to the groups.

Step 5: Each participate will read the word or statement (in three colored boxes below) indicated on the card and post to the category indicated above (1–3) that s/he thinks is best (other group members need to discuss and agree)

Step 6: Each group need to post their agreed points on the wall

Step 7: Participants will 'do gallery walk' and discuss other groups' decisions.

Step 8: Facilitators summarize.

1. Reasons why urban residents construct and use latrines

Health benefits

Increased school enrollment for girls

Security for women

Convenience, safety

Social prestige

Dignity

Economic benefits

2. Reasons that urban resident don't construct or use latrines

Lack space	Smells and attracts flies	High initial cost	Poor knowledge
Fear of collapse due to termites, flooding, or loose soil, posing dangers to users		Live in a rented house	
Need for frequent maintenance		Low priority	

3. Misconceptions that affect the latrine use

Don't consider children's feces to be a potential health hazard/children's latrine use unimportant.	
Discouraging household members from night use because of fear that 'evil' or 'devils' inhabit the latrine during that time.	
Urban residents are more aware than rural of effects of poor sanitation facilities and improper latrine use.	
Most urban residents use quality latrines	Evil things may follow if mother who gave birth goes out to use latrine

Enabling objective 2: Identify community action to condemn open defecation

Activity: Group work - 60 minutes

Step 1: Split participants into three groups.

Step 2: Advise each group to have a leader, note taker, and time keeper.

Step 3: Each group will discuss questions indicated for its group for 30 minutes then present to the larger group within 10 minutes.

Step 4: Post the words/statements in three above boxes above using cards or power point for all to see.

Group 1 will discuss reasons why urban residents construct, use, and maintain their latrines

- Based on your experience and the suggestions on the cards (they may cite reasons not on the cards), what are the major reasons that communities and households construct, use, and maintain latrines in your area? Why?

- What's been your experience with using these reasons to promote proper latrine construction, use, and management when counseling community members using family health cards, WASH job aids, and other behavior change communication (BCC) materials?

- Do you think these reasons are effective for mobilizing collective actions? Why

Group 2 will discuss reasons that urban residents don't construct or use latrines

- Based on your experience and the suggestions on the cards (they may cite reasons not on the cards) what are the major reasons that communities and households doesn't construct, use, or maintain latrines in your area? Why?

- As a UHE-p, what is your experience with using these reasons when you counsel community members using family health cards, WASH job aids, and other BCC materials?

- As clearly indicated, some reasons are outside the health sector mandate and need the involvement from other sectors, what is your experience in coordinating these actors such as government concerned bodies, community-based organizations and communities for collective actions? How?

- What are the key messages you would like to convey for community members on constructing, utilizing the latrine regularly at all times and by all family members, properly maintain their latrine?

Group 3 will discuss prevailing community misconceptions that prevent or undermine latrine use

- Which misconceptions indicated in the cards (they may cite reasons not on the cards) affect community and households latrine use in your area? Why?

- What is your experience with dispelling these misconceptions when you counsel community members using family health cards and other BCC materials?

Group presentation

Step 1: Ask each group to present its discussion using a flipchart.

Step 2:After each group's presentation, other group members can comment and ask question (10 minutes each/total of 30 minutes)

Step 3:After all the presentation the facilitator will lead general discussion on the major points and end by asking participants what they have learned.

Step 5: Summarize this activity based on the major issues identified during the group work. Compare/ correct with what is indicated in the UHE-p resource under this topic.

Facilitator tips: Facts that illustrate the need for latrine construction and use (HEAT Module Part 1)

- It is reported that up to 60% of the current disease burden in Ethiopia is attributable to poor latrine conditions. 15% of the total deaths are from diarrhea, mostly among the large population of children under five.
- Fecal contamination at the household level is thought to account for 30% of the disease burden in developing countries.
- It is estimated that an average child in a developing country without the benefit of sanitized environment will suffer 10 attacks of severe diarrhea before the age of five and 1 in 10 will die as direct result.

Enabling objective 3: Understand proper way to handle and dispose children's feces

Activity: Case study/role play -60 minutes

Case study

Imagine that you are working with the mother of a one-year-old child. She believes that children's feces are not a potential health hazard and does not worry about the proper disposal of child feces nor think that children should use the latrine.

Step 1: Instruct the trainees in a role play. One will be the UHE-p who is educating and counseling people on hygiene; another will represent the mother; the rest community members.

Step 2: After the role play, use these questions to have a discussion.

For person representing UHE-p:

- What did you do well in the role play?
- What useful attitudes did convey?
- If you had a chance to do the role play again, what you will do differently? Why?

For person representing the mother:

- As a mother, how useful was the information the UHE-p presented?
- How effectively did they use terminologies? Was it simple enough for you?

- What could the UHE-p to do differently to better help you?

For role play community members:

- How did the UHE-p manage the situation and answer questions?
- If you were in the UHE-p role, what would you do to help the community to overcome misconceptions about child feces management?
- Which helpful or hindering attitudes did the UHE-p convey?

Finally, ask the person who played the role of UHE-p:

- What feedback was helpful and how would it change your approach in real-life work situations?

SESSION 3: LATRINE OPERATION AND MANAGEMENT

Primary objective: By the end of this training session, the participants will have knowledge, skills, and attitudes to promote latrine operation and maintenance.

Time: 180 minutes

Enabling objective 1: Explain the operation and management of private and shared latrines available in urban areas

Activity: Case study/role play- 70 minutes

Case study

Imagine a situation in which you are promoting the proper management of a four-room communal latrine shared by 16 households in a slum area. The latrine was constructed by an NGO and handed to the user community seven years ago. Since then, it hasn't been emptied; now it is full and its contents flow through the area. The community is complaining of upper respiratory problems from the odor coming from the latrine; their children are frequently affected by diarrhea, they are ashamed when people come to visit because open defection is practiced near the compound wall. These people are very poor, living in kebele administration houses and some in a rented house. Though the UHE-p assigned to the kebele repeatedly visited provided hygiene education and counseling services, the majority of the household heads would not commit to actions to improve latrine management.

Step 1: Use the case study for a role play. One participant will play a UHE-p doing a group hygiene education/counseling; the others will represent household heads.

Step 2: After the role play, use these questions to have a discussion.

For person representing UHE-p:

- What did you do well in the role play?
- What usuful attitudes did convey?
- If you had a chance to do the role play again, what you will do differently? Why?

For people representing household heads

- How did the UHE-p manage the situation and answer questions?
- If you were in the UHE-p role, what would you do to help the community overcome misconceptions about child feces management?
- Which helpful or hindering attitudes did the UHE-p convey?

Finally, ask the person who played the role of UHE-p:

- What feedback was helpful and how would it change your approach in real-life work situations?

Enabling objective 2: Explain how to operate and manage a latrine

Activity: Group work- 80 minutes

Step 1: Split participants into three groups. Ask each group to select a leader, note taker, and timekeeper.

Step 2: Each group will spend 40 minutes discussing the questions below and write agreed-upon answers on the flipchart:

- What are the existing practices and situations of latrine quality/ cleanliness, utilization, and maintenance in your locality?
- What is the proper way to clean a latrine?
- Do you think UHE-ps have concern about and responsibilities for latrine operation and management in homes and communities where they work? Why?
- What factors are considered when during cleaning and handling of latrines in your working areas? Why?

Step 4: Each group will have 10 minutes to present their answers to the larger group.

Step 5: Conduct general discussion

SESSION 4: LATRINE TECHNOLOGY OPTIONS

Primary objective: By the end of this session, participants will be have the knowledge, skills, and attitude about sanitation ladder and latrine technology options in urban contexts.

Total time: 170 minutes

Enabling objective 1: Describe sanitation ladder options on feces management to counsel households

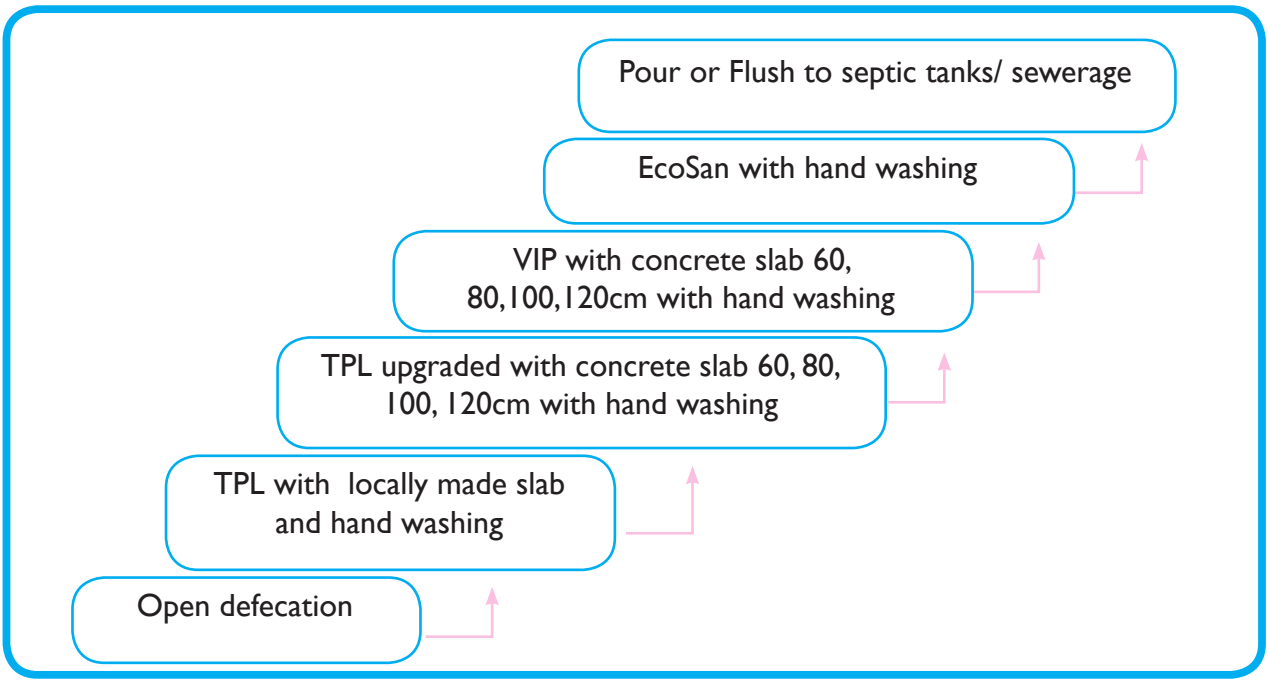
Activity: Group work/card sort – 60 minutes

Step 1: Ask participants to form three groups

Step 2: The facilitators write the words/phrases indicated in the below box on the VIPP card (one term on one card), and distribute a full set to each group. Make sure that participants understand the text on each card.

Step 3: Put the sanitation ladder on the flipchart and explain its sequence to the participants. Then ask the groups to discuss and place the VIPP cards in in the appropriate box on the sanitation ladder.

Step 4: Each group will explain the reasons for its placement choices in a group discussion.



Source: National Sanitation Strategic Action Plan, 2010

Ventilated improved pit latrine with concrete slab 60, 80, 100, 120cm with hand washing station

Traditional pit latrine (TPL) with locally made slab and hand washing

Open defecation

Pour or flush to septic tanks/sewer

TPL upgraded with concrete slab 60, 80, 100, 120cm with hand washing

EcoSan with hand washing

Enabling objective 2: Identify different latrine technology options available in urban areas

Activity: Gallery walk - 40 minutes

Step 1: Post list of latrine technology options (indicated below) latrine categories and advantages and disadvantages of each as applicable in urban areas of Ethiopia. Prepare the flipchart before the training.

Step 2: Make sure that the participants are aware on each type of latrine technology before asking them to walk around and talk about the flipchart contents.

Step 3: Conduct discussion using the following questions as a guide;

- From the lists indicated in the VIPP card, which latrines are categorized as improved and which are unimproved? Why?
- From the lists indicated in the card, which of them are used in the communities that you work in? Why?
- As UHE-ps, what are your roles and responsibilities for improving latrine quality?
- In your experience, what makes people resist adopting new technologies? How do you help people overcome their resistance and adopt new behaviors?

Latrine technology options applicable in urban context

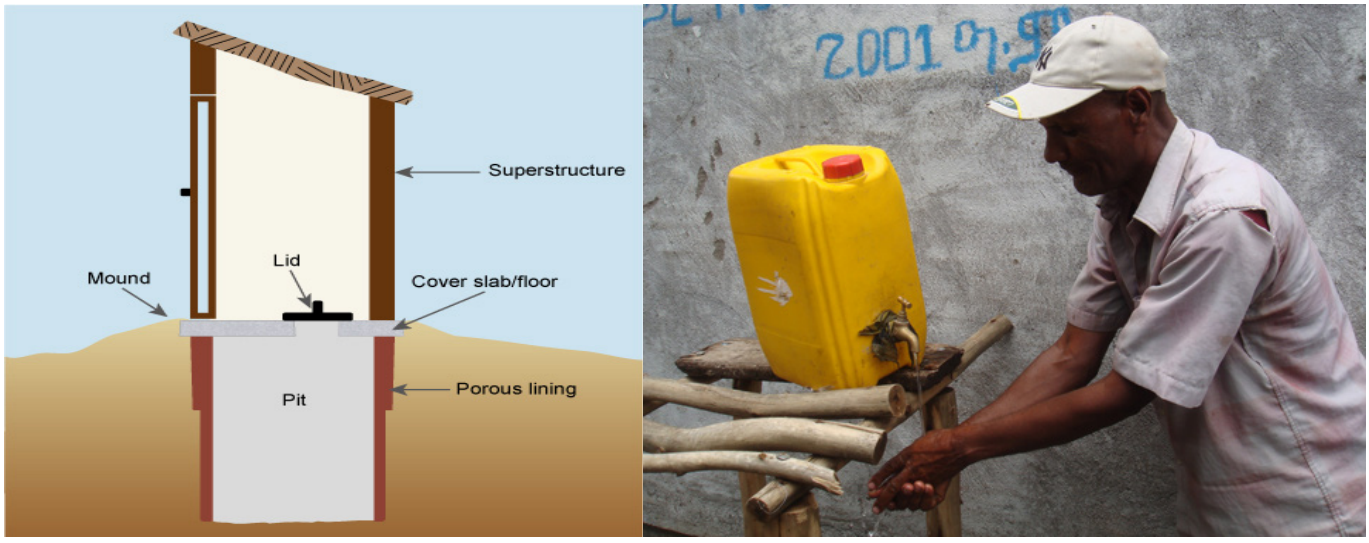
1. TPL
2. Improved traditional pit latrine (TPL with concrete slabs)
3. Biogas latrine
4. Composting latrine with twin alternating vault or Fossa Alterna
5. Aqua privy latrine
6. Low-cost pour/flush latrine
7. Ventilated improved pit latrine
8. Urine diversion ecological latrine

Tips for the facilitator

For a latrine to be classified as 'improved,' it should satisfy the following requirements:

- be safe to use (the pit may need to be lined)
- have a structurally sound and cleanable slab floor
- have hand washing facilities with soap
- not be contaminated with ground or surface water
- have a squat hole fitted with a lid so that excreta is not accessible to flies or other creatures
- be free from odors and unsightly conditions
- not require people to handle excreta

Major components of an improved pit latrine



Enabling objective 3: Briefly describe the key factors to consider when selecting a latrine technology option

Activity: Case study – 60 minutes

Case study

Ato Aschalew, a resident in the outskirts of your town, consults you about building a latrine in the compound of his house. He is an open-minded man who is keen to improve life for his family. He has a wife and three young children, and his elderly mother lives with them. He doesn't have a tap in his house and gets water from a nearby well. The area has heavy soil and the rock below is impermeable.

Step 1: Split participants into three groups.

Step 2: Advise each group to have a leader, note taker, and time keeper.

Step 3: Each group will discuss the case study and the following questions:

- Which types of latrine are available to him?
- Which would you recommend, and why?
- What advice would you give him on location, construction materials, cost, safety, accessibility, and user preferences?

Step 4: Each group will present to the larger group

Step 5: Conduct larger group discussion and summarize this activity

Activity: Field visit

Facilitator note
Training visits help turn theory into practice. On the fourth day of this module, participants will visit one improved and unimproved latrine.

Unit Assessment Sheet

Directions: Once you have completed this assessment sheet compare your answers with information from the presentations; the Hygiene and Environmental Health module parts 1 and 2; the Open WASH module; and other reference materials and make any necessary corrections. When all participants have completed this assignment, discuss each area.

Q1. Participants will match the following type of latrine with its definition on the table below: biogas latrine; cistern-flush latrine; EcoSan latrine; improved latrine; pour-flush latrine; urine-diverting latrine; VIPL latrine **(answers already provided for FG).**

urine-diverting latrine	a latrine that separates urine and feces
biogas latrine	a latrine that generates a fuel gas
improved latrine	a latrine where there is no contact between the user and the excreta
cistern-flush latrine	a toilet that relies on a water supply for operation
EcoSan latrine	a latrine that composts fecal matter
VIPL latrine	a modification of the simple pit latrine that solves the problems of odor and flies
pour-flush latrine	a latrine for which the user has to move excreta along using water

Q2. Galawdeyos and his family comprise seven people. They plan to build a new VIPL latrine with diameter of 1m in their back yard. Calculate the depth of pit required if they want it to last three years. Take the sludge accumulation rate to be 40 liters per person per year.

Answer for Q2

Depth of pit = $\frac{P \times S \times N}{A} \frac{P \times S \times N}{A}$ + 0.5 m

P = 7

S = 40 liters per person per year = 0.04 m^3 per person per year

N = 3 years

$A = \frac{\pi \times d^2}{4} \frac{\pi \times d^2}{4}$ or $\frac{3.142 \times 1^2}{4} \frac{3.142 \times 1^2}{4}$ = 0.79 m^2

Depth = $\frac{7 \times 0.04 \times 3}{0.79} \frac{7 \times 0.04 \times 37 \times 0.04 \times 3}{0.79}$ + 0.5 = 1.6 m

Q3. Which of the following statements are *false*? Explain.

A. For sustainability, it is best to use locally available materials and skills when constructing latrines.

B. The aim should always be to have water-carriage toilets such as a water closet.

C. Constructing a pit latrine with a mound ensures that any water drains away.

D. Raised footrests in latrines help use of the facility in darkness.

E. The cost of the latrine doesn't matter because good health from proper sanitation is priceless.

Answers for Q3

B is false. Water-flushed toilet systems should only be considered if a continuous supply of water is available.

E is false. Latrines need to be affordable for people to adopt them.

Session evaluation

- **Practical and continues assessment**; the facilitator may use continuous assessment based on the trainees' group performance during their presentation.
- **Pre- and post-training assessment**: the facilitator will use pre- and post-training assessment to evaluate the trainees' performance.

UNIT 2: FOOD HYGIENE AND SAFE WATER TREATMENT AND STORAGE

Unit description: This unit is designed to give participants competence to explain food hygiene, and water treatment and safe storage at urban household level.

Specific objective: by the end of this unit, the participants are expected to

Describe food hygiene in urban setup

Describe the way of safe water handling and treatment at the household level

Time allocated: 240 minutes

SESSION 1: FOOD HYGIENE

Primary objective: Give participants knowledge, skills, and attitudes needed to understand, explain, demonstrate, the pertinent features of food hygiene.

Enabling objectives: at the end of this session participants will be able to:

- Explain the principles of food hygiene and safety
- Describe the various types of diseases associated with food born
- Demonstrate food preservation methods and five keys for food safety and hygiene
- Demonstrate food utensils and equipment cleanness

Brian storming - 5 min

- Show slide and briefly explain the learning objectives of this session
- Start the session by a general brainstorming question:
    - What do you understand by food hygiene?
    - List the key points of the responses on the flipchart.

Enabling objective 1: Explain the principles of food hygiene and safety

Activity: brainstorm

Method Group discussion: (30 minutes)

The purpose of this group discussion is to help UHE-ps define food hygiene and understand its public health importance. Prepare yourself ahead by reading the already indicated questions and notes indicated in the resource part of this manual.

Step 1: Divide the participants into four groups. Instruct them to select a presenter and note taker. Give prepared questions to the group and ask them to discuss for 10 min.

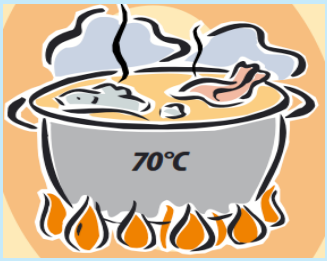
Step 2: Note taker will present their discussion using flipchart to the participants. (10 minutes group presentation). *See the discussion questions in the participant's guide.*

Step 3: Summarize the discussion (10 minutes) by asking the questions below. Your summary PPT must contain answers to the group discussion questions and those questions below.

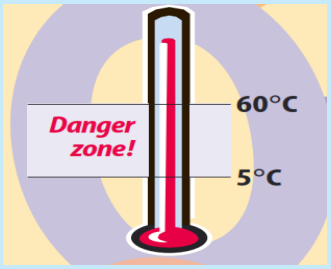
- What they you learned from the discussion?
- Do you think this will help you to improve your performance in future? How?
- Please highlight the most important issues indicated on the flipchart

Notes for the unit

Action	Keep clean	Why?
	• 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 area and food from insects, pests, and other animals.	While some microorganisms cannot cause diseases, dangerous microorganisms are widely found in soil, water, animals, and people. They are carried on hands, wiping cloths, and utensils, especially cutting boards and the slightest contact can transfer them to food and cause food-borne diseases
	**Separate raw and cooked**	**Why?**
	• Separate raw meat, poultry, and seafood from other foods. • Use separate equipment and utensils such as knifes and cutting boards for holding raw foods. • Store food in containers to avoid contact between raw and prepared foods.	Raw food, especially meat, poultry, and seafood and their juices can contain dangerous microorganisms which may be transferred onto other foods during food preparation and storage



Cook thoroughly	Why?
• Cook food thoroughly, especially meat, poultry, eggs and seafood. • Bring food like soups and stews to boil to make sure that they have reached 70 0c. For meat and poultry, make sure that juices are clear—not pink. • Reheat cooked food thoroughly.	Proper cooking kills almost all dangerous microorganisms. Studies have shown that cooking food to a temperature of 70°c can help ensure it is safe for consumption. Foods that require special attention include minced meats, rolled roasts, large joints of meat, and whole poultry



Keep food at safe temperature	Why?
• Do not leave cooked food at room temperature for more than 2 hours. • Refrigerator promptly all cooked and perishable food (preferably below 5oc) • Keep cooked food piping hot (more than 600C) prior to serving. • Do not store food too long even in the refrigerator. • Do not thaw frozen food at room temperature.	Microorganisms can multiply very quickly if food is stored at room temperature. By holding at room temperature below 5^{0}c or above 60°c, the growth of microorganisms is slowed down or stopped. Some dangerous microorganisms still grow below 5°c.

Use safe water and raw materials	Why?
• Use safe/treated water. • 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 after its expiry date.	Raw materials including water and ice may be contaminated with dangerous microorganisms and chemicals. Toxic chemicals may be formed in damaged and moldy foods. Care in selection of raw materials and simple measures such as washing and peeling may reduce the risk

Food hygiene is a subject of wide scope. It aims to study methods for the production, preparation, and presentation of foods that are safe and of good keeping quality. It covers not only the proper handling of many varieties of foodstuff and drink but also all the utensils and apparatus used in their preparation, service, and consumption.

The public health importance of food hygiene

Food-borne disease, infection, poisoning, toxic infection, chemical poisoning, adulteration, misbranding, and food spoilage are among the result of contaminated food consumption.

What are principles of food hygiene and safety?

Principles of safe food preparation

- Choose foods that are not easily damaged by transportation, accidents, or storage.
- Cook foods thoroughly, especially milk and meat because this will help kill any microorganisms that might be present in the food.
- Meat is nutritious but can become unsafe if not handled properly.
- Eat foods immediately after they are cooked—don't leave them out and eat later. Delays in eating cooked food can lead to the growth and reproduction of microorganisms in the food.
- Store cooked food carefully at an appropriate temperature. It should either be kept cold, ideally in a refrigerator, or hot. If food must be reheated, be sure to reheat it thoroughly.
- Avoid contact between raw and cooked food.
- Wash hands properly before handling food and eating. Keep all kitchen surfaces and utensils meticulously clean.
- Protect food from insects, rodents, and other animals. Use safe water in food preparation and for washing fruits and vegetables to be eaten raw.

- Cloths that come into contact with dishes and utensils, and that are used to cover food, need to be changed daily and boiled before use.
- All dishes, glasses and utensils must be kept clean by regular washing in clean water, and clean utensils should be kept covered.

General principles of food protection

Food protection and food preservation are intended to prevent contamination and spoilage of foods. Food protection measures are taken to protect food from being contaminated by any agent. All food must be protected at all times during storage and preparation from the following contaminants:

- Any water that is not known to be safe, including overhead leaks and drips
- Dirty hands, dust, and soot
- Coughing, sneezing, and cigarette smoke.
- Flies, rodents, and other vermin
- Insecticides and other chemicals (which should be clearly labeled) and
- Unclean utensils and work surfaces

Enabling objective 2: Describe the various types of diseases associated with food

Activity: Group discussion and case study- 45 minutes

Step 1: Divide participants into two groups

Step 2: Ask each to select a reporter and time keeper

Step 3: Participants will read and analyze this case study individually. When the others in their group have finished reading it, they will start discussion.

Step 4: Each group will discuss the case study for 10 minutes and present to the larger group in 2 minutes.

Step 5: Show PPT slide and discuss food-borne diseases, transmission and prevention methods. The PPT must contain the case studies summary and answers to questions.

Case study 1: You are asked by a school head teacher to explain to food contamination by microorganism to students.

- ☛ Write a plan of what you will tell them, including explaining the conditions in which microorganism grow and multiply.
- ☛ How microorganisms are going to contaminate the food?

Case study 2: Suppose you visited a home and found complaints of food-borne illness among household members.

Questions

- ☛ What problems related to the food contamination might you see?
- ☛ Identify the possible source of household food contamination.

(base this on the discussion and information from the previous activity, and show them how to conceptualize the different prevention methods)

Types of food-borne diseases

Pathogens can cause different types of food-borne illness. Once a contaminated food is eaten, illness can be caused by the pathogens themselves (**food-borne infection**); toxins produced in the food by pathogens (**food-borne intoxication**); or toxins produced in the body by pathogens (**food-borne toxin-mediated infection**).

Causes of food-borne illness

The causes of food-borne illness fall into the following categories:

- Biological hazards include bacteria, viruses, and parasites. Bacteria and viruses are responsible for most food-borne illnesses. Biological hazards are the biggest threat to food safety. They may be inherent in the product or due to mishandling (e.g. time/temperature abuse).
- Chemical hazards include natural toxins and chemical contaminants. Some natural toxins are associated with the food itself (i.e., certain mushrooms,); some are made by pathogens in the food when it is time/temperature abused (i.e., histamine development in certain seafood species). Some additives, such as sulfites, can be a hazard to certain individuals. Chemical contamination can also occur when products, such as cleaners and sanitizers, are not used correctly.
- Food allergens are also a chemical hazard. Some people are sensitive to proteins in foods. Every food is different. Regulatory authorities have identified eight food allergens that cause 90% of allergic reactions. These are milk, eggs, fish, crustacean shellfish (lobster, crab, shrimp), wheat, soy, peanuts, and tree nuts.

Physical hazards include metal shavings from cans, wires from a grill bristle, and plastic pieces or broken glass from packaging.

Bacterial infections. Many common diarrheal diseases are caused by bacterial infections transmitted by ingestion of contaminated food and water. Some bacterial diseases such as anthrax, bovine tuberculosis, and brucellosis are particularly related to foods of animal origin.

Viral infections. Several viruses may be transmitted by contaminated food via the fecal-oral route. Food-borne viral infections usually have an incubation period of between one and three days.

Tapeworms are one of the most common causes of food-borne parasitic diseases in Ethiopia.

Immature forms of the tapeworm develop in the muscles of animals that have eaten tapeworm eggs while grazing on infected grass.

Bacterial food poisoning

> **Staphylococcal.** Staphylococcal food poisoning is caused by one of the many species of staphylococcal bacteria. It is the most common and major type of food poisoning.

- This type of food poisoning can result from the preparation of food more than half a day in advance of need; storage at room temperature; inadequate cooling; or inadequate reheating.
- It begins with symptoms such as nausea, vomiting, stomach cramping, and diarrhea. These can persist for days and lead to dehydration, loss of electrolytes, and even death if not treated promptly.
- Control measures are promoting and monitoring the personal hygiene of food handlers, safe and hygienic conditions in food preparation areas, and keeping cooked or processed foods covered and cool until consumed.

> **Botulism** is caused by clostridium botulinum. It occurs in poorly canned foods, including home-canned foods, and honey. It is not advisable to eat food from deformed or bulging cans or to give honey to young children.

Two main types of chemical food poisoning: pesticides and chemical products

Pesticides. Common sources of chemical contamination of foods are pesticides including insecticides, herbicides, and rodenticides, and detergents and their containers. When these products find their way into food they can cause poisoning. There are many cases of intentional chemical poisoning in Ethiopia when people drink these chemicals to commit suicide.

Heavy metals. Metals cause poisoning when foods are stored in faulty or damaged containers made of materials like tin, lead, copper, and zinc.

Prevention of food-borne illness

Follow these four simple steps to keep food safe:

1. **CLEAN.** Wash hands and food contact surfaces and utensils often, between tasks, and if they have become contaminated. Effective cleaning involves removing soil and debris, scrubbing with hot soapy water and rinsing, and using potable/drinking water. Sanitizing involves the use of high heat (e.g., a dishwasher) or chemicals (e.g., chlorine bleach) to eliminate reduce or the number of microorganisms or germs to a safe level.
2. **SEPARATE** to prevent cross contamination. Cross contamination is the transfer of harmful bacteria from uncooked food products (e.g., raw meat, fish, poultry) or unclean people, countertops, and kitchen equipment to ready-to-eat foods (e.g., fruits, vegetables, prepared foods).
3. **COOK** foods thoroughly and if possible use a thermometer to verify the proper temperature is reached.
4. **CHILL** cool foods promptly. Cold temperatures slow the growth of harmful bacteria. Cold air must circulate to help keep food safe, so do not over-fill the refrigerator.

Enabling objective 3: Explain food preservation methods and five features of food safety and hygiene.

Activity: Group discussion and agree/disagree- **45 minutes**

Step 1: Divide the participants into four groups. Instruct them to select a presenter and note taker and discuss the question listed below.

- What is food preservation and what are methods of food preservation?
- Explain best experience of food preservation methods in your area and why?
- What are the challenges of food preservation in urban households? What should UHE-ps do when an individual household does not practice proper preservation?

Step 2: The facilitator will forward the pre-prepared questions to the group and the group members will share their ideas and experiences on the stated questions.

Step 3: Explain each group should assign group leader and presenter /note taker/ before the discussion.

Step 4: Summarize the discussion by reviewing the five keys for safer food chart and ask *[the summary PPT must contain answers for group discussion questions as well as answers for those questions listed below]. Ask the group:*

- What they learned from the discussion.
- Do you think this will help you to improve your performance in future? How?

Agree/disagree 15 minutes

Step 1: Conduct an agree/disagree discussion to assess participant learning**.** As always in agree/disagree discussions, the point is not to establish right or wrong; no one will be judged or challenged on his/her views. Ask

Step 3 The facilitator will ask questions for clarification and to enable discussion.

The **Agree/disagree question** a**re below**

1. It is essential that all food handlers are aware of the need for good personal hygiene to protect the food from contamination and prevent disease
2. Food preservation methods are used to keep foods safe for extended periods of time.
3. Recommended methods for safe food preservation are aimed at preventing contamination, reducing microbial number, preventing microbial growth and delaying self-decomposition
4. There are many different methods of food preservation that can be used for different foods
5. Salting and sugaring are chemical methods of food preservation that rely on soaking food in a weak solution of salt or sugar
6. Canned foods can be eaten if the can is swollen and bulging
7. Single method is not a reliable method of food preservation unless combined with some other method.
8. When we preserving food, the food losing its nutritional quality

Step 4: Ask participants to think and reflect for 2 minutes with their nearby participant on the most important lesson they got from the activity, the major issues raised during the discussion and agree/disagree part of the exercise [the summary PPT must contain answers for agree/disagree questions]

Food preservation

Food preservation involves a variety of techniques that allow food to be kept for extended periods of time without losing nutritional quality and avoiding the growth of unwanted microorganisms.

Three basic objectives for the preservation of food:

- Prevention of contamination of food from damaging agents.
- Delay or prevent growth of microorganisms in the food.
- Delay of enzymatic spoilage, i.e., self-decomposition of the food by naturally occurring enzymes within it.

What are the most common methods of food preservation?

> Heat treatment - cooking, canning, bottling sterilizing, pasteurizing, and ultra heat treatment
> Low temperature - freezing and refrigeration
> Drying (dehydrating) - fish, meat, fruit, vegetables, soup
> Chemical preservation - curing, salting, pickling
> Vacuum sealing/packing - meat, fish, poultry
> Smoking - fish, meat, cheese
> Irradiation - herbs and spices

Enabling objective 4: Demonstrate food utensils and equipment cleanness

Steps for demonstration Time- 45 minutes

Step 1: Arrange Materials:

- three vats or bowls, each with a capacity of 20–30 liters
- Washing equipment such as detergent (powdered soap) and a scraping cloth, sponge, or cleaning brush

Step 2: Ask a volunteer to show the three bowl system for washing soiled dishes:

Step 3: The facilitators use the "hot potato" game, summarize the session with the participants by for-

warding the following questions

- ☛ Describe proper dish washing processes.
- ☛ Explain why it is important to keep utensils and work surfaces clean in food preparation
- ☛ Personal hygiene required for food handlers to prepare food safely.
- ☛ Summarize the key points by demonstrating the proper dish washing and referring to participant manual.

Food preparation facilities must have rules and systems to follow them to:

- Ensure appropriate maintenance, cleaning, and sanitizing of facilities and equipment
- Control pests
- Remove waste
- Monitor and record the effectiveness of maintenance and sanitizing procedures
- Prevent disease-causing organisms from contaminating food and water

The importance of promoting good food handlers' hygiene is to:

- prevent food contamination and spread of disease.
- ensure the good health of people eating the food.
- protect the health of the food handler.

Hand washing is important to maintain personal cleanliness and hygiene, especially for food handlers who are likely to transmit bacteria or harmful microbes onto food, food contact surfaces, and equipment if their hands are contaminated. Provision of adequate hand washing facilities is crucial to the prevention of food contamination and spread of food-borne diseases.

Proper dish washing process

Cleaning and sanitizing equipment and utensils should be separate processes. A surface must be thoroughly cleaned before it is sanitized.

1) Cleaning

Cleaning is a process for removal of contaminants such as food residue, dirt, grease, and bacterial film from a surface. It is achieved by the use of water and proper detergent and the following steps.

- ➢ Pre-scrape utensils and surfaces and rinse with clean water to remove most of the food residues, dirt, and debris.

- Wash with warm water and detergent by agitation to loosen the remaining food residue and dirt.
- Rinse with clean water to remove the loosened food and detergent residues.

2) Sanitizing
After cleaning, sanitize food contact surfaces of equipment and utensils by:

- immersion in boiling water for at least one minute inside a sterilizer; or
- immersion in a non-toxic solution containing a approved bactericidal agent at a temperature of not less than 24°C for at least one minute; or
- washed in an approved mechanical dishwasher.

3) Drying
All cleaned and sanitized equipment and utensils should be thoroughly air dried.
4) Storage
Store cleaned and sanitized equipment in a cupboard that is protected from dust and pests.

SESSION 2: HOUSEHOLD WATER TREATMENT AND SAFE STORAGE

Primary objective: Teach participants to explain and demonstrate household water treatment and safe storage.

Enabling objectives: at the end of this session participants will be able to:

- Describe sources of drinking water contamination
- Explain water-borne diseases and prevention methods
- Demonstrate household water treatment methods and safe storage and use of treated water
- Activity: Brainstorm-5 min
- Show slide and explain the learning objectives of this session
- Ask participants
  - What do you understand by household water treatment and safe storage?
  - List the key points of the responses on the flipchart.

Enabling objective 1: Describe sources of drinking water contamination

Activity: **Gallery walk-30 minutes**

Step 1: Give each participant three VIPP cards and five minutes to write potential sources of water contaminates on it.

Step 2: Ask each individual to read what s/he wrote on the card aloud and post it on the wall. Post cards with similar answers together. After all participants have posted their cards, ask them to talk with other trainees about any other ideas that were not mentioned.

Step 3: Summarize the key points by referring to the sources of drinking water contaminants listed below (10 min) *[the summary PPT must provide answers for brainstorm questions]*

Typical sources of drinking water contamination

All water contaminants fall into the categories of point and diffuse sources. Discharge from industrial areas and sewage treatment works are point sources and as such are more readily identifiable and controlled. Run off from agricultural land and hard surfaces, such as roads, are not so obvious or easily controlled. There is also the possibility of spills of chemicals from industry and agriculture, and slurries from intensive farm units that can contain pathogens. In some countries, poorly situated latrines and septic tanks are a significant source of contamination, especially of wells. Local industries can also increase contamination of water sources, particularly when chemicals are handled and disposed without proper care. The run-off or leaching of nutrients into slow-flowing or still surface waters can result in excessive growth of cyanobacteria or blue-green algae.[1]

There are several variants of the fecal-oral pathway of waterborne disease transmission. These include contamination of drinking-water catchment areas (by human and animal feces) and sources (through inadequate disposal of human or animal excreta, or domestic or industrial waste). Transmission can also result from contamination in the distribution system (through "leaky" pipes, obsolete infrastructure, and inadequate treatment and storage) and unhygienic handling of stored household water.

Millions of people are exposed to unsafe concentrations of chemical contaminants in their drinking-water. This contamination may be linked to naturally occurring inorganic chemicals such as arsenic and fluoride, which cause cancer and tooth and/or skeletal damage, respectively. Alternately, it may be linked to a lack of proper management of urban and industrial wastewater or agricultural runoff water, with potentially long-term exposure to pollutants, resulting in a range of serious health implications.

Potential pollution sources that threaten drinking water are open-field defecation, animal waste, plants, economic activities (agricultural, industrial, and business) and even waste from residential areas as well as transportation systems. Any water source, especially older water supply systems, hand-dug wells; spring-fed systems (including treatment plants, reservoirs, pressure breaks, pipe networks, and delivery points) are vulnerable to such contamination. Systems with casings or caps that are not water-tight are most vulnerable.

Enabling objective 2: Explain water-borne diseases and prevention methods (20 min).
Activity: Brainstorm- 20 minutes

Step 1: Put people in pairs and ask them to discuss water-borne diseases, how they are transmit and prevention methods (5 minutes).

Step 2: Ask 4–5 people from the different corners of the room to summarize what they discussed and write it on a flipchart. Ask the entire group if there is anything was left out.

Step 3: Summarize the key points by referring to water-borne diseases list below). *[The summary PPT must provide answers for brainstorm questions]*

Water-associated disease is related to water supply and sanitation. There are four categories.

1. Water-borne disease

Several human enteric infections and intestinal diseases are transmitted through water contamination by fecal matter. Pathogens excreted in water by an infected person include all major categories such as bacteria, viruses, protozoa, and parasitic worms. Water acts as a passive vehicle for the infectious agent. The following table shows examples of waterborne diseases.

Type	Organism
Bacteria	Typhoid and paratyphoid fever Cholera Diarrheas (caused by salmonella, yersinia entrocolitica, E.coli) Campylobacter dysentery Bacillary dysentery (caused by shigella)
Virus	Hepatitis A Poliomyelitis Viral gastroenteritis
Protozoa	Amoebic dysentery Giardia (lambliasis) Balantidiasis
Helminthes	Helminthiasis caused by ascaris and Trichinas

Water-washed diseases

These diseases are linked to a lack of water for personal hygiene. Examples are:
Dermatological disease such as scabies
Ophthalmic disease such as trachoma and conjunctivitis
Louse-borne disease such as typhus and relapsing fever. Lack of good personal hygiene and inability to wash clothes encourages the proliferation of lice and the problems associated with their presence (itching, scratching, skin sores).

Water-based diseases

These are caused by infectious agents that are spread by contact with water. The essential part of the life cycle of the infecting agent takes place in an aquatic animal. A number of diseases depend upon the pathogenic organisms spending part of their life cycle in water or in an intermediate host that lives in water. Thus, infection of humans cannot occur by immediate ingestion of, or contact with, the organism excreted by sufferers. Many diseases in this class are caused by worms that which infest the sufferer and produce eggs that are then discharged in feces or urine. Typical examples are schistosomiasis and dracunculiasis (guinea worm).

Water-related diseases

These are transmitted by mosquitoes, flies, and other insects that breed in or near water.
The four mechanisms of water-associated diseases and preventive strategies

Water-associated diseases	Examples	Agent	Preventive strategies
1. Water-borne (fecal –oral) a) Low infectious dose b) High infectious dose	Typhoid, cholera, bacillary dysentery	A A	Improve water quality Prevent usual use of other contaminated source Health education
2. Water-washed a) Skin and eye b) Other	Scabies, trachoma, louse-borne fever	F E	Improve water quantity Improve water access Health education
3. Water-based a) Penetrating skin b) Ingested	Schistosomiasis guinea worms	D D	Decrease need for untreated water contact Control snail population Improve quality of water Filter out Cyclops Health education
4. Water-related a) Biting near water b) Breeding in water	Sleeping sickness, Malaria	C C	Proper site selection of house Use personal protection materials Destroy breeding sites of insects Decrease need to visit breeding site Health education

Key: A – Bacterial; B– Virus; C– Protozoa; D – Helminthes; E – Spirochetes; F– Other agent.

How are water-borne diseases transmitted?

Most people get infected when the contaminated material enters their mouth. Other possible modes of transmission are:

Dirty/contaminated hands, clothes, cooking vessels, etc.

Uncovered food and drinking water

Contaminated water

Flies, other insects.

Prevention method

At home:

Boil/filter or disinfect water using approved disinfectant to ensure that water used is free from micro-organisms

Always clean water storage materials

Use narrow-necked storage materials

Always cover containers used for storing of water

Adequate and clean water supplies

Improve the quality of drinking water at source, tap, and storage vessels

Increase the quantity of water available

Proper waste disposal

Dispose organic and animal waste properly to avoid flies

Proper disposal of human feces will reduce the number of cases of water-borne illnesses

Enabling objective 3: Demonstrate household water treatment methods and safe storage and use of treated water

Activity: Agree/disagree and case study—25 minutes

Step 1: Conduct an agree/disagree discussion to assess participant learning. As always in agree/disagree

discussions, the point is not to establish right or wrong; no one will be judged or challenged on his/her views.

Step 2 The facilitator will only ask questions for clarification and to enable discussion:

Agree/disagree question

1. Community health depends on clean water.
2. Can access to clean water reduce diarrhea and waterborne diseases? If yes, why?
3. Provision of safe water improves the lives of infants and children.
4. How do you monitor water use in the home and ensure that household practices do not allow recontamination?
5. Should water be kept water in a narrow-necked container? If yes, why?
6. Whatever type of treatment method is used, why it is essential that water is stored safely and hygienically?
7. Could disease outbreak occur because of contamination at some point after collection from the source? If yes, how?
8. If water has come from an improved source, is its safety guaranteed? Can contamination occur in the household due to poor storage and handling practices?
9. Safe storage is designed to eliminate sources of recontamination by keeping objects, including hands, out of the system. Why?
10. Cups used to withdraw water should not be used for any other purpose and should be regularly cleaned and kept where they cannot be easily contaminated. Why?

Step 4: Summarize this activity by forwarding the major issues raised during the discussion and agree/disagree part of the exercise *[the summary PPT must contain answers for agree/disagree questions]*

Activity: Group work using case studies - 35 minutes

Split participants in three small groups and instruct each to select a reporter and time keeper. Give each group one of the case studies below and instruct each person to read and analyze it individually. When all group members have finished reading it, they will have 10 minutes to discuss the questions and 2 minutes to present to the others.

Case study 1: Suppose you went to kebele to promote household water treatment. W/ro. Abebech, a kebele resident asks why she needs to treat the water for drinking. Her family obtains water from a

protected source and has been treated with chlorine. She thinks that it is safe to drink. How would you explain the need for household water treatment?

Case study 2: Suppose you have a group of women in your area who want to know about household water treatment by chlorine solution, particularly 'Wuha Agar.' What key points would you make and how would you explain and demonstrate them?

Case study 3: Suppose inhabitants of a village obtain water from a pipe. They want to know about safe water storage. What household safe water storage advice would you give? What are the potential sources of contamination of the water in the household? What would you recommended the families to store the water safely?

Summarize by comparing the key issues identified during the group discussion with what is indicated in the resource manual. Demonstrate household water treatment by chlorine solution and household safe water storage. Explain each step to participants by first asking them questions like why and when. *[the summary PPT must contain the case studies summary and answers for the questions]*

Household water treatment and safe storage (HWTSS)

HWTSS can improve water quality at the point of consumption, especially when drinking-water sources are distant, unreliable, or unsafe. HWTSS is a not ideal and does not replace a service provider's obligation to provide safe drinking water. It is intended for people who have no access to improved drinking water sources; those with access to improved sources outside their home or premises (i.e., when contamination can occur during transport and storage); people who have unreliable piped supplies and must store water to bridge the gaps between deliveries; and for people in emergency situations.

Methods of household water treatment and safe storage

Water source protection

Before discussing methods of treating water at the household level, emphasize the importance of using and protecting the best available source of water to reduce or eliminates the risks of water-borne disease and improving water quality and health.

Actions that can be taken at the community level include:

- regularly cleaning the area around the water source
- moving latrines away and downstream of water sources
- building fences to prevent animals from getting into open water sources
- lining wells to prevent surface water from contaminating groundwater

- building proper drainage for waste water near taps and wells
- stabilizing springs against erosion and protection from surface run-off contamination
- ensuring watershed use is non-polluting

Sedimentation

Sedimentation is a physical treatment process used to reduce the turbidity of water. This can be as simple as letting water settle for some time in a small container, such as a bucket or pail.

Filtration

Filtration is commonly used to reduce turbidity and remove pathogens. It involves passing water through filter media. Some filters are designed to grow a biological layer that kills or inactivates pathogens and improves removal efficiency.

Sand and ceramic are common filter media, but various types of filters are used by households around the world:

- bios and filters
- ceramic pot filters
- ceramic candle filters
- membrane filters

Other filters use media such as activated carbon that adsorb and hold contaminants like a sponge rather than mechanically remove them like a sieve. The capacity of these filters is used up once the adsorption sites become fully occupied.

Disinfection

Another approach to treating water in the home is to kill or inactivate pathogens through disinfection. The most common methods used by households around the world to disinfect drinking-water are:

- chlorine or approved disinfectants following guidelines

- chlorine or approved disinfectants following guidelines
- solar
- ultraviolet light
- boiling

Safe water storage

A safe water storage container should:

- have a strong and tightly sealed lid or cover
- be durable and strong
- be easy to clean

A good safe storage container should also have instructions on how to properly use and maintain it. Other safe water handling practices include:

- using a separate container for collecting and storing untreated water
- using a separate container for storing treated water
- regularly cleaning the storage container with soap
- storing treated water off the ground
- storing treated water away from animals
- pouring treated water from the container instead of scooping the water from it
- using the water as soon after treatment as possible, preferably on the same day

Unit assessment sheet

1. Write the five principles of food hygiene
2. Describe the various types of food-borne diseases and prevention methods
3. Describe food preservation methods
4. Describe various types of water-associated diseases and prevention methods
5. List sources of drinking water contamination

Answers

1. Principles of food hygiene
   - Keep clean
   - Separate raw and cooked
   - Cook thoroughly
   - Keep food at safe temperature
   - Use safe water and raw materials
2. Types of food-borne diseases and prevention methods
   - Food borne diseases can be caused by the pathogens themselves (**food-borne infection**); toxins produced in the food by pathogens (**food-borne intoxication**); and toxins produced in the body by pathogens (**food-borne toxin-mediated infection**).
   - Prevention
     - **CLEAN** hands and food contact surfaces and utensils often
     - **SEPARATE** to prevent cross-contamination
     - **COOK** foods thoroughly
     - **CHILL** foods promptly

3. Food preservation method techniques allow food to be kept for extended periods of time without losing nutritional quality and avoiding growth of unwanted microorganisms.

➢ **The most common methods are**

- Heat treatment: cooking, canning, bottling, sterilizing, Pasteurizing, and ultra heath treatment
- Low temperature: freezing and refrigeration
- Drying (dehydrating): fish, meat, fruit, vegetables, soup
- Chemical preservation: curing, salting, pickling
- Vacuum sealing/packing: meat, fish, poultry
- Smoking: fish, meat, cheese

4. The various types of water associated diseases and prevention method

Water-associated diseases	Preventive strategies
1. Waterborne (fecal–oral) a) Low infectious dose b) High infectious dose	➢ Improve water quality ➢ Prevent use of other contaminated source ➢ Health education
2. Water-washed a) Skin and eye b) Other	➢ Improve water quantity ➢ Improve water access ➢ Health education
3. Water-based a) Penetrating skin b) Ingested	➢ Decrease need for untreated water contact ➢ Control snail population ➢ Improve quality of water ➢ Filter out Cyclops ➢ Health education
4. Water-related a) Biting near water b) Breeding in water	➢ Proper site selection of house ➢ Use personal protection material ➢ Destroy breeding sites of insects ➢ Decrease need to visit breeding site ➢ Health education

6. Source of drinking water contamination fall into the categories of point and diffuse (non-point) sources.

UNIT 3: PERSONAL HYGIENE AND HEALTHY HOMES

Unit description: By the end of this training unit participants will have the knowledge, attitudes, and skills to promote and demonstrate proper personal hygiene and healthy home environment practices.

Unit Specific objective: After the training of this unit, the participants will be equipped with the required enabling knowledge, skill and attitude to;

- List, describe and demonstrate major components and public health importance of personal hygiene
- Describe and analyze basic requirements of a healthy housing in terms of satisfying physiological needs and protecting infectious diseases and injuries

Time allocated: 200 minutes

SESSION 1: PERSONAL HYGIENE

Primary objective: By the end of this training session the participants will have the knowledge, attitudes, and skills to list, describe and demonstrate major components and public health importance of personal hygiene.

Enabling objective: At the end of this session, the participants will able to;

- explain about all the proper practice of maintaining major components personal hygiene
- Demonstrate common and frequent hygienic practices
- Overcome attitudes and misinformation that hinder UHE-ps ability to communicate sensitive personal hygiene information to clients.
- Describe major public health importance of personal hygiene

Time allocated: **170 minutes**

Enabling objective 1: Explain practices and components of maintaining personal hygiene

Activity: Group work – 40 minutes

The facilitator(s) should follow the following steps;

- Divide the participants into four groups and instruct each to select a note taker and timekeeper.
- Give the respective questions to each group and make sure the participants understand all the questions and discuss for 30 minutes. and present within 15 minutes

Groups 1 & 3 will discuss questions related to body washing, oral hygiene, and clothes and face washing.

- What are the most common health and other social problems associated with poor body washing, oral hygiene, clothes and face washing, and menstrual and child hygiene in your community?
- How do you prevent community members from having the social and health related problems that you just mentioned?
- You are responsible for the promotion and follow up of the implementation of these hygiene practices at homes, schools, and youth centers. How do you do it?
- What are common rumors and misconceptions about tooth brushing in your community?
- what do you think is a proper brushing?

Groups 2 and 4 will discuss questions related to menstrual and child hygiene.

- What are the most common health and social problems associated with poor menstrual and child hygiene in your community?
- How do you prevent community members from having the social and health related problems that you just mentioned?
- You are responsible for the promotion and follow up of the implementation of these hygiene practices at homes, schools, and youth centers. How do you do it?

Summarize this session using the notes from the group presentations, supplemented with the information below. If available, show a video on tooth brushing and proper personal hygiene practices.

Notes on components of personal hygiene

Body hygiene

The body has nearly two million sweat glands. Moistened and dried sweat and dead skin cells from the dirt that sticks to our skin and underclothes. Bacteria decompose the sweat, thereby generating bad odor and irritating the skin. This is especially observed in the groin, underarms, feet, and in clothing that has absorbed sweat. Skin infections such as scabies, pimples, and ringworm are results of poor body hygiene. Bathing or showering using body soap at least weekly is very important to ensure that your body stays clean Bathing should be everyday or after periods of sweating or getting dirty. The genital and the anal regions need to be cleaned well because of the natural secretions of these areas.

Clothes washing

Underwear must be washed more frequently than outer layers of clothing. If possible, washed clothes should be ironed to help the destruction of body lice and nits. Boiling water or insecticides can be used to destroy clothes infestation.

Face washing

Face hygiene includes all parts of the face. The most important area to keep clean is the eyes. The organic substance of the eye discharge can attract flies and this is dangerous because the fly is a carrier (vector) of trachoma and conjunctivitis. It is not advisable to share a face towel because some diseases, such as conjunctivitis and trachoma, can be transmitted easily from person to person in this way.

Oral hygiene

The mouth is the area of the body most prone to collecting harmful bacteria and generating infections because it is at the optimum temperature (37°C) and is often rich in food particles that support bacterial growth. The decaying process that takes place on the surface of the teeth eventually produces a build-up called plaque (a sticky deposit on which bacteria grow) that is then converted into tartar (a hard, yellowish, calcified deposit on the teeth, consisting of organic secretions and food particles). The result is tooth decay. In addition, unpleasant smelling breath (halitosis or stinking odor), and tooth and gum infections can result from poor oral hygiene.

Advice for keeping the mouth clean:

- Rinse the mouth after each meal.
- Brush your teeth with a fluoride-containing toothpaste twice a day – before breakfast and before you go to bed. Cleaning the mouth with twigs is possible if done carefully.
- During the day, fill your mouth with water and swish it around to get rid of anything sticking to your teeth.
- In addition to regular brushing, you should floss your teeth at least once a day, usually before you go to bed.

Menstrual hygiene management

The vagina is able to clean itself; no special care is needed other than washing the external genitals. Washing the outer genital area with clean water must be a daily practice. Change tampons and sanitary napkins or pads regularly. Always wash your hands before and after handling a tampon or pad. Clean and soft cloths can be used in place of sanitary pads, but do not use dirty cloths. Menstrual blood-absorbing items must be properly disposed of in a burial pit or other appropriate method.

Hygiene generally refers to the set of practices associated with the preservation of health and healthy living.

Personal hygiene is defined as a condition promoting sanitary practices to the self. Generally, the practice of personal hygiene is employed to prevent or minimize the incidence and spread of communicable diseases. It includes cleanliness of hair, body, hands, fingers, feet, clothing, menstruation, and clothes.

Hygienic behavior is behavior that manifested when people transform themselves to demand, develop, and sustain a hygienic and healthy environment for themselves by erecting barriers to prevent the transmission of diseases derived from fecal contamination.

Public health importance of personal hygiene: The knowledge and practice of personal hygiene are vital in all our everyday activities. The Benefits include:

1. Prevents fecal-orally transmitted disease
2. Aesthetics
3. Promotes positive social interactions

Components of personal hygiene include but not limited to:

- Body/skin
- Oral
- Hand and face washing
- Ear and hair
- Clothes
- Menstrual
- Children

Role of UHE-Ps on the demonstration of personal hygiene : As an Urban Health Extension professional, educating/counseling the community members on personal hygiene is one of your main duties. You may ask yourself: what to educate, whom to educate, where, and how? You may further ask yourself: how do I monitor or evaluate my success in the promotion of personal hygiene? UHE-Ps can promote key health messages on personal hygiene with the help of family health card and other BCC materials. You can also mobilize the community.

Enabling objective 2: Demonstrate common hygienic practices

Methods: Brainstorming and demonstrations -40 minutes

Activity 1: Brainstorming

- Ask the participants to split into groups of 2–3 people to discuss the questions and statements below -30 minutes:
- List the critical times and steps for proper hand washing.
- What are common behaviors and misconceptions about hand washing with soap in your community?
- What are the most common health and social problems associated with poor hand washing?
- In your professional capacity, how do you prevent community members from such health-related problems? You are responsible for promoting and following implementation of these behaviors in homes, schools, and youth centers. How do you do it?
    - Each group will present its answers as written on flipcharts-10 minutes

Activity: Demonstrate proper hand washing and tooth brushing– 35 minutes

Note to facilitator

Secure a hand washing facility, water, soap, stick, and tooth brush ahead of the training.

- Divide participants in two groups. Assign one hand washing and the other tooth brushing and ask them to do the assigned activity as they usually do- 20 minutes.
- Show the videos for each.
- Reconvene the group and discuss the following: 15 minutes

- Compare your usual practice to the videos. Did you follow the correct procedures? Did you miss any? Which?
- Describe the most common hand washing and tooth brushing practices.
- Describe common misconceptions on the methods for washing hands and brushing teeth.
- In the end, ask the plenary the following practical question
    - Why do we need to know about hand washing practices? How will these skills improve your performance?
- Ask participants to summarize activities 1 and 2- 10 minutes.
- Summarize using the notes and show the graphic below and compare them with issues raised during group sessions.

Steps and critical times for hand washing

Enabling objective 3: overcome attitudes and misinformation that hinder UHE-ps ability to communicate sensitive personal hygiene information to clients.

Activity: Agree/disagree - 35 minutes

Note to facilitator:
This activity will help participants identify beliefs and attitudes that compromise their ability to discuss menstrual hygiene accurately and comfortably with their clients.

- Write each of the following statements on a card (only one statement per card)

Agree or disagree statements

- Most women do not want to talk about menstruation or menstrual hygiene
- If girls are seen with blood spots on their dresses, they should be scolded for negligence.
- It is not appropriate to talk about menstruation and menstrual hygiene with mothers who stopped giving birth.
- Menstruation is a normal and natural physiological process.
- It is wrong to educate girls on menstruation and menstrual hygiene.
- When discussing menstruation and menstrual hygiene with a married woman, privacy is a priority.
- Husbands should not be part of discussions to educate women about menstruation and menstrual hygiene.

- Stand in the middle of the room. Read the statement on the cards one at a time. For each, instruct participants to stand on your left if they agree, and to come stand on your right if they don't.

Facilitator tip: Remain at the center and do not express your opinion.

- When all participants have taken their position after a question, ask those who agreed and those who have disagreed to explain their reasons, one by one. Allow discussion between the two groups.
- Tell participants that they can change their position if they are convinced by the other group. If they do, ask what convinced them.
- Do the same until all the cards have been read and discussed (see agree/disagree statements in the participant manual).
- In the end, ask the following:
    - Was the exercise helpful? How?
    - What did you learn from this exercise?
    - How do your beliefs/attitudes affect your ability to educate mothers and school girls about menstruation and menstrual hygiene? Why?

Answers to "agree or disagree statements"

- Most women do not want to talk about menstruation or menstrual hygiene. **Disagree**
- If girls are seen with blood spots on their dresses, they should be scolded for negligence. **Disagree**
- It is not appropriate to talk about menstruation and menstrual hygiene with mothers who stopped giving birth. **Disagree**
- It is not appropriate to talk about menstruation and menstrual hygiene with mothers who stopped giving birth. **Agree**
- Menstruation is a normal and natural physiological process. **Agree**
- It is wrong to educate girls on menstruation and menstrual hygiene. **Disagree**
- When discussing menstruation and menstrual hygiene with a married woman, privacy is a priority. **Agree**
- Husbands should not be part of discussions to educate women about menstruation and menstrual hygiene. **Disagree**

Enabling objective 4: Describe public health importance of personal hygiene

Activity: Buzz group discussion

- Ask the participants to pair.
- Write the following question on the flipchart and instruct each group to discuss—15 minutes.

What is the public health importance of personal hygiene?

- Ask each pair to reflect on what they have discussed and write responses on the flipchart.
- Ask the plenary to comment on what was discussed in the buzz groups. If they have questions, ask other participants to respond.
- Ask volunteers to summarize the topic. If time remains ask other participants to summarize the whole session 1 (personal hygiene). Follow with relevant/left out information as needed (refer to participant manual).

Public health importance of personal hygiene

1. Prevents fecal-orally transmitted disease

Fingers easily get contaminated with one's own feces, either directly or indirectly. Careless practices during defecation and child bottom-washing are opportunities for finger contamination that facilitates infection transmission.

2. Aesthetics

A person with clean hands is proud when eating because s/he is confident that s/he is preventing disease transmission. A school teacher is always happy to see students with clean faces, eyes, and clothes. A mother is happy when she feeds her infant with clean hands because she is preserving the child's health. Generally, cleaning oneself produces pride, comfort, and dignity at home and in public places. Taking caring with the way you look increases self-esteem.

3. Promotes positive social interactions

A person who has poor personal hygiene may be isolated from friendship because telling the person about the situation can be awkward and culturally difficult. The success of a job interview or chance of promotion may be compromised by poor personal hygiene because no company wants to be represented by someone who does not look after him/herself.

- Summarize the session using the notes from the participants' manual and issues raised during group work.

NOTES

ቁልፍ መልእክቶች

1. እጃችንን በውሃ እና በሳሙና ወይም በአመድ በአግባቡ መታጠብ ጤናማ ሆነን እንድንቆይ እና የተለያዩ በሽታዎችን ለምሳሌ ተቅማጥ፣ የአንጀት በሽታ የሚያስከትሉ ጥገኛ ተዋህስያን፣ ትላትሎችን፣ ትራኮማን (አይንማዘዘ)፣ የላይኛው የመተንፈሻ አካል በሽታን ወዘተ ለመከላከል በጣም ጠቃሚ ነው።
2. ወሳኝ በሆኑ ጊዜያት እጃችንን በውሃ እና በሳሙና በተገቢ ሁኔታ መታጠብ የተቅማጥ በሽታን በግማሽ ይቀንሳል።
3. እጆቻችንን ወሳኝ በሆኑ ሰአቶች በአግባቡ መታጠብ በቀላሉ እና ያለብዙ ወጪ ልናከናውነው የምንችለው ተግባር ሲሆን ይህን በማድረጋች የተለያዩ በሽታዎችን በከፍተኛ ሁኔታ የሚከላከልልን ድርጊት ነው።

Critical times for hand washing: the following *(also indicated in the graphic under enabling objective 2)* are critical times for hand washing

- Before and after contact with a wound
- After contact with blood or body fluids (e.g., vomit)
- Before and after dressing wounds
- Before giving care to an 'at risk' person (e.g., attending delivery, attending a baby)
- After giving care to an infected person and/or handling any type of waste

Proper hand washing steps/procedure: The following steps ensure that the hands are properly washed.

- Wet your hands with clean water and lather with a bar of soap.
- Rub your hands together vigorously and scrub all surfaces up to your wrists.
- Clean under your finger nails.
- Continue for 15–30 seconds or about the length of a little tune (for example, the 'Happy Birthday' song). It is the soap combined with the scrubbing action that helps dislodge and remove germs.
- Rinse your hands well with clean running water (pour from a jug or tap).
- Dry your hands in the air to avoid recontamination on a dirty towel. Do not touch anything until your hands are dry.

SESSION SUMMARY

- Personal hygiene is a necessity for our daily activities. It is very important for the protection of our health and preventing the spread of communicable diseases.
- Personal hygiene has social and aesthetic values. An individual who follows the practice of proper personal hygiene gains confidence, pride, and dignity.
- Personal hygiene applies to all parts of the body but hand hygiene is probably the most important for public health.
- Procedures for personal hygiene (such as hand washing and oral hygiene) must be followed strictly to gain the best results.
- The promotion of personal hygiene should aim to change human behavior. The provision of hygiene information first effects knowledge, then practice.
- Personal hygiene promotion must be well planned to create positive change.

SESSION 2: HEALTHY HOUSE

Primary objective: By the end of this training session, participants will be able to have the knowledge, skills, and attitudes to describe and analyze basic requirements of healthy housing by satisfying physiological needs and infectious disease and injury prevention.

Enabling Objective: By the end of this session, the participants will be able to;

- explain the basic requirements of a healthy housing
- identify risk factors associated with housing using hypothetical data
- Understand social ecology factors that affect healthy housing and apply them to solve problems
- Explain common approaches to promote hygiene

Time: **165 minutes**

Enabling objective 1: Explain the basic requirements of healthy housing

Activity: Group discussion – 40 minutes

Divide the participants into three groups; give each a question to discuss.

Group 1: What are the requirements for healthy housing to satisfy physiological needs?

Group 2: What are the requirements for healthy housing to protect against infection?

Group 3: What are the requirements for healthy housing to protect against accidents?

Reconvene and ask each group to present its work. Ask the plenary to reflect on what was discussed. Direct them to the participant manual section on the basic requirements of healthy housing. Ask if they have questions. if yes, invite other participants to respond. Then summarize the activity.

Enabling objective 2: Demonstrate ability to identify and analyze risk factors associated with housing using hypothetical data

Activity: Group work - 40 minutes

- Divide the participants in four groups and give each the following hypothetical data on urban housing.

House	# of people living in the house	Total size of house (m sq)	Size of windows (m sq)	Living room	Separate bed rooms	Floor	Wall	Roofing	Latrine facility	Water supply	Separate kitchen
A	6	20	1	1	No	Earth and ragged	Many cracks	High but many visible holes	public	public	No (in-door cooking)
B	2	20	2	1	1	Earth and ragged		Too short (2 m)	public	public	No (in-door cooking)
C	4	120	2.5	1	4	ceramic	Plastered and painted	High and sealed	private VIPL (2)	private	yes
D	1	9	None	1	No	ceramic	Plastered and painted	Too short (2 m)	public	private	No (in door cooking)

- Ask them to work on houses A, B, C, D in one-to-one correspondence
- Using table above and enabling objective 1, session 2, ask them to answer the following questions for their respective house:
    - What is the category of this house?
    - What is this house lacking to qualify as healthy?
    - How do you categorize the households in your catchment areas?
    - What are the major risk factors associated with your hypothetical house and what would be your plan to minimize such risks?
- Invite all groups to present to the plenary
- Ask those groups who are not presenting to reflect on what has been presented? do the same for all groups
- Finally ask the following additional questions?
    - What is the advantage/s of doing such exercise?
    - What did you learn from this exercise?
    - How will you apply this learning to your daily duties?
    - Some people think that those who live in poor housing are mentally sick and violent. What is your opinion? If the response is "yes" ask how that attitude helps them perform their daily activities.

Activity: Individual exercise using the following question - 15 minutes

> **Question:** The floor dimensions of a room are 3m wide and 4m long. Calculate the size of the window that could supply adequate ventilation. Why?

- Give five minutes to answer. Collect their answers, then display the answer below

Answer: Floor area = 3m X 4m = 12m^2. The window should be 10% of the floor area. 10% of 12m^2 is 1.2m^2. The size of the window needed is therefore 1m wide by 1.2m height, if the room has one widow, or 0.8m by 0.8m each if the room has two windows.

- Ask the plenary these additional questions:
- What would be the risk if the room had a 0.4m by 0.4 m widow and no separate bedroom or kitchen and accommodated 5 people?
- Ask participants to summarize the topic.

Basic requirements of healthful housing

WHO has adopted four basic requirements to define healthy/adequate house:

Satisfaction of physiological needs

Human physiology (the functioning of our bodies) is highly dependent on the immediate environment. Our environment should supply the necessary services and facilities to meet our physiological needs, including:

Breathing is a physiological process that uses oxygen for energy production and expels the waste as carbon dioxide (CO_2). Housing must allow adequate fresh air to get into the house and used air to get out. Ventilation is facilitated by a window. The area of the window surface through which air can pass must be proportional to the floor area of the room to get adequate air supply per given time. A guide of 10% (light and air admitting window area divided by floor area) is assumed adequate for residential housing

Seeing Is the ability to observe the immediate environment. Naturally, visual physiology requires adequate light to see or look at an object. Adequate light is also important for reading, watching TV and attending class lectures in a school. The physical structure of housing provides the required light through electric sources and natural light through the windows. The minimum recommended light-admitting window area is similar to that for breathing.

Sleeping is a time when our body must get complete rest to be refreshed for the next day. Sleeping requires a separate room and should be free from any disturbance such as noise and indoor air pollution. The housing structure should provide adequate space in the form of a bedroom that is reasonably free from any environmental hazard that could disrupt sleeping. Separate bedrooms for children and adults are, in many families, a necessity.

- Tuberculosis, measles, and other droplet infections due to poor ventilation and crowding.
- Acute and chronic lung diseases, and eye infection and irritation due to indoor cooking smoke.
- Skin infections such as scabies and ringworm due to crowding as a result of limited housing space.
- Typhus and relapsing fever due to over-crowding. Lice can easily travel from an infected person to a nearby person.

- Disturbance of human comfort as a result of the bites of insects such as bedbugs and fleas.
- Rat breeding in poor housing.

We must ensure that our housing provides the necessary service and facilities to prevent communicable disease and to protection our health.

Protection from accidents

Poor housing can contribute to several types of accidents including burns and electric shocks (if there is an electricity supply).

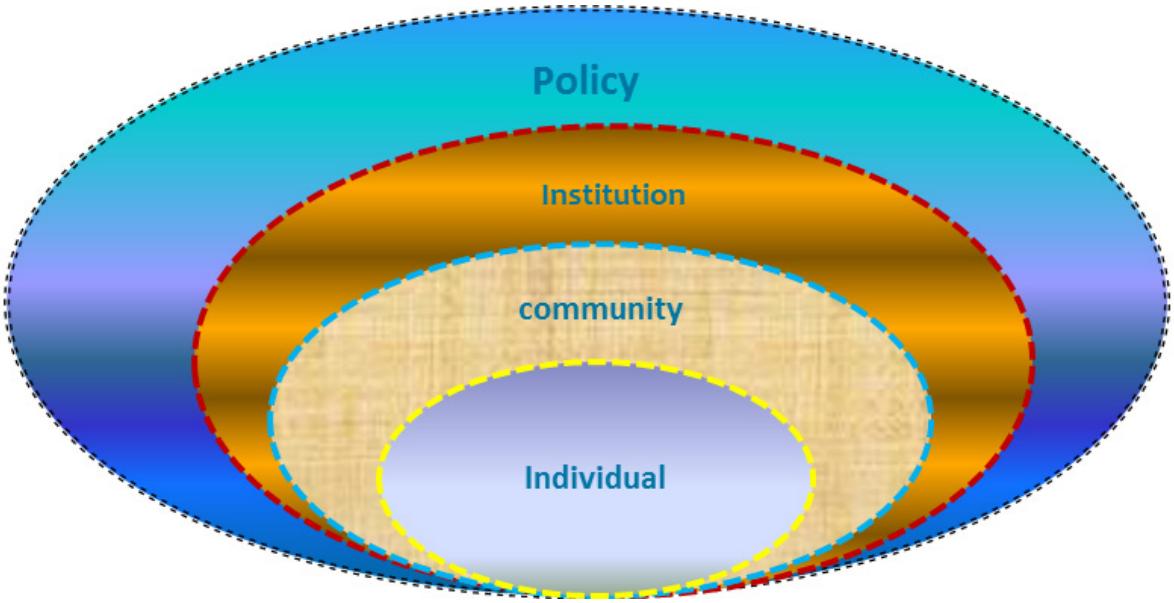
Protection from psychological and social stress

Housing is more than shelter. Poor housing contribute to psychological and social stress that may not be physically observed but may be revealed in the words people use to describe how they feel. We know that stress is not good for people.

Enabling objective 3*: Understand social ecology factors that affect healthy housing and apply them to solve problems*

Activity: Group and brain storming- 40 minutes

- Divide the participants in four groups and give each a map of social ecology and a flipchart.
- Assign each group one level of the social ecology stratum: group 1 on the individual; group 2 on community; group 3 on the institutional, and group 4 on policy.
- Instruct them to discuss factors that contribute to poor housing at the level they have been assigned.
- After the exercise, ask each group to present its work, one at a time, to the plenary.
- Encourage discussion by asking the following questions:
    - Why do you need to identify these factors? How are they interlinked?
    - What factors affect healthy housing?
    - How do you prioritize the problems and what can you do about them?
- Ask a volunteer to summarize the discussion.



Social ecology map

NOTES

Definition of a healthy housing and living environnet: it refers to safeguarding the home and its environment; the dwelling and its immediate environment.

- The human living environment consists of home,work and recreational environments.
- As indicated in the figure, the interaction between these environments and human activities results in various types of hazards that may adversely affect human health.

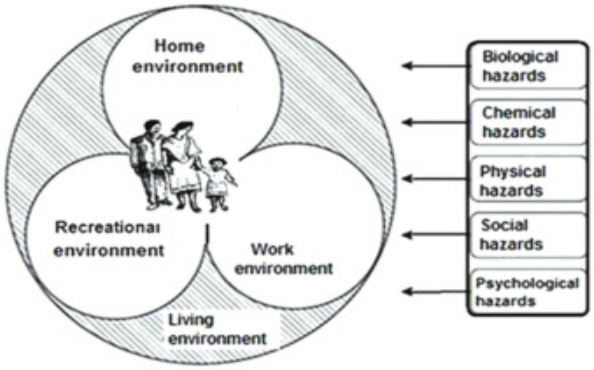


Figure - The System of Environmental health (Source: adaptedfrom Bassett, 2004 as indicated in HEAT modue)

Requirements of a healthy Housing; WHO has adopted four basic requirements:

- satisfaction of physiological needs
- protection against infection
- protection against accidents

- protection against psychological and social stresses.

Major facilities or services requirements for a healthy housing and living environment ;

- Water supply
- Toilet facility
- Bathing and laundry
- Waste disposal /liquid and solid
- Ventilation and illumination
- Utensils and food items kept off the floor
- Separate living rooms from animals and kitchens

Poor housing is associated with a wide range of diseases. Categories of communicable diseases due to poor housing include:

- Diarrheal diseases (cholera, dysentery, shigellosis, typhoid fever and other feco-orally transmitted diseases) because of poor personal hygiene, absence or poor utilization of latrines and poor waste management.
- Tuberculosis, measles, and other droplet infections due to poor ventilation and crowding.
- Acute and chronic lung diseases due to indoor/cooking smoke. Indoor smoke causes eye infection and irritation.
- Skin infections such as scabies and ring worm due to crowding as a result of limited housing space.
- Typhus fever and relapsing fever are possible due to crowding. Lice can easily travel from an infected person to the next nearby one.
- Disturbance of human comforts as result of insect bites (e.g., bedbugs and fleas).
- Breeding sites of rats in poor housing.

Enabling objective 4: Explain common approaches to promote hygiene and sanitation

Activity: Brainstorm – 30 minutes

Note for facilitator

Since most UHE-ps are not aware of sanitation and hygiene promotion approaches, start this activity by brainstorming about their experience with hygiene and sanitation promotion approaches. Use the table below to summarize sanitation and hygiene promotion approaches and their pros and cons

- Ask the participants to make groups of 2-3 people set together and discuss based on the following discussion points for 30 minutes ;

- Ask the participants to explain sanitation and hygiene promotion approaches and community mobilization that they use, and the pros and cons of each.
- Using the table in the participants manual, discuss key sanitation and hygiene promotion approaches and their pros and cons-15 minutes
- Ask participants to summarize the topic.

Sanitation and hygiene promotion approaches, pros, and cons

Approaches	Advantages (pros)	Limitations (cons)
Information, education, communication and BCC	• Raises awareness and knowledge on sanitation, disease transmission, and benefits of good hygiene. • Can reach large number of people and is potentially cost-effective.	• Does not provide people with sufficient incentive or motivation to change behavior • Unless backed by other initiatives or promotions, does not have a long-term effect
Community- or school-led total sanitation and hygiene	• Doesn't rely on subsidies. • Encourages people to change their hygiene behavior without telling them how to do it. • Empowers households them climb the sanitation ladder at the level they can afford. • Builds and social cohesion momentum for collective action.	• Success depends on the degree to which facilitator is trained and enthusiastic. • Only works in areas that have not had prior hygiene or sanitation subsidies. • Effectiveness and sustainability not well known/documented
Participatory hygiene and sanitation transformation	• Rewards community members and workers/facilitators by involving them in project planning and implementation. • Community gains confidence to take responsibility for their problems/ projects. • Involves community in monitoring and evaluation. • Workers trained in participatory techniques can be community resources. • Use of pictures allows involvement of people who are not literate. • Tools like pocket voting allow people to express feelings without fear.	• Requires in-depth training in participatory techniques (@ 2 weeks for primary and follow-up trainings) • Experienced community workers may not adopt participatory approaches. • Requires intensive management structure; feasible with small/grass roots projects, difficult to scale up. • Takes a long time to learn to use tools, which leads to incorrect/ ineffective use.
Sanitation marketing	• Creates demand for behavior change via social marketing of consumer goods and behaviors. • Can generate income for local people. • Improves to go up to the sanitation ladder.	• Can be difficult if there is no strong culture for private sector activities. • May not reach the poorest of the poor or the most vulnerable, who have no resources to invest.
Community-led urban environmental sanitation	• Relatively new approach being piloted in selected towns. (e.g., ORDA is piloting this approach in Bahir Dar)	• Requires intensive management structure; feasible with small/grass roots projects, difficult to scale up. • Takes a long time to learn to use tools, which leads to incorrect/ ineffective use.

- Ask 4 or 5 volunteers to discuss and summarize the whole session and present it to the plenary. Ask those who are not in the group to reflect and provide feedback on what has been presented (refer to participant manual).

Unit assessment sheet

Q1. List at least three major components of personal hygiene.

A. Hand washing, oral hygiene, body washing, and menstrual hygiene.

Q2. What are the most common health and other social problems associated with poor personal hygiene and a healthy living environment in your community? How can these problems be prevented?

A. Health consequences are summarized in the table below. Social consequences include but are not limited to sham, lack of dignity, and school dropout.

Common WASH-related diseases and transmission, control, and prevention methods

#	*Diseases*	*Link with WASH components*	*Transmission, control, and prevention*
1	Trachoma	Sanitation, hygiene, water	Transmission between infected persons through flies. Prevention through face washing of children, improving access to clean water, and proper sanitation for disposal of human waste to reduce fly population.
2	Soil-transmitted helminthes – intestinal worms (ascariasis, hookworm, trichuriasis)	Sanitation, Hygiene	Eggs ingested through contaminated vegetables or water, or directly by children placing soil in mouth. Hookworm larvae penetrate skin when walking barefoot on contaminated soil (but no direct person-to-person transmission). Prevention through improved sanitation and hygiene (hand washing).
3	Schistosomiasis (bilharzias)	Sanitation, Water	Infection via eggs of worms in human feces and urine deposited in water where emerging larvae enter freshwater snails. After development in snail, larvae forms emerge in water and penetrate skin during contact with infested water. Control measures include snail control, improved sanitation and health education, and reduced contact with surface water.

4	Cysticercosis	Hygiene, sanitation, water	Adult tapeworms in humans produce eggs that contaminate the disposed areas and allowing pigs to become infected. Larval stages develop in pigs, which are then consumed by humans. If humans consume eggs they also develop cysticercosis or neurocystercosis (a major cause of epilepsy). Prevention requires strict meat inspection regimens, health education, thorough cooking of pork, sound hygiene, and adequate water and sanitation to prevent pig access to human waste.
5	Echinococcosis	Hygiene, water quality, (animal) Sanitation	Humans acquire infection contact with feces (from dogs feces that are infected by ingestion of hydatid cysts at slaughter (usually from sheep or other herbivores). Prevention: avoid food and water contaminated by dog feces; hand washing with soap after handling animals. Control slaughter practices to prevent dogs accessing offal.
6	Endemic treponematoses (inc. yaws)	Sanitation, Hygiene	Transmitted through skin contact with an infected person. Overcrowding, poor personal hygiene and sanitation facilitate spread.
7	Lymphatic flariasis (elephantiasis caused by roundworm)	Sanitation (prevention), hygiene (treatment)	Parasites transmitted by mosquitoes. Poorly constructed latrines increase presence of LF-transmitting Culex mosquito vectors. Patients with chronic disabilities resulting from LF must maintain rigorous hygiene and take necessary precautions to prevent secondary infection and aggravation of the condition; availability of clean water for limb washing reduces severity.
8	Human African Trypanosomiasis (sleeping sickness)	Sanitation (prevention), hygiene (treatment)	Transmission between infected persons through flies. Prevention includes promotion of face washing of children, improving access to clean water, and proper sanitation for disposal of human waste to reduce fly population.
9	Chagas disease	Food hygiene	Parasite transmitted by triatomine ('kissing') bugs, whose presence is linked to poorly constructed housing (not WASH). Vector control is the key preventive method, but good hygiene practices in food preparation, transportation, storage, and consumption are also recommended.
10	Dengue	Water storage management	Mosquito-transmitted virus. Mosquito control includes covering, emptying, and frequent cleaning of domestic water storage containers; and applying appropriate insecticides to outdoor water storage containers. Epidemic control through insecticide spraying.

11	Food-borne trematode infections (liver/lung flukes)	Food hygiene	Worm eggs in human feces that are improperly dumped produce larvae in aquatic snails that produce larvae that develop in food products (fish, crabs/ crayfish, water plants). Prevention includes good food preparation practices and safe disposal of human feces to keep eggs from getting into snail-infested water.
12	Onchocerciasis (river blindness)	Water resource management	Parasite transmitted by black fly in riverside locations. Black fly control includes insecticide treatment of larval breeding sites (fast flowing water) and water-flow manipulation if possible (dam sites, spillways).
13	Skin infections such as scabies, leprosy, yaws	Water, sanitation, and hygiene	Improve water quality, viability, and reliability and hygiene education.
14	Viral: hep A, E, and F, poliomyelitis, rotaviral diarrhea		Improve water quality, availability, and reliability (water washed disease control), and hygiene education.
15	Bacterial: cholera, typhoid, and paratyphoid fever, heliobacter pylori infection, salmonellosis	Water, sanitation, and hygiene	Improve water quality, availability, and reliability (water washed disease control), and hygiene education.
16	Taeniasis	Sanitation, food, hygiene	Effective treatment of excreta or waste water prior to re-use, hygiene education, proper cooking of meat and improved meat inspection, food hygiene education.
17	Protozoan: amoebiasis, giardiasis	Water, sanitation, and hygiene	Improve water quality, availability, and reliability (water washed disease control), and hygiene education.

Q3: What are your responsibilities for fostering personal health, and healthy housing and living environments in homes, schools, and youth centers?

A: As an UHE-p, educating/counseling the community members on personal hygiene is one of your main duties. UHE-ps can promote key health messages on personal hygiene with the help of family health cards, urban WASH job aids, and other BCC materials.

Q4: What do hygiene and sanitation mean?

A: Hygiene is related to personal cleanliness. Sanitation refers to waste management, particularly human,

solid, and liquid waste.

Q5. Write the names of one or two communicable diseases or conditions and the recommended frequency of washing or cleaning for the following components of personal hygiene.

Components	Diseases/conditions	Recommended frequency of cleaning
Eye hygiene		
Hair hygiene		
Body hygiene		
Oral hygiene		
Feet hygiene		
Hand hygiene		
Clothes hygiene		

A. Possible answers:

Components	Diseases/conditions	Recommended frequency of cleaning
Eye hygiene	Trachoma, conjunctivitis	Daily every morning and when the face is dirty
Hair hygiene	Dandruff, *Tinea capitis*, infestation (lice, nits)	Twice weekly; preferably once every other day
Body hygiene	Bad smell, scabies	1–2 times a week
Oral hygiene	Tooth decay, gum infection, bad breath	Brushing twice a day; rinsing after each meal
Feet hygiene	Athlete's foot, wound	Every day
Hand hygiene	Diarrhoea, typhus fever, dysentery, ascariasis	Every time after touching contaminated surfaces; every time before eating and touching clean surfaces
Clothes hygiene	Bad smell, not good looking, relapsing fever, typhus	1–2 times weekly

Q6. The purpose of hand washing is to remove microorganisms from hands. Suppose you want to educate family members on proper hand washing and demonstrate the correct procedure. What will you tell them to do? When would you tell them to do it?

UNIT 4: SOLID AND LIQUID WASTE MANAGEMENT

Primary objective: By the end of this training session the participants will be equipped with the necessary knowledge, attitude and skills to describe and explain public health importance and management of solid and liquid waste.

Specific objective: by the end of this course, the participants are expected to

- Understand the definition of solid and liquid waste , its management and their public health importance
- Describe the source of solid waste and its management process
- Describe the source of liquid waste and its management
- Understand urban WASH sector actors coordination mechanisms

SESSION1: Understand Solid and liquid waste , its management and their public health importance

Primary Objective: By the end of this training session the participants will be equipped with the necessary knowledge, attitude and skills to understand and described Solid and liquid waste, its management and their public health importance

Enabling objective: At the end of this session, the participants will able to;

- Understand the definition of solid and liquid waste and their management
- Describe public health importance of solid and liquid waste

Enabling objective 1: Understand the Definition of solid and liquid waste and their management

The Definition of solid and liquid waste

Time: 30 minutes

Activity: Brainstorm

Ask participants to discuss the definition of solid and liquid waste and ask them to read their answers to the class. Write their answers on a flip chart. Summarize by reading the definitions below.

What is solid waste? Solid waste is a heterogeneous mixture of paper, plastic, cloth, metal, glass, organic matter, etc. generated from households, commercial establishments, and markets. The proportion of different constituents of waste varies from season to season and place to place, depending on the lifestyle, food habits, standards of living.

What is liquid waste management? Liquid Waste management is the proper containment and disposal of liquid wastes generated at household, industries, farms and institutions which may be hazardous or just sullage from causing nuisance, infection, poisoning to people and animals The Definition of solid and liquid waste management

The Definition of solid and liquid waste management

Time: 30 minutes

Activity: Group discussion

- Divide the participants into four groups and ask each to select a discussion leader and reporter.
- Ask groups one and three to discuss the definition of solid waste management and groups two and four to discuss liquid waste management.
- Ask each group to present its work on a flipchart.
- Summarize the session by reading the definition of solid and liquid waste management below.

Waste management: Waste management includes activities and actions required to manage waste from its inception to its final disposal. This includes waste collection, transport, treatment, disposal, monitoring, and regulation. It also encompasses the legal and regulatory framework that relates to waste management (guidance on recycling etc.).

What is solid waste management? Solid waste management is the systematic administration for the collection, source separation, storage, transportation, transfer, processing, treatment, recycling, and disposal of solid waste. Solid waste is the unwanted or useless material generated from residential, industrial, and commercial activities. It may be categorized according to its origin; its contents (organic material, glass, metal, plastic, paper, etc.); or its hazard potential (toxic, non-toxin, flammable, radioactive, infectious, etc.). Management of solid waste reduces or eliminates adverse impacts on the environment and human health and supports economic development and improved quality of life.

What is liquid waste management? Liquid Waste management is the proper containment and disposal of wastes generated at household, industries, farms and institutions which may be hazardous or just sullage from causing nuisance, infection, poisoning to people and animals

Enabling objective 2: Describe public health importance of proper solid and liquid waste

Time: 50 minutes

Present the public health importance of proper solid and liquid waste:

Proper storage at the point of generation, collection, and disposal of solid and liquid waste is part of a community's environmental and public health service program. If it isn't, waste will be:

1. Provide a breeding place for flies, facilitating food contamination and other fly-transmitted diseases.

2. Provide food and shelter for rats and mice, which are destroyers and contaminants of food and other goods.
3. Create suitable breeding place for mosquitoes, leading to mosquito-borne diseases, (e.g., malaria, filariasis).
4. Cause aesthetic nuisance (looks unpleasant and smells bad, etc.)
5. Attract dogs, cats, and other scavengers.
6. Pose fire hazard by instantaneous combustion.
7. Pollution and contamination of air , land and water;

Activity: Case study

- Divide the participants into four groups and ask each to read Betame's case study.
- Instruct them to discuss the questions that follow the case study and present its answers.Then read the correct answers and ask if there are any question

Case study

Betame is a widow living in Sawla Town, Yocha Kebele with her three children ages 5, 3, and 1. Their income depends on street vending (gulit chirchera). Betame and her neighbors dispose their household waste, including leftover food, water that has been used for bathing, laundry, and kitchen activities, and plastic in an open near their house and where their children play football. There has been an increase in volume of flies in and outside their homes.
When Betame returned home one day, she found that Chutulo, her three-year-old, had diarrhea. She worried and tried to manage it with home remedies.After two days, the illness was worsening so she brought him to the nearby health center. But it was too late and Chutulo died on the way.

Discussion questions

1. What was the primary cause of Chutulo's illness?
2. How did Betame and her neighbors' waste disposal practices contribute to Chutulo's illness?
3. Describe diseases that are transmitted by improper solid and liquid waste disposal.

Answers

1. The primary cause of Chutulo's illness was improper and indiscriminate disposal of solid and liquid waste.
2. Betame's neighborhood's improper waste disposal led to Chutulo's illness by producing breeding grounds for flies and mosquitoes that transmit disease.

3. Among the diseases caused by improper solid and liquid waste disposal are typhoid fever, endemic typhus fever, yellow fever, dengue fever, malaria, cholera, shigellosis, amoebiasis, and jardiasis..

SESSION 2: Sources of Solid waste and its management process

Primary Objective: By the end of this training session the participants will be equipped with the necessary knowledge, attitude and skills to described sources of Solid waste and its management process

Enabling objective : At the end of this session, the participants will able to;

- ☛ Describe the source of solid waste and its management process
- ☛ Describe Solid waste management approaches and processes

Enabling objective *1*: Describe the sources of solid waste and its management process

Time: 90 minutes

Activity: Group discussion **–** 30 minutes

Divide participants into four groups—make sure that they are not the same groups of people as the last exercise. Ask each group to discuss the following questions for 20 minutes.

- ✓ What are the major sources of solid waste in your area?
- ✓ What are the challenges to identifying sources of solid waste? How do you overcome them?

    - Ask each group to present its work on a flipchart. Encourage discussion.
    - Summarize the activity by using facilitator note 3 of this manual on the major sources of solid waste.

Note: When summarizing doesn't forget to share challenge tackling tactics of the participants, as it helps other participants to share the experiences.

Activity: Brainstorming – 30 minutes

Ask the participants to name types of solid waste with the person sitting next to them. Ask five voluntary participants to give answer, and write them on a flipchart. Supplement their answers with the list of solid waste types, below.

Solid waste includes: Garbage, pesticides, insecticides, rubbish, metals, glass, ceramics, ashes, laundry, animal dung, crop residue, kitchen residue, needles from health facilities, heavy metals like lead, office waste like paper, etc.

Activity: Card sort -30 minutes

- Write a list of solid wastes on cards or paper for each group
- Divide participants into four groups and give them the card.
- Prepare a flipchart for each group and write the types of solid waste in three columns on each

- Instruct each group to place the cards/piece of papers on the correct column.
- Ask each group to present its flipchart and ask other groups to give feedback.
- Summarize the activity by presenting examples of solid waste types as listed below.

Sources of solid waste

1. **Residential:** generated from households (kitchen, *ketema,* and ash). Generally non-hazardous.
2. **Agricultural:** food and crop residue, dung, etc. Usually non-hazardous and negligible in rural Ethiopia.
3. **Commercial:** generated from business establishments (restaurants, offices, shops, etc.) Generally non-hazardous waste (e.g., paper, cardboard, wood, metals and plastic.
4. **Industrial:** depends on the type of industry and kind of raw material involved. Often include toxic and hazardous waste that has adverse effects on the environment.
5. **Institutional:** generated from public and government institutions (offices, religious institutions, schools, universities, etc.); generally not hazardous.
6. **Hospital:** discarded, unwanted solid wastes from hospitals. It consists of both non-hazardous and hazardous waste. The above classification helps to identify whether the waste is hazardous or not

Types of solid waste

- **Infectious**: wastes that arise from health institutions, like needle, safety box, goose, etc
- **Hazardous**: heavy metals, chemicals pesticides and insecticides, etc.
- **Non-hazardous**: Garbage, rubbish, ashes. If not properly managed and stored beyond the expected length of time/days they will cause air, land and water pollution and adversely affect humans, animals and the environment.

Examples of solid waste

Garbage: Putrescible waste resulting from the growing, handling, preparation, cooking, and serving food. Attracts insects and rats and rapidly decomposes, producing unpleasant odor.

Rubbish: All non-putrescible refuse except ashes. There are two categories of rubbish: combustible and noncombustible.

a) Combustible: primarily organic in nature and includes paper, cardboard, wood, and bedding.

b) Non-combustible: primarily inorganic and includes tin cans, metals, glass, ceramics, and other mineral refuse.

Ashes: waste from coal, charcoal, and wood when burned.

Other wastes: demolished materials, abandoned cars, and construction waste, also considered municipal waste.

Enabling objective 2: Describe Solid waste management approaches and processes

Time: 120 minutes

Activity: Slide presentation, group discussion – 40 minutes

Divide the participants in to four groups; make sure that configuration is different from previous group. Ask each group to discuss the following questions.

1. What does the solid waste management process look like in your kebele/woreda?
2. What challenges have you encountered? How you did you overcome the challenges?
3. What should be done to ensure proper management of solid waste? (refer to these themes):
    - Waste sorting
    - Waste collection
    - Waste transportation

Ask each group to present its work on a flipchart. Summarize the activity using information from slide with solid waste management process/stages and risk minimization during disposing:

Solid waste management stages:

- onsite handling, storage, and processing
- collection
- transfer and transport
- resource recovery and processing
- Disposal

Apply integrated solid waste management:

The complete set of functional elements/stages for waste disposal systems in urban centers/towns includes:

✓ **Onsite handling**: Concerns solid waste at the place where the waste is generated.

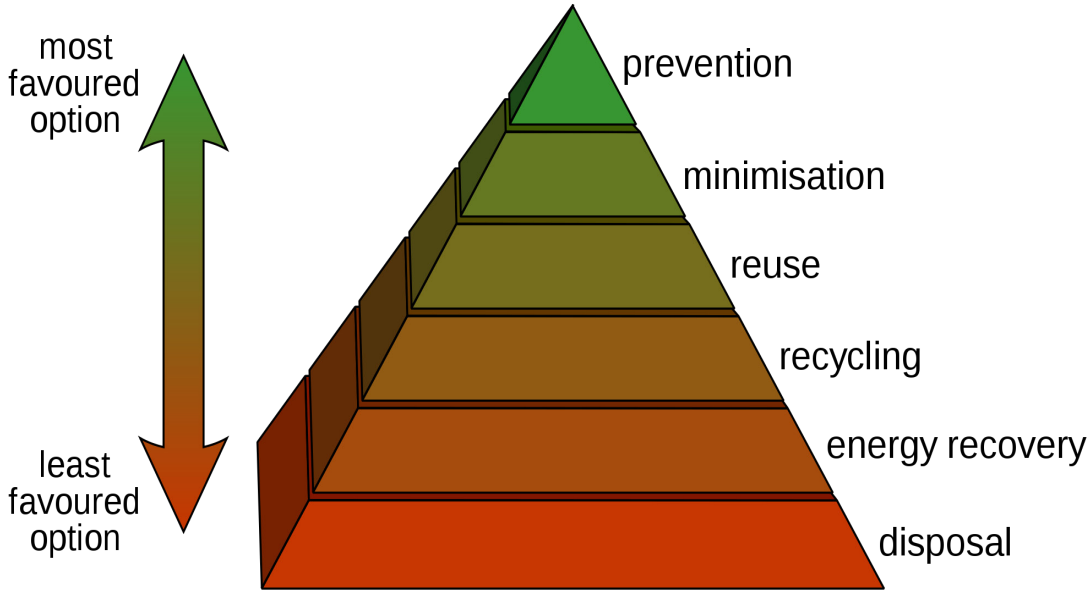
✓ **Onsite storage:** The temporary collection of waste at the household level. It is important that

waste is stored in proper containers.

- ✓ **Onsite processing:** Some waste needs processing before the next steps. For example, in areas where false banana (enset) is used as a staple crop, byproducts should be chopped into pieces before composting to hasten decomposition.
- ✓ **Collection:** Waste is collected and held at central transfer stations and store before transport to final disposal site.
- ✓ **Resource recovery:** A range of processes for recycling materials or recovering resources from waste, including composting and energy recovery.
- ✓ **Disposal:** Waste need to be disposed at final waste disposal site or area using different waste disposal options or methods
    - Sanitary methods including controlled tipping or controlled burial, incineration and sanitary land fill (Open field dumping is the most un sanitary method of refuse disposal and is most likely to cause a health hazard.).

Pyramid of Integrated solid waste management

The least desirable waste management option is disposal, which includes landfill, tipping, and incineration (burning) without energy recovery.



Sanitary solid waste disposal options at household, schools, and youth centers

Activity: Case study, slide presentation

Time: 80 minutes

Divide the participants in to four groups, make sure configuration is different from the previous group. Ask each group to read the case study below and then discuss the questions that follow it.

Case study

Sr. Aster is a UHE-p who works in an Adama Town kebele that is a slum. Nearly all households dispose their solid waste onto the roads or into an open ditch into which they also dump liquid waste. Because households generate remaining food, plastic, cosmetics glasses, the roads and open ditches accumulate solid waste and make walking difficult, are infested with flies, and smell bad. When Sr. Aster was making home visits, she realized that household members didn't know how to dispose solid waste properly, nor were they aware of the various solid waste disposal options.

Discussion questions:

Put yourself in Sr. Aster's place.

1. What type of sanitary solid waste disposal options/methods would you recommend to the households? Why?

2. What can they do to minimize health risks when disposing solid waste?

Following the group discussion ask each group to present its work. Summarize the session by reading the answers to the discussion questions.

Answers:

Q1. All disposal options discussed can be used directly or indirectly. Remember that the disposal options should be determined by local context and availability of technology. The most important disposal methods for households are controlled burial, composting, incineration, and recycling.

Q2. Present slide with sanitary solid waste disposal options/methods information:

Disposal options/methods

1) Controlled tipping/burial
2) Hog feeding
3) Incineration
4) Sanitary landfill
5) Composting
6) Recycling

Controlled tipping or burial**:** similar in principle to sanitary landfill but at a smaller scale that is appropriate for small towns and urban areas with limited space. Solid waste is dumped into a dug pit and covered with soil to avoid attracting disease vectors such as flies and rodents.

Hog feeding: feeding garbage to hogs has been practiced for many years in various parts of the world.

Incineration: process of burning the combustible components of garbage and refuse. Disposal of solid waste by incineration can be conducted on a small scale in food service establishments and at institutions such as hospitals and schools.

Sanitary landfill: controlled filling of compacted layers of solid waste and soil into prepared, designated land.

Compost: break down of biodegradable solid waste into humus. The metabolism of micro-organisms breaks down waste aerobically. Solid wastes that are non-biodegradable must be separated from biodegradable.

Recycle: process of converting unwanted solid waste into useful material. There are many economically feasible and environmentally sound technologies for recycling solid waste.

How to minimize risks when disposing solid waste:

a. Disposal site should be 30 meters from water sources to prevent contamination.
b. Do not mix radioactive materials and explosives.
c. Fence the site to keep scavengers out.
d. Cover all surfaces of the dump.
e. Dump all waste in compacted layers.
f. Disposal site should be 500 meters from residential area.

SESSION3: Sources of liquid waste and its management

Primary Objective: By the end of this training session the participants will be equipped with the necessary knowledge, attitude and skills to describe sources of liquid waste and its management processes

Enabling objective: At the end of this session, the participants will able to;

- Describe the source of liquid waste and its management
- Describe methods of liquid waste disposal

Enabling objective 1: Describe the sources of liquid waste and its management

Time: 90 minutes

Activity: Group discussion – 30 minutes

Divide participants into four groups; making sure that composition differs from those of the last session. Ask each group to discuss the following questions:

- ✓ What are the major sources of liquid waste in your area?
- ✓ What are the challenges to identifying sources of liquid waste? How do you overcome them?

Ask each group to present its work on a flipchart. Supplement their answers using the information below.

Sources of liquid waste

- Residential: generated from households (bath and laundry water, human excreta).
- Commercial: waste generated from business establishments (food establishments, shops, offices), that generate waste water from dishwashing systems, laundries, bath etc.
- Industrial waste: varies by type of industry and kind of raw material involved. Often toxic and hazardous with adverse environmental effects.
- Institutional: generated from schools, hospitals, youth centers, prison etc.

Activity: Brainstorm - 30 minutes

Instruct participants to list types of liquid waste with the person next to them. Ask five volunteers to give answers, and write them on a flipchart. Summarize by presenting types of liquid wastes from the notes below.

Types of liquid waste

Effluent: waste water of any type that is discharged (flows out) from a pipe or other structure that includes human excreta.

Infectious: blood, tissue, and any laboratory wastes from health institutions

Runoff/storm water: Mainly in towns and cities, where runoff is directed into storm water canals. These must be used properly and kept clear of debris.

Activity: VIPP card – 30 minutes

- Write a list of liquid wastes on cards or paper. for each group
- Divide participants into four groups and give them card.
- Prepare a flipchart for each group and write the types of liquid waste (from list above) in three columns on each.
- Instruct each group to place the cards/piece of papers on the correct column.
- Ask each group to present its flipchart and ask other groups to give feedback
- Summarize the activity by presenting examples of liquid waste types as listed above

Enabling objective 2: Methods of liquid waste disposal

Time: 40 minutes

Activity: Slide presentation

Present methods of liquid waste disposal for the participants using the information below:

Liquid waste disposal options/methods

Connecting into sewerage system: this is the method of liquid waste disposal directly disposing into the sewerage system in areas where there is sewer line access

Cesspool: It is a large diameter hole dug in the ground to receive waste matter from kitchen and toilets.

Connecting to latrine pit – this is a method similar to cesspool but the pit is the one used for latrine

Soak away pit: In its simplest form is a hole dug in the ground filled with stones, broken bricks etc. (Soak) or lined with bricks or stone masonry (seepage), to receive any Grey water or liquid effluent from septic tanks, kitchen or lavatory.

Seepage pits: This option may not be necessarily built in the same manner with soak pits. Seepage pit is not filled with rocks or bricks rather it is lined with open joints. In this system the liquid is assumed to infiltrate through the soil.

Activity: Case study – 40 minutes

- Divide participants into four groups. Make sure composition is different from the previous group. Instruct them to read the case study below then discuss the questions that follow.

Case study
Sr. Azeb is a UHE- p working in a slum kebele of Dire Dawa. Most of the households have no space to manage their wastewater, so they throw it into the road and into an open ditch where most of the households dispose their solid waste as well. Because of this, the roads and open ditches accumulate water, making it difficult to pass, infested with flies, and bad smelling.

Questions

- How can you, Sr. Azeb, help ensure proper dispose of liquid waste? How can you help them manage
    - Human waste (excreta) management
    - Sullage and effulent management
    - Runoff management
- Following the group discussion ask each group to present their work.
- Use the checklist below to provide feedback to each group. Summarize the session using the answers to the discussion questions by referring the above notes on sources and types of liquid wastes and Methods of liquid waste disposal

Checklist for case scenario 3

Disposal options	Discussed	Not discussed
Connecting into sewerage system		
Cesspool		
Connecting into latrine pits		
Seepage pit		
Soak away pits constructed at household or community level		

SESSION4: Understand urban WASH sector actors coordination mechanism

Primary Objective: At the end of this session the participants will be able to describe the major urban sanitation and waste management services providers and the need of sartorial collaboration in addressing the full chain of service delivery.

Enabling objective: At the end of this session, the participants will able to;

- ☛ Describe major urban sanitation and waste management service providers
- ☛ Explain the required institutional arrangement for better sartorial integration.

Enabling objective 1*: Describe major urban sanitation and waste management service providers*

Allocated Time: 40 minute

Activity 1: Group work

Step1: Ask the participants to form three to four groups and advice them to assign chairperson and note taker

Stept 2: Each group will discuss with similar questions indicated below

Step 3: Summarize the discussion by presenting major urban WASH sector actors with the roles and responsibilities indicated in integrated urban sanitation and hygiene strategy

1. Using the table below, list out major urban sanitation and waste management service providers and their roles and responsibilities in the area you are working? After you filled the table what did you observe?

Name of the institution/ organization	Type of service delivery										
	Promotion of proper latrines construction, utilization (at all times and by all family members) and proper management of the facility	Promotion of proper solid waste management at household and community level	Mobilize the community and conduct sanitation campaigns	Pit emptying	Construct public latrines and communal latrines in different parts of the town	Primary solid waste collection	Secondary solid waste collection	Allowing land for WASH facilities construction	Giving construction permission	Provide urban sanitation and waste management services for institutions such as schools, health facilities, prisons, religious institutions	Other urban sanitation and waste management services

2. What are the major challenges in coordinating those sector actors and addressing the full chain of urban sanitation and waste management service delivery? How you address those challenges and what lessons you learnt?

Enabling objective 2: Explain the required institutional arrangement for better sectorial integration

Activity: Brainstorming – 30 minutes

- Based on the presentation done in the previous exercise – brainstorm on the required institutional

arrangement for better coordination of urban WASH sector actors and address the full chain of urban sanitation and waste management service delivery.

Notes for the session

Urban sanitation has no clear institutional 'home,' which means responsibilities are diffused among several agencies, and there is no or limited means to coordinate these sector actors. Currently, the integrated urban sanitation and hygiene with its implementation guideline, joint action points and strategic action plan (SAP) is developed. Recognizing the importance of integration in achieving the collective goals indicated in SDG, GTP2 and HSDP, the responsible WASH sector ministries; MoH, MoWIE, MoUDH, MoECC, MoCT and MoE) signed a joint action agreement (MoU).

The purpose of the MoU is to structure their work in accordance with the implementation guideline (and to jointly bring about a fully integrated and harmonized urban WASH Service delivery. Institutional arrangement at all levels is one of the key areas that WIF addressed. The proposed institutional arrangement Town/City level is indicated on figure, below, as indicated in the national One WASH Program and adopted by IUSHS. At Town/City level, in addition to the water board, (which mainly works on water and sewerage issues), the following are included;

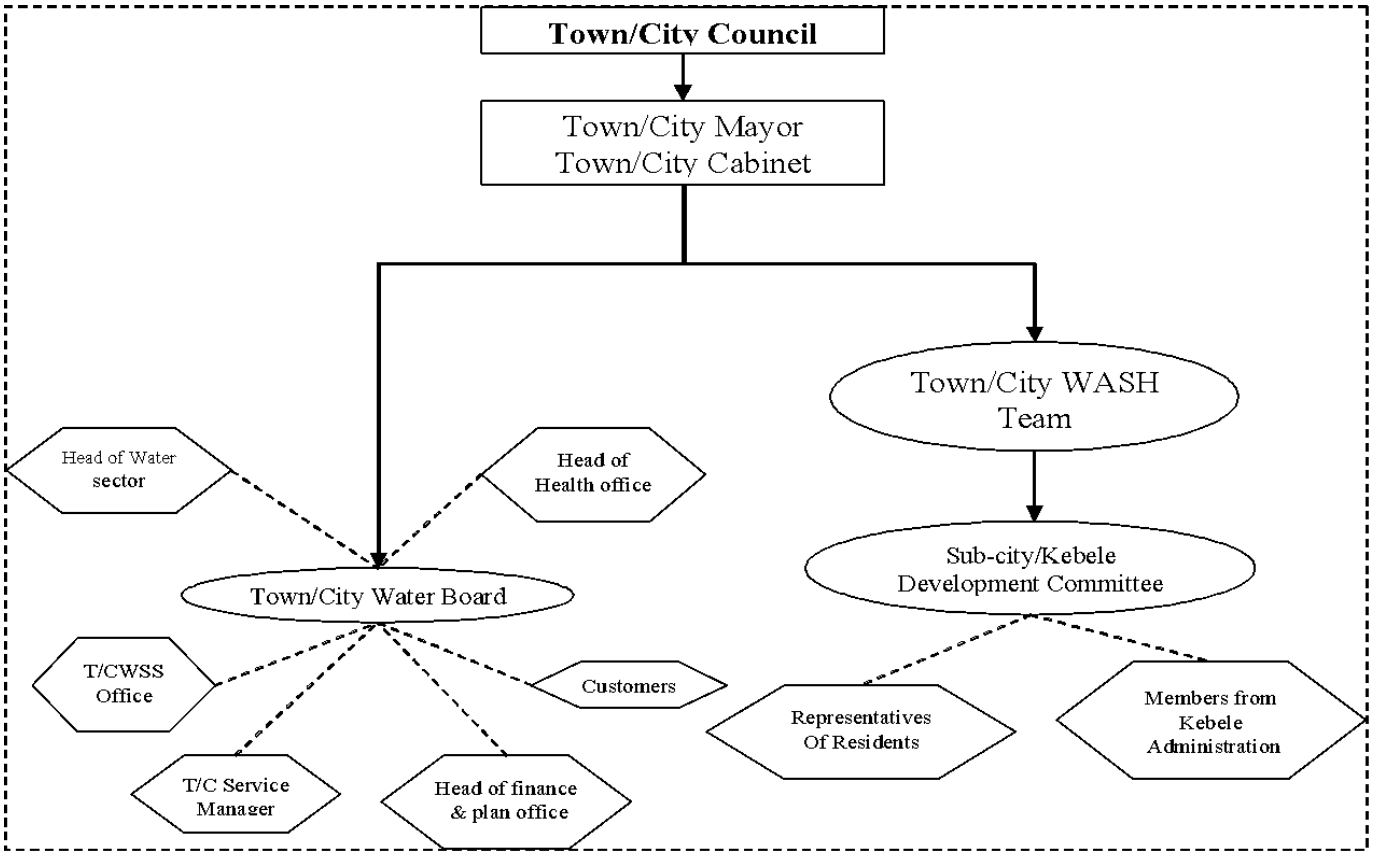
- Town/city WASH steering committee – these town/city Cabinet members and this will be lead by Town/city Mayor and accountable to Town/City Council
- Town/City WASH Technical committee - municipality, health desk, education desk Town/City water board, Town/City water utility are included and the leader will be assigned by the Mayor- and accountable to WASH steering committee.

This institutional arrangement is proposed to cascade to lower structure of the Town/City such as sub city, woreds and kebele levels. The roles and responsibilities are also clearly indicated. In addition to this, the IUSHS also proposed clustering of cities/towns for the proper urban sanitation and waste management service delivery.

Most of the regions and city administrations cascade the national level MoU and develop the structure up to woreda level, but town/city level this structure mostly not existed.

Following the signing of the MoU, Ethiopia's One WASH National Program (OWNP) is launched in 2013. Urban WASH is one of the focus areas of the OWNP. The following are indicated as the guiding principles for OWNP;

- **Integration** of water , health and education and finance sectors
- **Alignment** of partners' activities with those of the Government of Ethiopia
- **Harmonization** of partners' approaches and activities
- **Partnership** between implementing parties at all levels



Institutional arrangement of Urban WASH, Source: National WASH Implementation Framework (WIF), 2013

Session Evaluation

- **Practical and continues assessment**; the facilitator may use continuous assessment based on the trainees' group performance during their presentation.
- **Pre and post training assessment**: the facilitator will use pre and post training assessment questions for evaluation of the t trainees performance

Unity Assessment sheet

1. What are the major types and sources of liquid waste?
2. What liquid waste disposal methods/options would be appropriate for your urban/ town setup?

ANNEXES;

References

1. Open University and MOH, 2010: HEAT- Module: Hygiene and Environmental Health Part I and Part II
2. MoH, 2016 Curriculum and Facilitator's Guide for Urban Health Extension Professionals Training
3. MOH, 2016, Revised Urban Health Extension Program Implementation Manual
4. JSI/SEUHP, 2015: Urban health extension professional in-service WASH training modules

Pre - Post Test Questions

1. As profession working in this sector, what are the roles and responsibilities of UHE-ps in latrine construction of the households in the community they are working?
2. What are the main requirements for the properly designed/constructed latrine?
3. What is improved latrine?
4. List the critical times for hand washing?
5. List at least two reasons why urban community members didn't use latrines or people defecate openly?
6. Write the following words next to their correct definitions in the table below; biogas latrine; cistern-flush toilet; ecosan latrine; improved latrine; pour-flush latrine; urine-diverting latrine; VIP latrine.

	a type of latrine that separates urine and faeces
	a type of latrine that generates a fuel gas
	a latrine where there is no contact between the user and the excreta produced
	a type of toilet where a water supply is needed for operation
	a type of latrine where the faecal matter is composted
	a modification of the simple pit latrine where the problems of odour and flies have been addressed
	a type of latrine where the user has to move the excreta along using water

7. Write at least three major components of personal hygiene?

8. Write the most common misconceptions on hand washing?

9. Poor housing is associated with a wide range of diseases. Write at least four communicable diseases due to poor housing include?

10. What are the major pros and cons of community led total sanitation and hygiene (CLTSH) promotion approach?

11. Describe the various types of food borne diseases

12. Describe sources of drinking water contamination and method of prevention of contamination

13. Describe the major sources and types of solid and liquid waste

Training Participants Attendance Sheet

Training/Course Name/Title:								
Training Dates					Training place and Venue:			
No.	Participants' Name	Organization Name	Position	Gender	Signature			
					Day 1 _____ / 20__	Day 2 _____ / 20__	Day 3 _____ / 20__	Day 4 _____ / 20__

WASH Module IRT Daily Evaluation Sheet

No	Evaluation Question	Scale			
		Very Useful	Useful	Partially useful	Not useful
Q1	How useful is this training to help you reflect on your current knowledge and experiences to identify how you can improve what you do in your work?				
Q2	How useful is this training to help you identify how to reorient your attitudes to better do your job?				
Q3	How useful is this training to help you identify and analyze broader social factors that may affect different clients and groups you are meant to reach?				
Q4	How useful is this training to help you expand knowledge and identify how to use it with different client and groups you are meant to train?				
Q5	How useful is this training to help you improve your skills to apply CBT approach in providing training to UHEPs?				
Q6	How relevant are he methods in addressing ASK and ELC?				

Facilitator's Guide