USAID/E, Preventive Care Package for HIV/AIDS Project

Trainer's Manual

[February 2009]

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Publication/issuance date: Feb. 2009

Document Title: PCP Trainers' Manual

Author: IntraHealth

Activity Title: USAID/E, Preventive Care Package for HIV/AIDS Project

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Acknowledgements

This training manual on Basic HIV/AIDS Preventive Care Package (BPCP) was produced by IntraHealth International- Ethiopia in collaboration with PSI-Ethiopia.

This training manual is the outcome of the hard work and contribution of many partner organizations and individuals. Therefore, IntraHealth International-Ethiopia is very grateful to PSI-Ethiopia, FMOH, Federal HAPCO, Regional Health Bureaus and HAPCOs of Oromiya, Amhara, Tigraye, SNNPRS, and Addis Ababa.

Many thanks to USAID and PEPFAR as this manual was made possible through their financial support.

We would like also to acknowledge IHE-Capacity Project for their technical support in the preparation of this training manual.

Finally, We appreciate Dr Kamlesh Giri, Senior Technical Advisor, Training Systems in IntraHealth International, for his patience to re-arrange his tight program in preparing this BPCP training Manual and providing the training.

Acronym List

ANC	Ante Natal Care
ART	Anti Retroviral Treatment
BPCP	Basic Preventive Care Package
CDC	Centers for Disease Control and Prevention
CHW	Community Health Workers
HBC	Home Based Care
HCT	HIV/AIDS Counseling and Testing
HAART	Highly Active Anti Retroviral Treatment
IEC	Information, Education, Communication
IPT	Isoniazid Preventive Therapy
ITNs	Insecticide Treated Nets
LLITNs	Long Lasting Insecticide Treated Nets
MCHPs	Mother and Child Programs
MOH	Ministry of Health
MTCT	Mother to Child Transmission
NGOs	Non Governmental Organizations
ORS	Oral Re-hydration Salts
PHAs	People living with HIV/AIDS
PLWHA	People Living With HIV/AIDS
PMTCT	Prevention of Mother to Child Transmission
PNC	Post Natal Care
PSI	Population Service International
PWPC	Preventive with Positive Counseling
STHs	Soil Transmitted Helminthes
STIs/STDs	Sexually Transmitted Infections/Sexually Transmitted Diseases
SWS	Safe Water System
TB	Tuberculosis
TST	Tuberculin Skin Test
USAID	United States Agency for International Development
VCT	Voluntary Counseling and Testing
WHO	World Health Organization

TRAINING GUIDELINE

Day 1 session 1: Climate setting and course overview

Time	Session objectives	Process	Materials
2 hours	By the end of this session participants will be able to: - Know each other and to get to know the facilitators - Link the participants expectations to the objectives of the training - Familiarize themselves with the training materials and course schedule - Set ground rules for the training - Assess participants knowledge/background	**Activity 1**: **Welcome, official opening (30 minutes)** Registration and welcome by the representatives of the organization sponsoring the training and RHB or RHAPCO	Registration form, microphone
		Activity 2: **Participants introduction (20 minutes)** Ask participants to select a partner to form a pair, interview their partner regarding their name, place of work, position, and any other subject of interests. Each pair will Introduce its partner to the group. The trainer should also be involved in this introduction	Pen, Note book and name tent
		Activity 3 : Course overview and participants expectation (20 minutes) Review the Preventive care package manual with the participants. Give an outline of the topics that will be covered during the training. Walk through the schedule and allow participants to clarify any questions they may have Ask the participants to express what they hope to gain from this training. The trainer should write down the expectations on a	Flash card, Flip chart or White board and Marker pen, Participants manual, trainers manual and courses schedule

		flipchart. After completing the activity post the flipchart on a wall where it is visible for the duration of the training. Identify any expectations that cannot be addressed by the training. Initiate discussion on how participants will use what they learn here to their regular worksite.	
		Activity 4: **Establish ground rules for the course (10 minutes)** Tell participants the need to have some ground rules in order to achieve course objectives and create a conducive environment where every body feels free to ask questions, express views and make mistakes with out fear or being criticized. Brainstorm with the participants to come out with the ground rules they want every one to follow. Give couple of examples: Punctuality, active participation etc. Assign key responsibilities to participants to look out session recap, daily evaluation and time keeping	Flip chart or white board Markers and scotch tape
		Activity 5 : Pre-test (40 minutes) Briefly explain the purpose of the test: To help participants know what topics they need to focus during the course. Distribute copies of pre-test questionnaire to participants and ask them to complete the test. Ask participants to submit their answer sheets to the trainer. Those who finish early may submit and leave the room for 20 minutes break. They have 20 minutes	Pre-Test Question sheet

		to complete the test.	

Day 1 Session 2: Current HIV situation and the preventive care package

Time	Session objectives	Process	Materials
1 hour, 40 min	By the end of the training participants will be able to : • Describe the basic features of HIV epidemic in general and specific for Ethiopia • Describe the essential biology of HIV virus as it relates to HIV infection • Provide preventive care services to HIV positive clients to help them prevent opportunistic infections and transmission of HIV	**Activity 1** : **Overview of essential biology of HIV virus and basic features of HIV epidemic in general (45 minutes)** **Presentation and discussion**: With the help of a power point presentation explain the basic features of HIV epidemic and biology of HIV epidemic. Ask questions of the participants on their current knowledge about the epidemic in Ethiopia. Encourage participants to ask questions regarding the infection.	Power point slides / transparency, Basic Preventive Care Package manual, Flip chart and marker pen
		Activity 2: **Describe the components of the HIV preventive care kit (55 minutes)** **Demonstration and discussion**: Provide a list of components of the HIV preventive care kit. Describe each component and discuss how it relates to prevention of Opportunistic Infections (OIs) for PLHAs	Samples of HIV preventive care kit , Basic Preventive Care Package manual, Flip chart and marker pen

Day 1 session 3: Malaria prevention and benefits of ITN for PLHAs

Time	Session objectives	Process	Materials
1 hour	By the end of the session participants will be able to: - Describe the link between malaria and HIV - Explain mode of malaria transmission and symptoms of malaria - Explain and demonstrate the use of insecticide treated bed nets for malaria prevention and control	**Activity 1**: **Presentation and discussion (40 minutes)** Use the power point presentation to discuss malaria and its relation to HIV. Ask participants questions regarding common ways of preventing malaria in their communities. Encourage participants to ask questions.	Power point presentation, Basic Preventive Care Package manual, Flip chart and marker pen
		Activity 2: **Demonstration (20 minutes)**: Ask one of the participants to demonstrate the use of ITN. The trainer should assist the participant in the process by using the step by step instructions for setting up a bed net. Ask feedback from other participants. Correct any mistakes and ensure everyone can list the steps involved in the correct use of ITN	Insecticide Treated bed Nets, Flip chart with steps on the correct use of ITN

Day 1 Session 4: Diarrhea prevention and Benefits of a Safe Water System for PLHAs

Time	Session objectives	Process	Materials
2 hours, 40 min	By the end of the session participants will be able to: - Explain the relationship between diarrhea and HIV - Describe the ways to prevent diarrhea in HIV - Identify the roll of workers in the prevention of diarrhea - Describe the use of ORS and De-worming treatment	**Activity 1**: **Presentation and discussion (1 hour)** Use the relevant power point presentation to discuss issues related to hygiene for PLHAs. Allow participants to discuss household strategies for prevention of diarrhea. Use the power point presentation to discuss the topic on safe water system. Ask participants questions to ensure understanding of the topics discussed. Encourage participants to ask questions..	Power point presentation, Basic Preventive Care Package manual, Flip chart and marker pen
		Activity 2: Demonstration (60 minutes) Trainer should demonstrate the correct use of the WaterGuard and PUR to disinfect water	Water Guard, PUR sachet, water source, clean cotton cloth filter, 20 litter water container (Jeri can) and stirring stick
		Activity 4 : Group work (30 minutes)	Bar of soap, Hand towel, Water source, water container for

		Demonstrate proper hand washing. Ask participants to practice with return demonstration. Ask the following questions: How will the participants apply this skill where they work? Do they think it will be easy or difficult for the community members / house holds to adopt proper hand washing in every body life?	holding run- off water
		Activity 5: review and close the day (10 minutes)	

Day 2: Session 1: Prevention with positive counseling (PWPC)

Time	Session objectives	Process	Materials
3 hours	By the end of the session participants will be able to: - Explain the meaning of PWPC and the rationale behind positive counseling - Describe the necessary skills and knowledge to handle: 1. Disclosure 2. Discordance 3. Prevention and early treatment of STD/STI in PLHAs 4. PMTCT 5. Condom use 6. Adherence counselling	**Activity 1**: **Presentation and discussion (40 minutes)** Use the relevant power point presentation to discuss details on PWPC, disclosure and discordance.	Power point slides/ transparency, Basic Preventive Care Package manual, Flip chart and marker pen
		Activity 2: Practice counseling skills for the process of disclosure and discordance (30 minutes). Discuss the steps for the counseling process with the entire group. Demonstrate the counseling process in a simulated setting. **Role play**: Divide the participants in to groups of 4 to 6 participants. Provide a reselected counseling situation to each group role play the counseling process.	Flip chart with steps for counseling process Role play arrangements
		Activity 3: Presentation and discussion on STI/STD Treatment and Prevention (25 minutes) Use the power point presentation to discuss the topic.	Power point slides / transparency

		Allow time for participants to ask questions List signs and symptoms of STIs/STDs and describe its relationship with HIV and ways of preventing STDs	
		Activity 4: PMTCT Presentation and discussion (25 minutes): Use relevant power point presentation to discuss the topic with participants. Ask the following questions to facilitate discussion: What are the causes of MTCT? What is the most common cause of MTCT in Ethiopia? What prevention measures have been implemented in Ethiopia? Clarify any questions participants may have regarding the subject. How do they plan to apply this knowledge to the place where they work? **Activity 5: Presentation and discussion on correct and consistent use of condom (40 minutes)** Use the relevant power point presentation to discuss the topic. Allow time for participants to ask questions Condom demonstration Ask the participants steps of using condom. Ask	Power point slides/ transparency Condom, penis model

		participants to demonstrate using condom in turn round. **Activity 6: Adherence counseling presentation and discussion (20 minutes)** Use the relevant power point presentation to discuss the topic. Allow time for participants to ask questions	Power point slides

Day 2 Sessions 2: Nutrition and HIV

Time	Session objectives	Process	Materials
2 hours, 40 min	By the end of the session participants will be able to: - Describe the importance of nutrition for PLHAs - Explain the relationship between nutrition and HIV - List the essential nutritional requirements	**Activity 1**: **Presentation and discussion (50 minutes)** Use the power point presentation to discuss nutrition and its relationship with HIV. Allow participants to ask questions and clarify as needed. Use the annexed table 2 different food classes	Power point slides, Basic Preventive Care Package manual, Flip chart and marker pen

	for PLHAs Identify the role of health care providers in delivery of nutritional care and supportive services to PLHAs	**Activity 2**: **Group work to identify the roles of service providers in nutritional care of PLHAs (1hr,50 minutes)** **Group work:** Divide participants into 3 main groups. Organize the role of the service providers into 3 parts: Part 1: Supporting PLHAs with nutritional care, Part 2: Supporting Pregnant and lactating mothers, Part 3: Supporting Vulnerable children. Assign one part to each group for group work and discussion. Each group will present their findings to the large group on the role of the providers for each part. The trainer will facilitate the group discussion – (40 min for group work and 40 min for presentation and discussion). Summarize the session with key messages and frequently asked questions about nutrition and HIV – (30 min)	Flip chart, Marker pen and scotch tape

Day 2 Session 3: TB Control in PLHAs

Time	Session objectives	Process	Materials
2 hours, 40 min	By the end of the session participants will be able to: • Describe the relation ship between TB and HIV • List the steps to prevent TB and HIV • Identify the role of health care providers in TB and HIV prevention	**Activity 1**: **Presentation and discussion (50 min)** Use power point presentation to explain the topic. Specifically talk about measures used in Ethiopia for TB prevention. Encourage participants to ask questions and clarify doubts.	Power point slides/ transparency, Basic Preventive Care Package manual, Flip chart and marker pen
		Activity 2: Identify the role of service providers in reducing the burden of TB in PLHAs (20 Minutes) **Brain Storming**: Initiate discussion on the role of providers in prevention and control of TB in PLHAs. Summarize the roles with bulleted list on a flip chart. Discuss the value of infection control and prevention as it related to TB.	Flip chart and marker pen with summery points on TB and HIV

Time	Session objectives	**Process**	Materials
		Activity 3: Post test (50 minutes) Distribute post-test questionnaire to all participants and allow 20 minutes to complete the test. Collect the answer sheets and grade the responses. Discuss the answers with participants.	Post test questionnaire, Flip chart and Marker
		Activity 4: Training evaluation and closing (40 minutes) Provide training completion certificates to successful candidates. Allow time for participants to express their feedback on the training event. Distribute the training end evaluation form to complete and collect it.	Training end evaluation form

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SECTION I

Chapter 1: INTRODUCTION

The Basic HIV/AIDS Preventive Care Package (BPCP) training manual briefly discusses about the meaning and elements of BPCP kits. It contains information on most common opportunistic infections among people living with HIV/AIDS and prevention techniques.

The purpose of this manual is to increase the knowledge of health care provider so as to teach about OI prevention, Basic Preventive Care Package and demonstrate on how to use the BPCP kit for people living with HIV/AIDS. Therefore, the manual can be a good reference to teach and help the PLWHA to protect themselves from opportunistic infection, live a health life and live longer.

The manual also deals with the basic biology of HIV/AIDS and the current situation of HIV/AIDS in Ethiopia. The demonstration part focuses on how to use the BPCP kits (like Long Lasting Insecticide Treated Bed Nets (LLITN), WaterGuard, PUR, ORS) which help the PLWHA to protect themselves from some opportunistic infections like diarrhea, malaria and the like

Hence, the need for this training manual is to serve as a good resource for those health care providers working particularly on HIV/AIDS issues to acquire better skills on the use of BPCP kit so as to help their clients who come to the health facilities to get the services.
This training manual is particularly useful in the following situations:

- Trainees can use the manuals for reviewing the subject after the training.
- It lets the trainee concentrate on and partake in the training during the training session instead of taking detailed notes.
- It can serve as a reference document to use in the health center and hospital

This manual is directly targeted to health care providers who are working on ART, PMTCT and other HIV/AIDS related programs at health facilities and indirectly to the general public

Chapter 2: Current Situation and Basic Facts on HIV

Module 2.1: Introduction

Overview of the Current Situation of HIV and AIDS and the HIV Preventive Care Package

Ethiopia has accomplished a lot in terms of reducing the prevalence of HIV infection as well as improving access to HIV care and treatment services. There is apparent decrease in the occurrence of new HIV infections in the country from 2.4% in 2001 to 2.1% in 2007 (*WHO's Ethiopian Epidemiological Fact Sheet on HIV and AIDs*). PSI (Population Services International) and IntraHealth International, with support from the USAID (United States Agency for International Development), in collaboration with MOH and other local partners, have worked together to develop the "HIV Preventive Care Package" for PHAs. This HIV Preventive Care Package includes:

- Malaria prevention with the use of insecticide-treated nets
- Diarrhea prevention and safe water systems, including use of ORS and de-worming
- "Prevention with Positives" counseling (including topics like disclosure, discordance, couple testing, safer sex and condom use, family planning and PMTCT).
- Nutrition and HIV prevention and treatment
- TB and HIV prevention and treatment
- Palliative Care and Pain Management

HIV Preventive Care Package is to enable HIV/AIDS implementing organizations to deliver consistent and inclusive messages, as well as services and products that contribute to improving the quality of life of PHAs. The two key message categories are:

1. How to prevent opportunistic infections; and
2. How to prevent transmission of HIV to others

Module 2:2 Basic HIV Epidemiology

Global Trends and Distribution of HIV[1]

Since the early 1980's global HIV prevalence has increased to almost 40 million people – roughly 1% of adults of the reproductive age. The greatest numbers of infected people are in Sub Saharan Africa with very high rates of infection especially in southern Africa and to a lesser extent Eastern
Africa. At the extreme are countries such as Botswana, where prevalence is about 30% of adults

Trends of HIV in Ethiopia[2]

Over the past 25 years the HIV epidemic has gone through four distinct phases.

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[1] Source *http://www.globalhealthlearning.org*

[2] Source *Canadian International Development Agency*; *WHO's Ethiopian Epidemiological Fact Sheet on HIV and AIDs*

- 1980s: first reported case of AIDS in 1986, Ministry of Health develops National AIDS program in 1987.
- 1993-1999: Government formulates first HIV/AIDS policy.
- 2000 – 2003: There is a steady increase in HIV prevalence.
- To date, the prevalence of HIV among the age group 15-49 years has decreased from 2.4% in 2001 to 2.1% in 2007.

Current situation of HIV in Ethiopia[3]

- About 980,000 People living with HIV (890,000 adults and 92,000 children)
- More than 100,000 people were estimated to acquire HIV in each year in Ethiopia
- HIV prevalence in the general population (aged 15-49) estimated at 2.1% with HIV prevalence higher among women (2.6%) than men (1.7%)
- It remains higher in urban (7.7%) settings compared to rural (0.9%) settings.
- For the most part, HIV infection rises with age until ages 35-39 for women and ages 40-44 for men. With the exception of women aged 30-34, HIV prevalence is higher among women than men in all age groups.

HIV Prevalence in Children

- There were an estimated 65,000 children (<14 years of age) who were HIV positive in 2007.
- Infection rates were the same for girls and boys.
- There were an estimated 75,500 pregnant women who were HIV positive in 2007.

Major factors influencing the spread of HIV in Ethiopia

Economic factors

- Poverty is a leading driver to HIV/AIDS.
- It influences people to engage in transactional/commercial sex & intergenerational sex. (Many studies have shown that Ethiopian girls often have sexual relations with men who are on average ten years or more older.).
- HIV/AIDS also contributes to poverty since it affects the most productive populations.

Behavioral factors:

- Multiple/Casual sexual relationships increase HIV risk.
- Early initiation of sex associated with HIV risk.
- Non condom use in especially non-cohabiting relations increases the risk of HIV infection.

Socio-economic factors[4]

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[3] *Source 2008 Ethiopia country progress report; Single Point HIV Prevalence Estimate- Ethiopia MOH*

WHO's Ethiopian Epidemiological Fact Sheet on HIV and AIDs; HIV / AIDS in Ethiopia -an epidemiological synthesis

[4] *Source The Epidemiology and Ecology of Health and Disease in Ethiopia- Chapter 26*

- Some cultural expectations have negative consequences for HIV transmission e.g. support for early marriages, multiple sexual partners, submissiveness for women.
- High divorce rates (mainly a result of early marriage and childlessness), low access to health care and education, and heavy workloads create a low socioeconomic status for Ethiopian females which results in many entering into prostitution.
- Role of the media and western "modernization."

Stigma and discrimination

- Persons with HIV infections taken as out casts in society. This leads to denial and may affect access to HIV services.
- Those who know their HIV status fear disclosure consequences because of stigma.

High risk population and vulnerable groups[5]

- High risk groups mix with the general population and this has effect on HIV transmission.
- The latest data for the sex worker population is from the early 1990s. It is known that there has been an increase in the number of sex workers in the country, an increase in the utilization of sex workers, and that the median age of the sex worker population is decreasing.
- FHI found that the number of sex workers who see five or more partners per week is increasing: 14.7% in 1989 to 45.1% in 2002 to 34.6% in 2005.
- Uniformed services, truckers, refugees and displaced peoples, street children, daily laborers, students and other mobile populations are the most vulnerable.
- These have been found to be more vulnerable to HIV infection compared to others.

Biological factors

- Infection with an STI increases exposure to HIV infection (genital ulcer diseases like herpes simplex)
- Knowledge of MTCT is low in Ethiopia (2008 Ethiopia country progress report).
- HIV Discordance - most discordant couples are unaware of their HIV status.

In the 2002 BSS, less than 10% of the general population knew about the possibility of mother-to-child transmission of HIV and the availability of preventive medication. In the 2005 DHS, 21.2% of women and 25.7% of men said they knew that the risk of transmission could be reduced through the use of drugs during pregnancy, but this still reveals a widespread lack of knowledge, and could perhaps help to explain the low rate of ANC and PMTCT service utilization in the country. *(ref 5)*

Module 2.3: Basic Biology of HIV/AIDS

Basic parts of the virus

- *Its Ribo Nucleic Acid, which contains all the of the genetic information of the virus*
- *It uses reverse transcriptase to replicate*

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[5] *Source 2008 Ethiopia country progress report*

- *Binding protein on the outside , that allows it to bind to human cells and cause infection*

How HIV Enters the Human Cell[6]

HIV binds on to specific primary ‘’receptors”
The term CD4 refers to a specific type of immune white cell – the CD4 cell. It is called that because it has a very high number of CD4 receptors. This is a major target for HIV. However, a number of other immune cells (e.g., macrophages, dendritic cells, certain T lymphocytes) also have CD4 receptors and can be targets of HIV. Measuring the number of CD4 cells or “CD4 count” is one of the main ways of monitoring HIV progression.

HIV Breaks open and releases RNA and reverse transcriptase
HIV effectively injects itself into the cell, by fusing with the cells membrane and then passing through it. Once inside the cell, the virus breaks open and releases its RNA and the enzyme (reverse transcriptase) that allows it to replicate. The process of viral replication is highly error prone. The likelihood that the genetic message may be incorrectly copied is high. This results in **a high mutation rate for HIV.**

Making and Integrating Viral DNA into the host’s DNA
After replication the viral DNA is then integrated into the persons normal DNA in the cell nucleus.
Blocking reverse transcriptase is the basis for two important classes of antiretroviral (ARV) Drugs – the nucleoside transcriptase (NRTIs) and the non – Nucleoside Reverse transcriptase inhibitors (NNRTIs)

Hijacking the cells Machinery to Make the Virus
The Viral DNA now effectively “hijacks” the cell’s production machinery to produce the various viral components. The viral components are then assembled into viruses that are released from the cell – potentially to go on and infect other cells.
As part of the production process, some of the initial viral material produced is cut or refined to make the final components by an enzyme called **protease.** Protease inhibitors are another major class of ARV.

HIV Attacks the Immune System

HIV attacks the immune system at the same time the immune system attacks it. Both virus and CD4 and other immune cells are produced and destroyed at a rapid rate. As the HIV disease progresses, viral level rises and the CD4 level falls. **Tests to measure viral load and CD4 count are used to monitor disease progression.**

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[6] www.youtube.com/watch?v=RO8MP3wMvqg;
http://www.sumanasinc.com/webcontent/animations/content/hiv.html (Perry, et al., *Microbial Life,* First Edition, published by Sinauer Associates © 2002 Sinauer Associates and Sumanas, Inc.)

HIV does not cause death directly. Rather, it impairs the immune system and makes the person susceptible to other organisms that are easily fended off by the normal immune system. Because these normally benign organisms take advantage of the opportunity of an impaired immune system they are called **opportunistic infections.**

The Natural Course of HIV infection and AIDS
The course of infection can be divided into three phases:

1. **Early or acute phase:** HIV replicates rapidly and viral levels get quite high, some people will have some flue like symptoms. Eventually the immune system kicks in sufficiently to lower the viral levels and "sero-conversion" occurs.

2. **Long asymptomatic phase:** for many years typically seven to ten years, the virus is in check and people go about their daily routines with no symptoms at all.

3. **Symptomatic/AIDS phase:** eventually, however, HIV takes its toll and CD4 levels drop making the body susceptible to other infections and eventually the severe symptoms of AIDS.

HIV testing generally tests for circulating antibodies, not the virus itself. In early stages of infection when HIV levels are high, such HIV tests may still be negative because the antibody levels have not yet raised high enough to be detected.
The infectiousness of a person is directly related to the viral load which changes over the course of the disease and relates to the amount of virus shed in the semen or vaginal secretions.

Chapter 3: Malaria Prevention and the Benefits of Insecticide Treated Bed Nets

Aim

To promote accurate knowledge and awareness among health providers about the risks of malaria for people living with HIV/AIDS (PHAS) and the benefits of long lasting insecticide treated nets in preventing malaria.

Objectives

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

- Describe the link between malaria and HIV and the importance of controlling malaria in PHAs;
- Explain its mode of transmission and the symptoms of malaria;
- Define insecticides and demonstrate the use of LLITN (long lasting insecticide treated nets)
- List the advantages of LLITNs;
- Outline the process of acquiring a good quality net.

Module 3.1: Overview of malaria

What causes malaria?

Malaria is a disease caused by parasites called *Plasmodium. P. falciparum* is the species responsible for 70% of the malaria in Ethiopia. *P. vivax* is responsible for 28% of the reported cases[7].

How is malaria transmitted?

- The female anopheles mosquito transmits malaria parasites.
- The mosquitoes that carry malaria parasites bite at night.

What are the symptoms of malaria?

Simple malaria

- Some of the symptoms of simple malaria are fever (temperature above 37.5 degrees centigrade), headache, loss of appetite, general weakness and joint pains.

Complicated malaria

- If simple malaria is not treated for PHAs, children under five years, and pregnant women, it progresses to severe or complicated malaria.
- Some of symptoms of severe or complicated malaria are impaired consciousness, convulsions, temperature over 40 degrees centigrade, difficult breathing, shock, jaundice, and anemia.

What are the treatment options for someone with malaria in Ethiopia[8]?

The national anti-malarial drug policy and guideline was revised in 1998.

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[7] Roll Back Malaria Monitoring and Evaluation- Ethiopia

[8] ETHIOPIA RBM Country Consultative Mission Final Report

- The national policy recommends **intermittent presumptive treatment of malaria during pregnancy** (at peripheral health facilities, and by CHWs and MCHPs) with a single dose of Sulfadoxine-Pyrimethamine (fansidar).
- HIV positive pregnant women receiving daily cotrimoxazole should not be given sulfadoxine – pyrimethamine prophylaxis as cotrimoxazole has been proven to have prophylactic effect on malaria and is sufficient in this case. Also, combining cotrimoxazole and SP may cause a severe skin reaction.
- Quinine is recommended for the management of severe malaria and primaquine for anti-relapse treatment. (A gametocytocidal drug is recommended to be used during epidemic situations)[9].
- The artemisinin-based combination therapy Arthemether-Lumefantrine (Coartem™) is in the process of being registered while other options will be considered once the resistance study has been analyzed and shared with partners.

Module 3.2: Malaria Prevention in PHA

Relationship between HIV and malaria, and HIV and malaria during pregnancy

Malaria and HIV are among the two most important global health problems of our time, and together they cause more than four million deaths per year. Given the wide geographic overlap in occurrence and the resulting co-infection, the interaction between these two diseases clearly has major public health implications.
From the following several studies done in Africa and the rest of the world, the following conclusions have been made:
- There is increased risk of malaria with advanced immunosupression due to HIV;
- HIV doubles the risk of malaria parasitemia and clinical malaria;
- HIV decreases the response to standard anti-malarial treatment; and,
- Acute malaria infection increases viral load.

The consequences of the interaction between HIV and malaria are particularly serious for reproductive health.

- HIV-associated immunosuppressant contributes to more frequent malaria attacks of higher parasite density in pregnancy.
- Malaria and HIV increase the risk of anemia in pregnancy.
- Women with dual infections have poorer birth outcomes (fetal loss, preterm delivery, low birth weight, higher infant mortality rates).
- HIV shifts the burden of malaria from 1st and 2nd pregnancies to all pregnancies.

[9] A therapeutic efficacy study on SP has been completed in 11/12 sites and the data are being validated prior to review and updating of the national antimalarial drug policy.

Module 3.3: Malaria prevention and control

How to prevent and control

Due to the many difficulties associated with treating malaria, prevention is the best way to control malaria. Ways to prevent and control malaria include:

- Sleeping under insecticide treated nets; and,
- Indoor residual spraying.

Long lasting insecticide treated nets are currently considered the most cost-effective and sustainable community-based malaria vector control tool available. When used correctly and consistently, long lasting insecticide treated nets can reduce the incidence of malaria by 50%

What is an insecticide treated net (ITN)?
A long lasting insecticide treated net (LLITN) is a net treated at factory level with insecticide either incorporated into or coated around fibers. The insecticide used is resistant to multiple washes and maintains biological activity as long the net itself (about 3 years).

- **Long Lasting Insecticide Treated Nets**[10]: *PermaNet* LLIN is sold at cost plus a small margin and *SafeNite* – sold at a subsidized price in three high malarias regions. In addition, with support from USAID/OFDA, heavily subsidized *Woba Gasha* (The Malaria Shield) brand ITNs are distributed in rural areas in partnership with a wide range of over 10 different NGOs.

In 2004, PSI/Ethiopia launched SafeNite, Ethiopia's first locally branded and commercially available long lasting insecticide treated mosquito net, and now markets a range of brands including fully priced, non-subsidized nets in urban areas, and free nets that are made available in rural areas to vulnerable communities. Nearly one million mosquito nets have now been distributed by PSI in Ethiopia. These activities are supported by branded and generic communications campaigns, including radio, billboard, television and interpersonal communications approaches in multiple languages that also support mosquito nets being distributed for free by the Ministry of Health[11].

Long lasting insecticide treated nets (LLITNs) are recommended because they do not need to be retreated with insecticide to maintain their effectiveness.

How do LLITNs work?
• LLITNs act as effective physical barriers against mosquito bites;
• LLITNs kill mosquitoes (and other insects) that rest on the treated materials; and,
• LLITNs repel mosquitoes coming to feed on humans sleeping under them.

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[10] PSI Malaria Control

[11] Fact Sheet: PSI/Ethiopia

What is an insecticide?

- Insecticide is a substance used to control insect pests.
- The insecticides used in mosquito nets are called pyrethroids. Pyrethroids are synthetic, but act in a similar manner to pyrethrins, which are derived from chrysanthemum flowers and are widely used for controlling various insects.
- SmartNet and PermaNet contain deltamethrin, an example of a pyrethroid.

Are insecticides dangerous to humans?

The MOH and World Health Organisation approve pyrethroids as safe for use in ITNs and agree that they are not dangerous when used correctly. The dose of insecticide used in LLITNs is harmless to human beings, both adults and children, including newborns.

Benefits of LLITNs

Benefits to PLHAs

- Reduces the incidence of malaria in PHAS. When used correctly and consistently, LLITNs can reduce the chances of getting malaria by 50%.
- Reduce malaria related transient increase in viral load
- Reduces the incidence of poor birth outcomes (preterm delivery, fetal loss, low birth weight)

Public health benefits

Key message	**Supporting information**
Reduces morbidity and mortality in children	Reduces childhood morbidity by 46% • Reduced all cause childhood mortality by 20% • Reduces severe childhood anemia by 40% among the under 3 year olds • Reduces sick child visits to the health facilities by 30% among under 5s and by 45% in infants less than 6 months
Reduces malaria transmission by up to 90% in infants less than 6 months Reduces malaria in pregnancy and its complications	• LLITNs reduce peripheral parasitemia during pregnancy by 38% • Adverse pregnancy outcomes like low birth weight by 28%
Reduces burden on hospitals	• Reduce hospital admission rates due to severe malaria by 44%

Economic benefits of ITNs

Key message	**Supporting information**
Reduces household poverty	• Through reducing expenses on treatment and treatment seeking by 46% • Reduces expenses on funerals

	• Reduced absenteeism from work, which increases productivity both in industry and agriculture
Reduces health facility expenses	• Reduced admission rates reduce health facility expenses in buying antimalarials and on the general management of malaria patients Reduces expense on controlling other household pests • ITNs kill mosquitoes and other household pests such as bedbugs, cockroaches, lice, fleas, etc. Thus less expenditure on aerosol sprays and mosquito coils.
Most cost effective way of controlling malaria	• LLITNs are cheaper in the long run than sprays, of controlling malaria coils, and all other ways of controlling malaria

Socio-cultural benefits

Key message	**Supporting information**
Easy to use	• Use of nets does not require highly qualified people or expensive equipment • Can be used anywhere, over a bed or mat, and be carried to school or taken on visits.
Highly effective	• When over 60% of the population in an area use treated nets, there is such a "mass" killing of mosquitoes such that even the 40% without nets are protected from getting malaria. • 'The mosquito killing and repellent effect of the treated net also protect unprotected people sharing a room with someone using a treated net'. • LLITNs kill mosquitoes and other biting household pests. Thus one is assured of a good night's sleep. • LLITNs are effective even when old and torn, although it is important to mend torn nets.

How do you use a long lasting insecticide treated net?
Step 1: Unpack carefully, not to tear a hole into the net.
Step 2: Tie the strings provided into the loops at the corners of the net.
Step 3: Tie the strings to the hooks provided, or to a stable support.
Step 4: Allow the net to hang low enough to enable you to tuck it in.
Step 5: When you wash your net, hang it out to dry in the shade. Do not hang it out under direct sunlight.

Figure 1 the Long Lasting Insecticide Treated Nets (LLITNs)

How to care for an LLITN:

- LLITNs can retain the insecticide for 3 years or up to twenty washes.
- LLITNs should be dried in the shade to protect the insecticide; direct sunlight can diminish its effectiveness against mosquitoes.
- LLITNs should be washed with simple bar soap and not left to soak. JIK or other household detergents and bleach are not recommended.

Module 3.4: Key Messages and Frequently Asked Questions

Key messages

- HIV increases the frequency and severity of malaria attacks
- Malaria lowers the immunity of PHAs
- Malaria in HIV can be prevented by sleeping under an insecticide treated net daily, and taking cotrimoxazole prophylaxis daily.

FAQs on malaria prevention for PHAS

1. My child is asthmatic. Can he get an attack when he sleeps under the insecticide treated net.

   The insecticide and material of the nets is not known to cause allergies. However, due to prolonged storage before the net reaches the client, some people may sneeze the first night they sleep under the net. To avoid this, hang the net up for sometime before sleeping under it.
2. Some clients stay in rented houses and can not drill holes into the roof for the hooks. How do they hang the nets up?

There are several ways to hang the net. The net is packed with 4 long strings. The 4 ends of the strings can be tied together and tied to one point in the room.

3. Some clients stay in one room that acts as a bedroom, kitchen, and garage for the bicycle. The SmartNet seems to be too big to fit in their homes. How can we help these people?
   Tie the net up when not using it. This leaves enough room for all other activities.

4. Aren't these insecticide treated nets a fire hazard?
   Most household items easily catch fire. Tie the net up when not using it to reduce the risks of your net catching fire.

5. How much does a treated net cost on the open market?
   The cost of a treated net is approximately 17.3 Birr[12] (or $2.00 (U.S)).

6. What is the chemical in the net?
   The insecticides used in mosquito nets are called pyrethroids. Pyrethroids are synthetic, but act in a similar manner to pyrethrins, which are derived from chrysanthemum flowers and are widely used for controlling various insects.
7. If a cockroach can be killed by the chemical in the net, don't you think it is dangerous for a baby?
   The dose of the insecticide in the nets is safe for a new born baby.

[12] Economic costs of epidemic malaria to households in rural Ethiopia

Chapter 4: Diarrhea Prevention and the benefits of Safe Water Systems

Aim

To promote accurate knowledge and awareness among health care providers about the danger of diarrhea and parasitic infections for PHAs, and ways to prevent them by use of safe water systems and maintaining hand hygiene

Objectives

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

- Explain the relationship between diarrhea and HIV
- Describe the ways to prevent diarrhea in HIV
- Describe the use of ORS and de-worming treatment
- Identify the role of health workers in the prevention of diarrhea.

Module 4.1: Overview of diarrhea in HIV

What is diarrhea?

Diarrhea is passing of loose, watery stools 3 or more times per day.

What are the common sources of pathogens that cause diarrhea?

- Unclean water and poor sanitation
- Poor hygiene

What are the common pathogens that cause diarrhea?

- **Viral infections**: rotavirus, Norwalk virus, cytomegalovirus, herpes simplex virus, and viral hepatitis
- **Bacterial infections**: Typhoid (*Salmonella typhi*), E. coli (*Escherichia coli*), Cholera (*Vibrio cholerae*)
- **Parasites**: amoeba, giardia and cryptosporidium
- **Other sources**: Certain intestinal disorders, some prescription drugs, food intolerances

What can these bacteria, viruses, and parasites cause?

- **Cholera:** An acute bacterial infection of the intestine caused by ingestion of food or water contaminated with *Vibrio cholera*. Symptoms include acute watery diarrhea and vomiting which can result in severe dehydration. When untreated, death can occur rapidly.

- **Dysentery:** Diarrhea containing blood. Although several organisms can cause dysentery, *Shigella* and *E. coli* are the most important. *Shigella dysenteriae (*type 1, Sd1), also known as the Shiga bacillus, is the most virulent of the four serogroups of Shigella. Sd1 is the only cause of epidemic dysentery. In addition to bloody diarrhea, the illness caused by Sd1 often includes abdominal cramps, fever and rectal pain. Less frequent complications of infection with Sd1 include sepsis, seizures, renal failure and the hemolytic uremic syndrome. Approximately 5-15% of Sd1 cases are fatal.

- **Typhoid:** Contracted when people eat food or drink water that has been contaminated with Salmonella typhi. It is recognized by the sudden onset of sustained fever, severe headache, nausea and severe loss of appetite. It is sometimes accompanied by hoarse cough and constipation or diarrhea. Case fatality rates of 10% can be reduced to less than 1% with appropriate antibiotic therapy. Paratyphoid fever shows similar symptoms, but tends to be milder and the case-fatality rate is much lower.

Module 4.2: Relationship between diarrhea and HIV

Diarrhea is a common opportunistic infection and common cause of morbidity for PHAs. Diarrhea can be particularly severe, frequent and sometimes dangerous for PHAS because their immune systems are suppressed by HIV and unable to fight the pathogens that cause diarrhea. The same pathogens are responsible for diarrhea among HIV negative and positive people, though the frequency of the infection may be different for different species among HIV positive and negative people. The most common pathogens responsible for diarrhea in PHAs are: *E. coli, Strongyloides stercoralis, Aeromonas, Shigella, Cryptosporidium, Salmonella ,Campylobactor and Isospora belli*

According to research found in the CDC Tororo study, treating water with a dilute sodium hypochlorite solution (WaterGuard) and storing drinking water in a safe-water-storage vessel reduces diarrhea incidence by 32% in PHAS.

Module 4.3: Conventional water Treatment Methods in Prevention of diarrhea

<u>Physical treatment methods</u>

***Boiling*:** To heat water to boiling (occurs at a temperature of 100 degrees Celsius) at which water escapes from the surface of the boiling water through water vapor.

- **Advantages**
  - Effective in improving water quality and preventing disease when done properly
  - Universally available
  - Universally practiced for cooking
- **Disadvantages**
  - High cost (time, opportunity costs)
  - Taste (flat taste due to the removal of oxygen from the water)
  - Recontamination possible
  - Environmentally harmful

***Filtration*:** Straining the water through a cloth or a porous material to collect the sedimentation.

- **Advantages**
  - Simple to use
  - Improves taste of water
  - Improves appearance of water
- **Disadvantages**
  - Cost/Maintenance
  - Need to replace filter
  - Recontamination possible

***Settling*:** Allowing the water to sit for a period of time to allow the particles/sediment to sink to the bottom of the bucket. Storing water in safe conditions for one day can result in the death of more than 50% of most bacteria.

- **Advantages**
  - Simple to use
  - Improves appearance of water
- **Disadvantages**
  - Time consuming
  - Does not remove parasites
  - Recontamination possible

<u>Chemical Treatment Methods</u>

Chlorine tablets: Chlorine tablets are added to the water to kill pathogens.

- **Advantages**
  - Simple to use
  - Residual disinfection benefits
  - Removes bacteria and viruses
- **Disadvantages**
  - Difficult to access, not readily available on the market
  - Relatively expensive
  - Treated water may have a chlorine taste

Dilute sodium hypochlorite (WaterGuard): A measured amount of liquid sodium hypochlorite is added to the water to kill pathogens.

- **Advantages**
  - Simple to use
  - Residual disinfection benefits
  - Removes bacteria and viruses
  - Component of the HIV Preventive Care Package in Ethiopia
  - Relatively inexpensive
- **Disadvantages**
  - Only removes parasitic cysts when combined with filtering through a cotton cloth
  - Does not improve appearance of water (unless combined with filtering through a cotton cloth)
  - Treated water may have a chlorine taste

Disinfection, coagulation, flocculation (PUR): Includes 2 active ingredients:

1) Chlorine that kills pathogens
2) Iron sulphate that causes particles suspended in water to aggregate into clumps and sink to the bottom of the water container and then removed by filtering

Steps involved in this process are:

1. Source water – getting or identifying the water that needs to be treated
2. Floc formation - flocculation (effect of iron sulphate)

3. Settling after stirring (sedimentation)
4. Filter through cloth (filtration)
5. Clean water ready for storage and use

- **Advantages**
  - Residual disinfection benefits
  - Removes bacteria, viruses and parasitic cysts
- **Disadvantages**
  - Several step process
  - Less expensive than tablets, still relatively expensive
  - Treated water may have a chlorine taste

CONVENTIONAL EFFORTS (STRUCTURAL LEVEL)

Centralized piped water

- **Advantages**
  - The gold standard for water treatment
  - Treated at the plant so that it is ready to drink by the time it comes out of the tap
  - Easy and convenient
- **Disadvantages**
  - Prohibitively expensive
  - Potential for contamination still exists because people tap their own connections into the pipes and hook it up wrong. Or the water can get contaminated in transport or during storage.
  - Water can still be inadequately treated
  - Flow may be intermittent allowing contamination through leaks where pipes are connected

Boreholes

- **Advantages**
  - If properly constructed and well-maintained, can provide safe water at the source
- **Disadvantages**
  - Post-collection contamination – water can be contaminated during transport to the home (point-of-use) or during storage in the home (point-of-use)
  - Area around source can become contaminated by livestock or pit-latrines

Module 4.4: Safe Water Systems

What is the Safe Water System (SWS)?

The Safe Water System (SWS) is a household-based water quality intervention in response to the need for inexpensive, alternative means of water treatment and storage in the short to medium term.

What Are the 3 Components of the SWS?

1. Water treatment in the home with a specifically designed point-of-use water treatment that includes chemical disinfection (For example: WaterGuard).
2. Safe storage container that has a narrow mouth and a tight fitting lid to prevent recontamination (For example: 20 liter safe water storage vessel)
3. Behavior change techniques regarding water treatment, storage and hand hygiene.

The Goals of the SWS:

- To improve the microbiological quality of the water in homes by means of a sustainable technology
- To decrease death and diarrhea from contaminated drinking water
- To improve hygienic behaviors related to water use

Why should SWS be used instead of alternative options?

- The simplest, most inexpensive and effective means of preventing diarrhea in developing countries that is currently available
- A centralized option, such as piped water, is impractical (piped water takes an enormous amount of infrastructure and resources) and it does not protect against residual contamination
- Other common options (such as boiling) are hard on the environment and expensive
- SWS provide a residual effect against recontamination, because the containers have a narrow mouth, a lid, and a spigot for removing water
- WaterGuard is easy to obtain and is recommended by health care providers *(**Note to the instructor:** Emphasize health care providers' role in teaching the use of WaterGuard at the household level)*
- SWS has been shown to reduce diarrhea risk in developing countries from 44-72%.

What is the link between SWS and Hand Washing?

Together, SWS and proper hand washing techniques can drastically reduce the risk of diarrhea diseases.

Reasons why it is important for Health Care Providers to promote SWS and Hand Hygiene to PHAS:

- Hand washing protects individuals and their families from spreading germs that cause diarrhea – helping protect PHAS from diarrhea and other opportunistic infections.
- Health care professionals have a PROFESSIONAL OBLIGATION to promote cleaner water and better hygiene practices to all their patients.
- Treating household drinking water helps protect individuals and families from diarrhea, and has a positive impact for all members of the household, regardless if they are HIV-positive or HIV-negative.

Module 4.5: Components of SWS

4.5.1 WaterGuard

What is WaterGuard?

WaterGuard is a 1.25% sodium hypochlorite solution (dilute bleach) that is used to disinfect water and make it safe for drinking without boiling.

Figure 2 150 ml Bottle of WaterGuard

When should you use WaterGuard?
Every time you refill your water container, you should treat the water with WaterGuard. Water should be treated YEAR ROUND. You should even treat your water if you have piped water and store it, because the water can be contaminated after collection and/or during storage.

How do you use WaterGuard?
- Filter the water using a clean cotton cloth.
- Pour one capful of WaterGuard liquid into a 20 liter Jerrican full of un-boiled water.
- Cover the Jerrican and shake thoroughly until Waterguard is completely mixed with water. Wait 30 minutes.
- Your water is now safe to drink.

What are the dosing instructions for WaterGuard?
- 20 liters of clear water: 1 capful of waterguard bottle top
- 20 liters of cloudy or turbid water: 2 capfuls of waterguard bottle top
- *The dosing instructions should be multiplied depending on the size of the container (for example: 2 capfuls for 40 liters of clear water, 4 capfuls for 40 liters of cloudy/turbid water)*

Important: WaterGuard should only be used in home storage containers and is not suitable for treating water in large water storage tanks, wells or boreholes.

Where can one get WaterGuard?
- **WaterGuard** is distributed free to PHAs.
- **WaterGuard** is available to the general population and sold in kiosks, select clinics, pharmacies, drug shops and other retail outlets.

How long does a bottle of WaterGuard last?
The product is alkalinized and lasts about 9-12 months if unopened. Once opened, the solution should be used within 1 month, because contact with air causes it to lose its potency. Water treated with **WaterGuard** remains safe as long as it is not re-contaminated.

Where should the bottle of WaterGuard be stored?
- Out of sunlight, in a cool dry place
- Out of the reach of children

What are other purposes of WaterGuard treated water besides using it for drinking?
WaterGuard treated water should also be used for hand washing, washing fruits and vegetables and cooking.

Is WaterGuard prevention or treatment for diarrhea?
WaterGuard is prevention for diarrhea, whereas Oral Re-hydration Salts (ORS) is a treatment.

What does WaterGuard treated water taste like?
WaterGuard treated water has no taste and smells like chlorine.

What are the limitations of WaterGuard?
- WaterGuard kills most, but not all, waterborne microscopic organisms that cause diarrhea. Guardia and Cryptosporidium are protozoa that are resistant to chlorination, because they exist in water in a cyst form; however, they can be removed by filtration. A filtration step should therefore be added before adding the sodium hypochlorite.
- The SWS intervention has been proven to reduce diarrhea, and this intervention does inactivate many of the organisms that cause the most severe disease, like cholera, dysentery, and typhoid fever.
- In water that is soapy and oily, the even distribution of waterguard is interfered with. This reduces it effectiveness.

What are safety considerations regarding WaterGuard?
The **WaterGuard** solution is dilute and very safe. If WaterGuard is accidentally ingested in large quantities by children, in the majority of cases, there are only minor, transient adverse effects on health. If a child or adult ingests WaterGuard, give him/her plenty of water to take then refer to a health facility for medical observation.
The risk of bladder cancer from using WaterGuard is quite low or non-existent. Most importantly, the World Health Organization specifically and repeatedly states in its 1993 Guidelines that:
"Where local circumstances require that a choice must be made between meeting either microbiological guidelines or guidelines for disinfectants or disinfectant by-products, the microbiological quality must always take precedence, and where necessary, a chemical guideline value can be adopted corresponding to a higher level of risk. Efficient disinfection must never be compromised."

The benefits of WaterGuard far outweigh any small risks. This is the position taken by the World Health Organization (WHO), the Centers for Disease Control and Prevention (CDC), and the world's leading water experts.

4.5.2 PUR

The PUR product is a small sachet which consists of powder Chemical. PUR is designed to treat turbid water especially found in rural and remote areas to improve the safe water.
PUR is different from Water guard in its capability to isolate mud and other insoluble particles from water that is already turbid. Especially PUR is used in remote areas of the country where there is poor sanitation and water system. It has dual benefit

1. Purifies turbid water
2. Kills disease causing organisms

Figure 3 4g of Sachet PUR

The PUR powder is:

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

PUR is most appropriate in areas with a consistent supply chain for sachet resupply and in urban, rural, and emergency situations where educational messages can reach users to encourage correct and consistent use.

Important Facts to Know about Safe Water Storage

Safe Water Vessel: Drinking water should be stored in a clean and designated safe water vessel. A safe water vessel should have: a lid, a narrow mouth, and a spigot to prevent recontamination of the water once it is treated.

Figure 4: 20 litter of Jerrican

Examples of Safe Water Vessels:
The best option for safe water storage is the 20 liter safe water vessel depicted below. This modified storage vessel has been designed with a narrow mouth, a lid, and a spigot to prevent recontamination during storage.
An added benefit of the safe water vessel is that it also provides an additional tap in the home to help with hand washing and cleaning cooking utensils.

What are examples of containers that are NOT SAFE for storing drinking water?
Ordinary clay pots with a wide mouth and without a lid, buckets, drums, and/or other vessels with a wide mouth and no lid.

What are the advantages of the 20 liter safe water vessel?
- Available to PHAS through the HIV Preventive Care Package
- Effective (spigot and narrow mouth reduce risk of recontamination)
- Easy to clean
- Durable
- Standard volume of container simplifies WaterGuard dosing

What are the disadvantages of the 20 liter safe water vessel?
- Does not keep water cool
- Over time, exposure to sunlight damages the vessel causing it to crack (vessels should be stored away from direct sunlight)
- Spigot often needs to be replaced once every two years

Cleaning Recommendations:
The vessel should be washed thoroughly each time it is emptied before new water is added.

Module 4.6: Components of Proper Hand Hygiene

What are the benefits of integrating proper hand washing into daily hygiene for PHAS?
- Hand washing is the number one prevention against spread of infection and can help protect PHAS against micro-organisms that can cause opportunistic infections. PHAS are at increased risk for opportunistic infections because their immune systems are often too weak to fight the illness.

- Hand washing is the cornerstone of infection-prevention practices and is effective in preventing some opportunistic infections.
- Proper and consistent hand washing benefits PHAS and the entire household by limiting microorganisms that cause infections.

Key elements to remember when teaching your patients about hand washing:
- How you wash your hands is just as important as *when* you wash them. (Just rinsing them is not enough!)
- Unwashed (or poorly washed) hands can transfer harmful micro-organisms to other people.
- Encourage patients to share the hand washing message with their family, neighbors, and friends.

When should you tell your patients to wash their hands?
- Before preparing or eating food
- After going to the latrine
- After cleaning up a child
- When attending to someone who is sick
- After handling uncooked foods, particularly raw meat, poultry, or fish
- After blowing your nose, coughing, or sneezing
- After handling an animal or animal waste
- After handling garbage
- When treating a cut or wound

Hand washing training tips:
- Hand washing is best learned through watching and doing.
- Demonstrate proper hand washing with each patient (step-by-step) then ask patients to do it while you coach them.
- Give feedback.

Proper Hand Washing Steps:
1. Place your hands together under water (warm water if possible)
2. Use soap
3. Rub your hands together for at least 10-15 seconds. Wash all surfaces thoroughly, including wrists, palms, backs of hands, fingers, and under the fingernails.
4. Clean the dirt from under your fingernails
5. Scrub forearm to just below elbow
6. Rinse forearms and hands
7. Dry your hands completely with a clean towel if possible (this helps remove the germs). Pat your skin rather than rubbing to avoid chapping and cracking. If no clean towel is available, air dry hands

1. Put your hands together under pipe water or pouring water

2. Lather thoroughly with soap, covering all surfaces including under nails

3. Rinse hands

4. Dry your hands completely with a clean towel if available or air dry your hands

Figure 5: Steps in Hand Washing

Module 4.7: Key messages and frequently asked questions

Key messages

- Diarrhea can be frequent and severe for PHAS because their immune systems are often too weak to fight the germs that cause diarrhea.
- The primary source of germs that cause diarrhea comes from drinking contaminated water. Water can be contaminated even if it looks clear.
- Always treating drinking water with **WaterGuard**, and storing in a clean container with a narrow mouth and a lid (like the safe water vessel) can prevent diarrhea.
- Washing our hands with soap before preparing or eating food and after using the toilet can also prevent diarrhea and other opportunistic infections.

Frequently asked questions and answers

What do I do if the water is cloudy (muddy or dirty)?

- Filter water with a cloth. (To make a filter, fold the cloth over a number of times, enough to remove sediment yet optimize flow.)

OR

- Use a settling technique (Let water settle overnight and then gently pour the cleared water into a new container.) If the water is still cloudy after filtration or settling, remember to treat the water with a double dose of **WaterGuard** to maximize effectiveness.

Why does my water taste like chlorine and what can I do about it?

- Have your patients associate the smell of chlorine with water that is safe to drink.

OR

- Treat water in the evening for the following day, so that the taste dissipates overnight.

Can I just use commercially-prepared bleach instead?

- No, because the concentration varies so it is difficult to know how much bleach is safe for use. In contrast, **WaterGuard** is formulated specifically for drinking water.

OR

No, because commercial bleach can contain chemical additives and perfumes that may be dangerous for human consumption.

Module 4.8: Oral Re-hydration solution (ORS)

ORS is a sodium and glucose solution that is widely used to treat acute diarrhea, especially in children, but also for adults. ORS reduces the severity of diarrhea and vomiting, the number of hospitalizations, the need for costly intravenous (IV) fluid treatment and the length of illness. The four ingredients of ORS (glucose, sodium chloride, potassium chloride and trisodium citrate) in the reduced concentrations described below yield an effective solution for re-hydration and for the prevention of dehydration.

The use of ORS is responsible for saving the lives of millions of children worldwide. This inexpensive and readily available intervention reduces death and suffering from dehydration caused by diarrhea. Since WHO adopted ORS in 1978 as its primary tool to fight diarrhea, the mortality rate for children suffering from acute diarrhea has fallen from 5 million to 1.3 million deaths annually.

The new improved formula is the result of extensive research sponsored by WHO's Department of Child and Adolescent Health and Development and supported by the U. S. Agency for International Development (USAID). The latest study was conducted in five developing countries among children from one month to two years old with acute diarrhea and dehydration.

The study's findings suggest that using the low-sodium, low-glucose ORS formulation reduces the need for intravenous fluids by 33 percent. The effect of this reduction could result in fewer hospitalizations, fewer secondary infections, a diminished need to handle blood with its potentially dangerous consequences, and lower health care costs.

	1) Standard ORS solution	*2) Reduced Osmolarity ORS solutions*		
	(mEq or mmol/l)	**(mEq or mmol/l) (21)**	**(mEq or mmol/l) (6, 14, 22-27)**	**(mEq or mmol/l) (13, 15-18, 28-29)**
Glucose	**111**	**111**	**75-90**	**75**
Sodium	**90**	**50**	**60-70**	**75**
Chloride	**80**	**40**	**60-70**	**65**
Potassium	**20**	**20**	**20**	**20**
Citrate	**10**	**30**	**10**	**10**
Osmolarity	**311**	**251**	**210-260**	**245**

Table 1: Compostion of standard and reduced osmolarity ORS solutions

Source: http://www.supply.unicef.dk/Catalogue/bulletin9.htm#

Module 4.9: Parasitic infections and its prevention and treatment (de-worming)

Health impact due to parasitic infections: Parasitic infections contribute to a range of health problems including malnutrition, anemia, and slow cognitive development. Around 2 billion people worldwide harbor schistosomiasis and soil-transmitted Helminthes (STHs) – otherwise known as intestinal worms. 300 million people, 50% of them school-aged children, are severely ill due to worms. Intestinal worms account for an estimated 11-12% of the total disease burden for school-aged children (5 to 14 years) in low-income countries. Regular de-worming allows people to avoid the worst effects of chronic worm infections, even without an improvement in sanitation conditions. New research is also showing the impact of STHs on the clinical burden of HIV/AIDS and Malaria, both of which are highly prevalent in Ethiopia.

What are de-worming tablets and how effective are they? There are two main types of anti-helminthes – otherwise known as de-worming tablets - with Mebendazole being perhaps the more appropriate tablet for Ethiopia given the particular epidemiology for the country, and its authorization for use with both pregnant women (in the third trimester) and children from one year. Mebendazole has been fully approved for use in Ethiopia by the Drug Administration Control Authority. Regular use of inexpensive de-worming tablets has been shown to improve the health of individuals suffering from worm infestations, with reduction of transmission in school-aged children having positive externalities for reduction of the disease burden in the entire population.

- **De-worming is effective:** Efficacy was demonstrated by a World Health Organization (WHO) assessment of de-worming among pre-school children in Nepal. Results showed a 43% reduction in worm-infection rate, 76% reduction in anemia prevalence, and improvement in the mean hemoglobin level from 11g/dl to 12.2g/dl after only two rounds of de-worming.

- **De-worming is safe:** Treatment is safe, even when given to uninfected children as young as one year old. A WHO taskforce recently recommended that even pregnant women should be treated after their first trimester.

What is the recommended dosage? One 500mg mebendazole tablet should be taken once or twice a year depending upon the worm burden in the area. Due to the likelihood of re-infection, it is important to re-treat regularly, with a focus on children aged 1-14 and in particular school age children, people living with HIV/AIDS, and pregnant women, after their first trimester. De-worming tablets are part of the HIV Preventive Care Kit.

Figure 6: Packet of 500 mg Tablet Mebendazole USP

Shelf-life and packaging: Tablet shelf life is up to 4 years and no cold chain is necessary for delivery. Tablets will be packed in individual tablet packs, and in multi-packs with four tablets for those families with many children. Each pack will have an illustrative insert including instructions and prevention messages.

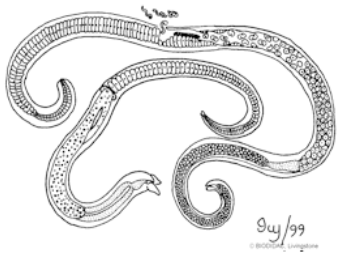

Figure 7: Ascaris lumbricoides(round worm)

Burden of worm infestation in Ethiopia: Several studies show that Ascaris lumbricoides (roundworm) is the most prevalent intestinal parasite, with an average prevalence around 56%, followed by Trichuris trichuria, hookworm and Strongyloides stercoralis. A study conducted on school children in Dembia district, northwest Ethiopia also indicated that the re-infection rate for roundworm was 53% after a de-worming campaign carried out eleven months previously, stressing the importance of regular, repeated de-worming.

While there is less data specifically about STHs and people living with HIV/AIDS a recent study in southwest Ethiopia found 53% of people living with HIV/AIDS had an intestinal parasitic infection, compared to 42% of an HIV-negative control group.

Can Mebendazole be used with pregnant women? STH infections have long been known to have adverse effects on maternal health and pregnancy outcomes. In 1990, approximately 44 million pregnancies were thought to be complicated by STH infections. Impaired iron status, iron deficiency anemia, low birth weight, and neonatal and maternal deaths are some of the outcomes of STH infection during pregnancy. Until recently, pregnant women have been largely excluded from treatment against STHs as a result of a lack of relevant information on safety concerning the use of de-worming drugs during pregnancy and lactation.
The WHO however has now concluded, through its various consultations and expert committees, that the health benefits that are gained from the treatment of STHs with WHO-recommended drugs such as Mebendazole outweigh any risks to a mother or her unborn child or breast-fed infant. Risks will diminish even further if the first trimester can be avoided. The national guidelines for control and prevention of micronutrient deficiencies issued by the Family Health Department of the Federal Ministry of Health in June 2004 have adopted the use of Mebendazole (500mg) from the third trimester for lactating and pregnant women.

What are the links between STHs, HIV/AIDS and malaria? New evidence suggests that worm infections may influence the clinical burden of both HIV/AIDS and malaria. One recent study found that malaria attacks were more frequent in persons infected with intestinal worms. Another study indicates that worm infections disrupt the immune response in ways that could hasten the progression from HIV infection to AIDS. A World Bank Development Research Group Working Paper also states that the impact of de-worming on improved educational outcome also contributes to the 'social vaccination' against HIV infection. The effectiveness of interventions aimed at improving nutritional outcomes or reducing anemia among PLWHA will be significantly reduced if recipients are worm infested.

A clinical study of 56 asymptomatic HIV positive patients in Addis Ababa found that Helminthes "load" is correlated to HIV plasma VL, and successful de-worming is associated with a significant decrease in HIV plasma VL. The results of the study, if confirmed in a larger study, may have important implications for slowing disease progression and reducing risks of transmission.

Chapter 5: Prevention with Positive Counseling (PWPC)

Aim
To help PHAs learn ways to protect those around them from HIV/AIDs

Objectives

By the end of the session, participants will be able to:
- Explain the meaning of PWPC and rationale behind positive counseling
- Describe the necessary skills and knowledge to handle:
  1. Disclosure
  2. Discordance
  3. Family planning
  4. PMTCT
  5. Prevention and early treatment of STD/STI in PHAs

MODULE 5.1: Overview of PWPC

Introduction

PWPC is one of the components of the HIV Preventive Care Package. PHAs are the most important audience for HIV prevention messages, because at least one HIV positive person is involved in each case of HIV transmission. Growing numbers of people with the disease are living healthier, sexual lives, increasing the need for prevention campaigns for PHAs. They may engage in risky behaviors that adversely affect their own health and of others, and hence PWPC involves teaching PHAs to protect those around them from HIV.

Effective HIV/STI prevention is two folds, HIV negative people have to take responsibility to stay negative and HIV positive people need to live healthy without transmitting the virus to other people. PWPC enhances the current HIV prevention, care and treatment efforts through meaningful involvement of PHA seen as important members of the community and key to the solution to the HIV problem and not part of the problem.

Rationale
The successful intervention of ART came with new lease of life for PHAs. It tremendously improved the quality of life resulting in increased sexual activity among PHAs. HIV-negative partners of PHAs are perhaps the group at greatest risk of contracting HIV in Ethiopia, and couple counseling services in the country are either non-existent or rudimentary. Stigma is another significant factor in HIV prevention, it affects disclosure of HIV sero-status i.e. the 2005 DHS indicates that 1.8% of cohabiting couples (n=2,674) were discordant[13].
Also a substantial number of discordant couples do not know each other's status. However, maintaining healthy, respectful and productive lives by PHA is prone to challenges such as stigma, inability to disclose sero-status, experiences of discordance, and unplanned pregnancies

[13] *Source 2008 Ethiopia country progress report*

etc. Coupled with this is the inadequacy of knowledge and skills on the part of service providers to effectively support PHA to effectively participate in prevention efforts.

Module 5.2: Disclosure

Definition

Disclosure in HIV occurs when someone living with HIV shares their HIV status with another person. HIV disclosure can be daunting and particularly difficult when sharing with family and sexual partners.

Types of disclosure

Self Disclosure
This is disclosure by a PHA to spouse/family members and/or other significant people – here, counselor provides client with the necessary skills to disclose, including having client practice how to disclose, then on their own, they disclose their HIV sero status.

Counselor-supported Disclosure
This is disclosure by a PHA to spouse/family members and/or other significant people. The client invites into the session the people that he/she would like to tell about his/her HIV sero-status in the presence of the Counselor who offers support where need be.

Importance of Disclosure
Basis for risk reduction planning:
- Reduces transmission in case the partner is positive (CDC findings 2005)
- Among HIV – infected adults, knowing status is associated with 64% reduction in risky behavior
- Encourages condom use which is associated with 80% reduction in transmission

Benefits of disclosure
- It can reduce stress and pressure an HIV positive client may be having. There is usually a feeling of guilt or self-blame when people learn they have HIV. When you disclose your Sero status, the guilt and pressure may eventually reduce. Some people find sharing difficult problems relieving.
- Disclosure can reduce stigma by enabling someone with HIV seek support without fear of discrimination or discovery. Once someone has disclosed their status, they can freely seek support from relevant support organizations that offer support to people living with HIV/AIDS
- Disclosure is a big step towards positive behavioral change. Once someone knows his or her status, he or she can make better informed decisions about how to prevent the transmission of HIV to others by abstaining, using condoms consistently, and practicing prevention of mother to child transmission of HIV.
- Disclosure enhances prevention of infection or re – infection with HIV.
- Disclosure can strengthen relationships. People are often more supportive if they know what the problem is.
- Fears and uncertainties are dispelled hence promotion of care and a better understanding.

Counseling process for 'disclosure'

Step 1: **Transition**

Make a statement that will bring out the client's feelings.
For example: 'Christine, I see you are concerned about being seen taking medication daily, how do you feel about telling other people your status?'

Step 2: **Discuss**

- Whom client is considering telling. Why?
- Explore issues and concerns specific for each person your client is telling you.
- Assist with prioritizing disclosure.
- Discuss what else might be disclosed along with HIV status, like how they got HIV.
- Ask the client how they think the person may react.
- Address specific concerns as they occur.
- Remind clients that confidentiality may be breached by the person they disclose their status to.

Step 3: **Coaching skills for client**

- Explore when and where the client will disclose to a specific person.
- Remind client about securing a private place.
- Ask client what they will say when they disclose their status.
- Offer an opportunity to practice with you.

Step 4: **Summarize the discussion**

- Review what you have talked about.
- Support the clients for wanting to disclose.
- Inform the client that you will always be available incase he/she has any issue at hand and needs further support.

Why is partner testing important?

Partners of PHAS should know their HIV status. This is important because:

- Persons with HIV may engage in risk behaviors that adversely affect their own health and their partners'.
- They can be advised on changes in lifestyle that improve resistance to opportunistic infections.
- Help to make informed decisions about relationships, pregnancy, career and other long-term plans.
- Follow up counseling can help those who are discordant to make changes in behavior to avoid spreading the infection to the negative partner.

Module 5.3: Discordance

What is discordance?
Discordance means two sexual partners with different HIV sero-status. This is where one is HIV negative and the other is positive.

How common is discordance in Ethiopia?
- An estimated 5 – 35% of couples in sub-Saharan Africa are discordant. In Ethiopia 1.8% of couples are estimated to be in discordant relationships. HIV prevalence among cohabiting individuals is notably high in the urban areas (10.9%); of whom about 72% (i.e. 7.8% of the total) of the cohabiting couples are discordant[14]. Discordance is commonest in couples with lower transmission risks including abstinence, use of barrier protection.
- On average in a year, 10 – 12% of discordant couples will transmit HIV to the negative partner.

When does discordance occur?
- Discordance is not a sure sign of infidelity. Couples are usually discordant when they enter into a relationship.
- Sometimes a couple will become discordant due to factors outside the relationship like injury with contaminated instruments and blood transfusions with contaminated blood.
- Couples can remain discordant for as long as 10 years
- On average, in a year, 10 – 12 % of discordant couples will transmit HIV to the negative partner.
- Negative partners in discordant couples are the highest known risk group of contracting HIV in Ethiopia. In a recent study in Tanzania, HIV negative partners in discordant couples were 58 times more likely to get infected than individuals in concordant negative couples.

Why does discordance happen?
- Discordance is most common in couples who practice behavior with lower risk transmission
- Given the factors affecting HIV transmission, discordance is a result of chance.
- HIV is not transmitted at every exposure.
- At any one time, it is hard to control the factors affecting HIV transmission. Even if the actual risk is 1 in 1000, you cannot predict when that 1 is.

Factors affecting HIV transmission risks
- Abstinence completely eliminates the risk of transmission.
- Use of barrier protection (condoms) greatly reduces the risk of transmission when used correctly and consistently[15].

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[14] *Source 2008 Ethiopia country progress report*

[15] There is increasing evidence that circumcision reduces the rate of HIV transmission. In the Rakai study of 415 couples, there was no sero conversion for circumcised men.

- Frequency of sex; sex less often means fewer chances for transmission.
- Presence of sexually transmitted diseases (STDs) can increase the chances of transmission by 2-6 times depending on the STD. Genital herpes (HSV – 2) has a higher risk than most of the other STDs.
- Viral load: people with higher viral load are more likely to transmit HIV to negative partners. The possible decrease in viral load for people on ARVs may reduce the chances of transmitting HIV from people on ARVs. However, people on ARVs are a source of resistant strains of the virus. In addition the viral load in semen or vaginal fluid varies a lot. There is no way to predict whether or not someone will get HIV.

Role of counseling
Counseling is an excellent opportunity to support discordant couples. Effective counseling can save lives and reduce risk of HIV transmission.

The counselor has 3 major roles:
- To explain discordance accurately and dispel rumors and myths;
- To help the couple understand the advantages of being discordant; and,
- To help the couple develop coping strategies and a risk reduction plan

Couple reactions to discordance may be shock, disbelief, confusion, blame, anger, or relief.

Importance of HCT
- To deliver nutrition messages to HIV-positive
- To minimize stigma and discrimination
- To minimize the morbidity and mortality rate
- To better manage new HIV cases
- To avoid further damages

MODULE 5.4: STIs/STDs TREATMENT AND PREVENTION

What are STIs/STDS?
These are conditions caused by one or more micro-organisms transmitted through unprotected sexual intercourse with an infected person.

What are the common signs and symptoms of STIs/STDs?
(LAGUG)

1. **Lower abdominal pains**
- Gonorrhea
- Chlamydia

2. **Abnormal vaginal discharge**
- Gonorrhea
- Trichomonas
- Bacterial vaginosis
- Candida vaginalis
- Chlamydia

3. Genital sores/ulcers
- Syphilis
- Chancroid
- Genital herpes

4. Urethral discharge
- Gonorrhea
- Chlamydia

5. Genital warts
- Warts

What is the relationship between STIs/STDs and HIV?
- STIs/STDs fuel transmission of HIV3
    a. STDs that cause ulcers for example, Genital Herpes and Syphilis disrupt the integrity of the skin barrier enabling HIV easy access through such defects in the skin.4
    b. STDs that cause inflammation such as gonorrhea, Chlamydia infections, and trichomoniasis present a weak barrier to HIV
    c. Infected lymphocytes among HIV infected individuals are attracted to the STD lesion, hence increasing the likelihood of transmitting HIV to the partner
    d. Increased viral shedding has been reported in genital fluids of patients with STIs and STI treatment has been demonstrated to significantly reduce viral shedding

- Condoms can be used to prevent both STIs/STDs and HIV
- STIs/STDs and HIV both affect the reproductive health.
- HIV and STIs/STDs lower the body's immunity
- HIV infection is an STIs/STDs
- Some STIs/STDs cause ulcers on genitals, anus, and the mouth area. If HIV comes in contact with these, it will freely enter the person's blood stream.
- Preventive measures of HIV and STIs/STDs are the same.
- HIV accelerates the progression of STIs/STDs.

What happens if STIs/STDs are not treated?
- STIs/STDs predispose to HIV. HIV prevalence among STI patients is higher than in the general public.
- Infertility due to blocking of the fallopian tubes in females and destruction of some cells in the testes responsible for the production of sperms in males.
- Ectopic pregnancies. This is a pregnancy implanted anywhere else other than the uterus for example in the fallopian tubes (tubal pregnancy).
- Urethral strictures. This is blocking of the urethra in men, causing stasis of urine, thus infection.
- Pelvic inflammatory diseases, leading to inflammation of the internal reproductive organs.
- Mother to child transmission of gonorrhea and syphilis.
- Increased likelihood of stillbirths and abortions; and, Death.

How can we prevent STIs/STDs?
- Abstain from sex.
- Be faithful to one partner.

- Safer sex by using condoms correctly and consistently **(handout 2)**.
- Early diagnosis and treatment of infected person.
- Partner notification and treatment.
- Treatment of complication and consistence in taking medications.
- Sensitization and client education on STIs/STDs, and,
- Discuss any questions or concerns with your health care provider.

Module 5.5: Prevention of Mother to Child Transmission of HIV (PMTCT)

What is MTCT?
- This is where by an HIV positive mother passes on the HIV infection to her newborn baby.

Modes of MTCT of HIV
- Can occur during pregnancy, across the placenta (20 - 30%).
- Majority occurs at birth because the baby gets in contact with the mother's fluids and blood (50 - 60%).
- Can occur after birth, through breast feeding. (15 - 30%).

Factors associated with increased transmission
Maternal factors associated with increased transmission
- High viral load, especially during sero conversion and during AIDS.
- Decreased immunity or low CD4 count.
- Prolonged rupture of membranes.
- Vaginal delivery.
- Placental infections – *Chorioamnionitis.*
- Decreased Vitamin A levels.

Infant factors associated with increased transmission
- Gestational age at delivery. Pre-maturity is associated with increased risk.
- 1st born twin - exposed longer than 2nd twin.
- Mixed feeding and prolonged breast feeding increases the risk of transmission.
- Fetal immune response.

What is PMTCT?
- This refers to a series of interventions that help reduce the risk that an HIV positive mother will pass on the HIV infection to her newborn baby.
- The rate of mother to child transmission of HIV varies between 15- 45%, with the lowest in Europe and the highest in Africa. African rates are higher probably due to very sick mothers and breastfeeding.
- Knowledge of PMTCT is low in Ethiopia. In 2002 BSS, less than 10% of the general population knew about the possibility of mother-to-child-transmission of HIV and the availability of preventive medication[16].

[16] *Source 2008 Ethiopia country progress report*

Strategies for PMTCT

- Primary prevention of HIV in women (A, B, C).
- Voluntary counseling and testing for all pregnant women and their partners.
- Early, regular attendance of antenatal care (ANC). Start as early as 3 months of pregnancy, keep all appointments, and attend at least 4 ANC visits during pregnancy.
- Combined ARV drug Prophylaxis
- Prevent breast milk transmission by avoiding mixed feeding.
- Avoid breast feeding when the breast is infected or nipples are cracked.
- Mode of delivery- Caesarian section.
- Good obstetric practice. No Premature Rupture of Membranes, minimize episiotomies.
- Family planning to prevent unintended pregnancy.
- Early and proper treatment of all sexually transmitted diseases.

PMTCT program

Identify HIV positive women early in pregnancy
Comprehensive ANC and PNC (post natal care)
Counsel them about living positively, infant feeding and the use of combined ARV drug Prophylaxis for PMTCT.
Instruct them about baby dosing even if the mother delivered at home

Modified Obstetrics

A process known as modified obstetrics is also used to minimize or limit baby-mother blood contact. A caesarean section is done and the cord is not milked as always the procedure. This is done at the discretion of the doctor who weighs the benefits against risks – it is always a practice to leave the baby unwashed to prevent it from exposure to cold, however, in this case the child is washed immediately to minimize fluid exchange between mother and baby. This is why it's important to encourage pregnant mothers to go for VCT (to identify their sero-status).

After the child is born (postal natal), the mother is given modified nutritional advice to limit transmission through breast milk. Two options are always given One is not to breast feed at all and the other is to exclusively breastfeed for only three months and stop abruptly without weaning. It's very important to encourage HIV positive mothers to seek nutritional advice and care. The last method of prevention is the Abstinence, Being faithful and using a condom.

Module 5.6: Key Messages and Frequently Asked Questions

Key messages

- STI/STD patients should be counseled about their increased risk of HIV transmission and should seek VCT services
- Most STIs can be treated and cured. If STI patients receive prompt and effective treatment it can help prevent or reduce HIV transmission
- If a client comes for an HIV test, they should be screened for STDs.
- HIV discordance is common
- HIV discordance is not a sure sign of infidelity;
- A couple can remain HIV discordant for a long time;
- Factors influencing HIV transmission risk:
  a. Abstinence
  b. Use of barrier protection

c. Circumcision
d. Frequency of sex
e. Presence of sexually transmitted diseases
f. Viral load

- HIV is not transmitted at every exposure. Even if the actual risk is 1 in 1000, you cannot predict when that 1 is.
- No one is immune from HIV infection. An HIV negative partner in a discordant couple can convert to HIV positive.
- HIV negative partners in discordant couples are at a very high risk of infection
- HIV transmission within discordant couples can be prevented
- Risk reduction options
  a. Abstain
  b. Reduce frequency of sex
  c. Use condoms every time you have sex
  d. Recognize and treat STDs early
  e. Seek on-going support (couples club)
  f. Consider separation
- Counseling on family planning is very sensitive as it involves people's private lives. It calls for a counselor to be knowledgeable, sensitive, have positive attitudes and good counseling skills.
- A counselor should know about common methods available in Ethiopia, and the benefits of family planning.
- Encourage participation of both husband and wife
- PHAS should be encouraged to use condoms together with a hormonal method of family planning (dual protection)
- Relationship between ARVs and Family Planning Methods

Module 5.7: Correct and consistent use of Condom

Condom is a semi-transparent soft plastic like material that is put-on the males' penis during sexual intercourse. Condoms are an integral and essential part of comprehensive prevention and care programs, and their promotion must be accelerated. Condom use is, therefore, a critical element in comprehensive, effective and sustainable approach to HIV prevention and treatment. Condoms must be readily available universally, either free or at low cost, and promoted in ways that help to overcome social and personal obstacles to their use. HIV prevention education and condom promotion must overcome the challenges of complex gender and cultural factors. Condoms have played a decisive role in HIV prevention efforts in many countries. Increased access to antiretroviral treatment creates the need and the opportunity for accelerated condom promotion.

In Sub-Saharan Africa, socio-cultural norms and practices are major determinants of sexual risk-taking behavior. For example, In Ethiopia, a cohort study of factory workers with a high prevalence of HIV reported high-risk sexual behavior and low condom use, eventhough the majority mentioned condom use as the best way to prevent HIV.

The male latex condom;

- The male latex condom is the single, most efficient, available technology to reduce the sexual transmission of HIV and other sexually transmitted infections.

- Correct and consistent use of latex condoms during sexual intercourse can greatly reduce a person's risk of acquiring or transmitting most STDs, including HIV infection.

Behaviors that increase risk for HIV transmission include:

- Engaging in casual sexual encounters,
- Engaging in sex in exchange for money or favors,
- Having sex with an HIV-positive partner or one whose status is unknown,
- Using drugs or abusing alcohol in the context of sexual interactions.
- Women, even if faithful themselves, can still be at risk of becoming infected by their spouse, regular male partner, or someone using force against them.
- Other high-risk persons or groups include men who have sex with men and workers who are employed away from home

Existing research demonstrates that the correct and consistent use of condoms significantly reduces, but does not eliminate, risk of HIV infection. Studies of sexually active couples for example, in which one partner is infected with HIV and the other partner is not, demonstrate that latex condoms provide approximately 80-90 percent protection, *when used consistently*.

To achieve the protective effect of condom, people must use them *correctly and consistently, at every sexual encounter*. Failure to do so diminishes the protective effect and increases the risk of acquiring a sexually transmitted infection (STI) because transmission can occur with even a single sexual encounter. Latex condoms, when used consistently and correctly, are highly effective in preventing transmission of HIV. In addition, correct and consistent use of latex condoms can reduce the risk of other sexually transmitted diseases (STDs), including gonorrhea, syphilis and genital ulcer diseases.

Correct and consistent Condom use programs support the provision of full and accurate information about correct and consistent condom use reducing, but not eliminating, the risk of HIV infection; and support access to condoms for those most at risk for transmitting or becoming infected with HIV.

Condom use programs promote the following:

- The understanding that abstaining from sexual activity is the most effective and only certain way to avoid HIV infection;
- The understanding of how different behaviors increase risk of HIV infections;
- The importance of risk reduction and a consistent risk-reduction strategy when risk elimination is not practiced;
- The importance of correctly and consistently using condoms during every sexual encounter with partners known to be HIV-positive (discordant couples), or partners whose status is unknown;
- The critical role of HIV counseling and testing as a risk-reduction strategy;
- The development of skills for obtaining and correctly and consistently using condoms, including skills for vulnerable persons; and
- The knowledge that condoms do not protect against all STI

Module 5.8: Important Facts to Know about Behavior Change

> Behavior change is an essential component required for the positive impacts of Safe Water System, hand hygiene, Condom use to take effect and generally to adhere to clinical services!

Aspects to consider when dealing with behavior change:

- Cultural issues/acceptability
- Awareness of a problem
- Patient preferences

Your role as a health care provider in encouraging behavior change among your patients:

- Serve as positive role models for your patients. Incorporate the changes into your own lifestyle, so that when patients see you out in the community using SWS and proper hand washing techniques, they want to try and feel more confident when using it.
- Do not tell your patients what to do. Instead, it is more effective to encourage them by reinforcing the benefits of using SWS and proper hand hygiene. Remember to use **WaterGuard** and safe water vessel in your clinics.
- Do not use scare tactics. Positive reinforcement and knowing your facts goes a long way in encouraging change.
- Listen to the concerns of your patients and constructively address their questions or comments.
- Above all these let your clients adhere to all services provided in line with their positive status
- Be open minded and patient.
- Do not expect change to happen overnight. Clients will change their behavior when they are ready to do so.
- Be supportive in the meantime and continue teaching the message…you never know when the message will finally hit home with a patient and motivate him or her to change!

Client's Rights during Interaction

Tto get what we need at the end of a certain behavior change communication, we need to understand client's rights during interaction and we should handle unsatisfied client in a different manner. Let's look at clients' rights and what we should do for unsatisfied client so as to attain the planned behavior change among the beneficiaries

1. **Information** - to receive clear information to learn about the availability, benefits and possible problems associated with the services that you are providing.
2. **Access** - to obtain services regardless of age, sex, color, tribe, marital status, location, or socio-economic class
3. **Choice** - to decide freely whether to use health services and what to use that best meets their needs, goals and life styles
4. **Safety** - to receive effective services, treatments and care without harm

5. **Privacy** - to have a private environment during counseling and service delivery
6. **Confidentiality**- to be assured that any personal information will not be shared in public
7. **Dignity** - to be treated with courtesy, enthusiasm, attentiveness and respect
8. **Comfort** - to feel comfortable while receiving services
9. **Continuity** - to receive appropriate health services, drugs, commodities, and supplies for as long as needed
10. **Opinion**- to express an opinion about the services being offered without fear and with confidence that the opinion will be considered valuable

Problem of unsatisfied client; How to handle unsatisfied client:

1. Stay calm. Remember that the client is unsatisfied with the situation, not with you.
2. Let the client express anger. Stay quiet and listen for clues about what caused the anger.
3. Put yourself in the client's position, acknowledge her/his feelings and try to understand the situation from the client's perspective.
4. Control your own anger.
5. When the client is calm, ask questions to get to the root of the problem.
6. Be positive about resolving the problem. Use phrases like, "We can offer to …" or "What we can do is this ..."
7. Identify the best option for solving the problem with the client.

Module 5.9: Adherence Counseling

Adherence: the degree to which a patient exactly follows a prescribed treatment regimen that has been designed in the context of a (consultative) partnership between the client and the health care worker/counselor. Poor adherence may negatively impact a drug's effectiveness.

Adherence is acceptance of an active role in one's own health care

Counseling -treatment, financial, nutritional, preventive behavior, linking with other services

Adherence Counseling

- Knowledge of the treatment regimen
- Knowledge of side effects and ways to manage side effects
- Assess the barriers to adherence that the patient faces, discuss ways to address them
- Integrating the treatment into the patient's daily routine
- Assess the barriers to adherence that the PLWHA faces, discuss ways to address them
- Using 'drug reminder cues', checklists
- Involving family members
- Explore patient's beliefs and perceptions regarding ARV

There are two types of Adherence Counseling

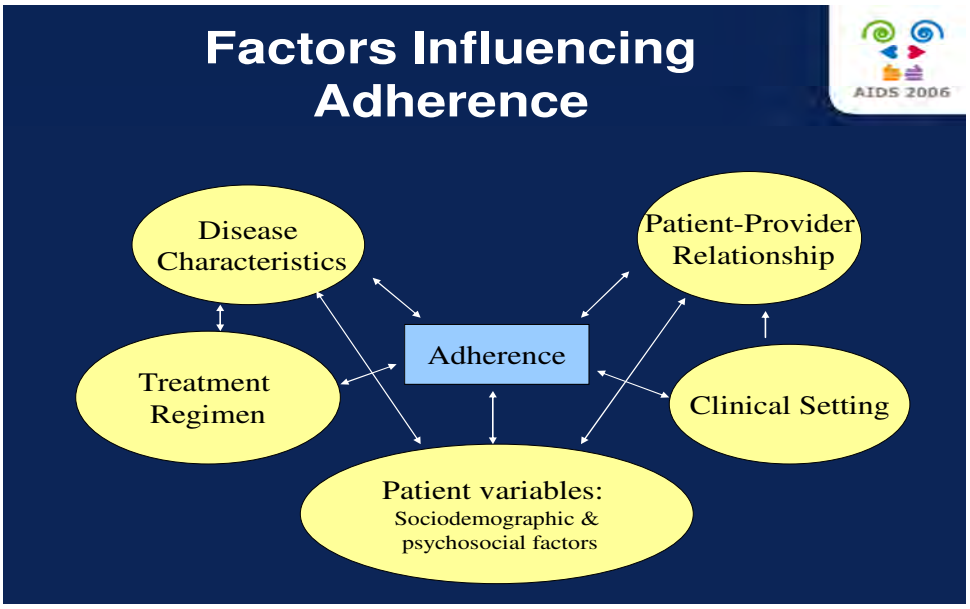
1. **Preparatory Counseling**
    a. Establish a trusting relationship with the client

b. [17]Introduction to the treatment program.
c. Inform the principles; number of appointments
d. Review patient's relationship with health care-provider
e. Plan the treatment
f. Discuss Adherence Strategies
g. Identify barriers of Adherence
h. Set the next appointment

2. Ongoing Adherence counseling

a. Review treatment regimen
b. Discuss current experience on receiving ARV
c. Assess adherence (pill-count form)
d. Discuss about adherence and its barrier[18]s
e. Discuss about side effects and resolutions
f. Discuss about follow-up plan
g. Review the treatment goals, current achievement, and tailoring pill-taking into daily life.
h. Discuss about family involvement and support. Encourage patient to disclose HIV status with partner, and emphasize on disease prevention.
i. Record the information
j. Fix a date for the next appointment

Factors Influencing Adherence



[17] *www.doh.gov.za/docs/misc/hiv/manual/adhrence*

[18] *www.aids2006.org/PAG/Material/TUSB04%20-%20Introduction%20ARV%20**Adherence**%20**Counseling**.ppt*

PATIENT-RELATED STRATEGIES TO IMPROVE

ADHERENCE

- Multiple education and encounters
- Establish readiness to take medication first
- Recruit family and friends
- Develop support groups
- Develop concrete plan
- timing of doses
- relation to meals
- daily schedule
- side effect management
- Inform patient
- Provide
- pill boxes
- pagers
- alarm clocks
- Familiarize patient with pills
- Selection of regimen
- Follow-up of patients' perceived symptoms
- Assisting with management of symptoms

GUIDELINES FOR THE COUNSELLOR

- Spend time on the relationship
- Acknowledge the role of race, ethnicity, gender, sexual orientation and age in your own and your client's life
- Stay up-to-date on HIV risk-related information
- Be aware of the client's perception of their risk
- Use the stages of change and harm reduction theory in your work
- Be curious about the contextual issues in your client's life (whilst also
- being purposeful)
- Be aware of the specific impact of HIV in each individual's life
- Be aware of and support your client's strengths and sources of resiliency
- Remember that the client has an ultimate right to self-determination
- Commit to an ongoing self-reflection of your values and judgments.

THE CLIENT-COUNSELLOR PARTNERSHIP

Involves:

• The client having a say in the kind of drug regimen that he/she goes on
• The client asking for information
• Asking questions
• Making sense of the information

• Deciding w hen they want to start
• Deciding w hen/how frequently they would like a consultation

Involves the counselor

- Providing ALL the necessary information
- Completely disclosing information with regards to side-effects
- Checking the client's understanding
- Responding to and taking account of the client's various emotions
- Addressing the client's doubts about beginning ART
- Anticipating future challenges in the client's life
- Encouraging the client to do independent research/information gathering about the subject

Some incentives for taking ART (ADVANTAGES):

- Extended life-span
- Delayed onset of opportunistic infections
- Stronger immune system due to delaying progression of disease
- Longer life-span to fulfil dreams and goals
- More time to see children grow up and go through life stages
- Opportunity to convey one's life experience (through writing, talking, other means of communication)
- An opportunity to use the experience of HIV-diagnosis to make life more fulfilling
- The opportunity to continue earning a living (i.e. more productive life years)
- More time to await (and possibly benefit from) the outcomes of scientific
- HIV/AIDS research – Maybe a cure w ill be found before I get ill?
- Better quality of life
- More time to do the things you enjoy

Some deterrents against taking ART (DISADVANTAGES):

- Patients must adhere to the timing, frequency and dosage of the drug regimen for a lifelong treatment period
- Dosing regimens may be complex
- There are differing dietary requirements
- Some drugs require refrigeration
- Some require preparation
- Multi-drug regimens require taking numerous pills per day
- Certain drugs may interact
- There is a high possibility of experiencing drug side-effects
- Loss of confidentiality as a result of being seen taking the drugs
- Risk of drug resistance and, therefore, limitations of future ART choices
- Unknown long-term toxicity

Key Messages

- Adequate counselling about safer sex practices must be provided to encourage prevention of new infections and re-infection.

Chapter 6: Nutrition and HIV

Aim

The aim of this section is to promote accurate knowledge and awareness among health care providers about the importance of nutrition in HIV and ways to improve the nutritional status of PHAs.

Objectives

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

- Describe the importance of Nutrition in PHAs
- Explain the relationship between Nutrition and HIV
- List the essential nutritional requirements for PHAs
- Identify the role of health care providers in delivery of nutritional care and support services for PHAs

Module 6.1: Overview of Nutrition and HIV

What is Nutrition?

Nutrition refers to how food is consumed, digested, absorbed and utilized by the body for growth, reproduction and maintenance of health. Food contains different nutrients that include water, carbohydrates, and proteins (or amino acids), lipids, vitamins and minerals.

What is the importance of Nutrition for PHAs?

- PHAs may suffer from loss of appetite, difficulty in eating and poor absorption of nutrients. This compromises their nutrition and results in deteriorating health. Counseling and supporting them to take simple actions to improve their nutrition can improve their health. Attainment of good nutrition will contribute to the adoption of a positive attitude, which normally improves the quality of life for PHAs.

- The **elderly** have special nutritional problems due to the effects of aging, e.g. loss of teeth, poor absorption, poor appetite, hypertension and diabetes. HIV/AIDS infection makes these problems worse.

- The nutrient needs of **adolescents** are high. They should eat quality foods to satisfy their large appetites. Adolescent girls should take iron and folic acid supplements. Young girls who become pregnant are at a particular risk of developing nutrient deficiencies if they have HIV/AIDS. They need additional nutrients for their baby's growth as well as their own and to boost their immunity.

- Good nutrition is important for the health and reproductive performance of **women** as well as for the survival and development of their children. A woman's nutritional status prior to and during pregnancy determines the risk of MTCT and also influences her own health. Pregnant and lactating mothers who are infected with HIV are at a higher risk of malnutrition and mortality. This is due to the extra demands for energy and nutrients exerted by pregnancy, lactation, and HIV. To preserve their health and nutritional status they require additional food to meet the extra demands for nutrients during pregnancy and those imposed on the body by the HIV infection. Unfortunately in Ethiopia, many

women become pregnant when they are already malnourished. They are often malnourished prior to HIV infection as well. If the woman is HIV positive then the effects of malnutrition and HIV increase her vulnerability to health dangers associated with pregnancy and childbirth.

What are the Nutritional requirements for PHAs?

PHAs need a meal made up of at least one food item from each of the following:

- Energy giving group (Carbohydrates, Sugars and Sugary foods, fats and Oils, Dietary fibers)
- Body building group (Plant and Animal Proteins)
- Protective group (vitamins, minerals, vegetables and Fruits)
- Water and Beverages

Carbohydrates	**Proteins**	**Fats**	**Fruits & Vegetables**	**Sugars & Sugary foods**	**Dietary Fibres**
Bread	Meat	Oil	Tomato	Honey	Vegetables
Cassava	Chicken	Eggs	Carrots	Jam	Fruits
Rice	Fish	Ground nuts	Green pepper	Table/Tea sugar	
Wheat	Eggs	Breast milk	Pineapple	Fruit juices	
Maize	Ground nuts		Mango	Breast milk	
Breast milk	Beans		Papaya		
	Breast milk				

Table 2: Different classes of foods

Special attention on feeding and support should be given to children with HIV positive mothers. Infants born to HIV positive mothers need exclusive breastfeeding for not more than six months or exclusive replacement feeding. This helps to reduce the risk of HIV transmission.

Module 6.2: Relationship between Nutrition and HIV

Background

HIV/AIDS and high levels of malnutrition combine to undermine immunity of most people in the community. According to the EDHS (2005), 47% of children less than 5 years of age are

stunted and 27% of women have chronic energy deficiency. More than 50% of children less than 5 years of age and 27% of women ages 15-49 are anemic[19].

HIV/AIDS attacks households by reducing labor, agricultural production and income, which then aggravates food insecurity. This further limits the capacity of affected households to access food, quality care and to adopt appropriate health and nutritional responses to HIV/AIDS.

Providing quality care and support for people with HIV/AIDS (PHAs) requires addressing their nutritional needs. Good nutrition has been shown to be an effective strategy in the mitigation of the effects of HIV/AIDS. Like HIV/AIDS, malnutrition also compromises the immune function and thus increases susceptibility to severe illness and reduces survival. Nutritional care and support should therefore be an integral component of the HIV/AIDS Preventive Care Package.

The Link between Nutrition and HIV/AIDS

1. The relationship between malnutrition and HIV/ADS creates a vicious cycle that weakens the immune system. The effect of the virus on nutrition can occur early in the course of the disease. The time it takes for HIV infection to become full- blown AIDS depends on the general health and nutritional status before and during the time of infection.

   Many people live with the virus for ten years or more if they maintain good nutrition. As the viral load increases, the infections put extra demand on the immune system and increase the body's need for energy and nutrients. Frequent illnesses coupled with malnutrition further weaken the body leading to loss of weight and increased susceptibility to opportunistic infections such as diarrhea, fever, etc.

[19] http://www.measuredhs.com/pubs/pdf/FR179/FR179.pdf

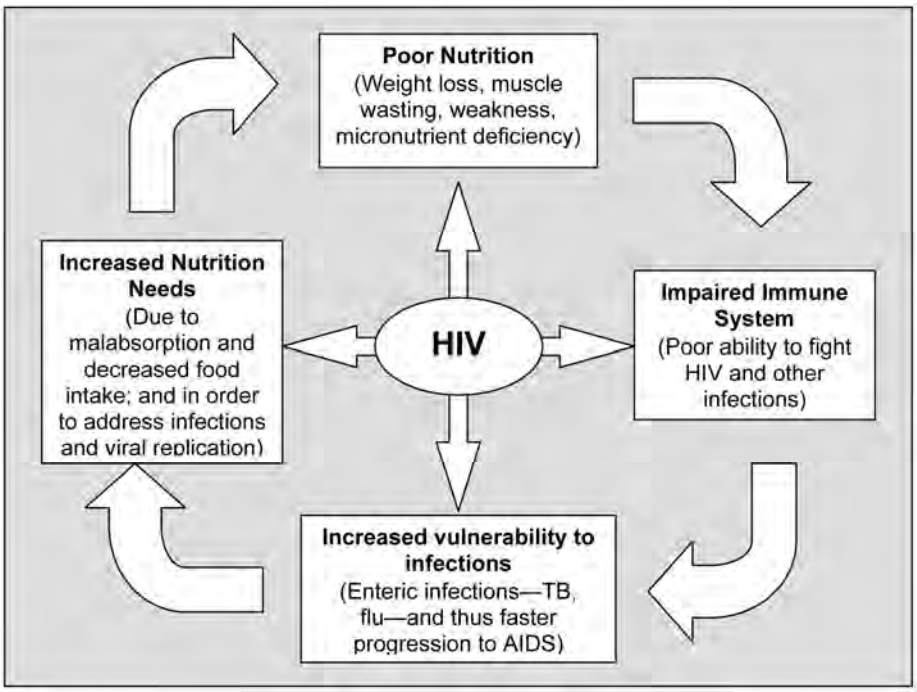


Figure 8: The cycle of malnutrition and infection in the context of HIV/AIDS

(Source RCQHC/FANTA, 2004)

2. Persons with HIV/ADS are at increased risk of malnutrition through various mechanisms, some of which are not related to food intake. The increased risk of malnutrition in HIV infected person is due to:
   - Increased requirements as a result of the disease accompanied with reduced food intake as a result of appetite loss and difficulty in eating, which may result from infections, side effects of medication, or depression due to fatal illness.
   - Poor absorption of nutrients that may be due to recurrent/chronic diarrhea and HIV caused intestinal cell damage.
   - Changes in the way the body uses the nutrients it receives or has stored.
   - Chronic infections and illnesses that accompany HIV that may increase the nutrient requirements of the body.

3. Poor nutrition increases susceptibility to opportunistic infections and may accelerate the progression of HIV/AIDS.

Nutrition should be an integral component in the prevention, care, treatment and support programs for HIV/AIDS.

Module 6.3: Role of health care provider in nutritional care of PHAs

1. Support PHAs to access information on nutrition and HIV/AIDS. Assist in linking them to organizations/ services where they can get dietary information or support, and provide them with nutrition IEC.

2. Encourage PHAs to regularly have medical check-up including nutritional status.

- Encourage adults with HIV/AIDS to regularly (at least every 3 months) check their weight and to undergo a general clinical check up especially for anemia. If possible they should have their hemoglobin levels determined and recorded.
- Accurately record the weight, height and other records of PHAs. Encourage them to show the records to service providers with whom they may come into contact.

3. Teach PHAs to prevent weight loss, or gain weight in case of loss.

    - Counsel PHAs to increase their energy and nutrient intake, through:
        - Increasing the amount and the frequency of eating meals rich in energy, protein and plenty of fruits and vegetables.
        - Eating nutritious snacks between meals as often as possible.
        - Eating foods that are fortified with essential micronutrients like vitamins A, B, C, E, K and iron.
    - Using micronutrient supplements in consultation with a doctor. If clients prefer this option, discuss the costs of this option relative to the cost of food-based approaches.
    - Help make meal plans using locally available foods to meet their nutrition needs. The counselor should consider food accessibility, availability, affordability, preservation and storage. The counselor should also consider fuel needs of the client, house hold and community. The meal plan should also consider whether the client is taking medication or has infections.
    - Encourage the client to drink at least eight glasses of clean safe water each day.
    - Advise PHAs to seek prompt treatment for HIV-related conditions, particularly those that affect food intake such as fever, oral thrush, ulcers/sores in the mouth, diarrhea, vomiting, nausea and loss of appetite.
    - Encourage PHAs to have a positive attitude towards the illness and life: it can make a difference to their health.
    - Practice food and water safety and personal hygiene, e.g. wash hands before handling food, thoroughly cook animal products, boil drinking water, wash fruits and vegetables in clean water and store food appropriately
    - Get de-wormed every six months
    - Advise your clients to avoid habits that may interfere with their foods intake, absorption and utilization. These include consumption of alcohol, smoking, drug abuse and family meals alongside drinking tea or coffee.
    - Advise care givers of bedridden PHAs to regularly supervise their meals to ensure adequate food consumption.

4. Support PHAs to address conditions that may affect their body shape.
   Develop a plan with PHAs and encourage them to engage in physical activities. Exercise helps strengthen the body and stimulates appetite. If loss of muscle persists even with increased energy intake, exercises, and prompt treatment of illness, the client should be referred to a doctor. PHAs should do light exercise such as walking, jogging, weight lifting, and skipping.

<u>Pregnant and lactating mothers</u>

5. Support pregnant and lactating mothers to seek early diagnosis for HIV infection.

Provide counseling to pregnant and lactating mothers on the need for early diagnosis of HIV infection. Knowing their HIV status helps them to**:**

- Better understand their overall health situation and take care of themselves more thoroughly.
- Prevent infection or even re-infection by having safer sex.
- Seek nutritional support that is more specific to their needs.
- Refer all pregnant women to an institution that offers HIV counseling and testing services.
- Encourage lactating mothers to go for HIV counseling and testing
- Counsel women on the need to seek early and regular antenatal and postnatal care.
- Link them to and encourage them to utilize PMTCT services if available.

6. Support pregnant and lactating mothers to monitor their nutritional status.

- Ensure that every pregnant mother has an antenatal card to record weight changes during pregnancy**.**
- Educate all mothers infected with HIV about the importance of regularly monitoring their weight:
    a) To know whether they are gaining adequate weight as expected or are losing weight at a rate that is detrimental to their health.
    b) To be able to plan appropriately so that they may address their dietary needs.

(Pregnant women gaining less than one kilogram per month in the second and third trimester should be referred to a health unit immediately where they can receive more care)

    c) Assess the nutritional status of women (using anthropometric measurements) and record it on the antenatal card.
    d) If a pregnant mother has a weight gain that falls below the recommended range, discuss with the pregnant mother to find the probable causes of insufficient gestational weight gain and work with her to figure out the best course of action to promote weight gain.
    e) Weight loss may indicate a possible medical problem (e.g. an opportunistic infection) or inappropriate energy intake, and or food insecurity.
- Check for paleness of inner eyelids and palms or for hemoglobin levels. Any signs of anemia (or Hb<11mg/dL) should be referred for immediate treatment. The best treatment should include food based approaches and iron supplementation.
- All pregnant women and women within the first six weeks of delivery will be given routine iron and folic acid supplementation (source: National Anemia Policy)

7. Support pregnant and lactating mothers to consume enough food to meet their energy and nutrient needs.
    - Find out the foods the client has been eating and assess whether the intake is adequate. Pregnant and lactating mothers should follow all the guidelines for food intake given in the section under 'Pregnant and lactating mother' above. If there are any factors that may limit intake, help the mother address them.
    - Encourage pregnant and lactating mothers to consume foods rich in micronutrients and go to ANC services for guidance on micronutrient supplementation.

- Ensure that lactating mothers get vitamin A supplementation at delivery or at least within the first eight weeks of delivery.

8. Support pregnant and lactating mothers to prevent illnesses that may affect their nutritional status or their ability to eat.
   - Advise pregnant and lactating mothers to:
     a) Seek early treatment for infections such as fever, malaria, and diarrhea to minimize the impact on mother's nutritional status.
     b) Go for de-worming every six months. During pregnancy de-worming is done in the second and third trimester.
     c) Maintain physical activity and exercise as much as possible. This improves appetite and helps build body mass.
   - Support women to practice food safety and hygiene, in order to avoid food borne illnesses
   - Refer mothers to reproductive health services where they can get family planning as well as STD and HIV prevention and counseling services.

<u>Vulnerable children</u>

9. Support mothers/caretakers in whatever feeding option they may choose. Assess whether the mother has any preference for either Exclusive or Replacement Feeding.

   If the mother chooses the exclusive breastfeeding option:
   - Help mother to apply good breastfeeding practices like positioning of the baby during breastfeeding and attachment of the baby to the breast. Good breastfeeding practices are essential for prevention of breast problems like mastitis.
   - Ensure that breast-feeding is on demand, that is, as often as the child wants to feed, at least eight times a day or, whenever the mother wants to feed the child.
   - Counsel her on exclusive breastfeeding for not more than six months.
   - Whenever the mother is ready to stop breast feeding she needs to take the child off the breast immediately once she decides to do so. She should be shown how to express breast milk and feed it to the baby using a cup. Once the baby is then used to the cup, she should then feed the baby on a replacement feed and stop breastfeeding/breast milk completely.

Any mother who develops the symptoms of full-blown AIDS should consider stopping breastfeeding immediately

- Counsel mothers how and when (immediately if she can meet AFASS or at six months) to introduce other foods to their babies. Demonstrate to mothers/caretakers the preparation of the milk of their choice.
- Advise the mother to seek health care when the baby does not breastfeed well or is sick, or when the mother has breast problems such as cracked nipples, painful or swollen breasts or sores on her breast.
- Discourage mixed feeding.

If the mother chooses the exclusive replacement feeding option:

- Assess for Acceptability, Feasibility Affordability, Sustainability, and safety (AFASS). If the mother does not meet AFASS, explain the risks involved with this choice.
- Verify adequacy of resources and skills needed to sustain replacement feeding.

- Demonstrate/explain the preparation of the replacement feed the mother/caretaker has chosen
- Emphasis the importance of small but frequent meals.
- Help mother/caretaker identify ways of meeting the baby's micronutrient needs if the selected replacement feed is animal milk.

Infants less than 6 months who are not breastfed should be supplemented with vitamin A (50,000 IU) and thereafter continue with routine vitamin A Supplementation. If they are on animal milk, they should take micro nutrient supplementation daily

- During every contact you have with the mother/caregiver:
    - Assess for AFASS
    - Assess whether the baby is getting enough of the replacement foods at least eight times a day.
    - Help the mother/caretaker prepare the baby feeds (amounts change as the baby grows)
    - Stress the importance of using clean safe water and containers for replacement feeding. If water is used for diluting cow's milk or prepare formula, the client should boil and filter the water.
    - Help mother/caretaker know when and where to seek medical care and other social support if the child has feeding problems or is ill.
    - Counsel the mother on the risks of mixed feeding.

10. Support mothers/caretakers to provide children infected with HIV with nutritious diets and to address factors that result in decreased food intake.
    - Counsel mothers/caretakers on feeding recommendations as provided on Infant and Child Feeding Counseling Cards (2006) developed by the ministry of health.

    For infants aged 0-6 months:
    - Refer to point 10 above. These children need additional 10% energy if asymptomatic and 20-30% more energy if symptomatic. If they are losing weight they will need 50-100% additional energy compared un-infected child

    For children who are 6-24 months old:

    - Promote foods and fluids that are rich in energy and nutrients.
        - Give porridge enriched with any of the following: milk, oil, sugar, ground nut or simsim paste, bean powder or Soya bean flour
        - Give semi solid food enriched with any of the foods mentioned above, but also with fish powder or fortified.
        - Give the baby mashed fruits and vegetables such as ripe bananas, papaws, avocados and pumpkins as frequently as possible.
        - Continue giving animal milk between meals.

    - Support the mother/care takers to:
        - Provide nutritious food according to the weight and age of the child, and increase the food portions as the child grows older.

- Feed the child frequently (5- 6 times per day) and provide nutritious snacks in between meals.
- Make sure that the child's food is prepared appropriately

- Review the child's diet at every contact to ensure appropriate feeding.
  - Help mothers to practice active and responsive feeding including small but frequent meals, feeding the child patiently, not forcing the child to eat and feeding the child the food she/he likes
  - Assess and promote good hygiene and proper food safety and handling.
  - Promote continued adequate dietary care and support during and after illness.
  - Create awareness about physiological and social economic support that households with HIV/AIDS infected children can access in their locality.

For children who are more than 2 years old:

- Encourage the mother to ensure that children consume adequate food to meet their increased energy needs.
- Develop a plan in consultation with the mother for feeding the child that includes sources of adequate protein and micro nutrients.

11. Support mothers /caretakers to use essential child survival services

- Ensure that each child has a child health card. This can be accessed at health facilities
- Assess children for complete and up to date immunization information. Immunize or refer children whose immunization is not up to date.
- Assess whether children are receiving Vitamin A supplementation and undergoing regular de-worming.
- If these have not been done in the last six months, provide the service or refer the children to where they can get the services
- Advise mother/caretakers to always take their children to outreach services or health units nearest to them to receive all immunizations and vitamin A supplementation.
- Ensure that all immunizations and vitamin A supplementation have been recorded on the child health card.
- Counsel mothers/ caretakers about importance of taking their children for monthly growth promotion and monitoring.
- HIV infected children brought for growth monitoring should be weighed accurately. The weights should be plotted accurately against the ages on the child health card.
- Provide nutritional counseling to all mothers/ caretakers irrespective of the growth status of the child.
- If growth failure is detected the mother/caretaker should be advised accordingly ask the mother/caretaker if there are any feeding problems or illnesses and provide a suitable intervention.
- Moderately and severely malnourished should be referred for nutrition rehabilitation services.

Children who are losing weight need 50-100% additional daily energy compared to an un-infected child of the same sex and age

- Encourage mothers/caretakers to keep the Child Health Card properly. The child health card should be brought each time the child is brought to the health unit or for weighing, to ensure that there is continuous plotting of the weight on the same card.

Ensure that the child's weight is plotted on a Child Health Card on every visit and interpreted to the Caregiver..

Module 6.4: Key Messages and frequently asked questions

Key messages

- PHAs without AIDS related symptoms need 10% more energy (equivalent to one snack per day) while those experiencing AIDS related symptoms need 20-30% more energy (2-3 extra snacks per day) than HIV negative person of the same age, sex, level of physical activity and physiological state.
- All PHAs should take at least 3 full meals, 2 snacks, and 8 glasses of safe water daily.
- Pregnant and lactating PHAs should be weighed and screened for anemia at least every 3 months.
- Children under 6 months should be on exclusive breast feeding or replacement feeding, and not mixed feeding.
- All PHAs should access the basic care package to reduce opportunistic infections that aggravate poor nutritional status.

Chapter 7: Tuberculosis Control in People Living With HIV/AIDS

Aim
To promote accurate knowledge and awareness among health providers about the risks of TB for PHAs, and how to prevent TB in HIV

Objective
By the end of the training, participants will be able to:
- Describe the relationship between TB and HIV
- List steps to prevent TB in HIV
- Identify the role of health workers in the control of TB and HIV

Module 7.1: Relationship between TB and HIV

Tuberculosis (TB) is the most important opportunistic infection in HIV-infected people, and one of the defining infections of AIDS. Uganda has high rates of both TB and HIV. Statistics have shown that TB is the most common cause of death for persons with HIV (30%). In Uganda, 50-60% of all TB patients are HIV-infected. For these reasons, it is recommended that all TB patients be routinely offered HIV testing and counseling and all HIV clients/patients be screened for TB.

The strongest risk factor for developing TB disease is HIV infection. Persons with HIV and TB infection have a 5-10% yearly risk and 50-60% lifetime risk of developing active TB disease, compared with only a 10% lifetime risk for persons who are HIV-uninfected. The HIV epidemic, therefore, creates a large number of persons at high risk of developing TB and, as a result, increases the number of persons who will ultimately develop TB and spread TB to HIV-infected and HIV uninfected persons.

HIV-infected patients can develop TB at any time, even during the early stages of their HIV infection. HIV-infected patients with a nearly normal immune system may have TB symptoms similar to patients without HIV infection. However, as an HIV-infected patient's immune system gets weaker, patients are more likely to have less common symptoms of TB and to have extra pulmonary TB.

Effect of TB on HIV disease
TB is a potent stimulus to the immune system via cytokine production. Immune system activation increases the rate of HIV growth, thus people co infected with TB and HIV often have a high viral load. This means immunosuppression progresses more quickly, and survival may be shorter despite successful treatment of TB. HIV-infected patients with TB are at greater risk of becoming sick quickly (rapid disease progression), and of dying if TB is not diagnosed and treated quickly.

In order to combat the dual infection, we should ensure that:

1. All TB patients are offered HIV testing and counseling;
2. All HIV clients/patients are screened for TB;
3. All TB-HIV co-infected patients are offered appropriate care; and,

4. TB/HIV data are recorded and reported according to recommended guidelines for countries with generalized HIV epidemics

Module 7.2: Overview of TB

What Is TB?
Tuberculosis (TB) is a bacterial infection caused by *Mycobacterium tuberculosis.*

How Is TB Transmitted?
TB is usually spread by a person who has TB disease in their lungs and is coughing. People at greatest risk of becoming infected with TB include those who have had close and prolonged contact with someone who has TB, such as a household contact.

What are the signs and symptoms of TB?
Many people with TB infection will never develop disease because the bacteria remain inactive in their bodies. People with TB infection have no signs or symptoms of active TB disease, and cannot transmit TB to other persons. Risk factors for developing TB disease after TB infection include:

• HIV infection;
• Infection within the past 1 year;
• Chest radiograph findings suggestive of previous TB;
• Less than 3 years of age;
• Immuno – suppressive treatment;
• Underweight;
• Diabetes; and,
• Tobacco smoking.

Active TB disease usually affects the lungs (pulmonary TB). Common symptoms include prolonged cough with sputum, weight loss, night sweats, fevers, and lymph node enlargement.

Presentation of TB among TB-HIV co infected patients
CD4> 200 presents with typical upper lobe cavity pulmonary disease, and sputum smears are often positive CD4< 200 presents with lower lobe or other atypical infiltrates, sputum smears are often negative, and extrapulmonary and disseminated disease is common.

How is TB diagnosed?
The diagnosis of pulmonary TB is usually made by asking the patient to give a sputum specimen. Patients are usually asked to provide 3 initial sputum specimens to make the diagnosis. The disease is called “smear-positive” when TB organisms can be seen under the microscope. Patients who are smear positive are the most infectious. Sometimes patients have TB even though the bacteria are not visible under the microscope. Such patients are described a “smear-negative”, and the diagnosis is usually made by a chest radiograph.

Diagnosis of TB Disease in Persons with HIV infection

Features of TB	Stage of HIV Infection	
	Early	Late
Clinical features	Typical symptoms, such as cough, fever, and weight loss	May not have typical symptoms, but instead a dry cough
Sputum smear result	Often positive	Often negative
Chest radiograph	Typical appearance, cavities are common	Atypical for TB, often infiltrates with no cavities

Table 3: Diagnosis of TB disease in persons with HIV infection

How to Screen for TB Disease

- Screen for symptoms
  i. Cough > 3 weeks
  ii. Lymphadenopathy
  iii. Weight loss
  iv. Unexplained persistent fevers or night sweats
- All patients with symptoms should have a TB evaluation
- Patients should submit 3 sputum samples for smear microscopy
- Other tests should be considered
  i. Chest radiography
  ii. Mycobacterium culture

What are the treatment options for TB

TB disease is curable, even among those with HIV infection. TB treatment lasts a period of 6-8 months. During the first 2 months, patients usually receive 4 drugs. If they improve clinically, they are placed on 2 drugs for the remaining 4 or 6 months. The treatment of HIV-infected TB patients who are receiving ART is more complicated, and should be done by someone with experience. The care of patients should be carefully coordinated between the treating physician from the TB program and medical officer from the ARV program. Because HIV infected patients with TB are more likely to have side effects from TB medications, they should be monitored carefully. They should be followed closely to ensure that they respond to treatment and are cured of TB. HIV infected TB patients are also at risk of having a recurrence of TB, either because they were not fully cured the first time (relapse), or because they have been infected with TB again (re-infection).

Response of HIV/TB co-infected to TB treatment

- Clinical response to short course chemotherapy is the same both in HIV positive and HIV negative TB patients
- Average weight gain is less in HIV positive TB patients
- Case fatality rate is higher in HIV positive TB patients

- Recurrence rate is higher in HIV positive TB patients
- Side effects of drugs is common in HIV positive TB patients

Module 7.3: Control of TB in HIV

Prevention of TB in HIV

PHAs are at a higher risk of developing active TB from TB infection. PHAs with TB infection can be given treatment to prevent them from developing active TB disease. The treatment usually involves only one anti-TB drug, isoniazid. TB infection is diagnosed using a tuberculin skin test (TST). All HIV positive clients with active TB should be referred to TB clinic for treatment and those with out active TB should be given Isoniazid preventive therapy (INH) at the HIV/ART clinic.

Several studies have shown that Isoniazid preventive therapy (INH) reduce active TB diseases in PLWHA. The main purposes of IPT are to prevent TB in HIV infected individuals so that they may lead a longer, disease free life. It also helps to prevent further transmission of TB in the community.

Prevention of HIV in TB patients

In order to prevent HIV in TB patients, the following should be done:
In addition to the general HIV prevention interventions, all TB patients should be counseled on HIV, offered HCT and condoms should be provided in TB clinics.

BCG in HIV

BCG protects from severe forms of TB, and is part of routine immunization for children in Ethiopia. BCG is part of routine immunization at birth in Ethiopia. However, BCG is contraindicated in children with symptoms of HIV/AIDS.

Treatment of patients co-infected with TB and HIV

The treatment outcome of TB patient co infected with HIV usually improves when the patient is provided with comprehensive HIV care including ART. Close monitoring for side effects is very essential so that appropriate action is taken as soon as a patient gets a problem or side effect to the drugs. It is important to reassure the patient as part of continued support as this would improve adherence to treatment and improve the treatment outcome of the patient.

Patients who need to be referred to the medical officer to decide how and when to give TB and HIV treatment together are:

- Patients who are already on ART and develop TB
- HIV patients who are on TB treatment for pulmonary TB and have any of the following:
  i. Losing weight on treatment
  ii. Has or develops signs of clinical stage four[20]
  iii. Develops oral thrush, pyomyocytis, recurrent pneumonia, persistent diarrhea and new prolonged fever while on treatment.

[20] Combination of the following: HIV wasting syndrome, Opportunistic infections, Cancers e.g. Kaposi's Sarcoma (KS), Other conditions (HIV encephalopathy)

- HIV AIDS patients with extra pulmonary TB.
- Any TB patient with a CD4 less than 350.

Patients who do not need to be referred;
- Pulmonary TB patients without any other signs or symptoms of clinical stage three or four and gain weight on treatment. For these patients, complete the entire TB treatment and start ART after completing treatment.
- Patients who have completed TB treatment for either pulmonary or extra pulmonary TB. These patients can be started on ART if they have no new symptoms and meet the requirements for ART.
- TB patients with a CD4 count more than 350.

ART for children co-infected with TB and HIV
- Children with pulmonary TB who are doing well with anti TB treatment should be allowed to complete the entire treatment. ART is initiated after the completion of TB treatment.
- Children who have completed TB treatment and have no new symptoms can be started on ART.
- Children with TB who have a CD 4 count> 15% can wait until treatment for TB is completed before initiation of ART. However if CD4 % is < 15% ART should be started after 2 months of TB treatment. Where CD4 % is< 10 both ART and TB treatment may need to be initiated together. (National guidelines for treatment of TB in children)

Special management issues in dually infected patients;
- All dually infected patients should be on co-trimoxazole prophylaxis
- As soon as it is safe, they should be started on HAART
- Vitamin supplementation is associated with better outcome
- Pyridoxine supplements should be routine
- No iron supplements should be given unless the patient has iron deficiency anemia
- Jaundice in patients on TB therapy may have multiple causes including toxicity to INH, PZA, RIF or EFV; TB hepatitis, or flare up of hepatitis B viral infection
- In cases of uncertainty in the diagnosis of cases of smear negative TB, if patients are not improving after 1-2 months of anti-TBs, diagnosis of TB should be reviewed and other possible diagnoses considered.
- Oral contraceptives should not be given to patients co-infected with TB and HIV.

Co-trimoxazole Preventive Therapy (CPT)
CPT is active against many pathogens (bacteria and parasites) that are frequent causes of morbidity and mortality among PLWHA including:
- Pneumocystis jiroveci pneumonia (causative agent for pneumocystis pneumonia)
- Streptococcus pneumonia (which commonly causes septicemia and pneumonia)
- Non-typhoidal salmonella
- Isospora belli (causes enteritis)
- Toxoplasma gondi (causes central nervous system infection)
- Malaria (plasmodium falciparum)

Co-trimoxazole preventive Therapy is indicated to
- To all patients with active TB who are HIV positive

- Adults and adolescents (above 13 years of age) with symptomatic HIV disease (stages 2,3, or 4 of WHO HIV clinical staging) as referred Federal Ministry of Health Ethiopia, July 2005 TB/HIV Implementation Guidelines

Drug interactions between anti-TBs and ART

Anti – Retroviral treatment

A TB patient co-infected with HIV may be eligible for ART and should therefore be helped to access ART. The health worker will either need a CD4 cell count, lymphocyte count or Clinical staging of HIV to determine whether the patient needs ART.

The decision on giving ART and TB drugs together needs to be made by a medical officer because

- Drug interactions between TB drugs and ART can occur. These interactions occur mainly during the intensive phase of the TB treatment, when the treatment contains Rifampicin. The interaction can damage the liver or make some ARVs less effective.
- The number of pills the patient has to take if both TB and HIV are treated at the same time is very high (includes co-trimoxazole).
- There is no interaction between Rifampicin and NRTI class of ARTs. There is clinically significant interaction between NNRTI and PI classes of ART
- Rifampicin slightly lowers Efavirenz levels but they can be used together
- Rifampicin significantly lowers Nevirapine levels
- There is increased risk of hepatic toxicity when Rrifampicin and Nevirapine are used together and so the combination of Nevirapine and Rifampicin should be avoided if at all possible
- Rifampicin lowers the blood levels of all protease inhibitors
- Protease inhibitors which can safely be used with rifampicin are; Ritonavir 600mg BD Lopinavir/ritonavir 3 caps bd PLUS ritonavir 300 mg bd (for a total of lopinavir 400 mg/ritnavir 400mg bd)
- Saquinavir 400mg + Ritonavir 400 mg bd is no longer recommended due to toxicity.
- No second line HAART is currently recommended to be used with rifampicin based TB treatment. If available, use 2NRTIs (AZT + ddI) with ritonavir 600mgbd OR kaletra 3 capsules bd + ritonavir 300 mg bd

What is the role of health workers in reducing the burden of TB in PLHAs?

National HIV Testing Policy for TB patients: All patients diagnosed with TB should routinely be offered an HIV test with the opportunity to opt-out should they so desire. HIV testing provides an entry point for those co-infected to receive HIV treatment and care.

HIV Care Settings

- Screen for TB symptoms

- Refer patients with symptoms for TB evaluation

- Develop TB infection control plan

- To reduce risk of TB to HIV+ patients and health care workers, you can:

a) Develop TB infection control plan and identify responsible staff
b) Screen HIV+ clients for TB symptoms and refer promptly
c) Provide face masks to TB suspects
d) Provide separate waiting areas and expedited care for TB suspects
e) Use simple environmental control measures
f) Screen staff periodically for TB symptoms
g) Train staff on TB and TB infection control

- All patients diagnosed with TB should routinely be offered an HIV test with the opportunity to opt-out should they so desire.

Infection Control

- Because TB is an airborne disease, HIV-infected patients and healthcare workers may become infected and sick with TB if they are exposed to infectious cases. For this reason, both TB and HIV program should develop policies to minimize the risk of TB to patients and staff in your facilities. At a minimum this should include:
  1. Develop a simple infection control plan, and identify a staff member who is responsible for this plan
  2. In HIV care and treatment settings, screen all clients to identify persons with symptoms of pulmonary TB disease and refer for prompt evaluation and treatment
  3. Provide face masks or tissues to persons with symptoms ("TB suspects")
  4. Place TB suspects in a separate waiting area
  5. Expedite TB suspects' receipt of services in the facility
  6. Use and maintain simple environmental control measures (fans, open windows, outdoor waiting areas)
  7. Screen staff for TB on a routine basis
  8. Train and educate staff on TB, TB control, and the TB infection control plan

Module 7.4: Key Messages

Key messages

- TB is an opportunistic infection in HIV.
- The strongest risk factor for developing TB is HIV.
- TB is an airborne disease.
- A typical Pulmonary TB patient presents with cough for more than three weeks, weight loss, night sweat, fever, and lymph nodes enlargement.
- TB in HIV can be cured and not all TB patients have HIV
- A TB patient should be screened for HIV and all HIV patients should be screened for TB.

SECTION II

ANNEXES

Annex A: Pre/Post Test Questions on HIV Preventive Care Package

Malaria Prevention and Benefits of ITN for PHAs

Select the correct answer or answers as directed in the stem of the question. After completing the test submit your test paper to you trainer/facilitator. Follow any other instructions given to you by your trainer/facilitator.

1. Malaria is transmitted by
   a) Coughing and sneezing
   b) Bite of infected female anopheles mosquito at night
   c) Bite of male anopheles mosquito during the day
   d) Plasmodium P. falciparum

2. How long does a long lasting insecticide treated net (LLITN) last?
   a) One month or 2 washes
   b) Six months or 5 washes
   c) Two weeks or no washes
   d) Three years or 20 washes

3. How is the LLITN effective against malaria? Check all that apply
   a) Physical barrier
   b) Cures malaria if you get it
   c) Repels
   d) Kills

4. True or False? Circle "T" for true and "F" for false statements
   a) T F LLITN is **not** dangerous for humans, even babies
   b) T F PHAS get malaria more easily than HIV negative people
   c) T F Hanging a LLITN at the door protects better than sleeping under the net

Diarrhea Prevention and benefits of Safe Water Systems

1. Safe Water System (SWS) consists of: (*select one correct response*)
   a) A method of filtering the water to make it safe for drinking.
   b) Boiling water to keep it clean.
   c) WaterGuard, safe water storage and behavior change.
   d) A bucket for pouring water

2. What is an example of a safe drinking water source?
   a) River or lake
   b) Piped water
   c) A well
   d) Rainwater collection

3. What is an example of perfectly safe water?

a) Water that has been filtered and looks clear.
b) Water treated by waterguard and stored in a Jerrican for a week.
c) Muddy water with branches and rocks.
d) Boiled water left in an open pot for a week.

4. A safe water vessel needs (*check all that apply*)
   a) To be expensive
   b) To have a narrow opening
   c) To be operated by electricity
   d) To have a lid

5. Diarrhea is more frequent among PHAs because of (check all that apply):
   a) Reduced immunity
   b) Excessive exposure to diarrhea pathogens
   c) Poor appetite
   d) Lack of awareness about diarrhea

6. True or False? Circle "T" for true and "F" for false statements.
   a) T F Clear water can be contaminated
   b) T F Washing hands with soap is necessary to prevent the spread of diseases
   c) T F Many HIV positive people die of diarrhea

Prevention with Positive Counseling (PWPC)

1. Which of the following would you advice a discordant couple to do to prevent the transmission of HIV to the negative partner? (Check all that apply)
   a) Abstain from sex
   b) Break up and see other people
   c) Correct and consistent use of condom with every sexual act
   d) Treat all STDs

2. What can a mother do to help prevent mother to child transmission?
   a) Combine breast – feeding with formula feeding
   b) Choose either to breastfeed or formula feed exclusively
   c) Practice family planning
   d) Find out her HIV status

3. True or False?
   a) T F If a couple is discordant, one partner has been unfaithful
   b) T F Disclosure Makes easier to negotiate condom use with your partner
   c) T F Not treating STDs increases the risk of getting HIV
   d) T F Babies delivered prematurely are at a higher risk of getting HIV from their mother

Nutrition and HIV

1. What is the role of nutrition in positive living? (*Check all that apply*)
   a) Boosts immunity
   b) Helps PHAs live longer
   c) Has no role in HIV/AIDS
   d) Helps PHAs maintain their body weight

2. Which of these are components of a balanced diet? (*check all that apply*)

a) carbohydrates
b) Proteins
c) Fats
d) Vitamins

3. True or false? Circle "T" for true and "F" for false statements
   a) T F It is important to wash hands before and after touching food.
   b) T F Babies should eat as often as they want to.
   c) T F Left-over food can be left for more than 48 hours.
   d) T F PHAs should eat more food than people who are HIV negative

Tuberculosis Control in PLAs

1. Circle "T" for true and "F" for false for the following statements about TB in HIV
   a) T F TB is an opportunistic infection in HIV
   b) T F There is no cure for TB in people living with HIV
   c) T F All TB patients should be tested for HIV
   d) T F HIV is the strongest risk factor for developing TB

2. Which of the following symptoms are used to screen for TB in PHAs (select one correct answer)
   a) Cough > 3 weeks, diarrhea, headache, general weakness
   b) Cough > 3 weeks, weight loss, enlarged lymph nodes, unexplained persistent fevers or night sweats
   c) Weight loss, general weakness, skin rash, fever
   d) Unexplained persistent fevers or night sweats, cough and HIV

3. Which of the following statements is false about drugs taken by patients co infected with TB and HIV
   a) A TB HIV patient must stop ARVs until anti TB treatment is completed
   b) A TB HIV patient must continue taking co-trimoxazole prophylaxis in spite of all the other drugs started
   c) A TB HIV patient may be on several drugs at the same time, and therefore needs treatment support
   d) Once TB HIV patients take the recommended treatment, they can gain weight

Annex B:
Answer Key to Pre and Post Test Questionnaire on Basic Preventive Care Package for HIV/AIDS

(For the Trainer's reference)

Note to the instructor: *This test is designed to test the baseline knowledge of the participants on malaria prevention for people living with HIV / AIDS (PHAs. Hand out the test before and after the training and allow them to work on it for 5 minutes. Work should be done individually, and without references. Make sure they do not feel anxious about the test because they will be learning the material they do not know during the training.*

Answers to questions on malaria prevention and benefits of LLITN

2. Malaria is transmitted by
   a) Coughing and sneezing
   b) Bite of female anopheles mosquito at night
   c) Having sex with someone who has malaria
   d) Plasmodium P. falciparum

3. How long does a long lasting insecticide treated net (LLITN) last?
   a) One month or 2 washes
   b) Six months or 5 washes
   c) Two weeks or no washes
   d) Three years or 20 washes

4. How is the LLITN effective against malaria? *Check all that apply*
   a) Physical barrier
   b) Cures malaria if you get it
   c) Repels insects
   d) Kills mosquitoes

5. True or False?
   a) **T** F A LLITN is **not** dangerous for humans, even babies
   b) **T** F PHAS get malaria more easily than HIV negative people
   c) T **F** Hanging a LLITN at the door protects better than sleeping under the net

Answers to questions on Safe water systems and Hand Hygiene

1. Safe Water System (SWS) consists of: (*select one correct response*)
   a) A method of filtering the water to make it safe for drinking.
   b) Boiling water to keep it clean.
   c) WaterGuard, safe water storage and behavior change.
   d) A bucket for pouring water

2. What is an example of a safe drinking water source?
   a) River or lake
   b) Piped water
   c) A well
   d) Rainwater collection

3. What is an example of perfectly safe water?
   a) Water that has been filtered and looks clear.

b) Water treated by waterguard and stored in a Jerrican for a week.
c) Muddy water with branches and rocks.
d) Boiled water left in an open pot for a week.

4. A safe water vessel needs (*check all that apply*)
   a) To be expensive
   b) To have a narrow opening
   c) To be operated by electricity
   d) To have a lid

5. Diarrhea is more frequent among PHAs because of (check all that apply):
   e) Reduced immunity
   f) Excessive exposure to diarrhea pathogens
   g) Poor appetite
   h) Lack of awareness about diarrhea

6. True or False? Circle "T" for true and "F" for false statements.
   a) **T** F Clear water can be contaminated
   b) **T** F Washing hands with soap is necessary to prevent the spread of diseases
   c) **T** F Many HIV positive people die of diarrhea

Answers to questions on Prevention with Positive Counseling

1. Which of the following would you advice a discordant couple to do to prevent the transmission of HIV to the negative partner? (*Check all that apply*)
   a) Abstain from sex
   b) Brake up and see other people
   c) Correct and consistent use of condom
   d) Treat all STDs

2. What can a mother do to help prevent mother to child transmission?
   a) Combine breast feeding and formula feeding
   b) Choose either to breastfeed or formula feed exclusively
   c) Practice family planning
   d) Find out her HIV status

3. True or False? Circle "T" for true and "F" for false statements
   a) T **F** If a couple is discordant, one partner has been unfaithful
   b) **T** F Disclosure makes easier to negotiate condom use with your partner
   c) **T** F Not treating STDs increases the risk of getting HIV
   d) **T** F Babies delivered prematurely are at a higher risk of getting HIV from their mother

Answers to questions on Nutrition and HIV

1. What is the role of nutrition in positive living? (*Check all that apply*)
   a) Boosts immunity
   b) Slows down opportunistic infections
   c) Has no role in HIV/AIDS
   d) Helps PHAs maintain their body weight

2. Which of these dietary components represent a balanced diet?
    a) Carbohydrates, protein and water
    b) Proteins, fats and vitamins
    c) Fats, carbohydrates, and vitamins
    d) Vitamins, carbohydrates, fat, water and protein

3. True or false
    a) **T** F It is important to wash hands before and after touching food.
    b) **T** F Babies should feed as often as they want to
    c) T **F** Left over food can be left for more than 48 hours ……
    d) T F PHAs should eat more food than people who are HIV negative

Answers to questions on TB in HIV

1. Circle "T" for true and "F" for false for the following statements about TB in PHAs
    a) **True** F TB is an opportunistic infection in HIV
    b) T **False** There is no cure for TB in HIV
    c) **True** F All TB patients should be tested for HIV
    d) **True** F HIV is the strongest risk factor for developing TB

2. Which of the following symptoms are used to screen for TB in PHAs (select one correct answer)
    a) Cough > 3 weeks, diarrhea, headache, general weakness
    b) Cough > 3 weeks, weight loss, enlarged lymph nodes, unexplained persistent fevers or night sweats
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3. Which of the following statements is false about drugs taken by patients co infected with TB and HIV
    a) A TB HIV patient must stop all other drugs until anti TB treatment is complete
    b) A TB HIV patient must continue taking co-trimoxazole prophylaxis in spite of all the other drugs started
    c) A TB HIV patient may be on several drugs at the same time, and therefore needs treatment support
    d) Once TB HIV patients take the recommended treatment, they can gain weight

Annex C: HANDOUTS

HANDOUT 1

Effect of HIV-1 and increasing immunosuppressant on malaria parasitaemia and clinical episodes in adults in rural Uganda: a cohort study (lancet 2000; 356: 1051 – 56)

James Whitworth, Dilys Morgan, Maria Quigley, Adrian Smith, Billy Mayanja, Henry Eotu, Nicholas
Omoding, Martin Okongo, Samuel Malamba, Amato Ojwiya

Summary

Background An association between HIV-1 and malaria is expected in theory, but has not been convincingly shown in practice. We studied the effects of HIV-1 infection and advancing immunosuppression on falciparum parasitaemia and clinical malaria.

Methods HIV-1-positive and HIV-1-negative adults selected from a population-based cohort in rural
Uganda were invited to attend a clinic every 3 months (routine visits) and whenever they were sick (interim visits). At each visit, information was collected on recent fever, body temperature, and malaria parasites. Participants were assigned a clinical stage at each routine visit and had regular CD4-cell measurements.

Findings 484 participants made 7220 routine clinic visits between 1990 and 1998. Parasitaemia was more common at visits by HIV-1-positive individuals (328 of 2788 [11·8%] *vs* 231 of 3688 [6·3%], p<0·0001). At HIV-1-positive visits, lower CD4-cell counts were associated with higher parasite densities, compared with HIV-1-negative visits (p=0·0076). Clinical malaria was significantly more common at HIV-
1-positive visits (55 of 2788 [2·0%] *vs* 26 of 3688 [0·7%], p=0·0003) and the odds of having clinical malaria increased with falling CD4-cell count (p=0·0002) and advancing clinical stage (p=0·0024).
Participants made 3377 interim visits. The risk of clinical malaria was significantly higher at visits by HIV-
1-positive individuals than HIV-1-negative individuals (4·0% *vs* 1·9%, p=0·009). The risk of clinical malaria tended to increase with falling CD4-cell counts (p=0·052).

Interpretation HIV-1 infection is associated with an increased frequency of clinical malaria and parasitaemia. This association tends to become more pronounced with advancing immunosuppressant, and could have important public-health implications for sub-Saharan Africa.

HANDOUT 2: HOW TO USE A CONDOM

1. Talk about condom use with your partner.
2. Buy or get condoms. (Advise them to always carry condoms).
3. Store the condoms in a cool, dry place.
4. Check the date made or expiration date.
5. Open the foil (condom package) carefully because fingernails can tear the condom; ensure that the part to be rolled is on the outside.
6. When the man gets an erection, unroll the condom slightly to make sure it faces the correct direction over the penis.
7. Place the condom on the tip of the penis. (Please emphasize that if the condom is initially placed on the penis backwards, do not turn the condom around; throw it away and start with a new one.
8. Leave a small space at the tip of the condom.
9. Roll the condom onto the base of the penis as you hold the tip of the condom.
10. The man inserts his penis for intercourse.
11. Now you can have safer sex.
12. The man ejaculates.
13. After ejaculation, hold the condom at the base of the penis while still erect
14. Remove the condom carefully by rolling it down.
15. Throw the used condom in a pit latrine or burn it

HANDOUT 3: Essential nutrients, their functions and locally dietary sources

SPECIFIC ROLE NUTRIENT	DIETARY	SOURCES
Carbohydrates (sugars and starches)	- Provide energy and promote body function	-Cereals such as maize and rice - Starchy roots such as cassava, sweet potatoes, Irish potatoes and yams. - Starchy fruits such as ripe fruit and honey
Fats and Oils	- Provide a concentrated source of energy - Form a part of the essential structures of cells	-Cooking oil, cooking fats and blue band margarine - Fatty animal foods such as meat, chicken, milk and fish - Oily vegetable foods such as ground nuts and soybeans
Proteins	- Promote cell growth and repair	- Plant sources: Legumes and pulses (such as beans, cowpeas, garden peas, pigeon peas and ground nuts) - Animal sources: milk and milk products like yogurt and cheese - Meat and meat products - Poultry and poultry products - Fish and fish products
Vitamins		
Vitamin A	- Promotes maintenance of epithelial cells, mucous membranes and the health and integrity of the skin - Supports the immune system and provides resistance to infections - Promotes growth - Ensures good vision	- Yellow sweet potatoes - Dark green leafy vegetables (DGLVS) -Liver, full cream, blue band margarine, milk and eggs
Vitamin B1(Thiamin)	- Involved in energy production - Enhances appetite - Supports the central	- Whole grain cereals such as roasted and cooked maize, legumes and oil seed - Fish, liver, milk and eggs

	nervous System	
Vitamin B2 (Roboflavin)	Contributes to energy production in the body	- Fish, liver, eggs, milk and meat - Whole grain cereals and legumes. - Dark green leafy vegetables
Vitamin B3(Niacin)	Contributes to energy production in the body - Enhances appetite - Supports the central nervous system	- Fish, liver, milk eggs and meat - Whole grain cereals and legumes
Vitamin B6	Facilitates metabolism and absorption of fats and proteins - Promotes red blood cell(RBC) Formation	Legumes (especially white beans), Avocado and DGLVs - Maize, Potatoes and water melon
Vitamin B12	- Contributes to synthesis of new cells	- Fish, meat, chicken, eggs and Milk
Vitamin C	- Contributes to borne formation - Improves the absorption of non haem iron - Improves resitance to infections - Serves as an anti oxidant - Facilitates protein metabolism	

HANDOUT 4: Energy Values of Locally Available Meals, Snacks, and Foods

Meals

Below are common Ethiopian meals, each providing 700 – 850 kilocalories.

	One enjera with...		
	1 sauce	**2 sauces**	**3 sauces**
Shiro	5 small ladles shiro	4 small ladles shiro and one small ladle vegetable	3 small ladles shiro, 1small ladle vegetable alicha, and 1small ladle tomato salad
Miser	3 big ladles miser	2 big ladles miser sauce and1 big ladle gommen	1 big ladle miser sauce , 1small ladle gommen, and 1 small ladle tomato
Bozena shiro	5 small ladles bozena shiro	4 small ladles bozena shiro and 1 small ladle tomato salad	3 small ladles bozena shiro and 1 small ladle vegetable alicha, 1 small ladle tomato salad
Pumpkin	5 small ladles pumpkin	4 small ladles pumpkin and1 small ladle vegetable alicha	3 small ladles pumpkin sauce, 1 small ladle vegetable alicha, and 1 small ladle tomato salad
Potato	5 small ladles potato	4 small ladles potato and 1 small ladle vegetable alicha	3 small ladles potato sauce , 1 small ladle vegetable alicha, and 1small ladle ater kick
Ater kick	5 small ladles ater kick	4 small ladles ater kick and1 small ladle vegetable alicha	3 small ladles ater kick , 1 small ladle vegetable alicha, and 1small ladle tomato salad
Gommen	3 big ladles gommen	2 big ladles gommen with 2 small ladles shiro	1 big ladle gommen, 1 small ladle shiro, and 1small ladle vegetable alicha
Siga	4.5 small ladles meat	3 small ladles meat sauce 1 small ladle vegetable	2 ladles meat sauce, 1 small ladle vegetable alicha and 1 small ladle tomato salad

N.B. Small ladle = 50 gm Medium ladle = 70 gm Large ladle =100gm

Snacks

Below are the energy values of common Ethiopian snacks (mekses).

Snack (ingredients)	Amount in grams/ml	Calories	Protein
Kolo (roasted barley, wheat)	50 grams (1 small ladle)	195	5.1
Nifro (boiled wheat and chickpeas)	70 grams (1 medium ladle)	125	301
Kitta/ambasha	100 grams (1 slice)	222	6. 8
Beso drink (beso and sugar)	55 grams (5 medium tablespoons beso and 1 teaspoon sugar)	205	5.05
Beso firfir (beso and oil)	65 grams (6 medium tablespoons beso and 1 teaspoon oil)	267	6.06
Sweat potato	100 grams (1 average-size sweet potato)	134	0.5
Boiled milk	140 ml (2 large coffee cups)	103	4.7
Tea with sugar	10 grams sugar 2 teaspoons)	40	0

Ashuk (roasted and boiled beans)	70 grams (1 large coffee cup)	192	11.48
Mango	100 grams 1 average-size mango)	44	0.30
Banana	100 grams 1 average-size banana)	88	0.8
Fried bread unleavened (wheat flour, spiced pepper, oil, salt, water)	300 grams	668	13.7
Thick porridge (wheat flour, oil, spiced pepper, salt, water)	350 grams	591	13.9
Chopped enjera with meat sauce (enjera, meat sauce)	300 grams	466	22.3
Chopped enjera without meat sauce(onion, pepper, oil, salt, water)	265 grams	456	7.6
Split wheat(kinche) (wheat, butter, salt)	160 grams	626	13.7

N.B. Small ladle = 50gm Medium ladle =70 gm Teaspoon = 5 ml Tablespoon = 25 ml
Large coffee cup= 70 ml

HANDOUT 5: Bulk foods:

Below are the energy values of common foods. Values are for portions of 100 grams.

Food	Local name	**Energy** (kilocalories)	**Protein** (Grams)
Cereals:			
Barley, white, flour	Gebs, nech, duqyet	368	8.5
Corn, white, flour	Beqqollo, nech, duqyet	378	9.0
Sorghum, white, flour	Mashyilla, nech	375	8.1
Tef, red, flour	T'yef, qeyy, duqyet	355	9.0
Wheat, white, flour	Sindye, nech, duqyet	363	10.9
Starchy roots and tubers:			
False banana, flour	Inset, karta	196	.9
Potato Irish, raw	Yabesha dinnich, yalteqeqqele	104	1.3
Sweet potato, raw	Sikkwar dinnich, yalteqeqqele	136	1.3
Legumes:			
Kidney beans, whole, dried	Adengwarrye, difin, dereq	354	19.1
Lentil, split	Missir, kick	355	23.0
Peas, flour	Arer, duqyet	352	20.1
Vegetables:			
Carrot, raw	Carrot, yalteqeqqele	42	1.7
Cabbage, raw	T'iqill gommen, yalteqeqqele	21	.9
Ethiopian kale, raw	Gommen, yalteqeqqele	46	2.8
Onion (shallot), raw	Qeyy shinkurt, yalteqeqqele	71	1.06
Tomato, raw	Tyimatyim, yalteqeqqele	31	1.3
Fruits:			
Avocado, fresh	Avokado	110	1.6
Lemon, fresh	Lomyi	49	.4
Orange, fresh	Birtukan	34	.7
Pineapple, fresh	Ananas	35	.4
Meat, poultry other animal products:			
Beef, raw	Yeberye siga, t'rye	115	19.8
Mutton, raw	Yebeg siga, t'rye	91	19.7
Goat meat, raw	Yefiyyel siga, t'rye	99	19.9
Chicken, whole,	raw Doro, mulu, t'rye	93	16.4
Milk, cow, fresh	Yelam wetet, yaltefella	74	3.4
Egg, whole, raw	Inqulal, difin, t'rye	153	12.1
Fish:			
Lake fish, raw	Yehatq asa, t'rye	107	17.6
River fish, raw	Yewenz asa, t'rye	137	18.9
Sugars:			
Sugar, refined	Sikkwar	385	0.0
Fats:			
Butter, unspiced, raw	Qibye, qimem, yelellew, t'rye	735	1.3
Oil, niger seed, fresh	Zeyt, nug	896	0.0

Annex D: Basic Preventive Care Package TOT Schedules

<table>
<tr><th colspan="2">HIV BPCP TOT Schedule Ethiopia: 4 days</th></tr>
<tr><th>Day 1</th><th>Day 2</th></tr>
<tr><td>AM 4 hours
• Welcome and Introduction
• Overview of BPCP training
• Participants' Hopes and Fear; orienting towards action planning
• Pretest

Break

• Current Situation and basic facts about HIV/AIDS
• PCP kit – overview and orientation
• Malaria Prevention and Benefits of ITN for PHAs</td><td>AM 4 hours
• Transfer in
• Prevention with Positive Counseling

Break

• Nutrition and HIV

• TB control in PHAs
▪ Overview and control of TB in HIV</td></tr>
<tr><td colspan="2">Lunch Break</td></tr>
<tr><td>PM 4 hours
• Diarrhea Prevention & Benefits of Safe Water System for PHAs
▪ Overview
▪ SWS & hand hygiene
▪ ORS
▪ De-worming
Break

• Prevention with Positive counseling (PWPC)
▪ Disclosure
▪ Discordance
▪ STD Treatment and prevention
Closing Circle</td><td>PM 4 hours
• TB Control in PHAs – continued
• Fundamentals of Palliative Care

• Post – test

Break

• Review of Post-Test answers

Closing Circle</td></tr>
</table>

Annex E: Group Process – Behavior and Interventions

Aspect of Group Process	Desired Behavior	Examples of Undesirable Behaviors	Possible Interventions
Communication	When participants speak, other group members listen and respond appropriately. Participants are aware of how communication is happening in the group.	Participants interrupt one another or the trainer. Group members do not listen to one another. Participants look at the floor when they talk. Participants carry on side conversation.	The trainer asks group members what they notice about how they are communicating: "Do you see any patterns or themes in the way people are communicating?" When there are side conversations, the trainer moves towards the people who are involved in it, or ask the participants who is trying to speak to the group: "What does it feel like when you are speaking and others are talking at the same time?"
Participation	Discussion is structured so that everyone can participate.	Some participants dominate discussion. A few participants are uncomfortable talking in a group. The trainer talks too much.	When dominant members want to contribute, the trainer says, "Let's hear from some other people." The trainer is sensitive in drawing out the participants. The trainer monitors the amount of time he/she is speaking; self-awareness is the key.
Group Cohesion	Members accept group goals and are willing to work toward them.	There is competition between individuals or subgroups working on a task.	The trainer calls the group's attention to the effects of competition, and explains to them that some degree of competitiveness can be helpful to the group interaction. The trainer tells the group, "There are enough rewards for everyone and enough time for all to complete the tasks."
Environment	Group members are friendly with one another and feel free to express themselves and share personal feelings.	Group members are formal in their interactions. The learning environment is tense.	The trainer asks the group, "What is the learning environment in the group right now?" If the group is silent, the trainer describes the group environment and asks for comments from participants. If the learning environment is tense, the trainer starts a discussion about the effect of tension on the group. If tension is the result of unresolved conflict, discuss

			the issue and resolve it, or agree to disagree.
Group Norms	The group has developed a consensus about how to work together.	Participants arrive late. Participants talk at the same time. Sessions do not end on time. Feedback is insincere.	Discuss norms on the first morning. When norms are not honored, the trainer must discuss this issue with the group. The trainer can bring to the front of the room the flipchart page about norms that was created on the first day, and ask the group members whether they are still committed to following the norms or if they want to change them.
Leadership	The trainer respects the participants and speaks to them as colleagues, and the participants respect the trainer.	The trainer speaks to the participants in a condescending way. The trainer is not comfortable in a leadership role. The trainer discourages discussion that disagrees with her/his opinion.	The trainer has to take responsibility for her/his own behavior. When there are two or more trainers, they need to give one another feedback. If training alone, the trainer arranges to be observed by a more experienced trainer who will provide feedback. In either case, the trainer being observed will have to make clear to the observer in what areas she/he believes she needs feedback.

Source: Clinical Training Skills for Reproductive Health Professionals, 1999, JHPIEGO

Annex F: Interactive Training Techniques

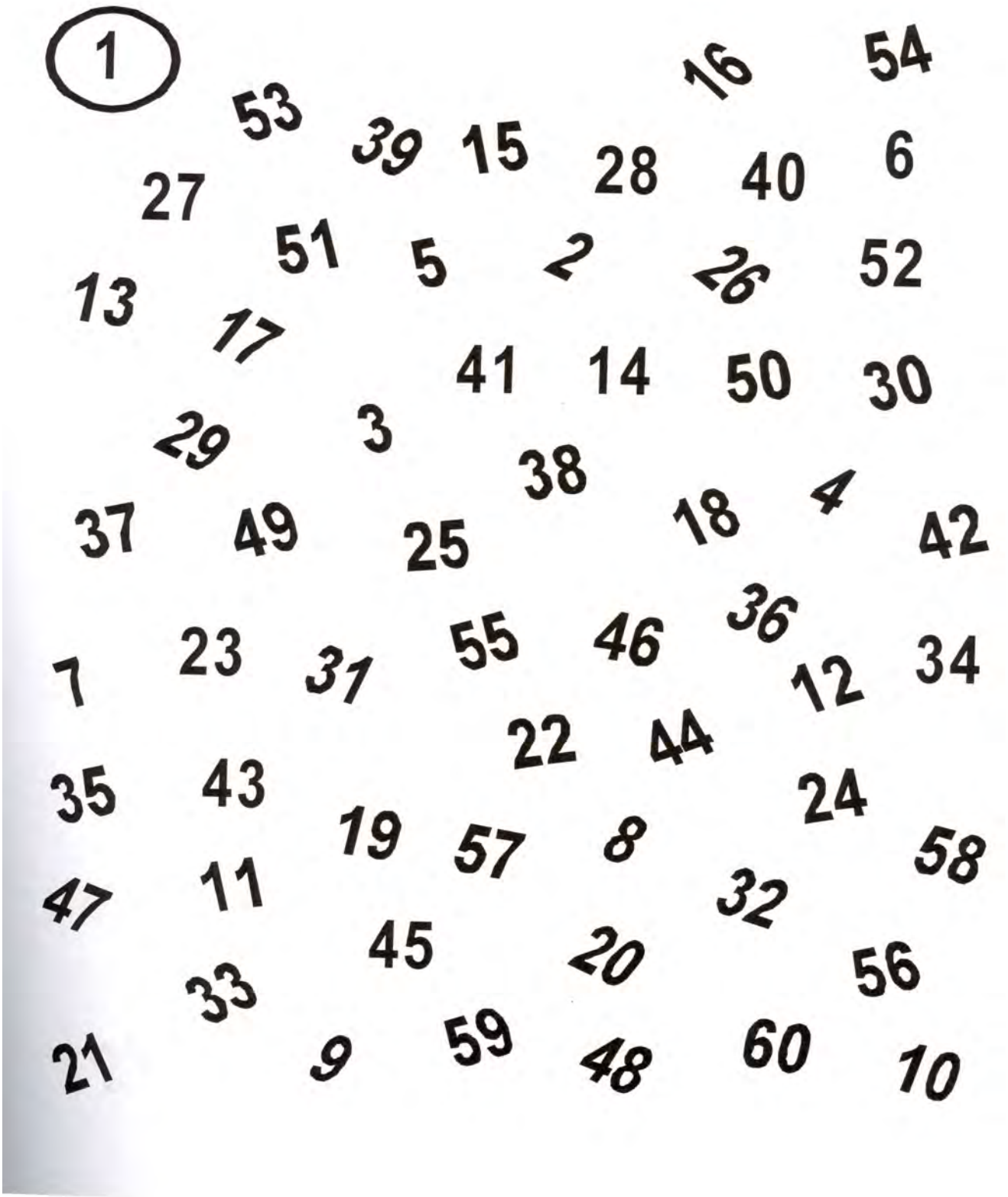
TRAINING TECHNIQUES	ADVANTAGES	DISADVANTAGES	REMINDERS
Illustrated Lecture: Used to transfer information (knowledge) to participants	• Good for large groups of participants • Useful when you want to introduce new topics, disseminate facts, define policies, or procedures • Requires only a few teaching aids; relatively inexpensive	• Requires good amount of preparation time by trainer • Relatively passive in comparison to other methods • Only effective for about 45 to 60 minute sessions at a time	• Should only be used to introduce factual information; do not build skills and are not very effective in shaping attitudes • Must be followed by or interspersed with discussion or question and answer time • Trainer must have complete command of the materials because assistance from the participants is not available
Small Group Work: Used to get input from all participants	• Good for creating a sense of team work • Provides opportunity to learn from one another • Used to save time by dividing large	• Requires additional rooms/space to accommodate multiple groups • Trainers need to keep moving from one group to	• Should provide **written instructions** for the group work • Should allocate **time for presentation** or discussion

TRAINING TECHNIQUES	ADVANTAGES	DISADVANTAGES	REMINDERS
	tasks into sub-tasks • Good for discussing a case study or acting out a role play	another to supervise and provide guidance • May need more trainers to supervise all groups equally	at the end • Must **check in with groups** intermittently to ensure timely progress • Should allow all groups to express their viewpoints
Case Study: Relies on real-life situations and problems for analysis or resolution by the participants The objective is to have the participants apply diagnostic, analytical and problem solving skills	• Requires participant involvement • Promotes a variety of methods for solving a problem • Can be used as an out-of-classroom assignment	• Trainer must be able to deal with varying ideas and responses • Requires sufficient time for participants to complete the case study • Assumes all participants can read and can communicate at, or about, the same level	• Do not use cases for which there are predictable responses • Cases that are not well-prepared can cause more harm than good • Participants may become too interested in the case content and may miss the point of discussion
Role Play: An educational technique in which a situation is presented and acted out The enactment is usually followed by a discussion and analysis of what happened, why it happened, and how the situation could be handled differently	• Allows the participant to apply what was learned • Helps participant to appreciate another point of view, e.g. the client's perspective • The	• May be difficult for shy learners • Requires sufficient time and space to conduct role play where all participants can see it and engage in a	• Create a learning environment that is safe and where there is mutual respect between the participants and the trainer

TRAINING TECHNIQUES	ADVANTAGES	DISADVANTAGES	REMINDERS
	participant can become sensitive to the way his/her behavior affects others	discussion after the role play • If participating in the role play is dependent on past knowledge, the trainer must ensure that the participant possesses that knowledge	• Requires follow-up discussion: - What did you see? - What went well? - What would you have done? - How might this situation have been improved? • Roles need structure, but, at the same time, they must be flexible to allow for adaptation by the trainees • Successful role plays need clear objectives
Brainstorming: Used when you are trying to generate a wide variety of ideas, opinions or possibilities There are no incorrect answers	• Gets all participants involved • Values everyone's contribution	• Participants must have prior knowledge of the subject • Can be time consuming when used for larger groups because, to be effective, everyone must respond	• Because there are no incorrect answers, brainstorming should not be used to elicit factual information • Should not be used to select the best idea or right answer
Group Discussion: Used when the trainer wants to give the	• Everyone has equal rights and access to	• Requires a trainer with skills in	• The trainer should prepare

TRAINING TECHNIQUES	ADVANTAGES	DISADVANTAGES	REMINDERS
participants the opportunity to exchange their thoughts and ideas in a conversational style with others	the discussion • Trainers can ensure that participants stay on the topic • Keeps participants interested and involved • Information can be discovered and shared	managing discussion dynamics (what to do if no one talks, or someone dominates a discussion) • If poorly facilitated, training content may become confusing or lost • Staying on time may be difficult	discussion questions or points ahead of time so as to guide the discussion • Do not try to discuss more than one subject or topic at a time
Demonstration/Practice: The trainer shows the participants the expected behaviors/tasks step-by-step, and then asks them to exhibit or perform those same behaviors/tasks	• High learner participation • Participants learn by doing • Good for teaching routine processes, such as a clinical procedure or filling out forms	• Only teaches skills; not appropriate for teaching ideas, theories or attitudes • May require a high trainer to participant ratio	• Never allow a participant to practice a skill or task incorrectly • Never allow a participant to perform a clinical procedure unsupervised • Clear performance standards must be set, which the participant must understand before practicing the skills

Annex G: Number Game: This measures an individual speed during practicing to connect consecutive numbers across the line starting from the smallest number to the biggest. Give the print out paper with this numbers and leave them for some times to connect numbers consecutively and ask them to do repeadly, then they can level themselves at what speed they are.



Annex H: End of Session Evaluation

Session Title: _____ Trainer: _____

Instruction: Please circle the number that best reflects your opinion about the session, using the following rating scale:

5-Excellent 4-Very Good 3-Average 2-Poor 1-Unacceptable

1.	The trainer clearly stated instructional objectives.	5	4	3	2	1
2.	The trainer communicated effectively.	5	4	3	2	1
3.	The information presented was new to me.	5	4	3	2	1
4.	The trainer used a variety of audiovisuals.	5	4	3	2	1
5.	The trainer was enthusiastic about the subject.	5	4	3	2	1
6.	The session content was practical and not too theoretical.	5	4	3	2	1
7.	The session was well organized.	5	4	3	2	1
8.	The trainer asked questions and involved me in the session.	5	4	3	2	1
9.	The content was relevant to my work.	5	4	3	2	1
10.	The session made me feel more competent in my work.	5	4	3	2	1

Which aspects of the session were **not** clear?

Comments:

Annex I: End of Training Evaluation

Training Name: _____ Training Dates: From _____ To _____

Instruction: Please answer the questions, as directed, to best reflect your assessment of the training course. Your response will assist in determining what modifications should be made to strengthen the course.

A. Please circle the number that best reflects your assessment of the training course, using the rating scale given below.

5-Excellent	**4-Very Good**	**3-Average**	**2-Poor**	**1-Unacceptable**

11.	Achievement of course objectives.	5	4	3	2	1
12.	Achievement of personal expectations.	5	4	3	2	1
13.	Relevance of course to your work.	5	4	3	2	1
14.	Usefulness of training materials.	5	4	3	2	1
15.	Organization of the course.	5	4	3	2	1
16.	Training facilities.	5	4	3	2	1
17.	Administrative support.	5	4	3	2	1
18.	Travel arrangements.	5	4	3	2	1
19.	Financial arrangements.	5	4	3	2	1
20.	Hotel accommodations.	5	4	3	2	1

B. Course length: _____ Too long _____ Too Short _____ Just Right

C. What topics covered in this course do you think will be most useful to you in your work?

D. On which topics would you have liked more information or preferred to spend more time?

E. On which topics would you have liked less information or preferred to spend less time?

Additional Comments

Annex J: REFERENCES

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