

MODULE

# ***HIV/AIDS***

For the Ethiopian Health Center Team



**Ethiopia Public Health  
Training Initiative**

Shabbir Ismail  
Getnet Mitike  
Damen Hailemariam

Addis Ababa University

In collaboration with the Ethiopia Public Health Training Initiative, The Carter Center,  
the Ethiopia Ministry of Health, and the Ethiopia Ministry of Education

2002



Funded under USAID Cooperative Agreement No. 663-A-00-00-0358-00.

Produced in collaboration with the Ethiopia Public Health Training Initiative, The Carter Center, the Ethiopia Ministry of Health, and the Ethiopia Ministry of Education.

### **Important Guidelines for Printing and Photocopying**

Limited permission is granted free of charge to print or photocopy all pages of this publication for educational, not-for-profit use by health care workers, students or faculty. All copies must retain all author credits and copyright notices included in the original document. Under no circumstances is it permissible to sell or distribute on a commercial basis, or to claim authorship of, copies of material reproduced from this publication.

**©2002 by Shabbir Ismail, Getnet Mitike, and Damen Hailemariam**

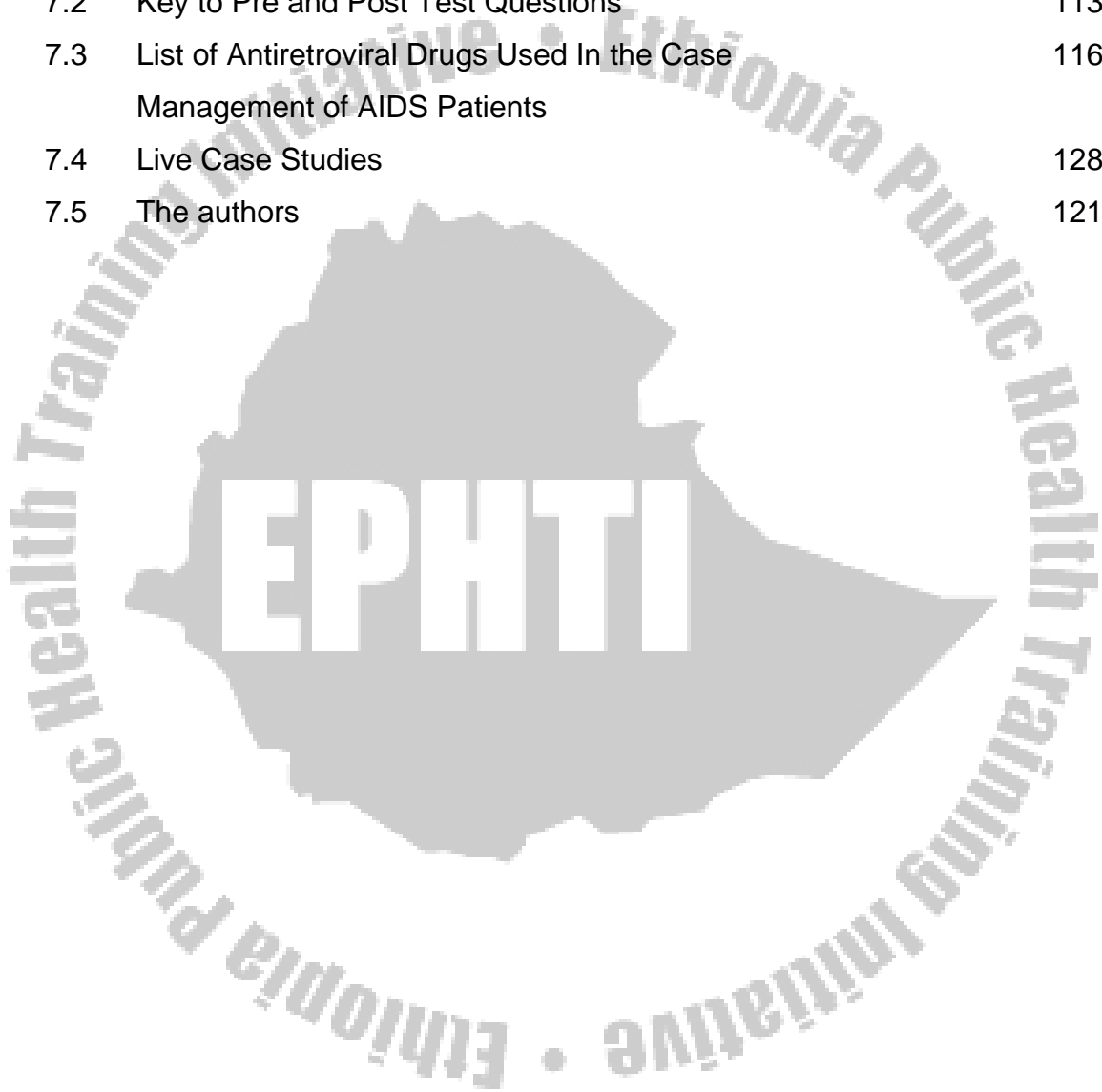
All rights reserved. Except as expressly provided above, no part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without written permission of the author or authors.

*This material is intended for educational use only by practicing health care workers or students and faculty in a health care field.*

## TABLE OF CONTENTS

<b><u>TOPIC</u></b>	<b><u>PAGE</u></b>
Table of Contents	i
Preface	iii
Acknowledgments	v
List of Abbreviations	vi
<b>UNIT ONE Introduction</b>	<b>1</b>
1.1 Purpose and Uses of the Module	2
1.2 Directions for Using the Module	3
<b>UNIT TWO Core Module</b>	<b>4</b>
2.1 Pre-Test	5
2.2 Significance and Brief Description Of HIV/AIDS	11
2.3 Learning Objectives	12
2.4 Epidemiological Case Study: Learning Activity 1	12
2.5 Definition	13
2.6 Epidfemiology	13
2.7 Etiology	16
2.8 Clinical Features	16
2.9 Diagnosis	16
2.10 Case Management	17
2.11 Prevention and Control	17
2.12 Group Exercise: Learning Activity	18
<b>UNIT THREE Satellite Modules</b>	<b>21</b>
3.1 Health Officers	22
3.2 Public Health Nurses	42
3.3 Environmental Health Technicians	66
3.4 Medical Laboratory Technicians	74
3.5 Community Health Worker	79
3.6 Take Home Message for Caregivers	84

<b>UNIT FOUR</b>	<b>Roles and Task Analysis</b>	<b>88</b>
<b>UNIT FIVE</b>	<b>Glossary</b>	<b>103</b>
<b>UNIT SIX</b>	<b>References</b>	<b>107</b>
<b>UNIT Seven</b>	<b>Annexes</b>	<b>110</b>
7.1	The ' HIV-Spread Like the Fire" Game	111
7.2	Key to Pre and Post Test Questions	113
7.3	List of Antiretroviral Drugs Used In the Case Management of AIDS Patients	116
7.4	Live Case Studies	128
7.5	The authors	121



## Preface

HIV/AIDS has become a major public health problem worldwide. The pandemic has brought about overwhelming threats to economically Poor countries, especially the sub-Saharan Africa. In Ethiopia HIV/AIDS has spread very fast in the last fifteen years and it has produced devastating effects.

Teaching students about HIV/AIDS is extremely vital, Although almost all textbooks of recent editions talk, about HIV/AIDS in one way or another, The preparation of this module has been realized with the following intentions:1/ text books are scarce ; and the ones that are available in the shelves of libraries of the training institutions are in most instances out of date;

2/ current and basic knowledge, especially about the Ethiopian situation is not widely available; 3/ at this stage provision of facts is not adequate, students should be able to teach patients, families, pupils, healthy individuals and communities; and 5/ the knowledge and skills are not organized in such a way that it passes directly and clearly to the caretaker which is essential in the case of HIV/AIDS control and prevention.

Therefore, this module is prepared to bridge those gaps mentioned above. it is particularly designed for the health center team that will be working at the primary health care unit PHCU as the first level of care in the referral system. Its spectrum extends to the community health workers and caretakers. The module is organized in such a way that each category knows the specific tasks and roles.

The module has the characteristics of lecture notes (factual based) as well as module (interactive learning). This is because, there is a shortage of reference materials of all kinds and provision of essential information is important in these case in the form of short notes.

The health center team training includes the following students (public health nurses, environmental health technicians, and medical laboratory technicians). The module has a Core Module; four satellite Modules and a Take home message for the caretaker. The core Module is intended to provide the minimum essentials for all core Module. Specific

areas of each category that were not possible to cover in the core module are addressed in the satellite modules. However, the basis for the development of the satellite modules is the core module and the tasks/roles analyses are presented in tabular form.

Readers should understand that this modules is not prepared to replace any teaching-learning about HIV/AIDS in the training years It is rather designed to supplement and strengthen the teaching process through the interactive methods of the modular teaching-learning process that enable students to take active roles in teachings concerning HIV/AIDS.



## **Acknowledgments**

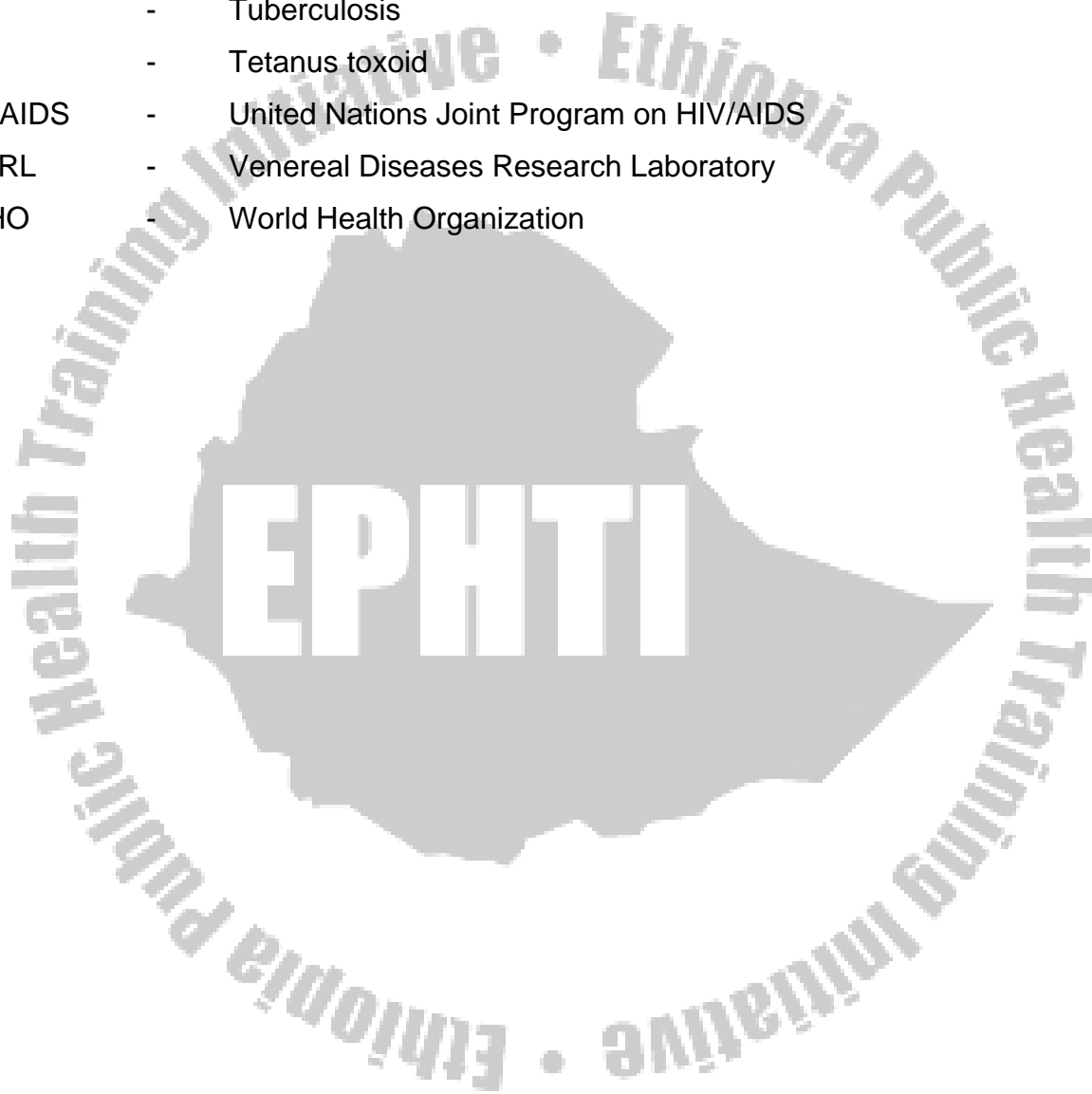
We are greatly indebted to The Carter for supporting the preparation and development of this module as part of the Ethiopian Public health Training Initiative. The development of the module as part of the Ethiopian public Health Training Initiative . The development of the module has gone through series of workshops, meetings and individual as well as group works both within the institution and groups of experts from other sister institutions. There were critical comments and relevant suggestions Gondar College of Medical Sciences, Dilla College of Teachers Education and Health Sciences (Debu University), Almaya University and the Department of Community Health, Faculty of Medicine (Addis Ababa University). We also greatly acknowledge internal medicine, Faculty of Medicine, Addis Ababa University) and Dr Tadesse Wuhib (CDC - Ethiopia) for their Valuable comments and critiques. We would like to pass our gratitude to Prof. Dennid G. Carlson, Senior Consultant at The Carter Center for reviewing this module and also for his effort in identifying additional expertise, and finally realizing the initiative, which was extremely demanding Exhausting the names of those who helped to improve this module is not possible Therefore, We acknowledge those who have helped us in one-way or the other.

## List Of Abbreviations

AAU	-	Addis Ababa University
AIDS	-	Acquired Immunodeficiency Syndrome
ARC	-	AIDS related complex
AZT	-	Azidothymidine
CBRHA	-	Community based reproductive health agent
CDC	-	Centers for Disease Control and Prevention
CHW	-	community Health Worker
CMV	-	Cytomegalovirus
CT	-	Care Taker
DCH	-	Department of Community Health
DNA	-	Deoxyribonucleic acid
EHT	-	Environmental Health Technician
ELISA	-	Enzyme Linked Immunosorbent Assay
FOM	-	Faculty of Medicine
HBC	-	Home based care
HIV	-	Human Immunodeficiency Virus
HO	-	Health Officer
IEC	-	Information Education Communication
INH	-	Isoniazid
MLT	-	Medical Laboratory Technician.
MPSC	-	Multipartner Sexual Contact
NB	-	Note Back
NGO	-	Non - governmental organization.
NVP	-	Nevirapin.
OI	-	Opportunistic Infections
OSSA	-	Organization for Social Services for AIDS
PCP	-	Pneumocystic carinii pneumonia
PGL	-	Persistent Generalized Lymphadenopathy
PHCU	-	Primary Health care unit



PHN	-	Public Health Nurse
PLWHA	-	People living with HIV/AIDS
RNA	-	Ribonucleic acid
STD	-	Sexually Transmitted Diseases
SYGA	-	Save Your Generation Association
TB	-	Tuberculosis
TT	-	Tetanus toxoid
UNAIDS	-	United Nations Joint Program on HIV/AIDS
VDRL	-	Venereal Diseases Research Laboratory
WHO	-	World Health Organization





**UNIT ONE**  
**INTRODUCTION**

**EPHTI**

## 1.1 Purpose and Uses of the Module

Module is a form of educational material comprising of a set of inter-related instructional booklets that have the basic information to be learned. The different parts of a module deal with materials that will enable participants to develop skills on specific issues.

Modules enable Participants to be actively involved in the learning process by asking questions and interacting in group discussions. There are, currently, modules prepared for conducting in-service training for mid-level health workers in the various health care programs. Modules are also increasingly becoming popular in the preserves training; through which problem-based and student centered learning can be facilitated.

This module was prepared with the aim of strengthening the health center team training in Ethiopia. Besides its usefulness in basic training that is being given in the training institutions, it is possible that the educators in the institutions be involved in conducting continuing education for the various categories of health workers that have been already deployed in the various health institutions in the country.

The module consists of the core Module as well as Satellite Modules. The information and facts stated in the core module is the minimum set of information that should be known by all categories of health workers. Satellite modules emphatically deal with the specific knowledge, attitude and skills that are required by the respective category of the health center team members. Hence, each student should know what is stated in the core module as well as in the respective satellite modules. It is advisable that each student reads the satellite modules of other categories, too. This will enable the team member to know the tasks of other members of the health center team.

## 1.2 Directions for Using the Module

- Read this section on Directions for using the module both in the Core as well as in each Satellite module carefully.
- First read the Introduction and understand the purpose and uses of the module.
- Then attempt to answer all the questions on the pretest questions (both designed for all categories of the students [2.1.1] as well as those specific to the respective professionals [2.1.2-2.1.5]).
- The instructor should conduct the game described in Annex 7.1 with the students.
- Answer the questions following the game. Then read and study the contents in the Core Module.
- Read the Epidemiological Case study described in Learning Activity2 (section 2.12) Answer the questions that follow after the case study.
- Then each category of students should read their respective satellite modules. After having read the satellite module thoroughly, the student should attempt to answer all the post-test questions given in the core module. Compare your answers to those shown in the key to pre- and post-test questions in section 7.2.
- Study and discuss the specific learning objectives, activities, and tasks of each category of students and community health workers shown in the Tables (Unit four).
- All categories of students should study carefully annex 7.4 and then discuss the issues among yourself and with your instructors.
- All instructors using this module should formulate questions for discussion from the case studies in annex 7.4.



**UNIT TWO**  
**CORE MODULE**

**EPHTI**

## 2.1 Pre-test

### 2.1.1 Questions for all categories

1. Define the abbreviation AIDS:
2. Define the abbreviation HIV:
3. List the three main routes of transmission of HIV
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
4. What is the main mode of HIV transmission in developing countries like Ethiopia? \_\_\_\_\_
5. List the three population groups which are at most risk for contracting HIV in Ethiopia
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
6. Which one of the following is not a laboratory diagnostic test for HIV?
  - a. ELISA
  - b. Western blot
  - c. VDRL
  - d. Spot test
7. List the three main methods of preventing the transmission of HIV.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
8. List the three most common manifestations of AIDS.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_

9. Since January 2000, there is an effective treatment for curing HIV/AIDS  
True \_\_\_\_\_ False \_\_\_\_\_
10. Mention three important points that should be stressed in counseling PLWHA.  
a. \_\_\_\_\_  
b. \_\_\_\_\_  
c. \_\_\_\_\_

### 2.1.2 Questions for Health Officers

1. To what group of viruses does HIV belong?  
a. Adenoviruses  
b. Rotaviruses  
c. Retroviruses  
d. Cytomegalovirus
2. List the immunological components of the body that are most affected by HIV infection  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. Describe the five stages of clinical manifestations of HIV/AIDS.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. List three behaviors putting persons at a higher risk of contracting HIV infection.  
a. \_\_\_\_\_  
b. \_\_\_\_\_  
c. \_\_\_\_\_

5. If a person tests positive for HIV, what does it not necessarily imply?

\_\_\_\_\_

6. State the most common opportunistic infections in AIDS and state how they should be managed.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

7. List at least four of the anti-retroviral drugs that are currently available worldwide for the treatment of AIDS.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

8. List two neoplastic conditions that have been related with HIV/AIDS.

\_\_\_\_\_

\_\_\_\_\_

9. Describe ways of reducing mother-to-child transmission of HIV.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

10. List the main impacts of HIV/AIDS at a national level.

a. \_\_\_\_\_

b. \_\_\_\_\_

c. \_\_\_\_\_

d. \_\_\_\_\_



### 2.1.3 Questions for public Health Nurses

1. HIV infection can be transmitted through
  - a. Breast feeding
  - b. Handling utensils of patients
  - c. During delivery
  - d. Touching the body of an AIDS patient
  - e. Only "a" and "c"
2. It is essential to wear hand gloves when giving care to an AIDS patient.  
True \_\_\_\_\_ False \_\_\_\_\_
3. Proper nutrition does not play any role in the prognosis of an AIDS patient  
True \_\_\_\_\_ False \_\_\_\_\_
4. Family members cannot be trained in the principles off home-based care for an AIDS Patient.  
True \_\_\_\_\_ False \_\_\_\_\_
5. List the three main types of counseling given to PLWHA.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
6. Describe the six main principles (components) of nursing care for PLWHA.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
  - f. \_\_\_\_\_
7. Describe the steps in handling blood and body fluids from AIUDS patients.  
\_\_\_\_\_  
\_\_\_\_\_

8. Describe the phrase "safer sex".

---

---

9. What should the nurse teach about safer sex?

---

---

10. List the steps of providing post-mortem care to people who have died of AIDS

---

---

#### 2.1.4 Questions for Environmental Health Technicians

1. The etiologic agent for AIDS is a:

- a. Bacteria
- b. Virus
- c. Protozoa
- d. Fungus

2. Maintaining personal hygiene and cleanliness won't affect the prognosis of HIV disease.

True \_\_\_\_\_ False \_\_\_\_\_

3. Which of the following are the best places for disseminating health education? message about HIV/AIDS?

- a. Health institution
- b. Schools
- c. Working places
- d. All

4. List the infectious wastes From AIDS patient?

---

---

5. Hypodermic needle, scalpels and IV sets in health care facilities should be collected in special containers before disposal.  
True \_\_\_\_\_ False \_\_\_\_\_
6. All body fluids from patients should be handled with special attention in waste Management.  
True \_\_\_\_\_ False \_\_\_\_\_
7. \_\_\_\_\_ is necessary before reusing waste containers in health care facilities and in home based care for PLWHA.  
a. Washing  
b. Disinfecting  
c. Covering  
d. None of the above
8. Disinfections is a process mainly used as a barrier between the patients and the people about him/ her.  
True \_\_\_\_\_ False \_\_\_\_\_
9. List the methods of treatment and disposal of infectious wastes from AIDS Patients.

### 2.1.5 Questions for Laboratory Technicians

1. Mention the principles behind laboratory screening methods for HIV?  
\_\_\_\_\_  
\_\_\_\_\_
2. What is specificity of a screening test?  
\_\_\_\_\_  
\_\_\_\_\_
3. What is specificity of a screening test?  
\_\_\_\_\_  
\_\_\_\_\_

4. Mention the comparative advantage of Western blot test over ELISA?  
\_\_\_\_\_
5. Mention the comparative advantage of ELISA over Western blot?  
\_\_\_\_\_
6. List the main serotypes of HIV
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
7. Mention the tests required before administering Progress of patients on anti-retroviral therapy for a patient?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
8. Mention the tests that are required for monitoring the progress of patients on anti-retroviral therapy.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## 2.2 Significance and Brief Description of HIV/AIDS

Infection due to Human Immunodeficiency Virus (HIV) and resulting Acquired Immunodeficiency Syndrome (AIDS) has been occurring in the world as the major pandemic since the last two decades of the past century. HIV/AIDS has affected all parts of the world, but sub-Saharan Africa is the hardest hit. Ethiopia currently has one of the highest numbers of people affected by the problem. In Ethiopia there are indications that the epidemic has affected a large proportion of the society and that no region or zone in the country is spared. To date no prophylactic vaccine is available. However, there are anti-retroviral drugs used to prolong the life of AIDS patients in developing countries and the respective governments fail to insure their supply. The best intervention available is prevention of the acquisition of the

infection. As a result HIV/AIDS has caused an immense social, economic, cultural and political burden in addition to the pressure on the health care system. HIV/AIDS has started to influence the demographic trends in many countries by increasing mortality rates and lowering life expectancy. It has mainly affected the reproductive segments of the population and hence, has become the most important development concern across the world.

In this module major emphasis is placed on the Epidemiology as well as the prevention and control of the problem.

### **2.3. Learning objectives**

After going through this module all categories of students should at least be able to:

1. Define what HIV/AIDS is.
2. Describe the difference between HIV and AIDS.
3. Describe the risk factors and population groups at higher risk.
4. Discuss the routes of transmission.
5. Describe the clinical manifestations of HIV/AIDS.
6. List diagnostic tests.
7. Discuss the methods of prevention and control of HIV/AIDS.

### **2.4 "HIV-Spread Like the Fire" Game-Learning Activity 1**

Refer to Annex 7.1 for the detailed instructions as how to play the game. The instructor should guide this game.

#### **Questions**

1. What did you learn from this game?
2. Discuss the reactions observed in the rest of the participants.
3. What were your feelings about the reactions?
4. Discuss the possible reasons about the reactions.
5. How do you relate the game with the real life situation?

## 2.5 Definition

HIV infection is caused by one or two related viruses (HIV-1 and HIV-2) resulting in a wide range of clinical manifestations varying from asymptomatic carrier states to severely debilitating and fatal disorders related to defective cell mediated immunity. Acquired immunodeficiency syndrome (AIDS) is a secondary immunodeficiency syndrome due to HIV infection and characterized by opportunistic infections, malignancies, neurologic dysfunction, and a variety of other syndromes.

## 2.6 Epidemiology -Transmission and Risk Factors

HIV is transmitted through the following main routes: 1) sexual intercourse- accounts to 70-80% of the global transmission of HIV infection; 2) perinatal (mother-to-baby) -5-10%; 3) through blood and blood products -3-5%, and 4) from unsafe injections. HIV is not transmitted by casual contact or even by close non-sexual contact that normally occurs at work, in schools or at home. In developing countries including Ethiopia, the main route of HIV-1 infection is through heterosexual transmission.

### ***Extent of the Magnitude of the Epidemic***

The magnitude of HIV infection is estimated using "sentinel surveillance systems" They provide important information for planners and decision makers. Sero-surveys conducted among pregnant women attending antenatal (ANC) clinics and blood donors are often used to describe the magnitude of HIV infection in developing countries, as they are more likely to represent the general population. They are feasible to undertake and are within the resource means of the countries.

Accordingly, sero-surveys conducted on pregnant women attending ANC in 1998, 1999 and 2000 in various parts of the country showed that the prevalence of HIV infection ranged from 0.8%-4.0% in Atat Hospital (1998/00), 13.0%-20.8% in Bahir Dar (1992/93-1999/00). In Gambella, Dilla, Awasa, Dire Dawa and Addis Ababa prevalence rates between 13.6% and 19% were reported in the year 1999/00

In summary, HIV prevalence among the general population is estimated to be 7.3% (ranging between 6% to 9%) in Ethiopia. The prevalence in Addis Ababa is estimated at 16.8%, in other urban areas 13.4% and 5% in rural areas.

Among blood donors lower rates i.e. ranging between 3.8% and 7.9% were found. In semi-urban and rural communities such as the Atat and Hosanna prevalence rates of 0.8% and 3.6%, respectively, have been reported (in 1998)

Among commercial sex workers, surveys conducted in several cities during the mid 1990s have documented HIV levels of 69.4% and 65.0% in Bahir Dar and Nazareth, respectively, among sex workers in Addis Ababa; a prevalence rate of 73.4% was reported in 1999.

The level of HIV infection and its progression specifically among adolescents and young adults is not well known. This is because the ANC sentinel surveillance estimates for the age group 15-49. In towns such as Dire Dawa, the prevalence of HIV among young women attending ANC (15-24 years) was 14%. In Gambella the prevalence was 12.1%. Data from blood donors also indicated that this group accounted for a large proportion of infections among the general population.

Accurate information concerning AIDS related deaths is limited in Ethiopia. However, AIDS has been identified as one of the most important cause of mortality in adults, accounting for a large proportion of adult deaths in Ethiopia, and particularly in the cities.

### ***Routes of Transmission***

The major route of transmission in Ethiopia is reported to be heterosexual; the practice of multi-partner sexual contact is the biggest risk factor for HIV transmission. A number of factors increase the risk of infection by a single act of intercourse. One of such important factors is the presence of a sexually transmitted disease (STD), such as syphilis or gonorrhoea, in either of the partners.

Crude estimate of vertical transmission (mother to newborn) is between 29% and 47%. It was estimated that about 250,000 children under the age of 5 were infected by 2000.

Transfusion with infected blood always transmits HIV. However, in Ethiopia most blood is screened for HIV. Therefore, few new infections are due to blood transfusions.

HIV can be transmitted by injection if the same needle is used to inject many people, without being sterilized after each use. Practices such as unsafe/ unsterile injections can result in new HIV infections.

**High Risk Groups and Behaviors]**

The risk behaviors for contraction HIV/STDs:

- ✓ Having unprotected sexual intercourse (not using condoms)
- ✓ Having unprotected sexual contact with many different partners
- ✓ Having Sexually transmitted disease(s)
- ✓ Alcoholism
- ✓ Drug abuse

**Population Groups at Risk in Ethiopia and the Respective Risk Factors**

<b>Population at Risk</b>	<b>Exhibiting Risk Factors</b>
Youth in and out of school	Lack of awareness, alcohol and substance abuse, Helplessness associated with unemployment
Multiple partner sexual contacts and Commercial sex workers	Poor economic status, early marriage and marital discord, practicing unprotected sex, alcohol and Substance abuse
Truck drivers	Low awareness, high mobility alcohol and substance abuse, practicing unprotected sex
Merchants	Low awareness, high mobility, alcohol abuse, luxurious living
Women in child bearing age	Harmful traditional practices, divorce and poor economic status, gender inequality
Migrant workers	Unprotected sexual contact, high mobility, poor economical status, and lack of awareness



## **2.7 Etiology**

The causative organism is a transmissible retrovirus- the Human immunodeficiency virus (HIV) types 1 and 2. Type 1 is the organism causing AIDS in Ethiopia. The virus causes immuno-suppression. By doing so it substantially reduces the capacity of human body to defend against many of the pathogenic viruses, bacteria, protozoa and fungus.

## **2.8 Clinical Features**

The incubation period in adults ranges between 3 to 12 years whereas in children it ranges between 1 to 3 years. After infection there is a period of asymptomatic carrier sero- negative state, followed by flu -like stage, and then sero-conversion occurs. AIDS Related Complex (ARC) may follow with chronic symptoms and signs of HIV infected persons without opportunistic infection or tumors to define AIDS. Wasting syndrome (massive weight loss) is also a common feature.

## **2.9 Diagnosis**

### **2.9.1 Clinical Diagnosis-African Case Definition**

Using the WHO Case Definition based on major and minor criteria makes diagnosis. Major criteria include weight loss, chronic fever and chronic diarrhea. Minor ones being chronic cough, lymphadenopathy, fungal infections of the mouth and genitalia, herpes infections, neurological abnormalities, cryptococcal meningitis, and others. Presence of one major and two minor or two major and one minor criteria is diagnosed clinically as AIDS. The main limitation of this definition is in patients with tuberculosis. The definition also lacks specificity or moderate to severe HIV disease. The WHO case definition does not include any of the now well-described neurological manifestations associated with HIV infection.

An adult would be classified as having AIDS if the CDC surveillance case definition for AIDS was fulfilled or patients had a positive test for HIV infection plus one or more of the following:

- ➔ Greater than 10% body weight loss or cachexia, with diarrhea and/or fever, intermittent or constant cough for at least one month, not known to be due to a condition unrelated to HIV infection.
- ➔ Tuberculosis with the features in #1; tuberculosis that is disseminated (involving at least two organs) or miliary; or extra pulmonary tuberculosis (which may be presumptively diagnosed.)
- ➔ Kaposi's sarcoma.
- ➔ Neurological impairment sufficient to prevent independent daily activities not known to be due to a condition unrelated to HIV infection, such as trauma.

This modified case definition is simpler, more specific and sensitive, yet requires positive serologic result.

## **2.9.2 Laboratory Diagnosis**

Laboratory diagnosis is dependent on detection of either antigens or antibodies for HIV. The former is not in use currently. Antibody detection is done using two known tests. Enzyme Linked Immunosorbent Assay (ELISA) and Western Blot-an immunoelectrophoretic test, which is, used as confirmatory test after performing ELISA. Additionally, there are also other tests such as rapid tests and spot tests.

## **2.10 Case Management**

All available drugs to date attempt to inhibit viral replication. Some of these drugs are AZT (zidovudine) nevirapine, saquinavir, indinavir, nelfinavir and others. These drugs can either be used in single or in combination. The later has proved to be more effective. All the mentioned drugs are very expensive for widespread use. See the annex for details.

## **2.11 Prevention and Control**

To date there is no protective vaccine against HIV. Therefore, the control lies on prevention of the infection, which can only be achieved through modification of behavior.

The following information, Education, Communication (IEC) activities should be carried out to teach the public in general and the high risk groups in particular.

1. **Avoid unsafe sexual practices** by reducing the number and frequency of sexual contacts, avoiding high-risk practices and using barrier protection such as condoms
2. **Interruption of mother to baby transmission** by testing for antibody of HIV for women at risk for infection, and HIV infected women should be advised to defer pregnancy - (termination of pregnancy is a more acceptable alternative)
3. **Reducing transmission through potential drug use (drug injectors)** by educating and counseling drug users with regard to risk of sharing needles.
4. **Discourage harmful traditional practices** such as female genital mutilation, tooth - extraction, venotomy, skin incisions, etc.
5. **Others**
  - a. Testing for HIV should be offered on a confidential basis to requesting individuals but only when pre - and post - test counseling can be given.
  - b. Medical personnel should protect themselves from patient contamination.
  - c. Follow strict infection prevention rules (disinfections and sterilization) in clinical settings as well as at home

## **2.12 An Epidemiological Case Study: Learning Activity 2 How HIV/AIDS Spread in Ethiopia?**

HIV infection is believed to have spread to Ethiopia in the early 1980's. The first HIV

testing of the Ethiopian population was carried out in 1982, and infection was revealed in the urban population until 1984.

The first evidence of HIV infection was reported in 1984 when two HEV sero-positive samples were detected while testing a collection of sera from 167 hospital patients in Addis Ababa.

In 1986 four positives were found among 5,265 samples of sera taken from army recruits. In the second groups of recruits, tested in 1987, 0.9% were positive.

Testing multi-partner sex contact (MPSC) females and males attending STD clinics in Addis Ababa in 1986 showed an HIV-1 prevalence of 6.7% and 1.4%, respectively. Another study on MPSC females in 1986 showed prevalence of 2.7%.

In 1989, a sero-epidemiological survey including a representative sample of 6,234 female sex workers in 23 towns of the country aside from Addis Ababa showed a prevalence that ranged from 1.3% in Massawa to 38.1% in Dessie, with an average for all the towns being 17%. The highest prevalence rates (above 20%) were found in large towns situated along the roads leading from Addis Ababa to Asseb, Gondar and Mekele.

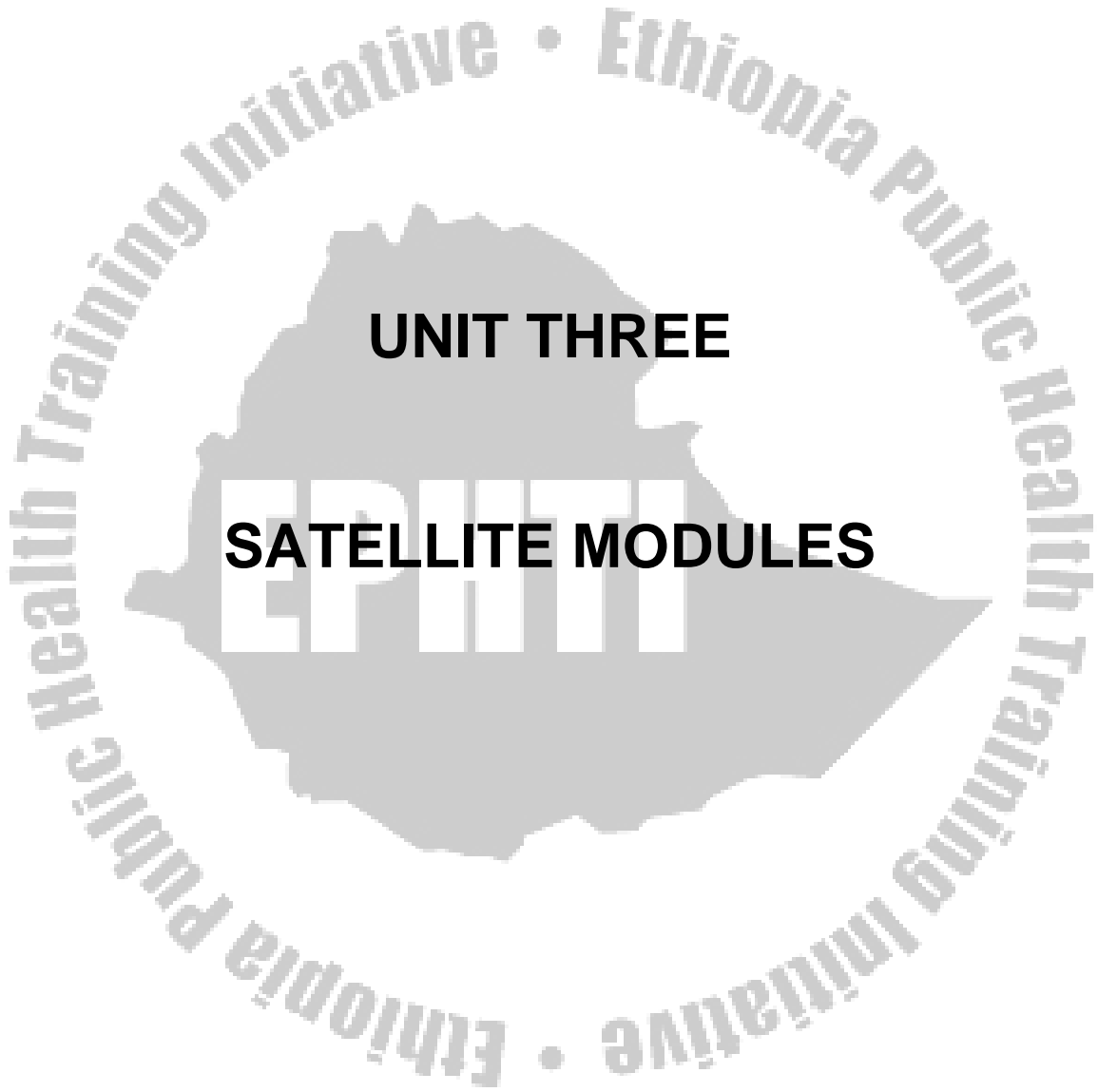
HIV prevalence estimated among the antenatal clinic attendants of Addis Ababa in 1996 was 16.4%. The prevalence was higher (20.7%) in the younger age group (15-24 years). Various sero-epidemiologic studies conducted in 1998-1999 among antenatal care attendees across the country showed varying prevalence rates: 14.1% in Addis Ababa, 19% in Gambella, 14.5% in Dilla, 14.4% in Awasa, 13.6% in Dire Dawa, 3.6% in Hosana and 0.8% in Ataf are among the few.

Currently (in 2000) it is estimated that there are about 2.6 million people infected with HIV and 400,000 actual AIDS cases. By the end of 2000, the overall prevalence of HIV infection in the general population was estimated to be 7.3%. A total of 100,303 AIDS cases have been reported in Ethiopia (June 2001).

## Questions

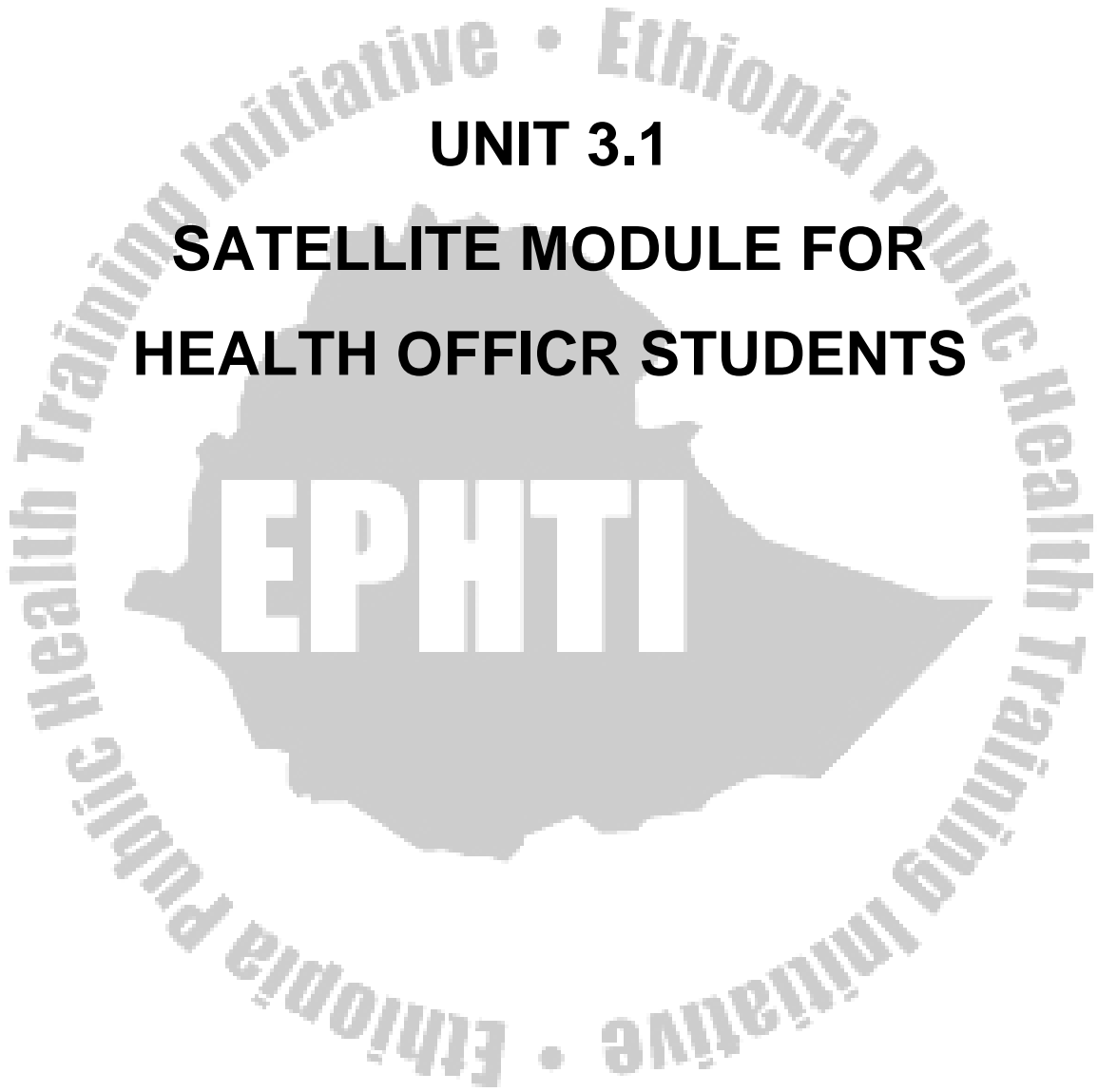
1. From the given information, what can you comment on the trend of prevalence of HIV Infection in Ethiopia?
2. Which groups of the population seem to be more affected? Justify your response.
3. Can you explain the difference in prevalence rate of HIV infection among the various locations in Ethiopia, including urban-rural differences, if any?





**UNIT THREE**

**SATELLITE MODULES**



**UNIT 3.1**

**SATELLITE MODULE FOR  
HEALTH OFFICER STUDENTS**

## **3.1 Satellite Module for Health officer students**

### **3.1.1 Introduction**

Health officers (HO) are involved in the prevention of HIV/AIDS and managing PLWHA. It is, therefore, necessary to equip this category of health workers with up to-date knowledge in HIV/AIDS research. It is also vital that the HO develop a caring attitude towards persons affected by HIV/ AIDS. They should be sufficiently skilled to diagnose, manage and care for AIDS patients both in clinical setting and at home. At the same time they should also be learning the various protective measures against acquisition of HIV from their patients, this module, therefore, deals with equipping the HO with the appropriate knowledge, attitudes and skills for preventing the spread of HIV through implementing effective IEC strategies and handling people living with HIV/AIDS (PLWHA)

### **3.1.2 Instructions for Using the Satellite Module**

Proceed through the modules as follows:

- ⇒ Read the Directions for using the module in section 1.2 and follow the instructions.
- ⇒ After doing so read the core module, do the pre-tests, do the exercises and then go through this satellite module.
- ⇒ It is advisable that you read all other satellite modules.

### **3.1.3 Learning Objectives**

At the end of the session the students should be able to:

1. Describe the etiology and pathogenesis of AIDS.
2. Describe the routes of transmission of HIV and their relative importance.
3. List and describe the various clinical manifestations of AIDS.
4. List the most common opportunistic infections defining AIDS.
5. List and describe the various laboratory diagnostic methods.



6. Explain the case management of AIDS and list the available drugs used worldwide in the treatment of AIDS patients.
7. List some of the complications of treatment with drugs.
8. Describe principles of counseling people living with HIV/AIDS.

### 3.1.4 “AIDS Spread like fire’ game: Learning Activity 1(Annex 7.2)

#### Questions

1. Which parts of the game address the magnitude of HIV/AIDS?
2. Which parts of the game indicate about human behavior related to HIV/AIDS?
3. What does the game show you about the spread and speed of HIV infection?
4. From the game is it possible to identify persons infected by HIV? Explain your reason.
5. Relate the concept of ice-berg’ to the game.

### 3.1.5 Etiology And Pathogenesis

As already stated in the core module, HIV, one of the retroviruses, causes AIDS. HIV causes both malignant and non-malignant diseases. HIV infects a major subset of T-cells – the T4 or CD4 receptors are found on T-lymphocytes, macrophages, monocytes, tissue cells (dendritic cells present in genital and anorectal area) certain brain cells (glial cells) and some other cells as well. HIV also infects non- lymphoid cells in the lungs, brain, skin and lymph nodes. Humoral immunity is also affected, leading to lymphadenopathy. CD4 counts are used in monitoring the progression of the immune suppression in the body.

The CD4 (T4) helper cells are very important in the regulation and control of the immune response by:

- ➔ Directly, or indirectly, protecting the body from invasion by certain bacteria, viruses, fungi and parasites
- ➔ Clearing away a number of cancer cells.
- ➔ Producing substances that are useful in the body’s defenses

They also influence the development and function of monocytes and macrophages, which act as scavenger cells in the immune system.

### **How does the HIV multiply in the body and cause immune suppression?**

After binding to the CD4 receptor, the viral genetic material enters the host's cell (E.g., a CD4 cell) with the reverse transcriptase reaction, the virus's DNA copy becomes incorporated into the host cell. Enter the blood stream and infect more cells. In this process, the host cells (such as CD4 T lymphocytes) are damaged and destroyed.

It takes the HIV a number of years to destroy enough of the immune system to cause immune-deficiency and immune-incompetence. It may take 3-7 or even more years, for a person who is HIV-infected to develop immunodeficiency and HIV-related medical conditions.

An untreated HIV infected person has an estimated chance of developing AIDS at a rate of 1-2% per year in the first several years following infection. This increases to 5% per year. In the first ten years 50% develop AIDS. Eventually, all develop AIDS.

### **3.1.6 Clinical Features**

#### **Natural Course of infection**

HIV infection may progress in the following stages. This is a general description and not every HIV infected person will necessarily follow this pattern.

The Centers for Disease Control and Prevention (CDC) in the United States published a classification system for the progression of HIV infection. This system delineates more inclusive definition and classifications that can be used for patient care, health planning, public health strategies, prevention and control activities, and epidemiological studies. Classification into groups is not intended to have prognostic significance or severity of illness designation.

From occurrence of HIV infection to onset of AIDS symptoms and disease in adults,

the time period can be long or short it can be as short as 1-2 years. In this case the disease may progress more rapidly, especially in persons with underlying problems, such as chronic diseases, recurrent infections, anemia, malnutrition, closely spaced and repeated pregnancies, malaria and tuberculosis.

### **Window period**

Detectable antibodies usually develop within 2 weeks to 3 months of infection. Most commonly, sero-conversion occurs in two to four weeks. However, individuals exposed to HIV risk should wait for three months following exposure to be tested for HIV antibodies. Otherwise, a negative result may mean there has not been enough time for antibodies to develop.

The “**Window Period**” of delayed sero-conversion is an important concept for clinicians who are assessing and counseling clients. Many HIV infected persons do tend to exhibit some clinical signs of compromised immune system function months or years before AIDS is evident. Clinical practitioners should maintain a high level of suspicion and assess carefully (and test/repeat HIV testing, if available) those clients who present with unexplained fatigue, recurrent oral or vaginal candidiasis, persistent diarrhea, and persistent dermatitis or other skin conditions.

Signs and symptoms of AIDS are due to:

- ➔ New infections, especially opportunistic infections
- ➔ Reactivation of old, inactive or dormant infections, such as tuberculosis, herpes or unusual cancers
- ➔ The HIV itself and its effects on various organs and tissues in the body

### **Stages of Clinical Manifestations**

A person who becomes infected with HIV will usually go through various clinical stages that occur over a long period of time.

**Early [primary] HIV Infection** is defined as a flu- like syndrome, with or without aseptic meningitis that is associated with sero-conversion of HIV antibody. This takes up to 3 months after exposure to HIV. Antibody. This takes up to 3 months after exposure to HIV. Infection persons to develop recognizable sign and symptoms in the acute phase. Antibodies ay appear three to six weeks and nearly always are present in three months.

The clinical signs and symptoms may typically include fever, sweating, headache, migraine, rash, sore throat, muscle and joint pain. Most frequently this develops in the second week of the illness. This ay be accompanied with generalized lymphadenopathy involving axillary, occipital, and cervical nodes.

Asymptomatic infection includes patients with no signs and symptoms of HIV infection. HIV is persistent even if it is inactive or dormant; allowing for its transmission, even when the person is asymptomatic. This can take variable number of years or months.

The asymptomatic phase is usually associated with CD4 cell counts between 500 and 800 cells/mm<sup>3</sup> Or even less.

**Persistent Generalized Lymphadenopathy [PGL]** includes patients with persistent palpable lymphadenopathy with lymph node enlargement of 1 cm or greater at two or more extra sites that persist for more than three months in the absence of a concurrent illness other than HIV that explains these findings. Up to 70% of HIV infected persons show PGL. The pathologic finding in PGL is non-specific. PGL may persist for several years, even in the absence of other symptoms PGL may be seen alone or in conjunction with systemic complaints like fatigue, fever, and major swats. There may also be herpes zoster, skin rashes, fungal nail infections, recurrent oral ulcerations, recurrent upper respiratory tract infections and weight loss. In this phase the CD4 cell count is between 350 and 500 cells/mm<sup>3</sup>

**HIV related diseases-previously known as “AIDS Related Complex” [ARC]**

Includes patients with findings of HIV infection other than, or in addition to lymphadenopathy.

The most common signs and symptoms of this stage are as follows:

- ➔ Oral or vaginal candidiasis (thrush)
- ➔ Hairy leukoplakia on the tongue
- ➔ Recurrent herpes simplex infection-cold sore or genital herpes infection
- ➔ Herpes zoster (shingles) involving two or more distinct episodes or more than one dermatome
- ➔ Acne-like bacterial skin infections
- ➔ Persistent and unexplained fevers (greater than 38.5°C) and night sweats
- ➔ Skin infections
- ➔ Generalized lymphadenopathy or shrinking of previously enlarged lymph nodes
- ➔ Persistent diarrhea (more than one month)
- ➔ Weight loss
- ➔ Reactivation of tuberculosis

The CD4 cell count is usually between 150- 350 cells/mm<sup>3</sup>.

### **Severe HIV- related disease- AIDS, the severe symptomatic phase**

The presence of any serious opportunistic infection is a sign that the body is not coping immunologically

Signs and symptoms of AIDS may differ from one patient to another and depending on the infection, cancer or organ affected. Refer to the manifestations mentioned above.

AIDS is always associated with a high HIV viral load and severe immunodeficiency. This usually corresponds to CD4 cell counts below 200 cells/mm<sup>3</sup> to a low lymphocyte count.

**The relation ship between the immune status, the CD4 counts, the lymphocyte counts and the presence of symptomatic disease**

<b>Clinical Condition</b>	<b>CD4 cell count</b>	<b>Lymphocyte Count</b>
Well with no symptoms	More than 500-600 cells/mm <sup>3</sup>	More than 2500 cells.mm <sup>3</sup>
Minor symptoms	350-500 cell.mm <sup>3</sup>	1000-2500 cells.mm <sup>3</sup>
Major symptoms and opportunistic diseases	200-350 cells.mm <sup>3</sup>	500-1000 cells.mm <sup>3</sup>
AIDS	Less than 200 cells.mm <sup>3</sup>	500-1000 cells.mm <sup>3</sup>

**Opportunistic infections**

The most common opportunistic infections occurring in HIV infection

- ✓ Tuberculosis
- ✓ Pneumonia due to
  - Group B streptococcus (usually in children)
  - Heamophilus influenzae (usually in children)
- ✓ Pneumocystic carinii pneumonia
- ✓ Salmonellosis
- ✓ Cryptococcosis
- ✓ Candidiasis-oral and vaginal
- ✓ Infection with atypical mycobacteria
- ✓ Toxoplasmosis
- ✓ Various viral infections-herpes, Cytomegalo (CMV), etc.
- ✓ Cancers- kaposi's Sarcoma and lymphomas

**Diagnostic Evaluation**

Patients may present with known HIV serological status; alternatively, THEY MAY present with complications of HIV infection without prior testing and without readily evident risk factors. Ten common findings at the time if initial evaluations are:

1. Persistent generalized lymphadenopathy (PGL)-enlarged lymph nodes involving two noncontiguous sites other than inguinal nodes
2. Cytopenias(low blood cell count)
3. Pulmonary symptoms suggesting Pneumocystis carinii pneumonia (PCO)
4. Kaposi's sarcoma
5. Localized candida infections.
6. Constitutional symptoms-- Weight loss, night sweats, chronic fever (at least 30 days), and /or chronic diarrhoea (at least 30 days), fatigue
8. Bacterial infections-Pneumococcal pneumonia, Streptococcus pneumoniae, Haemophilus influenzae, Pseudomonas aeruginosa ,Staphylococcus aureus, Clostridium difficile, Nocardia asteroides, Rhodococcus equi,Rochalimaea Quintana
9. Tuberculosis
10. Sexually transmitted diseases
11. Neurological syndromes-dementia, peripheral neuropathy.

### **Physical Examination**

The physical examination in patients with HIV infection should include attention to those anatomical sites that are likely to show significant changes and prove useful in management, including staging. Especially important are:

- ☛ The evaluation of lymph nodes
- ☛ Fundoscopic examination-CMV retinitis
- ☛ The oral cavity
- ☛ Careful skin examination
- ☛ Abdominal examination for hepato-splenomegaly
- ☛ Genital examination for STDs, pelvic examination in women
- ☛ Neuropsychological testing
- ☛ Nutritional assessment

### 3.1.7 Laboratory Diagnosis

#### ***Initial or baseline Laboratory studies***

(Most of the tests cannot be performed at the health center level, yet the health officer should have basic knowledge of the tests.)

- ☑ Complete blood count with differential and platelet count
- ☑ Blood Chemistry
- ☑ CD4 cell count
- ☑ Purified Protein Derivative (PPD) with or without energy testing using two of the following three skin tests reagents: candida albicanus, tetanus toxoid, mumps
- ☑ Venereal Disease Research Laboratory (VDRL) test or alternatively Rapid Plasma Regain (RPR) test
- ☑ Chest X-ray
- ☑ papanicolau (PAP) smear (repeatedly every 6-12 months)
- ☑ Verify HIV serological status

An HIV test does not tell whether you have AIDS. It only determines whether you have been infected with the virus.

#### **Interpreting Test Results:**

##### *HIV Positive Test Result means*

- ⇒ There is definite HIV infection if there are other obvious signs of immunodeficiency.
- ⇒ There is likely HIV infection and a confirmatory test should be done.
- ⇒ The person is able to spread the HIV during sex, through his/her blood, or during pregnancy, childbirth and breast feeding.

##### *The HIV positive test result does not mean:*

- ⇒ That the person has developed the AIDS stage of HIV disease
- ⇒ That the person will definitely develop AIDS. However, most HIV positive People (95%) will develop AIDS within 7-10 years from the time of the infection (not from the time of the test!),



- ⇒ It does not reveal the stage of the disease.
- ⇒ it cannot determine when the person acquired the HIV infection.

*HIV negative test result means*

- ⇒ The patient does not have HIV infection, unless the test is done during the "window period"
- ⇒ It may be falsely negative if the test is done within the first 6-12 weeks after possible HIV exposure, then the test should be repeated after a total period of 12 weeks after the possible HIV exposure.
- ⇒ Laboratory error

**Who should be tested?**

- ☛ Persons who have sexually transmitted diseases
- ☛ Persons considered to be in high risk categories:
  - Commercial sex workers
  - Hemophiliacs
  - Persons who received unscreened transfusions
  - Intravenous drug users
  - Gay and bisexual men
- ☛ Persons who consider themselves at risk or request the test (voluntary testing)
- ☛ Women who are in child-bearing age or who are pregnant
- ☛ Medical evaluation (diagnostic test) for patients with clinical or laboratory findings suggesting HIV infection including:
  - Generalized lymphadenopathy;
  - Unexplained dementia;
  - Chronic, unexplained fever or diarrhea;
  - Unexplained weight loss;

- Diseases that commonly complicate HIV, such as chronic or generalized herpes, thrush, oral hairy leukoplakia;
  - Other opportunistic infections suggesting unexplained defective cell-mediated immunity;
  - Opportunistic tumors including Kaposi's sarcoma and B cell lymphoma;
  - Unexplained cytopenias (anemia, leukopenia, lymphopenia, thrombocytopenia);
  - Unexplained neurological syndromes (Guillain-Barre syndrome, aseptic meningitis, peripheral neuropathies)
- ☛ patients with active tuberculosis
- ☛ Recipient and source of blood or body fluid exposure:
- Body fluids considered source of infection (other than blood): semen, Vaginal secretions, cerebrospinal fluids, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, amniotic fluid and bloody body fluid;
  - Body fluids not considered risk are feces, nasal secretions, sputum, saliva, sweat, tears, urine and vomitus unless they contain visible blood;

HIV testing must be carried out according to the proper and ethical standards. There must be:

- ➔ Pre-and post-test counseling
- ➔ Informed consent
- ➔ Privacy, confidentiality and the right to refuse to have the test

### 3.1.8.1 Case Management

#### **Drugs used in the case management of AIDS, the opportunistic infections and their side/effects and complications**

Antiretroviral therapy-currently the antiretroviral drugs are not included in the Essential drug list for health centers. But for information, the list of the various drugs used for treatment is annexed.

Management of the most common opportunistic infections

1. Pneumocystis carinii - trimethoprim or pentamidine, clindamycin, atovaquone
2. Candida (thrush) - itraconazole, nystatin clotrimazole, fluconazole,

3. Candida (vaginitis) - Intravaginal miconazole suppositories, clotrimazole OR ketoconazole, fluconazole
4. Cryptococcal meningitis - amphotericine B or fluconazole, itraconazole
5. Micobacterium tuberculosis - INH, rifampicine, pyrazinamide, ethambutol, streptomycin
6. Herpes simples - acyclovir OR foscarnet, topical trifluridine solution
7. Herpes zoster (dermatomal) - acyclovir OR foscarnet
8. Staphillococcus Pneumoniae - penicillin or erythromycin, cephalosporines
9. Heamophilus influenza - ampicillin/amoxicillin OR co-trimoxazole, cefuroxime/cefamandole,
10. Salmonella(ac ute) - ampicillin then amoxicilline, ciprofloxacin OR co-trimoxazole
11. Staphillococcus aureus - nafcillin, oxacillin ± gentamycin , rifampine OR cephalosporin ± gentamycin or rifampine, vancomycin

**Advise the patients on:**

**Self - care to:**

- ➔ Have balanced diet
- ➔ Consider nutritional supplements, such as vitamins and minerals
- ➔ Avoid smoking
- ➔ Avoid Alcohol intoxication
- ➔ Do physical exercise
- ➔ Avoid taking unnecessary drugs
- ➔ Have lots of rest and sleep
- ➔ Have a positive mental; attitude
- ➔ Alternative therapies (such as massages)
- ➔ Seed early treatment for medical problems

**Safer sexual practices:**

- ➔ Protection through condom use
- ➔ Alternative sexual methods -masturbation
- ➔ Avoid anal sex

## **Support, Counseling and Referral**

Remember that there are three types of counseling for PLWHA, these are the pre-, post-test and follow up counseling-for details refer to the satellite Module for public health Nurses.

In counseling PLWHA, the following messages should be included:

1. The natural history of HIV infection:
  - a. Average time between infection and serious illness
  - b. Prospects and uses of administering anti-retroviral therapy and prophylaxis
2. Positive serology indicates viral carrier state and risk of transmission to others-counsel on how to prevent the spread.
3. Pregnancy in a seropositive woman carries a 30-35% risk of HIV infection in the infant.
4. Inform about their sexual and needle sharing partners
5. The need for early testing and early treatment
6. Psychological responses such as anxiety, depression, insomnia, somatic concerns, and/or suicidal thoughts need support.
7. Medical care - treatment should include appropriate attention to nutrition, exercise, continued work, and other facets of "wellness."
8. Available resources for patient services and financial assistance - organizations such as organizations such as organization for social services for AIDS patients (OSSA) save your generation Association (SYGA), Dawn of hope, etc.

## **Principles of home-based care**

The health officer should advise the caretakers of AIDS patients to provide the following home:(refer for details on the satellite module for public health Nurses)

1. General hygienic measures - personal hygiene, house keeping (handling contaminated soiled materials)
2. Nutrition of the patient - provide good nutrition (proper balanced diet)
3. Treatment of opportunistic infections
4. Physical therapy - physical exercises and massages

5. Various types of support to be provided - social, spiritual, emotional, psychological and material support
6. Measures on the sexual behavior of the patients - information and education to promote responsible or safe sexual behavior to prevent the spread

### 3.1.9 Prevention and control

HIV transmission mechanisms and interventions

Transmission Mechanisms	Interventions
unsafe medical practices	Ensure sterile conditions
Transfusion	Eliminate unnecessary transfusions Screen donors Test blood supply
Prenatal (mother-to-child) [During pregnancy, delivery and breast feeding]	Counseling Testing Nutrition Family planning AZT or Nevirapine (NVP)
sexual transmission	Maintain faithful partnership Delay onset of sexual activity Use of condoms Control STDs

#### ***Transmission through Blood Transfusions***

Avoid unnecessary transfusion. Blood supply should be made as safe as possible. Laboratory tests and screening potential blood donors through interviews should screen blood in order to reject as donors or those that have a high probability of being infected.

#### **Mother to child Transmission**

- ☛ Counseling and Testing of young women for HIV
- ☛ Reducing number of pregnancies - counseling and testing to convince HIV infected women not to get pregnant

- ☛ Reduce transmission during childbirth - vaginal cleansing, delivery by
- ☛ Anti-retroviral therapy - AZT or NVP during childbirth and postpartum period
- ☛ Reduce transmission through breastfeeding -curtail breastfeeding

### **Transmission through Heterosexual Contact**

- ☛ Promoting abstinence before marriage and faithfulness to one partner
  - Use mass media, counseling and educational programs
  - Delaying in onset of sexual activity among adolescents
  - Limiting sexual partners at any one time
  - Reduction in the number of men who have contact with commercial sex workers and bar girls
- ☛ Promoting the use and availability of condoms, including female condoms,
- ☛ Controlling other sexually transmitted diseases such as syphilis, gonorrhea and chancroids
- ☛ Combined interventions

### **3.1.10 Impacts of AIDS**

#### **Demographic Impacts**

AIDS will have a big impact on population size, growth and life expectancy. With the continued AIDS epidemic, the total population of Ethiopia would be 85 Million by 2014, which is 7 Million smaller than the projection without AIDS. However, by that time the population would still be growing at 2.3% per Year.

#### **Health Care Impacts**

##### **➔ Costs of health care**

AIDS is an expensive disease that will require a considerable amount of resources from the health system. By 2014, expenditures for AIDS care could amount to one-third of the entire budget of the ministry of Health. Clearly, this would place a tremendous burden on the public health care system to provide adequate care for AIDS patients and still try to meet all the other health needs of the population.

Today, as much as one fifth of all hospital in the country are occupied by AIDS patients. As the epidemic grows, so will the hospital bed requirements? BY the year 2000 about half of all hospital beds are projected to be occupied by AIDS patients.

➔ **Childhood deaths**

The number of children dying from AIDS is increasing and this negatively affects the outcomes of child survival programs.

➔ **HIV and Tuberculosis**

TB/HIV relationship is already established in Ethiopia. With AIDS, a number of new cases of tuberculosis will develop. In the absence of HIV, the number of new TB infections would be limited to about 0.12% of the adult population. This would result in 35,000 55,000 new TB cases each year. If we assume that, among people with both HIV and latent TB infection, 8 percent develop TB each year, and then the additional number of TB cases due to HIV infection would be about 82,800 in 2000 and 13. 380 by 2014. Even this is likely to be an under-estimate since these new cases may transmit the disease to others. The impact of HIV on tuberculosis is a serious problem. Since TB can be infectious through casual contact, the increased number of TB cases due to HIV can also lead to additional TB cases among those who are not infected with HIV. Also drug-resistant strains of TB are appearing, making it much more difficult and expensive to treat tuberculosis.

**Economic Impacts**

AIDS has an impact on the economic development of Ethiopia in a number of ways. The loss of young adults in their most productive years of life will certainly affect overall economic output. If AIDS is more prevalent among the economically well to do, the best-educated people and with the highest paying jobs, then the impact could be much larger. The huge expenditures for care of AIDS patient will lead to reduction in investment, which could lead to reduction in investment, which could lead to a significant reduction in economic growth,

AIDS can also affect foreign exchange allocation. It has been estimated that the foreign exchange requirements for imported drugs could require from 7 to 37 weeks of entire foreign exchange quota if all AIDS patients received complete drug treatment.

Sectors highly affected:

- Health
- Education
- Military
- Transportation
- Extension services
- Banking
- Agriculture
- Industry
  - Loss of workers
  - Lost work days due to sickness
  - Lost work days due to funeral leave
  - Increased health care costs

**Social Impacts**

- ☛ Grandparents will have to assume full responsibility for raising children when parents die.
- ☛ Children are more likely to be malnourished, and have fewer opportunities for education
- ☛ Increase in the number of orphans. The number of AIDS orphans could increase to 750,000 by 2000 and to 2.1 million by 2014.
- ☛ If the husband dies, the remaining wife and children can be particularly vulnerable. Some women will be over worked with family affairs and some even have to resort to commercial sex to cover costs for supporting the family.
- ☛ A widow can also be forced to sell sex if she cannot maintain herself and her children on the farm or with other occupations.
- ☛ A woman may be at risk of getting HIV even though she is faithful to her husband, because her husband could have extramarital affairs.
- ☛ At family level -an increased burden and stress for the extended family.
- ☛ At community level and national level there will be an increased burden on society to provide services for the orphaned children.

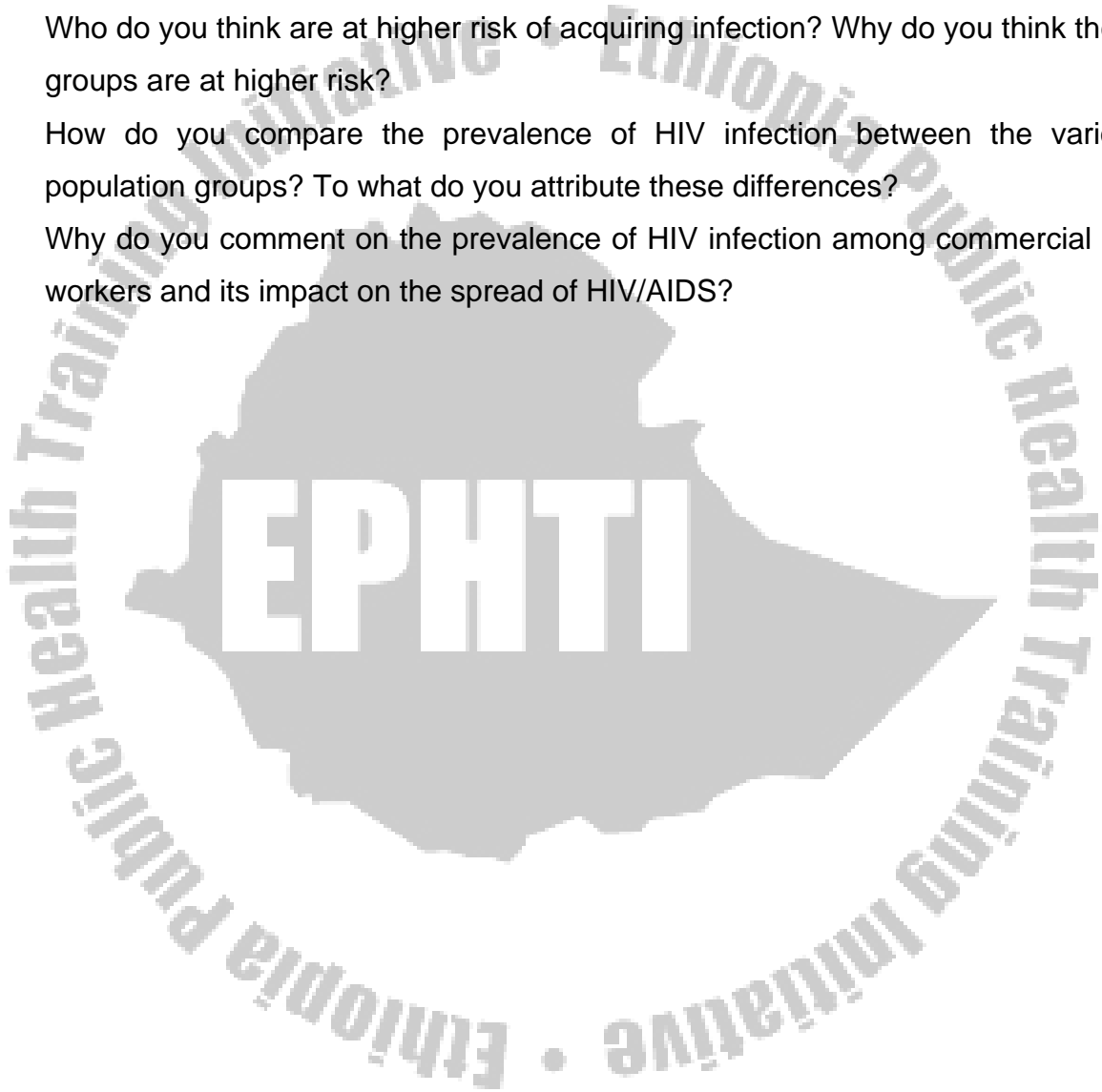


### 3.1.11 Epidemiological Case Study: learning activity 2

(Refer to the Core Module Section 2.12)

After reading the Case Study thoroughly, answer the following questions.

1. From the case study describe the rate of progression of the spread of HIV infection.
2. Who do you think are at higher risk of acquiring infection? Why do you think these groups are at higher risk?
3. How do you compare the prevalence of HIV infection between the various population groups? To what do you attribute these differences?
4. Why do you comment on the prevalence of HIV infection among commercial sex workers and its impact on the spread of HIV/AIDS?





## **UNIT 3.2**

# **SATELLITE MODULE FOR PUBLIC HEALTH NURSE STUDENTS**

## **3.2 Satellite Module for public Health Nurse Students**

### **3.2.1 Introduction**

Public health Nurses (PHN) are involved in the management, and care of PLWHA. Prevention and control of HIV/AIDS, is one of the major areas where PHNs will be involved. Therefore, it is vital to equip this category of health workers with the up-to-date and relevant Knowledge and skills that help them to give the maximum care/ support for HIV/AIDS patients including counseling and conduct promotive and preventive activities. They should be sufficiently skilled to provide optimal care for AIDS patients both in clinical setting and at home. It is also important that PHNs develop caring attitude towards persons affected by HIV/AIDS and be taught on the various self-protective measures during their practice.

### **3.2.2 Directions for Using the Module**

Proceed through the modules as follows:

- ➔ Read the Direction for using the module in section 1.2 and follow the instructions.
- ➔ After doing so read the core module, do the pre-tests, do the exercises and then go through this satellite module.
- ➔ Afterwards, you may also read the satellite modules of other category of health Professionals.
- ➔ Read the clinical manifestations from the satellite module prepared for health officers.

### **3.2.3 Learning objectives**

At the end of the session the students should be able to:

1. List the various clinical manifestations of AIDS.
2. Describe in detail the nursing care for AIDS patients.

3. Describe the precautions while providing nursing care and handling body fluids.
4. Identify the potential sources of contamination from a patient with HIV/AIDS.
5. List the available drugs used in the treatment of AIDS patients.
6. List some of the common side effects of drugs used in the treatment of AIDS.
7. Describe the types and procedures of counseling PLWHA.
8. Explain the procedures of home based care for AIDS patients

### **3.2.4 Case Study: Learning Activity 1**

#### **Questions (based on "the HIV-Spread like a fire game ")(Annex 7.1)**

1. What is the role of a public Health Nurse in the prevention and control of the epidemic
2. How and where should PLWHA be managed?
3. In relation to the game played, what are the implications of the rapid spread of HIV/AIDS?
4. What other methods should be used to teach the community?
5. Who is responsible to counsel and what is the importance of counseling (relate the questions with laboratory services given in the game)?

#### **3.2.4 Nursing Care of AIDS patients**

Nursing care is one of the most important cares that need to be given to PLWHA. since there is no cure for HIV/AIDS nursing care and support are the main-stay of help for PLWHA.

The following are the general principles of providing care for PLWHA:

1. General hygienic measures
2. Nutrition services
3. Information and education for sexual behavior

4. Physical therapy
5. General support services
6. Treatment of opportunistic infections.

## **1. GENERAL HYGIENE SERVICES**

The purpose of home-based care (HBC) services for PLWHA in the area of general hygiene is to:

- ➔ Establish state of cleanliness
- ➔ Refresh PLWHA
- ➔ Improve relationship between PLWHA and caregiver
- ➔ Provide opportunity for care givers to observe PLWHA'S general condition
- ➔ Improve quality of care

Other HBC activities in this category aim to keep the PLWHA'S surroundings clean and to help prevent contamination and cross- infection.

### **a) Bed Baths**

#### **Definition**

A bed bath is given to a bedridden patient in the bed. The patient is helped to bathe by the caregiver. While giving bed baths the care giver should always be gloved.

#### **Steps**

1. Explain the procedure to the patient and offer a plastic container /urinal if necessary.
2. Close the windows and draw the screen
3. Strip the bed and cover the patient with a blanket. NB: if bedding is soiled (e.g., stool, urine, blood), follow steps below under" Handling Soiled Linen".
4. Help the patient into a suitable position.
5. Protect the bed with a plastic sheet.
6. Place basin of Warm water on the stool/table; be sure the patient can easily reach toilet articles.

7. Permit the patient to take bath by him (her) self as far as condition allows, even leaving the room for a short time, if patient is able to manage alone.
8. When the patient has finished to the extent possible, return, change the water and complete the procedure by
  - ⇒ Washing the patient's back
  - ⇒ Attending to the patient's feet
  - ⇒ Taking care of pressure areas
  - ⇒ Cutting finger-and toe nails
9. Help patient into clean clothes and make the bed.
10. Make sure that the patient's hair has been combed. Offer a mouthwash and help clean the teeth, A male patient may wish to shave.
11. Leave the patient in a comfortable position.

## **b) Turning PLWH/A in Bed**

### **Definition**

This is care given to bed-ridden PLWHA to prevent them from developing pressure sores caused by lying on one side of the body for long periods. Turning should be done at least every 4 hours.

### **Steps**

1. Explain the procedure to the patient.
2. Strip the bed leaving the top sheet loose so that the patient's limbs can be easily moved.
3. Bring an arm and a leg across to the side the patient is to face.
4. One person brings over the shoulder while the other rolls the pelvis.
5. Now the 2 people join hands over the PLWHA hop joints and thighs and lift the patient into the center of the bed.
6. Adjust the pillow under the PLWHA'S cheek.
7. Put the PLWHA'S hands in a comfortable position.
8. Bend the PLWHA'S legs slightly.
9. Remake the bed ad leave the patient comfortable.

## **C) Handling Body Fluids**

### **Definition**

This is care taken to dispose of body fluids to prevent contamination.

### **Purpose**

People living with HIV/AIDS are at greater risk of contracting various infections. Body fluids are often a source of infection to both PLWHA and their families. They may contain HIV and other harmful germs. PLWHA and their families need to handle body fluids with care.

The following sections are about how to handle these body fluids:

- ⇒ Blood
- ⇒ Plus
- ⇒ Stool and urine
- ⇒ Sputum and vomits

### **Blood from Wounds and Bleeding**

#### **Steps**

1. Put on gloves or plastic bags.
2. Stop the bleeding.
3. Cover the wound with clean cloth or bandage.
4. Soak clothes soiled with blood for 10 minutes in cold water/5% chlorine solution.
5. Wash clothes with hot water and soap; rinse well.
6. Dry clothes in the sun.

### **Menstrual Blood**

#### **Steps**

1. Put on gloves/ plastic bags.
2. Change the pads or cloths.
3. Wrap the used pads or cloths in newspapers or plastic bag.
4. Burn the pads or throw them into a pit latrine.

**Note:** Wrap contaminated wastes in news, if available, for disposal in a pit latrine.

#### **d) Stool, Urine, Vomits and Sputum**

Stool and urine should be thrown down the pit latrine immediately.

##### Steps

1. Prepare plastic containers with 5% chlorine solution to decontaminate the body waste.
2. Put the plastic containers by the PLWHA'S bedside or underneath for use.
3. Always cover containers used to collect body wastes.
4. Explain to the PLWHA how to use the containers.
5. Put on gloves/plastic bags to empty the containers preferably in a pit latrine, or bury the contents.
6. Soak the plastic containers for 10 minutes in soapy water with 5 % chlorine solution.
7. Scrub containers using brush.
8. Rinse in clean water.
9. Prepare containers for re -use

##### **Body Fluids on surfaces**

If any body fluids spill on the floor, seats or objects, they should be cleaned up immediately and the surfaces decontaminated.

## **2. NUTRITION SERVICES**

The purpose of nutrition services to PLWHAS is to provide a diet that can compensate the catabolic losses due the illness as well as for the patient to live a relatively comfortable and "healthy" life. Such food should be able to:

- ⇒ Provide energy to the body
- ⇒ Repair worn out body cells
- ⇒ protect the body against infections
- ⇒ Stimulate the appetite
- ⇒ Improve well-being of the body



Food preparation; Food preparation in this context means making nutritionally balanced meals in a form that is appealing, appetizing (presentation, smell, taste) and culturally acceptable.

Food Service: Food service involves presentation of food in an attractive way, to stimulate the patient's appetite and encourage ingestion. PLWHA may be able to feed them selves or they may need assistance.

### **Steps**

1. Explain the procedure to the patient.
2. Help the patient into a comfortable position.
3. Place a protective cloth on the chest of the patient.
4. Feed the patient with small quantities of food, allowing time to swallow.
5. Give drinking water on demand.
6. Have patient rinse the mouth with water or mouthwash after eating.
7. Remove the protective cloth and eating utensils.
8. Settle the patient.

### **3. INFORMATION AND EDUCATION SERVICES FOR SEXUAL BEHAVIOR**

The purpose of providing information and education (IE) about sexual behavior is to:

- Prevent infection and re- infection
- Improve and maintain sexual relationship
- Raise awareness
- Provide opportunities to make informed decisions

#### **Information and Education for safer sex**

Penetrative sex always carries some risk. This is why it is wise for PLWHA not to have any penetrative sex at all. However, if PLWHA and their partners decide to have penetrative sex, they should be sure to use protection. Condoms are effective in preventing pregnancies and infections from HIV/AIDS and other STDs because they help prevent contact with sexual body fluids (semen, vaginal fluids and blood).

## What is "safer sex"?

Safer sex is any sexual practice that reduces the risk of passing (transmitting) HIV from one person to another.

The best protection is obtained by choosing sexual activities that do not allow semen, fluid from the vagina, or blood to enter the mouth, anus or vagina of the partner, or to touch the skin of the partner where there is an open cut or sore.

Safer sex practices include:

- ☛ Staying in a mutually faithful relationship where both partners are uninfected.
- ☛ Avoiding certain practices that increase the possibility of HIV transmission, for example "Dry" sex, which may lead to breaks in the skin.
- ☛ Following the ABC Rules of sexual behavior:
  - A = Abstinence from sexual activity
  - B = Be faithful to one partner or
  - C = Condom use with all sexual partners

Couples should talk about sex and learn to please each other. This can allow for the negotiation of safer sex and make the intercourse more pleasurable for both and less likely to cause discomfort or minor damage to the genitals.

## 4. Support services

Support services are those given to PLWHA to help meet social, spiritual and emotional needs. Support services help to:

- ☛ Reduce anxiety
- ☛ Provide sense of belonging
- ☛ Assure quality of care
- ☛ Improve relationship between PLWHA and care giver

People who have AIDS or people who are in contact with someone with AIDS are often afraid that the negative feeling described about PLWHA will be too strong to bear. These feelings cannot and should not be avoided. They are normal reactions to crisis. Family, friends, neighbors, CBRHA (or anyone who cares) can help another person cope with these feelings by listening and talking to the person about these feelings.

Neighbors can help a family that is affected by AIDS. Women's clubs, youth and religious groups can also be mobilized to assist. Similarly, local political and social organizations can be involved.

## **Fear, Anxiety or Depression**

### ***What to Teach the Family:***

- ☛ Listen to the patient.
- ☛ Let the patient know that their feelings are normal.
- ☛ If they need or want professional help, help them to get it if possible.
- ☛ Talk to some one; family members may also be depressed and need help and counseling.
- ☛ Get support from a helping organization in the community. Many health workers and religious and spiritual organizations can counsel people living with HIV/AIDS and their families.

**Note:** If people need help and do not accept it, or are so angry that they may hurt themselves or another person, it is a good idea for the family to talk to someone in a helping organization.

### **What to Teach the Person and the Family:**

- ☛ Keep the person as comfortable as possible.
- ☛ For pain, provide ant pains at regular times.
- ☛ Help the person relax: for example, give back rubs and body massages, serve tea.
- ☛ Keep the person clean and dry.
- ☛ Help the person to be as independent as possible:
  - Accept decisions such as refusing to eat or get up
  - Respect requests such as having or not having certain visitors
- ☛ Allow the person to give for the losses that are being experienced.
- ☛ Let the person talk about how (s) he feels.
- ☛ Accept the person's feelings; for example, anger or sorrow.

## Confusion

### What to Teach the Family:

- ☛ Move loose or dangerous object out of the way.
- ☛ Help the person to stand and walk, about.
- ☛ Try no to leave the person alone and unattended.
- ☛ Keep medicines out of the way if the person is forgetful and might take them incorrectly.

## Physical Therapy

### Purpose

Physical therapy includes exercise or massage that helps to:

- ☛ Improve blood circulation
- ☛ Improve digestion
- ☛ Prevent stiffness of joints
- ☛ Prevent muscle wasting
- ☛ Prevent secondary infection, e.g., Inhalation pneumonia
- ☛ Relax the patient

### Steps

1. Assess PLWHA for the need or exercises/massage.
2. Explain the exercise/massage to the PLWHA.
3. Perform the exercises/massage.
4. Ensure that the exercise/massage is not painful.

Teach PLWHA the routine of the exercise/massage, including timing and duration.

## 5. SERVICES FOR THE MANAGEMENT OF OPPORTUNISTIC INFECTIONS.

*The purpose of home-based care of opportunistic infections is:*

- ☛ To reduce suffering
- ☛ To promote healing of these infections
- ☛ To maintain continuity of services

- ☛ To bring services close to the PLWHA

## **Home/Traditional Treatment**

### **Steps**

1. Identify PLWHA requiring home/traditional treatment.
2. Identify the conditions for which PLWHA require home/traditional treatment.
3. Decide on appropriate treatment if there is no medical treatment.
4. If medical treatment is prescribed ensure that any medications are taken according to prescription.
5. If PLWHA is on home/traditional treatment ensure that the treatment is safe and effective.
6. Refer PLWHA who need medical treatment.

### **Referral for Medical Treatment**

PLWHA often have health problems that cannot be treated at home. In this case they must seek the advice and care of medical practitioners. The home-based caregiver needs to be able to recognize such conditions and provide referrals for medical treatment.

This service:

- ☛ Maintains continuity of medical care
- ☛ Provides linkage between clinics and PLWHA
- ☛ Provides support for PLWHA
- ☛ Allows follow-up

### **What should people do at home?**

#### **Hygiene**

##### **What to teach the person and the family:**

- ☛ Always wash hands before cooking or eating.
- ☛ Always wash hands after defecating.
- ☛ Wash dishes in hot water with soap.
- ☛ Wash linens and clothes with soap and hot water.
- ☛ Cover the mouth when coughing then wash hands.

- ☛ Always spit into a container, not on the ground.
- ☛ Always wash the hands after touching blood.
- ☛ Dispose of garbage in covered containers, or bury or burn it.

## **Nutrition**

### ***What to teach the person and the family:***

- ☛ Eat small amounts often, including complete nutrition if possible: fruits, vegetables, grains and beans, and if possible, eggs, milk, meat or fish.
- ☛ Choose foods that the person likes.

### **What to teach the family:**

- ☛ Keep the person away from cooking smells.
- ☛ Prepare small amounts of favorite food often.
- ☛ Watch for dehydration. (See treatment for dehydration under Diarrhea.)

## **Skin problems**

### **What to teach the person and the family:**

- ☛ If the patient has diarrhea:
- ☛ Wash the skin with warm soap and water after each bowel movement and
- ☛ Keep the skin clean and dry.

#### ☞ For open sores:

- ☛ Wash with soap and water
- ☛ Keep the area dry, and apply 1% gentian violet solution
- ☛ Dressings can be made of cloth strips that have been washed and dried in the sun
- ☛ Dressings soiled with pus or blood should be handled the way body fluids are handled

#### ☞ For rashes:

- ☛ Apply local remedies or calamine lotion.

- ☞ Herpes zoster causes a large area of open sores on one side of the body; this can be very painful. For adults, take paracetamol 1000 mg every 4 hours. Local remedies and locally applied wet compresses may also be helpful. If the pain is very bad or the sores become infected, encourage the person to go a health care

facility for stronger pain medicine and for dressings and medicines for the open sores.

## **Sore Mouth and Throat**

### **What to teach the person and the family:**

- ☞ Rinse the mouth with warm water mixed with a pinch of salt.
- ☞ For white patches, suck a lemon to ease sores on the lips and mouth.
- ☞ Eat soft foods as much as possible.
- ☞ Apply gentian violet solution to sores on lips and mouth.
- ☞ Use any local remedies that are soothing.

## **Pain**

### **What to teach the person and the family:**

- ☞ For adults, take paracetamol 500mg tablets every 4 hours.
- ☞ Use any local remedies that ease the pain.
- ☞ If lying in bed, change positions frequently.
- ☞ For swelling, raise legs or swollen body parts on pillows.

### **What to teach the family:**

- ☛ Rub and gently massage sore muscles. Use oils.
- ☛ Talk with the person. Provide distraction to help the person forget the pain.
- ☛ Help the person to change positions and to raise the legs or swollen body parts.

## **Tiredness, Weakness**

### **What to teach the person and the family;**

- ☛ Rest as needed. Learn to accept help from others
- ☛ Find ways to make activities easier. For example, sit rather than stand to wash.

### **What to teach the family:**

If needed, help the person with care such as washing, going to the toilet or latrine, getting in and out of bed, eating .If the person cannot get out of bed at all, gently move the arms and legs several times a day

### **Fever**

#### **What to teach the person and the family:**

- ☞ Wash the body in cool water or wipe the skin with wet cloths.
- ☞ For adults, take paracetamol 500mg tablets every 4 hours.
- ☞ Drink more than usual: water, tea, broth or juice.
- ☞ Use any local remedies that reduce the fever.

Fevers may be caused by infections such as malaria and tuberculosis that can be treated effectively by modern medicine. Encourage the person to go to health care facility if a new or especially high fever develops.

#### **What to teach the family:**

- ☞ Offer water and other drinks frequently.
- ☞ If the person is weak, help him or her to turn from side to side in bed, or to sit up and move about.
- ☞ Help keep the person clean and dry.
- ☞ Watch for dehydration. (see treatment for dehydration under Diarrhea.)

### **Chronic Diarrhea**

People living with HIV/AIDS may have diarrhea that does not go away.

#### ***What to teach the person and the family***

- ☞ Drink much more than usual: lots of water, tea, broth or juice.
- ☞ Continue eating solid foods, including porridge (admit) and fruit such as bananas:
- ☞ Wash and dry the skin around anus and buttocks after every bowel movement.

#### ***What to teach the family:***

- ☞ Encourage and serve lots of water, soup and juice frequently.



- ☞ Watch for signs of dehydration: the tongue is dry, the eyes are sunken, and skin goes back slowly when pinched. If the person is dehydrated, give oral re-hydration solution.

**Note:** If the person cannot drink, and dehydration becomes worse, encourage the family to quickly take the person to the nearest health facility.

## **Cough and Difficulty in Breathing**

### ***What to teach the person and the family:***

- ☞ For adults, take paracetamol 500 mg tablets every 4 hours.
- ☞ Drink lots of fluids, especially if there is fever.
- ☞ Move about and turn in bed frequently.
- ☞ Sit up when possible.
- ☞ Cover the mouth when coughing. Spit into something that can be burned such as a piece of paper, sputum cup, leaf or a paper box.
- ☞ Use any local remedies that are soothing.

Infections such as pneumonia and tuberculosis (TB) can be treated effectively. TB is contagious to others if it is not treated. Encourage the person to go to a health care facility for any new cough or difficult breathing, especially if there is chest pain, bloody sputum or a new fever.

### ***What to teach the family:***

- ☞ Elevate head and upper body on pillows or raise the head of the bed on blocks to assist breathing.
- ☞ Sit with the person. Difficulty in breathing can be very frightening.

## **Care of the Person who is dying of Aids**

Eventually, the person with AIDS will die. This is sometimes hard for the person and for the family to accept. In this case, do not avoid discussion or deny that the patient is dying. Otherwise this creates fear and anxiety. Patients and their family often want to, and need to, talk about death. This serves to express feelings and fears and helps to prevent anxiety and other problems. Being open about death can help the patient and

His/her loved ones get close and make the dying process smooth. It also helps to prevent "regret" that later makes the grieving process more difficult for the relatives.

A different kind of care is needed for the person who is dying. This care can be provided either in hospital or at home. In both places, the family is very important when a person is dying. Any person who is handling the deceased should strictly follow hygienic practices, i.e., the person should be fully gloved and protect him/herself from coming into contact with any of the body fluids of the deceased.

### **Post-mortem care**

Pay special attention to your personal protection, i.e., the caregiver should be properly gloved and if possible gowned.

The following procedures should be followed:

- ☑ Clean the body, bathe if necessary
- ☑ Close eyes and mouth
- ☑ Place the body parts in normal position (arms, legs, head, etc)
- ☑ Pack cotton/pads in the rectum and vagina
- ☑ Cover any draining wounds with clean dressing
- ☑ Tie extremities loosely
- ☑ Pad ankles and wrists
- ☑ Wrap the body in clean shroud of discarded sheet or any other garment depending on the culture.

### **3.2.7 Counseling for PLWHA**

In counseling PLWHA. The following messages should be included:

1. The natural history of HIV infection.
2. Average time between infection and serious illness.
3. Prospects and uses of administering anti-retroviral therapy and prophylaxis
4. Pre and post test counseling.
5. Positive serology indicates viral carrier state and risk of transmission counsel on how to prevent the spread.
6. Pregnancy in a sero-positive woman carries a 30-50% risk of HIV infection in the infant. Viral transmission may take place in-utero, during birth or with breast-

feeding. Condoms are not adequate for birth control and should be used in conjunction with other methods such as oral contraceptive pills.

7. Inform about their sexual and needle sharing partners and the precautions
8. The need for early testing and treatment.
9. Psychological response - anxiety, depression insomnia, somatic concerns and/or suicidal thoughts.
10. Available resources for patient services and financial assistance - organizations such as OSSA, SYFA, Dawn of Hope, etc.
11. Medical care - treatment should include appropriate attention to nutrition, exercise, continued work, and other facets of "Wellness."

There are three types of counseling for PLWHA; these are the pre-, post-and follow up counseling

### **Pre-test Counseling**

#### **Reasons:**

- ➔ To ensure that the person understands the basic facts about HIV/AIDS
- ➔ To assist the patient in understanding the test and what the results mean and to prepare him/her to receive this result
- ➔ To consider and explore what he/she might do if the test is positive or negative
- ➔ To explore potential support for loved ones, family, friends, etc
- ➔ To understand that if he/she is HIV positive, there is medical care/follow up which can help to keep him/her healthier for longer
- ➔ To ensure that the person has confidence in the confidentiality of the test result, i.e., that it will be kept private
- ➔ To advise on safer sexual practices
- ➔ To enable the person to make an informed decision whether to take the test or not
- ➔ To make an assessment of risk of possible HIV infection

Some of the most important issues:

- ➔ Does the patient understand the basic information about HIV infection and AIDS? Explain these and clear up any misunderstandings.

- ➔ Does the patient understand what the test is and what a positive or negative result would mean? Remember it is an antibody test and does not tell whether you have the AIDS phase of the disease
- ➔ Explore why he/she wants the test, or explain why you have suggested the test, and what benefits there are in knowing one is HIV positive. Has he/she been at risk for acquiring HIV infection?
- ➔ It is also important to discuss how the patient thinks he/she might feel and react if the test is positive. How would he/she tell the news of the result to the sexual partner? If the result is positive, the sexual partner may also need a test.
- ➔ It is best if he/she thinks carefully about who to tell the result to: employers, friends, and even some family members may not keep the result to themselves. Many people have lost their jobs, friends and lovers after telling them the positive result.
- ➔ Explain when and how he/she can get the result. HIV results should be given to patients in person and in privacy/ the result must be kept confidential.
- ➔ Let him/her know that you understand the difficulty and anxieties involved in having an HIV test. Let him/her know that you, or another health worker, will be available to give the result. Tell him/her that it will be kept confidential and that there will be ongoing support and advice if needed.
- ➔ Does he/she know how to prevent the spread of HIV infection? Does he/she know how to have sex in a safer way? Can he / she get condoms or do you need to provide them? Does he / she know how to use them correctly? you may need to explain in detail about the Importance of practicing safer sex from now onwards. Remember this may be the last time you will see the patient.
- ➔ After exploring the above issues, it is important finally to ask if he/she still wants to undergo the test, or would he/she like to think about it a little longer? In this way he /she will be able to give informed consent.

## Post/test Counseling

### Reasons:

- ➔ It is often difficult for a person to accept and believe that he/she has HIV infection merely on the basis of an HIV positive test result. Counseling is often needed to help convince the patient about reality of the situation.
- ➔ To ensure the person understands the meaning of the result.
- ➔ To help the person cope with the result, especially in the days or weeks to follow (if the result is positive).
- ➔ To make a follow up plan for the ongoing care of the person if he/she is HIV positive.
- ➔ To ensure that the person is aware of the dangers of spreading HIV (if the result is positive) or of preventing infection (if the result is negative). Information on safer sexual practices should also be given.
- ➔ To understand the need for careful consideration about having children, if HIV positive.
- ➔ To explain the need for re-testing if he/she is considered to be in the[" Window period".

It is usually best to give the result as soon as possible with out any unnecessary delay. Results must be given the result as soon as possible without any unnecessary delay. Results must be given in a private and confidential manner. Remember the patient is most likely to be very anxious and will be concerned about the result. Allow him/her time to think about it. Whether it is positive or negative, you must check that he/she understands the meaning of the result, and what the implications are. He/she may need to return to clear up misunderstandings or to hear some of the details again.

If the HIV tests result is positive:

- ➔ Give the patient time to express his /her feelings and fears, and encourage him/her to talk, He /she may experience many different feelings, such as anger, guilt, sadness, anxiety, fear, confusion or disbelief. He/she may become emotionally 'shocked' or be unclear or confused about what to do next. These are

all normal and expected responses. Give him/her the opportunity to feel them and express them.

- ➔ Reassure that he/she will not be abandoned (left alone). Make it clear that he/she will be supported and guided as to what to do next. Explain that coming to terms with the result is a process that needs some time.
- ➔ Try not to overload him/her with information and advice all at once. He/she needs to treat and manage an HIV positive person. Let him/her know that you, and/ or other co-workers, are available to provide ongoing support and care.
- ➔ He/she should understand the importance of practicing safer sex, and the need to protect sexual partners from infection. He/she may need a supply of condoms.
- ➔ He/she may need convincing that an HIV positive result really means that there is HIV infection.
- ➔ In a woman it is even more important for her to approach her sexual partner very carefully. The male partner may become aggressive and violent when he learns that his wife or girlfriend is HIV positive. He may even walk out on her and leave her destitute. The woman needs to think very carefully about what she should do.
- ➔ The patient must also be aware that he/she must not donate blood for transfusion or share a syringe, needle or razor blade with anyone else.
- ➔ You will need to discuss to whom he/she should tell the result and when to do so. You should do all possible to maintain confidentiality of information that may lead to any stigmatization of PLWHA.
- ➔ Also discuss the possibility that the partner, family, neighbors and friends may reject him. Such rejections, isolations and discriminations are called stigma.
- ➔ You may need to arrange another time to discuss this and other questions and problems.
- ➔ Any health worker should do all in his/her capacity to protect PLWHA against the effects of stigma.

*If the HIV tests result is negative;*

- ➔ Check with the patient whether he/she understands the meaning of a negative result

- ➔ If you felt he/she has had risk of exposure to infection in the 12 weeks before having the test, then you want to advise him/her to have another test in 6-12 months' time. Remember there is 'window' period where a person is HIV-infected but the test is falsely negative.
- ➔ Discuss the importance of him/her remaining HIV negative. This means knowing how he/she could become infected in the future. The necessary precautions to prevent further infection will need to be taken.
- ➔ You may need to counsel him/her about safer sexual practices. He/she must appreciate sex in a safer way. It might be useful to explore why it has been difficult for him/her to practice safer sex.
- ➔ He/she also needs to understand the connection between other sexually transmitted diseases (STDs) and AIDS; and the importance of having the STD treated.

### **Follow up Counseling**

Follow up counseling is offered to a person after pre and post test counseling to help the person try to live positively with HIV infection and cope with any problems she/he may face.

*The aims of offering follow up counseling:*

- ☞ Maintain hope
- ☞ Empower people with HIV to maintain control over their lives
- ☞ Develop healthy coping skills

Who should be offered with follow up counseling?

- ☞ To all clients who have undergone pre and post test counseling.

**Where should it be offered?**

- ☞ At office or clinic
- ☞ In hospital
- ☞ At the persons' home
- ☞ Counseling centers, or
- ☞ Any convenient place

*Follow up counseling process:*

1. Helping the person tell the story - issues from last counseling session any concerns (Feelings, listening, understanding)
2. Helping the person consider options
3. Helping the person make plans

Issues in providing follow-up support and counseling:

1. Psychological adjustment (anxiety, stress, suicidal ideas, etc)
2. Counseling prior to death and bereavement counseling
3. practical support - coping mechanisms for self and family
4. Medical issues -- liaison with medical personnel, providing information, promotion of healthy living

### **3.2.8 Drugs used in the Management of HIV/AIDS and their side effects - Annex 7.3**

### **3.2.9 Self-protective Measures**

*Precautions to avoid contracting HIV infection from patients*

1. The handling of used needles
  - a. Re-sheathing needles - do not re-sheath or re-cover used needles unless there is a special apparatus which will hold the sheath and give the health worker protection. If a needle must be re-sheathed, then you must not hold the needle cover with your hand.
  - b. Discarding needles - All needles must be discarded in to protected containers. never discard a used needle or sharp instrument into a dustbin or paper or plastic bag.
2. Procedures that involve blood and body fluids
  - a. Wear gloves when using sharp instruments, taking blood, putting up drips, handling body fluids.
  - b. Take extra care to avoid blood splashing or spilling onto your skin. Wash off any blood from your skin as soon as possible.

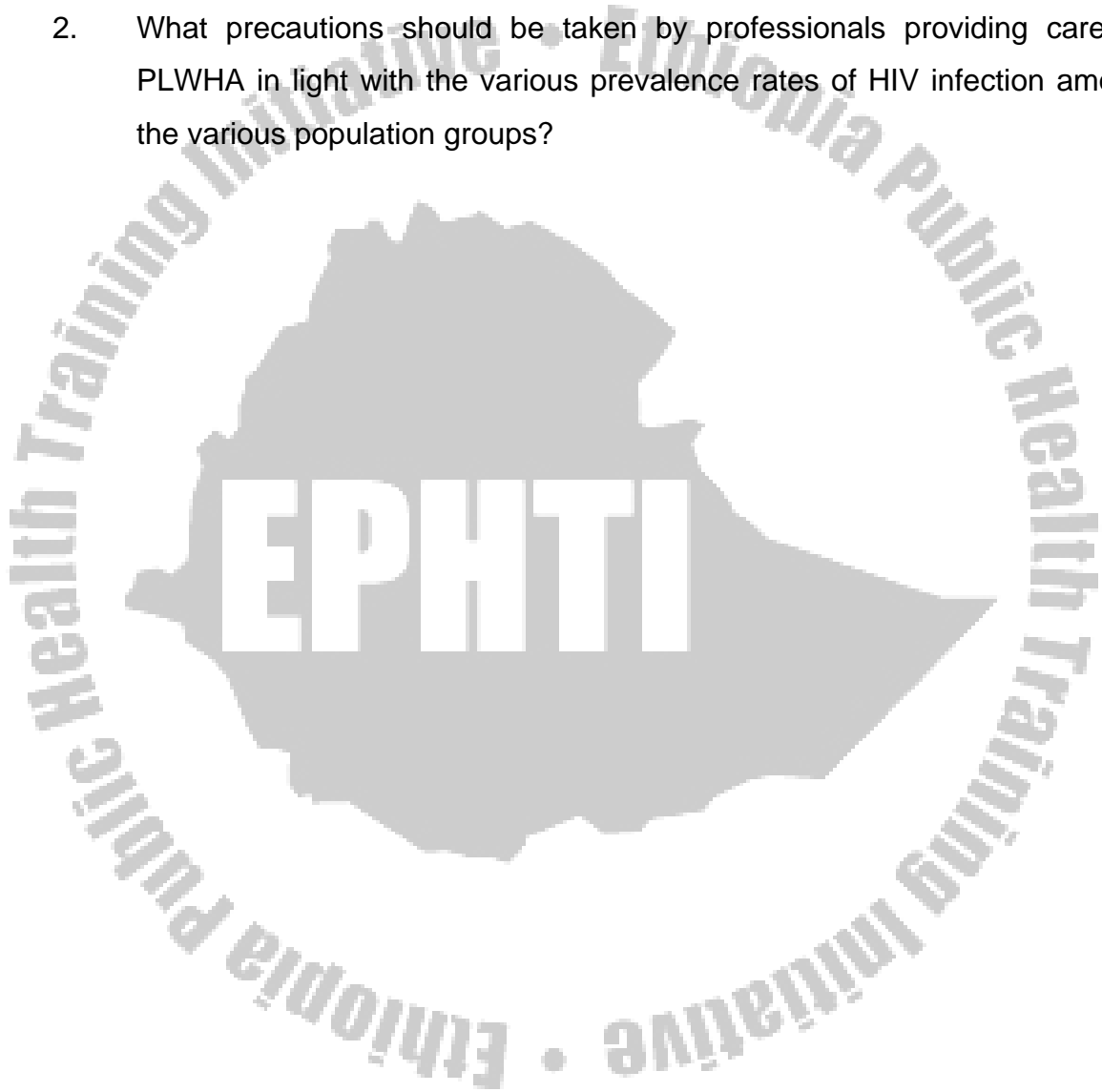


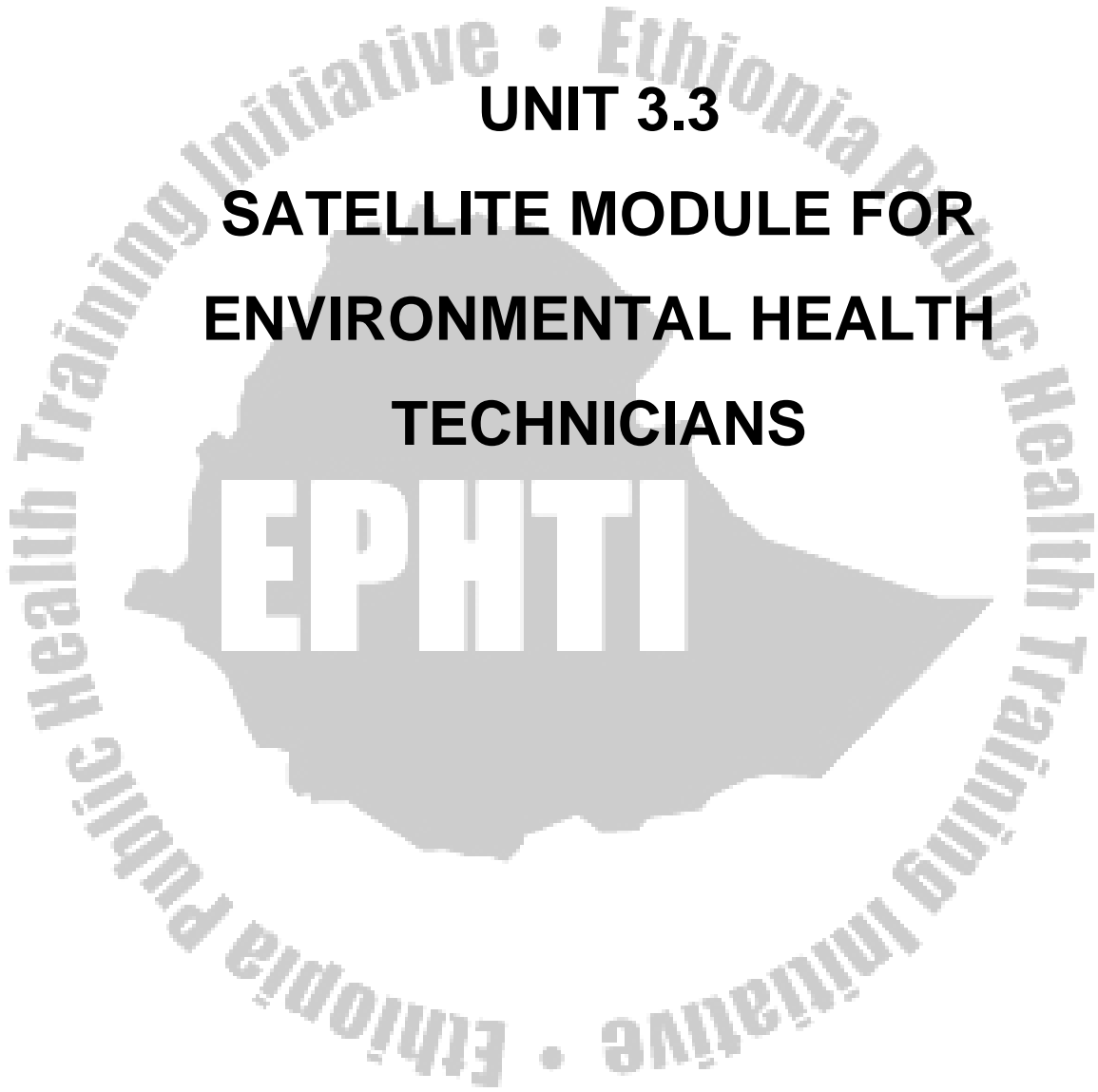
- c. Keep obvious cuts and sores covered with waterproof plasters or tape.
  - d. Wear gloves when handling any blood-contaminated materials, such as swabs, cotton wool, bandages, dressings and instruments, or for handling any body fluids.
3. Surgical procedures: The health care worker must take extra care when doing surgery, post-mortem and other invasive procedures. It is important to regard all patients as possibly being HIV-infected and to take precautions on them all.
- a. Take special care passing sharp instruments around during surgery.
  - b. Also extra care should be taken when inserting or removing a blade from a scalpel. Workers doing post-mortam examinations should also take extra care.
  - c. Use gloves and plastic apron if you are doing surgical procedures or delivering babies (childbirth).
4. Washing hands
- a. Always wash hands after examining or caring for a patient, after cleaning up, or after doing a procedure
  - b. If possible use an antiseptic soap, such as iodine (Betadine), chlorhexidine (Hibitane/Hibiscrub) and cetrimide (Cetavlon, Savlon).
5. Other protective measures
- a. Eye and mouth protection -wear protective eye equipment (glasses or goggles) when doing procedures where body fluids may e splashed.
  - b. Contaminated linen-wear gloves and plastic aprons for handling contaminated linen, bed clothes, dressings, or for cleaning up any spills of blood or body fluids
  - c. Mouth to mouth resuscitation- if possible place a thin cloth over the mouth, to avoid any saliva or fluid exchange during mouth -to- mouth contact.

### 3.2.10 Case study: learning Activity 2

Refer to the Epidemiologic case study in the core module and attempt the following questions:

1. considering the data given on the case study, what would you comment on the effect of the epidemic on professional providing care to PLWH?
2. What precautions should be taken by professionals providing care to PLWHA in light with the various prevalence rates of HIV infection among the various population groups?





**UNIT 3.3**

**SATELLITE MODULE FOR  
ENVIRONMENTAL HEALTH  
TECHNICIANS**

### **3.3 Satellite Module for Environmental Health Technicians (EHT)**

#### **3.3.1 Introduction**

Environmental health technicians like any other health workers, are involved in the prevention and control of HIV infection. It is therefore necessary to equip this category of health workers with the up to date knowledge on HIV/AIDS. It is also vital that EHT develop favorable attitude towards PLWHA. EHT should also be sufficiently skilled to educate the public in ways of preventing the acquisition and spread of the infection. EHT should be effectively assisting other health workers in reducing contamination from instruments used to give care for HIV/AIDS patients and hazardous excretion/discharge from the patient by practicing optimal sanitary measures, particularly disinfections and sterilization. This module, therefore, deals with equipping the EHT with the appropriate knowledge and skills of handling HIV infected individuals and propagate sanitary practices related to HIV/AIDS prevention.

#### **3.3.2 Directions for Using the Module**

Proceed through the module as follows:

- ⇒ Read the directions for using the module in section 1.1 and follow the instructions.
- ⇒ After doing so read the core module, do the pre-tests, do the exercises and then go through this satellite module.
- ⇒ Afterwards, you may also read the satellite modules of other categories of health professionals, too.

#### **3.3.3 Learning Objectives and Activities**

At the end of the session the students should be able to:

1. Describe the routes of transmission of HIV
2. Describe the ways of prevention and control of HIV/AIDS with focus on reduction of contamination and IEC.
3. Explain to family members the principles, methods and hygienic measures to be taken while providing home based care to AIDS patients.

### 3.3.4 Prevention and Control (IEC Focus)

HIV transmission mechanisms and Interventions

Transmission Mechanisms	Interventions
Unsafe medical practices	Ensure sterile conditions
Transfusion	Eliminate unnecessary transfusions Screen donors Test blood supply
Prenatal (Mother-to-child)	Counseling, Testing Nutrition Family planning Drug treatment
Sexual transmission	Maintain faithful partnership Delay onset of sexual activity Use of condoms Control STDs

### 3.3.5 How to Reduce Infection by contamination in Health Care Facilities?

#### Disinfections and Sterilization Measures

Disinfections is mainly used as a barrier to contamination by discharges from the patient. It should be applied, as closely as possible to the patient. It is frequently used to treat the excretions and discharges of patients and also fomites and various objects with which the sick person discharges come in contact.

#### Methods:

- ➔ Chemicals
- ➔ Heat
- ➔ Steam, boiling
- ➔ Large steam sterilizing

- ➔ Dry heat
- ➔ Light

### **Chemical Agents**

- ➔ 5% chlorine solution to disinfect sputum and feces -effective if the chemical agent is in solution form
- ➔ Alcohol (as antiseptic and germicide) -effective germicide in solution of 50-70%
- ➔ Iodine -2.5% solution in 70% alcohol

Attendants should disinfect their hands after handling patients and materials soiled with patient's body fluids. This can be accompanied by wetting the hand with a 70%alcohol solution.

### **Disinfecting Bed and Body Linen**

- ➔ Steaming, boiling or soaking for one hour in a 5% carbolic solution, or 10%formaline before laundering
- ➔ During the period of illness cleaning rooms should be accomplished by scrubbing and other dustless method (hot water and detergent) at least three times a day (dampened cloth)
- ➔ For soiled walls -washing, painting or repapering may be advisable.
- ➔ Complete airing and sun lighting or rooms.

### **Management of Infectious Wastes and Sharps**

- ➔ Infectious wastes including wastes from laboratories are good media for growth of infectious agents. These wastes have to be incinerated.
- ➔ Sharp needles, blades and instruments could be encapsulated for disposal.
- ➔ Blood should be disinfected before discharge into sewer or may be incinerated.

**N.B:** After incineration or any other disinfections process, residues may be land-filled.

## Segregation and Packing

- Careful segregation and separate collection of infectious waste may be tiresome for health personnel but it is the key to safe and sound management of infectious wastes.
- Double packing i.e. using plastic bag inside a holder/container for easy cleaning
- Containers for hazardous /infectious wastes should be disinfected (e.g., using sodium hypo chlorite / bleach) before reuse.
- Cleaning personnel should be informed about the potential risks posed by waste handling. They should be trained in safe handling procedures and should wear protective aprons and gloves. The waste should be collected daily.

## Treatment and Disposal of infectious Wastes

- Thermal process
  - Static - grate single chamber incinerator
  - Drum or brick incinerator
  - Open air burning
- Wet thermal disinfections
  - Exposure of waste to increase temperature and increase pressure steam
- Autoclaving
- Chemical disinfections
  - E.g., stool disinfections -in a bucket add chlorine
  - Oxide powder or dehydrate- lime oxide (CaO)

## General Remarks

- ⇒ Infected dressings are put into clean, covered containers
- ⇒ The lids of the containers must always be firmly covered.
- ⇒ Contents should not be directly handled (free hand)
- ⇒ The containers should be cleaned with disinfectants after emptying.
- ⇒ Hands should be washed after disposal of contaminated wastes.
- ⇒ Sharp needles, syringes, etc should be put into a special container before disposal to avoid puncturing in collectors.

## What should the public be taught about the prevention and control of HIV infection?

- People should be convinced that abstinence before marriage and faithfulness to one partner is the best way to prevent one from getting HIV infection. To do so one can use mass media, interpersonal talks, IEC materials, and other educational programs.
- Adolescents and young people should be advised and convinced that they should delay in onset of sexual activity; they should also limit their sexual partners to one and abstain from having sexual contact with commercial sex workers.
- In cases where the above recommendations are not feasible then all sexual contacts must be protected by using condoms.
- Persons having signs and symptoms or suspected of having any STD, should be detected early and properly treated at health institutions.
- Health professionals should be informed that any blood should be screened in the laboratory before it is transfused. All samples testing positive should be discarded.
- In infected pregnant women reduce transmission through breastfeeding -curtail breastfeeding if other options of feeding are available.
- Reducing number of pregnancies - counseling and testing to convince HIV infected women not to get pregnant.
- All women (particularly young and pregnant ones) should be tested for HIV and undergo proper counseling.
- Proper handling of wastes and discharges from patients

### 3.3.7 Principles of hygiene in home based care (HBC) for PLWHA

HBC activities in this category teach families of the PLWHA to keep the surroundings clean and to help -prevent contamination and cross-infection.



## Handling Body Fluids

### Purpose

People living with HIV/AIDS are at greater risk of contracting various other infections. Body fluids are often a source of infection to both PLWHA and their families. They may contain HIV and other harmful germs. PLWHA and their families need to handle body fluids with care. Therefore, it is essential to teach caregivers of PLWHA about proper handling and management of body fluids and soiled materials.

The following sections are about how to handle these body fluids:

- ⇒ Blood
- ⇒ Pus
- ⇒ Stool and urine
- ⇒ Sputum and vomits

### Blood from Wounds and Bleeding

#### Steps

1. Put on gloves or plastic bags.
2. Stop the bleeding.
3. Cover the wound with clean cloth or bandage.
4. Soak clothes soiled with blood for 10 minutes in cold water/5% chlorine solution
5. Wash clothes with hot water and soap; rinse well.
6. Dry clothes in the sun.

**Note:** Wrap contaminated wastes in newspapers, if available, for disposal in a pit

### Stool, Urine, Vomits and Sputum

Stool and urine should be thrown down into the pit latrine immediately.

#### Steps

1. Prepare plastic containers with 5% chlorine solution to decontaminate the body Fluids.
2. Put the plastic containers by the PLWHA bedside or underneath for use.
3. Always cover containers used to collect body wastes.
4. Explain to the PLWHA how to use the containers.

5. Put on gloves/plastic bags to empty the containers preferably in a pit latrine, or bury the contents.
6. Soak the plastic containers for 10 minutes in soapy water with 5% chlorine solution.
7. Scrub containers using brush.
8. Rinse in clean water.
9. Prepare containers for re-use

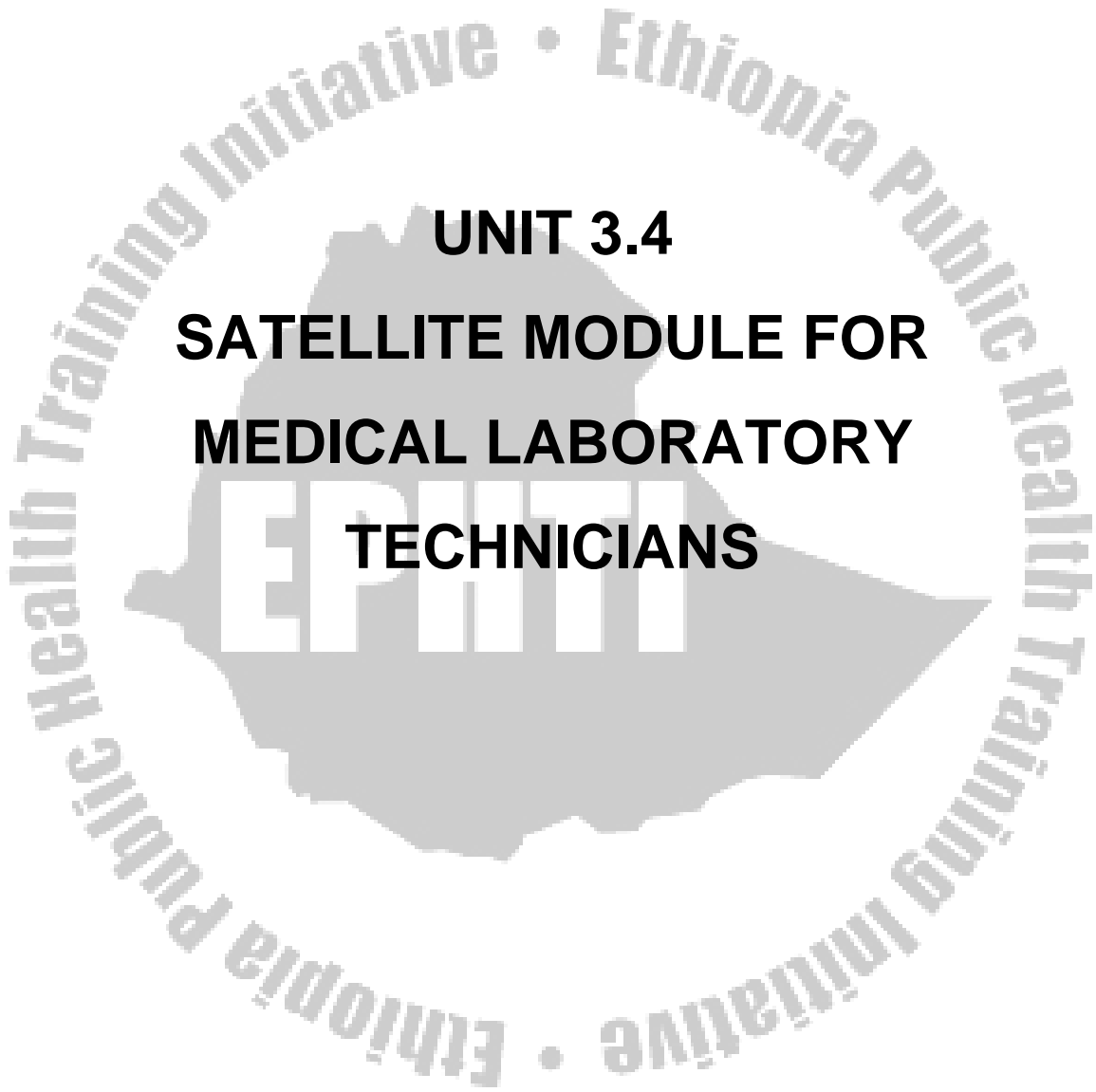
### **Body Fluids on Surfaces**

if any body fluids spill on the floor, seats or objects, it should be cleaned up immediately and the surfaces decontaminated.

### **3.3.8 Epidemiological Case Study: Learning Activity 2**

**Answer the following questions related to the Epidemiological case study (2.12).**

1. What can be the role of the Environmental Health? Technician in curbing the spread of the HIV infection in Ethiopia?
2. Can you comment on the spread of HIV infection in the health care setting through unsanitary environment?



**UNIT 3.4**  
**SATELLITE MODULE FOR**  
**MEDICAL LABORATORY**  
**TECHNICIANS**

## **3.4 Satellite Module for Medical Laboratory Technician Students**

### **3.4.1 Introduction**

Medical Laboratory Technicians (MLT) are involved in the diagnosis and management of HIV/AIDS in individuals who are suspected to have the problem or who are apparently healthy. They support the process of diagnosis by producing laboratory evidences. In addition, as health professionals, they can contribute in the control and prevention of HIV/AIDS. It is therefore, necessary to equip them with the up-to-date knowledge. It is also vital that MLT develop favourable attitude towards persons affected by HIV/AIDS. MLT should be sufficiently skilled to conduct the laboratory diagnosis of HIV. At the same time they should also be taught on the various protective measures against acquisition of HIV from patient specimens during handling and processing. This module, therefore, deals with equipping the MLT with the appropriate knowledge and skills of handling HIV infected persons and AIDS patients and their specimen.

### **3.4.2 Directions for Using the Module**

Proceed through the module as follows:

- ⇒ Read the core module and "the HIV-Spread like a fire" game (Annex 7.1)
- ⇒ Perform the pre-test.
- ⇒ Then go through the satellite module
- ⇒ Conduct the post-test. If your score is not satisfactory, you may repeat the Procedure

### **3.4.3 Learning Objectives**

1. Describe the types of types of diagnostic tests available for diagnosing HIV infection.
2. Describe the procedures of HIV testing.
3. Discuss on the sensitivity and specificity of each test.

4. Identify the types of supportive tests that could be conducted at a health center level to diagnose opportunistic infections,
5. Discuss on the precautions in handling specimens for HIV testing.

#### **3.4.4 Learning Activity 1 (Refer to the core module, Annex 7.1)**

##### **Questions (based on the observation of fire game)**

1. Were the participants at ease for providing blood specimen for HIV testing?
2. What reaction did you observe when participants were shown the “instruments for HIV testing”?
3. What is the role of diagnostic tests for the prevention and control of HIV/ AIDS?
4. What are the implications of being Test Positive and Test Negative? Explain by assuming that you are the person who was tested.

#### **3.4.5 Laboratory Diagnosis**

Specific tests for HIV include antibody and antigen. Detection. Blood (serum) is screened by enzyme linked immunosorbent assay (ELISA). Positive specimens are then confirmed by a different method (e.g., Western Blot) or through repeated ELISA testing. Nowadays rapid and spot tests are also used.

Nonspecific laboratory findings with HIV infection may include anemia, leukopenia (Particularly lymphopenia) and thrombocytopenia in any combination polyclonal hypergammaglobuliemia, and hypochoestrolemia.

For information on prognosis and guiding therapy decisions, the most important test is CD4 lymphocyte count. As counts decrease, the risk of serious opportunistic infection over the subsequent 3-5 years increases. The limitations of CD4 count include that there is substantial diurnal variation (counts are generally lower in the morning), and counts may be depressed by any intercurrent illness, Therefore trends is more important than any single count.

The threshold CD4 count for initiation of therapy is 500-cells/ micro-liter of blood.

- Those above the threshold count need counts every 6 month
- Between 500 to 200- the counts are made every 3 months (below 200, one needs to start prophylactic therapy for pneumocystis Carinii)

## Laboratory Tests Related to HIV Infection

The following Table illustrates the significance of the tests that need to be performed in HIV/AIDS patients. It should be noted some of the hospitals. Yet, there will probably be progress and changes in availability of testing. However, it is essential that MLT students should have the basic knowledge of the various diagnostic tests and be able to conduct the tests when the opportunity arises, only few special diagnostic centers can handle tests such as Western blot, CD4 count, viral load determination and B Microglobulin determination

Test	Significance
Enzyme Linked Immunosorbent Assay (ELISA)	Screening test for HIV infection. Sensitivity >99.9% To avoid false positive results, repeatedly reactive results must be Confirmed with Western Blot
Western Blot	Confirmatory test for HIV. Specificity when combined with ELISA >99.9%. Indeterminate results with early HIV infection, HIV2 infection, autoimmune diseases, pregnancy, and recent tetanus toxoid(TT) administration
Complete Blood Count (CBC)	Anemia, neutropenia, and thrombocytopenia common with advanced HIV infection
Absolute CD4 Lymphocyte count	Most widely used predictor of HIV progression, Risk of progression to
CD4 Lymphocyte Percentage	Percentage may be more reliable than CD4 count. Risk of progression to AIDS opportunistic infection or malignancy is high With percentage <20%
Viral load tests	These tests measure the amount of actively replicating HIV. Correlates with disease progression and response to antiretroviral drugs. Levels >5000-10,000 copies/ml indicate the need for treatment.
B Microglobulin	Cell surface protein indicative of macrophage-monocyte stimulation, Levels >3.5mg/dl associated with rapid progression to disease. Not useful with intravenous drug users

Source: Tierney, LM, McPhee, SJ & Papadakis, MA. Current Medical diagnosis and Treatment 2001. 40<sup>th</sup> edition, Lange Medical Books/McGraw-Hill, 2001.

### **3.4.6 Validity of Diagnostic Tests for HIV**

The sensitivity of screening serologic tests is greater than 99.5 the specificity of positive results with two different techniques approaches 100% even in low-risk populations. In general, Western blot is more specific than ELISA.

False positive screening tests may occur as normal biologic variants or association with recent influenza vaccination or other disease states such as connective tissue disease; These are usually detected by negative confirmatory tests.

### **3.4.7 Precaution to be Taken During Specimen Handling and Processing**

The precautions needed for handling and processing blood specimens for HIV testing are not different from those that are needed in handling and processing other blood specimens. However, one should be aware of the moral as well as legal consequences of mislabelling specimens and/or coming up with incorrect or inconclusive results. In addition, the result of the test needs to be strictly confidential. For these reason, the laboratory technician is, currently, the focal person in HIV/AIDS diagnosis with implications for possible misconduct in interpretig and reporting of screening test results. Therefore, one needs to be armed with the utmost ethics and professionalism in handling these issues.



**UNIT 3.5**

**SATELLITE MODULE FOR**

**COMMUNITY HEALTH**

**WORKERS**



## **3.5 Satellite Module for Community Health Worker**

### **3.5.1 Introduction**

The majority of people living with HIV/AIDS do not have the access to health services either because health services are not sufficiently available or because they are not organized in such a way that PLWHA would be served properly. It is therefore vital that local resources from the community itself be utilized in order to motivate such people to seek health services or provide local care to the sick at home level. In this regard, the CHW and the family members of patients can play a significant role both in the prevention of HIV transmission and home based care. Therefore, educating CHWS is very important in the control of HIV/AIDS.

### **3.5.2 Learning Objective**

The objectives of this Module are to;

1. Equip CHWS, with relevant knowledge about HIV/AIDS so that they will play An active role in educating the people in their communities, and
2. Improve home based care for people living with HIV/AIDS.

### **3.5.3 Pre & Post Test**

Answer the following questions in short Write your answers I the separate sheet Provided.

1. What is HIV infection ad what is AIDS?
2. What is the cause of AIDS?
3. List the main modes of transmission of HIV.
4. List the high-risk behaviours and practices that enhance spread of HIV?
5. Describe the preventive measures against acquiring HIV infection.
6. Is it possible to give care to PLWHA at home? How would failies and the ommunity care for PLWHA?

### **3.4.5 Definition**

AIDS is caused by tiny organisms called HIV (virus) or germs. The virus weakens the defense system and hence predisposes (weakens) the body to other killer diseases.

### 3.5.5 Epidemiology - Transmission and Risk Factors

HIV is transmitted by either of the three main routes namely:

- ➔ Sexual intercourse with person having HIV
- ➔ Through unclean injections and transfusion of unscreened blood
- ➔ From mother to the baby during birth and breast feeding
- ➔ Harmful traditional practices such as uvula cutting, tattooing, female genital mutilation, tooth extraction, etc.

#### HIV/AIDS Not Transmitted by:

- Touching
- "Dry" kissing with no exchange of saliva
- Hugging
- Toilet seats
- Swimming together
- Sharing, eating utensils or food cooked by an HIV positive person
- Shaking hands
- Working together
- Studying or playing with HIV positive individuals or other casual contact
- Mosquitoes or insect bites.

#### Groups at risk of Contracting HIV Infection

- ⇒ Persons with multiple sexual partners
- ⇒ Those who take alcohol
- ⇒ Bar girls
- ⇒ Long distance truck/train drivers
- ⇒ Drug abusers
- ⇒ Youth experimenting sex
- ⇒ Raped women and men

#### High Risk Behaviors

- Having sexual contact with many different partners, such as the commercial sex workers
- Having sexually transmitted disease(s)

- ☑ Alcoholism
- ☑ Sexual intercourse with commercial sex workers
- ☑ In and out-of-school youth practicing unsafe sex
- ☑ Drug abusing

### 3.5.6 Clinical Features

The difference between HIV infection and AIDS is that, HIV infection is simply the presence of the microorganism in the body. An HIV infected person may apparently be healthy with out having any signs and symptoms. AIDS on the other hand is the stage where the HIV infected individual develops signs and symptoms of disease. A person may remain without sign and symptoms for about 3 to 7 years or even up to 10 years.

persons suffering from AIDS may show various signs and symptoms such as long lasting diarrhea, significant weight loss, fever, chronic cough, skin eruptions, skin rashes, swelling of lymph nodes and many others.

To date there is no drug to cure persons suffering from AIDS. Preventing the acquiring of HIV is the only possible solution.

### 3.5.7 Prevention and Control

To date there is no protective vaccine against HIV. Therefore, the control lies on prevention of the infection, which can only be achieved through modification of behavior. The following activities should be carried out to teach the public in general and the high-risk groups in particular. One should follow the ABC rule i.e. abstention, be faithful and condom use

1. **Avoid unsafe sexual practices** by reducing the number and frequency of sexual contacts, avoiding high-risk practices and using barrier protection such as condoms
2. **Interruption of mother to baby transmission** by testing for antibody of HIV for women at risk for infection, and HIV infected women should be advised to defer pregnancy - (termination of pregnancy is more an acceptable alternative).
3. **Other measures**
  - a. Testing for HIV should be offered on confidential basis to requesting individuals but only when pre-and post-test counseling can be given

- b. Health personnel should protect themselves from patient contamination.
- c. Following strict infection prevention rules (disinfections and sterilization)

### 3.5.8 Keys to pre and post Test

1. HIV is a human Immunodeficiency virus which weakens natural immunity of a person. AIDS -Acquired immunodeficiency syndrome is a secondary Immunodeficiency syndrome from HIV infection.
2. HIV is caused by microorganism called Human Immunodeficiency virus (HIV)
3. Modes of HIV transmissions
  - a. Sexual -unprotected sexual intercourse
  - b. parenteral - injections, blood transfusions
  - c. Perinatal - transplacental, breast feeding
  - d. Sharing of blade, needles, nail, pin ... especially in local practices of uvula cutting, tooth extraction, circumcision, tattooing, eye-lid incision...
4. The high-risk behaviors are promiscuity, extramarital sexual intercourse and excessive alcohol consumption, harmful traditional practices involving use of blades. Needles, nails, pins...
5. Prevention of HIV infection
  - a. Sexual -abstain sex before marriage and remain faithful after marriage, safe sex (use condom), reduce number of partners,
  - b. Parenteral -avoid using un-sterile injections, transfuse screened blood, avoid village injectors, avoid needle sharing
  - c. Prenatal -counsel HIV positive mothers on risk of passing it to the baby in utero and as much as possible not be pregnant
  - d. Avoid sharing body-piercing objects such as blades, needles, pins...
6. Yes, it is possible. AIDS patients can be given the same care and shown concern as is done for other sickness. Besides, all types of discrimination and stigmatization associated to being HIV positive must be avoided. Furthermore, it should be recognized that PLWHA are able persons who can work, generate their livelihood etc and such rights of theirs should be respected.



## **UNIT 3.6**

# **TAKE HOME MESSAGE FOR PERSONS PROVIDING HOME CARE TO PLWHA**

## **3.6 Take Home Message for Persons Giving Home Care to PLWHA**

### **3.6.1 Introduction**

Household members and other close contacts of AIDS patients should be the main focus of the prevention and control program. In addition, they are also the vital parts of the HIV/AIDS treatment, especially in countries like ours. This is because, at the moment, health sector resources that can be devoted to this situation are so minimal that home care of patients will continue to be the mainstay of treatment.

Therefore, there is a need for an easy and acceptable method of educating contacts of AIDS patients and other lay care givers on the disease, its causes and manifestations, transmission routes, control and treatment measures.

### **3.6.2 Learning objectives**

By the end of the session, the potential caregiver will be able to:

1. Define and explain home care for PLWHA
2. Explain the importance of home care for PLWHA
3. Describe the various services that can be given at home for PLWHA
4. Practice safety precautions when providing care for PLWHA
5. Explain and practice the steps in caring for PLWHA

### **Specific Messages**

1. About HIV and AIDS
  - Fast spreading disease
  - A disease that does not have cure
  - A disease which stays in the body along time without any manifestation
  - Does not discriminate in terms of age, sex, color level of wealth...
2. Cause of HIV
  - HIV infection is caused by entrance of a virus into body. The virus weakens the body's ability to protect from a disease
3. Modes of HIV transmission

- Unprotected sexual intercourse
  - Blood transfusion, injections, receiving or donating infected blood
  - From mother to child during pregnancy, delivery and breast feeding
  - Harmful traditional practices (e.g Uvulectomy, tooth extraction, circumcision...) which expose one to be in contact with blood
  - Shared blades, needles and any other piercing objects
4. Risk Behaviors related to HIV/AIDS
- Promiscuity
  - Extra-marital sexual practices
  - Harmful traditional practices
  - Alcoholism and drug use (Such as Khat chewing)
5. Prevention of HIV/AIDS
- Abstain from sexual intercourse before marriage
  - Remain faithful to partner after marriage
  - Use condoms in cases of extra-marital sexual intercourse
  - Avoid sharing piercing objects (blades, needles...)
  - Avoid harmful traditional practices such as uvula cutting, circumcision, tooth extraction, tattooing...
6. Care for People living with HIV/AIDS
- PLWHA need attention from their family and the community at large
  - PLWHA should not be isolated within the community
  - Isolating them would:
    - ⇒ Aggravate the problem
    - ⇒ Lower their self esteem and purpose of living
    - ⇒ Initiate them to revenge

Hence, they should be considered as able to work, generate livelihood, and given the right to live relatively healthy life.

### **Post-mortem Care**

Clean the body, bathe if necessary

Close eyes and mouth

Place the body parts in normal position(arms, legs, head, etc)

Pack cotton/pads in the rectum and vagina

Cover any draining wounds with clean dressing

Tie extremities loosely

Pad ankles and wrists

Wrap the body in clean shroud or discarded sheet or any other garment depending on the culture.








## UNIT FOUR

# **ROLE AND TASK ANALYSIS BASED ON LEARNING OBJECTIVES AND ACTIVITIES**

- 
- Table 1. Learning objectives and activities for Health Officers
- 1.1 Knowledge objectives
  - 1.2 Attitude/practice objectives
- Table 2. Learning objectives and activities for Public Health Nurses
- 2.1 Knowledge objectives
  - 2.2 Attitude/practice objectives
- Table 3. Learning objectives and activities for Environmental Health Technicians
- 3.1 Knowledge objectives
  - 3.2 Attitude/practice objectives
- Table 4. Learning objectives and activities for Medical Laboratory Technicians
- 4.1 Knowledge objectives
  - 4.2 Attitude/practice objectives
- Table 5. Learning objectives for Community Health Workers
- 5.1 Knowledge objectives
  - 5.2 Attitude/practice objectives
- Table 6. Learning objectives for caregivers
- 6.1 Knowledge objectives
  - 6.2 Attitude/practice objectives

**Table 1 - Learning Objectives and Activities for health Officers**

**1.1 Knowledge objectives**

<i>Learning Objectives</i>	<i>Learning Activities</i>
Define HIV and AIDS	Study the definition of AIDS. Describe the difference between HIV and AIDS
Describe the most important features of the causative agent	Study the commonest features of the causative agent What is the difference between HIV and other types of common viruses?
Name the causative agents	Identify the causative agent for AIDS and the pathogenesis
Describe the historical background of HIV/AIDS	Study when and where HIV/AIDS was discovered globally and in Ethiopia? Describe the pace of HIV/AIDS expansion globally and in Ethiopia
Explain the natural course of HIV infection and AIDS	Discuss on the natural course of HIV/AIDS Discuss on Window Period.
Describe the epidemiology of HIV/AIDS globally and	Form 3 groups, each consisting of 5-6 students. Discuss and study on the following points: Group 1: How commonly does HIV/AIDS affect the population. Discuss in terms of prevalence and incidence rates. Also, discuss global, regional and national figures. Group1: How commonly does hIV/AIDS affect the population. Group 3: Discuss on the economic, demographic, social and health impacts of HIV/AIDS In a panel present and discuss on the findings of each groups
Identify the modes of transmission	Study the modes of transmission and routes of spread of infection. Discuss the three main global patterns of HIV transmission Explain the common misconceptions about HIV spread
List and describe the various clinical manifestations of AIDS Describe the stages Describe the most common opportunistic infections in AIDS	Discuss the main clinical manifestations of AIDS Discuss the clinical stages of AIDS List the most common opportunistic infections Identify common manifestations of opportunistic infections
Describe the various preventive methods against HIV/AIDS Explain the role of IEC in prevention of HIV/AIDS Explain the role of family, community, and institutions in preventing HIV/AIDS	Discuss the preventive methods of HIV Discuss on health professionals risk of acquiring HIV and state the reasons. Study the protective measures: e.g during patient handling, blood and blood products' handling Discuss the role of health education (IEC) in the prevention and control of HIV spread. Discuss on the roles of family, community, and institutions in prevention of HIV spread

## 1.1 Knowledge Objectives (Continued)

<b>Learning Objectives</b>	<b>Learning Activities</b>
List and describe the various laboratory diagnostic methods	<p>Explain the most commonly used laboratory diagnostic methods used to diagnose HIV</p> <p>Form 3 groups each having 6 students and each to discuss the following and present in 5 minutes time:</p> <p>Groups 1. What can i mean if HIV test turns out to be negative among people of high-risk groups and in high prevalence areas?</p> <p>Groups 2. What can it mean if HIV test turns out to be positive among people of high-risk groups and in high prevalence areas?</p> <p>Groups 3. What can it mean if HIV test turns out to be intermediate among people of high-risk groups and in high prevalence areas?</p> <p>Conduct a panel discussion on the findings of the group-works Describe and discuss the most sensitive and specific test available nowadays in Ethiopia for diagnosing HIV infection. Explain the differences between the different tests available</p>
Explain the case management of AIDS and list the available drugs used in the treatment of PLWA	<p>Study the main modes of treatment of AIDS patients in a clinical set up.</p> <p>Discuss the commonly used drugs in the management of AIDS, the principles of treatment and mechanisms of actions of the drugs</p> <p>Discuss the principles of home based care/treatment</p>
List some of the complications of treatment with drugs	Explain the main complication of treatment with the available drugs



## Tables 2 - Learning Objectives & Activities for Public Health Nurses

### 2.1 Knowledge Objectives

<i>Learning Objectives</i>	<i>Learning Activities</i>
Define HIV and AIDS	Study the definition of AIDS Identify the difference between HIV and AIDS
Identify the causative agent	Name the organism that is responsible to cause AIDS
List the most common opportunistic infections related to HIV/AIDS	What types of opportunistic infections are common to HIV/AIDS patients especially in Ethiopia and other countries Describe the manifestations of some common opportunistic infections
Describe the Epidemiology of HIV/AIDS in Ethiopia Explain the impact of HIV/AIDS on development	Form 4 groups, each consisting of 4 students and discuss on the following points: Group 1: The various modes of transmission and routes of spread of infection. Group 2: How commonly does HIV/AIDS affect the population. Discuss in terms of prevalence and incidence rates. Discuss national figures. Group 3: Identify the various high risk factors for HIV/AIDS and also the high-risk groups in the population. Continue discussion in panel
Describe the modes of transmission of HIV globally and in Ethiopia	Study the modes of transmission of HIV. Describe the three main global patterns of HIV transmission Discuss on the misconceptions about modes of transmission.
Explain the role of harmful traditional practices for the spread of HIV infection	Discuss on the traditional practices that contribute to spread of HIV infection.
List and describe the various clinical manifestations of AIDS	Describe the main clinical manifestation of AIDS.
Describe the preventive methods	Discuss on the preventive methods Explain and discuss on how to teach on condom use
List and describe the various laboratory diagnostic methods available	Describe the laboratory tests Explain the differences between ELISA, Western Blot and Rapid tests
Explain the case management of AIDS List the available drugs used in the treatment of AIDS Describe the advantages and disadvantages or limitations of the drugs	Discuss the currently advocated case management of AIDS List the drugs commonly used for the treatment of people with AIDS Identify the importance and limitations of drugs for treatment AIDS patients.

## 2.2 Attitude/Practice Objectives

<b>Learning Objectives</b>	<b>Learning Activities</b>
<p>Describe the psychological and social impacts of HIV/AIDS in the community</p> <p>Describe stigma related to PLWHA</p>	<p>Discuss on the following points:</p> <p>How people perceive AIDS or what are the feelings of the general public towards AIDS - the illness and the patients?</p> <p>What do people feel when they discover that they have AIDS?</p> <p>Why do you think this happens?</p> <p>What are some of the ethical issues related to HIV testing?</p> <p>Perform a role-play on how PLWHA are stigmatized. (5-10 minutes).</p> <p>Discuss ways of overcoming such stigma among your colleagues and with your instructor.</p>
<p>Explain and demonstrate the various counseling methods used for PLWHA</p>	<p>Discuss and demonstrate the principles of counseling</p> <p>Discuss the various types of counseling carried out for people living with PLWHA</p>
<p>Explain the roles of family members, community and institution for PLWHA</p>	<p>Discuss the methods of guiding family members and the community and institutions on how to provide home based care to PLWA</p>
<p>Perform appropriate nursing care of AIDS patients</p>	<p>Discuss the principles and procedures to perform an effective nursing care of AIDS</p>

**Table 3 - Learning Objectives and Activities for Environmental Health Technicians**

**3.1 Knowledge Objectives**

<i><b>Learning Objectives</b></i>	<i><b>Learning Activities</b></i>
Define HIV and AIDS	Explain what HIV and AIDS are Describe the difference between HIV and AIDS
Identify the causative agent	Name the causative agent
List the common modes of transmission	Discuss the various modes of transmission and spread
Identify and describe the various misconceptions about modes of transmission	Discuss the common misconception about the transmission of HIV Describe the three transmission patterns of HIV
Describe the Epidemiology of HIV/AIDS - globally and in Ethiopia	How commonly does HIV/AIDS affect the population Discuss in terms of prevalence and incidence rates. Also, discuss global, regional and national figures  Identify the various risk factors for AIDS and also the high-risk groups in the population.
Describe the various preventive methods against HIV transmission	Discuss the preventive methods against acquisition and spread of HIV? List them and explain each  Discuss about the wastes/excretions from the PLWA and the care needed.



### 3.2 Attitude/Practice Objectives

<b>Learning Objectives</b>	<b>Learning Activities</b>
<p>Describe the psychological and ethical impacts of HIV/AIDS in the community.</p> <p>Describe stigma related to PLWHA</p>	<p>Discuss on the following questions:</p> <p>How do people perceive AIDS or what are the feelings of the general public towards AIDS - the illness and the patients?</p> <p>What do people feel when they discover that they have AIDS? Why do you think this happens?</p> <p>How do you think health workers should handle such ethical concerns and HIV and/or AIDS patients?</p> <p>Perform role-play among two volunteering students dealing with issues related to ethical concerns in 5 minutes.</p> <p>Perform a role-play on how PLWHA are stigmatized. (5 - 10 minutes).</p> <p>Discuss ways of overcoming such stigma among your colleagues and with your instructor.</p>
<p>Explain the importance of home-based care for PLWHA</p>	<p>Discuss the role of family, community and institution in caring for PLWHA</p> <p>Discuss on the importance of precautions in disposing contaminated materials and body fluids</p> <p>Discuss on the role of general hygienic measures.</p>

**Table 4 - Learning Objectives and Activities for Medical Laboratory Technicians**

**4.1 Knowledge Objectives**

<i>Learning Objectives</i>	<i>Learning Activities</i>
Define AIDS	Describe what AIDS is
Identify the causative agent	Name the causative agent
Identify the characteristics of the virus	Discuss on the characteristics of the virus in relation to other similar viruses
Describe the difference between HIV and AIDS	Discuss on the difference between HIV and AIDS
List the most common opportunistic infections in AIDS	Discuss on the Commonest types of infections that affect people with HIV/AIDS Identify the commonest manifestations
Describe the Epidemiology of HIV/AIDS - in Ethiopia	Discuss the various modes of transmission and spread of infection globally and in Ethiopia. How commonly does HIV/AIDS affect the population? Discuss in terms of prevalence and incidence rates. Discuss national figures. Identify the various high risk factors for HIV/AIDS and also the high-risk groups in the population.
List and describe the various laboratory diagnostic methods	What are the most commonly used laboratory diagnostic methods. Name them. Where do you get these of tests? Describe each of them in terms of sensitivity and specificity. Discuss on the meaning of a negative or positive test result? What is the advantage of doing repeated or confirmatory test?
Describe the various preventive methods against HIV/AIDS	Discuss on the various preventive methods Demonstrate the ways of using protective measures -especially patient specimen handling, wearing gloves, blood screening
Describe the meanings of test positive, test negative and intermediates	Discuss what HIV positive test means, what HIV negative means and what an intermediate result means
Describe the preventive measures for HIV	What are the preventive methods against acquisition of HIV? List them and explain each.

## 4.2 Attitude/Practice Objectives

Learning objectives	Learning Activities
Identify the type of specimens collected for the diagnosis of HIV and the procedures	<p>identify the type of specimens collected for the diagnosis of HIV</p> <p>Describe the procedures use to collect specimen in relation to the type of test</p> <p>Describe the how the test results are interpreted, kept and reported</p>
Explain the ethical issues related to HIV testing	Discuss on the ethical issues of HIV testing
<p>Describe the psychological, social and ethical impacts of HIV/AIDS in the community</p> <p>Describe stigma related to PLWHA</p>	<p>Discuss on the following</p> <p>How do people perceive AIDS or what are the feelings of the general public towards AIDS-the illness and the patients?</p> <p>what do people feel when they discover that somebody has AIDS? Why do you think this happens?</p> <p>How do you think health workers should handle such ethical Concerns and HIV and/or AIDS patients?</p> <p>Perform role-play among two volunteering students dealing with HIV testing issues related to ethical concerns in 5 minutes.</p> <p>Perform a role-play on how PLWHA are stigmatized. (5-10 minutes).</p> <p>Discuss ways of overcoming such stigma among your colleagues and with your instructor.</p>

**Table 5- Learning Objectives and Activities for CHWs**

5.1 Knowledge objectives

Learning objectives	Learning Activities
Describe in a simple and locally sound way what HIV and AIDS is	Describe what AIDS is using the local terms
Identify the causative agent	Discuss that HIV is caused by microorganism (germs)
	Study the difference between HIV infection and development of AIDS. Is it possible to identify a person with HIV infection without investigations (clinical, laboratory)?
List the common high risk behaviors for HIV/AIDS	Describe the behaviors that expose people to HIV/AIDS. Which group of people is at higher risk for acquiring HIV/AIDS and why? What is the importance of identifying high-risk groups?
Describe the modes of transmission of HIV	List the modes of transmission of HIV/AIDS. Which of these modes of transmission are commonest?  Explain the role of harmful traditional practices in the spread of HIV/AIDS
Explain the importance of home based care of AIDS patients	Discuss the principles of home based care for AIDS patients.  Describe the importance of providing care for PLWHA at home.

## 5.2 Attitude/ Practice Objectives

Learning Objectives	Learning Activities
Describe the various preventive methods against HIV/AIDS	<p>Explain the preventive methods of HIV/AIDS.</p> <p>Explain about condoms and their use in the community.</p> <p>Study the correct way of applying and using condoms during sexual intercourse.</p>
<p>Describe the psychological, social and economic impacts on the family and the community</p> <p>Describe stigma related to PLWHA</p>	<p>Explain what people feel when they discover that they have AIDS?</p> <p>Discuss on the social and economic implications of HIV/AIDS on the family and community at large</p> <p>Perform a role-play on how PLWHA are stigmatized by the community</p> <p>Discuss how the community will be able to avoid stigmatizing PLWHA.</p>
Describe the safety precautions in handling body fluids/soiled materials	Discuss safety precautions in handling body fluids and soiled materials

**Table 6 -Learning objectives and Activities for Caregiver**

6.1 Knowledge objectives

Learning Objectives	Learning Activities
Describe AIDS in a simple and locally sound way	<p>Discuss what HIV/AIDS is using the local terms</p> <p>Explain the difference between HIV and AIDS using locally sound examples</p>
Name the causative agent for AIDS	<p>Describe that the causative agent is a microorganism (germ) that Cannot be seen with naked eye.</p>
Identify the signs and symptoms of AIDS	<p>Discuss on the symptoms of AIDS</p>
List the common high risk behaviors for HIV transmission	<p>Identify locally recognized risk behaviors for the spread of HIV/AIDS</p> <p>Discuss how commonly HIV/AIDS affect the families and the community.</p> <p>Discuss the various high risk factors for HIV/AIDS and also the high-risk groups in the community.</p>
Describe the routes of transmission of HIV	<p>Discuss the common routes of transmission of HIV</p> <p>Explain the role of harmful traditional practices in the spread of HIV</p> <p>Discuss on the misconceptions about modes of transmission of HIV</p>
Explain the importance of home based care for PLWHA	<p>Discuss the principles of home based care for AIDS patients</p> <p>Discuss on the attitudes of people towards helping PLWHA</p> <p>Explain the effect of giving due attention/ care for PLWHA</p>
Describe the preventive methods against HIV/AIDS	<p>Explain the various preventive methods against acquisition of HIV infection</p> <p>Explain about condom use as a preventive method</p>

## 6.2 Attitude/ Practice objectives

Learning Objectives	Learning Activities
<p>Describe the psychological, social and economic impacts of HIV.AIDS on a family and community level</p> <p>Describe stigma related to PLWHA</p>	<p>Discuss on what people feel when they discover that somebody has AIDS? Why do you think this happens?</p> <p>Discuss on how PLWHA are stigmatized by the community. Discuss how community will be able to avoid stigmatizing PLWHA.</p>
<p>Describe the safety precautions handling body fluids/soiled materials</p>	<p>Discuss safety precautions in handling body fluids and soiled materials</p>



UNIT FIVE

GLOSSARY

**EPHTI**



## Glossary of Terms

Asymptomatic	-	A stage in a natural course of a disease, where the symptoms and signs are not manifested.
Attitude	-	Reflects our likes and dislikes. It often comes from our experiences or from those of people close to us.
Catabolism	-	Breaking down of complex chemical into simple chemicals.
CD4 cell	-	Major subset of T-lymphocytes functionally helper T-cells. Their receptors regulate and control the aspects of immune System.
Control	-	Control lies on prevention of the infection, which can only be achieved through modification of behavior.
Counseling	-	Advising, educating, informing of all possible outcomes -as Pre-and post-test counseling, also allowing persons express Feelings and questions.
Cytopenias	-	Advising, educating, informing of all possible outcomes -as Pre-and post-test counseling, also allowing persons express Feelings and questions.
Cytopenias	-	Deficiency of cellular elements in blood or tissue
Diagnosis	-	Statement of the nature of a disease condition made after observing its signs, symptoms and other indications.
Diurnal	-	Happenings during the daytime.
Epidemic	-	Occurrence of a disease in an a excess of usual or normal Prevalence
Epidemiology	-	The study of the distribution of diseases and related conditions in terms of their distribution by time, place. and person.
Etiology	-	The main cause of disease conditions. Usually used for microbial causative agents

Flu like syndrome	-	Illness looking like a bad cold and with fever
Hetero sexual	-	Having sex to the people of the opposite sex.
HIV-1	-	Type 1 human immunodeficiency virus which is the Predominant cause of AIDS throughout the world
HIV-2	-	Type 2 human immunodeficiency virus, which is the Predominant cause of AIDS in West Africa
Immunodeficiency	-	A weakening or deficiency in the immune system.
Immunosuppression	-	A process by which the immune system of the body is not responsive to diseases.
Kaposi Sarcoma	-	Cancer which takes the form of many hemor(bleeding) nodes affecting the skin, especially on the extremities
Knowledge	-	information stored in the brain. Mainly facts, concepts and ideas.
Leukopenia	-	Reduction in the number of leucocytes in the blood, usually as a result of a disease
Leukoplakia	-	Condition where white patches form on mucous membranes (Such as tongue or inside of the mouth)
Lymphadenitis	-	inflammation of the lymph nodes
Opportunistic infection	-	infections that occur when the defense mechanisms of the body are weakened
Parenteral	-	Drugs and solutions administered through the intravenous route during the management of patients.
Pathogenesis	-	The mechanism of causing damage to the tissue of the body which result in clinical manifestations of a disease.
Perinatal	-	The age of a newborn from birth to seven days

Practice	-	Way of doing things
Prevention	-	Avoiding or averting harmful conditions or diseases from affecting individuals or communities by and large.
Sensitivity	-	Ability of a diagnostic test to detect a disease when the disease is actually present
Sentinel surveillance	-	An epidemiologic methodology where there is continuous Collection and analysis of data on a certain health issue from a specified target population. In case of HIV. the sentinel population are usually pregnant women.
Sero-epidemiologic survey	-	A monitoring mechanism for diseases and conditions through the use of continuous serological and epidemiological measurements.
Sero-prevalence	-	Presence of a condition in a certain population over time as detected in the serum of the individuals
Specificity	-	Ability of a diagnostic test to declare negative when the disease is absent
Stigma	-	A consequence or complication due to a disease leading to isolation, discrimination, labeling and prejudice.
Transmission countries, heterosexual	-	Mechanism/transferring power, in developing countries, the main route of HIV-1 infection is through transmission
Thrombocytopenia	-	Condition where the patient has an abnormally low number of platelets in the blood
Tumor	-	Abnormal swelling or growth of cells



**UNIT SIX**  
**REFERENCES**

1. AIDS Action. Understanding HIV: **Training exercise for Health Workers**, issue 27 December 1994-February 1995. Published by AHRTAG (Adopted from Health care Together/ TALC
2. Bedri A **Impact of AIDS on the economy and health care services in Ethiopia**. Ethiop. J. Health Dev. 1998; 12:191-201.
3. Buve, A., & Rogers, MF. Overview: **Epidemiology**. AIDS 1998;12 (suppl A)S53-S54.
4. **Disease Prevention and Control Department** Ministry of Health. AIDS in Ethiopia. 3<sup>rd</sup> Edition, November 2000.
5. Essex Max, Mboup, Kanki P., Kalengayi M. Ed. **AIDS in africa**. Raven press Ltd. New York, USA, 1994.
6. Evai C. primary AIDS Care; **A practical guide for primary Health Care personnel in the Clinical and supportive care of people with HIV/AIDS**. 3<sup>rd</sup> edition, January 2000.
7. Federal Democratic Republic of Ethiopia, **policy on HIV/AIDS**, August 1998.
8. Fontanet, AL., et al. **Age-and sex-specific HIV prevalence in the urban community setting of Addis Ababa, Ethiopia**. AIDS 1998; 12:315-322
9. GElete A., Kebede D., Berhane Y. **Tuberculosis and HIV infection in southern Ethiopia**. **Ethiop. J. Health Dev. 1997:11:51-59**
10. Hearst, N, & Mendel, Js. **A research agenda for AIDS prevention in the developing world**. AIDS 1997; 11 (suppl): S1-S4
11. Kebede D. Sanders E, Aklilu M. **The HIV epidemic and the state of its surveillance in Ethiopia: Report submitted to the Technical Working group on HIV/AIDS in Ethiopia** -. UNAIDS -Ethiopia, March 2000
12. Meers M.H., Berkow R. Ed. **The merck Manual** (1999): Centennial Edition, 17<sup>th</sup> edition. Merck Research Laboratories, USA, pp 1312-1323.
13. Mekanna, SL. **Rapid HIV testing and counseling for voluntary testing centers in Africa**. AIDS 1997;11 (suppl): S103-S110.
14. Ministry of Health. **AIDS in Ethiopia: Background, projections, impacts and interventions**. second Edition, 1998.

15. Mitike G., Kebede D., Yeneneh H. **HIV infection and ant tuberculosis drug resisance among pulmonary tuberculosis patients in Harar TuberculosisCenter Ethiopia.** EAst Afr Med J 1997;74: 154-157
16. MOH, National AIDS Control program: strategic framework for the national response to HIV/AIDS in Ethiopia for 2000-2004 Addis Ababa, Ethiopia.
17. Pantales, G, & Pernin, L.can HIV be eradicated? AIDS 1998;12 (suppl a) s175-s180.
18. Rahway. Huuman Immunodeficiency Virus (Hiv) Infection. The Merck Manual. 15<sup>th</sup> edition, 1992.
19. Romano, G, Massi, D.,& Giordano,. The standpoint of AIDS research and therapy programs. Anticancer Research 1998;18;2763-2778.
20. UNAIDs (Ethiopia), Overview of HIV/AIDS situation in Ethiopia. Notes, 1998.
21. Zewdie,d., & ko9dakovich,L/ HIV infection & AIDS in Ethiopia. The Ethiop J Health Dev, Special Issue, 1990:4(2).
22. Is mail S. Mitilce CT rapid assessment of the Ethio-Djibouti Transportation corridor in the context of STDS/HIV/ AIDS related high risk factors: CDC Ethiopia (Report), September 2001.



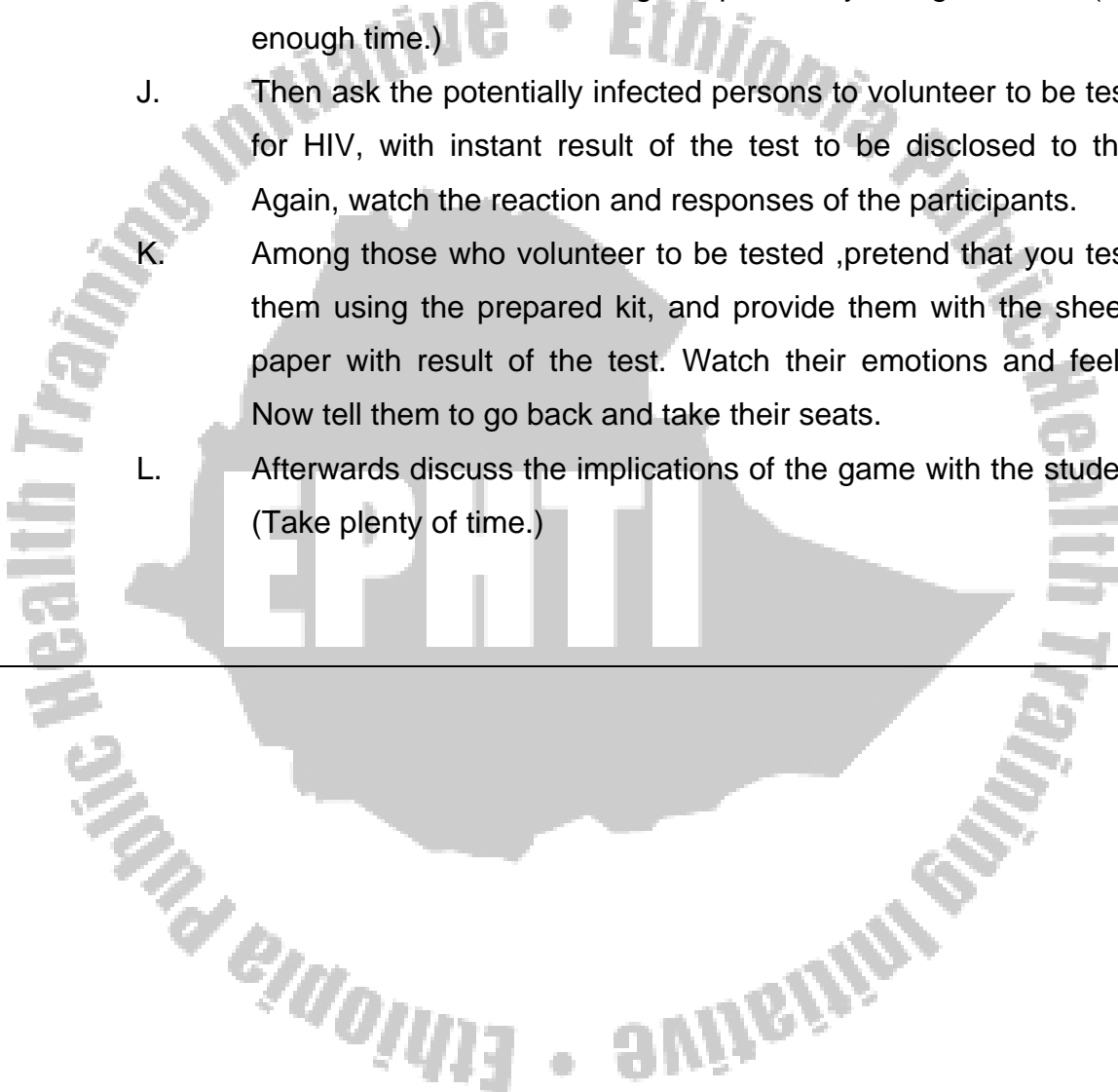
**UNIT SEVEN**  
**ANNEXES**

## Annex 7.1 - The "HIV-Spread Like the Fire" Game

Follow the instructions below to play the game.

- A. Prepare the following; few needles and syringes, some instrument which may mimic a testing kit, few pieces of paper marked on them either positive or negative using a red marker. On the back of the positives write "I'm Sorry!" and on the back of the negatives, write "congratulations!"
- B. Gather the student and form a circle (not exceeding 25 in number).
- C. Instruct the students about the game in clear language. Tell them that this game is about Having either protected or unprotected sexual intercourse in form of hand shaking. If some one scratches your hand while you shake with that person, it means that it was unprotected sexual intercourse; whereas if not scratched then it was a protected one. Also, tell them that someone who is going to be patted on his/her shoulder also means being infected.
- D. Begin the game them to close their eyes; and while doing wo you will go around from their backs, and pat the shoulder of one of the students playing the game. Afterward tell them to open their eyes again.
- E. Then, ask them whether they can recognize who was infected (patted on the shoulder).
- F. Then, tell them to mix up and shake hands with each other. The initially infected person shall scratch hands of three other persons and each scratched person in turn will scratch another three persons. Scratching more than three persons is not allowed. However, they can shake hands without scratching, too.
- G. Then in between, after about 2-3 minutes, clap your hands and halt the shaking process.



- 
- H. Call the first person who was infected to come into the center of the circle. Then call all others scratched to come into the center of the circle. Watch out for the reactions of the students. Especially the hesitation from the side of those who were scratched.
  - I. Ask them about their feelings of potentially being infected. (Take enough time.)
  - J. Then ask the potentially infected persons to volunteer to be tested for HIV, with instant result of the test to be disclosed to them. Again, watch the reaction and responses of the participants.
  - K. Among those who volunteer to be tested ,pretend that you tested them using the prepared kit, and provide them with the sheet of paper with result of the test. Watch their emotions and feeling. Now tell them to go back and take their seats.
  - L. Afterwards discuss the implications of the game with the students. (Take plenty of time.)

## **Annex 7.2 Key to Pre and Post test Questions**

### **2.1.1 All Categories**

1. Acquired immune-deficiency Syndrome
2. Human Immune-deficiency Virus
  - a. Sexual intercourse
  - b. Parenteral
  - c. Maternal-fetal
3. Sexual intercourse
4. Commercial sex workers, military personnel and distance truck drivers
5. C
6. Abstinence, being faithful to a single partner, proper use of condoms
7. Long lasting fever, wasting, chronic diarrhea
8. False
9. Natural history HIV infection, what HIV positive means and does not mean, and HIV negative means and what it does not mean.

### **2.1.2 Health Officers**

1. C
2. B-lymphocytes, CD4 helper cells, humeral immunity
3. Early primary infection, a symptomatic infection, PEL, HIV related diseases, severe HIV related disease
4. Sex with CSW, MPSC, unscreened blood transfusion, having unprotected sex (non-use of condoms)
5.
  - a. The person has developed the clinical stage of AIDS
  - b. The person will definitely develop AIDS,
  - c. Stage of disease, (4) when the person was infected
7. AZT,NVP, DDL, DDC,etc
8. Kaposi sarcoma, lymphomas
9. Abort pregnancy, use antiretrivirals, avoid breastfeeding, avoid pregnancy altogether
10. Demographic, socio-economic, political,health care

### 2.1.3 Public Health Nurses

1. E
2. True
3. False
4. False
5. Pre, post and follow up counseling
6. a) Hygiene, (2) nutrition, (3) treatment of opportunistic infections, (4) physical therapy (5) care/support on social, spiritual, emotional and psychological and material
7. Steps
  - a. Put on gloves or plastic bags.
  - b. Stop the bleeding.
  - c. Cover the wound with clean cloth or bandage.
  - d. Soak clothes soiled with blood for 10 minutes in cold water /5% chlorine solution
  - e. Wash clothes with hot water and soap; rinse well.
  - f. Dry clothes in the sun
8. Safer sex-types of sexual intercourse in which the risk or transmission of HIV is minimized by having non-penetrative sex, using condoms, etc.
9. Teaching about safer sex practices include:
  - Staying in mutually faithful relationship where both partners are uninfected
  - Avoiding certain practices that increase the possibility of HIV transmission, for example "dry" sex, which may lead to breaks in the skin
  - Avoiding sex when either partner has open sores or any sexually transmitted diseases (STD)
  - Following the ABC Rule of sexual behavior
10. The following procedures should be followed:
  - Clean the body, bathe if necessary
  - Close eyes and mouth
  - Place the body parts in normal position (arms, legs, head, etc)
  - Pack cotton/pads in the rectum and vagina

- Cover any draining wounds with clean dressing
- Tie extremities loosely
- Pad ankles and wrists
- Wrap the body in clean shroud or discarded sheet or any other garment depending on the culture.

#### 2.1.4 Environmental Health technicians

1. B
2. False
3. D
4. Blood and blood products, excreta, sputum, used clothes, needles used on AIDS patients, etc.
5. True
6. True
7. B
8. True
9. Treatment and disposal of infectious wastes
  - Thermal process
    - Static-Grate single chamber incinerator
    - Drum or brick incinerator
    - Open air burning
  - Wet thermal disinfections
    - Exposure of waste to increase temperature and increase pressure steam
  - Autoclaving
  - Chemical disinfections
    - E.g.. Stool disinfections-in a bucket add chlorine
  - Oxide powder or dehydrate-lime oxide (CaO)

#### 2.1.5 Laboratory Technicians

1. Screening involves detection of HIV-antibodies in the blood

2. Ability of the test to declare negative when HIV/ antibody are not present
3. Ability of the test to detect antibodies When are actually present.
4. Has higher specificity
5. Relatively cheaper cost
6. HIV-1, HIV-
7. Liver function test, CD-4 count, viral load
8. CD-4 count

**Annex 7.3 List of antiretroviral drugs used in the case management of AIDS patients**

**Nucleoside Reverse Analogue Transcriptase inhibitors (RTIS)**

- Zidovudine (Retovir, AZT) -indicated for symptomatic HIV infections with CD4 cell count of less than  $500/\text{mm}^3$  or asymptomatic HIV infection with a CD4 count less than  $2000 \text{ mm}^3$ . The major side effect is marrow suppression with anemia or granulocytopenia. The other side effect is macrocytosis. Side effects include: nausea, headache, insomnia, fatigue, myalgias, malaise, vomiting, and abdominal pain.
- ddi (Dideoxyinosin, Videx) -in patients who have advanced HIV infection and Prolonged prior treatment with AZT. HIV strains resistant to AZT are sensitive to ddi. The most serious side effect is pancreatitis and peripheral neuropathy.
- ddC (Dideoxycytidine, HIVID, Zalcitabine) - for use along or in combination with AZT in patients with CD4 cell counts or  $50-500/\text{mm}^3$  plus progression while receiving AZT failure. The major toxicity of ddC is peripheral neuropathy. The other major side effect is aphthous ulcers of the oral cavity or stomatitis. Pancreatitis is also observed in some patients.
- Others- stavudin (d4T, Zerit), lamivudine (3TC, Epivir)

**Non- nucleoside Reverse Transcriptase Inhibitors (NNRTIs)**

- Nevirapine - Viramune - side effects are skin rash, hepatitis, Stenven Johnson Syndrome

- delavirdine

### **Protease Inhibitors (PI)**

- Saquinavir (invirase)
- Nelfinavir (Viracept)
- Indinavir (Crixivan)
- Ritonavir (Norvir)



## Anne 7.4 Live Case Studies

### Case 1

She was born and grown in the northern part of Ethiopia - Wollo specifically in the rural area of Last. At the age of 8 years her families arranged a marriage for her and then she married. But she did not have had sexual intercourse. However her fiancée went to the war front and then he died. Her parents died too. She went to jimma (southwest Ethiopia) and started to live with her uncle. Then she stayed there but did not go to school. She quarreled with the wife of her uncle. and disappeared to Addis Ababa. In Addis Ababa she contacted the brokers and was hired as a housemaid She worked for a family for about one and half year. Then she was able to meet her friend in Addis Ababa. Her friend lived in Nazareth. She advised and convinced her to go together to Nazareth. Then she decided and went to Nazareth accompanying her friend. Her friend has rented a small house at the periphery of the town. She lived there for a few days. However something happened. Her friend received some money from a man and started to provoke her to have sex with him. Many times she left her alone with the man. She struggled and stayed for about two months without having sexual intercourse. One day he invited her to drink but she refused then, the next day he made her take some alcohol and then she allowed him to have sex with her. This was her first experience. Then she moved to the bar, where we interviewed her, and started commercial sex work. she worked for a year and want back to her original area -wollo she stayed for one year and came back to Nazareth. She entered the same bar and continued to work for two years. Since six month she entered the same bar and continued to work for two years. Since six months she became sick and finally was not able to continue her previous work. Now she is living with the help of her friends in the same bar. Luckily the bar owner did not push her out. Her life has completely changed. We were very much touched by what happened to this young lady of 20 years of age. We gave her some money so that she will be able to get medical help and went out.

We went to a known nightclub in Diredawa. The key informant who was a taxi driver took us there. The place is called Gojo pub. Gojo means a Small hat. When we entered the gate it was a very big nightclub. Music was flowing and everybody was taken up by the music. The girls and the males were dancing together. It was so crowded and you hardly identify who is who. The lights had different color combinations however the red was dominating. It was very difficult to count the people. However we estimated about 25-30 females and 40to50 males according to the information the number increases during the weekends. Services are provided in the dancing room as will as out side the room in the big space available outside. Males serve drinks. In the bar there was no place to stand. It was crowded with dancing males and females. We went out side and chatted with the girls who were dancing.

The first one was an 18 years old girl. She is a short and beautiful girl. She came from Addis Ababa a year back. She stopped her school at grade 5 three to four years back. She came to this place because her family is poor. Both do not have jobs and their living conditions have deteriorated She decide to come to Diredawa after discussing with a friend who has stared the same activity. Them she directly came to Diredawa. she worked for about 2 months on another hotel called Thehay Hotel. Then she left the hotel and started to look for clients in Gojo pub. Now she earns 100 to 150 birr per night from her clients. She lives alone renting a room in Ginde Kore ara. Almost she gets clients every day Unlike the other bars they do not pay for te bar owner and they can go with thir clients any time. She never takes her clients to her room that she rented, Her clients are responsible to find their place for passing the night. The club starts its work after 11"00 P.M. the girls also come to the club after 10:30 -11:00 P.M. The peak is between 12:00 P.M midnight to 1:00 A.M. She takes alcohol but does not chew khat and she does not smoke. This girl was willing to be tested and also wanted to go back home. She was very happy with the informal interview that we had with her. We planned to talk with her the next day afternoon at Ras Hotel. From our discussion somehow we were convinced that she has decided to go back home. We agreed to do as much as we can. If she becomes willing to tell us the address of her parents, we planned to contact them in Addis Ababa. The next day we met at Ras Hotel. In fact she came with another girl whom we have not seen yesterday. The first girl has still persisted in ger previous decisions to go back home. She gave the address of her parents including their full names, kefitegna. kebele, specific location, and the house number but there was no telephone number. Sae has forgotten the telephone numbers of her neighbors. We then furter discussed on the possibilities such as about alternatives to support herself or finding of any job that could help her to slip saway from prostitution. We made some arrangements with the Dirdawa Council Health Burau, HIV/AIDS Coordinator if there is any real possibility. They had planned a training workshop and planned them to be involved in the training and to counsel them so that they can teach on HIV/AIDS. from later developments both girls have participated in the training workshop arranged by the bureau. However, the frst one disappeared after she agreed to have VCT. But the second girl did.



### Case 3

The second one was a 17 years old girl. Her physique tells that she is very young. Even She looked younger than her age. She came to us after discussing with her friend. This young girl is from Diredawa town. She stopped her school at 10<sup>th</sup> grade. Her grand mother initially brought her up until she was about 10 or 11 years old. After she died she started to live with her parents. When her mother was about to die, She told her that her real father is living in Addis Ababa and her husband was not. Her real father had denied and refused to accept that she is his daughter. After telling this story her mother died.

She indulged in to commercial sex work tow years back at the age of 15 years. Her stepfather has married another woman. She was not at good terms with her stepmother. She frequently quarreled with her. The stepmother does not like to give her food and does not treat her well. Surprisingly her stepfather supported what his new wife was doing. One of the reasons for going into commercial sex was her family situation. She had a boyfriend. Now he is living in the USA. He still writes to her. She has waited for him for three years. However, she thinks that there is no hope.

She does not have any non-paying commercial partner.

According our latest information she has decided to stop commercial sex work she was not going to that nightclub anymore. After participating in the training workshop arranged by the Diredawa Council Health Bureau, she has volunteered to be tested and blood has been taken. We have called and talked to her and we were communicating witht the HIV/AIDS Coordinator, who is our friend. Until we wire writing this report she has continued her relations with the health bureau and the bureau has committed to help the young girl.

## **Annex 7.5 - The Authors**

**Shabbier Ismail (MD, MPH)** is an associate professor at the Department of community Health (DCH), Faculty of Medicine (FOM), Addis Ababa University (AAU). He has an extensive experience in teaching public health and research. He was teaching at the gondar College of Medical Sciences. Currently, he is working in the Behavioral Sciences unit of the Department of Community Health and teaches Health Education for both he undergraduate and postgraduate students. He is also doing his PHD in reproductive health specifically on HIV/AIDS.

Getnet Mitike (MD, MPH) is an associate professor at the DCH, FoM AAU. He was teaching public health at the gondar College of Medical Sciences. Currently, he is working at the Department of Community Health, Policy and Health Services Management Unit. He teaches both the undergraduate and postgraduate students.

Damen H/Mariam (MD, MPH, and PHD) is a health economist. He is an assistant professor and head of the DCH, FoM, and AAU. He has an extensive experience in teaching public health and research. He teaches both undergraduate and postgraduate students.

### **Contributors**

Berhanu Demeke (MD, MPH) was faculty member of the DCH, AAU. Currently he is working as a consultant at the UNAIDS - Working for the National AIDs Secretariat. He has been teaching health services management for undergraduate as well as postgraduate students.

Bekele Kebede (MD) was teaching at Gondar College of Medical Sciences in the school of Environmental Health. He has a long teaching experience. Currently, he works in the Ethiopian Science and Technology commission and he is an honorary member of the DCH, FoM, AAU.

Mirgissa Kaba (BA, MAS) is a medical anthropologist. He has been teaching at jimma University and later on in the behavioral Sciences Unit of the DCH, FoM, AAU. Currently he is working for UNICEF.