MODULE

HIV/AIDS

For the Ethiopian Health Center Team

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

TABLE OF CONTENTS

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scarce ; and the ones that are available in the shelves of libraries of the training institutions are in most instances out of date;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.

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.

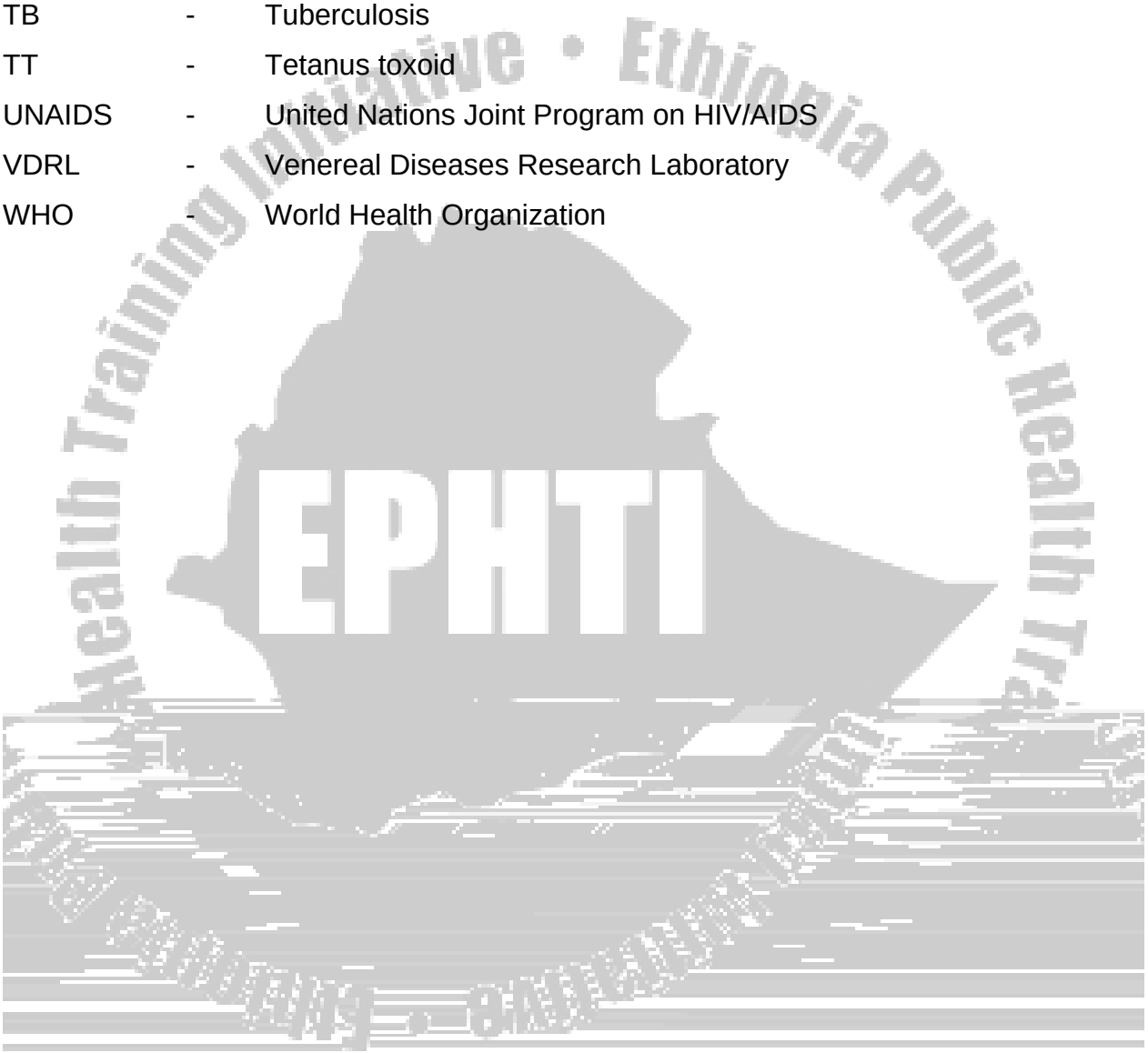
Acknowledgments

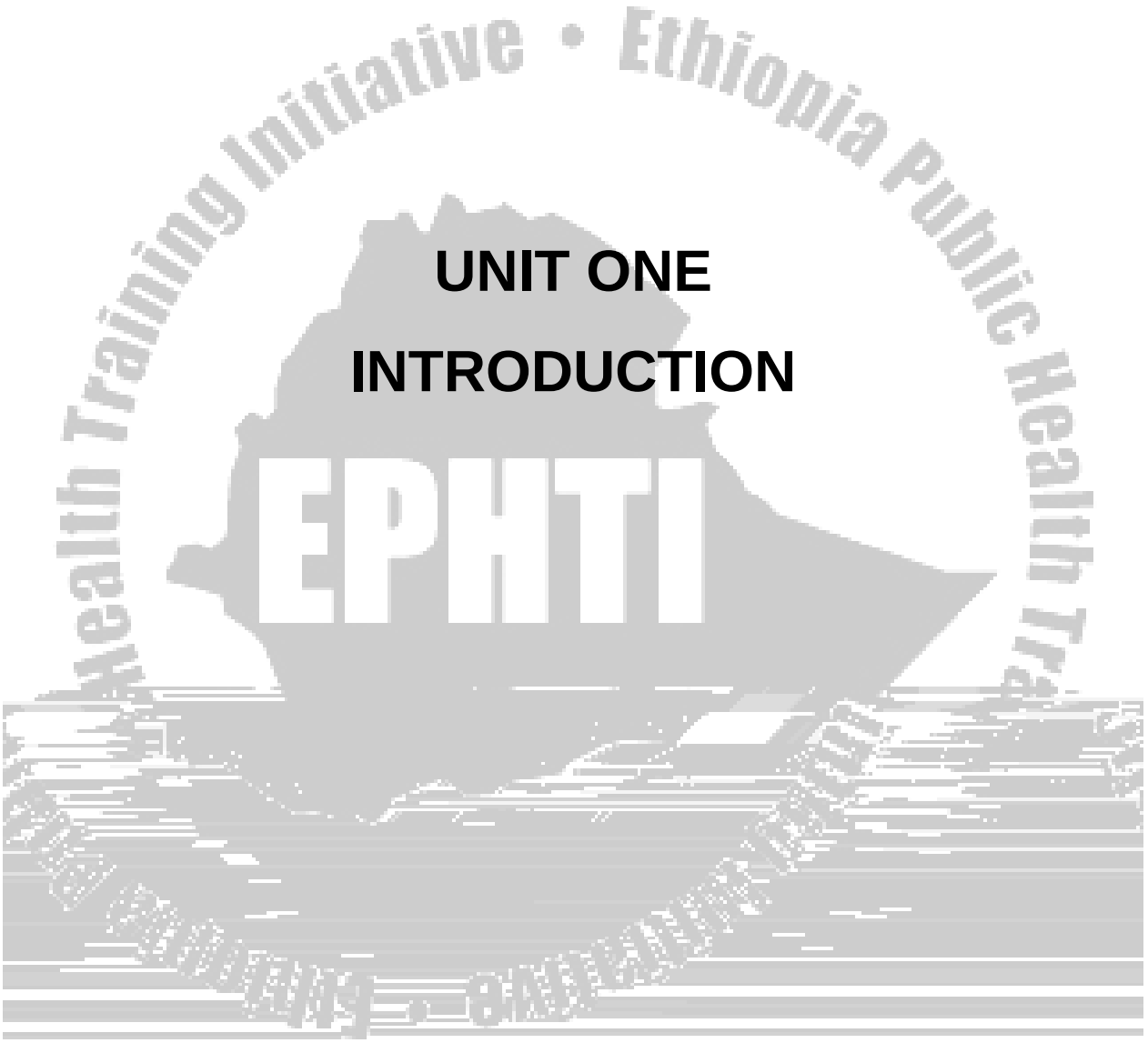
We are greatly indebted to The Carter for supporting the preparation and development of this module as part of the Ethiopian Public health Training Initiative. The development of the module as part of the Ethiopian public Health Training Initiative . The development of the module has gone through series 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 (Debub 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 Taddesse Wuhib (CDC - Ethiopia) for their Valuable comments and critiques. We [(-wa02 criti3 Tc0.0.000T* -0.005 TD(v)Tj/T* -v)Tj/T*

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 Comtact
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 Lymp0hadenopathy
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





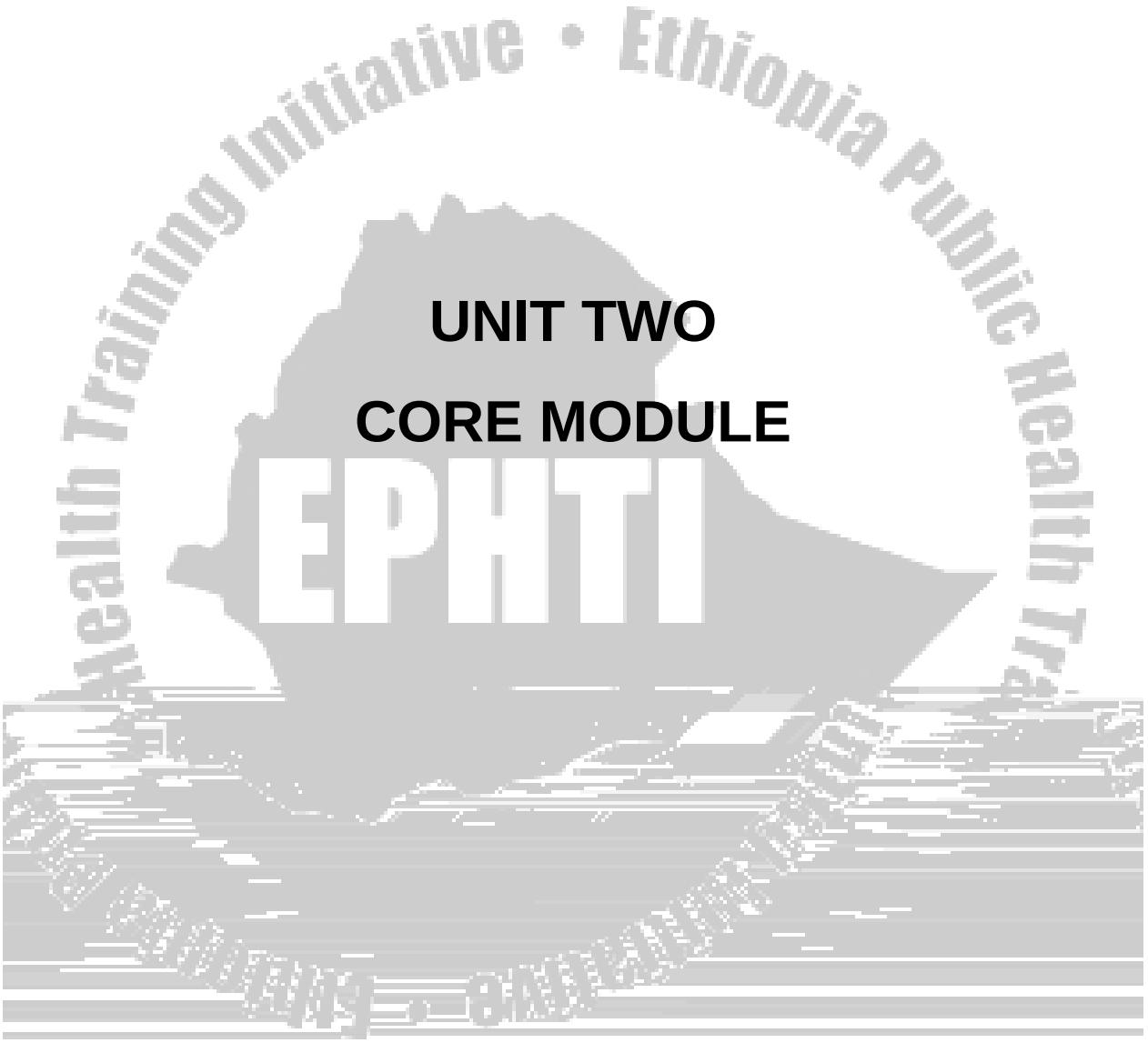
UNIT ONE

INTRODUCTION

Ethiopia Public Health Training Initiative •
EPHTI

1.2 Directions for Using the Module

- Read this section on Directions for using the module both in the Core as will as in each Satellite module carefully.
- First read the Introduction and understand the purpose and uses



UNIT TWO

CORE MODULE

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. _____

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. _____

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.
   _____
   _____

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 ImmunodeficienDS)rief f pultantibp1b__ vaila00d.1rt04 Tc2rt0(__

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%, and4) 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.

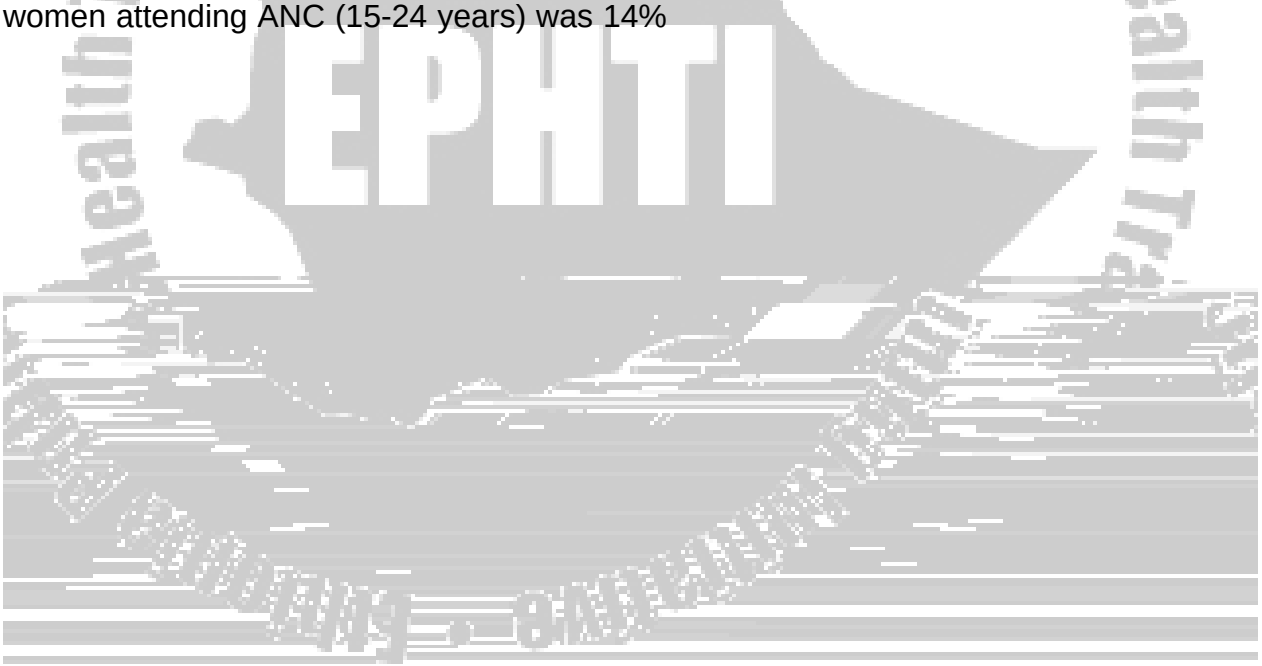
Accordingly, sero-surveys conducted on pregnant women attending ANC in 1998, 1999 and 2000 in various parmeesou1herre wit.4.84 TdT-urvthe global8ey are fu-1 inu

In summary, HIV prevalence among the general population is estimated to be 7.3% (ranging between 6%to9%) 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%



HIV can be transmitted by injection if the same needle is used to inject many people, without being sterillized 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

Population at Risk	**Exhibiting Risk Factors**
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

2.7 Etiology

The causative organism is a transmissible retrovirus- the Human immunodeficiency virus (HIV) types 1 and2. 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:

- Ò 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.
- Ò 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.)
- Ò Kaposi's sarcoma.
- Ò 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 (zudovidine) 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

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 sowed 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 (above20%) 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 (15-24years)/

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 DireDawa, 3.6% in Hosana and 0.8% in Atat 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 Aida cases have been reported in Ethiopia (June 2001).

Questions

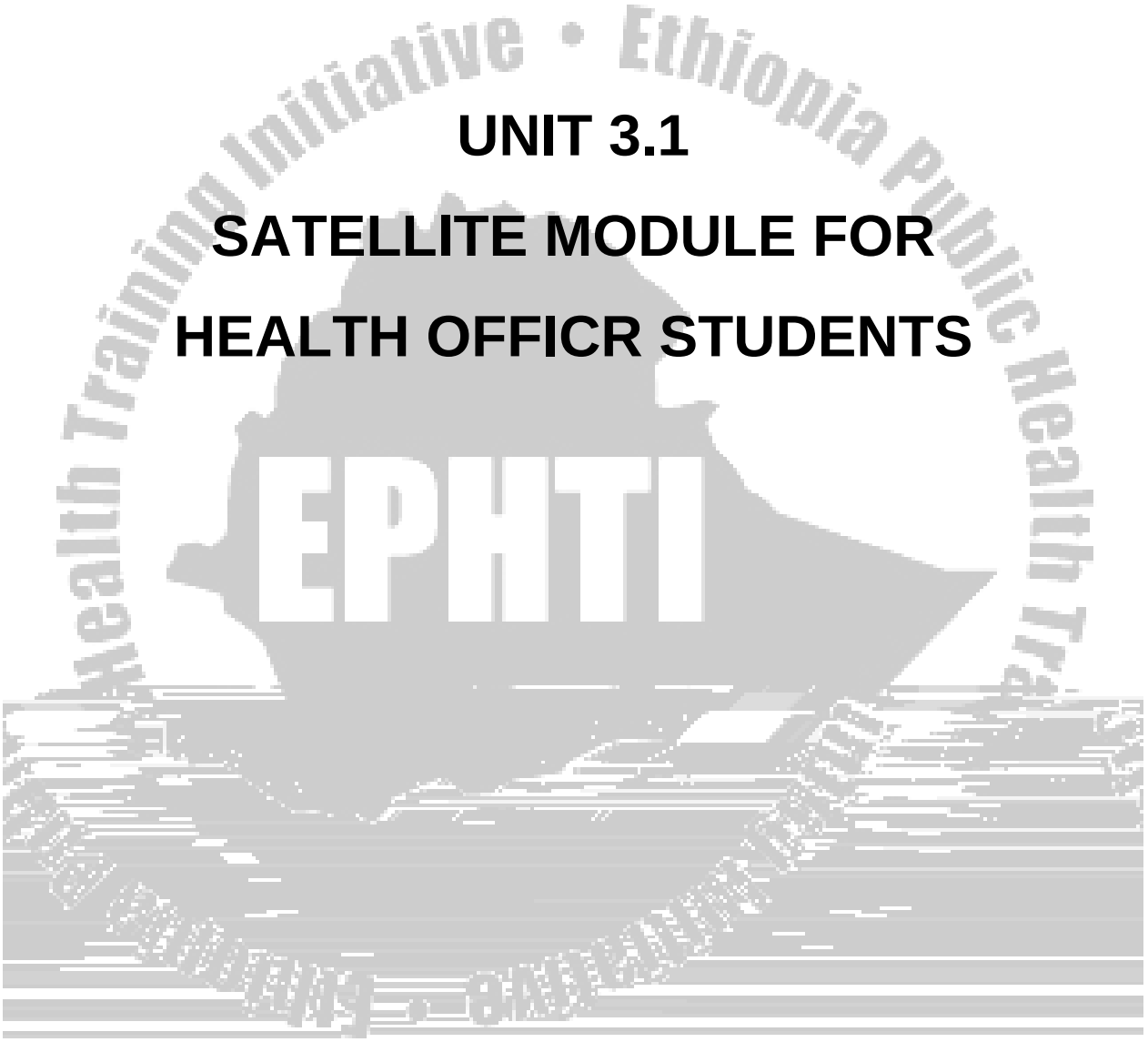
1. From the given information, what can you comment on the trend of prevalence of HIV Infection in Ethiopia?
2. Which groups of the population seem to be more affected? Justify your response.
3. Can you explain the difference in prevalence rate of HIV infection among the various locations in Ethiopia,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

UNIT THREE

SATELLITE MODULES

UNIT 3.1

SATELLITE MODULE FOR HEALTH OFFICR STUDENTS



3.1Satelite 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 n 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/AAIDS (PLWHA)

3.1.2 Instructions for Using the Satellite Module

Proceed through the modules as follows:

a Read the Directions for using the module in section 1.2 and follow the instructions.

a After doing so read the core module, do the pre-tests, do the exercises and then go through this satellite module.

a 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 ad 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 sped of HIV infection?
4. From the game is it possible to identify persons infected by HIV? Explain your reason.

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

How does the HIV multiply I 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 transcripts reaction, the virus's DA 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 umber of years to destroy enough of the immune system to cause immune- deficiency ad immune-incompetence. It may take 3-7 or eve ore years, for a person who is HIV-infected to develop immunodeficiency and HIV-related medical conditions.

An untreated GIV infected person has an estimated chance of developing AIDS at a rate of 1-2% per year in the first several years following infection. The it 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 ay 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 tow 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 tie 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 candidacies, persistent diarrhea, ad 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 axilliary, 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^3 Or even less.

Persistent Generalized Lymphadenopathy [PGL] includes patients with persistent palpable lympndodenophaty with lym

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

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

The CD4 cell count is usually between 150- 350 cells/mm^3.

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

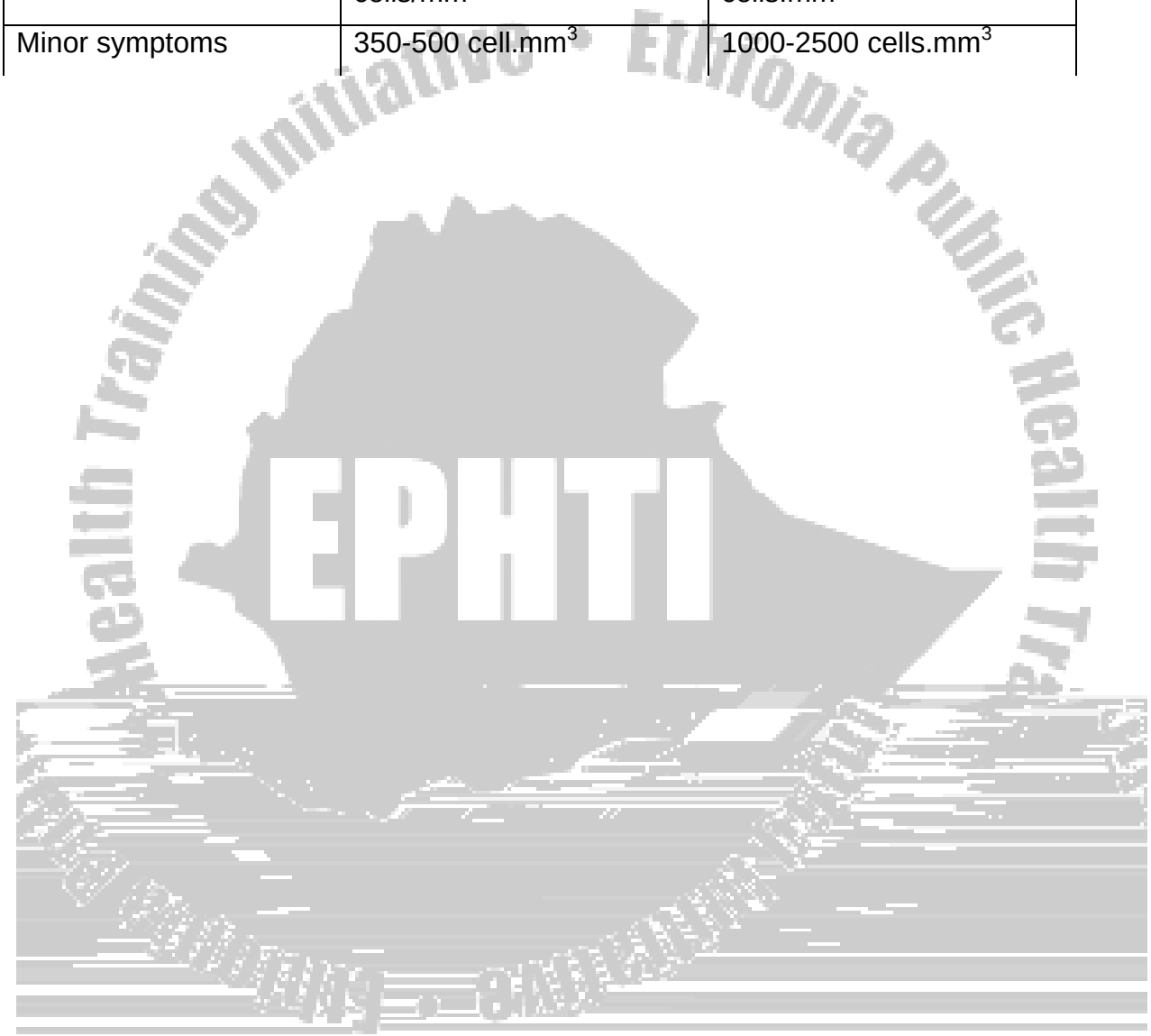
The presence of any serious opportunistic infection is a sign that the body is not coping immunologically

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 cekks/mm^3 to a low lymphocyte count.

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

Clinical Condition	CD4 cell count	Lymphocyte Count
Well with no symptoms	More than 500-600 cells/mm^3	More than 2500 cells.mm^3
Minor symptoms	350-500 cell.mm^3	1000-2500 cells.mm^3



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 dearrhea (at least 30 days), fatigue
8. Bacterialinfections-Pneumococcal pneumonia, Streptococcus pnuemonea, Haemophilus influenzea, Pseudomonas aeruginosa ,Staphylococcus aureus, clostridium defficile, Nocardia astroides, Rhodococcus equi,Rochalimaea Quintana
9. Tuberculosis
10. Sexually transmitted deseases
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

- a There is definite HI?V infection if there are other obvious signs of immunodeficiency.
- a There is likely HIV infection and a confirmatory test should be dome.
- a 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:

- a That the person has developed the AIDS stage of HIV disease
- a 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!),

a It does not reveal the stage of the disease.

a it cannot determine when the person acquired the HIV infection.

HIV negative test result means

a The patient does not have HIV infection, unless the test is dome during the "window period'

a It may be falsely negative if the test is dome 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.

a 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;
  -

- 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 (Guillian-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, peicardial fluid, amniotic fluid aned bloody body fluid;
- Body fluids not considered resk 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:

Ă Pre-and post-test counseling

Ă Informed consent

Ă 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-current

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 foscarmet
8. Staphillococcus Pneumonae - penicillin or erythromycin, cephalosporines
9. Heamophillus influenza - ampicllin/amoxicillin OR co-trmoxazole, 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:

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

Safer sexual practices:

- Ă Protection through condom use
- Ă Alternative sexual methods -masturbation
- Ă 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 appropriaste attention to nutrition, exercise, continued work, andf 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 hyugiene, 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 medial 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 t

- 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 cancroids
- Combined interventions

3.1.10 Impacts of AIDS

☑ **Demographic Impacts**

AIDS will have a big impact on population size

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.

Ă Childhood deaths

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

Ă HIV and Tuberculosis

TB/HIV relationship is already established in Ethiopia. With AIDS, a number of new

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 Section2.12)

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?

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

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

Abed 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.

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 container

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

Copies 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

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:

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 oftìyœ#€ Ź’à

- 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 o 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.

Health Training Initiative • Ethiopia Public Health Training
EPHTI

- Ă 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
- Ă 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?
- Ă 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.
- Ă 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.
- Ă 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.
- Ă 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.
- Ă Does he/she know how to prevent the spread of HIVinfection? Does he/sher 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.
- Ă 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:

- Ă 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.
- Ă To ensure the person understands the meaning of the result.
- Ă To help the person cope with the result, especially in the days or weeks to follow (if the result is positive).
- Ă To make a follow up plan for the ongoing care of the person if he/she is HIV positive.
- Ă 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.
- Ă To understand the need for careful consideration about having children, if HIV positive.
- Ă 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:

- Ă 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 than 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 .( )-1nbe sujms11 (Tc0.eally o0175 Tc0.01o0ys.0003.yL89 -.5cl.iyL84mo 0.0739lt1ar(l. anviol

- If you fell 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 hilp 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:

c. Keep obvious cuts and sores covered with waterproof plasters or tape.

d. Wear gloves when handling any blood-contaminated materials, such as

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

Ă Dry heat

Ă Light

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.

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

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

Ethiopia Public Health Training Initiative •
EPHTI

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 I 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
3. What is the role of diagnostic tests for the prevention and control of HIV/ AIDS? HIV testing"?
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 wvr 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-cills/ 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 chages 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

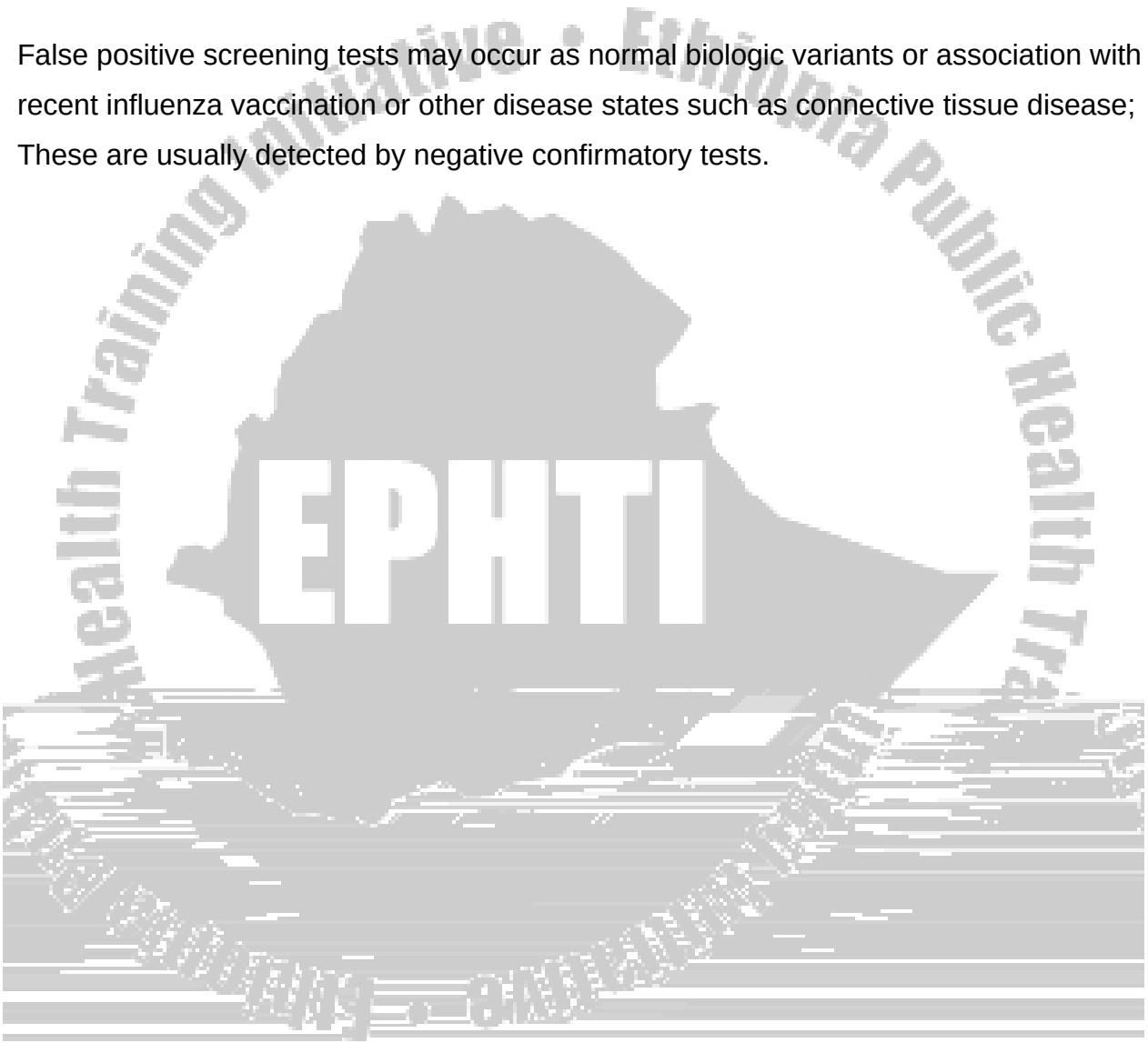
.

Source: Tierney, LM, McPhee, SJ & Papadakis, MA. Current Medical diagnosis and Treatment 2001. 40th

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.



UNIT 3.5

SATELLITE MODULE FOR

COMMUNITY HEALTH

WORKERS

Health Training Initiative • Ethiopia Public Health Training
EPHTI

3.5.5 Epidemiology - Transmission and Risk Factors

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

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

HIV/AIDS <u>Not</u> 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 deferent 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 bo0dy. An HIV infected person may apparently be healthy with our 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. Modest of HIV transmissions
   a. Sexual -unprotected sexual intercourse
   b. parenteral - injections, blood transfusions
   c. Perrinatal - 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 pf 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,

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 Massages

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 Uvulec

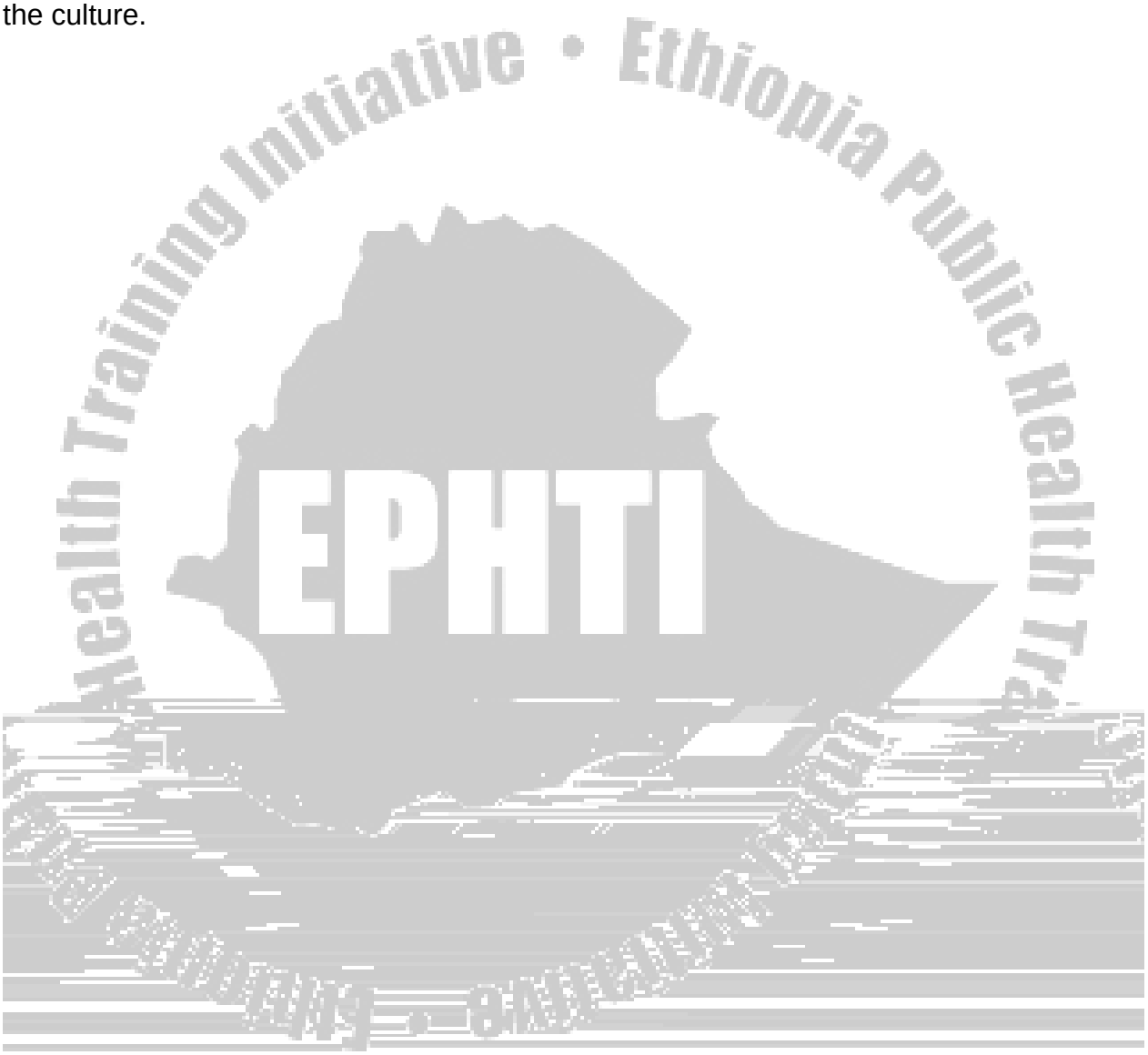
Pack cotton/pads in the rectum and vagina

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

Learning Objectives	*Learning Activities*
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 epidemiiology of HIV/AIDS globally and	Form 3 groups, each consisting of 5-6 students. Discuss and study on the following points:

1.1 Knowledge Objectives (Continued)

Learning Objectives	*Learning Activities*
List and describe the various laboratory diagnostic methods	Explain the most commonly used laboratory diagnostic methods used to diagnose HIV Form 3 groups each having 6 students and each to discuss the following and present in 5 minutes time: 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? 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? 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? 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
Explain the case management of AIDS and list the available drugs used in the treatment of PLWA	Study the main modes of treatment of AIDS patients in a clinical set up. Discuss the commonly used drugs in the management of AIDS, the principles of treatment and mechanisms of actions of the drugs Discuss the principles of home based care/treatment
List some of the complications of treatment with drugs	Explain the main complication of treatment with the available drugs

1.2 Attitude/Practice Objectives

Learning Objectives	*Learning Activities*
Explain the methods of guiding family members on how to provide home based care to PLWHA	Study the principle of home-based care for AIDS patients. discuss on the attitudes and practices of community members on people lining with HIV/AIDS Explain the importance of care/attention for PLWA in the family and community.
Discuss the social and psychological impacts of HIV/AIDS in the community Describe Stigma related to PLWHA	**Discuss among yourselves or discuss with your instructor on:** How do people perceive AIDS or what are their opinions about AIDS/the illness and the patients/? What people feel when they discover that they have AIDS. Why do you think this happens? What are some of the ethical issues related to HIV testing? How do you think health workers should handle such ethical concerns and HIV and/or AIDS patients? What people feel when they discover that they have AIDS? Why do you think this happens? What are some of the ethical issues related to HIV testing? How do you think health workers should handle such ethical concerns and HIV and/or AIDS patients? The importance of care/attention for PLWHA The right of PLWHA to live actively in the social system Perform a role-play among two volunteer students dealing with issues related to social and psychological aspects of HIV/AIDS (30 minutes - including the discussions). Perform a role-play on how PLWHA are stigmatized. (5 - 10 minutes). Discuss ways of overcoming such stigma among your colleagues and with your instructor.

Tables 2 - Learning Objectives & Activities for Public Health Nurses

2.1 Knowledge Objectives

Learning Objectives ***Learning Activities***

2.2 Attitude/Practice Objectives

Learning Objectives	*Learning Activities*
Describe the psychological and social impacts of HIV/AIDS in the community	Discuss on the following points: How people perceive AIDS or what are the feelings of the general public towards AIDS - the illness and the patients? What do people feel when they discover that they have AIDS? Why do you think this happens? What are some of the ethical issues related to HIV testing?
Describe stigma related to PLWHA	Performa a role-play on how PLWHA are stigmatized. (5-10 minutes). Discuss ways of overcoming such stigma among your colleagues and with your instructor.

Table 3 - Learning Objectives and Activities for Environmental Health Technicians

3.1 Knowledge Objectives

Learning Objectives	*Learning Activities*
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 mi8sconceptions 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

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

Table 4 - Learning Objectives and Activities for Medical Laboratory Technicians

4.1 Knowledge Objectives

Learning Objectives	*Learning Activities*
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

4.2 Attitude/Practice Objectives

Learning objectives	Learning Activities

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 (gems)
	Study the difference between HIV infection and development of AIDS. is possible to identify a person with HIV infection with out 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**.**

6.2 Attitude/ Practice objectives

Learning Objectives	Learning Activities

UNIT FIVE

GLOSSARY

Health Training Initiative • Ethiopia Public Health Tra
EPHTI

Flu like syndrome	-	lllness 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 weakened condition of the immune system

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 epiemiologic 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 sent inel population are usually pregnant women.
Sero-epidemiolgic survey	-	A monitoring mechanism for diseases and conditions throug 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	-	Mechanism/transferring power, in developing countries, the main route of HIV-1 infection is through heterosexual 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. 3rd 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. 3rd 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 set**ti ng of Addis Ababa, Ethiopia.** AIDS 1998; 12:315-322
9. GElete A., Kebede D., Berhane Y. **Tuberculosis and HIV infecton in southern Ethiopia. Ethiop. J. Health Dev. 1997:11:51-59**
10 Hearst, N, & Mendel, Js. **A research agenda for AIDS prevention in** tdeveloping **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: Rport 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, 17th 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

15. Mitike G., Kebede D., Yeneneh H. **HIV infection and ant tuberculosis drug resisance among pulmonary tuberculosis patients in Harar**

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 bake 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, lymjphomas
9. Abort pregnancy, use antiretrivirals, avoid breastfeeding, avo9id 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

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. Lever 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/mm^3 or asymptomatic HIV infection with a CD4 count less than 2000 mm^3. The major side effect is marrow suppression with anemia or granulocytopenia. The other side effect is macrocytosis. Side efects include: nausia, 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 wit CD4 cell counts or 50-500/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

delaviridine

Protease Inhibitors (Pl)

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 fried in Addis Ababa. Her fried 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 lift 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 medial 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

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 10th 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 p

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