NATIONAL AIDS CONTROL PROGRAMME

INDIA

HIV/AIDS : PREVENTION, CARE & CONTROL

SELF INSTRUCTIONAL MODULES

FOR PRESERVICE AND INSERVICE

NURSES AND MIDWIVES

(MODULE NO : 1 TO 5)

1996

NATIONAL AIDS CONTROL ORGANISATION
MINISTRY OF HEALTH & FAMILY WELFARE
GOVERNMENT OF INDIA

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GLOSSARY

REFERENCES

PREFACE

HIV / AIDS is a deadly condition and has spread all over the country crossing all geographical, socio-cultural and socio-economic boundaries. It is recognised as one of the most serious public health problems in present world and in the country.

There is a crucial need for the training of all health personnel at various levels including the nurses who provide direct care. They need to be knowledgeable and trained to give safe, competent and compassionate care.

In 1988, guidelines containing basic information on the nursing of people with HIV infection and related illness were jointly developed by World Health Organisations (WHO) / Global Programme on AIDS (GPA) and International Council of Nurses (ICN). Teaching modules for basic nursing and midwifery education in the prevention and control of HIV infection were then developed by WHO / GPA and were adapted and used throughout the world.

In addition to the materials presented by WHO / GPA, it was considered helpful to incorporate additional specific materials relating to nursing in India. WHO collaborating centre for research in Nursing Development accordingly initiated plan in February 1993 to prepare a revised form of the modules at Rajkumari Amrit Kaur College of Nursing, New Delhi.

A core group was then constituted by National AIDS Control Organisation (NACO) with following representatives from various nursing institutions, who wrote the modules and provided the vital inputs to give a final shape to the modules.

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There are eleven self-instructional modules and eleven teaching modules. These modules were pretested for 'Trainers' as well as 'Trainees' in three institutions i.e. Rajkumari Amrit Kaur College of Nursing, New Delhi; College of Nursing, Manipal; Academy of Higher Education, Manipal; and School of Health Sciences, Indira Gandhi National Open University, New Delhi.

On the basis of feedback from the pretesting sessions, further modifications were made to finalise the content and organisation of the modules. Several steps were thus taken for developing content editing and critiquing these modules.

WHO sponsored "Think Tank Workshop - I for Nurse experts, to plan the strategy for country-wide training of nurses on HIV / AIDS" was convened by Christian Medical Association of India, in New Delhi in December 1995 in collaboration with NACO and Government of India.

"Think Tank Workshop - II for developing State-wise Operational Plan for training of nurses in HIV / AIDS" for seven states of India was held at Bangalore in February 1996.

Both group of experts recommended modification of the modules to make the modules more concise and convenient for workshop presentation. The steering committee constituted on the basis of recommendation of the same group, then met and constituted a sub-committee to complete the job. Modules were modified, edited and divided into two parts as Self-Instructional Material (SIM) and Teaching Strategies by the following members of the sub-committee.

- **Miss Krishna Kumari Gulani** (Original writer)
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'HIV / AIDS : Prevention, Care and Control Self Instructional and Teaching Modules for Preservice and Inservice Nurses and Midwives' has attained the present form due to the hard work and sincerity of core group workers, and guidance of a number of people.

The basic document was put together by Rajkumari Amrit Kaur College of Nursing, New Delhi, with the assistance of the Trained Nurses' Association of India and the School of Health Sciences, Indira Gandhi National Open University, New Delhi. A team of peer group reviewers have greatly contributed towards developing the content validity of the modules. The participation of the nurse administrators, nurse educators, nurse practitioners and nursing students, in its field testing have greatly contributed to establish the effectiveness of the modules.

We gratefully acknowledge the support and guidance from Dr. Shiv Lal, Addl. Project Director (IEC), National AIDS Control Organisation and Dr. D. Sen Gupta, National AIDS Consultant, NACO without whose support this project would not have been possible.

Sincere appreciation is extended to Mr. Dileep Kumar, Nursing Adviser, Government of India for his contribution and sustained support to bring this project of preparing training modules for nurses, to completion.

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We thank all those associated with this project and whose names may not have been mentioned. We appreciate their valuable contributions.

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INSTRUCTIONS FOR USING THE MODULES

APPLICATION

The Modules are designed as self-instructional material (SIM) for pre-service and in-service nurses. They cover the basic knowledge and skill which nurses need to acquire for effective and safe practice. The Modules are consecutive, each one building the knowledge and skill described in the previous module. They can also be presented separately.

STRUCTURE OF THE MODULES

The course is divided into 11 separate Modules. Each module has two major sections. Section-I deals with the Self-Instructional Material (SIM) for individual learning. Section-II contains examples of visual aids.

All nurses will need the information contained in Modules 1-11, irrespective of their area of expertise or geographic location. The suggested content and learning activities have been limited to basic information. Nursing and midwifery schools might find it challenging to incorporate additional material in their curricula.

Section - I : SIM

I. Overview

II. Specific Objectives

III. An Introduction

IV. Description of Content

(Self-Instructional materials incorporating examples, visuals, activities, check your progress along with the content).

V. Answer to check your progress

Section - II : Visual Aids

USE OF SIM

SIM is a learning package designed for learners to achieve prespecified objectives. The learner can study at home without disruption and at his or her own pace. Here the subject matter is presented in an organised manner and follows a logical sequence. Each module has specific objectives, major areas of learning and their description. Illustrations, case histories, diagrams, activities are given at appropriate places, self checking questions are given to check the learner's progress. Exercises or assignments / activities are given wherever felt necessary. The learner can check his / her answers with the possible answers given at the end of the module. It is important for you to start at the beginning of the material and go through this material in a systematic way. The exercises or the assignments are designed to help you to study further and to clarify your doubts. A Glossary and References are given at the end of the eleven modules. The Glossary will help you to understand common technical terms used in the modules.

MODULE 1

EPIDEMIOLOGY AND TRANSMISSION OF HIV INFECTION

SECTION - I : SIM

I. OVERVIEW

For a better understanding of epidemiology of HIV infection, learners are expected to have an understanding of the basic principles of epidemiology and dynamics of disease transmission. On completion of this module, the learners will have an understanding of epidemiology and transmission of HIV infection and their role in preventing further spread of infection.

II. SPECIFIC OBJECTIVES

On completion of this Module, the learner will be able to:

- identify personal and community fears and worries about HIV infection.
- describe epidemiological features of HIV infection.
- explain how HIV infection is and is not transmitted.
- describe the role of the nurse in preventing the spread of HIV infection in the community.
- discuss the local, as well as the national and global epidemiological picture of the HIV / AIDS epidemic, including the importance of surveillance in understanding and responding to HIV infection in the community.
- describe ways in which information can be collected to help identify the demographic characteristics and risk behaviours of people reported to be infected with HIV.

III. INTRODUCTION

Human Immuno-deficiency Virus (HIV) infection is a disease which may give rise to fear and misunderstanding. It is a new disease, transmissible, life long, incurable, eventually fatal. It is frequently associated with behaviour patterns considered to be unacceptable by society. Acquired Immuno-deficiency Syndrome (AIDS) is the last stage of HIV infection. Being part of the community, nurses are likely to share the same fears and misconceptions as other members of the community. It is essential, therefore, for nurses to have a clear understanding of their own fears and concerns; only then will it be possible to separate the unfounded fears from the real. They need to understand the scope / extent of HIV / AIDS epidemic, its epidemiological feature and mode of transmission. This is the first step in preparing them to be informed professionals with the expertise needed to address the problems of the infection.

IV. DESCRIPTION OF CONTENT

Description of content is organized under the following headings :

1. **Personal and community fears and anxieties.**
2. **Epidemiological feature and transmission of HIV.**
3. **Global, National and Local Epidemiology.**
4. **AIDS Control Programme and Surveillance Resources.**
5. **Nurses' role in Prevention of HIV.**

1. Personal and Community Fears and Anxieties

You all know that HIV infection / AIDS is a new and serious problem. It is but natural to have fears and anxieties. People in general and HIV / AIDS patients and their families in particular are afraid of many things which are described as under.

1.1 Fear and Anxiety of Common People

(i) Misconceptions : Fear of getting HIV infection / AIDS by coming in casual contact with HIV-infected or AIDS cases e.g. shaking hands, sharing of utensils, clothes, furniture etc.; curse of God or punishment, evil spirit, shadow of an AIDS patient; going to hospital for care and treatment etc. These misconceptions are due to misinformation and superstitions.

(ii) Fear of moral judgement on sexual behaviour pattern : It is considered a shame disease because of its co-relation with sexual behaviour of people and people are, therefore, afraid of getting exposed to their character which is culturally not accepted by society. Having multiple sex partners, homo- sexuality are seen as immoral acts by society.

(iii) Fear of stigma / disgrace : This is also due to the fact that this problem emanates from the involvement of one's behaviour, especially extramarital sex. Sometimes it is also due to myths that this is the curse of God for wrong deeds etc.

1.2 Fear and Anxieties of Persons Affected with HIV Infection / AIDS

Persons with HIV infection / AIDS face many difficulties. These are physical, social and emotional.

(i) Physical : This includes fear of :

a) *Threat to Health* : HIV is a life-long infection which makes the body weak and susceptible to many other diseases like

tuberculosis, skin infection, cancer, repeated spells of diarrhoea, fever etc.

b) *Pain and agony* of AIDS itself which is the eventual outcome of the infection.

c) *Death* as HIV / AIDS is incurable and ultimately proves fatal.

(ii) Social : Social fears include fear of :

a) *Ostracism* i.e. getting condemned, rejected or abandoned by their friends, relatives, neighbours, health-care providers or even by their families. See Example 1 for ostracism.

b) *Stigma / disgrace* because most of the time the disease is associated with personal behaviour which includes sex and drug abuse by an individual. These are considered immoral behaviours by society.

c) *Exposure and loss of privacy and economic burden*

d) *Fear or risk of infecting others* - There may be a genuine fear of infecting their sexual partner.

Example - 1.

Batwa, a 32-year-old man, is a known case of AIDS. He was working as an Assistant in C.T. Hospital's Mortuary. Since his diagnosis as a case of AIDS, he is not allowed to work, his fellow workers have asked him to leave his hut. He says : "People have abandoned me and I have been forced to abandon my children". Batwa now cries, no one around him says a word, no one tries to console him. (India Today)

(iii) **Emotional** : Emotional fears include fear and anxiety about :

a) *death* which is the ultimate end, particularly fear of dying alone and in pain or without dignity.

b) *children getting orphaned*, being isolated from friends, neighbours and school, giving a feeling of insecurity.

c) *future social and sexual unacceptability.*

d) *loss of physical and financial independence.*

e) *the ability of loved ones* and family to cope with the problem.

1.3 Fears and Anxieties of Family and Friends of Persons with HIV Infection / AIDS

(i) *Getting infection* by coming in casual contact with HIV / AIDS persons because of misinformation and misconception.

(ii) *Stigma*, getting exposed and social rejection or segregation by the community, friends and relatives. This may reduce their social contacts, and the family may feel isolated.

(iii) *Losing* a near and dear one and all the more losing someone in a young and productive age.

(iv) *Loss of job* and increased expenses due to sickness - Exclusion or rejection from the work place can be highly stressful to the family.

(v) *Increased demand* of care from the family and friends leading to neglect of family responsibilities. The family members, partner and friends are often the main sources of care and support for the people with HIV infection. As the care becomes more demanding, the burden on the family increases and the emotional involvement becomes greater day by day. See Examples 2,3,4 & 5 given below depicting fears and anxieties of affected people.

Example - 2

Chitra, 23, caught the virus from her husband, Mohan, who died of AIDS. Now their daughter has it too. She says : "The first few days, I had a lot of difficulties with people's jeers and comments. But now I have become more used to it".

Example 3

In Imphal, Anjan Das, 29 years, has not yet managed to muster the courage to tell his mother about his HIV status. "My mother will die of shock, so I don't keep in touch with her," he says. "Life has ended. I can't marry or get education. So what's the use of living ?"

Example 4

In Bombay, a young man who tested positive harbours dreams of taking up where Dominic D'Souza left and reviving the self-help group called Positive People. But he is afraid of revealing his identity. "My sister will never be able to marry," he says, "our family will be ostracised." (India Today)

Example 5

Rohit and Vineet, who are haemophiliacs, are coping with physical pain but the emotional hurt runs deep.

Their entire world has shrunk to the confines of a room. A room they are scared to emerge from, for each time they look out they have to meet those eyes. Insistant eyes that glare, sneer, condemn and ridicule. Haemophiliacs since birth, Vineet, 25, and Rohit Oberoi, 31, are now battling with the HIV infection. Rohit's whole world was shattered in April 1989, the moment the nurses at AIIMS put up a board saying positive at the corner of his bed. All of a sudden, everyone stopped coming to see him. He knew what AIDS meant. He has read about it on the labels accompanying the blood bags. What he didn't know was what having AIDS meant. He could not understand why he was being treated like an untouchable. Physical pain Rohit has learnt to live with, but the emotional hurt runs deep. Rohit's father, a retired section officer from the Lok Sabha Secretariat, remembers how his colleagues refused to shake hands with him. Their mother is humiliated each time she goes to the hospital or to the neighbourhood dispensary. Wherever she goes, people want to know if she is negative or positive. And when Rohit goes for his routine check-up, he is asked to sit on a stool in a corner of the room and not next to the doctor.

"Like all men of my age, I too thought I would get married and have a family", he reminisces. He had even met his partner - a girl who, on seeing the two brothers' advertisement for blood, had come to their house offering to donate some. Rohit and she talked and liked each other. "I am still in love with her," says Rohit, pausing to add, "but what is the point ? Now it is only

friendship and love". Each blow has brought with it pain but has also helped Rohit become a little more stole. Now all he says is : "I am at peace inside my home. Please let me be."

(India Today)

You have learnt about fear and anxieties which the affected individual, his family and the common people may have about HIV infection and AIDS. Nurses being part of the community may also have similar fears, anxieties and notions regarding AIDS, which is a new and serious problem. It is, therefore, advisible to examine personal fears and anxieties so as to identify false notions or myths if there is any and rectify that by giving correct information about the scientific facts.

2. Epidemiological Feature and Transmission of HIV Infection

2.1 Epidemiological Feature of HIV Infection :

(i) **Historical Genesis** : The disease, what we call as Acquired Immuno-deficiency Syndrome, (AIDS), was first reported among homo-sexuals in USA, and other developed countries like Australia, New Zealand and Europe in 1981. The prevalence of AIDS and HIV infection rapidly

flared up (accelerated) in a pandemic form. In other countries, AIDS was diagnosed among :

- heterosexual men and women
- injecting drug users
- recipients of blood transfusion and in particular children and adults with haemophilia.

In the South-East Asia Region (SEAR) it was first detected in Thailand in 1985. In India, HIV infection was first detected in 1986 when six commercial sex workers from Tamil Nadu were found positive for HIV antibodies. Since then there is an explosive increase in HIV infection in female commercial sex workers in Vellore, Tamil Nadu, Bombay and Delhi and injecting drug users in Manipur.

(ii) Agent Factors : Agent factors include the causative agent that causes AIDS, reservoir and source of infection and are described as under :

(a) *Agent* - The virus that causes AIDS is known as Human Immuno-deficiency Virus (HIV). It was first discovered around mid-1983 at the Pasteur Institute in Paris from the lymph glands of a male homosexual.

We now know that there are at least two different major types of this virus, one called HIV-1 and the other known as HIV-2. HIV-1 is the principle AIDS virus while HIV-2 is found in West African countries. Of late, HIV-2 infection is also reported in India.

HIV is very small - 1/10,000 of a mm in diameter, sensitive to heat and is a member of the retrovirus family. The retrovirus enters the host cell by attachment to a specific cell receptor. In the case of HIV infection, the cell receptor is CD-4 molecules on the surface of the T4 Lymphocytes, which is part of the body's immune system. The viruses are released to the exterior of the cell by a process known as budding (see Exhibit 1.1, Figures 1 & 2).

HIV takes a long time to do damage because after getting into the host cell, viral DNA lies dormant for several years before it stimulates multiplication and destruction of the cells.

As the virus get multiplied, each one invades the fresh lymphocytes and the process goes on. Thus, the number of lymphocytes goes on decreasing which impairs the body's immune system (see Exhibit 1.2).

(b) **Reservoir of Infections** : The infected person and AIDS cases are the reservoir of infection. Once the person is infected, he remains infected for the rest of his life. The infection remains in a latent state for several years before it shows any signs and symptoms of disease, but the infected person (carrier) can give infection to other people. The Virus lives in dead bodies of an infected person upto 10 hours.

(c) **Source of Infection** : HIV has been isolated in almost all body fluids of infected persons. However, only blood and semen have been found to transmit the virus to a greater extent and vaginal fluids and breast milk to a lesser extent.

(iii) **Host Factors** : Host factors include age, sex, risk behaviour and immunology of the host. The description follows :

(a) *Age* : Infection can occur in all age groups but most cases have been reported in the 21-50 age groups who were sexually active. Less than 3 percent of cases have been reported in children under 15 years of age.

(b) *Sex* : Infection can occur in both the sexes. However according to WHO estimates, almost half of newly infected adults are women. But it is observed that certain sexual practices increase the risk of infection more than others e.g. multiple sexual partners, anal intercourse, and male homosexuality. Infection rate is very high in female commercial sex workers (prostitutes).

(c) *High-Risk Groups* : High risk of getting HIV infection are male homo-sexuals and bisexuals, heterosexual partners, including female commercial sex workers, injecting drug users using common syringe, recipients of blood transfusion, haemophiliacs, thalassemics, persons having STD and children of infected mothers.

However, in India, the general population is now at risk. For example, with unsafe sexual practices, a man like Mohan had given the infection to Chitra, an ordinary housewife, and to their eight-month-old daughter (refer to example 2). The India Today magazine reports .... "It is clear that the virus has spread beyond female commercial sex workers and their most frequent clients : migrant labourers, truckdrivers and students. Among the new victims are salesmen, executives, armed forces personnel, housewives and more sadly the new-born children."

(d) *Immunology* : The virus invades the T4 lymphocytes of white blood cells and gradually destroys them, leading to profound lymphopenia and thereby deficiency in the immune system of the body.

(e) *Incubation Period* : The incubation period i.e. the period between HIV infection and the onset of AIDS symptoms is uncertain. It is observed by scientists that HIV / AIDS is preceded by a variable period of a few months to two to five years or even more i.e. 10 to 17 years. The incubation period is much shorter in poor undernourished people and in children with HIV infection. Around 75% of those infected with the infection develop AIDS by the end of 10 years. During this period the person is asymptomatic and physically healthy but his blood is HIV positive and he is infective to others. See Examples 6 & 7 below indicating asymptomatic long-duration incubation period are quoted below.

Example 6

Deb, 37, a teacher in a Delhi School, discovered that he was a carrier of HIV in the last stage of AIDS. He probably contacted the infection several years ago as he admitted about his sexually promiscuous behaviour in Zambia.

Example 7

A 29 year-old-Navy man, with over 10 years in service, was tested for HIV infection in 1992 while donating blood. He was certified as HIV positive in INS Aswini. He gave the history of sexual contact with a female commercial sex worker at Vishakhapatnam in 1988. He did not show any other signs of HIV infection. He looked apparently healthy. In other words, he was asymptomatic.

India Today

2.2 Transmission of HIV Infection

Epidemological studies have shown three modes of transmission, which are as follows :

(i) **Sexual Transmission** : This refers to transmission through unsafe sexual activity, that is genital and / or oral sex. This is the most frequent mode of transmission. The virus can be transmitted from any infected person to his or her sexual partner (man to woman; woman to man; man to man, but less likely woman to woman).

(ii) **Parenteral Transmission** : This refers to transmission through the infected blood or blood products. That is, this may occur through blood or plasma transfusion when the donor is an infected person, and use of blood contaminated needles, syringes or other skin- piercing instruments. Refer to Rohit and Vineet's case (Example 5). Both of them were haemophillics and they contracted HIV infection through blood transfusion.

It is said that the recipients of a single unit of HIV-infected blood have hundred percent possibility of acquiring the infection. In Manipur, the incidence of HIV infection is high among the I.V. drug abusers.

(iii) **Perinatal Transmission** : This refers to transmission of infection from mother to foetus before, during or shortly after birth. The risk of HIV from mother to child transmission is believed to be 30-40 percent in the uterus and during delivery. The issue is debatable. It is believed that during the post-natal period, transmission of HIV infection from mother to child occurs through breast milk but the possibility is low. Refer Exhibit 1.4 to know about HIV transmission in South-East Asia.

(iv) **HIV Infection Is Not Spread Through**

Casual Contact e.g. by :

- Shaking hands, embracing, contacts with objects in phone booths, public transport, door-knobs, money (coins and notes).
- Shared use of china, crockery, silver, towels, bedding linen, toilet articles.
- Eating and drinking from common dishes (Holy Communion).
- Caressing, petting, kissing (cheek).
- Masturbation
- Coughing, sneezing, tears.
- Normal use of public toilets, swimming pools, community showers, saunas (unless unsafe sex is practised there).
- Massage, physical therapy, cosmetic treatment, hair dressing.
- Scratches and bites by pets or insects.
- Caring for AIDS victims or HIV positive people.

In Module 5, you will have an opportunity to learn methods to help reduce the risk of becoming infected sexually with HIV and to explore ways of teaching this material to students and patients.

It is important to stress at this point that in most work activities, nurses are not at risk of becoming infected by people with whom they work. This will be discussed in more detail in Module 4.

2.3 CHECK YOUR PROGRESS - 1

(i) Give a brief account of individual's, family's and community's fear of AIDS and HIV infection.

(ii) Briefly describe the agent that causes AIDS.

(iii) Answer the following :

(a) Reservoir of HIV infection.
(b) Source of HIV infection.
(c) High-risk groups of HIV infection.
(d) Incubation period of AIDS.

(iv) Briefly describe the modes of HIV infection.

3. Global, National and Local Epidemiology

Epidemiological information on AIDS has helped scientists understand the occurrence, distribution and causes of the disease in man and also its projection in future. As such, nurses need to know how people may become infected in their communities and what the major risk factors are, which may differ in each community.

3.1 Review of Background Information :

Review the following concepts before you proceed further for a better understanding of the information presented here.

(i) **Incidence** : Incidence means the occurance of new AIDS cases presenting each month or the number of new HIV infections being detected during a specified period of time.

(ii) **Prevalence** : Prevalence means "the total number of specific conditions in existence in a defined population at a precise period in time" e.g. the number of AIDS cases or the number of HIV infections which have so far been reported in the country.

(iii) **Surveillance** : The systematic collection of facts (data) on disease occurrence is called surveillance. It is very important to learn about AIDS and HIV infection in every country through national surveillance programmes.

3.2 Global HIV / AIDS Epidemiology

HIV / AIDS is recognised as one of the most serious global public health problems of the present time. It has spread like a wild fire and emerged as pandemic since 1981.

(i) Epidemiological Pattern : Three distinct epidemiological patterns of HIV infection have been identified on the basis of a predominant mode of transmission in different parts of the world.

(a) *Pattern I* : This pattern is typical of certain industrialized countries, including North America, Western Europe, Australia, New Zealand and parts of Latin America. In these areas :

- extensive transmission of HIV appears to have begun in the late 1970s.
- most cases occur among homosexuals or bisexual males and injecting drug-users.
- heterosexual transmission is responsible for a small percentage of cases but is increasing.
- transmission through blood and blood products is rare because of strict safety measures.
- male-to-female ratio of cases ranges from 10:1 to 15 : 1.
- overall seroprevalence is generally less than 1 percent but can be 50 percent in high-risk groups such as homosexual with multiple partners and injecting drug-users.

(b) *Pattern II* : This pattern is typical of Sub- Saharan Africa and some Caribbean countries. In these areas :

- extensive transmission appears to have begun in the 1970s.
- most cases occur among heterosexuals. As a result, the male-to-female ratio of cases is 1:1 and perinatal transmission is common.
- transmission through homosexual activity or intravenous drug use is minimal.
- overall seroprevalence is more than 1 percent but can be upto 15 percent or more in sexually active people in some urban areas.

c) *Pattern III* : This pattern is found in North Africa, Eastern Europe, the Eastern Mediterranean, Asia and most of the Pacific region. In these areas

- HIV has appeared to occur in early to mid 1980s and only 1 percent cases have been reported
- initially, the infection occurred in persons who travelled in or had contact with individuals from pattern I and pattern II areas or those who received imported blood.
- presently the infection is transmitted through homosexual and heterosexual contacts, use of contaminated blood for transfusion and unsterilized injecting equipment especially by injecting drug-users.
- transmission is proceeding silently and rapidly. The infection is still in a latent stage.
- awareness of the problem among professionals and the common people is very low.

(ii) Global HIV / AIDS Status

(a) *AIDS Cases* : Throughout the world there has been a steep increase in the number of cases.

Of the total cases reported in 1992, 39.5% are from the USA, 34.5% from Africa, 13% from Europe, 12% from Americas and 0.5% each from Asia and other countries. (Exhibit 1.6)

(b) *HIV infection* : It is estimated by WHO that by 1992 there were about 10-12 million people infected with HIV. They are asymptomatic and pass on the infection to others. Infected women have already given birth to 1 million HIV-infected children. It is estimated that 10-30% of these infected people will develop AIDS during the next five years.

Estimated continent-wise or region-wise distribution of cumulative HIV infection among adult is indicated in Exhibit 1.7. It shows maximum distribution in Sub-Saharan Africa (7.5 million), followed by South East Asia (1.5 million). Of these 1.5 million, one million are estimated to be in India.

c) *Global projection* : WHO estimated that by the year 2000 AD, there will be a total of 30-40 million men, women and children infected with HIV, more than 1 million adults would get AIDS every year i.e. 12-18 million of AIDS cases, 10-15 million children would become orphans. The great majority of these cases will be in developing countries of Africa and Asia.

3.3 National and Local HIV / AIDS Epidemiology

India is one of the 11 countries of the South-East Asia region of WHO. It is, therefore, important to describe HIV/AIDS status of this region to understand National HIV / AIDS epidemiology which is as under:

(i) **South-East Asia HIV / AIDS Status** : In this region, the first case was detected in 1985 in male commercial sex workers in Thailand and later in 1986 in most other countries. Since then the infection has spread rapidly. AIDS cases are reported from eight of the 11 countries as is seen from Exhibit 1.8.

(a) *HIV Infection* : HIV infection pandemic in this region is in its early stage but it is spreading at a very fast rate like it was in Sub-Saharan Africa in the early 1980s.

Seroprevalence surveys carried out in different countries of this region confirm the alarming increase in HIV infection rates in selected high-risk groups like commercial sex workers, injecting drug- users, haemophiliacs and thalassemics.

The estimated number of HIV- infection cases in all the 11 countries of this region is shown in Exhibit 1.8. The largest number (1,001,000) was recorded in India, followed by Thailand (45,00,000) and Myanmar (1,50,000).

(b) *Future Projections* : HIV infection will continue to increase and will appear in general public because the predominant mode of transmission is through heterosexual contact, which is mostly unprotected sexual activity. Besides, there are high rates of STDs. The annual infection rate would far exceed what is seen in Sub-Saharan Africa by the year 2000 AD (see Exhibit 1.9). It is also projected by WHO that there will be a total of 2 million AIDS cases by the year 2000 AD. See Exhibit 1.10.

(ii) **National (India) HIV / AIDS Status** : In India, the first AIDS case was reported in May 1986. Since then there has been a consistent increase in the number of cases and the prevalence of HIV infection in the country. But the epidemic is still in its early phase except in some of the States like Manipur, Maharashtra and Tamil Nadu.

(a) *AIDS Cases* : Since 1986, a total of 310 AIDS cases had been reported from 18 States and Union Territories by 31st March, 1993. Majority of the cases are in Maharashtra (95), Tamil Nadu (92),

Punjab/Chandigarh (47), Delhi (31), Kerala (16). See Table 1.2 and refer to exhibit 1.11 to see the steady increase in the number of cases over the years.

Majority of these cases are among high-risk groups i.e. female commercial sex workers, sexually active males, haemophiliacs and injecting drug-users (mainly from Manipur). Almost 90% of these cases are below the age of 50 years. The estimated number of AIDS cases will be between 5,000 and 10,000

(b) *HIV Infection* : From October 1985 to 31st March 1993, a sample of 1,659,412 persons of high-risk behaviour have been screened for HIV infection and 11,849 have been found positive. This represents a seroprevalence of 7.4 per 1,000. The seropositivity rate has increased from 2.5 per 1000 in 1986 to 11.2 per 1000 by 1992 (refer Exhibit 1.12).

Unprotected Heterosexual behaviour is responsible for the majority of these infections except in North-Eastern States where intravenous drug use is the predominant mode of transmission.

Prevalence rate of HIV infection varies in different states, the highest rate is found to be in Manipur. Based on the prevalence of AIDS cases and HIV infection, three epicentres of HIV epidemic have been identified. These are: Bombay (Maharashtra), Madras (Tamil Nadu) and Manipur (see Exhibit 1.13). The term epicentre refers to a point from where the problem originates. It is reported by WHO that there is an increase in sero-prevalence rates in these epicentres from 1986 onwards. In Manipur from 0% in 1989 to 54% in June, 1990, in Bombay from 2% in 1989 to 40% by 1991 and in Vellore & Tamil Nadu from 0.5% in 1986 to 34.5% by 1990.

(c) *Future Projection* : It has been estimated that if the transmission of HIV continues at the same pace, then by the year 2000 there is a possibility of having 5 million infected persons and more than one million AIDS cases. The increase in the number of AIDS cases and HIV prevalence in India as projected by WHO can be seen in Exhibit 1.14.

This is alarming statistical information on AIDS / HIV infection, which emphasizes the need for dealing with this problem right from the National level to the community level.

(d) *Local HIV / AIDS Status* : Using local resources try to obtain information on the incidence and prevalence of HIV infection and AIDS cases in your own community i.e. District / Town / Block / Village and record them in your diary or on paper and insert in this module.

3.4 Check Your Progress - 2

(i) Briefly describe the epidemiological pattern of South-East Asia.

(ii) Where was AIDS first reported in SEAR ?

(iii) In which region of the world the largest percentage of cases is reported ?

(iv) Answer the following :

a) Distribution of estimated number of HIV infected persons in South-East Asia by 1992 _____

b) Distribution of estimated number of HIV-infected persons in India by 1992 _____

c) Estimated number by the year 2000 AD

HIV-infected in the world _____ , and in India _____ .

AIDS cases in the world _____ , in South-East Asia_____ , and in India _____ .

4. National AIDS Prevention and Control Programme and Local Surveillance Resources.

4.1 National AIDS Prevention and Control Programme

The Government of India launched the National AIDS Control Programme in 1987. The ultimate aim of the programme was prevention of HIV transmission and reduction of morbidity and mortality due to HIV infection and AIDS. The major activities included are : surveillance among high-risk groups, screening of blood and blood products to ensure blood safety and information education communication.

The programme is planned and managed by the National AIDS Control Organisation (NACO), Ministry of Health and Family Welfare with financial support from the World Bank and technical assistance by WHO. Major components of this programme are discussed briefly.

(i) **Surveillance and Research** : There are two aspects of surveillance considered in the AIDS control programme. These are :

(a) *Surveillance of HIV infection* : There are 62 surveillance centres (1992) located throughout the country. These centres are involved in sentinal surveillance, which includes screening of a selected population in selected sites over a period of time. You may find out the surveillance centres existing in your State.

These centres have testing laboratories and are placed at the state and district levels. ELISA test is done free of charge at these centres. There are also nine reference centres which perform a confirmatory Western Blot Test (refer Exhibit 1.18).

(b) *Surveillance of AIDS Cases* : All medical institutions are expected to participate in the identification of suspected AIDS cases. Final diagnosis of cases will be done by nine reference centres which will also report to the Health Authority.

(ii) **Behaviour Change through Information, Education and Communication and the Reduction of Impact**

This component includes activities aimed at creating awareness of HIV / AIDS and bringing about positive changes in the risky behaviours of people for prevention ad control of HIV / AIDS. This component also aims at reducing the psychosocial impact of epidemic by providing appropriate and adequate counselling services and clinical care services. Hence, this component is linked with other components of the programme.

It includes various strategies which are media campaigns, social mobilization, targeted intervention for high-risk groups, collaboration and support to NGOs, counselling, care and treatment inside and outside the clinical setting with an individual's right and dignity, training and operational research.

(iii) **STD Control Programmes** : Increasing emphasis is given to STD control because STD and AIDS are not only closely associated with the same high- risk behaviour but STDs increase the risk of AIDS, as mentioned earlier.

(iv) **Condom Programme** : This programme aims at ensuring good quality of affordable and acceptable condoms. The major strategies included are :

a) manufacture of condoms as per quality standard laid down by WHO.

b) strengthening of condom distribution network developed by the Department of Family Welfare.

c) promoting market research.

(v) **Blood Safety Programme** : This programme aims at developing and strengthening the national blood transfusion system and ensuring adequate supply of safe blood to the blood banks. The strategies included are :

a) Mandatory testing of blood for HIV : As many as 150 HIV Zonal blood testing centres have been established in 112 cities.

b) Upgrading and strengthening of all blood banks operating in public sectors with central assistance. There are altogether 608 blood banks in the public sector. Of these 187 are planned to be upgraded during 1993-1994.

c) Setting-up of blood component separation facilities to promote use of blood products. Thirty one such units are planned to be opened by NACO, in phases, all over the country.

4.2 Local Surveillance Resources

(i) **Awareness** : Nurses need to be aware of the National AIDS Prevention and Control Programme in order to :

- plan relevant health-care interventions at the local level.
- refer suspected cases and HIV-infected and AIDS cases to appropriate support services e.g. testing centres, surveillance centres, referral centres and counselling centres .
- influence developing priorities of the programme.

(ii) **Surveillance Resources** : Try to obtain the following information on surveillance centres, blood testing centres and reference centres so that you can develop a working relationship with the centres and help clients utilize their services effectively.

- location accessibility
- working schedule
- policies, any formal procedure to avail the services / referral system.
- kind and nature of services rendered
- feedback and follow-up . Also try to find out the counselling and clinical care facilities available in your area and obtain similar information on these facilities.

5. Nurses' Role in Prevention of HIV Infection in the Community

5.1 HIV Transmission

HIV is transmitted through specific individual behaviours and through readily identifiable practices in health-care settings e.g. infection control technique, intravenous infusion and transfusion. Further HIV transmission requires the active participation of two persons ; the chain of transmission can be broken by the individual behaviour of either the infected or the non-infected person or even both.

5.2 Nurses' Role

Nurses' role can be identified based on the background information discussed above and it includes :

(i) providing information and education on prevention and control of HIV infection / AIDS to health workers, people at large and high-risk groups in particular.

(ii) informing people about health and social services available and making referrals.

(iii) participation in counselling of vulnerable groups and infected persons to motivate a behavioural change.

(iv) mobilizing community support to find a solution to the problem of rejected HIV-infected / AIDS cases, orphan and terminal cases.

5.4 Check Your Progress - 3

(i) State the objectives of the National AIDS Programme.
(ii) What is NACO ?
(iii) What are the nurses' role in prevention of HIV transmission ?

V. ANSWERS TO CHECK YOUR PROGRESS

2.3(i)

- Fear of getting infective even through casual contact.
- Fear of moral judgement on sexual behaviour.
- Fear of stigma / disgrace; getting segregated.
- Exposure and loss of privacy

- Fear of physical pain, AIDS-related problems etc. diarrhoea, fever, skin infection, cancer etc.
- Fear of death and loss of dears and nears.
- Physical and financial loss.
- Increased demand of care from the family.

2.3 (ii) AIDS is caused by Human Immuno-Deficiency Virus, popularly known as HIV. This Virus has two different strains, which are responsible for causing AIDS. These are HIV-I and HIV-II. The former is the principal AIDS virus, and the latter is found only in West African countries. Lately it is reported in India. The virus is sensitive to heat and it is retrovirus.

2.3(iii)

a. Persons infected with HIV.
b. Almost all body fluids but greater content from blood and semen and lesser content from vaginal fluid and breast milk.
c. Multiple sexual partners, male homosexual & bisexual, commercial sex workers, receipient of blood transfusion, injecting drug user person's having STD & children of infected mothers.
d. A few months to two to five years or even more.

2.3(iv) Three modes of HIV infection :

(a) Sexual transmission i.e. man to woman, women to man, man to man but less likely from woman to woman.
(b) Parenteral transmission i.e. transmission through infected blood or blood products and through contaminated injecting equipment.
(c) Perinatal transmission from mother to her foetus.

3.4(i) Epidemiological Pattern-III is found in South-East Asia.

- HIV occurred from 1985 onwards.
- To start with, the infection was imported from Pattern-I and Pattern-II areas.
- The infection is now transmitted through sexual contacts, use of contaminated blood, use of unsterile injecting equipments.
- The infection is progressing silently but rapidly.
- Low awareness of the problem.

3.4(ii) Thailand.

3.4(iii) A large percentage of the total number of cases in the world is reported in the USA (39.5% in 1992).

3.4(iv)

(a) In South-East Asia - 1.5 million infected persons.

(b) In India, 1 million infected persons.

(c) Estimated number by the year 2000 AD

- HIV-infected in the World
  - 30-40 million men, women and children
  - India - 5 million
- AIDS cases in the World - 12-18 million
  - SEAR - 2 million
  - India - 1 million

5.4(i) - To ascertain surveillance of HIV infection and AIDS cases so as to prevent the further spread of the infection.

- To create awareness of HIV / AIDS so as to change risky behaviours.
- To reduce the social and psychological impact of HIV / AIDS by educational and counselling services.
- To ensure adequate continuum of care to affected people.
- To strengthen STD control programme.
- To ensure easy access to good quality, affordable and acceptable condoms.
- To ensure adequate supply of safe blood through a national blood transfusion system.

5.4(ii) NACO - It refers to the National AIDS Control Organisation. This organisation has been set up by the Ministry of Health and Family Welfare for effective implementation of the National AIDS control project.

5.4(iii) Surveillance and research.

5.4(iv) Participation in information, education and communication on prevention and control of HIV / AIDS.

- Help utilization of health and social services available.
- Making referrals
- Participation in counselling services.
- Mobilizing community support.

II. VISUAL AIDS

Exhibit 1.1

FIGURE 1

A virus must attach itself to another cell and use its equipment to produce more viruses

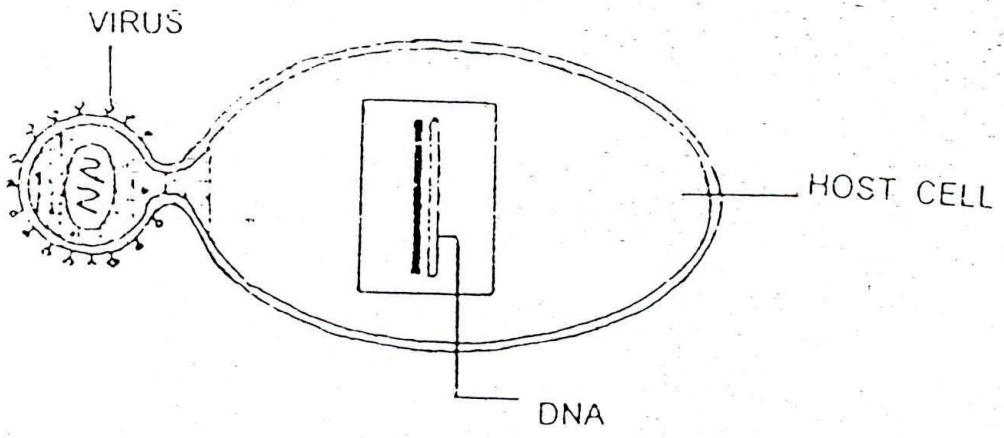


FIGURE 2

The Human Immuno-Deficiency Virus (HIV) consists of genetic information surrounded by a protein layer

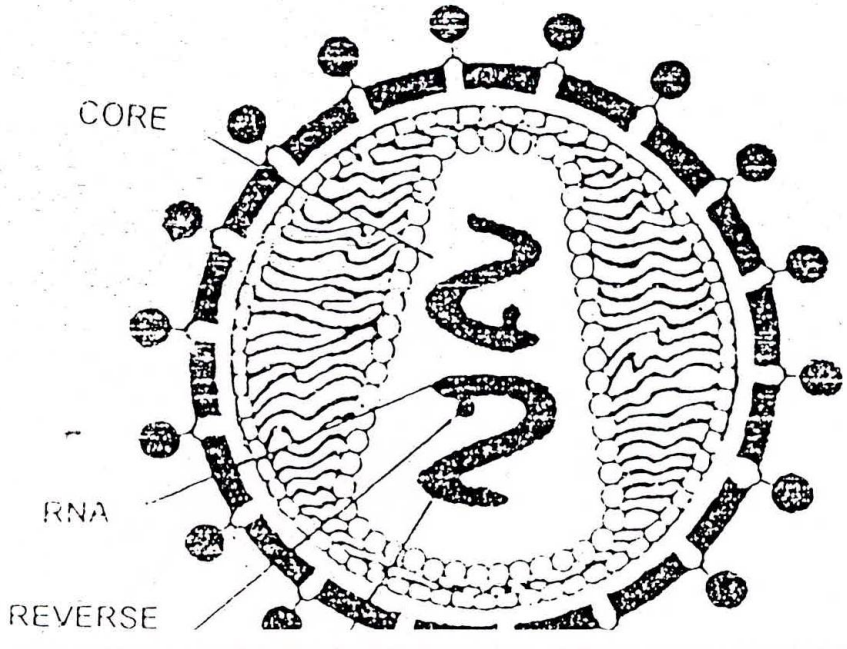


Exhibit 1.2

How HIV affects the Immune System

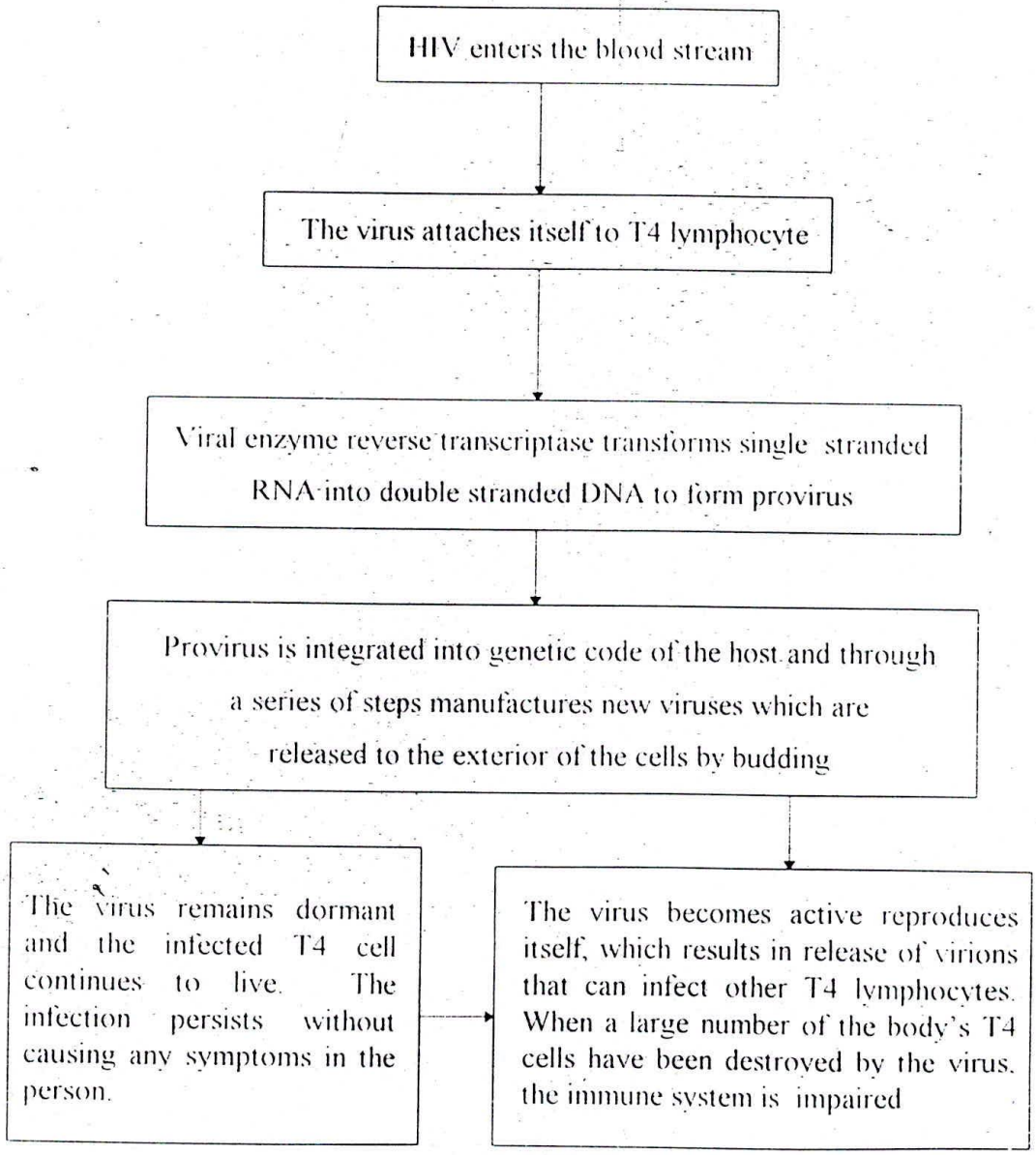


Exhibit 1.3

HIV Transmission

HIV can be transmitted :

- Sexually, via contact with infected blood, semen and cervical and vaginal fluids. This is the most frequent mode of transmission and HIV can be transmitted from any infected person to his or her sexual partner (man to woman, woman to man, man to man and but less likely woman to woman.
- Following transfusion of blood or blood products from donor blood infected with HIV.
- Using HIV contaminated injecting or skin-piercing equipment.
- From a mother infected with HIV to her child during pregnancy, at birth or after birth from breast-feeding.

HIV cannot be transmitted by :

- Coughing, sneezing or handshakes
- Insect bites, work or school contacts
- Touching, hugging or using toilets
- Water, food or using telephone
- Kissing, swimming pools
- Public baths, Sharing cups, glasses, plates and other eating utensils.
- Donating blood

Exhibit 1.4

HIV TRANSMISSION IN SOUTH-EAST ASIA, 1992

ROUTE OF TRANSMISSION	EFFICIENCY	% OF TOTAL
SEXUAL INTERCOURSE	0.1-1.0%	80-90%
BLOOD		
TRANSFUSION	90%	3-5%
INTRAVENOUS DRUG USE	0.5% - 1.0%	5-10%
EQUIPMENT / NEEDLES	0.5%	0.1%
PERINATAL	15-45%	0.1%

Exhibit 1.5

EPIDEMIOLOGICAL PATTERN

Three distinct patterns are identified :

Pattern - I : This pattern is typical of certain industrialized countries, including North America, Western Europe, Australia, New Zealand and parts of Latin America. In these areas :

- extensive transmission of HIV appears to have begun in the late 1970s.
- most cases occur among homosexuals or bisexual males and injecting drug users.
- heterosexual transmission is responsible for a small percentage of the cases but is increasing.
- transfusion through blood and blood products is rare because of strict safety measures.
- male-to-female ratio of cases ranges from 10:1 to 15:1
- overall seroprevalence is generally less than 1 percent but can be 50% in high-risk groups such as homosexual with multiple partners and injecting drug-users.

Pattern - II : This pattern is typical of Sub-Saharan Africa and some caribbean countries. In these areas :

- extensive transmission appears to have begun in the 1970s.
- most cases occur among heterosexuals. As a result the male to female ratio of cases is 1:1 and perinatal transmission is common.
- transmission through homosexual activity or intravenous drug use is minimal.
- overall seroprevalence is more than 1 percent but can be upto 15% or more in sexually active people in some urban areas.

Pattern - III : This pattern is found in North Africa, Eastern Europe, the Eastern Mediterranean, Asia and most of the Pacific. In these areas :

- HIV appears to occur in early mid-1980s and only 1 percent cases have been reported.

- initially, the infection has occurred in persons who have travelled in or had contact with individuals from Pattern-I and Pattern-II areas or those who have received imported blood.

- presently the infection is transmitted through homosexual and heterosexual contacts, use of contaminated blood for transfusion and unsterile injecting equipment especially by injecting drug users.

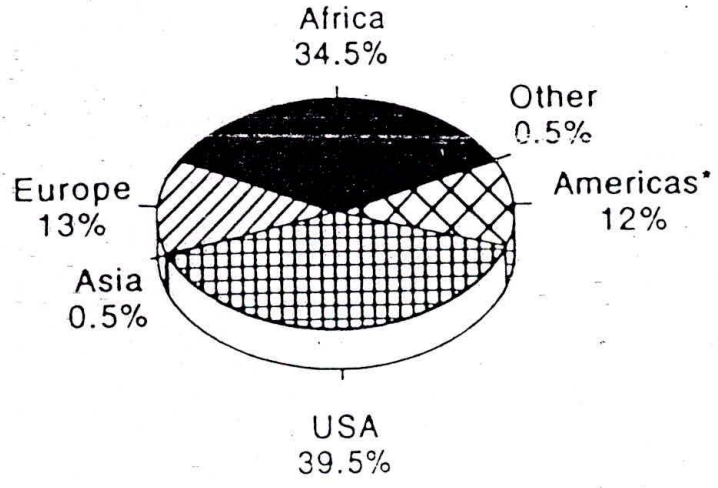
- transmission is proceeding silently and rapidly. The infection is still at a latent stage.

- awareness of the problem among professionals and the common people is very low.

Exhibit 1.6

CUMULATIVE AIDS CASES IN MEN, WOMEN AND CHILDREN LATE 1992

Reported : 6,11,589



Estimated 2,50,000

(* Excluding USA, Jan '93)

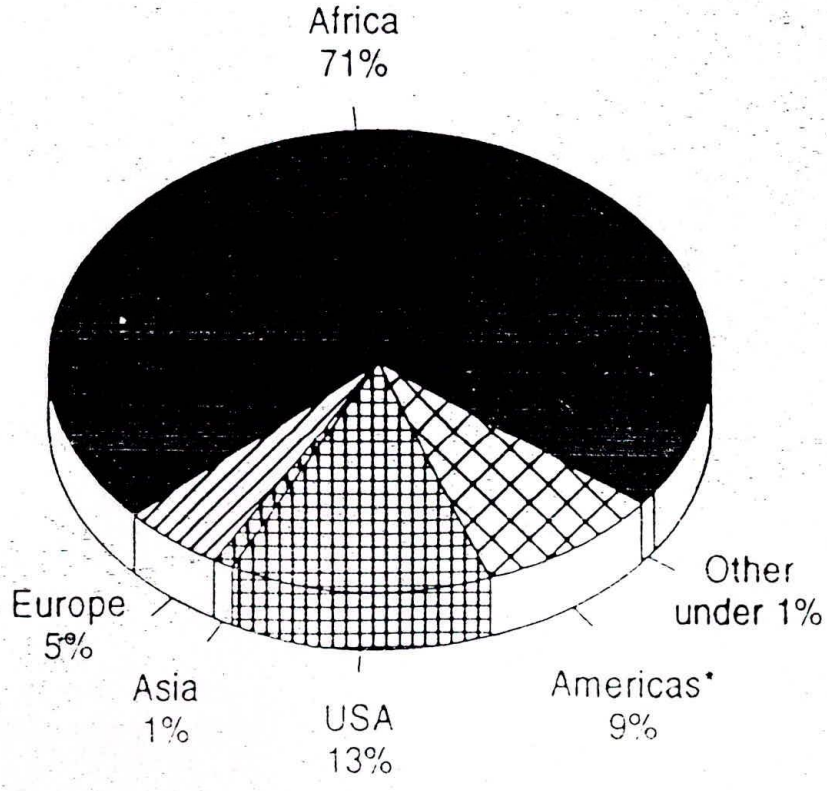


Exhibit 1.7

ESTIMATED DISTRIBUTION OF CUMULATIVE HIV INFECTIONS IN ADULTS, BY CONTINENT OR REGION

LATE 1992

Exhibit 1.8

AIDS AND HIV INFECTIONS IN SEAR COUNTRIES AS OF 28 FEBRUARY 1993

COUNTRY	REPORTED AIDS CASES	ESTIMATED HIV INFECTIONS
BANGLADESH	1	< 20,000
BHUTAN	0	< 300
DPR KOREA	0	< 1,000
INDIA	307	1,000,000
INDONESIA	26	< 20,000
MALDIVES	0	< 100
MONGOLIA	1	< 200
MYANMAR	16	150,000
NEPAL	12	< 5,000
SRI LANKA	22	< 1,000
THAILAND	946	450,000
TOTAL	1,331	> 1,500,000

Exhibit 1.9

ESTIMATED / PROJECTED ANNUAL ADULT HIV INFECTIONS

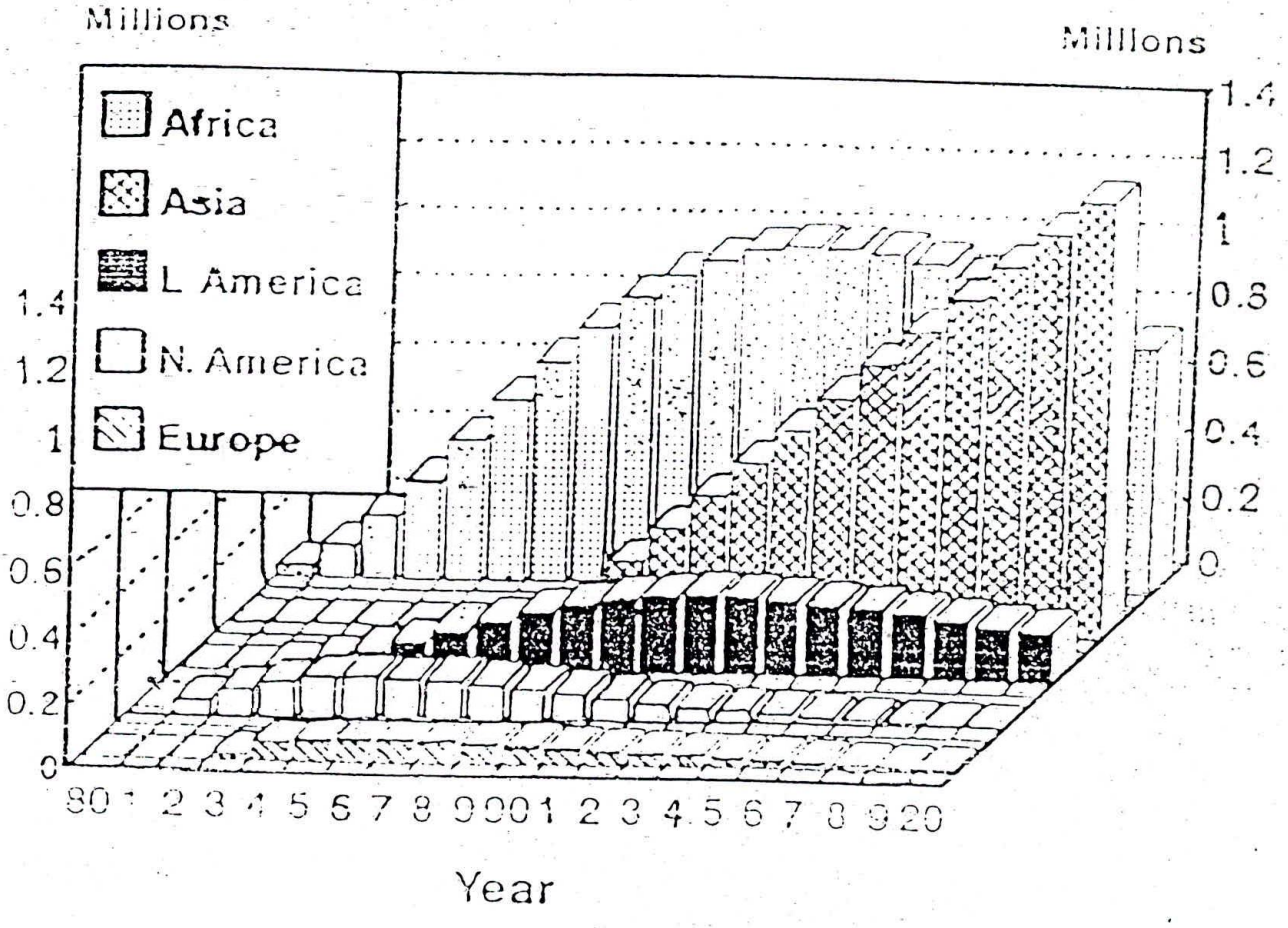


Exhibit 1.10

PROJECTED ANNUAL AIDS CASES SOUTH-EAST ASIA

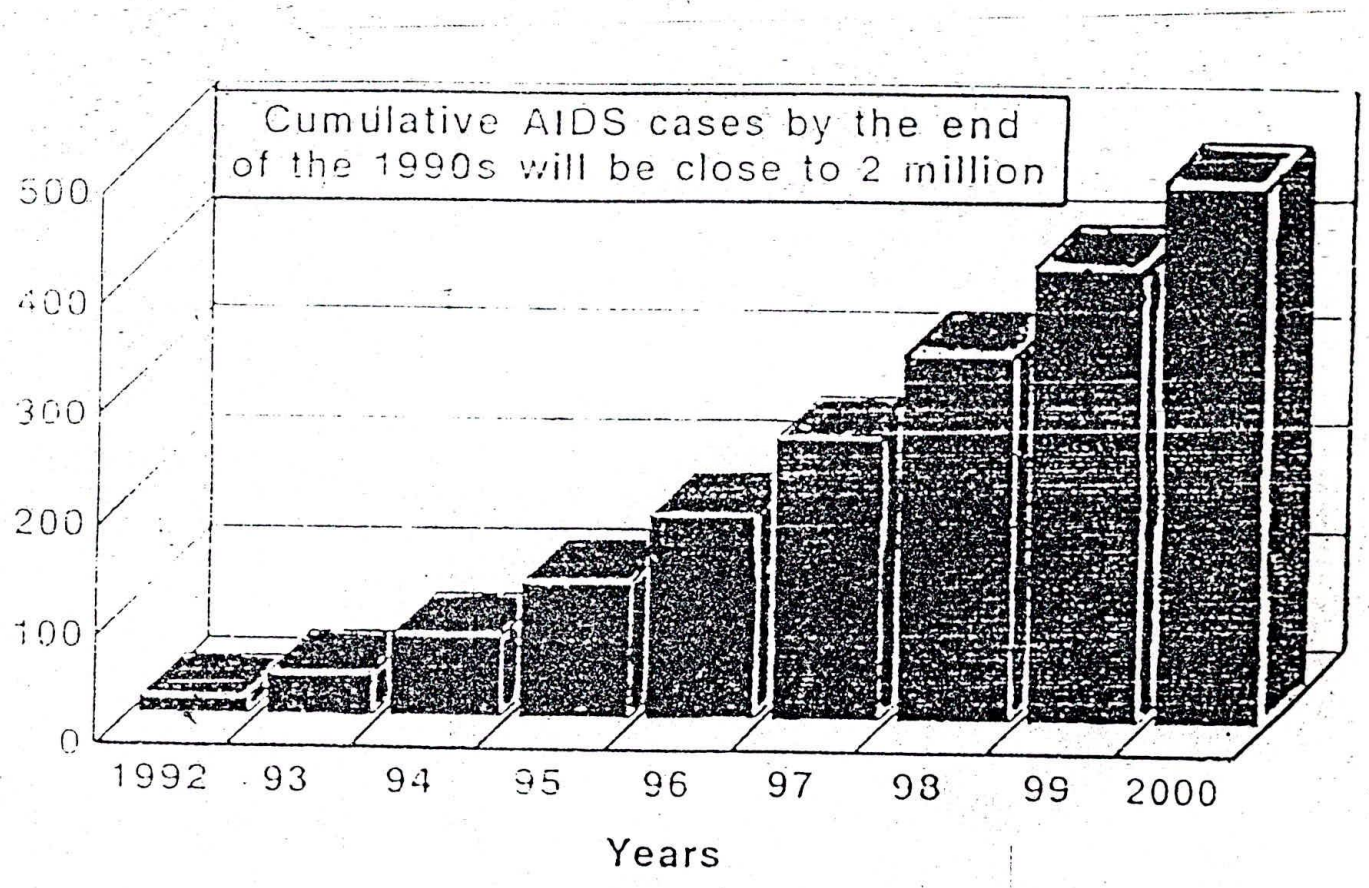


Exhibit 1.11

AIDS Cases Reported in India Yearwise

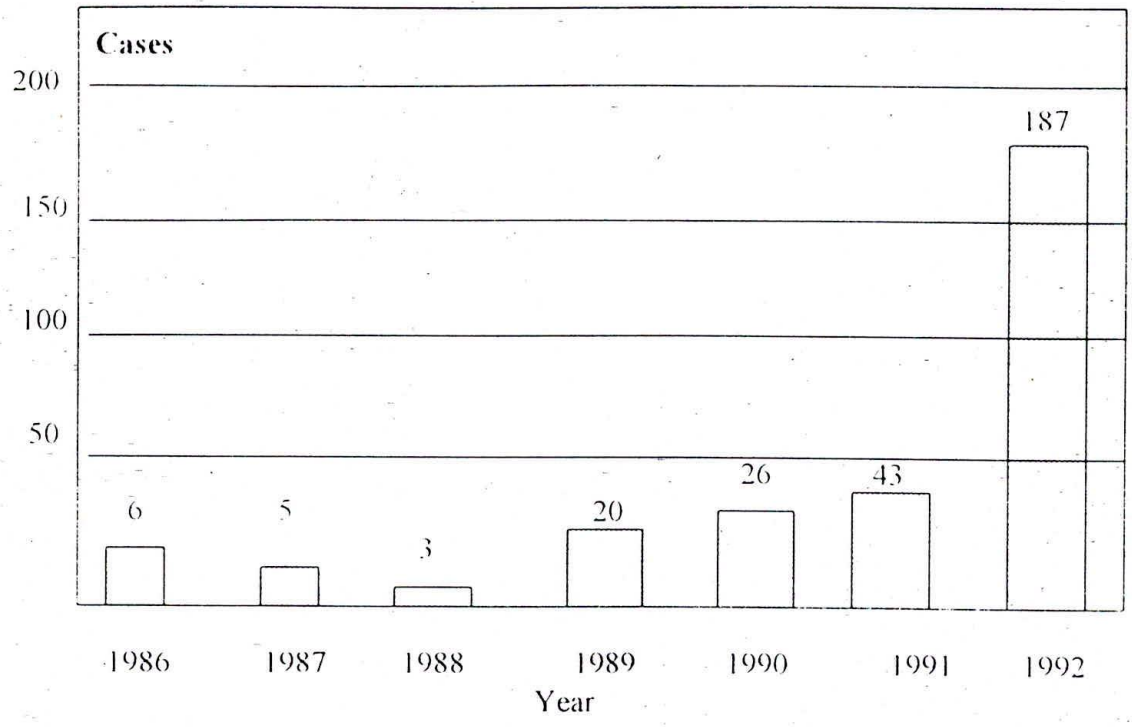


Table 1.2 : Cumulative number of AIDS cases reported in India by States / Union Territories, March 1993.

State / Union Territory	No. of cases
Andhra Pradesh	1
Assam	1
Delhi	33
Goa	2
Gujarat	2
Haryana	1
Himachal Pradesh	2
Jammu & Kashmir	1
Kerala	16
Madhya Pradesh	1
Maharashtra	93
Manipur	4
Pondicherry	6
Punjab / Chandigarh	47
Rajasthan	1
Tamil Nadu	92
Uttar Pradesh	1
West Bengal	6
TOTAL	**310**

Exhibit 1.12

Progress of HIV Seropositivity Rates Nationwide for all Groups Tested, 1986-1992

Period	No. tested	No. positive	Prevalence per/1000
October 1985 to October 1987	56,934	145	2.5
November 1987 to October 1989	307,343	1505	4.9
November 1989 to December 1991	863,110	4,764	5.5
January 1992 to December 1992	437,563	4916	11.2
Total	**1,664,950**	**11,330**	-

Progression of HIV Seropositivity Rates Nationwide, for all Groups Tested

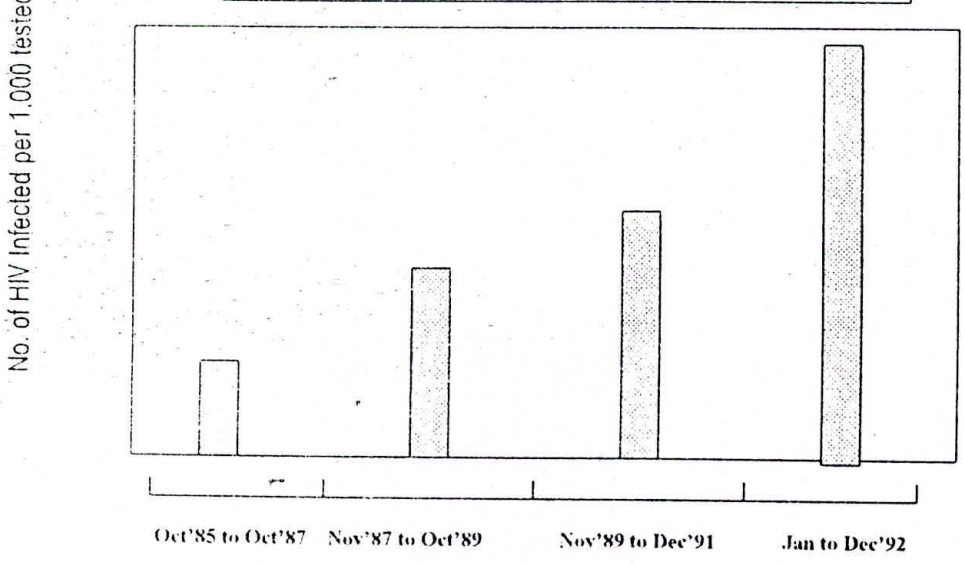


Exhibit 1.13

THREE EPICENTRES OF HIV EPIDEMIC IN INDIA

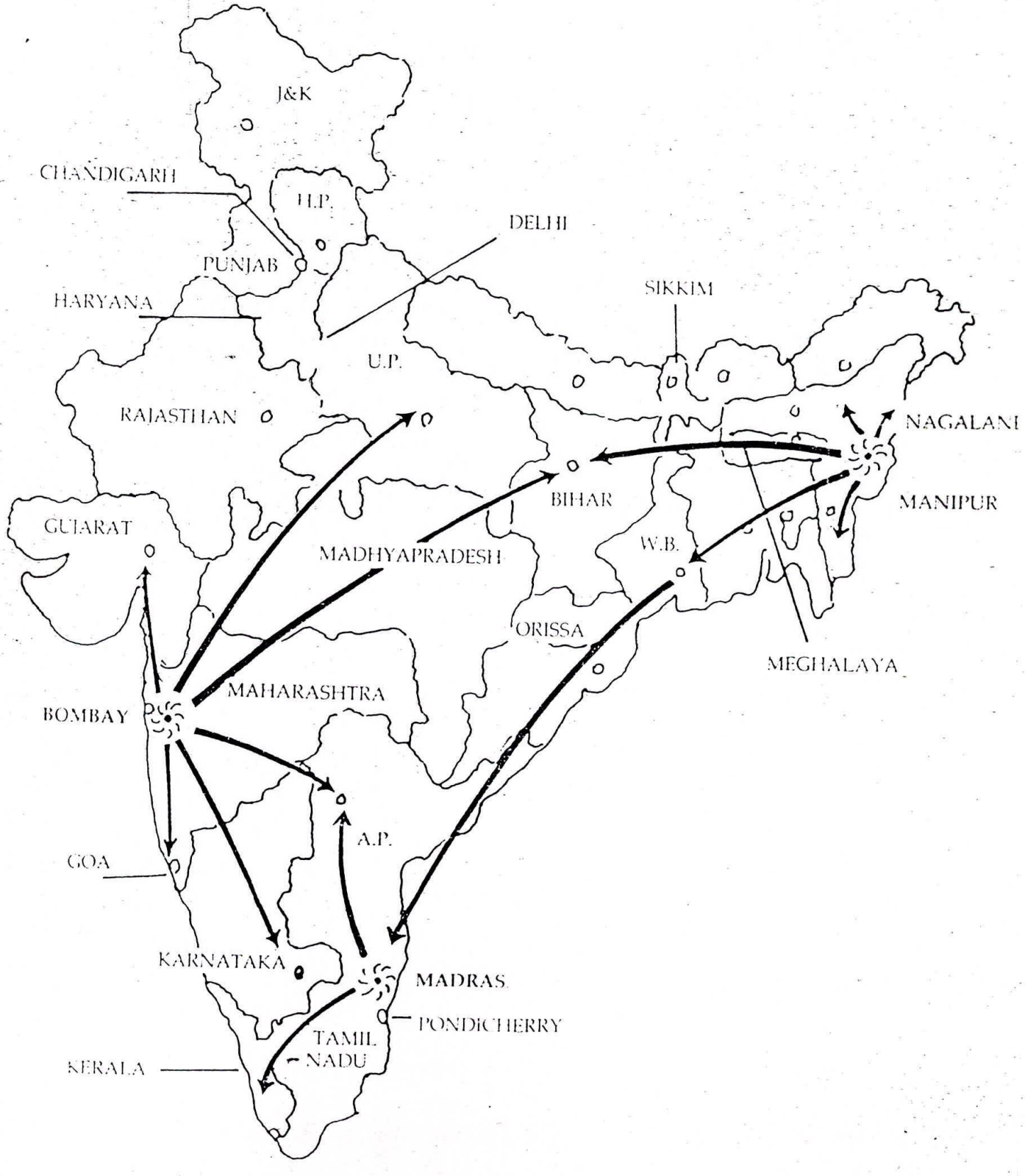


Exhibit 1.14

PROJECTIONS ON HIV PREVALENCE AND CUMULATIVE AIDS CASES IN INDIA

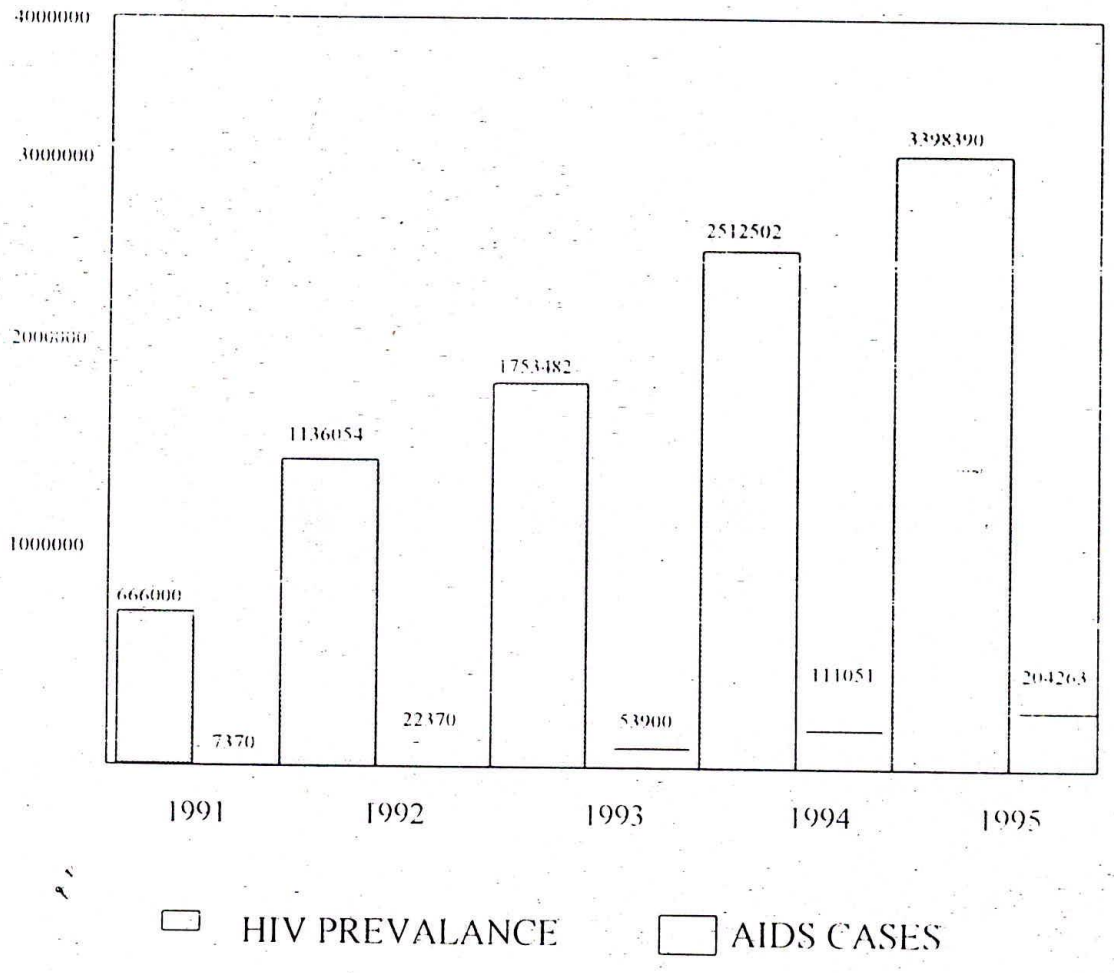


Exhibit 1.15

TEST ON EPIDEMIOLOGICAL ASPECTS AND DYNAMICS OF DISEASE TRANSMISSION

1. Define epidemiology.
2. What is epidemiological triad ?
3. What is agent ? Outline the types of agents.
4. List the host factors which influence the occurrence of disease.
5. List the environmental factors which influence the occurrence of disease.
6. What do you understand by risk factors ?
7. What is prepathogenesis phase of the natural history of disease ?
8. What is pathogenesis phase of the natural history of disease ?
9. What is incubation period ?
10. What is ice berg of disease ?
11. Outline the links in the chain of transmission of infectious disease.
12. What is reservoir of infection ?
13. What is source of infection ?
14. List the routes of transmission of disease.
15. What is direct contact ?
16. What is transplacental transmission ?
17. What are the postulates of successful infection ?
18. What do you understand by susceptable host ?

Exhibit 1.16

ANSWER KEY FOR TEST
(FOR EXHIBIT 1.22)

1. The study of the distribution and determinants of health-related states and events in populations, and the applications of this study to control health problems (Last J.M., 1983).

2. The occurrence and manifestations of any disease, whether communicable or non-communicable, are determined by the interactions among the agent, the host and the environment, which together constitute the epidemiological triad (Mahajan, B.K.,1991).

3. The agent is defined as an organism, a substance or a force, the presence or lack of which may initiate a disease process or may cause it to continue. There may be single or multiple agents for a disease.

Classification of Agents :

A Living or Biological Agents :

(i) Anthropods
(ii) Helminths
(iii) Protozoa
(iv) Fungi
(v) Bacteria
(vi) Virus

B Non-living or inanimate :

(i) Nutrient agents
(ii) Chemical agents
(iii) Physical agents
(iv) Mechanical agents

4. Host factors which influence determining of a disease are also called intrinsic factors and include :

(i) Demographic characters - age, sex, race.

(ii) Biological characteristics - genetic factors, physiological and biochemical characteristics (e.g. blood cholesterol, blood sugar level etc.); immune status, nutritional status; personality.

(iii) Socio-economic characteristics - economic status, social class, religion, education, occupation, marital status, place of living.

(iv) Life Style - living habits, food habits, sexual behaviour, use of alcohol, tobacco, drugs etc., degree of physical activity, personal hygiene etc.

5. Environmental factors which influence the occurrence of diseases are also called extrinsic factors and include :

(i) Physical environment - e.g. air, water, soil, housing, climate, geography, heat, light, noise, radiation etc.

(ii) Biological environment - e.g. micro-organisms, insects, rodents, animals and plants.

(iii) Psychosocial environment - e.g. cultural values, customs, habits beliefs, attitudes, morals, religion, education, life styles, community life, health services, social and political organizations etc.

6. Risk factor is an attribute or exposure that is significantly associated with the development of a disease. This factor can be modified by intervention, thereby reduces the possibility of occurrence of the disease. The presence of risk factor suggests that disease may occur or the disease may be due to this factor. Risk factors are observable and identifiable prior to the event they predict. e.g. smoking, drinking, obesity, high blood cholesterol, hypertension, air pollution, unsafe water, etc. These are modifiable risk factors. There are unmodifiable risk factors e.g. age, sex, genetic factors, family history. They act as foreseeable signals and timely prevention measures can be taken.

7. Prepathogenesis phase refers to the period prior to the onset of the disease in man. The causative agent has not yet entered a man's body, but the factors which favour the interaction of agent with the human host are there in the environment. Thus, we are in the prepathogenesis phase of many diseases.

8. Pathogenesis phase begins with the entry of the causative agent in the susceptible human host. The agent multiplies in the body and brings about change in the tissues and physiology. The disease progresses through a period of incubation followed by clinical signs and symptoms. The final outcome of the disease may be recovery, disability or death.

9. Incubation period - It is the period which lapses between the entry of organisms in the body and the appearance of clinical signs and symptoms of disease.

10. Iceberg of disease represents the prevalence of disease in the community. The clinical cases are like the floating tip of the iceberg which are known to the physician. Majority of the cases are undiagnosed, unknown, presymptomatic / subclinical which

are like submerged portion of the iceberg which cannot be seen See figure 1.1 given in this module.

11. There are three major links in the chain of transmission of an infectious disease.

(i) Source and reservoir of infection
(ii) Modes of transmission
(iii) Susceptible host.

12. A reservoir of infection is any person, animal, arthropod, plant, soil or substance in which an infectious agent lives and multiplies and depends for its survival.

13. A source of infection - The person, animal or substance from which an infectious agent passes to a host.

14. I. Direct Transmission :

(i) Direct contact
(ii) Droplet infection
(iii) Contact with soil
(iv) Parenteral
(v) Transplacental

II. Indirect transmission

(i) Vehicle-borne
(ii) Vector-borne
(iii) Air-borne
(iv) Fomite-borne
(v) Unclean hands and fingers

15. Direct contacts - Infection which is transmitted from a reservoir or a source to a susceptible host without any intermediate agency e.g. skin-to-skin contact by touching, kissing or sexual intercourse or continued close contact. Examples of diseases transmitted through direct contact are STD, AIDS, Leprosy.

16. Transplacental - Transmission of infection from mother's blood to the foetus through the placenta.

17. Postulates of successful infection :

(i) The organisms must enter the body through the appropriate protal of entry.
(ii) The organisms must reach the appropriate site after gaining entry into the body.

(iii) The organisms must find way out of the body to infect another host so as to propagate its species.

(iv) The organisms must survive outside the body till they invade the new host.

18. Susceptible Host - It is the host that is at the risk of getting infection through the appropriate portal of entry and who does not has natural / acquired resistance to resist against infection.

Exhibit 1.17

Guideline for Educational visit to Surveillance Centre e.g. Department of Microbiology, Maulana Azad Medical College, New Delhi.

Group : Nurses number not more than 40.

Date : Date convenient to the institution and to the learners.

Time : According to the Centre's convenience. It can be 10 AM to 12 Noon or 2 PM to 4 PM.

I. OBJECTIVES

By visit to this surveillance centre, the learners will :

1. Get acquainted with its :
   a) location and physical set-up
   b) historical background of surveillance work
   c) objectives, policies and function
   d) administrative set-up.

2. Be able to :
   a) describe the surveillance of HIV and AIDS cases.
   b) identify referral and reporting system for HIV / AIDS cases.
   c) discuss the surveillance centre's role in prevention and control of HIV / AIDS locally and nationally.
   d) describe the local epidemiological picture of HIV/AIDS.

II. GUIDELINE

Use the following guideline for making observation and writing the report.

1. Location
   Address
   Significant land marks

2. Historical background of surveillance :

Initial Phase

- when was surveillance first started ?
- what was the form of surveillance ?
- which were the two institutions that were given this responsibility ?
- which institution detected the first case ?

Second Phase

- When did the second phase start ?
- What development took place in this phase ?
- What were the findings of surveillance in this phase ?

Third Phase

- What were the factors of surveillance in this phase ?
- What development took place in this phase ?
- When was this department declared as a surveillance centre ?

3. Objectives and policies of the surveillance centre :

- State the objectives
- State the policies

4. Function of the surveillance centre :

5. Surveillance components :

A. Surveillance of HIV infection - find out the testing methodology for :

- testing blood for transfusion safety
- detection of HIV positive cases
- sentinal surveillance
- number of institutions involved in HIV surveillance.

B. Surveillance of AIDS cases :

- What is meant by surveillance of AIDS cases ?
- Which are the institutions which will / are participating in identification of AIDS cases ?
- What are referral institutions ?

- What is the future plan for referral institutions ?

6. Analyse the referral and reporting system of this centre for HIV / AIDS cases.

7. Surveillance centre's role in prevention and control of HIV / AIDS locally and nationally.

8. Local epidemiological picture of HIV / AIDS
   - High-risk group screened
   - HIV positive cases, annual and cumulative detected and estimated.
   - Projected HIV-infected persons.
   - AIDS case
   - reported and estimated.

Please Note : -

- Be alert. Keep your eyes and ears open to make an accurate observation
- Ask questions for any clarification or any information missed / not given.

Exhibit 1.18

List of HIV Reference Centres

1. National Institute of Communicable Diseases, Delhi.
2. All India Institute of Medical Sciences, New Delhi.
3. Indian Institute of Immunohematology, Bombay.
4. National Institute of Cholera and Enteric Diseases, Calcutta.
5. School of Tropical Medicines, Calcutta.
6. Madras Medical College, Madras.
7. National Institute of Virology, Pune.
8. Regional Medical College, Imphal.
9. Christian Medical College, Vellore.

The reference centres should be entrusted with the responsibility of carrying out confirmatory test. They should also be made responsible for diagnosis, quality control of HIV kits, guidelines for HIV testing, training in HIV testing and any other activity which may be necessary for standardization of HIV testing.

MODULE 2

HIV INFECTION AND DISEASE

Section - I : SIM

I. OVERVIEW

In preparation for this module, the learner will need :

- to have completed Module 1.
- an understanding of the basic concepts of the immune system and the nervous system.
- to have knowledge of sexually-transmitted diseases, malnutrition, cancer, tuberculosis, leprosy etc. which either facilitate development of HIV infection or occur as opportunistic infections.

On completion of this module, the learner will have a broad understanding of the clinical consequences of HIV infection and will be able to discuss the positive role of serological testing for HIV infection.

II. SPECIFIC OBJECTIVES

On completion of this module, the learner will be able to:

- explain how HIV affects the immune system;
- present the national definition of AIDS;
- describe the clinical course and staging of HIV disease.
- identify appropriate situations in which HIV antibody testing is beneficial.

III. INTRODUCTION

HIV disease is one of the greatest mysteries of the world. It takes several months to several years to develop the symptomatic HIV disease. There are examples of HIV positive people being asymptomatic and they remain carriers during this period. However, when the virus gets to work on the body's immune system, it destroys white blood cells (CD_4). As a result, CD_4 count drops low from 1200 cells per 1/1000th of a ml of blood to 500. The danger of contracting deadly diseases, associated with HIV infection increases drastically if this count falls below 200. You will be learning in detail about HIV-associated diseases in Module - 7. Content of this module mainly will focus on the HIV infection and its disease development process and differential diagnosis.

IV. DESCRIPTION OF CONTENT

This module will cover the following contents :

1. **Basic Concepts : HIV Infection.**
2. **Natural History of HIV Disease.**
3. **Definition and Case Diagnosis.**
4. **Serological Testing for HIV infection.**
5. **Differential diagnosis in HIV disease.**

1. Basic Concepts : HIV Infection

1.1 Definition

HIV is defined as a Human Immuno Deficiency Virus (retro-virus), the causative organism of HIV disease. The virus specifically infects and destroys the T-helper cells, which is a class of lymphocytes that plays a central role in organising the body's immune defence.

1.2 The Immune System

You have learnt in anatomy and physiology that the immune system of the body is a biochemical complex which protects the body against different pathogens invading the body. It is comprised of lymphoid related organs such as the bone marrow, thymus, spleen, tonsils, adenoids, appendix, peyer's patches, lymphnodes, blood and lymphatic vessels. When the disease producing micro-organisms enter the body through the skin or the mucous membranes, the immune system produces antibodies to neutralize the micro-organisms and activates special blood cells which kill and remove these organisms or toxins from the body. In doing so the T-helper cells of the lymphocytes stimulate B-cells, which multiply and produce antibodies that attack the invading virus. When the immune system is not functioning as it should, the person is described as having an immuno-deficiency. There are other causes of immuno-deficiency either temporary or permanent, including :

- Primary immune dysfunction e.g. congenital defects in the immune system.
- Secondary immune dysfunction e.g. due to:
  - drugs, e.g. immunosuppresant therapy, anti-cancer drugs, etc.
  - cancers
  - malnutrition
  - irradiation (both accidental and therapeutic)
  - infections, especially viruses.

1.3 Pathogenesis

You have read in Module 1 that HIV infect and destroy special lymphocytes (T4 helper cells) in the immune system and monocytes that are essential for the co-ordination of the body's immune defence mechanisms. When HIV penetrates a cell it combines with the host cell's own genetic material and gets itself processed into HIV production which greatly helps the infection to grow and endanger life. When these white blood cells are destroyed, a process that may even take many years will lead to a slowly persistent, progressive and profound impairment of the immune system. This makes an individual susceptible to various life-threatening infections and malignancies. Infected persons are likely to be infectious for life.

HIV affects both the central and peripheral nervous system early in the course of infection, causing a variety of neurological and neuropsychiatric conditions, in children and adults. In addition, the impairment of the immune system leaves the nervous system vulnerable to opportunistic infections and cancers. You will learn more about these in Module 7.

1.4 Opportunistic Diseases

An opportunistic disease is one which normally would not be a problem because of the body's ability to control it by the immune system. But this can become a major problem when immuno-deficiency occurs. Consequently, opportunistic diseases only occur in individuals whose immune system is depressed.

There are many microbes which commonly inhabit us without causing any illness, but when the immune system is depressed, they can pose serious problems. One example of an organism that causes an opportunistic disease is candida, a fungus found in the mouths of most people but rarely causing 'thrush' unless the immune system is depressed and not able to control the growth of oral candida. Pneumocystis carinii (flora), which is found in the lungs of people without causing any illness, causes pneumonia in immuno-depressed persons. The tubercle bacillus (mycobacterium tuberculosis), also commonly found in the lungs, can reactivate when the immune system is depressed, causing pulmonary tuberculosis, a common opportunistic infection seen in HIV disease. Another common example in Africa is Cryptococcus neoformans (also known as Filobasidiella neoformans) which can cause meningitis in an immuno depressed person. Details of these are given in Module 7.

1.5 Check Your Progress - 1

(i) Define immuno-deficiency

(ii) List four causes of immuno-deficiency

(iii) Read the following statements carefully and encircle (O) these statements either as True or False :

a	HIV infects red blood cells	T	F
b	A person on anticancer drugs is likely to undergo immunosuppression	T	F
c	HIV infection predisposes a person to many opportunistic infections	T	F
d	T4, the helper cells in our immune system, are special types of monocytes	T	F

2. Natural History of HIV Disease

2.1 Definition

HIV infection is caused by a virus known as Human Immuno Deficiency Virus (HIV) which invades the body's immune system and nervous system. The Acquired Immuno Deficiency Syndromes (AIDS) is the end stage of HIV infection. It is referred to as syndrome because the range of acquired immuno deficiency may include a variety of opportunistic infections, neurological disorders and several types of malignancies.

2.2 Stages of HIV Infection

HIV infection progresses through several stages. A person, once infected, remains infectious (able to transmit the virus to other people) for life. The stages of HIV infection are as follows :

(i) **Acute Seroconversion Illness** : Within three to eight weeks of infection, some (but not all) persons develop an acute illness lasting two to three weeks with symptoms such as fever, rash, joint and muscle pain, swollen lymph glands, diarrhoea and sore throat. The symptoms may be mild and eventually disappear completely. This self-limiting condition is known as an acute seroconversion illness. During this period the virus continues to reproduce itself inside the body and the person's immune system responds by developing antibodies to the virus. Within six to 12 weeks after infection, it is usually possible to detect HIV antibodies in the blood.

(ii) **Asymptomatic Infection** : During the asymptomatic period, the person is able to transmit the virus to others via sexual, parenteral and perinatal transmission and, as the virus continues to replicate, progressive damage to both the immune and nervous systems results over the time. If their blood is tested during this stage it will test positive for HIV

antibodies. Some individuals will have persistently enlarged lymph glands (persistent generalized lymphadenopathy or PGL) during the asymptomatic stage of the HIV disease.

(iii) **Early Symptomatic Illness** : Many individuals eventually show signs of ill-health due to HIV infection without developing AIDS. These constitutional symptoms and signs are sometimes referred to the AIDS related Complex (ARC). After a variable period of few months to years, or in continuation of the acute phase, the person may develop persistent lymph-adenopathy, persistent / prolonged or intermittent fever with rashes, unexplained splenomegaly, painful repeated oropharyngeal ulcers not responding to any measure, prolonged cough, any type of neurological deficit or psychiatric symptoms, periods of weight loss and night sweats, persistent severe exhaustion, altered mental function, diarrhoea, tuberculosis, etc. The person recovers from the illness but only after a prolonged period of experiencing severe illness.

(iv) **Late Symptomatic Illness i.e. AIDS / HIV Disease** : Eventually, individuals will have episodes of AIDS specific opportunistic diseases, such as pneumocystis carinii pneumonia, encephalitis caused by toxoplasma gondii, severe and chronic diarrhoea caused by crypto-sporidia and microsporidia. Pulmonary tuberculosis is increasingly being recognised as one of the most common opportunistic diseases associated with HIV infection, especially in the developing world. Opportunistic cancers, such as Kaposi's sarcoma and undifferentiated B-cell lymphomas may also be seen. In addition there will be a significant weight loss and both neurological and neuropsychiatric syndromes may be present. Ultimately, patients in this stage will enter a terminal phase and die (See Module 10). See Figure 2.1 depicting the Natural History of HIV represented by four stages described above.

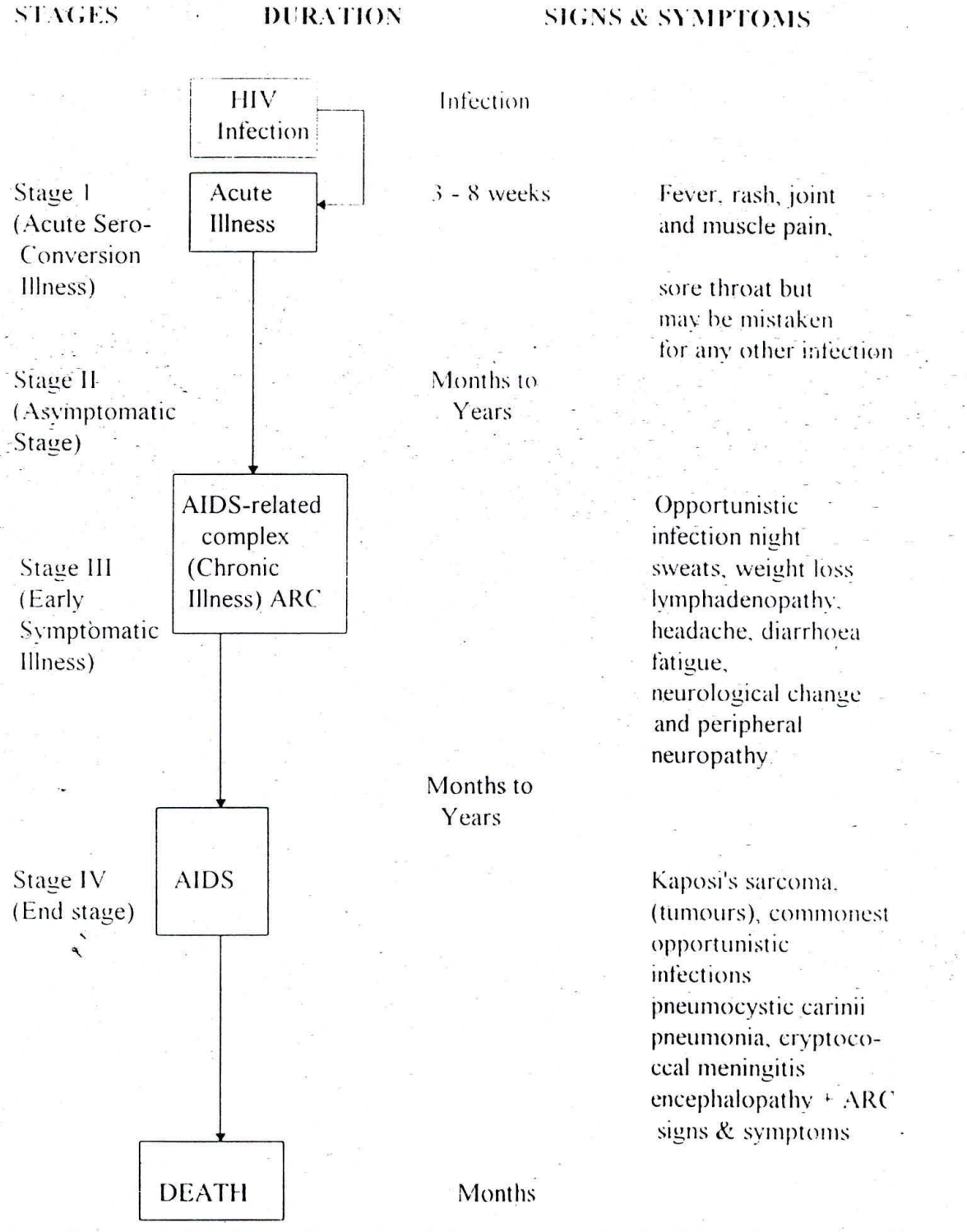


Figure 2.1 : Natural History of Human Immuno Deficiency Virus

Source Modified from Teaching Modules, WHO, Regional Office of Western Pacific, 1990, p.20

2.3 Check Your Progress - 2

(i) Why is HIV disease called as a syndrome ?

Example-1

Mr. 'Deb', a teacher in a well-known Delhi school, discovered that he was an HIV disease carrier only in the last stages when he was admitted to AIIMS with a debilitating attack of fungal meningitis and he refused to respond to treatment. A doctor tested his blood and found it to be positive for HIV. Later, he admitted to have a sexually promiscuous behaviour in Zambia seven years ago. He had an 11 month old daughter and wife, both of whom were found to be HIV positive. Mr. 'Deb' died.

(ii) Read this case carefully and answer the following questions :

a. How long did it take for Deb to develop the HIV disease ?

b. In which stage of the natural history of HIV disease will you place Mr. Deb when admitted ?

c. What opportunistic disease did he develop ?

3. Definition and Case Diagnosis

According to the Centre for Disease Control (CDC) in USA, a diagnosis of AIDS is made when a person has a positive HIV antibody test, has one of a list of specified diseases (opportunistic infections and selected cancers).

3.1 Definition

HIV disease in an adult is defined by the existence of at least two of the following major signs associated with at least one minor sign, in the absence of known causes of immunosuppression, such as cancer or severe malnutrition or other recognised causes.

3.2 Signs and Symptoms

(i) Major Signs : (WHO, 1991)

- Loss of weight - 10 percent of body weight
- Chronic diarrhoea - one month

- Prolonged fever - one month

(ii) Minor Signs

- Persistent cough for one month
- Generalised pruritic dermatitis
- Recurrent herpes zoster
- Oropharyngeal candidiasis
- Chronic progressive and disseminated herpes (simplex) infection
- Generalised lymphadenopathy

The presence of generalized Kaposi's sarcoma or cryptococcal meningitis is sufficient in itself for the diagnosis of AIDS. Refer Figure 2.1.

3.3 Check Your Progress - 3

Mr. Shyam has been admitted to hospital with tuberculosis and he has been told that he has HIV disease.

(i) List three facts known about Mr. Shyam from his diagnosis of HIV disease.

(ii) Give information not known about Mr. Shyam from the above statement.

4. HIV Testing and Screening

Serological testing for HIV infection is a laboratory procedure which is carried out to determine the presence of specific HIV antibodies produced by the body against the virus. A person who has antibodies to HIV is said to be HIV positive or seropositive. A seropositive person is not only actively infected, but is also a carrier of the virus and can infect others.

Out of 16,13,870 individuals screened in India from 1985 to 1993, 12,519 were found to be seropositive. Their descriptions are given in Table 2.1.

Table 2.1 : Details of Seropositive Individuals in India
(Period of Report : October, 1985 to July 1993)

Category	Seropositive	%age of Total
Heterosexually active	5,380	42.97
Homosexuals	41	0.33
Blood Donors	1,862	14.87
Dialysis Patients	114	0.91
Antenatal Mothers	60	0.48
Recipient of Blood/ blood products	267	2.13
Relatives of HIV patients	117	0.93
Suspected ARC / AIDS	556	4.44
IV Drug Users	1,726	13.79
Others	2,396	19.15
TOTAL	**12,519**	**100.00**

Source : Adopted from Sunday Magazine, Nov.30, 1993, page 30.

4.1 HIV Testing

HIV testing determines the infection or disease status of an individual. Testing programmes may be voluntary or mandatory. The emphasis here is on a voluntary programme.

(i) Purpose of Voluntary Testing :

- To confirm HIV diagnosis (As in case of Mr. Deb, Example 1)
- Promote a sustained behaviour change along with information, counselling and other support services.

- Encourage those individuals who are concerned and consider themselves at risk of being HIV positive.

(ii) Types of Tests : A serological test to detect antibodies against HIV became available for general use in 1985. The most frequently used method is Elisa (Enzyme- Linked Immuno Sorbent Assay), but other types of antibody tests such as those based on the agglutination of particles and "dot" ELISAs are now being developed. These tests are rapid and simple to perform and do not require sophisticated equipment. These can be classified under three main headings

a. *Screening tests for HIV antibodies*

- ELISA (Enzyme Linked Immuno Sorbent Assay) which is further classified as Antiglobulin ELISA, Competitive ELISA and Capture ELISA. Antiglobulin is the one which is commonly used.
- Agglutination tests
- Rapid tests

b. *Confirmatory tests*

- Western Blot Test : This detects and identifies antibodies to specific structural components of HIV
- Immunoflourescence
- Radio immune precipitation test

c. *Viral Antigen Detection test*

- HIV Culture
- Electronic microscopy
- Polymerace chain reaction

Although the above mentioned tests are highly sensitive, they are not completely free from false results and a reactive sample in ELISA will require further confirmation by a supplementary test such as Western Blot Test (Immuno Blot).

ELISA test is a preliminary test for HIV positive. If the blood sample is found positive, it is sent for the Western Blot Test which confirms the presence of infection. Generally, if the ELISA test, done twice, shows HIV positive, then there is no real need for the Western Blot Test.

It is also possible to detect directly the presence of HIV antigens (virus of viral proteins) in semen. Kits for this are commercially available.

5. Differential Diagnosis in HIV Disease

Often nurses are required to manage certain aspects of medical treatment in community setting. Knowledge of differential diagnosis is essential for arriving at a nursing diagnosis, assisting and interpreting diagnostic results and implementing care effectively. In this, the main focus is on the relevant components of history taking, assessment of the clinical manifestation and the common diagnostic measures.

The symptoms of HIV disease and the associated opportunistic diseases are often life threatening. There is no cure for HIV infection but many of the opportunistic diseases can be treated. Nurses in a clinic or community health care setting must be able to recognize the signs and symptoms in order to refer the person to a medical centre for possible diagnosis and treatment of these diseases.

In determining whether a person has HIV infection, the following three factors must be considered :

5.1 History Taking

History taking is essential to determine possible risk behaviours or factors. This will be determined by knowledge of how HIV is transmitted in the locality. Below is a list of possible risk factors and behaviours :

- High-risk exposure to a known HIV-infected person (sexual intercourse, sharing of skin-piercing equipment)
- Unsafe sexual behaviour, multi-sex partners;
- Male homosexual or bisexual activities;
- Sexual partners of a high risk person;
- Sharing needles during drug injection use or other exposures to potentially unsterilized needles.

5.2 Assessment of the Clinical Signs of the Disease

The nurse will look for the following clinical signs in her client :

- Duration of sickness
- General : weight loss, fever
- Neurological examination : peripheral neuropathy, cognitive disorders.
- Skin changes : herpes zoster, herpes simplex, folliculitis tinca, Kaposi's sarcoma, prurigo, seborrhoeic severe psoriasis.
- Oral cavity : thrush, hairy leukoplakia, gingivitis, Kaposi's sarcoma, lymphoma.
- Lymph nodes : focal or diffuse enlargement.
- Lungs : pneumonia, pleural effusion
- Abdominal examination : hepatosplenomegaly

- Genitalia : cancer / ulcers
- Anus : ulcers, warts.

5.3 Diagnostic Measures

Regular laboratory testing should be limited where resources are scarce. Where available, some of the investigations to be performed include :

5.4 Check Your Progress - 5

Example : A woman has a chronic cough, shortness of breath on walking, and has had fever in the afternoon for the last six months. She eats poorly and is always tired. She has had several sexual partners in the past two years.

(i) What is your diagnosis and why ?

V. ANSWERS TO CHECK YOUR PROGRESS

1.5 (i) Immuno deficiency is a condition which occurs when the immune system does not function as it should. The person is described as having immuno-deficiency.

1.5(ii) a. Cancer or congenital defects
b. Irradiation - accidental or therapeutic
c. Immunosuppressive therapy
d. HIV disease / infection.

1.5(iii) a. F
b. T
c. T
d. F

2.3(i) HIV disease (AIDS) is referred to as syndrome because the range of acquired immuno-deficiency may include a number of opportunistic infections, neurological impairment and malignancies.

2.3(ii) a. More than one year, probably 7 years.
b. Stage four.
c. Fungal meningitis.

3.3(i) Known about Mr. Shyam :
- He has an opportunistic disease.
- His white blood cells are infected with HIV.
- He is infected for life.
- He is a carrier and capable for passing infection to others through sexual inter-course / infected blood.

3.3(ii) Not known about Mr. Shyam are :
- Other opportunistic disease he is suffering from
- Symptoms he is having
- How and when did he become infected.

4.5(i) Serological test is carried out to determine the presence of specific HIV antibodies produced by the body against the virus.

4.5(ii) a. When a test result shows the presence of HIV antibodies in the blood but in reality they are not.

b. The test shows that the blood does not have HIV antibodies when in reality it does.

5.4(i) The woman could be suffering from tuberculosis because she gives the history of fever for six months, chronic cough and shortness of breath. She also tires easily and eats poorly. She has engaged in sexual risk behaviour and is at risk for HIV infection. Thus she is prone to opportunistic infections like tuberculosis. She may be suffering from HIV disease. The symptoms given in example 3 are typical clinical signs of this disease.

Exhibit 2.1
OPPORTUNISTIC INFECTION AND HEALTH

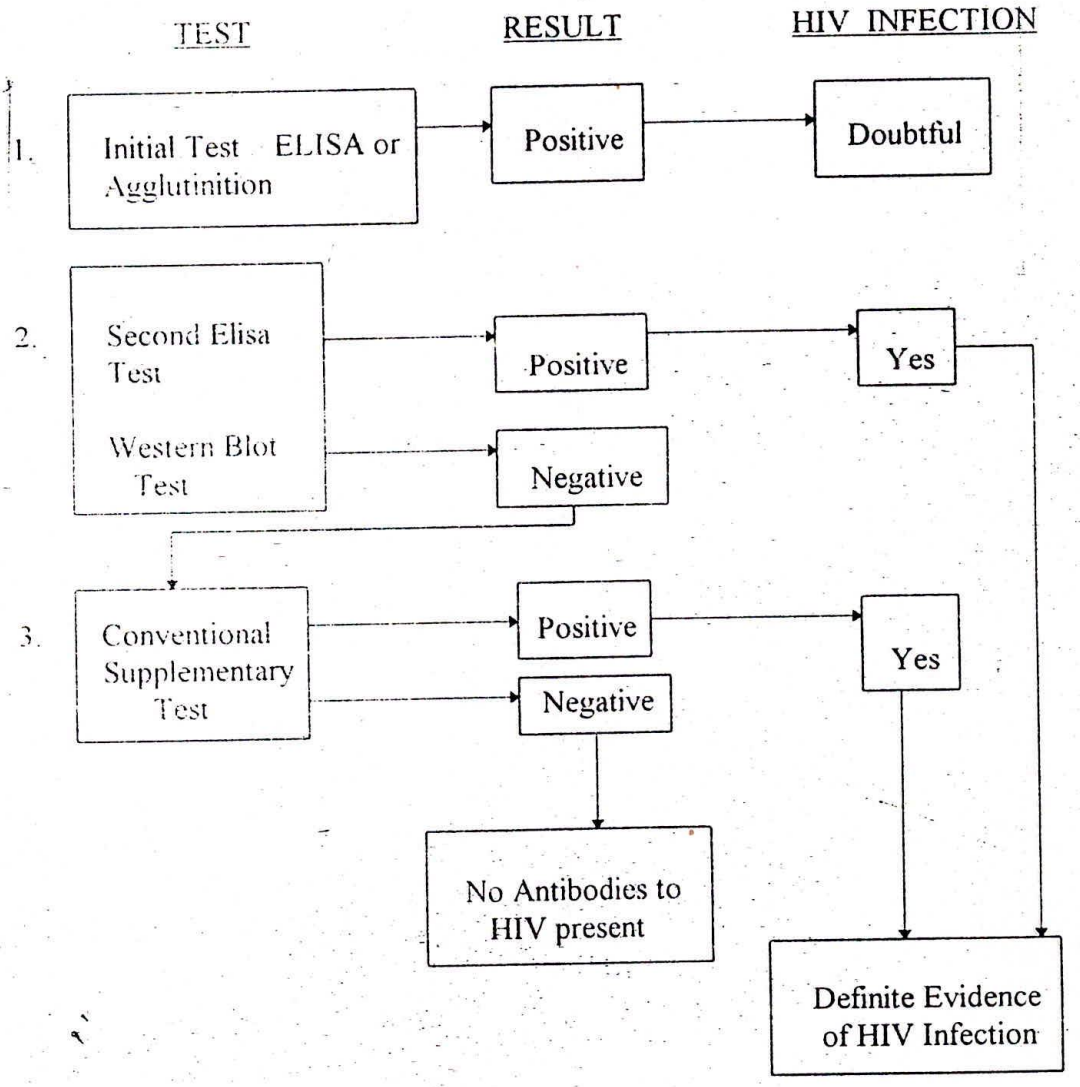
Example-1 : Mr. Deb, a teacher in a well-known Delhi School, discovered that he was an HIV disease carrier only in the last stage when he was admitted to AIIMS with a debilitating attack of fungal meningitis and he refused to respond to treatment, Doctors tested his blood and found it to be positive for HIV. Later he admitted to have a sexually promiscuous behaviour in Zambia, seven years ago. He had an 11 month old daughter and wife. Both were found to be HIV positive. Mr. Deb died. (Stage IV)

Example-2 : A woman has had a progressive weight loss for six months. She is weak and has to sit down after walking to the clinic. She has a poor appetite and has had diarrhoea for the past five months. She comes from a village in which there has been a history of dysentery. She has had no fever, her lymph nodes are normal and she has no cough. (Stage III)

Example-3 : Rama has been diagnosed as a case of AIDS. On testing it was observed that Shiela, his wife, and Meenu, his daughter, have seropositive blood. They do not show any sign of weight loss or diarrhoea but have had an attack of sore throat and fever in recent weeks. The condition was treated by antibiotics and antipyretics. At present they have no symptoms of illness.
(Stage I & II)

Exhibit 2.2

LABORATORY EVIDENCE OF HIV INFECTION



5. **Use of razor in a Barber's shop, tattooing, using common needles for ear-piercing.**

II. SYMPTOMS

1. Major Symptoms

   (i) H/o Loss of weight
   - Duration
   - Percentage of body weight lost

   (ii) H/o Chronic diarrhoea
   - Duration

   (iii) H/o Prolonged fever

2. Minor Symptoms

   (i) H/o Persistent cough
   - Duration

   (ii) H/o Pruritus / skin rash

   (iii) H/o Herpes zoster / simplex
   - Frequency

   (iv) H/o Sore mouth/sore throat
   - Duration
   - Frequency

   (v) H/o Swollen glands

   (vi) H/o Muscle/joint pain/fatigue

Exhibit 2.4

SIGNS AND SYMPTOMS IN HIV INFECTION COMPARED WITH OTHER DISEASES

Directions : Signs and symptoms are listed in the left-hand column. Using diseases that are common to your locality in the top boxes, check those symptoms that are present in the other diseases.

HIV Infection	Malaria	Mal-nutrition	Intestinal parasites	Tuber-culosis
Anorexia				
Diarrhoea				
Unexplained weight loss				
Anaemia				
Fevers, night sweats				
Lymphadenopathy				
Fatigue				
Cough, shortness of breath				
Skin rash				
Oral thrush				
Purple/dark skin spots				
Headache				
Change in mental state				
Other motor or cognitive deficits related to neurological changes				

Other possible diagnosis which need to be considered in areas where they are endemic include: leishmaniasis, filariasis, trypanosomiasis, Burkitt's lymphoma, Kaposi's sarcoma, syphilis, herpes zoster.

MODULE 3

PREVENTION OF HIV TRANSMISSION IN HEALTH-CARE SETTINGS

SECTION - I : SIM

I. OVERVIEW

In order to acquire knowledge and develop skills for prevention of transmission of HIV infection in health-care settings, the learners are expected to have an understanding of epidemiological features of HIV transmission as well as dynamics of disease transmission. They should also have the basic knowledge of the principles of infection control.

On completion of this module (3), the learners will have an understanding of the methods of prevention and control of HIV transmission in health-care settings, by taking infection control precautions in general and in specific situations.

II. SPECIFIC OBJECTIVES

On completion of this module, the learner will be able to:

- identify possible ways of HIV transmission in health- care settings.
- describe universal infection control precautions and rationale for their use in clinical practice.
- discuss the universal control precautions in specific situations / conditions.
- apply problem-solving skills in the prevention of exposure to HIV transmission in the health-care setting.
- work out teaching strategies for preparing other staff to integrate universal infection control practices in their clinical settings.

III. INTRODUCTION

HIV and other blood-borne pathogens, such as hepatitis B virus (HBV) may be transmitted in health-care settings from patient to patient, from patient to health care worker or, in rare cases, from the health care worker to the patient.

The high level of anxiety and fear that exists among the nurses about caring for AIDS patients is due to their insufficient and inaccurate knowledge of the disease. Today, AIDS epidemic presents a challenge to the nurses to maintain a safe and healthy environment to protect themselves and their clients.

Since it is not practical or desirable to identify everyone who is infected with HIV, the strategy for preventing its transmission in a health-care setting is to view everyone as having the potential to be infected.

In this module we will review the basic principles of disease transmission and discuss in detail its prevention and control in health care settings by the application of universal infection control precautions in general and in specific situations.

IV. DESCRIPTION OF CONTENT

The description of content is organized under the following sub-titles :

1. **HIV transmission in health-care settings.**
2. **Universal infection control precaution for prevention of HIV transmission.**
3. **Health-care workers and HIV-related issues.**
4. **Changing practices in health-care settings.**

1. HIV Transmission in Health-Care Settings

HIV is a fragile organism. It is unable to survive outside the body except in purposefully contrived laboratory conditions. HIV is transmitted directly from person to person by sexual contacts, or from a mother to a newborn during child-birth. The virus is found in a variety of body fluids. The infected persons can transmit the virus to others at all times. However, studies of health-care workers and non-sexual household contacts of HIV-infected individuals suggest that exposure to the virus may not always result in infection. The risk of transmission is important to understand the basic underlying factors and routes of transmission of HIV infection.

1.1 Factors of Transmission

The transmission of infection depends on five factors including :

(i) An infected source / reservoir

(ii) An appropriate site / portal of exit

(iii) A vehicle or mechanism of spread of infection.

(iv) A susceptible host

(v) An appropriate site / portal of entry.

These factors are represented in the form of a model in Figure 3.1 "Chain of Infection". The model explains the links in the process of disease transmission. Each link represents an opportunity for the interruption of the process and helps in the prevention of transmission of infection.

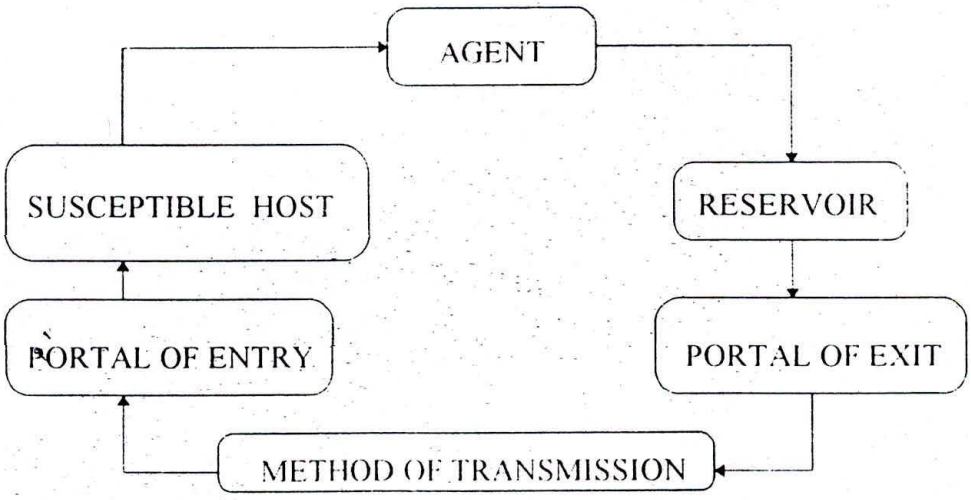


Figure 3.1 : Chain of Infection

The links of the chain are defined and described specifically for HIV and HBV in Figure 3.2. Figure 3.3 depicts the cycle of HIV transmission.

Link in Chain and Definitions	HIV and HBV
AGENT - Micro-organism which causes infection. Agents include bacteria, viruses, fungi and parasites.	The agent causing HIV infection is human immunodeficiency virus. The agent causing hepatitis B infection is hepatitis B virus (HBV)
RESERVOIR - Refers to the humans, animals, insects, soils, food, plants, air or water where micro-organisms live, multiply and can reproduce themselves to be transmitted to the susceptible host.	HIV and HBV live inside humans.
PORTAL OF EXIT - Routes from where the micro-organisms leave the reservoir.	HIV and HBV leave the human body via the penis (semen), vagina (vaginal secretions), breaks in skin (blood) and rarely, the breast (breast milk).
MODES OF TRANSMISSION - Refers to different ways the micro-organisms (infection) travel from reservoir to the susceptible host.	HIV and HBV are transmitted via : • sexual contact & semen donations. • blood contact : transfusion of contaminated blood and blood products. • skin-piercing practices e.g. injections, ear-piercing, tattooing etc. • perinatal : from an infected mother to her unborn infant or shortly after birth.
PORTAL OF ENTRY - Routes from where the micro-organisms enter the susceptible host, usually the same way as they leave the reservoir.	HIV and HBV enter the host via the penis, vagina, rectal lining, breaks in skin and rarely, blood transfusion and breast feeding.
SUSCEPTIBLE HOST - Persons or animals who are exposed to the risk and may become infected.	HIV and HBV infection can occur in any one who has sexual or blood contact with an infected person, and in infants of infected mothers.

Figure 3.2 : The Definition & Description of Links in Chain of HIV & HBV Infection

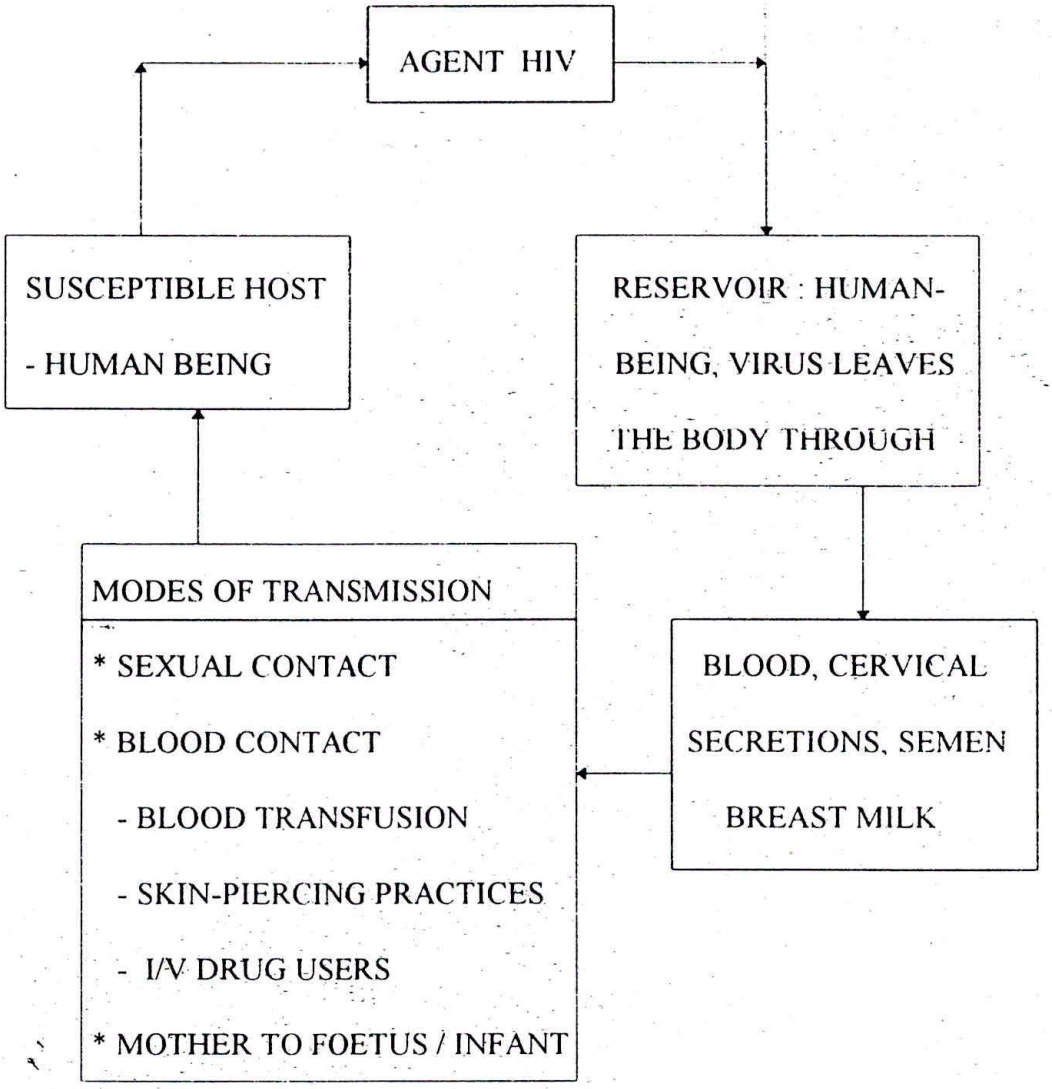


Figure 3.3 : The Cycle of HIV Transmission

1.2 The Risk of HIV Infection in A Health-Care Setting

(i) **Source of Infection** : You have learnt that HIV can be transmitted by exposure to infected blood or other body fluids. Body fluids which can transmit HIV include blood, semen, vaginal and cervical secretions, wound secretions, cerebro-spinal fluids, pleural fluids, synovial fluids, peritoneal fluids, pericardial and amniotic fluids.

Body excretions and secretions which are not associated with transmission of HIV in a health-care setting are faeces, urine, sputum, nasal secretions, tears, sweat and vomitus. But these are potential sources of nosocomial and community-acquired infections with other pathogens. Nurses must exercise caution in handling them.

(ii) **Extent of Risk** : There is a risk of HIV being transmitted in a health-care setting but this risk is minor. Studies done in the United States have indicated that the rate of infection after exposure to HIV infection from a needle-stick injury is 0.4 percent, whereas the risk of HBV after such exposure is 6 percent to 30 percent. Nearly all cases of HIV transmission in a health-care setting were due to negligence.

The risk of transmission following mucus membrane or skin exposure to HIV-infected blood, other body fluids or tissues is even lower. The risk in a health-care setting is low but it does exist. Blood-borne diseases, including hepatitis and HIV infection, can be transmitted in a health-care setting as described below.

(iii) **Possible Ways of Transmission of Infection** : The infection can be transmitted as described below :

a) *Patient to Health-Care Worker* : HIV transmission from a patient to a health-care worker can occur when the latter is exposed to the blood and other body fluids of an infected person. An example of this is parenteral contact, such as a needle-stick injury when the patient's blood is accidentally injected into the health-care worker's skin (the risk is less than 1%). It can also occur through muco-cutaneous contact, such as a splash of body fluids into the health care worker's eye or nose. Non-intact skin can be a point of HIV entry, e.g. a splash of blood on to open wounds or broken skin due to dermatitis, acne or chapped skin. But the chances are very low. These are preventable accidents.

(b) *Patient-to-Patient Transmission* : Patient-to- patient spread of HIV infection is usually by an indirect route. This transmission can occur through needles, syringes or other equipment which has been contaminated with blood and not properly sterilized or disinfected between use.

Patients can also be infected when they receive a transfusion with contaminated blood or blood products. HIV infection by blood or blood product transfusion can be greatly reduced by screening blood products for HIV and by requesting potential donors who practise high-risk behaviours not to give blood. Sometimes only specific cells from the blood stream are removed from donated blood and administered to the patient. One example is Factor VIII, a blood product which helps blood to clot so that haemophiliacs will not bleed to death. These blood products are heat treated in a way which inactivates HIV and HBV.

(c) *Health-Care Worker to Patient Transmission* : No cases of HIV transmission from health-care worker to a patient have been documented. Although this route of transmission is possible, the chances of it occurring are very small. Thus, HIV-infected health care workers are not considered a risk to patients during routine work activities. Transmission might occur if an HIV-infected health care worker mixes his blood with the blood of a patient. For example, an infected surgeon might nick his hand during surgery, causing some blood to enter the patient's wound. However, no such case has been reported.

Also refer exhibit 3.1 to summarize the risk to health care workers and patients in health-care settings.

You must remember that the principal risk of HIV infection is from sexual exposure to the virus and if appropriate infection control precautions are taken, the transmission of HIV or any other blood-borne infectious agent is unlikely to spread in a health-care setting.

AIDS is not a casually contracted disease. If it was, it would have been a disease of general public from the onset of case reporting. Those activities that are common to the general public are not the source of the viral transmission. Coughing, sneezing, breathing the same air, touching door knobs, swimming in public pools, using the same bathroom, eating in the same household or restaurant or being bitten by mosquitoes are no ways in which HIV can be transmitted. Neither are hugging, touching, feeding, working with or using items used by an AIDS patient. There is absolutely no evidence to suggest a casual transmission in any patient diagnosed as AIDS positive.

(iv) **HIV Testing** : It is sometimes suggested that all patients and health-care providers / nurses be tested for HIV antibody as a means of protection for nurses. However, routine and / or mandatory testing

of either health-care workers or patients for HIV antibody is not an effective strategy for controlling HIV transmission in a health-care setting and is not recommended by the World Health Organisation, as it is impossible to identify all infected individuals. For example, a person may have been infected and may not yet have developed antibodies. Consequently, this person's test result will be a false negative (see Module 2). Therefore, even if everyone is tested for HIV antibodies, it is not possible to identify everyone who is infected. In addition, it is time-consuming and costly and may lead to a false sense of security.

1.3 Check Your Progress - 1

(i) List the body fluids :
   a. which can transmit HIV infection.
   b. which cannot transmit HIV infection.

(ii) List the possible ways the health worker can get HIV infection in a health-care setting.

2. Universal Infection Control Precaution for Preventing HIV Transmission in A Health-Care Setting

2.1 Importance of Infection Control Precaution :

Infection control measures are important for prevention and control of cross-infection in the health-care settings. This can be achieved only by having appropriate infection control guidelines. Every hospital has an infection control committee which is responsible for developing and monitoring of these guidelines to ensure safety of workers, patients and visitors.

You have learnt that HIV is one of the blood-borne diseases and is found in various body fluids of the people infected with the virus. However, only blood, semen and vaginal / cervical secretions (and rarely breast milk) have been implicated in HIV transmission. Nevertheless, as all body fluids (including pus and other infected discharges and infected body cavity fluids, such as pleural fluid, cerebropsinal fluid) may contain blood or white blood cells, it is essential that all body fluids should be handled as though they were infectious.

2.2 Universal Precautions :

(i) **Definition** : Infection control precautions are referred to as universal precautions when all patients' body fluids are treated as infectious, since it is not known who is infected with HIV. Consequently, the

precautions devised to prevent HIV transmission in health-care settings apply to all patients, all the time, in all clinical settings.

(ii) **Purpose** : The purpose of universal precautions is to prevent transmission of infection from blood-borne pathogens.

(iii) **Rationale** : The rationale for applying universal precautions is that health-care workers may not know who is and who is not infected with HIV. The actual number of asymptomatic, HIV-infected persons is not known, it is much larger than the number of reported cases of AIDS (recall Module 1). A Patient's history taking and examination may not help identify majority of the clients / patients with HIV / other blood-borne pathogens. HIV testing is not practicable for all (refer content 1.2 (iv) in this SIM and also recall Module 2). However, even though there are no signs infection can still be transmitted. It is, therefore, essential to implement a programme of infection control precautions that is used consistently with all patients in health-care settings.

2.3 Universal HIV Infection Control Precautions

You have learnt that transmission of HIV infection is possible from a patient to a health worker through injury with needles or any other sharp instruments which have been contaminated with infected blood / body fluids and exposure of mucus membranes to blood. The infection can also be transmitted from patient to patient through the re-use of improperly sterilized needles and instruments for invasive procedures. Patients may also get infection through infected blood transfusion, skin graft, organ transplant, donated semen, and contact with blood or body fluids of HIV-infected health care workers. Accordingly, the infection control precautions can be in relation to:

(i) blood and other body fluids
(ii) injections and skin-piercing and invasive procedures
(iii) cleaning, sterilization and disinfection of equipment and supplies
(iv) special situations / settings.

Also refer exhibit 3.2 and 3.3 for general infection control guidelines for HIV infection.

(i) Precaution in Relation to Blood and other Body Fluids

(Refer exhibit 3.4)

a) *Hand washing* : Hands and other parts of the body that have come in contact with blood and other body fluids must be washed thoroughly with soap and water. Hands should be washed even if gloves were worn immediately after their removal. Hands should also be washed before and after providing care to the patient.

b) *Use of Gloves and other Protective Devices* : The use of gloves and other protective garments (gowns, masks, goggles) is recommended when direct contact with blood and / or other body fluids or a splattering of body fluids is expected, such as during bronchoscopy and certain surgical and delivery room procedures. Ordinarily, the use of a full protective covering is not warranted when providing routine care to the AIDS patient. While HIV has been isolated from saliva and tears, these secretions have not been implicated as a means of viral transmission.

When gloves are not available other methods should be used to prevent direct contact with blood e.g. forceps, towel or gauze may be used to hold the contaminated needle and syringe.

If gloves are not disposable, they should be changed, washed, disinfected or sterilized after contact with each patient. When cleaning sharp instruments, extra heavy duty gloves are recommended.

c) *Prevention of Needle-stick and other injuries* : Prevent injuries with sharp equipment and instruments such as needles, scalpels, blades and razors. Health-care workers can prevent injury by taking time with procedures involving sharp instruments. Remember that the more a needle or intravenous line is manipulated, the greater is the risk of needle stick injury. Refer exhibit 3.2 for detailed precautions.

d) *Mouth-to-Mouth Resuscitation* : Although HIV has been recovered from saliva, there is no conclusive evidence that saliva is involved in HIV transmission. Nevertheless, to reduce occupational exposure to HIV, mouth-to-mouth suctionshould be replaced by mechanical or electrical suction devices. Mouth pieces, airways, resuscitation bags or other ventilation devices should be available and used. Resuscitation equipment should be used only once and discarded or else be thoroughly cleaned and disinfected.

e) *Handling of Laboratory Specimens* : Always wear gloves when handling and processing specimen of blood and other body fluids (e.g. in taking and collecting blood). All open wounds on hands and arms should be covered with a water proof dressing. Hands should always be washed with soap and water immediately after exposure to specimens.

Specimens should be placed in a container with a secure lid to prevent leakage during transport. Care should be taken to avoid contamination of outside of the container.

Working surface should be covered with a non- penetrative material which is easy to clean e.g. plastic film. Any spillage of blood or other body fluids should be decontaminated with an appropriate disinfectant such as sodium hypochlorite 0.5% before cleaning.

Specimens should be carefully disposed of by pouring into flush drain. If this is not possible, the specimens should be decontaminated with a disinfectant such as 0.5% sodium hypochlorite before disposal.

f) *Spills of blood and other body fluids* : For visible spills of blood and other body fluids, the area should be flooded with an appropriate disinfectant such as sodium hypochlorite, 0.1% to 0.5%. The mixed body fluids and disinfectant should be removed, and the surface wiped with a disinfectant. Refer exhibit 3.2 for the alternative method.

(ii) **Precautions in Relation to Injection and Skin Piercing and Invasive Procedures**

a) *Injections and other Procedures* : Injections and other procedures in which the skin or mucous membranes are pierced for preventive, diagnostic, cosmetic or therapeutic purposes play an important role in both traditional and modern care.

It is important to restrict injections and skin-piercing procedures to situations in which the indications are clearly and appropriately defined. In many situations, drugs are given by injection when they would be equally effective when given orally. Reducing the number of unnecessary injections is, therefore, important in protecting both the patient and the health worker.

- To avoid person to person transmission of HIV, single-use (disposable) instruments should be used once only. To prevent reuse, they should then be destroyed under careful supervision. Multiple use (reusable) instruments should always be washed and appropriately sterilized (or disinfected) according to existing guidelines. Chemical disinfection must not be used for needles and syringes. If these procedures are always strictly observed, the risk of transmission of HIV through injections and other skin piercing procedures can be eliminated.

b) *Invasive Procedure* : An invasive procedure may be defined as a surgical entry into tissues, cavities or organs, whether for an

operation or for the repair of injury. Strict blood and body fluid precautions should be observed In addition :

- Gloves and a surgical mask should be worn for all invasive procedures.
- Protective glasses or face shield should be worn for procedures which may result in the generation of droplets or the splashing of blood or other body fluids.
- A gown or apron should be worn if blood splashes are likely.
- Nurses who perform or assist in vaginal or caesarean deliveries should wear gloves and a gown or apron when handling the placenta, when cleaning the blood from the infant's skin, and until post-delivery care of the umbilical cord is complete.
- If a glove is torn or a needle stick or other injury occurs, the glove should be changed and the hands washed carefully as soon as the safety of the patient permits. The needle or instrument involved in the accident should be removed from the sterile field.

(iii) Cleaning, Sterilization and Disinfection : HIV is transmitted via needles, syringes and other invasive equipment contaminated with blood, semen, vaginal secretions or fluids containing the blood of an infected person. Such equipment includes sharp instruments used by traditional healers and birth attendants, and the instruments used in tribal ceremonies and tattooing. To protect patients from infection, these items should be cleaned and sterilized or appropriately disinfected between each use.

a) *Cleaning* : Cleaning is the physical removal of organic material or soil from objects. Cleaning is done with water and detergents. Usually, cleaning does not kill or inactivate micro-organisms.

Cleaning should be done to remove dirt, dust and debris from items which will later be sterilized or disinfected. If microbes are protected by dirt or protein aqueous material such as blood, chemical disinfectants and moist heat will not inactivate them. Environmental surfaces such as floors, walls, tables and counter tops should also be cleaned.

Always clean and rinse items before sterilizing or disinfecting them. If items are grossly contaminated after use, decontaminate by soaking in a disinfectant, clean with soap and water, then sterilize or disinfect again before use.

b) *Sterilization* : Sterilization is the complete destruction of all micro-organisms and is carried out by steam under pressure, dry heat, and gas or liquid chemicals. Sterilize objects which enter the blood stream (needles, syringes, catheters and surgical instruments) or other sterile areas of the body.

All forms of sterilization will inactivate HIV and HBV.
The methods include :

- Steam under pressure	- Autoclave or pressure cook at a pressure of 15 pounds for 20 minutes at 121 deg. centigrade.
- Dry heat	- 170 centigrade (338 deg Fahrenheit) for 2 hours.
- Chemical	- Use 2% glutaraldehyde for at least 10 hrs.; or 3% hydrogen peroxide for at least 2 1/2 hrs.

c) *Disinfection* : Disinfection kills or inhibits most, but not all, micro-organisms through the use of chemical germicides or boiling. Disinfect objects and equipment which touch mucous membranes (respiratory equipment), items which cannot be sterilized (laproscopes), and items which must be decontaminated but do not need to be sterile (bedpans). In adverse conditions when sterilization of equipment is not available, disinfection may be used. Boiling is a form of high-level disinfection.

The following methods of disinfection are known to inhibit HIV. Be sure that all parts of the equipment are separated and completely immersed in the water or chemical disinfectant. The liquid must touch all surfaces of the object in order to be effective.

- Boiling is an effective way to disinfect instruments and equipment (for example, needles and syringes) when sterilization is not possible. To disinfect, boil in water for 20 minutes.

- Chemical disinfection. Do not use chemical disinfection for needles and syringes used for vaccinations. Chemical disinfection for other invasive equipment should only be used as a last resort.

Chlorine compounds (bleach). HIV is rapidly killed by liquid chlorine (household bleach), making it ideal for de-contaminating large surfaces. The following are guidelines for chlorine use :

* For small spills or clean equipment :

Dilution : liquid - 1 part in 10 parts of water
powder - 1.5 gms. per litre of water

* For large spills or to clean grossly contaminated equipment :

Dilution : liquid - 1 part in 10 parts of water
powder - 7.0 gms. per litre of water

* Chlorine compounds are very unstable. Prepare solutions daily or store in a covered brown bottle for upto 30 days. The bottle must be tightly capped between use. Avoid direct sunlight.

Other disinfectants which are active against HIV include 70% ethyl or isopropyl alcohol, 2% glutaraldehyde, 3% phenol (or lysol), 2.5% povidone iodine, 4% formaldehyde, and 3% to 6% hydrogen peroxide.

A summary of the definition and methods of cleaning, sterilization and disinfection is given in Figure 3.4.

d) *Storage* : All items and sterile packs must be stored in a clean, dry place, preferably under cover to protect from dust. Disassembled items should not be reassembled until ready for use. Sterile items should be separated from clean or disinfected items.

	Definition	**Method**
Cleaning	Physical removal of organic material or soil.	- Water and detergent
Sterilization	Complete destruction of all micro-organisms and spores	- Steam under pressure - Autoclave or pressure at 15 lb.for 20 minutes. - Dry heat, Gas - Liquid chemical

Disinfection	Kills or inhibits most, but not all, micro-organisms	- Chemical germicide (alcohol, bleach). Soak clean instruments for 20 min. then for all disinfectants except alcohol, rinse in boiled or sterilewater. - Boiling in water for 20 mt.

Figure 3.4 : Cleaning, Sterilization and Disinfection

(iv) Special Situations / Settings :

a) *Laundry* : Soiled linen should be bagged where used and not sorted or rinsed in patient-care areas. Linen soiled with blood or other body fluids should be traced and transported in leakproof bags. If leakproof bags are not available, the linen should be folded with the soiled parts inside. When handling soiled linen, gloves and a protective apron should be worn.

Linen should be washed with a detergent and water at a temperature of at least 71 deg. centigrade (160 Fahrenheit) for 25 minutes. If low - temperature laundry cycles are used (less than 70 centigrade = 158 fahrenheit), chemicals suitable for low-temperature washing should be used at the appropriate concentration as recommended by the manufacturer.

b) *Post-mortem procedures last offices care of the body* : When nurses are performing post-mortem procedures / last offices or giving last care to the body, they should follow the precautions outlined above and use the standard guidelines for the health-care setting involved. Refer Module 10 for more details.

c) *Disposal of infected wastes housekeeping* : Needles and other sharp instruments or materials should be placed in a puncture-proof container immediately after use and should preferably be incinerated.

Liquid wastes such as bulk blood, suction fluids, excretions and secretions should be carefully poured down a drain connected to an adequately treated sewer system, or disposed of in a pit latrine.

Solid, wastes, such as dressings and laboratory and pathology wastes, should be considered as infectious and treated by

incineration, burning or autoclaving. Other solid wastes, such as excreta, may be disposed of in a hygienically-controlled sanitary landfill or pit latrine.

Solid waste materials in the home (dressings, diapers, menstrual pads) should be considered infectious. They should preferably be burned. If this is not possible, they should be deposited in a domestic or public hygienically-controlled sanitary landfill or pit latrine.

Environmental surfaces such as walls, floors and other surfaces are not associated with infection transmission and, therefore, do not require extraordinary disinfection or sterilization. Routine cleaning and removal of soil on a regular basis, when spills or soiling occurs or when the patient is discharged, is recommended. Cleaning of walls, curtains, and blinds is recommended when they are visibly soiled. Environmental spills should be flooded with a liquid germicide before cleaning, then decontaminated with fresh germicide. Gloves must be worn during such cleaning procedures.

d) *Food Service* : Special dietary infection control precautions are not necessary in HIV infection and are no longer recommended for any communicable disease. Studies demonstrate the probability of transmission of disease from a dietary tray to a worker to be one in 5000. The key measure in insuring worker protection is hand washing after handling used trays.

e) *Ophthalmology* : While the AIDS virus has been found in tears, there is no evidence to suggest that this is an effective means of transmitting the virus. However, disinfecting instruments having direct contact with the eye, including contact lenses used for fitting trials, will prevent the transmission of other organisms that can infect the eye (see exhibit 3.5). The tolerance of the equipment to the disinfecting solution as well as the safety of any product that may make contact with the eye must be considered. For example, tonometers may be damaged by sodium hypochlorite but not by alcohol.

f) *Dialysis* : Renal patients who have AIDS or an HIV antibody positive may be dialysed in the hospital, using conventional infection control precautions which are adequate to prevent HIV transmission (refer exhibit 3.5 for specific details).

g) *Maternal Child Care* : It may be possible in some instances to determine which women are most at risk for HIV infection (intravenous drug users or those who have received transfusions in the last five years or prior to blood bank screening programmes)

However, there is an ever-increasing number of women who are at risk because of their sexual partners. These women may or may not know that they are at risk. In communities where there are already large numbers of AIDS cases, it may particularly be appropriate to utilize the universal infection control precautions that protect the nurse from the risk of exposure to an anticipated amount of blood and body fluid rather than relying on an AIDS diagnosis or a history suggesting risk for HIV infection. Refer exhibit 3.6 for guidelines on AIDS control in the perinatal area.

Products of conception (placenta and amniotic membranes) should not be released for commercial use. The infectious waste and specimen handling systems already in place in the institution are sufficient for the disposal of delivery room wastes and specimens. Reusable items such as specula, diaphragm fitting rings etc. require terminal disinfection. Environmental cleaning and disinfection can be done by the same methods previously approved for those settings. You will learn in detail in Module 8.

h) *Psychiatric Unit* : Patients with HIV infection admitted for purely psychiatric reasons without loss of control of body functions may be housed safely with other physically well patients. These patients may share the same bathroom facilities, eat in the same dining room, and even prepare food as part of patient activity plans. A guiding rule of thumb for any patient who prepares food for others is that they must adhere to basic hygiene measures as prescribed by the unit (handwashing before beginning to cook, not tasting out of the spoon used to stir the pot etc.).

Studies of non-sexual household contacts of people with AIDS have shown that the usual household activities, including food preparation, kissing, and even the sharing of toothbrushes and razors (not recommended) have not led to HIV transmission. These studies are the basis of the rationale behind the safety of shared living quarters with HIV-infected individuals.

(i) **Outpatient** : Basic infection control measures, as previously discussed, may be applied to outpatient departments and doctors' offices as well. The ambulatory nature of the patient generally makes containment of infectious agents easier. Patients with HIV infection who are in control of the body functions may share common waiting rooms with other patients. Patients with a cough should be seen as soon as possible. Since tuberculosis may be associated with HIV infection, screening should be considered when symptoms arise. Common toilet facilities may be shared by these patients. Similarly, the use of drinking water from taps /

coolers and other public facilities have not been implicated in transmission.

Clinics of any speciality may see AIDS patients along with other patients, using standard hygienic and aseptic techniques appropriate for the type of examination or procedure. There need not be two sets of standards or two sets of equipment.

2.4 Home-Care Guidelines

People with AIDS are frequently in and out of the hospital for the treatment of various AIDS-related opportunistic infections and neoplasms. However, between bouts of illness, these patients live at home and continue to work and live a relatively "normal" existence for many months and occasionally, years. Infection control at home is as important as it is in the institutional setting. Patients being discharged from the hospital or clinic and their care-givers or significant others need education on infection control at home. They need to know how to protect the patient from his / her environment and how to protect the family and the public from HIV.

Infection control practices for home-care personnel exposed to HIV should be based on the principles previously described. The protective equipment and practices used should be based on the degree of HIV exposure. Many activities at home, such as dishwashing, cleaning, and other sanitary practices need not be different from any other household. Specialized cleaning solutions or equipment are not required.

(i) **General** : Wash hands thoroughly before and after providing care, when changing soiled linen or dressings, when changing diapers or after any other contact with body secretions or excretions. Use gloves when contact or exposure to body fluids is anticipated, and when cleaning blood or other spills. Wear gloves when skin is irritated, is chapped, has cuts, or has dermatitis. Wear gown, mask or protective garments when cleaning blood, diarrhoea or other spills. Refer exhibit 3.3.

(ii) **Personal Hygiene** : Bathrooms may be shared with other family members as long as personal hygiene practices are followed. Encourage regular bathing and the use of emollients to prevent dermatitis. Dry feet well to avoid fungal infections. Razors and toothbrushes must not be shared with other family members. Vaseline or certain creams may be applied in winter to avoid skin irritation.

(iii) **Household** : Good home sanitation protects everyone in the household. Commonly used soaps or cleaning solutions may be used since the primary goal is physical removal of soil where organisms may thrive. Household surfaces that are contaminated with human waste, first

require cleaning to remove solid waste and then disinfection with a dilute household bleach solution. Bathroom sinks, tubs and toilets require regular cleaning.

Prepare a 1 : 10 bleach solution daily (1 part chlorine bleach to 9 parts of water). Wearing heavy duty plastic gloves, wipe off any surfaces soiled with blood or body fluids, then disinfect with the bleach solution. The same sponge used to wash dishes or clean the food counter must not be used to clean the bathroom or floor. Soak the cleaning mops and sponges for five minutes in the bleach solution and pour contaminated cleaning water into the toilet.

The kitchen surfaces, sink and other furnishings may need to be disinfected regularly if the patient is mobile and body fluids are in contact with these areas. Covering carpeting with plastic runners may prevent contamination of carpeting, especially for the patient with diarrhoea who has difficulty getting to the bathroom. The use of a bedside commode may also be helpful in such cases. Recurrent respiratory infections from oxygen support equipment can be prevented by cleaning the equipment and tubing regularly (1 to 3 times / week).

(iv) **Equipment** : Rented medical supplies such as beds and wheelchairs should be cleaned before returning to the company. Any commercially available phenolic household cleaner is adequate to control disease-causing organisms if the equipment is thoroughly cleaned. Rental company personnel need not wear protective garments to come into the home or remove the equipment.

(v) **Laundry** : A patient's clothing may be laundered or drycleaned in the usual manner. Keep soiled laundry in a plastic bag. Any bedding or clothing heavily soiled with blood or faeces may be rinsed and then laundered as usual in hot, soapy water, but with the addition of a cup of bleach to a full washerload of water. It is not necessary, or desirable, to soak these items for long periods in the bleach. If a dryer is available, dry clothing and linen at the highest temperature setting.

(vi) **Trash Disposal** : Waste should be handled in a sanitary manner. Line wastebaskets with plastic bags. Place soiled articles in a plastic bag and tie securely. Empty wastebaskets frequently into a plastic-lined garbage can with a tight fitting lid. Most household trash (soiled tissues, dressings, disposable diapers etc.) will not contain infectious agents in kind or quantity to require special handling. Needles used for injection may be the exception. Patients and care-givers must be provided with puncture-resistant containers for disposal of needles and sharp objects. Empty plastic cartons or empty metal cans with plastic lids

may serve the same purpose. The local health department is generally responsible for determining the means of disposal. Normally, needles for injection used by patients at home, even when infected (e.g. a diabetic who is a hepatitis B carrier) are disposed of with ordinary trash. Laws regulating infectious waste handling normally concern only those with a large volume of trash as hospitals.

(vii) Caring for Pets : People with AIDS may need help to keep their pets safely. Since animals may carry disease, it is important to maintain the health of the pet. Cryptosporidium causes diarrhoea in many household pets. Cat faeces may carry toxoplasma gondii cysts. Mycobacterium avium-intracellulare has been identified in bird droppings. Appropriate precautions for pet owners include: not allowing outdoor cats to use an indoor litter box; not having an immuno incompetent person clean the fish tank, bird cage or litter box; not handling animals that have diarrhoea or appear sick ; and washing hands after handling animals.

(viii) General Health : Maintaining good health habits include avoiding other infections ; eating a balanced diet; getting adequate rest and activity ; observing good personal hygiene such as washing hands before eating or food preparation and after use of the toilet and keeping a clean environment. These activities maximize the chances of a person with HIV infection remaining well.

2.5 Problem - solving approach to deal with various practical situations for HIV prevention on health - care settings.

In a health-care setting you may come across various problematic situations which may intervene in the application of infection control measures for HIV prevention.

Refer to Exhibit 3.7. There is a list of five situations which may occur in a health-care setting. Go through these situations and decide whether the action taken was appropriate or inappropriate and rationalize the decision. Check the possible answers given in the exhibit 3.8.

Guidelines for Safety of Nurses.

- Nurses with open skin lesions should cover the lesions with a waterproof dressing or gloves to prevent direct exposure to blood and other body fluids. To protect patients, nurses who have draining skin lesions should not take part in direct patient care and should not handle equipment for patient care.

- Nurses providing HIV-infected persons with home care are at the same low risk of infection as nurses in hospitals and other health care settings. Most infected persons who do not need hospitalization can safely be cared for at home. The precautions outlined above should be observed.

- Since HIV infection in a pregnant nurse carries the additional risk of subsequent perinatal transmission, pregnant nurses should strictly observe the precautions.

- In general, an HIV-infected nurse does not pose a risk to patients and restrictions in work are not needed.

- An infected nurse's personal doctor should advise on precautions or restrictions to protect patients and on whether they pose a risk to the nurse and, if so, suggest changes in work assignment.

2.6 Check Your Progress - 2

(i) What is meant by universal precautions ?

(ii) List the universal precautions in relation to injection and skin-piercing instruments.

(iii) What is meant by invasive procedure ?

(iv) Is there any difference in the infection control precautions in homes of HIV-infected / AIDS cases ?

3. Health-Care Workers and HIV-related issues

3.1 Management of Health Care Workers exposed to HIV

If the universal infection control guidelines are adhered to, the risk of acquiring a blood-borne infection, including HIV, will be significantly reduced. Even so, it is not possible to guarantee that exposure will not occur. Work place should, therefore, develop policies to meet those situations where health workers are injured or are exposed to known or unknown cases of HIV infection. The following guidelines are suggested for their management :

(i) **Evaluate and record the type of exposure**, e.g. needle stick injury, cut with sharp instrument, splash on to mucus membrane or non intact skin.

(ii) **If HIV testing is available** - contact the source person and with his / her informed consent test, the source patient for HIV.

a. If the test is negative, there is no need for a follow-up.

b. If the test is positive, if the patient refuses to be tested or if the source of exposure is unknown :

- The health care worker should be counselled about the risk of HIV infection and about subsequent risk to the community. The health worker should practise safer sex, delay pregnancy and not donate blood.
- The health worker should be asked to report any febrile episodes within 12 weeks after exposures. Rashes, fever or swollen lymph glands should be noted during this period.
- With his / her informed consent, the health worker should be tested for HIV at the time of exposure, then at six weeks, 12 weeks and six months after exposure.

(iii) If HIV testing is not available or very expensive :

a) The source patient should be evaluated for risk factors for HIV infection.

b) The health care worker should be counselled if it is determined that he / she has been exposed.

c) The health worker should be asked to monitor and report signs of infection such as fever, rash or swollen lymph glands within 12 weeks after exposure.

d) If feasible, HIV testing (informed) should be done in six months after exposure. Monitoring the illness should be continued for one year if HIV testing cannot be performed.

3.2 Health-Care Worker with HIV infection :

(i) Risk of HIV infection from health worker to patients - The safety of employing people who have HIV infection / AIDS in the health-care field is another major issue. People with AIDS and those infected with the virus have worked in health care, and there is no documented evidence of HIV transmission occurring from worker to patient in this setting. HIV-infected health care workers are not a risk to patients during routine work activities but may be more so during invasive procedure through cuts and injuries.

(ii) **Work Performance by HIV-infected health worker** - In the absence of clinically active infections that would otherwise restrict the individual from performance of duties, a person with AIDS may continue to work safely. However, HIV infection will progressively impair the immune system and consequently, HIV-infected health-care workers are more likely to acquire nosoeomial infections from a patient with contagious diseases e.g. pulmonary tuberculosis. Hence, an individual's work assignment must be determined on a case-by-case basis.

Past experience with a health-care worker and the unknown carrier of hepatitis B has shown the following practices to be prudent for the protection of the patient and nurse. Infected personnel should wear gloves when in contact with mucous membranes or non-intact skin, and should wear gloves or be reassigned from direct care when weeping or exudative lesions are present on their hands or skin. These practices apply to all personnel, regardless of risk for AIDS, since many other diseases can be avoided as well.

3.3 Other Issues

(i) **Pregnancy and HIV infection** - Pregnant nurses who are exposed to HIV at work fear transmitting it to their unborn children. Pregnant women who become infected through the known means of transmission (sexual contact, sharing needles with someone who is infected, or receiving infected blood products) do have an increased risk of transmitting the virus to their unborn children. Studies indicate that pregnant nurses have the same probability of HIV infection through occupational exposure like any other nurse. However, because of the increased risk of contracting herpes or cytomegalovirus from the AIDS patient (both are known to cause birth defects), the pregnant nurse should not provide direct care to this patient population.

(ii) **Risk of HIV infection to Families of Health Workers** Health-care workers, including nurses, are concerned about taking the virus home to their children. Unlike skin infections and diarrhoeal diseases where only superficial contact is necessary to transmit the organism, blood-borne viruses are harder to transmit. Surface contact is insufficient for transmission of HIV disease. Transmission of HIV occurs through blood or sexual contact; unless such contact has occurred, nurses are unlikely to expose their families. Epidemiologic evidence demonstrates that even when a family member is HIV- infected, transmission does not occur through ordinary household contact.

(iii) Personnel Policies :

a) *HIV Testing* - AS explained earlier, routine serologic testing of employees for the HIV antibody is not recommended. This additional information neither adds to or changes the infection control precautions observed by all employees nor does it affect employee personnel policies regarding the nurse's work assignment.

b) *Labour Laws* - Most personnel departments already have policies in keeping with the state and federal labour laws regarding disabled employees or employees with a catastrophic illness. Employees with AIDS can be included under these policies without creating new ones.

c) *Training* - As professionals, nurses are expected to be well informed about AIDS, HIV transmission and the basics of infection control. This knowledge is important not only to ensure personal safety and appropriate institutional policies, but also to teach patients and family members about safety at home. Nurses are also community resources for AIDS awareness and education. Well-planned education programmes for patients, health care staff, and community can help reduce the misinformation and anxiety.

Fear of contagion is an inevitable and perhaps normal reaction to AIDS education. Helping patients, family, and staff to acknowledge and overcome this fear is important for establishing reasonable infection control practices and providing sensitive and compassionate nursing care. Therefore, it is very important to have a rigorous and well-planned training and orientation programme for nurses and also for other health workers.

3.3 Check Your Progress - 3

(i) Should an employer try to find out if any workers are infected with HIV ?

4. Changing Practices in Health Care Settings

There may be many practical situations in a health-care setting which require modified practices to prevent the spread of infection. This can be achieved through effective teaching strategies. The following steps should be followed to deal with each situation :

(i) Study the situation

(ii) Formulate learning objectives.

(iii) Identify difficulties in meeting these objectives.

(iv) Determine the strategies of health education.

(v) Plan the content and conduct - teaching session / programme.

Examples of situations for working out teaching strategies for changing practices in health care settings are given in exhibit 3.11. Study these situations and answer the questions. You may discuss with your fellow workers / supervisor / authority.

After you have answered all questions and discussed with others, refer exhibit 3.12 for correct answers.

V. ANSWERS TO CHECK YOUR PROGRESS

(i)a - Blood
- Semen
- Vaginal and cervical secretions
- Wound secretions
- Cerebrospinal fluid
- Pleural fluids
- Synovial, peritoneal pericardial and amniotic fluid

b) - Faeces
- nasal secretions
- Urine
- Sweat
- Saliva
- Tears
- Vomitus

(ii)

- Needle stick injury, injury with sharp instruments contaminated with blood or other body fluids of HIV-infected persons.
- Exposure of open wounds to blood or other body fluids from HIV infected persons.
- Splashes of infected blood or any other specific body fluids on to mucous membrane and the eyes.

2.6(i) Refers to application of infection control precautions to all patient, all the time in all settings as all patients' body fluids are considered infectious since it is not known who is infected with HIV.

2.6(ii)

- Restrict use of injections and skin-piercing instruments, replace injectable medicine by oral medicine.

- Use of disposable syringes and needles and other skin-piercing instruments.
- Cleaning and sterilization and / or disinfection of reusable instruments.

2.6(iii) Refers to surgical entry into tissues, cavities or organs, whether for an operation or for the repair of an injury.

2.6(iv) No, there is no difference. The principles are the same as those of any other health care settings. The general precaution of infection control, with reference to safety of the self, patient, other members in the family and community remain the same.

3 (i) No, the employer should not because it is not an effective strategy in HIV prevention. it is not possible to identify all infected health workers, because there may be false negative resuits. it is time-consuming, costly and may lead to a false sense of insecurity. The chance of infection from a health worker to a patient is extremely rare. The HIV-infected person remains healthy for most part of her / his life and can perform work like any other person. But as the infection progresses, a suitable alternative job can be arranged on the basis of medical advice.

Exhibit 3.1

Summary List of Risk to Health-Care Workers and Patients in a Health-Care Setting.

Blood-borne infectious agents, including some hepatitis viruses (e.g. the viruses which cause hepatitis B and hepatitis C) can be transmitted in a health-care setting in the following ways :

Risk to Health-Care Workers

a) Injury with a needle or any other sharp instrument which has been contaminated with blood or body fluids from an HIV- infected person.

b) Exposure of open wounds to blood or other body fluids containing visible blood and specific body fluids from an HIV- infected person. (It is important to specify that HIV is not transmitted through unbroken skin).

c) Splashes of infected blood or any other specific body fluids on to mucous membranes and the eyes.

Risk to Patients

a) Contaminated instruments (needles, syringes, scalpels and other instruments for invasive procedures) that are being re-used without being sterilized or disinfected.

b) Transfusion with HIV-infected blood.

c) Skin graft, semen donation and organ transplants from an HIV-infected donor.

d) Contact with blood and other body fluids from an HIV- infected health worker (e.g. midwife, surgeon or dentist).

Exhibit 3.2

Infection Control Precautions

1. To prevent injuries from needles and other sharp instruments :

- Never bend, break or recap disposable needles, but dispose them immediately with the attached syringe in a thick cardboard, glass, heavy plastic or metal container. These containers should be located as close as is practical to the area in which the needles are used.

- Place disposable sharp instruments in a thick cardboard, glass, heavy plastic or metal container immediately after use. When full, seal the container carefully and burn or bury it in a hygienically-controlled sanitary landfill.

- Place re-usable sharp instruments (e.g. needles, scalpels, etc.) in a glass, heavy plastic or metal container immediately after use. Wear thick gloves and carefully clean needles and all other sharp instruments (and syringes) before disinfection or sterilization.

- Avoid unnecessary handling of contaminated sharp instruments, including needles.

2. To prevent exposure of open wounds and mucous membranes :

- Cover broken skin or open wounds with watertight dressings.

- Wash hands with water and soap immediately after any contact with blood or other body fluids.

- Specimens of blood and other body fluids should be placed in containers with secure lids to prevent leakage during transport. Avoid contamination of the outer surface of the container.

- Wear suitable gloves when expecting exposure to blood or body fluids and when handling blood specimens.

- Linen soiled with blood and other body fluids should be transported in a leak-proof bag or folded with the soiled part inside. It should be washed in hot water with a detergent.

- During assistance at childbirth, the nurse may be exposed to extensive amounts of blood. Planning for childbirth in the hospital or at home should include obtaining gloves, aprons, soap and water.

- Wear protective glasses when blood splashes are expected, such as during major surgery, childbirth or dental procedures.

- Mouth-to-mouth suction of newborns should be replaced with mechanical or electric suction devices.

- Mouth pipetting should be replaced by mechanical pipetting in all laboratories handling blood and other body fluids.

- Resuscitation bags should be made available in health-care settings, in which resuscitation is likely to be needed.

3. Preventing HIV transmission via contaminated instruments :

- All re-usable instruments must be cleaned and disinfected or sterilized between use.

- Disposable equipment must be used only once and then appropriately discarded, i.e. burnt or buried.

- Promote oral medication rather than medication by injection when possible. If clients prefer injections, explain why oral medication is preferable.

- Teach patients to avoid injections and skin-piercing carried out by practitioners who do not sterilize their equipment.

4. Preventing HIV transmission via transfusion of HIV contaminated blood or blood products :

- All blood for transfusion should be tested for markers of HIV infection. In areas where testing is not feasible, blood transfusions should only be given when absolutely necessary, to treat a life-threatening condition.

- Where possible replace blood transfusions by other suitable intravenous fluids, e.g. dextrose and / or dextran 70 or Ringer's solutions.

- For patients who are anaemic, the cause of anaemia should be sought and treated. It is better to prevent the cause of anaemia (hookworm, malaria or malnutrition) than to give transfusions

5. Preventing HIV transmission from HIV contaminated organs or tissue transplant or semen donation :

- Test all donors for HIV antibody prior to any donation.

6. Spills of blood or other body fluids onto surfaces e.g. Table, Floor etc.

- Remove blood or other body fluids with paper towels or old newspapers. Take care not to get blood on the hands i.e. wear gloves where possible. Cloth towels may be used, but will then be contaminated and must be handled as soiled linen.
- Wash surface with hot water and soap.
- Decontaminate with intermediate or low level disinfectant, e.g. sodium hypochlorite.

7. Disposal of waste :

- Liquid, such as blood can be flushed into a sanitary sewer or pit latrine.
- Solid waste, e.g. blood-soaked dressings, sanitary pads and napkins, placentas or tissue biopsy specimens should be burned or carefully buried.

Caution : Avoid placing these materials in open dumps to which animals and children have access, and avoid burying materials where there is a possibility of their being dug up or where they might contaminate water sources.

Exhibit 3.3

General Infection Control Guidelines for HIV infection

1. Handwashing :

- The most important measure in infection control.
- Correct technique is essential (soap, running water, 10 second thorough friction cleansing)
- Wash before and after direct patient care, even when gloves are worn.

2. **Gloving :**

- Bare skin contact with any patient's body substance or secretions is potentially unsafe.
- Glove for direct contact with infectious material, especially when skin is not intact or is chapped.
- Use single use gloves, proper disposal after use.

3. **Gowns :**

- Gown for procedures where splattering of body fluids is expected.
- Wear gown once only, discard properly for laundry or disposal.
- Not required for most routine AIDS care.

4. **Goggles / mask :**

- Use goggles and / or mask for procedures where splattering of body fluids into the face or mucous membranes is expected; (bronchoscopy, dental, specimen processing etc.).
- Wear mask once only, discard properly. Discard or disinfect goggles as directed.
- Not required for most routine AIDS care.

5. **Needle Precautions :**

- Dispose of needles promptly and carefully in labelled, puncture-resistant needle container.
- Never resheath, bend or break needles.
- Report needle stick injuries immediately.

6. **Blood Drawing :**

- Wear gloves
- Hand washing after the procedure.

7. **Specimen Handling :**

- Place lab specimens in leak-proof containers.
- Place container inside an impervious plastic bag for transport.
- Label with "blood precautions".

8. Private Room :

- Recommended for AIDS patients with respiratory disease, diarrhoea, tuberculosis, herpes zoster, or other highly contagious infections.

9. Reverse Isolation :

- Considered an unnecessary measure for AIDS patients.

10. Environmental Cleaning (surfaces) :

- Remove all body fluids by cleaning surface spill with an absorbent disposable material.
- Disinfect with either high-level tuberculocidal disinfectant, or sodium hypochlorite (dilute 1:10 or 1:100 with water).

11. Medical Equipment :

- Clean equipment by washing or wiping off blood or body fluids.
- Disinfect at a level that is tuberculocidal or
- Sterilize.

12. Waste and Linen Handling :

- Use existing standards.

Exhibit 3.4

Universal Blood and Body Fluid Precautions for all Patients (*)

Universal precautions are guidelines based on the risk of exposure to blood and body fluids rather than on a diagnosed disease. They encourage the nurse to take precautions with all patient secretions to prevent HIV transmission, regardless of the diagnosis.

- Use barrier precautions to prevent skin and mucous membrane exposure when contact with blood or body fluids of any patient is anticipated.

Gloves : for direct contact with blood, body secretions; for handling soiled laundry, equipment etc.; for performing venipuncture, other vascular access; should be changed after contact with each patient.

Masks protective eyewear : wear during procedures that are likely to generate droplets of body of body fluids that may splash on mucous membranes of mouth, nose or eyes.

Gowns : wear during procedures that are likely to generate splashes of blood or other body fluids.

- Wash hands and other skin surfaces immediately and thoroughly if contaminated with blood or body fluids of any patient. Wash hands immediately after removing gloves and in between contact with patient.

- Take precautions to avoid injuries from needles, scalpels or other sharp instruments during procedures, or when handling, cleaning or disposing of such items.

Do not resheath needles; do not bend or clip needles.
Dispose of all sharp items in puncture-resistant containers that are located as close to the use area as practical.

(*) Adapted from CDC : Recommendations for Prevention of HIV Transmission in Health-Care Settings. MMWR 36 (25) : 58 - 65, 1987.

- Use disposable mouth pieces, airways, resuscitation bags, or other ventilatory devices during emergency resuscitation instead of mouth-to-mouth resuscitation; have equipment readily available for use in the area.

- Nurses with exudative lesions or weeping dermatitis should not provide direct patient care or handle patient care - equipment.

- Nurses who are pregnant must be especially familiar with and adhere strictly to precautions to minimize the risk of HIV transmission.

- Isolation precautions (e.g. enteric, AFB) should be initiated as necessary if associated conditions are diagnosed or suspected.

Exhibit 3.5

HIV Infection Control Precautions in Ophthalmology and Haemodialysis Unit.

I. Disinfection of Eye Care Equipment (*)

Equipment	Method
Tonometers instruments that come into direct contact with the external surface of the eye :	Wipe clean Disinfect by exposing for 5-10 minutes to one of the following : - fresh 3% hydrogen peroxide - 1 to 10 dilution of sodium hypochlorite - 70% ethanol - 70% isopropanol Rinse thoroughly in tap water; dry before use.
Soft, hard, and gas permeable contact lenses fitting lenses	Use 3% hydrogen peroxide on soft, hard and rigid gas-permeable contact lenses (check recommendations of lens manufacturer) Heat disinfect some hard lenses (where approved by manufacturer) at 78-80 deg. C (117-176 deg. F) for 10 minutes.

(*) Adapted from : Recommendations for preventing possible transmission of human Telymphotropic Virus Type III lymphadenopathy - associated virus from teens. MMWR 34 : 553 - 534, 1985.

II. HIV Infection Control Precautions in the Haemodialysis Unit.(*)

Whether the population of the haemodialysis unit includes known HIV or hepatitis B virus-infected persons dialysed in the same area / separate machine or separate area / separate machine, or unknown viral carriers sharing the same machine, the following precautions are recommended :

- Immediately clean up gross spills.
- Clean and disinfect frequently touched surfaces daily, including :
  - * all environmental surfaces;
  - * dialysis machine knobs and exterior surfaces;
  - * non-disposable equipment which has been touched.
- Clean and disinfect with disposable cleaning cloth using :
  sodium hypochlorite (50-100 parts per million free chlorine), or any high - level disinfectant.
- Disinfect fluid pathway of dialysis machines (for control of bacterial contamination), using any one of the following solutions:
  sodium hypochlorite or
  formaldehyde or
  glutaraldehyde
- Re-use artificial kidney on the same patient only.

(*) Adapted from Favero MS : Recommendations for patients undergoing haemodialysis who have AIDS or non-A, non-B hepatitis. Infection Control 6 : 301 - 305, 19 .

Exhibit 3.6

AIDS Precautions in the Perinatal/Pediatric Areas

To be used with all patients regardless of diagnosis : *

Type of Precaution to be followed	Area where precaution should be practied	Situations requiring precautions by providers
Handwashing	Labour and delivery; nursery; postpartum; pediatrics	All providers before direct care or invasive procedures; before feeding or medications; after body substance contact
Handwashing; gloves	Labour and delivery; nursery	All providers of direct care when bathing infants and during contact with : • cervix; amniotic fluid • urine; blood • placenta; umbilical cord • scalp sample • internal electrodes • dressings • diarrhoea • lochia
Handwashing; gloves; gowns (or water-proof aprons)	Labour and delivery; nursery	Labour and delivery; special procedures
Handwashing; gloves; gowns masks; eye covering	Resuscitation; before initial body bath; artificial rupture of membranes (AROM)	Providers at the patient perineum bringing these circumstance • vaginal delivery; • AROM; • cesarean section

- Use standard blood precautions and aseptic techniques as for hepatitis B :
  gloves for contact of contaminated surfaces
  gowns where splatter is expected
  good handwashng technique
  no eating on the unit.

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* *Guidelines adapted from San Francisco General Hospital Medical Center.*

* *Other conditions, such as burns or suspected communicable respiratory diseases, may warrant additional care.*

Exhibit 3.7

Situation which may occur in a Health-Care Setting

1. A nurse arrives at a health centre to collect supplies for the outreach immunization service in a nearby village. She gets sterilized syringes, and asks for a safe container for the used syringes. She is told to put them in a small bowl that is only large enough for the syringes and not for the needles. She says she cannot handle the needles and gets a big metal jar with a loose lid.

2. A nurse / midwife orders supplies for the following month. There is a budget but the request is too expensive. She says, "Well, what will it be ? Gloves or a new stethoscope ? My stethoscope is old, and I need gloves too. What shall I do ? I will order the stethoscope."

3. A nurse gives a patient an injection. She reminds herself not to recap a disposable needle, and looks around for a needle container. She does not see one and decides to put the cap back on the needle. (N.B. Instructors should note that disposable needles and / or syringes may not be locally available).

4. A nurse / midwife is responsible for the training of traditional birth attendants in the district. She has ordered gloves for them, but has been told they are not available.

5. A nurse throws disposable needles in the waste container, which is emptied once a day into a plastic bag and taken to be buried.

Exhibit 3.8

Possible Answers for the Situations which may occur in a Health-Care Setting.

1. The nurse has found a good solution to her problem.

2. The nurse / midwife is not thinking of her personal protection. She should try very hard to have gloves always available for delivering babies. It is best to have a few pairs per delivery so that she can change gloves, if necessary.

3. This nurse is running a high risk. If she has no container to put the uncapped syringes in, there is another solution. Use the "scoop method", by putting the cap on the table, pushing the needle into it and without hiding the cap in the other hand, securing it.

4. If it is impossible to get gloves, the nurse / midwife should teach the traditional birth attendants to wash their hands frequently with soap and water. They should also be taught to cover any cuts they may have on their hands with waterproof dressings. A good handwashing technique is always important.

5. The people who remove the waste are at a high risk of injuring themselves from needles sticking through the plastic bag. People may collect needles. Needles need to be kept in a hard container for storage, for example, in oil cans, beer bottles or plastic bottles, until they are disposed of. (Strong cardboard boxes are better than a plastic bag). If the needles can be burned, that is the best method of disposal. If that is not possible, they can be disposed of in a pit latrine or buried where they will not be dug up.

Exhibit 3.9

Suggested guidelines for the Management of Health Care Workers exposed to HIV.

If a health-care worker suspects that he / she has been exposed to HIV, the following action is recommended :

1. Evaluate and record the type of exposure, e.g. needle stick injury, cut with a sharp instrument, splash onto mucous membranes or non-intact skin.

2. If HIV testing is available; with his / her permission, test the source patient (if known) for HIV.

   a) If the test is negative, there is no need for a follow-up.
   b) If the test is positive, if the patient refuses to be tested or if the source of exposure is unknown :

      - Counsel the health-care worker about the risks of HIV and HBV infection and about subsequent risk to the community. Recommend safer sex, delaying pregnancy and not donating blood.
      - Ask the health-care worker to report any febrile episodes within 12 weeks after the exposure. Rashes, fever or swollen lymph glands should be noted during this period.
      - With his / her consent, test the health care worker at the time of exposure for a baseline result, then at six weeks, 12 weeks and six months after exposure. Most seroconversions will occur within six to 12 weeks.

   c) If HIV testing is not available or is prohibitively expensive :

      - Evaluate the source patient for risk factors for HIV infection.
      - Counsel the employee if it is determined that he / she has been exposed.
      - Monitor the worker for signs of infection such as fever, rashes or swollen lymph glands within 12 weeks after exposure.
      - Perform testing at six months, since nearly all sero-testing cannot be performed, continue to monitor the employee for illness for one year or until testing can be performed.
      - Contact the National AIDS Committee, if there is any, for information.

Nurses, being frontline care-providers, are instrumental in preventing the spread of HIV and other viruses or microbes. By becoming informed and utilizing this knowledge in practice, nurses can prevent the spread of HIV infection to patients and themselves. In doing so, nursing care can be provided to the infected person with compassion and without fear.

Exhibit 3.10

Health-Care Workers with HIV Infection

Questions with Answers

Q. Is it safe to work with someone infected with HIV ?

Ans. Yes. Most workers face no risk of getting the virus while doing their work. If they have the virus themselves, they are no risk to others because of their work.

Q. If a worker has HIV infection, should he or she be allowed to continue work ?

Ans. Healthy Workers with the infection should be treated in the same way as any other workers. Those with AIDS or AIDS-related illnesses should be treated in the same way as any other workers who are ill. Infection with HIV is not a reason in itself for termination of employment.

Q. Does an employee infected with the virus have to tell the employer about it ?

Ans. Anyone who is infected or suspected to be infected, must be protected from discrimination by employers, co-workers, unions or clients. Thus, employees should not be required to inform their employer about their infection. If good information and education about AIDS are available to employees, a climate of understanding may develop in the workplace. It will be then be possible to face the situation more openly.

Q. Should an employer try to find out if any workers are infected with HIV ?

Ans. Testing for HIV should not be required of workers. Imagine that you are a worker with HIV infection and are healthy and able to work. As far as your work is concerned, the information on the virus is private. If it is made public, you could be a target for discrimination. If AIDS-related illness makes you unfit for a particular job, you should be treated in the same way as any other employee with an illness. A suitable alternative job can often be arranged by the employer. Employers in different parts of the world are dealing with these problems. Their associations and unions can help stop the disease by providing all workers with information and education and referring those concerned for counselling about AIDS.

Exhibit 3.11

Examples of a Situation for working out Teaching Strategies for Changing Practices in Health Care Settings.

Situation 1

A woman brings her baby, who has a fever, to the clinic. When the baby is given tablets instead of an injection, the mother becomes angry. This is a community in which nurses have given a lot of medicine by injection when available, because the people believe it works better. Sterilization procedures are difficult. For, sufficient equipment needed for daily use is not available.The nurse is worried that clinic staff may be giving injections with unsterilsed equipment.

1. What is your objective for your patient ? For the community? (What do you want to accomplish ?)
2. In meeting your objectives, what may be difficult to teach ?
3. What could you do to convince the mother that unnecessary injections should be avoided ?
4. How could you teach others in the community that injections are not always better than pills ?
5. What can you do to prevent staff from using unsterilised syringes and needles ? What will you tell them ?

Situation 2

A man comes to the health centre with fever and a swollen arm. He says he has gone to a lay practitioner for injection. The practitioner is a local leader who is highly respected in the community. You know, the man would respect his advice more than yours, and you are afraid he will stop coming to the clinic if you suggest that the practitioner is doing something wrong.

1. What are your objectives for the patient ? For the community ? (What do you want to accomplish ?)
2. What problems could you face in meeting your objectives ?
3. What strategies could you use to prevent the patient from seeking injections from the practitioner ?
4. What strategies could you use to teach others in the community to avoid seeking injections from lay practitioners ?
5. What strategies could you use to teach local practitioners to sterilize their equipment ?

Situation 3

Your group is a management committee in a hospital working on the development of new policies and procedures for infection control precautions to prevent the transmission of blood-borne pathogens. You are to develop a plan for teaching the staff how to use these procedures. The staff includes nurses on the wards and in the emergency room, the housekeeping staff, and the laboratory workers. They have used the same procedures for 20 years, and you have already heard some laboratory staff and nurses say they want to have all patients tested for HIV antibodies.

1. What are your objectives ?
2. What problems are likely to arise in meeting your objectives?
3. What changes should you make to the existing policies ?
4. Whom do you propose to teach about these changes ?
5. How will you teach them (e.g. in small or large groups, in lectures, or with demonstrations of techniques ?

Situation 4

You are part of a clinical management committee that has been formed to study ways to limit the number of unnecessary blood transfusions. It has been discovered that several children may have become HIV infected from blood transfusions. Most are anaemic as a result of malaria. You have been told that screening of blood for HIV may be done within one year.

1. What are your objectives ?
2. What are the most common medical conditions requiring blood transfusions in your work setting ?
3. What other interventions are there, besides blood transfusions,which might solve these medical problems once it exists) ?
4. Who needs to know about these solutions ?
5. How will you present these solutions to them ? (What kind of person will they listen to ? What information will convince them that there is a problem ? How can you convince them of the solutions ?)

Exhibit 3.12

Possible Answer to Situations given in Exhibit 3.11

Possible Answers - Situation 1

1. To give oral medication, whenever possible, and to avoid unnecessary injections; to try to make the mother satisfied with this; to teach staff to use sterilized needles and syringes; to obtain sufficient equipment; to teach the community about unnecessary injections.

2. The mother thinks injections are better. The community is used to injections. Hence, changing attitudes may be difficult.

3. Tell her how medicine is absorbed ; draw a simple diagram to show how medicine goes into the blood stream from the stomach.

4. Contact local community leaders and talk to them about the problem; seek their advice; request a meeting and teach groups of people what you have told the mother.

5. Plan training for the staff immediately after the clinic closes for the day. Demonstrate the correct way of handling and sterilizing dirty syringes and needles. Provide information on how HIV is transmitted. If the problem is that there are not enough needles and syringes, oblige the clinic to re-use them, discuss with your supervisor the possibility of writing a letter to the person responsible at the national level, informing him or her of your concern. Discontinue the practice of unnecessary injections. Contact a local agency, such as a church mission or the Red Cross, and ask them for more needles and syringes.

Possible Answer - Situation 2

1. To encourage everyone in the community to avoid getting injections from untrained people.

2. The patient trusts the practitioner and the community also trusts him. You are seen as an outsider.

3. Explain to the patient the mode of transmission of HIV, tetanus, and other infections. Treat the infection, which will help him gain trust in you and your

expertise. Draw simple diagrams to explain about micro-organisms. Find out why people go to the practitioner.

4. Check the law to find out who is allowed to give injections. If lay practitioners cannot by law give injections or buy medicines, contact your local supervisor about the problem. Approach the practitioners and explain to them your concern about possible HIV transmission and seek their advice. Call a meeting of the local people in the community and explain to them the dangers of having injections from equipment which is not properly sterilized.

5. If the practitioner is working within the law, explain the problem to him and offer to show how to sterilize needles and syringes. Consider ways to make more syringes available, if necessary.

Possible Answers - Situation 3

1. To implement universal precautions throughout the hospital and to have all staff use and understand these precautions.

2. Possible problems include : the staff are used to disease-oriented infection control precautions; they are used to other ways of doing things; they have no confidence in what you tell them; and a general shortage of supplies may exist.

3. To use precautions when dealing with blood and other body fluids from everyone; not to label specimens as infectious, but to treat them all as infectious; to wear gloves when drawing blood and during any procedure in which contact with blood or other body fluids is a possibility.

4. Everyone who may have contact with patients or specimens needs training in universal precautions. Otherwise people will be confused when they see others changing their procedures.

5. One method would be to visit each department individually (each nursing unit, each housekeeping team, the laboratory etc.) and provide information to small groups. Those concerned can then ask questions.

Possible Answers - Situation 4

1. To prevent HIV transmission by blood transfusion.

2. Malaria, sickle cell anaemia; blood loss due to haemorrhage of childbirth, trauma or surgery.

3. Malaria : identify cases early and treat the disease before the anaemia develops ; discuss vector control.

   Sickle cell anaemia : give recommended childhood vaccines; treat all illnesses early; treat exacerbations early. Blood loss due to surgery, childbirth, trauma : check the haemoglobin content and with minor blood loss, if possible, give intravenous, high- molecular fluid replacement rather than blood. Strengthen antenatal services to prevent complicated labour.

4. Malaria and Sickle cell anaemia : parents need to know the symptoms; nurses in district health centres need to identify cases early and to guide parents; and treatment needs to be provided. Blood loss : physicians and nurses in surgery, labour and delivery rooms and in emergency rooms.

5. Nurses can teach parents and community members. Sometimes having a meeting and asking a respected community leader to introduce you, will give even more importance to the problem. If members of the community know that people are getting HIV infection from blood transfusions, they are more likely to be concerned. If you then present beneficial solutions, they will probably be interested in implementing them.

   In addition, nurses can become local experts on HIV infection and can arrange in-service education for their colleagues.

MODULE 4

PSYCHOSOCIAL IMPACT OF HIV INFECTION ON THE INDIVIDUAL AND THE COMMUNITY

SECTION - I : SIM

I. OVERVIEW

The learners are expected to have developed an understanding of:

- basic concepts of epidemiology and transmission of HIV / AIDS,
- HIV / AIDS disease concepts and its prevention and control,
- ethical guidelines of nursing profession,
- any local policies or guidelines on HIV care,
- the concepts of community based care in terms of socio-cultural pattern, population mobility and community support.

On completion of this module the learners will be able to identify the psychosocial factors that affect people with HIV infection, be aware of the nurse's role in relation to social attitudes and their effect on the individual and identify the community support.

II. SPECIFIC OBJECTIVES

On completion of this module, the learner will be able to :

- discuss the ways in which some diseases are stigmatised;
- discuss the social and cultural attitudes and beliefs that affect individuals with HIV and their care;
- describe the ways that HIV infection might have a psychosocial impact on individuals in their community;
- identify existing resources in the community that can meet the psychosocial needs of affected individuals;
- describe the constraints that nurses work with in meeting the psychosocial needs of people with HIV (cultural, social, ethical and professional);
- identify strategies for strengthening and developing community based support systems for people with HIV infection.

III. INTRODUCTION

This module deals with the response of the individual and community to the AIDS epidemic, the ways the psychosocial effects of infection are influenced by this response and the role of nurses in reducing the impact of these effects and strengthening community resources.

HIV and AIDS are more than medical problems. Due to their association with sexuality, illness, loss and death, they arouse strong feelings and relate to our values. The required attention needs to be given to analyse the impact of these feelings and values on the families of patients or on patients and their dependents.

Nurses are, of course, members of the societies they live in and are influenced by the prevailing cultural, social and religious attitudes. This can sometimes affect their attitudes towards those they care for and lead to conflicts with professional guidelines. Nurses who are working to change social attitudes towards any aspect of AIDS care or prevention can find themselves at odds with their communities and with local policies relating to HIV.

In order to communicate on HIV / AIDS, we need to clarify our own values and attitudes on related issues and help those with whom we communicate and understand their values and attitudes related to the same.

Whenever people discuss personal attitude and belief about controversial subjects, there is a possibility of strong feelings. AIDS raises issues connected with sexuality, drug use, death, morale, prejudice and many other difficult areas. It is advisible not to exert on any one to share their personal views; maintain confidentiality of any information that is shared, respect the rights of others to hold opinions with which we disagree and make sure that everyone has the opportunity to speak.

IV. DESCRIPTION OF CONTENT

Content for the module is organised under the following headings :

1. **Stigma and Disease**
2. **Attitudes to HIV and AIDS**
3. **Psychosocial Impact of HIV infection on the individual**
4. **Existing resources for support in the community**
5. **Constraints and strategies for Nurses.**

1. Stigma and Disease

1.1 HIV / AIDS is Seen Different and Holds Stigma

HIV / AIDs holds a social stigma and is seen by member of the community to be different from many other diseases prevalent in the community. People are found to have different social attitudes and beliefs about HIV / AIDS. These differences may be due to differences in attitudes, beliefs, theories, religious ideas and so on.

Cultural values are the basis for the community response to HIV infection / AIDS. The attitudes and values that exist are affected by an individual's preference for sexuality (homosexual, bisexual, heterosexual), intravenous drug use, fear of contagion, death and dying, religious or spiritual beliefs, health care facilities, socio-economic condition and history of society.

1.2 Implications of these Differences on HIV / AIDS patients

(i) **Emotional and fearful responses** : HIV / AIDS has often resulted in highly emotional and fearful responses among the people in general and HIV / AIDS patients and their families in particular. These responses are because :

- the mortality rate is very high
- it is incurable disease
- there is no vaccine to prevent it
- it is sexually transmitted disease
- many of those affected may already be stigmatised in their societies.

(ii) **Economic Loss and Feeling of Insecurity** : Due to social stigma patient's/ client's family face direct economic loss due to medical care and loss of livelihood because often the person is ostracized and looses his job.

(iii) **Victimization** : There is another cost which cannot be quantified, that is, trauma of victimization for the person (Refer Content-1 in Module 1 for details). An example of victimization from Kochi is reported below :

Example 4.1

A case of victimization reported from a village in Kochi. A young man returned from a spell of employment in Bombay and fell sick as an outcome of HIV infection. When the source of his illness became known, his elderly parents were made socially outcast and destitute and the young man was hounded from the village. Not only does this case illustrate the need for confidentiality in HIV diagnosis, but many other social and economic impacts and interactions, the

vulnerability of migrant workers; loss of livelihood for the patient and dependents; loss of shelter and community support. Examples 1 to 5 narrated in Module 1 also depict a similar reaction by the employer, neighbour and the community at large.

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2. Attitude to HIV and AIDS

HIV and AIDS, due to their association with sexuality, illness, loss and death, arouse strong feelings and emotional reactions related to our values. In order to communicate on HIV / AIDS, we need to clarify our own values and attitudes on related issues and help those with whom we communicate to understand their values and attitudes related to the same.

2.1 Classification of Controversial Statements

To clarify the above mentioned controversial statements, the content is discussed under the following headings :

i. **The faulty logic and prejudgemental attitude behind demands for testing.**
ii. **The trend towards scapegoating.**
iii. **Understanding homosexuality.**
iv. **The hesitation about condom availability and the spread of knowledge**
v. **about its use.**
vi. **The rights of the HIV / AIDS affected person.**

(i) The Faulty Logic and Prejudgemental Attitudes behind Demands for Testing : Advocates of testing believe that the test will identify people who are likely to transmit HIV infection and will then enable the society in some ways to prevent them from transmitting the disease to others. This argument is a flaw, because this demand is essentially the prejudice about groups that are seen at risk, e.g. sex workers, homosexuals, intravenous drug users etc. Another reason may be fear and a desire to punish the groups seen as "responsible" for AIDS.

In India, such tests are not available everywhere and counselling facilities of a uniform standard are not available in all parts of the country. Availability of testing needs to be backed up by a strong counselling and support services network. In its absence, testing will only identify those who are infected but not help them to cope with HIV and live positively.

(ii) The Trend Towards Scapegoating (Blaming) : Babies with HIV infection, haemophiliacs, those infected with untreated blood, spouses of

the HIV positive individual are seen as "innocent", deserving sympathy, while the "guilty" viz. prostitutes, homosexuals, injecting drug users are seen as deserving to die. This tendency to isolate some for responsibility, leads to a chain of blame, anger and resentment, creates rifts between people, and does not contribute positively to the control of AIDS.

(iii) **Understanding Homosexuality** : 'Gay' men are men who have sex with men. It must be emphasized that though different from the majority of the people in society, homosexuality does exist. Such individuals are often victimised by the society because homosexuality is seen as a moral error rather than a matter of psychological and social identity and choice. It is important to accept everybody even if we do not always approve of their behaviour.

(iv) **The Hesitation about Condom Availability and the Spread of Knowledge about its Use** : There are strong taboos - religious, cultural and social that prevent the free availability of condoms, especially for young people. It is feared that availability will encourage sexual experimentation by the young. It is important to impart correct information and to inculcate appropriate values about safe and responsible sex. Non-availability of condoms may place people at the risk of exposure to HIV infection. Prevention can be made easier if placed in the hands of the people themselves, i.e. condoms are made accessible. This does not mean that one is encouraging young people to have sex. However the knowledge on use of condoms should be imparted.

(v) **The Rights of the HIV / AIDS Affected Persons** : Society is often conscious of its rights to protect the uninfected against infection from HIV / AIDS. This is why there are repeated demands for isolation of people who have HIV / AIDS, and for informing their near and dear ones as well as acquaintances and colleagues. Several counter arguments can be offered.

- Isolation increases the conspicious presence of the person.
- Isolation is stigmatizing as has been the case of in leprosy.
- Prevention of transmission of the infection does not necessitate physical isolation but preventive behaviour e.g. use of condoms.
- Merely informing those in the social network may lead to rejection, social isolation and discrimination. Counselling and seeking support, however, may lead to a different outcome. The individual must be given the right to decide whether he / she wants to inform, who he / she wants and when, how he/she wishes to inform.

2.2 Check Your Progress - 1

(i) Given below are the following statements. If you find the statements as True, encircle (T), if you find them false, encircle (F).

a. The mortality rate in HIV / AIDS is very low	T F
b. HIV / AIDS is incurable	T F
c. HIV is preventable	T F
d. HIV / AIDS affects children also	T F
e. HIV / AIDS is sexually transmitted	T F
f. Community accepts the patient with HIV / AIDS as patients with other diseases	T F

3. Psychosocial Impact of HIV Infection on the Individual

Persons with HIV infection / AIDS may not like to share personal experience with any one because of its psychosocial implications influenced by social attitudes. You need to understand the possible responses felt and experienced by persons with HIV / AIDS and the related social issues which are discussed in this part. This presentation would help you to appreciate and identify psychological and social needs of HIV / AIDS patients and thereby provide good psychosocial care to them.

3.1 The Psychological Issues Faced by most People with HIV / AIDS.

The psychosocial issues faced by HIV/ AIDS persons revolve around uncertainty and adjustment.

(i) **Uncertainty** : With HIV infection, uncertainty emerges with regard to hopes and expectations about life in general, but it may focus on family job and longetivity and quality of life. They need to be discussed openly and frankly, but care should always be taken to encourage hope and a positive outlook.

(ii) **Adjustment** : In response to uncertainty, the person with HIV / AIDS must make a variety of adjustments. Even the apparent absence of a response or denial is an adjustment in itself. People start adjusting to news of their infection or disease from the time they are first told. Their day-to-day lives will reflect the tension between uncertainity and adjustments. It is this tension that causes other psychosocial issues which requrie attention of health workers.

3.2 The Possible Emotional Response of Persons with HIV / AIDS

The possible emotional responses felt by HIV / AIDS people are described below :

(i) **Fear** : People with an HIV infection or disease have many fears. The fear of dying and particularly of dying alone and in pain is often very evident. Fear may be based on the experiences of loved ones, friends or colleagues who have been ill with, or died of AIDS. It may also be due to ignorance of what is involved and how the problems can be handled. They should be discussed in the context of managing the difficulties including with the help of friends and family or the counsellor / nurse.

(ii) **Loss** : People with HIV disease experience a sense of loss in terms of decreased life span and ambitions, their physical attractiveness and potency, sexual relationships, status in the community, financial stability, and independence. As the need for care increases, a sense of loss of privacy and control over one's own life will also be experienced. Perhaps, the most common loss is the loss of confidence.

(iii) **Grief** : People with HIV infection often have profound feelings of grief about the losses they have experienced or expecting to come. They may also suffer the grief that is projected on to them by close family members, lovers, spouses and friends.

(iv) **Guilt** : A diagnosis of HIV infection often provokes a feeling of guilt of having infected others, specially wife and children; or for the behaviour that may have resulted in the infection.

(v) **Depression** : Depression may arise for a number of reasons. The absence of a cure and the resulting feelings of helplessness, the loss of personal control associated with frequent medical examinations, and the knowledge that a virus has taken over one's body are all important factors. Similarly, knowing others or about others who have died or are ill with HIV disease, and experiencing such things as the loss of potential for reproduction.

(vi) **Denial** : Some people may respond to news of their infection or disease by denying it. For some people, initial denial can be a constructive way of handling the shock of diagnosis. If denial persists, person with HIV infection may not seek medical help.

(vii) **Anxiety** : The reasons for anxiety reflect the issues discussed above and concern the following :

- Prognosis in the short and long-term
- Risk of infection with other diseases
- Risk of infecting others with HIV

- Social, occupational, domestic and sexual hostility and rejection.
- Abandonment, isolation and physical pain.
- Fear of dying in pain or without dignity.
- Inability to alter circumstances and consequences of HIV infection.
- How to ensure the best possible health in future.
- Ability of loved ones and family to cope.
- Availability of appropriate medical / dental treatment.
- Loss of privacy and concern over confidentiality.
- Future social and sexual unacceptability.
- Declining ability to function efficiently.
- Loss of physical and financial independence.

(viii) **Anger** : Some people become outwardly angry because they feel they have been unlucky to contract the infection. They often feel that confidentiality is not maintained. Anger can sometimes be directed inwardly in the form of self blame for acquiring HIV, or in the form of self destructive (suicidal) behaviour.

(ix) **Suicidal Thinking** : People who are infected with HIV will have a significantly increased risk of suicide. Suicide may be seen as a way of avoiding pain and discomfort or of lessening the shame and grief of loved ones. Suicide may be active (i.e. deliberate self injury resulting in death) or passive (i.e. concealing the onset of a possibly fatal complication of HIV infection).

(x) **Self Esteem** : Self-esteem is often threatened early in the process of living with HIV. Rejection by colleagues, acquaintances, and loved ones can quickly lead to loss of confidence and social identity, and thus reduced feelings of self-worth. This can also be due to the physical impact of HIV-related diseases like facial disfigurement, physical wasting, and loss of strength and bodily control.

(xi) **Hypochondria and Obsessive States** : Pre occupation with health and even the smallest physical changes or sensations can result in hypochondria. This may be for very short duration in most of HIV infected persons but may persist in few.

(xii) **Spiritual Concerns** : Concern about impending death, loneliness, and loss of control may give rise to an interest in spritual matters and a search for religious support.

3.3 Possible Social Responses Experienced by Persons having HIV / AIDS

The possible social responses experienced by persons with HIV / AIDS are rejection, withdrawal or caring and support.

(i) **Rejection** The person with HIV / AIDS is often unwanted / unaccepted or abandoned by the family, friends, neighbourhood and community at large and employer. He gets the feeling of rejection.

Abandoning of a person with HIV / AIDS by the family can cause problems and add to the pain. The children will certainly suffer if either of the parents is affected. They need love and guidance from both the parents. It is of no use to blame anyone about bringing HIV infection in the family. It is more helpful to support each other, plan for the future and enjoy the remaining days together.

Often friends, neighbours and community ostracize the people having HIV / AIDS due to social stigma and fear of contracting the infection by casual contact with HIV / AIDS patients. The underlying cause for such perceptions and responses is ignorance.

(ii) **Withdrawal** : The persons with HIV / AIDS often become quiet, feel lonely and retreat. They may feel disgraceful because of involvement of their personal behaviour, life-long infection and incurable disease and resulting feeling of helplessness.

(iii) **Care and Support** : Family and friends can give care provide love and support and can share the financial burden. Community can develop and establish a support system and provide help for comfort and rehabilitation. These are positive social responses experienced by the person having HIV / AIDS.

3.4 Social Issues

Environmental and social pressures, such as (i) loss of income, (ii) discrimination, (iii) social stigma (if the diagnosis becomes commonly known), (iv) relationship changes, and (v) changing requirements for sexual expression, may contribute to post-diagnosis psycho-social problems.

The case of Batwa from Bombay given below, explains the psychosocial impact of HIV / AIDS on the individual.

Example 4.2

"I have been forced to abandon my children. Each time I look at her, I die," says Batwa, about his four-year-old daughter Asha. Of late, he has given up looking at her. Asha with one hand hooked every six hours to a 25 percent glucose drip, silently awaits death. In the last 30 days, she has lost 1 kg. Now she weighs just 5 kgs. A blood test last month showed she was HIV positive. Her sister, nine-year-old Urmilla, who cared for Asha at Bombay's G.T. Hospital, talking to her and feeding her, left after the blood test. Urmilla and her six-year-old brother Ganesh have been placed in a home for orphans. Says a doctor in the hospital's skin department : "Asha has AIDS. There is no hope for her." The irony of the child's name escapes him.

Batwa's real name is Mohan Girdhar Wagela. He is an assistant in G.T. Hospital's mortuary. Over the past 12 years, he acquired the reputation of being a hard worker. In the past six months, his reputation has been replaced with that of an alcoholic. Says Bhishambar Muktaram, a sweeper in the hospital who has known Batwa for many years : "There was a time when all you heard was 'Batwa, Batwa, Batwa' in the mortuary. He was so skilled, doctors did not want to use any other help. Lekin, ab iska ticket kat gaya (But now, his days are numbered)." Because Batwa too, like his little daughter, is a victim of AIDS.

For 12 years, he lived within the compound of the hospital, his bed spread below the shade of a banyan tree. Roughly a year ago, his wife Meena, was admitted to the hospital's TB ward. Fellow workers asked him to leave. He moved with his three children to a hut nearby. But when Meena died five months ago, everything crumbled. "This is my wife," says Batwa, pointing to a postcard size photograph. "I know she died of AIDS."

Batwa is not allowed to work now. Until recently, every time he met Asha, she asked for biscuits and ice-cream. Batwa begged for the money so that he could keep Asha happy. "Now I can't do it anymore. People have abandoned me. And I have been forced to abandon my children." For the next half-hour Batwa cries. No one around him says a word. No one tries to console him. In Ward 14, Asha too cries alone, unaware of the fate that awaits her.

3.5 Check Your Progress - 2

(i) Match the statements given in Column A with the terms in Column B. Place the alphabet in the space given in Column A.

Column A	Column B
A. He has been indulging in all the sin, so it is good that he is being punished. Gives a feeling of	_____ a. self-esteem
B. "No body will come to me even though I am dying because I have AIDS" Gives a feeling of	_____ b. rejection
C. "After all I had been enjoying sex with so many partners. God had topunish me" Gives a feeling of	_____ c. Anxiety _____ d. Loss
D. "Now what is the use of living I have AIDS" is due to the feeling of	e. Fear f. Guilt
E. "Even though my tests are positive I have no symptoms" is due to a feeling of	_____ g. Depression h. Denial

4. Existing Resources for Support in the Community

Since the beginning of any epidemic, nurses have assumed a leadership role within their work environment and community. In communities which have not yet determined how they will prevent the transmission of HIV or how care will be provided, nurses may need to initiate the development of such services.

4.1 Existing Resources

Some health services may already exist within the community and may be able to provide some of the necessary services. For example, there may be :

i. services which have been or are in the process of being developed which are specifically for HIV / AIDS; within the community.

Loneliness

If you have HIV or AIDS, remember you are not alone. Many other people have HIV or AIDS.
If someone you know has HIV or AIDS, give them companionship. Take away their loneliness.

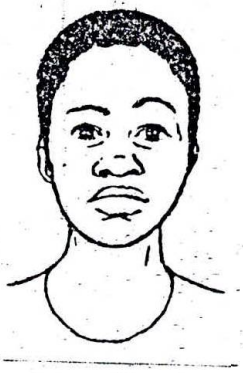
Fear

People with HIV or AIDS fear many things :

- Pain
- Losing their job
- Other people knowing that they are infected
- Leaving their children
- Death

It is frightening to have HIV or AIDS, but you may find that your fear becomes less when you talk to someone who understands.
You may also find that you are worried about things that you do not need to fear. For example, you may find that when other people learn you have HIV, they show you great love and kindness.

Acceptance



After some time most people with HIV or AIDS accept their situation. This is helpful. They often feel more serene (peaceful in mind). They often feel able to begin to think about the best way to live. They think :

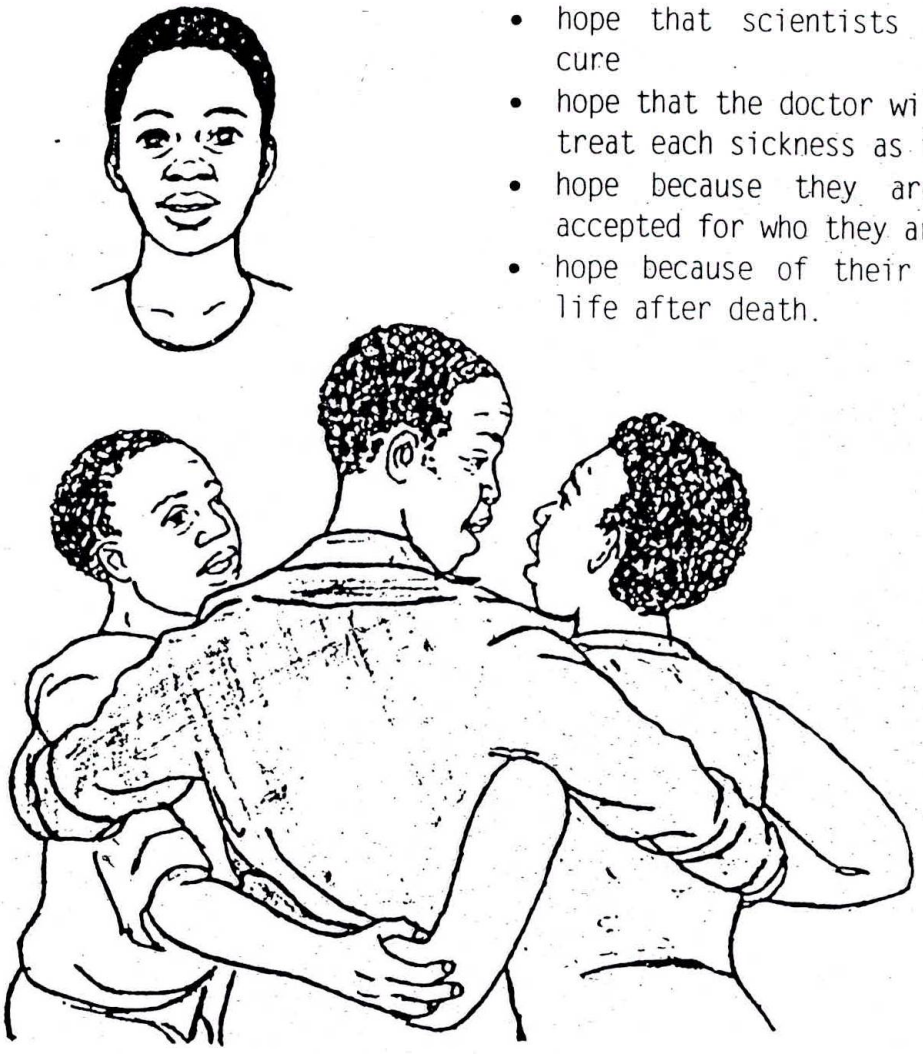
"What can I do to make the best of the rest of life ?"
"What foods should I eat to help me stay healthy ?"
"What plans shall I make so my children are provided for in future ?"

They might also think : "Let me be grateful for every day. Let me appreciate my friends and family".

Hope

People with HIV or AIDS can have hope about many things :

- hope that they will live a long time
- hope that scientists will find a cure
- hope that the doctor will be able to treat each sickness as it comes
- hope because they are loved and accepted for who they are
- hope because of their belief in a life after death.



It is important to have hope. Hope lifts your spirits and gives you strength to face each situation. Hope can help you to fight HIV and AIDS and live longer.

Remember : Even if you have hope today, it is possible to feel angry or depressed tomorrow. This is normal. The important thing is to try to regain the feelings of hope again and again.

Living positively with HIV and AIDS

Hope and acceptance can help you to **live positively** with HIV and AIDS.

But what does living positively mean ?

In the following pages, you can read about how families, friends and neighbours can help people with HIV or AIDS to live positively.

Exhibit 4.3

Role Play Depicting Constraints of an HIV Patient and Nurses

The nurse visits Mr. Ram in the community where he is living with his wife and child. Ram is sitting in the outer room, his wife is working in the kitchen and his son has gone to school.

Nurse	Namaste, Ram
Ram	Namaste, Behanji
Nurse	How are you, Ram ?
Ram	I am perfectly alright, Why have you come here, Sister ? You should have called me at the Centre.
Nurse	Ram, haven't you told your wife about the problem as yet ?
Ram	No, What is the need ? I will be alright, Please don't talk to my wife (Wife enters).
Wife	Namaste, Behanji, What happened to my husband ?
Nurse	(even though she wants to discuss but restrains herself). I came to visit all of you to find out if anyone is sick in the family. I was telling your husband to come to the Centre as he looks very weak.
Wife	No, Behanji, Everyone is alright - thank you very much.
Nurse	Ram, come to the Centre tomorrow at 10 AM to get some tonic as you look pale. (Nurse instructs Ram's wife to send her husband positively to the centre).

Exhibit 4.4

INTERNATIONAL COUNCIL OF NURSES CODE FOR NURSES

Ethical Concepts Applied to Nursing

The fundamental responsibility of the nurse is fourfold: to promote health, to prevent illness, to restore health and to alleviate suffering.

The need for nursing is universal. Inherent in nursing is respect for life, dignity and the rights of man. It is unrestricted by considerations of nationality, race, creed, colour, age, sex, politics or social status.

Nurses render health services to the individual, the family and the community and coordinate their services with those of related groups.

Nurses and people

- The nurse's primary responsibility is to those people who require nursing care.
- The nurse, in providing care, promotes an environment in which the values, customs and spiritual beliefs of the individual are respected.
- The nurse holds in confidence personal information and uses judgement in sharing this information.

Nurses and practice

- The nurse carries personal responsibility for nursing practice and for maintaining competence by continual learning.
- The nurse maintains the highest standards of nursing care possible within the reality of a specific situation.
- The nurse uses judgement in relation to individual competence when accepting and delegating responsibilities.
- The nurse when acting in a professional capacity should at all times maintain standards of personal conduct which reflect credit upon the profession.

Nurses and society

- The nurse shares with other citizens the responsibility for initiating and supporting action to meet the health and social needs of the public.

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- The nurse when acting in a professional capacity should at all times maintain standards of personal conduct which reflect credit upon the profession.

Nurses and society

- The nurse shares with other citizens the responsibility for initiating and supporting action to meet the health and social needs of the public.

Nurses and co-workers

- The nurse sustains a cooperative relationship with co-workers in nursing and other fields.

- The nurse takes appropriate action to safeguard the individual when his care is endangered by a co-worker or any other person.

Nurses and the profession

- The nurse plays the major role in determining and implementing desirable standards of nursing practice and nursing education.

- The nurse is active in developing a core of professional knowledge.

- The nurse, acting through the professional organization, participates in establishing and maintaining equitable, social and economic working conditions in nursing.

MODULE 5

DEVELOPING COUNSELLING SKILLS

SECTION - I : SIM

I. OVERVIEW

The learners are expected to have developed an understanding of basic concepts about epidemiology and transmission of HIV / AIDS, dynamics and prevention of HIV / AIDS transmission in health care settings and the psychological impact of the infection on the individual, family and community.

On completion of this module the learner will be able to understand the basic theory and practice of counselling skills in caring for people with HIV / AIDS and in preventing the spread of HIV. The learners should be able to begin using the skills themselves with adequate guidance and support.

II. SPECIFIC OBJECTIVES

On completion of this module, the learner will be able to :

- pinpoint the components, objectives and techniques of communication.
- be aware of the barriers that obstruct effective communication.
- identify the counselling skills that are appropriate when talking to patients in the context of HIV.
- relate why counselling skills are important to HIV.
- reflect on examples from their own clinical practice / given examples where counselling skills could have been used more effectively.
- specify the issues involved in pre -and post-HIV antibody test counselling.

III. INTRODUCTION

In the field of HIV / AIDS, counselling skills can be used in any encounter between nurses and patients. In practice, they are used in two basic ways :

- Preventing transmission of HIV infection through motivation and behaviour change.
- Providing psychosocial support to those infected or affected (e.g. patient's family) by HIV.

1.2 Components of Communication

Components of communication are source(s), message(m), channel(c) and receiver(R).

(i) **S - "source" :** 'sender' or encoder or person who initiates or starts the message.

(ii) **M - "message" :** The content which is to be conveyed. It can be verbal or non-verbal. Verbal is obvious and recordable where as bulk of communication is generally non-verbal by means of tone, voice, posture. Looking out for both these components may help the counsellor to see beyond what the client is obviously stating.

(iii) **C - "channel" :** Modes used for communication are : Senses of hearing, seeing, touch, smell and taste and speaking.

(iv) **R - "receiver" :** Decoder or receiver who receives the message.

Sender and receiver may be the client, friends, relatives or counsellor. Sender and receiver needs to have similar communication skills, attitudes, knowledge, understanding level and cultural pattern.

1.3 Objectives of Communication for HIV / AIDS

The objective of communication is to counsel the client to bring a sustained change in his / her behaviour. refer figure 5.1 to understand the process of behaviour change through communication. For example, the objective of counselling a person who smokes would be to achieve a change in his / her behaviour pattern, i.e. stop smoking. The first step is to create awareness about the ill- effects of smoking on one's own health through education / counselling. This awareness is not adequate if it is not personalized enough to cause concern. The combination of awareness and concern can motivate a person to change. i.e. to quit smoking or cut down on smoking.

A readiness to change needs to follow. This involves preparedness for coping with the negative effects of a new behaviour. In the case of quitting smoking, some negative effects could be : peers making fun of him, experience of uneasiness, recognising that one may have to replace smoking with a less harmful habit etc. This stage then leads to trial of new behaviour perhaps with some anxiety about its success. The response to the success of this new behaviour and experiences encountered may lead to a sustained behaviour change.

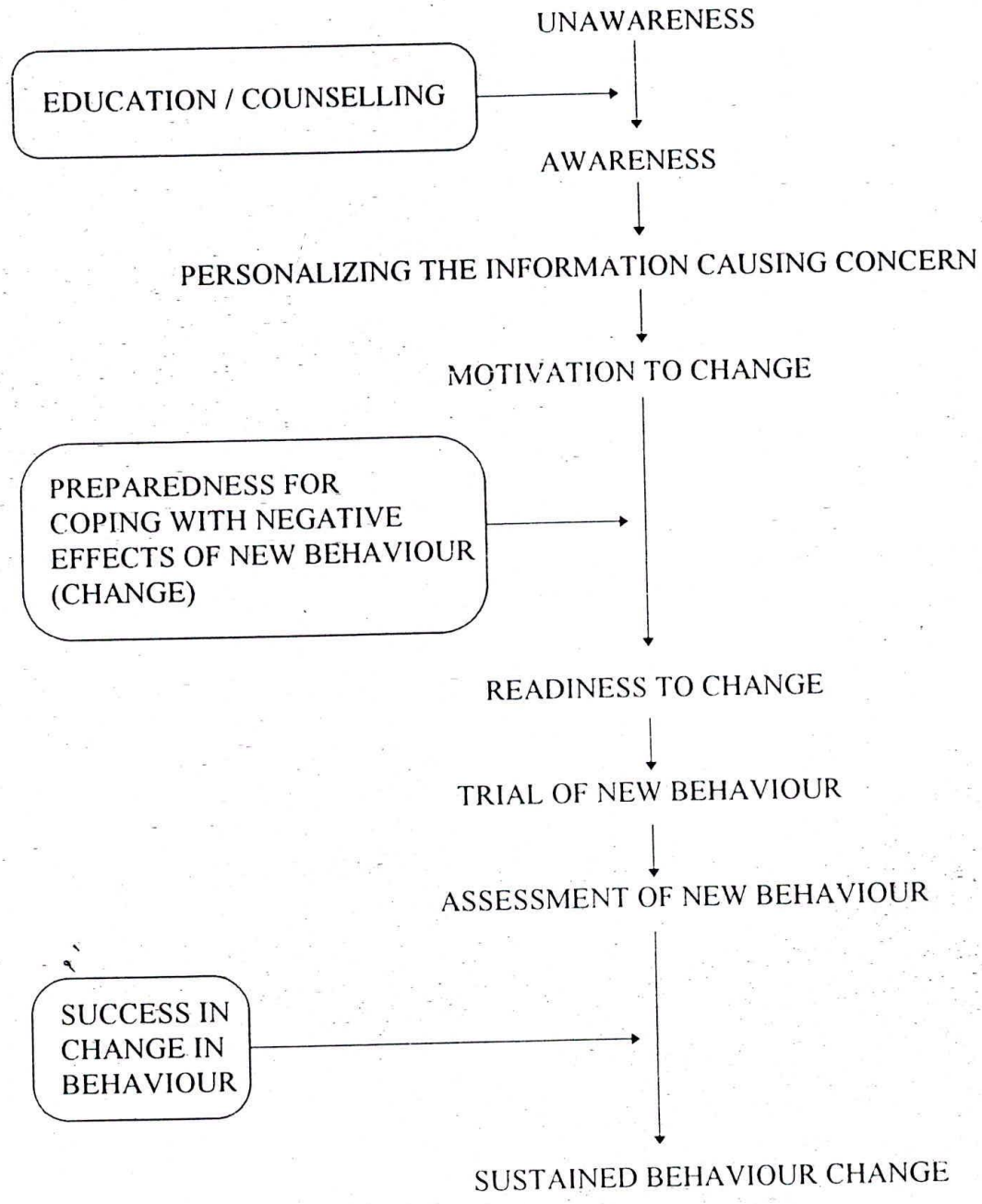

Figure 5.1 : A Model Describing the Process of Behaviour Change through Communication.

1.4 Communication Techniques

Communication in relation to counselling requires the establishment of rapport i.e. a trusting relationship between the counsellor and the client. The counsellor should be able to demonstrate and express sympathy. The various communication techniques for effective counselling are as follows :

(i) **Observing :** The counsellor makes an observation of overt and covert behaviour of the client while interacting. For example, the client wipes his perspiration, takes a glass of water, speaks in a low tone are examples of overt behaviour. The counsellor makes an observation of verbal and non-verbal communication.

(ii) **Questioning :** Counsellors use the questioning technique to obtain specific information, help the client communicate clearly, encourage exploration and clarification of thoughts, feelings and attitudes. Open-ended questions, which require more than a "yes" or "no" answer are more probing in nature. Example : "Would you tell me more about your feelings ?" "Would you like to tell me anything else ?"

(iii) **Active Listening :** Active listening demands extremely concentrated listening on the part of the counsellor, who must pay attention to the client's verbal disclosures, non-verbal cues and feelings that are indirectly expressed. Counsellors maintain and communicate their active involvement with the client while listening through non-verbal communication such as eye contact, nodding thehead, etc.

(iv) **Paraphrasing :** The counsellor can restate in his or her own words what the client said in order to let the latter know that he or she has been heard. Example : "So, what you are saying is that you can't imagine how you could have been exposed to HIV".

(v) **Identifying and Reflecting Feelings :** Counsellors can help clients identify and clarify their feelings and reactions by listening for the feelings being described and then reflecting them back to the client. Reflecting gives the counsellor an opportunity to interpret, and then compare with the client, what he/she has expressed. Example : "You seem to feel very angry with your husband for becoming infected with HIV, and deeply concerned about him at the same time. Can you tell me more about your feelings towards your husband ?"

(vi) **Focusing :** It is easy for the client to become sidetracked in the counselling session because many thoughts and feelings emerge during the process. The counsellor needs to help the client focus on the most important issues at hand. Example : "Let us come back to the issue of safe sex practices."

(vii) **Appropriate Use of Silence :** Silence in a counselling session is important at times. It gives the client an opportunity to reflect, integrate feelings, think through an idea or absorb new information. It is not always comfortable to allow the silence to continue, but counsellors should not interrupt it prematurely because of their own discomfort.

(viii) **Providing Information :** Providing information during a counselling session requires skill and awareness. Counsellors should present information in a clear and understandable manner, in an amount which is sufficient but not an overload, and during a point in the session in which it is appropriate and helpful.

(ix) **Assuring and Reassuring :** Counsellors assure and reassure clients verbally and nonverbally. For example, a client who receives a positive test may feel afraid of being rejected and "untouchable". The counsellor can reassure the client that he or she does not fear the client and will not back away. He / she does this by maintaining an open body posture, leaning forward, or reaching out and touching the client's hand.

(x) **Acknowledging and Validating :** Counsellors can let clients know that they are aware of their feelings and understand how and why they might be feeling that way by validating the response. Example : "I can understand why you would feel so sad about testing HIV positive and the losses you may face."

(xi) **Confirming Realities :** Counsellors need to confirm the truth and facts of what clients are facing and experiencing, even when they may want to protect them or cushion them from reality.

(xii) **Summarizing :** Summarizing is a useful technique at the end of a session, or in the middle, a time to pause, reflect on what has been discussed so far and to propose a similar or new direction.

(xiii) **Confronting :** Confronting the client may be an effective response when an issue is being denied or has not come out into the open.

(xiv) **Supporting and Modelling Behaviours :** Counsellors can support and reinforce specific behaviours by modelling them for and with the clients. For example, if a goal of the counselling session is for the client to improve communication skills, the counsellor can model clear and direct communication when he or she interacts with the client. When the client responds with clear and direct communication, the counsellor can comment on and support this type of dialogue.

1.5 Barriers of Effective Communication

Barriers of effective communication are :

(i) Failure to listen

(ii) Probing questions for finding out mysterious things about the client.

(iii) Ambiguous question (question with double meaning): For example, the counsellor asks the client: "So, you had been going out." The client may understand it as "so, he has been going out to another woman".

(iv) Failure to interpret for lack of knowledge.

(v) Too many interruptions during the session.

(vi) Partial or incomplete information to the client.

1.6 Check Your Progress - 1

(i) Define communication

(ii) State the objective of communication to a drug- user (injecting).

(iii) Give three reasons why communication may fail.

2. Basic Concept and Rationale for the Use of Counselling Skills in HIV / AIDS.

The content will be discussed under five headings:

2.1 Basic Concepts of Counselling
2.2 Rationale for Counselling
2.3 Essential Features of Counselling
2.4 Counselling Skills
2.5 Some Common Counselling Errors

2.1 Basic Concepts of Counselling :

Counselling is a helping process aimed at problem solving. It is face-to-face communication in which one person helps another to make decisions and take actions. Counselling aims at making the client independent. It helps people to understand themselves better in terms of their own needs, strengths, limitations and the resources they can avail of to bring about changes through a supportive relationship.

The nurse in a clinical and community setting can help a client to take decisions on problems related to HIV / AIDS.

(i) What are the aims of counselling in HIV/AIDS ? Major aims of counselling in HIV / AIDS are :

- to prevent transmission either to the individual in question or from an infected person to another.
- to help infected individuals to cope with the infected status and to help improve the quality of life.

(ii) Who should be given counselling ? Counselling should be given to :

a. people worried that they might have become infected with HIV.
b. people who are being considered for HIV testing.
c. people who have been tested for HIV (whether or not they are infected).
d. people who choose not to be tested despite past or present risk behaviour.
e. people who are unaware of the risk of HIV infection involved in the specific behaviour they have, or are engaged in.
f. people with AIDS or other diseases related to HIV infection.
g. people experiencing difficulties with employment, housing, financing, family etc.as a result of HIV infection.
h. the family and friends of people who are infected with HIV.
i. health workers and other professionals who come into regular contact with people infected with HIV.

(iii) Where can counselling services be provided ? Both preventive and supportive HIV / AIDS counselling can be given in any setting where there is or could be a discussion on HIV / AIDS. Such settings include :

a. Centres for sexually-transmitted diseases.
b. MCH & Family Welfare Centre.
c. Family Welfare Clinic in hospitals/dispensaries
d. PHC/Sub-Centre/Community health centres in rural areas.
e. Schools, organizations (social / industrial /religious) and all health out-reach programmes.

(iv) Who could provide counselling ? In addition to nurses, doctors, psychologists and social workers, other people can readily be encouraged and trained to provide counselling. Counsellors need not be formal health care providers. Teachers, health educators, religious and community leaders, youth group workers and members of self-help groups can undertake both preventive and supportive counselling.

2.2 Rationale for the Use of Counselling

(i) **Individuals diagnosed** or suspected as having HIV infection / AIDS have profound emotional, social and behavioural problems and medical consequences.

(ii) **The type of personal and social** adjustment required in the context of HIV infection often has implication and effect on family life, sexual and social relations, work and education, spiritual needs, legal status and for civil rights.

(iii) **Adjustment to HIV infection** involves constant stress management and adaptation. It is a life-long process that makes new and changing demands on individuals, their families and communities in which they live.

(iv) **Most people have** limited abilities or feel that they have limitations in what they can do and what changes they can make in their lives.

(v) **During the course of HIV infection**, a broad range of physical needs and problems are likely to be experienced. These may not remain constant and may progressively become more serious and difficult to handle. The changing nature of these needs imposes a variety of psychological and emotional strains on individuals and those close to them. Thus, the problems may threaten identity, independence, privacy and social status and generate fear of loneliness, dying and death, and feeling of guilt and anger.

2.3 Essential Features of Counselling

(i) **Privacy and Confidentiality :** Physical set-up should be non-disturbing and absolute privacy should be maintained so that the patient develops trust in the counsellor. The counselling relationship must be based on the understanding that whatever is discussed will remain confidential until and unless the client decides to share that information with someone else . There may be some instances where the counsellor or other health care workers feel that confidentiality may need to be broken e.g. that a decision should be made to notify the sex partners of an infected person even when the client has refused them permission to do so. In such situations, the health care provider will be required to make a decision consistent with medical ethics and relevant law of the country / state. When desired, anonymity should be maintained.

(ii) **Time Management :** Providing the client with time is important from the start. Much of the content of counselling, such as helping to accept the news about the diagnosis of AIDS cannot be rushed. Time is also necessary to establish a rapport and trust.

(iii) **Acceptance :** People with HIV infection and AIDS should always be encouraged to feel that they are fully accepted by the counsellor, irrespective of their life style, sexual preference, and socioeconomic, or religious background.

(iv) **Accessibility :** Counselling should be readily accessible and available on a regular basis.

(v) **Consistency and Accuracy :** Any information provided through counselling (e.g. about HIV infection, risk of infection, and risk reduction) should be consistent.

(vi) **Supportive and Non-supportive Behaviour :** Some part of a counsellor's behaviour readily supports the counselling process, while others can bring it to a halt very quickly. Some types of behaviour are summarized in examples given below. It should be noted that they are defined as supportive or non-supportive within a particular cultural context. Wherever counsellors are working, they will need to take note of the types of behaviour in the culture that would be supportive or non-supportive in counselling. Refer examples of supportive and non-supportive behaviour in a selected culture in Exhibit 5.2

2.4 Counselling Skills

In addition to technical knowledge about HIV infection, counselling principles and its values and information on resources, the counsellor must have awareness This involves assessing and knowing one's own strengths and weaknesses, prejudices and values.

Counsellors have their own needs and motivations, which they need to examine. They should ask themselves, for example, whether they can honestly assure other people that they will keep their secrets and maintain confidentiality. Will they be able to continue to counsel someone they dislike or whose behaviour offends them ?

The counsellor's effectiveness depends greatly on self-knowledge, self-discipline and self-restraint, and on achieving a balance between warmth and acceptance on the one hand, and objectivity on the other.

The following skills are required for counselling clients :

(i) **Forming a helping relationship :** Counselling skills can be learned and efectively used only by people who are genuinely concerned about others.

The helping relationship and the development of counselling skills also depends on a feeling of commitment to the work to be done. Counselling in relation to HIV infection is both intensive and difficult. It requires the counsellor to deal with regular loss and sometimes accept the behaviour which counsellor may not like himself / herself.

A supportive helpful relationship cannot develop if the counsellor does not acknowledge both the gravity of the problem and the context within which discussions take place. For example, trying to ask questions about sensitive personal topics in a crowded waiting room of a clinic obviously calls for an approach quite different from asking the same question in private. Privacy is important in any form of counselling, especially in relation to HIV infection because of the severe stress and stigma associated with the condition.

(ii) **Assessment**

(a) *Assessment of Motivation* : The counsellor needs to be alert to signs of psychological strength and the desire to maintain independence in the client. The counsellor must explore (and, where necessary, attempt to change) attitudes which weaken motivation in the following areas :

- The client's self-concept / self-evaluation. Is the "self-concept" one of the strengths or weaknesses, or is it worthy or unworthy ?
- Level of self-knowledge. How conscious are clients of their own thoughts, feelings, fears and actions ?
- Self protection. How do clients react to threatening information or events ? Denial is a common reaction.
- Explanation. How do the clients interpret what is happening to them and why is it happening ? Do the client perceive within or outside the self ?
- Anticipation. How do clients view the future ?

(b) *Assessment of Risk* : HIV/AIDS counsellors play a key role in helping individuals to assess their risk for HIV and help modify their risk behaviour.

- The counsellor assesses the client's current and past risk for HIV infection.

  Sexual behaviour and specific practices in particular, frequency and high-risk practices, such as vaginal, anal intercourse without using condoms, multiple sex partners, unprotected sexual relations with commercial sex workers.

  Injecting drug users.

  Being part of a group with known HIV prevalence or with known high-risk life styles, e.g. injecting drug users, male and female prostitutes and their clients, prisoners, and homosexual and bisexual men.

  History of blood transfusion, organ transplant, or administration of blood or blood products.

  Exposure to possibly non-sterile invasive procedures, such as tattooing and scarification.

- The counsellor assesses the client's knowledge of how HIV is transmitted and prevented, and identifies any misinformation.

(iii) Recognizing Signs of Psychological Stress : The counsellor must have skill in recognising and assessing signs of psychological distress and incapacity.Distress is a normal reaction to fearing or learning that one is HIV-infected. It can be alleviated only by expressing and discussing it, and by support.

(iv) Clarification of the Problems : Recognizing and clarifying problems calls for counselling skill. Counselling depends on a clear definition of problems. Many a times the new counsellors feels insecure and embarrassed about asking the kinds of questions needed to clarify the client's view of the problem. Problem recognition includes :

- defining the problem as the client sees it.
- determining why the client is seeking help now.
- ascertaining the duration and effects of the problem.
- recognising what the problem means to and how it will affect the client.
- repeating to the client the counsellor's interpretation of what has been said.
- finding out how the client is coping now and has coped with serious problems in the past. Who are the support people available in the family, among friends or religious organisations ?

- agreeing as to the problem (or part of a problem) to be tackled at a time.

(v) **Supportive Behaviour :** The counsellor needs to develop a skill in practising supportive behaviour. This has been discussed earlier in this section under 1.3 (vi).

(vi) **Establishing Goals :** The goals of counselling in relation to HIV infection are governed by the chronic nature of the infection and its possibility of ending in an early death. The goals should be developed related to what the clients expect to accomplish and what is to be expected of support systems.

(vii) **Helping Clients to Develop Basic Competence** : Many HIV-infected people may not be able to think clearly about their problem or to decide what shouid be done. They may withdraw socially, feel helpless and seem completely unable to make decisions or solve problems. A key counselling skill is to help them to regain a sense of competence and skill. For example, counselling must offer easy "how-to-do-it" instruction (ordevelopment of skill) on prevention of infection, use of condoms and maintaining caring relationships during a crisis. The counsellor must always focus on the basic skills needed in reducing risk and protecting others.

(viii) **Enhancing Coping Skills of the Client :** It would be useful to teach the client methods which would enhance his / her coping skills. One method which could be easily learnt is relaxation. A simple method to relax is to close your eyes and concentrate on your breathing, while letting your body loose. This should be practised for 15 minutes, twice daily.

(ix) Problem-solving and Decision-making in HIV / AIDS Counselling

(a) *Problem Solving and Decision Making* : To enable the clients to think through their problems, the counsellor has to rely very heavily on emotional support and sympathy.

Often, the counsellor helps the client to cope with the crisis of HIV / AIDS and facilitates the problem-solving and decision-making process. To enable the client to solve the problems related to HIV / AIDS the counsellor:

- reviews/discusses the action the client has already taken;
- discusses the personal and other resources available or needed;
- explains accurately the protective action the client will need to take; and

- helps the client establish a plan of action.

The family is a very important social system in the Indian context and performs a very essential function ranging from socialisation to providing the basic means for survival.

The counsellor may need to be present when family members and others are being told.

Many people will be reluctant to disclose the fact (i.e. HIV/ AIDS) for feelings of shame and guilt, and for fear of being rejected, or ostracised. The counsellor must accept that such fears are understandable but, nevertheless, encourage the clients to re-examine their objections to disclosure and looking to the family or other close associates for support. One of the most useful questions the counsellor can ask is : "What will happen to the people you love if you do not tell them now about what is happening to you ?" The counsellor may help the clients to consider how a spouse or partner has reacted in the past to some wrong doings, as well as rehearse the process of telling the family.

2.5 Some Common Counselling Errors

- Directing and leading - controlling rather than allowing and encouraging the client's expression of feelings and needs.
- Judging and evaluating, as shown by statements that indicate that the client does not meet the counsellor's standards.
- Moralizing, preaching, and patronising - telling people how they ought to behave or lead their lives.
- Labelling and diagnosing, rather than trying to find out the person's motivations, fears and anxieties.
- Unwarranted reassurance, diverting a client's attention from an issue and humouring the client - trying to induce optimism by making light of the client's own version of a problem.
- Not accepting the client's feelings - saying that they should be different.
- Advising, before the client has had enough information or time to arrive at a personal solution.
- Interrogating - using questions in an accusatory way. "Why" questions almost always sound accusatory.
- Encouraging dependence - increasing the client's need for the counsellor's continuing presence and guidance.

2.6 Check Your Progress - 2

(i) Enumerate five situations for counselling.
(a)
(b)
(c)
(d)
(e)

(ii) List the essential features of counselling.
(a)
(b)
(c)
(d)
(e)
(f)

3. Counselling and Clinical Practice

The counselling skills improve with the practice in clinical and community settings. These skills are difficult to learn in a classroom setting.

Case Study - 1

Ajitesh is an 18-year-old college student who lives in a small town. He has from his own College, a regular girl friend, with whom he has occasional sexual relations. Ajitesh occasionally experiments with drugs and visited a prostitute for his first sexual experience two years ago when his friends insisted him to accompany them to a brothel. His parents are keen that he marries a girl of their choice. They have fixed a marriage which will take place when he will be 20 years old. Ajitesh is upset for his visit to the brothel, and he goes for the HIV test. The result shows that he is HIV positive. He gets restless and does not know what to do. He goes to a nurse counsellor for help. The above incident / example raises the following questions :

3.1 How would you describe the incident ?

While describing the incident, no evaluative judgement should be passed on any of the characteristics, like sex, sexuality, socio-economic background, possible sources for transmission etc.

3.2 How did the incident make you feel ?

The irrational nature of prejudices like anger, rejection, condemning, punishing feelings for the client may emerge spontaneously. Once the nurse is aware of her own prejudices and those of others it would help the nurse counsellor to move towards greater acceptance and access to Ajitesh.

3.3 What do you feel about Ajitesh now ?

The nurse will develop sensitivity to the reality that Ajitesh will need special counselling for medical, psychosocial and welfare aspects. She will make an effort to help Ajitesh.

3.4 What would be your professional role in helping Ajitesh in this context ?

The nurse identifies that with her special counselling skills she is able to (i) form a helping relationship, (ii) assess the motivation, (iii) recognize signs of psychological stress, (iv) clarify the problem, (v) provide a supportive behaviour, (vi) establish the goals to help her client to cope with the crisis situation.

In case further medical tests are required, she would refer the client to an appropriate agency.

3.5 What might help Ajitesh in making a decision on his marriage ?

Ajitesh may be given an opportunity to talk freely to have mental catharsis. Informing and educating him about HIV and AIDS would help him to take a decision for his marriage.

3.6 Which counselling skill might help in this case ?

In the case of Ajitesh, the counselling skills that would be helpful are : observing overt and covert behaviour, listening attentively, informing about HIV / AIDS, clarifying his doubts and quaries, providing support and helping him to develop confidence to face his problems.

3.7 Is there anything that you would still like to do in relation to this incident ?

Follow-up care may be extended to Ajitesh. The nurse may also provide education to his friends by giving literature through Ajitesh, advise Ajitesh to explain his friends and contacts to go through the HIV test, and arrange HIV testing for people at the brothel through social workers.

3.8 How would you benefit from such an experience ?

The nurse counsellor gains confidence to handle similar incidents, incorporate such experiences in the clinical experiences of the students. She may also update her skill by attending short-term courses in counselling.

3.9 Check Your Progress - 3

(i) List the reactions the nurse may have towards Ajitesh.

(ii) Enumerate the special counselling skills the nurse could use in the case of Ajitesh.

4. Issues in Pre and Post-test Counselling

The content will be discussed under the following two headings :

4.1 Pre-test counselling
4.2 Post-test counselling

4.1 Pre-test Counselling

Pre-test counselling refers to counselling sessions between the client and the counsellor before the client takes the decision for HIV testing i.e. to be tested or not to be tested. Purposes of pre-test counselling are as follows :

- the client understands what the test implies and what a positive or negative result means.
- to clarify the misconception of client about HIV antibody testing.
- to alleviate the fear and anxiety of being positive.

(i) Counselling Issues related to Test Seeking

(a) Possible reasons for seeking test are :

- Prior to blood donation
- Prior to tissue / organ transplantation
- When there is a high-risk behaviour
- When suspected of having HIV infection (from the clinical signs).

(b) *Accessibility of testing facilities* : People who are considering being tested for HIV infection, must be given information on the HIV testing facilities available.

(c) *Provision of counselling services at HIV testing centres* : To facilitate pre-test and post-test counselling there should be counselling services attached to the testing centres.

(ii) Principles of Pre-test Counselling :

- Counselling before the test should provide individuals who are considering being tested with the information on the technical aspects of screening and on the possible personal, medical, social, psychological, and legal implications of being found either HIV positive or HIV negative.

- Informed consent implies awareness of the possible implications of a test result. There must be a clear understanding of the policy on-consent in every instance, and anyone considering being tested should understand what he / she is being tested for.

- Testing of HIV infection should be organised in such a way that minimizes the possibility of information disclosure.

- In screening, the rights of the individual must also be recognized and respected.

- Confidentiality should be ensured in every instance, both for the clients and their records.

- Pre-test counselling should be centred on two main topics : first, the person's personal history and risk of being or having been exposed to HIV; secondly, the client's understanding of HIV / AIDS and previous experience in dealing with threatening situations. Refer to exhibit 5.4-A for sample questions for assessment of psychosocial factors and knowledge.

- Pre-test counselling should include a careful consideration of the person's ability to cope with a diagnosis and the changes that may need to be made in response to it. Refer to exhibit 5.4-B regarding issues of pre-test counselling.

4.2 Post-test Counselling

Once a decision has been made to take the test for HIV antibody, arrangements should be made to prepare for post-test counselling. HIV testing can have three possible outcomes :

a. a negative result;
b. a positive result;
c. other issues with regard to HIV Testing

(i) **Counselling after a Negative Result :** It is very important to carefully discuss the meaning of a negative result (whether this was expected or not). The news that the result was negative is likely to produce a feeling of relief or euphoria, but the following points must be emphasized.

a. Following possible exposure to HIV, the "window period" must have elapsed before the test results can be considered reliable. This means that, in most cases, a minimum of at least three months must have elapsed from the time of possible exposure before a negative test can be considered to mean that infection did not occur. A negative test result carries greatest certainty if at least six months have elapsed since the last possible exposure.

b. Further exposure to HIV can be prevented only by avoiding high-risk behaviours. Safer sex and avoidance of needle-sharing must be fully explained.

c. Some clients have false belief that since high- risk behaviour has not led to infection so far, they have a natural immunity to HIV.

d. Other information on control and avoidance of HIV infection, including the development of positive health behaviours, must be provided. It may be necessary to repeat such explanations.

(ii) **Counselling after a Positive Result :** People diagnosed as having HIV infection or disease should be told as soon as possible. The discussion should be held in private and under conditions of confidentiality.

The pre-test assessment can be used to determine the best way to tell the client about the test result. How the news is accepted will depend on certain factors. Refer to exhibit 5.6 regarding points for consideration. The client must be told how to contact the counsellor during periods of severe stress. There should be some discussion of what may happen if employers or others learn that the person is HIV infected. All the information previously given about safer sex, prevention of transmission, and maintaining health must be repeated. Follow-up visits must be arranged, often on a routine basis.

Counsellors must always stress on "positive living" and the individual's responsibility for changing behaviour to avoid infection or to limit, if

not eliminate, the risk of transmission, and the life-long nature of the infection and of the risk of infecting others.

The following points need to be repeatedly emphasized :

a. HIV infection is not AIDS. Prognoses vary, but every infected person should be encouraged to live a normal social and economic life unless AIDS-related symptoms do not permit this. Since normal living requires the support of others, those concerned may need regular counselling to anticipate and cope with new needs.

b. A person who is HIV positive should take care of his or her general health. The presence of other infections, such as other sexually-transmitted diseases or any illness will affect the immune response and may hasten the development of AIDS. The counsellor must explain how the risk of infections can be avoided through general hygiene and the prevention of other sexually-transmitted diseases, emphasizing the use of condoms and reducing the number of sexual partners.

c. Spouses and partners will need support, telling them that HIV infection has been found. Considerable support for this may be needed from the counsellor. Bringing spouses or partners in for counselling to prevent transmission.

d. Spouses and partners must be protected against infection; Condoms should be recommended to prevent infection transmission and re-infection of the patient. The counsellor should stress the need for care in ensuring that the condoms are of good quality and intact. Latex condoms are much safer than animal membrane condoms. The use of spermicide in conjunction with condoms should be recommended.

(iii) Other Issues with regard to HIV Testing

a. A test result may show negative findings but in reality there may have been insufficient time for full sero conversion (i.e. "window period"). In such circumstances the counsellor needs to explain the need for retesting after a period of three months for confirmation. It is then important for the counsellor to emphasize essential preventive messages regarding sexual and drug-user activity, body fluids and tissue donation. The person will need to undertake the precautions recommended for HIV positive person until proven otherwise.

b. When someone is seeking to be tested and gives no history of high-risk behaviour, the counsellor should enquire into the

reasons why testing is sought, and offer preventive and supportive counselling.

c. The counsellor may discourage people who do not want to know the test result, but should make it quite clear to them that they must behave as they were seropositive in order to prevent infection of themselves or transmission to others.

d. A positive result in an ELISA test is reasonably accurate but since the test can give both false- negative and false-positive results, follow-up and confirmatory tests are necessary.

4.3 Check Your Progress - 4

(i) Example 1 : Jane, a 28-year-old working woman came to STD clinic with complaints of burning micturition and a history of multiple sex Partners. The nurse told her the need for HIV testing. She was reluctant. The nurse explained her that it was upto her to agree or not and that the information would remain confidential and anonymous. Jane asked a number of questions about HIV infection and the need for the test. During the conversation she clarified her concepts. She said that she was afraid of being HIV positive and that was why she did not want to be tested. The nurse shot back that her fear would still remain if she did not get tested. On the contrary, the testing would indicate whether she was positive or negative. If she was found positive, at least she would aim for positive living.

Read the example and answer the following questions :

(i) List three purposes of pretest counselling as shown in the example.

(ii) What are the possible reasons for seeking HIV testing?

(iii) In the case of Jane (Example 1), who gives the history of multiple sex partner, the HIV test result was found to be negative. Discuss the issues of post- test counselling in the case of Jane.

V. ANSWERS TO CHECK YOUR PROGRESS

1.6(i) Communication refers to the reciprocal exchange of information, ideas, beliefs, feelings and attitudes between persons or among a group of persons through a common system of symbols, signs or behaviour.

1.6(ii) The objective of communication with a drug user will be to achieve a motivation for change in his / her behaviour pattern, i.e. stop using injectable drugs or stop sharing needles with others or use individual sterilized needles.

Exhibit 5.6

How the news of HIV infection is accepted or incorporated may depend on the following :

a. The person's physical health at the time. People who are ill may have a delayed reaction. Their true response may appear only when they have grown physically stronger.

b. How well the person was prepared for the news ? People who are completely unprepared may react very differently from those who were prepared and perhaps expecting the result. However, even those who are well prepared may experience the reactions described herein.

c. How well the person is supported in the community and how easily can he or she call on friends ? Factors such as job satisfaction, family life and cohesion, and opportunities for recreation and sexual contact may all make a difference in the way a person responds. The reaction of the news of HIV infection may be much worse in people who are socially isolated and have little money, poor work prospects, little family support, and inadequate housing.

d. The person's pretest personality and psychological condition. Where psychological distress existed before the test result was known, the reactions may be either more or less complicated and require different management strategies than those found in persons without such difficulties. Post result management should take account of the person's psychological and / or psychiatric history, particularly as the stress of living with HIV may act as a catalyst for the reappearance of earlier disturbance.

In some cases, news of HIV infection can bring out previously unresolved fears and problems. These can often complicate the process of acceptance and adjustment and will need to be handled sensitively, carefully, and as soon as possible.

e. The cultural and spiritual values attached to AIDS, illness, and death. In some communities with a strong belief in life after death, or with a fatalistic attitude towards life, personal knowledge of HIV infection may be received more calmly than in others. On the other hand, there may be communities in which AIDS is seen as evidence of an antisocial or blasphemous behaviour and is, thus, associated with feelings of guilt and rejection.

1.6(iii) Any three of the following answers :

a. failure to listen.
b. unnecessary probing.
c. ambiguous questioning.
d. failure to interpret due to inadequate knowledge.
e. interruptions / disturbance during session.
f. partial / incomplete information given to the client.

2.6(i)

a. people who are worried that they might have become infected with HIV / AIDS.
b. people who are being considered for HIV testing.
c. people who have been tested for HIV (whether or not they areinfected).
d. people who choose not to be tested despite past or present risk behaviour.
e. family and friends of people who are infected with HIV / AIDS.

For other alternative situations see SIM 1.1(ii)

2.6(ii) The essential features of counselling are :

a. privacy and confidentiality.
b. time management.
c. acceptance.
d. accessibility.
e. consistency and accuracy.
f. supportive behaviour.

3.9(i)

- Anger
- Punishing
- Condemning
- Rejecting

3.9(ii)

- Forming a helping relationship.
- Assessment of motivation.
- Recognising signs of psychological stress.
- Clarification of problems.
- Supportive behaviour.

4.3(i) In Jane the purpose of pretest counselling was :

- To take an informed decision about HIV testing.

- To clarify the misconcepts on HIV testing, and Jane now understands what the test implies.
- To alleviate the fear and anxiety of being positive.

4.3(ii) Possible reasons for testing are :

- Prior to blood donation.
- Prior to tissue / organ transplantation.
- When there is a high-risk behaviour.
- When suspected of having HIV infection from clinical signs.

4.3(iii) As Jane gives the history of high-risk sexual behaviour along with complaints of STD it is possible that she is in the "window period". She needs to be explained the need for a repeat test after six months and refrain from high-risk behaviour and adopt safer sex practices.

Exhibit 5.1

An example of a Role play on Techniques of Communication.

Counsellor	Namaste Mr. Sham
Client	Namaste Sisterji
Counsellor	Sham your are looking very weak, what has happened to you (Observation)
Client	Sisterji, I' am having fever for last one month, loose motions, and I am loosing weight.
Counsellor	Did you show yourself to Doctor? (Questioning)
Client	Yes, I have shown to Doctor, they have told me that I am having AIDS. (Keep silence for 2 seconds) wipes face.
Counsellor	Keeps silent by putting hand on Mr. Sham's hand (Observing and supporting)
Client	I do not know what will happen to my wife and children, they say that now I have contracted the disease, and I will die.
Counsellor	It looks you are very much worried about your wife and children (Reflecion). How many children you have, Is there any one in the family, who is earning. (Questioning and sharing concern).
Client	'No one' I am the only earning member.
Counsellor	You said that there is no one to look after the financial aspect. Have you thought of something. (Paraphrasing).
Client	Pause.... Starts crying.
Counsellor	Allows Mr. Sham to cry and sit quietly for 5 minutes (silence and listening). I can understand, from your talk it looks you are very worried about financial loss you may have (Acknowledging and validating).
Client	Sisterji, I'm worried whether I can give infection to my wife and children.
Counsellor	Sham you need not worry about your children, but must take precaution while having sexual relation with the wife (Informing). Use condom so that you do not transmit infection to your wife. You must take care of your health, by maintaining good hygiene and taking mixed and adequate food, so as to avoid any infection (Informing).
Client	Thank you Sisterji for giving me help.

Exhibit 5.2

Supportive and Non-supportive Behaviour

a) Supportive

Verbal

- Addresses the client in a manner appropriate to his/her age.
- Uses language that he understands.
- Repeats, in other words, clarifies the client's statements.
- Explains clearly and adequately.
- Summarizes
- Responds to a primary message.
- Encourages : "I See", "Yes, go on"
- Gives needed information.
- Uses humour or other means of reducing tension.
- Does not criticize or censure the client.

Non-verbal

- Uses a tone of voice similar to the client's.
- Looks the client in the eye, maintains eye contact with him/her.
- Nods occasionally; uses facial expressions.
- Occasional gestures.
- Suitable conversational distance.
- Does not speak too quickly or too slowly.

b) Non-Supportive

Verbal

- Advising
- Preaching
- Blaming
- Cajoling (persuading by flattery or deceit)
- "Why" questions
- Directing, demanding
- Straying from the topic
- Patronizing (condenscending) attitude.

Non-verbal

- Looking away frequently
- Inappropriate distance
- Sneering
- Frowning, scowling and yawning
- Unpleasant tone of speech
- Speaking too quickly or too slowly.

Exhibit 5.3

Observation of Communication Techniques used in the Role Play / Counselling Process

Communication Techniques	Place a Tally(1) against the tech. when used	Total No. of tally	Rank most to least used technique
(i) Observing			
(ii) Questioning			
(iii) Active listening			
(iv) Paraphrasing			
(v) Identifying and reflecting feelings			
(vi) Appropriate use of silence			
(vii) Focusing			
(viii) Providing information			
(ix) Assuring and reassuring			
(x) Acknowledging and validating			
(xi) Confirming realities			
(xii) Summarizing			
(xiii) Confronting			
(xiv) Supporting and modelling			

Exhibit 5.4

Exhibit 5.4 - A

Assessment of Psychosocial Factors and Knowledge

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1. Why is the test being requested ?

2. What particular behaviours or symptoms are of concern to the client ?

3. Has the client sought testing before, and if so, when, from whom, for what reason, and with what result ?

4. What does the client know about the test and its uses ?

5. What are the client's beliefs and knowledge about HIV transmission and its relationship to risk behaviour ?

6. Has the client considered what to do or how he/she would react if the result were positive, or if it were negative ?

7. Who could provide (and is currently providing) emotional and social support (family, friends, others) ?

Exhibit 5.4 - B

Issues of Pretest Counselling

- Determine what that person understands about HIV and AIDS.
- Provide factual information as needed.
- Discuss potential implications of positive and negative test results.
- Explain and obtain formed consent.
- Review the test procedure.
- Assess the person's ability to cope with a positive result.
- Establish who else should be informed and is likely to be supportive to the client if tested positive.
- Explain the meaning of false positive and false negative results.
- Establish a relationship as a basis for post-test counselling.
- Provide adequate preventive counselling.

Exhibit 5.5

Points to be Emphasized while Counselling

- No test can tell whether someone has, or will develop AIDS.
- The tests available detect antibodies to HIV in the blood.
- The presence of HIV antibodies (except for passive maternal antibodies in the case of uninfected infants of HIV-infected mothers) is proof only of HIV infection; it does not prove that the person is suffering, or will suffer, from an HIV-related disease. It is impossible to tell from a positive HIV test when the person was infected, or for how long. This point is important and needs to be discussed with clients so as to make sure that they understand that HIV infection may have occurred before an existing relationship began and does not necessarily imply that the current partner has been unfaithful.
- Whether the test is positive or negative or even if not tested behaviour must often be changed, either to remain negative or to protect others against HIV infection.
- A negative result does not rule out infection; if there has been a risk behaviour, the test should be repeated three months after the exposure has occurred, to allow for the "window effect."
- Some kind of behaviour and practices are dangerous to the HIV- infected person, because they lead to exposure to other infections, including sexually-transmitted disease. "Safer sex" must become part of the way of life both of the seropositive person and the seronegative person who want to remain seronegative.

The counsellor should tell the client about any official policy on further testing for confirming a positive result. For example, the policy may be to follow an initial positive ELISA test with a second one and, if that is also positive, to confirm with the Western Blot.