TRAINING MANUAL

ON HIV/AIDS FOR

HOMOEOPATHY AND AYURVEDA

PHYSICIANS

CENTRAL COUNCIL FOR RESEARCH IN HOMOEOPATHY

2015

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Disclaimer: Medical knowledge is ever changing and progress made in the field of HIV is very fast. All due cautions have been made to keep the document updated. However, the practitioners are strongly encouraged to refer to the latest publications of the Government of India and World health Organization.

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FOREWORD

The number of people living with HIV increased from around 8 million in 1990 to 34 million by 2011. Since the beginning of the epidemic almost 30 million people have died from AIDS related causes. In the recent years, though the incidence of the disease has reduced, the disease is nowhere near eradication. Lifelong maintenance treatment strategies have been devised, but cure remains elusive. Prevention is still of paramount importance. There is no vaccine against the infection. Prevention through behavior change modification plays a vital role. Various strategies have been devised to identify persons with high risk behavior and promote change in risk behaviours. One such strategy is identification of high risk behaviours in persons approaching primary care physicians. The practitioners can play a major role in the risk assessment and delivery of HIV prevention messages to the patient population that they cater to. For this purpose, they need to be trained, bringing in a process of skill building, which re-enforces the art of communication with the patients.

Homoeopathy & Ayurveda, inspite of being different systems of medicine, originating centuries apart in different parts of the world are common in their wholistic approach to patient care and healing. With more than 5 lakh practitioners, the physicians can be actively involved in delivery of HIV prevention messages to their patients and families and in the community at large.

With this background, Central Council for Research in Homoeopathy undertook a collaborative study with the University of California Los Angeles to identify the perceived role of the practitioners and their knowledge and attitudes towards human immuno-deficiency virus /acquired immuno-deficiency syndrome (HIV/AIDS). This manual was developed as a part of this collaborative study and has been tested to identify the change in attitudes and behavior of the physicians towards HIV/AIDS. The trainings conducted in Delhi & Mumbai have brought in significant improvement in knowledge of the practitioners.

The manual is practical in its approach and focuses on learning by sharing experiences, discussing with peers and debating on issues. The formal environment ensures that the correct messages are percolated and the participatory approach maintains the interest of the practitioners. It is hoped that this manual will be adopted by the teaching institutions and will be useful for the students. It will also be useful for the practitioners in the field, who can organize such training as a part of continued medical education programs. Apart from this manual, CCRH has also developed a monograph on its research studies on HIV infections, which the practitioners can also refer.

However, it must be added that this is an area of comparatively recent in origin and new insights happen every day. It is recommended that the educators or trainers applying this manual in the field update their knowledge and use this manual as a guide, rather than as a standalone document on HIV/AIDS.

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We are grateful to the participants of the studies conducted in Delhi (2003 & 2005), Pune (2004) & Mumbai (2010) who shared their experiences with us, participated in the trainings, conducted the secondary trainings and participated in the assessments.

ABBREVIATIONS

ADC	AIDS Dementia Complex
AIDS	Acquired Immuno-deficiency Syndrome
ANC	Antenatal Clinics
ART	Anti Retro Viral Therapy
CDC	Centre for Disease Control
CMV	Cytomegalovirus
CRF	Circulating Recombinant Forms
DNA	Deoxyribonucleic acid
ELISA	Enzyme-Linked Immunosorbent Assay
GRID	Gay Related Immuno-deficiency
HAART	Highly Active Anti-Retroviral Therapy
HCW	Health Care Workers
HIV	Human Immunodeficiency Virus
HRGs	High Risk Groups
HSS	HIV Sentinel Surveillance
HTLV-III	Human T-cell Lymphotropic Virus III
IB	Immunoblot
ICMR	Indian Council of Medical Research
IDU	Injecting Drug Users
IFA	Immun-oflourescent assays
IPR	Interpersonal relationship
ITP	Idiopathic thrombocytopenia
IVDU	Intravenous Drug Use
LAV	Lymphadenopathy Associated Virus
MAC	Mycobacterium Avium complex
MTCT	Mother To Child Transmission
NACO	National AIDS Control Organization
NACP	National AIDS Control Program
PCP	Pneumocystis Carini Pneumonia
PEP	Post-Exposure Prophylaxis
PGL	Persistent Generalized Lymphadenopathy
PrEP	Pre-Exposure prophylaxis
RIBA	Recombinant Immuno-Blot Assay
RNA	Ribonucleic acid
TB	Tuberculosis
URF	Unique Recombinant Forms
UTs	Union Territories
WB	Western Blot
WHO	World Health Organization

INTRODUCTION

A Survey conducted in India in 2005 identified that 12.66 percent people in the country prefer Homoeopathy over other therapies for treatment of common ailments and 11.44 percent for serious ailments as last resort[1]. Homoeopathy physicians are generally primary health care physicians and services are available in both private and public sector. Inspite of being such a workforce, no studies had been undertaken to identify the role of Homoeopathy practitioners in providing HIV education and prevention, nor had they been informed of the most effective approaches that can be utilized in reaching populations most at risk for HIV/AIDS.

Central Council for Research in Homoeopathy undertook a collaborative study with the University of California Los Angeles, entitled AIDS Prevention with Traditional Medicine to bridge these gaps by examining the practices of Homeopathy practitioners, and to investigate best practices for the future development and implementation of an HIV/AIDS education and prevention training program. The study assessed the current level of knowledge of, and attitudes about, HIV/AIDS among Homoeopathic educators and practitioners. Focus group meets with practitioners and educators were conducted.

This study identified that general knowledge of HIV/AIDS was lacking[2], especially its damaging effects on brain, and other symptoms. Further, it was identified that education will assist with more information about the signs and symptoms of HIV/AIDS and clinical manifestations ranging from the asymptomatic to the symptomatic stages of HIV/AIDS will be useful in enhancing the knowledge of the homoeopaths.

The physicians identified various barriers[3] to the communication of prevention messages to their patients. Since HIV is a disease of comparatively recent origin a large number of practitioners were trained prior to the HIV era. These physicians particularly, in the absence of any formal re-orientation or continued medical education trainings suffered from lack of knowledge, and faced a number of myths. This resulted in a handicap in addressing the issue and risk assessment of the patients. Social factors such as stigma, fear, ignorance associated with the disease and discomfort during discussion on sexuality, both at society and practitioner level were also a barrier to delivery of prevention messages. Also the practitioners voiced their concerns about lack of time, financial constraints of patients for appropriate testing and medical treatments, etc. as other barriers. The facilitators such as educational enablers were identified. Emphasis was made on repeated trainings and formal continued education programs. The need for practical trainings rather than theoretical concepts was also identified. It was important to address societal barriers through tailored educational programs with appropriate reference materials for practitioners.

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[1] *Singh Padam, Yadav R.J., Pandey, Arvind. Utilization of indigenous systems of medicine & homoeopathy in India. Indian J Med Res 122, August 2005: 137-142*

[2] *Nyamathi A, Singh VP, Lowe A, Khurana A, Taneja D, George S, et al. Knowledge and attitudes about HIV/AIDS among homoeopathic practitioners and educators in India. Evid Based Complement Alternat Med 2008;5:221-5.*

[3] *George S, Nyamathi A, Lowe A, Singh V, Khurana A, Taneja D. Assessing the potential role of indian homeopathic practitioners in HIV education and prevention. World Med Health Policy 2010; 2:195-216.*

The approach of homoeopathy to address emotional and mental conditions of patients, were identified as advantage for risk assessment and delivery of prevention messages by the homoeopathic physicians. It was therefore concluded that within an enabling environment, a concerted prevention campaign, with training, monitoring and evaluation strategies, innovative programs can be conducted for homoeopathy practitioners that are critical for promoting prevention of HIV/AIDS throughout India[4].

Accordingly, CCRH undertook a second collaborative study with an objective to:

- build capacity and skills among homoeopathy practitioners and educators in the design, development and evaluation of culturally-competent programs focused on HIV prevention and on health promotion, both physical and emotional, in HIV positive persons; and
- demonstrate the delivery of a model program, which can be replicated throughout India.

The goals of training were to:

- provide health care providers with innovative techniques to educate others in prevention and care for people with HIV infection.
- dispel myths, correcting misunderstandings and allaying fears to improve quality of health care services.
- confidence build up in delivering prevention messages.

The ambit of the program was expanded to include ayruveda practitioners as well. CCRH, therefore, developed an education module to equip homeopathic and ayurvedic health care personnel to impart accurate AIDS information and prevention counseling to their patients in an efficient manner.

This manual was tested on homoeopathy and ayurveda practitioners, and resulted in increasing the knowledge of the practitioners about HIV/AIDS[5],[6]. It was also identified as a useful enabler in delivery of HIV prevention messages by the practitioners & educators to their patients and students.

EXPECTED OUTCOME

The manual is developed to provide both theoretical knowledge related to HIV infection and AIDS and practical knowledge related communicating about the disease to identify high risk behaviors and imparting prevention messages. The manual provides a suggestive plan for conducting training programs on HIV/AIDS. It is anticipated during training programs the practitioners, prefer being prefer being collaborators rather than containers. It is therefore, important to identify training methodologies, where the trainees play an active role and have a participatory approach, rather than being passive listeners. It is also important that ample opportunity is provided to share experiences

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[4] *Nyamathi A. Nyamathi A, Singh VP, Khurana A, Taneja D, Fahey JL. Preparation of health care providers for HIV/AIDS prevention using innovative train-the-trainer methods: A skills building workshop developed with the Indian systems of medicine and Homoeopathy. Presented at AIDS India 2005, MGR Medical University, Chennai. October 2005*

[5] *Nyamathi A, Khurana A, Singh VP, Shrikanth N, Taneja D, Choudhury SM, et al. Delivery of a model HIV prevention and health promotion train-the-trainer program in India by homeopathy and ayurveda practitioners and educators. World Med Health Policy 2010; 2:47-72.*

[6] *Taneja D, Nyamathi A, Khurana A, Srikanth N, Nayak C, Padhi MM, et al. Efficacy of train the trainer module in delivery of HIV prevention messages in homoeopathy and Ayurveda practitioners. Indian Journal of Research in Homoeopathy 2014; 8(2):136-46*

and to voice concerns specially when dealing with socially and personally sensitive topics. The ground rules for training have also been identified in this manual. The time schedules given are only suggestive and are likely to vary in training programs. The focus of the trainings should however, be on participative approaches, which could be given more time.

It is expected that training conducted using this manual will be useful for:

- capacity building of homoeopathy & ayurveda practitioners when dealing with HIV infected persons or with high risk groups
- increasing knowledge of practitioners about HIV/AIDS
- developing an understanding of HIV infection not only as a medical problem, but as an interaction of social, personal and ethical concerns
- dispelling myths & stigmas related to HIV/AIDS
- identifying patients who could be at risk of contracting HIV infection & institute prevention messages
- promoting behavior change communication with their patients
- identifying conditions which would prompt referral of HIV infected patients to other facilities

SUGGESTED PLAN OF TRAINING

Day 1

Session	Topic	Duration
1	Program overview	40 minutes
2	Epidemiology of HIV/AIDS *(Reading & Discussion)*	20 minutes
3	HIV Immunodeficiency virus *(Reading & Discussion)*	40 minutes
4	Transmission of the virus *(Reading & Discussion)*	45 minutes
5	Natural history of HIV/AIDS *(Reading & Discussion)*	45 minutes
6	Clinical manifestations & Opportunistic infections *(Reading & Discussion)*	60 minutes
7	Laboratory diagnosis *(Reading & Discussion)*	40 minutes
8	Management of HIV Infection *(Reading & Discussion)*	40 minutes
	TOTAL	6 HOURS

Day 2

Session	Topic	Duration
9	Impact of HIV Infection *(Reading, Case scenarios, debate)*	1 hour
10	Prevention of HIV/AIDS *(Reading, Group activities, Role plays, Case scenarios)*	2 hours 30 minutes
11	Counseling & Behaviour change communication *(Reading, Group discussion, Role plays)*	2 hour 30 minutes
	TOTAL	6 HOURS

SESSION - 1

GENERAL INTRODUCTION & PROGRAM OVERVIEW

This session introduces participants to the course on HIV/AIDS care and provides an overview of the program.

OBJECTIVES OF THIS SESSION:
By the end of this session, participants will be able to

1. Identify the goals, objectives and areas to be addressed.
2. Assess and discuss their own level of knowledge and sense of competency in those areas.

TIME: 40 minutes

PREPARATION: An assessment questionnaire can be used as pre-test & post test. Make a copy of the pretest / self-assessment for each participant.

DELIVERY:
Step 1
Welcome the participants, introduce yourself and ask each participant to introduce himself or herself, state their position and say how the course will contribute to their work. (15 minutes)

Step 2
Explain the goals, objectives, schedule of training and ground rules for the training. (10 minutes)

OBJECTIVES:
The goal of this training is to train Ayurveda/Homoeopathy physicians on different aspects related to HIV/AIDS. The purpose of this training is to:

- Develop an understanding of the HIV/AIDS disease process
- Appraise legal, ethical and social issues associated with HIV infection and AIDS disease
- Assess high risk behaviour of their clients and identify those who could possibly be at risk of HIV infection
- Provide prevention counseling to their clients
- Diagnose and manage HIV/AIDS and HIV-related diseases, including opportunistic infections.
- Improve quality of care for opportunistic infections and HIV-related conditions

The training manual presents the biomedical facts of care for people with HIV/AIDS in the context of a comprehensive public health approach, taking into account the physical and psychosocial needs of clients, patients, and their households. It also approaches the specific recommendations for diagnostic measures and patient treatment from a global perspective and directs the facilitator and participants to refer to and discuss local guidelines. The training uses participatory approaches and methodologies, such as group discussions, role plays and case studies.
A preliminary pretest and self-assessment of knowledge and skills can be made to open the course & similar post-workshop assessment can be made.

GROUND RULES FOR TRAINING TO BE FOLLOWED:

In order to meet the objectives of this course, we will discuss and explore some sensitive and personal issues. It is important to establish some basic guidelines to make sure that everyone has an opportunity to participate in the program and is treated with dignity and respect. Our expectation is that you will honor the following guidelines:

Confidentiality: Confidentiality means that any discussion that takes place in the context of this program should not be discussed with any one who is not participating in the program. We will also abide by this rule. All that you say to us will be held in the strictest of confidence.

Honesty: Honesty means that you should speak from your own feelings and not just what you think people expect you to say. The honesty rule also applies to questions, because if we ask honest questions we won't waste time.

"I Statements": "I" statements are statements that you make when you speak for yourself. Be accountable for yourself and do not speak for anyone else. Even though you may be friends, it is important that each of you speak for yourself and not your friend.

One at a Time: We cannot all be heard at the same time. Allow others to speak without interrupting them. Listen while others are speaking and do not participate in side conversations.

Respect: Treat all participants with dignity, and respect their feelings and opinions. We may not always agree on certain issues, but everyone has a right to his or her beliefs and ideas. Do not ridicule or make fun of others. Any question or comment that is honest is valuable.

Take Care of Yourself: Take care of yourself by being aware of your feelings. If any of the issues we discuss are disturbing to you or make you curious, let the instructor know. If answering any question or taking part in any discussion or activity makes you feel uncomfortable, don't do it. Throughout the course, you can choose not to participate in any activity that makes you feel uncomfortable.

SCHEDULE:

The training is for two days, approximately 6 hours every day. However, HIV/AIDS is not a training topic to be covered in a single training session and it is expected that this training opens more learning opportunities for you all.

Step 3

Distribute the assessment instrument and explain that these are tools to help the participants and trainers better understand their level of knowledge and comfort in performing skills related to the clinical management of HIV/AIDS. (10 minutes)

Pre-test:

Give participants 10 minutes to complete the assessment.

SESSION - 2

EPIDEMIOLOGY OF HIV/AIDS

PURPOSE

In this session, participants will learn about the HIV/AIDS epidemic and its impact worldwide, including India. The session will address the onset, history of the disease and current epidemiology of HIV/AIDS and its progression.

OBJECTIVES

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

1. Discuss the impact of the HIV/AIDS epidemic globally and in India.
2. Appreciate how the epidemic began and how it is spreading
3. Understand why the epidemic is associated with stigma and discrimination

TIME : 20 minutes

PREPARATION

- Obtain the current national/local statistics on the HIV epidemic.
- Write these on a flip chart or include them on a PowerPoint slide.

READING : (15 minutes)

EPIDEMIOLOGY

AIDS, the Acquired Immunodeficiency Syndrome is a fatal illness caused by a retro virus, Human Immuno-Deficiency Virus (HIV). The virus causes gradual depletion of the hosts immune system, until finally it breaks down the body's immune system, leaving the victim vulnerable to a host of opportunistic infections, neurological disorders or unusual malignancies, a state called AIDS. Strictly speaking, the term AIDS refers only to the last stage of the HIV infection. AIDS can be called our modern pandemic, affecting both industrialized and developing countries.

Historical Synopsis

1981 Dr. Michael Gottlieb reported 5 cases presenting with pneumocystitis carinii pneumonia associated with severe immunodeficiency. Report "Pneumocystitis carinii Pneumonia-Los Angeles" published on June 5, 1981 in Morbidity and Mortality weekly Report- CDC's epidemiological newsletter

Later "Pneumocytitis carinii pneumonia and mucosal candidiasis in previously healthy homosexual men: evidence of a new acquired cellular immunodeficiency" published in the New England Journal of Medicine 1981

This syndrome was initially named Gay Related Immunodeficiency (GRID)/ Gay Compromise Syndrome, because the first cases were observed in homosexual men.

By 1983 cases appeared in Blood transfusion recipients, Haemophiliacs, Intravenous Drug abusers and in children born to IVDU mothers.

So the syndrome was renamed as Acquired Immunodeficiency Syndrome (AIDS).

1983	Global surveillance of the disease was started by WHO in 1983. The causative agent of AIDS was identified in 1983 at Pasteur Institute, Paris and named as Lymphadenopathy Associated Virus (LAV). The virus was also identified by National Cancer Institute, USA and named as Human T cell Lymphotropic Virus III (HTLV-III)
April 1985	First Global Conference on AIDS. Major topics of discussion were: HTLV-III/LAV test Extent of heterosexual transmission International AIDS situation
May 1986	International Committee on Taxonomy of Viruses ruled that both names LAV and HTLV-III be dropped and new name Human Immunodeficiency Virus (HIV) was given.
1991	Red ribbon was adopted as symbol of AIDS awareness
1999	As per World Health Report AIDS became the fourth biggest killer globally
2005	WHO calls HIV/AIDS a Global Health Emergency

Global Scenario:

Recognized as an emerging disease only in the early 1980's, AIDS has rapidly established itself throughout the world and is persisting well into the 21st century. AIDS has evolved from mysterious illness to a global pandemic which has infected tens of millions in less than 20 years.

Table 1 : Global Summary of AIDS epidemic in 2012:

Number of people living with HIV in 2012	
Total	35.3 million (32.2–38.8 million)
Adults	32.1 million (29.1–35.3 million)
Women	17.7 million (16.4–19.3 million)
Children under 15 years	3.3 million (3.0–3.7 million)
People newly infected with HIV in 2012	
Total	2.3 million (1.9 - 2.7 million)
Adults	2.0 million (1.7–2.4 million)
Children under 15 years	260 000 (230 000–320 000)
AIDS deaths in 2012	
Total	1.6 million (1.4-1.9million)
Adults	1.4 million (1.2–1.7 million)
Children under 15 years	210 000 (190 000–250 000)
The ranges around the estimates in this table define the boundaries within which the actual numbers lie, based on the best available information.	

Source: .UNAIDS. Core Epidemiology Slides. September 2013 [Internet]. Available at: http://www.unaids.org/en/media/unaids/contentassets/documents/epidemiology/2013/gr2013/201309_epi_core_en.pdf [accessed on 1st September 2014]

Indian Scenario

The first HIV infection was reported in 1986 from Chennai and first AIDS case was reported in the same year from Mumbai. The disease is now seen in all parts of the country, although the total prevalence has declined over the last few years. India is estimated to have around 20.9 lakh persons living with HIV in 2011, at an estimated adult HIV prevalence of 0.27%. Adult HIV Prevalence has decreased from 0.41% in 2001 through 0.35% in 2006 to 0.27% in 2011. India has demonstrated an overall reduction of 57% in estimated annual new HIV infections (among adult population) from 2.74 lakhs in 2000 to 1.16 lakhs in 2011, reflecting the impact of scaled up prevention interventions.

Declines in adult HIV prevalence and new HIV infections are sustained in most of the states including all the high prevalence states of South India and North East. However, rising trends have been noted in some other low prevalence states.

Table 2 : HIV and AIDS estimates in India 2013

Total	2,100,000 (1,700,000- 2,700,000)
Adults	1,900,000 (1,500,000- 2,500,000)
Adults prevalence rate	0.3% (0.2-0.3%)
Women	750,000 (600,000- 970,000)
Children (<15 years)	140,000 (110,000-170,000)
Deaths due to AIDS	130,000 (93,000-160,000)

Source: UNAIDS. India [Internet]. Available at: http://www.unaids.org/en/regionscountries/countries/india/ [Accessed on 1st September 2014]

Sentinel Surveillance in India

India has one of the world's largest and most robust HIV Sentinel Surveillance (HSS) Systems. Since 1998 it has helped the national government to monitor the trends, levels and burden of HIV among different population groups in the country and craft effective responses to control HIV/AIDS. The 13 round of HSS was implemented during 2012-13 at 763 sites, including 750 Antenatal clinics (ANC) Surveillance Sites, covering 556 districts across 34 States and Union Territories (UTs) in the country.

The overall HIV prevalence among ANC clinic attendees, considered a proxy for prevalence among the general population, continues to be low at 0.35% (90% CI: 0.33%-0.37%). All states have shown less than 1% HIV prevalence among ANC clinic attendees. The highest prevalence was recorded in Nagaland (0.88%), followed by Mizoram (0.68%), Manipur (0.64%), Andhra Pradesh (0.59%) and Karnataka (0.53%). Chhattisgarh (0.51%), Gujarat (0.50%), Maharashtra (0.40%), Delhi (0.40%) and Punjab (0.37%) are other states which recorded HIV prevalence of more than the national average. Bihar (0.33%), Rajasthan (0.32%) and Odisha (0.31%) recorded HIV prevalence slightly lower than the country average. Four UTs (Puducherry, Dadra and Nagar Haveli, Chandigarh and Andaman & Nicobar Islands) recorded zero prevalence during the 13 round of HSS.

Source: NACO. HIV Sentinel Surveillance 2012-13, A Technical Brief. Department of AIDS Control , Ministry of Health & Family Welfare, Government of India

Tracking HIV in India:

1985 Sero-surveillance program in India started by ICMR

1986 First HIV positive case detected in Chennai and first AIDS case diagnosed in Mumbai.

1990 HIV levels among high risk groups like sex workers and STD clinic attendants in Maharashtra and amongst Injecting Drug Users (IDUs) in Manipur reaches over 5%.

1991 National AIDS Control Program Phase I launched

1994 HIV not restricted to high risk groups in Maharashtra, but spreading into general population. HIV also spreading to the states of Gujarat and Tamil Nadu where high risk groups have over 5 % HIV prevalence.

1998 Rapid HIV spread in the four large southern states, not only in high risk groups but also in the general population where it reached over 1%. Infection rate among antenatal women reaches 3.3% in Namakkal in Tamil Nadu and 5.3% in Churachandpur in Manipur. Among IDUs in Churachandpur it crosses 76% and in Mumbai, 64.4%.

1999 The infection rate in antenatal women in Namakkal rise to 6.5%. About 60% of the sex workers in some Mumbai sites are infected. Infection rates among STD patients reaches 30% in Andhra Pradesh and 14-60% in Maharashtra. About 64.4% IDUs at one of the sites in Maharashtra. About 64.4% IDUs at one of the sites in Mumbai and 68.4% in Chruchandpur are infected.
National AIDS Control Phase II launched with an objective to reduce the spread of HIV infection in India and to increase India's capacity to respond to HIV/AIDS on a long term basis.

2001 Infection crosses 1% in six States. These States account for 75% of the country's estimated HIV cases.

2004 ART program started by Government of India at 8 institutions

2007 Operational & Technical guidelines for ART launched
Number of ART centres reaches 100

2007 National AIDS Control Programme Phase III (2007-2012) launched with overall goal to halt and reverse the epidemic in India over the five year period.

2011 Number of ART centres reaches 300

2012 Revision of National Technical guidelines

2014 Fourth phase of NACP launched with the goal of 'Accelerate Reversal, Integrate Response'.

NATIONAL AIDS CONTROL PROGRAM (NACP) IV

The objectives of NACP IV are:

- Objective 1: Reduce new infections by 50% (2007 Baseline of NACP III)
- Objective 2: Provide comprehensive care and support to all persons living with HIV/AIDS and treatment services for all those who require it.

Key Strategies:

- Strategy 1: Intensifying and consolidating prevention services, with a focus on high risk groups (HRGs) and vulnerable population.
- Strategy 2: Increasing access and promoting comprehensive care, support and treatment
- Strategy 3: Expanding IEC services for (a) general population and (b) high risk groups with a focus on behaviour change and demand generation.
- Strategy 4: Building capacities at national, state, district and facility levels
- Strategy 5: Strengthening Strategic Information Management Systems

Source: Department of AIDS Control. National AIDS Control Programme Phase IV (2012-2017), Strategy Document. Department of AIDS Control, Ministry of Health & Family Welfare, Government of India
NACO. Journey of ART Programme In India, Story of a decade. Care support and Treatment Division. NACO, Department of AIDS Control , Ministry of Health & Family Welfare, Government of India

POINTS TO PONDER (5 minutes)

1. What is sentinel surveillance?
2. What is the prevalence of HIV infection in your state?

SESSION - 3

HUMAN IMMUNODEFICIENCY VIRUS

PURPOSE

In this session, participants will learn about the HIV virus, how the virus destroys the immune system and how the disease progresses.

OBJECTIVES

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

1. Develop an understanding of the structure and diversity of the virus
2. Describe the HIV life cycle and its effects on the immune system
3. Identify how the virus causes destruction of the immune system and why the immune system fails to build a response against the virus

TIME: 40 minutes

PREPARATION

Powerpoint presentation, particularly with diagram of HIV structure and HIV lifecycle

READING (30 minutes):

HUMAN IMMUNODEFICIENCY VIRUS

Human immunodeficiency virus (HIV) is a *lentivirus* which is a subgroup of *retrovirus* that can lead to acquired immunodeficiency syndrome (AIDS, a condition in humans in which the immune system begins to fail, leading to life-threatening opportunistic infections). Retroviruses are those viruses, whose genome consists of RNA and not DNA.

How the virus was identified

Robert Gallo, a US researcher claimed the discovery of a retrovirus that produced a cancer in human lymphocytes. It was known as Human Lymphotropic Virus (HTLV). It was postulated that agent that caused AIDS might be a mutant of this virus. A retrovirus was also isolated by Luc Montagnier and his colleagues at Pasteur Institute in France in 1983. The French called it Lymphadenopathy Associated Virus (LAV). Serological analysis and molecular cloning established the common origin of these viruses. To resolve the confusion in nomenclature, the International Committee on Virus Nomenclature decided on the generic name Human Immunodeficiency Virus or HIV. Thus the cause of AIDS was established, namely that HIV caused AIDS.

Structure

HIV is 120 nm icosahedral, enveloped, RNA virus. HIV comprises of an outer envelope consisting of a lipid bi-layer with uniformly arranged 72 spikes or knobs of Glycoprotein 120 (gp 120) and Glycoprotein 41 (gp 41). Gp120 protrudes out on the surface of the virus and gp 41 is embedded in the lipid matrix. Inside is the protein core surrounding two copies of RNA. Core also contains viral

enzymes reverse transcriptase, integrase and protease, all essential for viral replication and maturation. Proteins p7 and p9 are bound to the RNA and are believed to be involved in regulation of gene expression.

Antigenic variation and diversity

HIV-1 demonstrates high genetic diversity due to lack of proof reading ability of its enzyme, reverse transcriptase. As a result of high mutation rates HIV-1 virus strains show extreme genetic divergence and have been classified into subtypes (A to K), circulating recombinant forms (CRFs) and unique recombinant forms (URFs). The distribution of subtypes was identified to be geographically restricted such as HIV-1 Subtype A in Africa, Subtype B in North and South Americas and Europe, Subtype C in India, China and South Africa. HIV molecular epidemiology studies carried out in different parts of India suggest that subtype C is the most prevalent among all HIV-1 genetic subtypes. Other subtypes that have been reported include subtype B, subtype A and few cases of subtype E.

Heterogeneity of virus has implications for

- Development of effective vaccine
- Development of appropriate therapeutic agents
- Diagnosis of the virus subtypes
- To some extent on the course and transmission of disease

Genotypic variation has its impact on the biological properties of the virus. It is necessary for commercially available assays for diagnosing the infection to be able to diagnose infection of all HIV positive individuals including those infected with less prevalent, more diverse subtypes. The variability of the HIV virus also bears an impact on the development of vaccine and on anti-retroviral resistance as well.

Resistance of the virus

- HIV is thermolabile; being inactivated in 10 min at 500C and in seconds at 1000C
- At room temperature in dried blood it may survive till 7 days.
- HIV is inactivated in 10minutes by treatment with 50% Ethanol, 0.5%Lysol, 0.3% Hydrogen peroxide and 10% household bleach.
- Bleaching powder or household bleach is effective for surface decontamination. 2% solution of glutaraldehyde is used for treatment of contaminated medical instruments.

Reservoir of infection

People harboring HIV in their body are the reservoir of infection. These may be asymptomatic healthy carriers or full-blown cases of AIDS.

Receptors of HIV

The receptors of the HIV on the human cells are:

- CD4 glycoprotein - high affinity receptor
- CCR5 (new abbreviation R5) - chemokine receptor
- CXCR4 (new abbreviation X4) - chemokine receptor

Implication:

HIV virus affects all human cells which express CD4 on their surface. Persons deficient in CCR5 have been identified as being resistant to HIV infection.

Target cells

HIV multiplies in all cells but extent of replication varies in different cells. Cells expressing CD4 surface glycoprotein molecules are:

- **Haematopoietic system:** T Lymphocytes, B Lymphocytes, Macrophages, NK Cells, Megakaryocytes, Dendritic cells, Promyelocytes, Stem cells, Thymic epithelium, Follicular dendritic cells
- **Brain:** Capillary endothelial cells, Astrocytes, Macrophages (microglia), Oligigodendrocytes, Choroid plexus, Ganglia, Neuroblastoma cells, Glioma cell lines, Neurons
- **Skin:** Fibroblasts, Langerhans cells
- **Bowel:** Columnar and Goblet cells, Entero-chromaffin cells
- **Others:** Myocardium, Renal tubular cells, Synovial membrane, Hepatic sinusoid epithelium, Kupffer cells, Pulmonary fibroblasts, Retina, Cervix epithelium, prostate, testes, Foetal chorionic villi, placental trophoblast cells

LIFE CYCLE OF THE HIV

1. **Binding:** Gp 120 on the HIV surface binds to the CD4+ surface receptor of the cells. The virus further activates other proteins on the cell's surface, allowing the HIV envelope to fuse to the outside of the cell
2. **Reverse Transcription:** Once the HIV enters the cell, the process of reverse transcription takes place, i.e. the viral RNA creates DNA copies thereby, forming Proviral DNA
3. **Integration:** HIV DNA is then carried to the cell's nucleus (center), where the cell's DNA is kept. Then, another viral enzyme called integrase hides (integrates or joins) the proviral DNA into the cell's DNA. Then, when the cell tries to make new proteins, it makes new HIVs.
4. **Transcription:** The strands of viral DNA formed in the nucleus separate, and special enzymes create a complementary strand of genetic material called messenger RNA or mRNA (instructions for making new HIV).
5. **Translation:** The mRNA carries instructions for making new viral proteins from the nucleus to a kind of workshop in the cell. Each section of the mRNA corresponds to a protein building block for making a part of HIV. As each mRNA strand is processed, a corresponding string of proteins is made. This process continues until the mRNA strand has been transformed or "translated" into new viral proteins needed to make a new virus.
6. **Viral Assembly:** Long strings of proteins are cut up by a viral enzyme called protease into smaller proteins. These proteins serve a variety of functions; some become structural elements of new HIV, while others become enzymes, such as reverse transcriptase

How HIV infects cells

HIV infects cells that have the CD4 antigen molecules on their surface. These cells are principally the helper subset of T-lymphocytes, which are central to cell-mediated immunity. They are called CD4+ T-lymphocytes. In recent years it has also been discovered that HIV needs other molecules, called chemokines, on the cell surface to gain entry into the cell. Patients who do not have some of these specific chemokines (for example, CCR5) are more resistant to HIV infection. Others, who have molecular changes in these chemokine receptors, progress more slowly to AIDS.

Where on one hand the virus multiplies, the T cells are gradually destroyed. There are different mechanisms of T cell destruction, which are beyond the scope of this training.

POINTS TO PONDER AND DISCUSS (10 minutes)

1. How does the virus escape the immune system of the body?
2. What is the major difficulty in making a vaccine against the virus?
3. An HIV positive woman asks you, how should she clean her house? Her husband has AIDS and suffers from faecal incontinence and haemetemesis occasionally. Her children are HIV negative. How should she or her children clean the soiled clothes?

SESSION - 4

TRANSMISSION OF THE VIRUS

PURPOSE

In this session, participants would learn how the virus is transmitted from one person to another and the factors responsible for facilitating the spread of the pandemic.

OBJECTIVES:

By the end of the session, the participants would be able to

1. Identify the routes of transmission of the virus
2. Understand how HIV is not transmitted
3. Appreciate the biological, social and other factors responsible for the spread of the disease.

TIME : 45 minutes

Certain sensitive issues would be discussed during the session. Therefore, reaffirm participant code of conduct.

READING : (30 minutes)

TRANSMISSION

Agent Factors

Source of infection: In the body fluids of the HIV infected person

HIV is presented in greater concentration in

- blood
- semen
- CSF

Lower concentration in

- vaginal fluids,
- infected breast milk
- saliva
- tears
- urine

HIV has also been isolated from

- brain tissue
- lymph nodes
- bone marrow cells
- skin

Saliva & HIV

Saliva contains some non-specific inhibitory substances like Gibronectins and Glycoproteins, which prevent cell to cell transfer of virus. So, saliva is not a likely vehicle of transmission

Other Fluids

- Fluids like urine, sweat, bronchoalveolar lavage, amniotic fluid, synovial fluid, faeces, tears yield 0 or few HIV particles. So they do not appear to be important in HIV transmission
- CSF - Has High content of virus, particularly in individuals with neurological disease, but CSF is not a natural source of transmission.

However, from epidemiological point of view the prime sources of infection are:

- blood
- semen
- vaginal and cervical secretions
- breast milk

HIV is not known to be transmitted by tears, saliva, urine etc.

How HIV is transmitted?

Any person with HIV is infectious to another person and can transmit the virus through any of the below mentioned mechanisms of transmission. However, the infectiousness of the host varies. For a person to be infectious:

- Virus must be present in sufficient quantity
  - Blood, semen, Vaginal & cervical secretions carry sufficient quantity of virus to cause infection.
  - Other fluids do not have enough virus quantity

- Virus must get into the blood stream: Virus can enter the body only through
  - mucous membrane that lines vagina/rectum
  - directly into blood via membranes more easily if there is breach in normal mucosa due to
    - tears/cuts
    - inflammation

The infectiousness of the host depends on:

- Viral load: Higher the viral load more is the infectiousness
- Stage of disease: high infectiousness with sero-conversion and AIDS
- Highly Active Anti-retroviral Therapy (HAART), the currently accepted allopathic regimen for AIDS can decrease viral load and can decrease infectiousness of host but cannot eliminate it.

Modes of HIV transmission

Epidemiological studies throughout the world have shown three modes of HIV transmission:

1. Sexual transmission
2. Parental transmission
3. Peri-natal transmission

SEXUAL TRANSMISSION OF HIV

Approximate documented risk of infection per exposure: 0.1-1.0%

Whether heterosexual or homosexual, sexual intercourse is the most important mode of transmission from the epidemiological point of view, accounting for 75% of transmission in India. Every single act of unprotected intercourse with an HIV infected person exposes the uninfected person at risk of HIV infection.

The risk of becoming infected through an act of unprotected sexual intercourse depends on four main factors:

1. The likelihood that the sex partner is infected: The probability that a person has become infected with HIV is, in general, proportionate to the number (frequency) of unprotected sex acts and the number of high risk partners with whom the person has had sexual contact.
2. The type of sex act: All unprotected acts of sexual penetration (anal, vaginal, oral) carry a risk of HIV transmission because they bring sexual secretions directly into contact with exposed mucous membrane. Injury to the mucous membrane of the rectum, the vagina or the mouth may help the virus to enter into the bloodstream. "Receptive" partners are thus at a greater risk than "insertive" partners in acts of intercourse. However, HIV can be transmitted even through unbroken mucous membrane.
3. The amount of virus present in the blood or sexual secretions (semen, vaginal or cervical secretions) of the infected partner: Individuals with HIV infection become more infectious as they progress to HIV related diseases and AIDS. There is also an early period of high infectiousness around the time of seroconversion.
4. The presence of other sexually-transmitted diseases and/or genital lesions in either partner: HIV can be transmitted sexually even when neither partner has any of the other sexually-transmitted diseases. However, there is strong evidence that men and women with genital ulcer disease or urethral discharge are at increased risk of acquiring and transmitting HIV.

HIV transmission risk for different sex practices:

- High risk activities
  - Unprotected anal receptive intercourse with infected partner
  - Unprotected vaginal intercourse with infected partner

- Possibly unsafe activities
  - Oral contact with genitals
  - Sharing sex toys and implements

- Low risk activities
  - Anal or vaginal intercourse with proper use of intact condom
  - Wet kissing

- No risk activities
  - Monogamous relation in which both partners are un-infected
  - Touching, massaging, hugging
  - Dry kissing

PARENTRAL TRANSMISION

The important modes of parentral transmission are

1. Recipients of infected blood or blood products: The most efficient vehicle of HIV transmission is blood. The risk of infection via blood is now reduced because of strict screening of donated blood. However a person though seronegative in the window period is still capable of being infective and poses an important risk during blood transfusion. Approximate documented risk of infection per exposure: >90%
2. Intravenous drug use (IVDU): IVDU acts as a source of transmission because drug users frequently share syringes and needles to inject drugs. A small volume of contaminated blood if present on the used needle and syringe provides opportunity for further transmission. Approximate documented risk of infection per exposure: 0.5-1.0%
3. Use of unsterilized needles and instruments like scalpels etc., if contaminated with infected blood can transmit the infection. Skin piercing by injections, ear, nose piercing, tattooing, acupuncture or scarification also poses a risk in view of use of unsterilized needles. Approximate documented risk of infection per exposure: 0.5-1.0%
4. Needle stick injury: Transmission of HIV to health care workers through needle stick injury does pose a small risk but is extremely uncommon.

PERINATAL TRANSMISSION

The source of infection to the child are:

- Amniotic fluid
- Genital secretions
- Maternal blood
- Breast milk of the HIV infected mother

HIV-infected woman can transmit HIV to her foetus or infant before, during, or after birth. A pregnant woman with HIV infection has an approximately 30% chance of passing the virus to her foetus or newborn baby. There is evidence that infection can occur as early as the first 12-15 weeks of gestation. 60% of perinatal infections are in utero or during the birth process. It is estimated that 40% of perinatal infections occur through breast-feeding.

HIV can be transmitted from an infected mother to her child:

1. During the course of pregnancy
2. During delivery
3. Through breast feeding

HIV transmission during pregnancy: HIV can cross placental barrier. Therefore, there is a potential risk of transmission at anytime during pregnancy.

HIV transmission during delivery: The lining of the birth canal contains a high concentration of HIV. The baby may sustain minor cuts in the mucous membrane and in the skin during the birth process. It has been shown that maximum risk of infection to the fetus occurs during the time of delivery.

The risk of mother to child transmission increases with:

- Maternal high HIV RNA levels
- High genital tract viral loads
- Lower CD4 count or decreased CD4:CD8 ratio
- Maternal symptomatic disease or AIDS defining illness
- Females with primary HIV infection during pregnancy at which time plasma viremia is high
- Presence of STDs or other co-infections
- Illicit drug abuse during pregnancy
- Cigarette smoking during pregnancy
- Vitamin A deficiency has been shown to increase the risk of perinatal transmission by 3 to 4 times.
- Invasive fetal monitoring increases risk of exposure of fetus to maternal blood
- Preterm delivery is associated with increased risk
- Episiotomy and forceps may potentially increase the risk of transmission by increasing exposure to maternal blood/ genital secretions with trauma to maternal or neonatal tissue. On the other hand, judicious use of these techniques to shorten the duration of labor may decrease the likelihood of transmission
- Vaginal vs. caesarean delivery: Several studies indicate that delivery performed before the onset of labor and rupture of membrane significantly reduces the risk of perinatal transmission.

Post partum HIV transmission through breast feeding:

Breast-feeding in case of established maternal infection has an estimated additional risk of 14%. In case of acute maternal illness or recent seroconversion this risk may increase up to 29%. Risk of transmission is high during earlier months of breast-feeding but increased duration of breast-feeding also increases the risk. Other potential variables include presence of cracked nipples or breast abscess. On the other hand, in developing countries withholding breast-feeding may deprive the newborn of the protective immunity transferred from mother to the infant. Also, this aspect is of particular importance because in developing countries not enough facilities are available for bottle-feeding. Bottle feeding or formula feeds in itself pose a high risk of infectious diarrheas and other infections, thereby increasing the infant mortality.

Mothers known to be HIV-infected (and whose infants are HIV uninfected or of unknown HIV status) should exclusively breastfeed their infants for the first 6 months of life, introducing appropriate complementary foods thereafter, and continue breastfeeding for the first 12 months of life. Breastfeeding should then only stop once a nutritionally adequate and safe diet without breast milk can be provided. Transmission risk would be further diminished in presence of ARV interventions. Enabling breastfeeding in the presence of ARV interventions to continue to 12 months avoids many of the complexities associated with stopping breastfeeding and providing a safe and adequate diet without breast milk to the infant 6–12 months of age. Mothers known to be HIV-infected who decide to stop breastfeeding at any time should stop gradually within one month. Mothers or infants who have been receiving ARV prophylaxis should continue prophylaxis for one week after breastfeeding is fully stopped. Stopping breastfeeding abruptly is not advisable.

If infants and young children are known to be HIV-infected, mothers are strongly encouraged to exclusively breastfeed for the first 6 months of life and continue breastfeeding as per the recommendations for the general population, that is up to two years or beyond.

MISCELLANEOUS ASPECTS OF TRANSMISSION

Transmission through organ transplantation

HIV can be transmitted through infected organs like cornea, kidney, bone marrow, skin, semen etc. Before any organ is transplanted the donor must be screened for HIV. In cadaver transplantation the donor has to be checked. This route of transmission is, however, very rare in practice.

Transmission to health care workers (HCW)

Transmission of infection to health care workers is extremely uncommon. Various studies have suggested that the risk associated with needle injury from HIV infected blood is approximately 0.5%. The risk associated with mucocutaneous contact is too low to be reliably estimated. The risk associated from mucosal or non-intact skin is also minimal. All HCW should be aware of the universal precautions as outlined by the WHO and must put them into practice to protect themselves and others from infectio

Factors facilitating spread of HIV infection:

Table 3: Routes of Transmission

Route	%Efficiency	% Transmission (world)	% Transmission (India)
Blood transfusion	90-95	5	2.5
Perinatal	20-40	10	5.4
Sexual intercourse	0.1-1.0	75	85.5
Heterosexual	0.05-0.1	60	85
Homosexual	0.065-0.5	15	0.54
Injecting drug use	0.5-1	10	7.3
Needle stick exposure	<0.5	0.1	0

HIV transmission in India is driven by unprotected sexual intercourse and sharing of drug injecting equipment between an infected and an uninfected individual. Not everyone in the population has the same risk of acquiring or transmitting HIV. It occurs within groups or networks of individuals who have higher levels of risk due to a higher number of sexual partners or the sharing of injecting drug equipment.

These core high-risk groups (HRG) include:

- Female Sex Workers (FSW)
- High-risk Men who have Sex with Men (MSM), and Transgenders (TG)
- Injecting Drug Users (IDU)
- and also Bridge Populations (Migrants and Truckers)

The broader transmission of HIV beyond these HRG often occurs through their sexual partners, who also have lower risk sexual partners in the "general" population. For example, a client of a sex worker might also have a wife or other partner who is at risk of acquiring HIV from her higher risk partner. Individuals who have sexual partners in the high risk groups and other partners are called a "bridge population", because they form a transmission bridge from the HRG to the general population. HRG members may have many sexual partnerships with different bridge population members, who in turn have at least one partner in the general population.

Political and Economic Factors

Political stability is an important factor in controlling transmission of HIV. Countries with stable governments can devote resources to HIV/AIDS intervention and can provide consistent programmes.

Mal-distribution of resources promotes HIV transmission because:

- Poor men and women are forced to turn to commercial sex work for survival
- Affluent men or women have the means to avail themselves services of commercial sex workers
- Poor limited access to adequate health care, including care of sexually transmitted diseases
- Many segments are illiterate, thereby making intervention through education very difficult

➢ **Other Political and economic factors are:**

- Wars or civil disturbances limit the regular importation of commodities, such as STD treatment drugs, condoms and HIV testing kits. This is not only related to logistic and supply disruptions but is also due to changes in behaviour pattern, dislodging of families and persons etc. Radio and television messages promoting safer sex, condom promotion, etc. may not go as planned.
- Unacceptability of certain practices: The legal institution of the country may consider certain practices illegal, thereby limited access to intervention activities amongst certain high risk groups such as commercial sex workers, homosexuals, etc.
- Certain National policies may act as barriers to the implementation of important interventions. For example, restricted availability of needles and syringes would limit the usefulness of an intervention to promote needle exchange programes in intravenous drug abusers.
- Urbanization: For economic reasons many people move to the larger cities, where they may indulge in high risk behaviours such as commercial sex and injecting drug use, etc.
- Imprisonment: May restrict men's access to women and encourage men to have sex with men.
- High mobility: Certain target population may be highly mobile and increase the geographic spread of HIV transmission. For example, truck drivers may increase the spread by engaging in sex with CSWs at several truck stops.
- Migration and separation from families: Poverty may force persons to migrate from to other cities resulting in breakdown of family. Separation from families and other situations may drive migrants to seek commercial sex and casual sex. Also lack of social, economic or political support to the migrants make them more vulnerable to sexual abuse.

➢ **Social and Cultural Factors**

- Women's status: Women form a vulnerable group because of limited say in sexual matters. This limits women's ability to practice safer sex, for example, women might not be in a position to choose or make decisions such as condom use with their partners.
- Culture and ethnic practices such as tattooing, ear-nose piercing, circumcision may be well accepted but can also contribute to the risk of becoming infected in certain populations because of use of poorly sterilized equipment.
- Marginalized population: Economically depressed populations may not be able to benefit from prevention efforts because the social system refuses to recognize them, such as CSWs and injecting drug users. Unacceptability of certain sexual practices such as homosexuality may contribute to HIV transmission. Persons indulging in practices unacceptable at large are frequently marginalized, limiting their access to prevention interventions.
- Social un-acceptance of condoms: This may be a determinant of risk in certain populations. Such populations are at high risk of transmission through unsafe sexual practices.

HIV IS NOT TRANSMITTED BY

1. Drinking water or eating food from the same utensils by the infected person.
2. Shaking hands
3. Sharing toilets
4. Hugging and kissing
5. Donating blood
6. Coughing or sneezing of HIV infected persons
7. Working with people who are HIV positive or providing routine nursing care.
8. Massage and rubbing each other bodies.
9. Swimming in pools used by HIV positive persons.
10. Through mosquito bites or insect bites.
11. Socializing or casually living with people with HIV or AIDS.
12. Eating food cooked by an infected person
13. Studying in the same school or working in the same room with HIV infected persons, sharing the same telephone with other people in office or working side by side in a crowded factory with other HIV infected persons, will not expose a person the risk of contracting the infection.
14. Being in contact with dirt and sweat will also, not give the infection.

Transmission of HIV through casual contact, sharing utensils, lavatories and through insect bites has not been documented so far.

POINTS TO PONDER (10 minutes)

1. Why is wet kissing a low risk activity and not a no risk activity?
2. Why is sexual intercourse with condom a low risk activity and not a no risk activity?
3. Should condom be used only during vaginal sex? Should it be used for anal or oral sex as well?
4. Why is HIV not transmitted by mosquito bites or insect bites?
5. Can a new born infant get infected from HIV from his/her HIV positive parents by cuddling or kissing?

GROUP DISCUSSION (5 minutes)

Share your feelings with others if you come to know that a student in your child's class is HIV positive

SESSION - 5

NATURAL HISTORY OF HIV/AIDS

PURPOSE:
This session would detail the disease process associated with HIV infection and the various stages an infected person goes through before the final breakdown of the immune system resulting in AIDS.

OBJECTIVES:
At the conclusion of the session the participants would

1. Understand the natural history of HIV infection
2. Understand the clinical and immunological status associated with the stages of HIV infection

TIME : 45 minutes

PREPARATION : Powerpoint presentation/Chart showing all stages

READING (40 minutes)

People infected with HIV are both infected and infectious for life, even when they look and feel healthy, they can transmit the virus to others. The signs and symptoms of infection with HIV are varied and complex. Following acquisition of infection, the natural history of HIV infection is divided into following stages.

1. Primary HIV infection
2. Asymptomatic HIV infection
3. Symptomatic infection
4. Advance HIV disease n

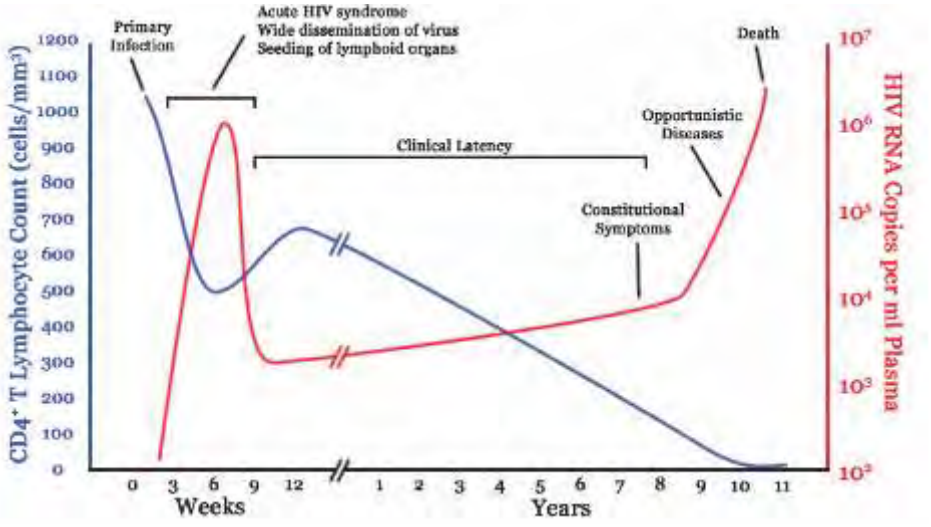


Figure 1: Natural course of HIV infection

Acquisition of Infection

HIV enters the human body either through a breach in the mucous membrane during sexual activities or through blood or tissue or through the mother to her unborn child. Following infection of CD4+ lymphocytes present below the mucous membrane, Virus is transmitted to regional lymph nodes and then into blood stream. It takes 48 hours for the virus to spread to the blood from lymph nodes.

Symptoms:	Absent. Known as window period
Duration:	6-8 weeks (3-17 weeks)
Infectivity:	Person is highly infectious
Investigations:	ELISA: negative
Plasma HIV RNA:	positive
CD4 T Lymphocyte:	normal

Acute Primary Infection (Sero-Conversion)

The initial primary infection with HIV is usually asymptomatic. After an incubation period of 2-6 weeks (longest 36 weeks), there is a phase of viremia and upto 50% of the infected persons suffer from an acute viral syndrome.

Symptoms of this viral syndrome:	High fever, Pharyngitis, Rash, Myalgia, and Lymphadenopathy. Some get erythematous maculopapular rash, arthralgia, retro orbital headache, malaise, diarrhea and vomiting. Rarely acute encephalopathy may be seen. A large majority, however, remain asymptomatic. The majority of those infected do not give a history of this stage of infection because it goes unnoticed resembling routine infections.
Duration :	2-3 weeks
Infectivity :	patient is highly infectious, due to high viremia
Investigations :	ELISA for HIV antibodies is negative initially and becomes positive later. The CD4 cell count declines rapidly from >1000 cells it may drop to <500 cells before virus is controlled by the immune system, whereupon the count returns to near normal after 3-4 days.

Asymptomatic HIV infection (Clinical latency)

This is an asymptomatic phase of HIV infection and most of the patients maintaining normal health and unaware of the disease.

Duration:	This phase has duration of several years - median duration being 10 years, but in India it is approximately 3-5 years.
Infectivity:	person is infectious
Investigations:	ELISA for HIV antibodies is positive The peripheral blood CD4 T-cell count is usually between 1000- 500 cells/mm^3. There is progressive decline in the number of CD4 Cells. Though difficult to predict, on an average, there is decrease of 48-80 cells/cumm/year, without anti-retroviral therapy.

Intermediate (Early symptomatic) HIV infection

With gradual depletion of CD4 cells, infections start occurring frequently. At this stage symptoms including fever, unexplained weight loss, recurrent diarrhea, fatigue and headache are seen. Cutaneous manifestations like seborrheic dermatitis, folliculitis, recurrent herpes simplex infections, oral hairy leukoplakia may occur.

Duration:	When left untreated, the patients have a 30-50% chance of developing AIDS defining condition or dying within next 18-24 months.
Infectivity:	patient is infectious
Investigations:	ELISA is positive. During this period the CD4 T-cells count continues to come down i.e. < 500-200 cells/mm^3. Anti- retroviral therapy may be started at this stage depending on the condition of the patient and depletion of CD cells.

Late symptomatic HIV disease

Patients in this group are defined as having AIDS. As the CD4 count falls lower than 200 cells/mm^3, the risk of developing AIDS related opportunistic infections or malignancy is very high. Pneumocystis Carini Pneumonia (PCP), Toxoplasma Encephalitis, Disseminated Mycobacterium Avium complex (MAC), Oesophageal Candidiasis, Lymphoma and Kaposi sarcoma.

Combination Anti-retroviral therapy can halt the rapid progression to a large extent and aggressive nutritional counseling is warranted to maintain immune system as well as delay development of AIDS wasting disease.

Infectivity:	Patient is highly infectious
Investigations:	ELISA positive Marked depletion of CD4 cell count
Reversal of Cd4:	CD8 ratio

In advanced HIV disease state the CD4 cell count is less than 50 cells/mm^3. The patients usually have multiple opportunistic infection and malignancies.

Direct neurological effect of HIV known as AIDS Dementia Complex (ADC) causing motor abnormalities, cognitive impairment, behavioral changes, may be seen. Many patients develop significant weight loss, muscle wasting, malabsorption (HIV wasting Syndrome).

Table 4: Stages of HIV disease

	Stage	Typical duration	Cd4+ cell count (range/mm3)
1	Primary HIV Infection	1-2 weeks	1000-500
2	Asymptomatic HIV infection (No s/s other than lymhadenopathy occasionally)	10 years	750-500
3	Early symptomatic HIV disease (non life-threatening infections or chronic or intermittent symptoms)	0-5 years	500-200
4	Late symptomatic HIV disease (increasingly severe symptoms, life threatening infections, malignancies)	0-3 years	<200

IMMUNOPATHOLOGY

The hallmark of HIV disease is profound immunodeficiency resulting primarily from a progressive quantitative and qualitative deficiency of the subset of T lymphocytes referred to as helper T cells, or inducer T cells. T lymphocytes are responsible for cell-mediated immunity, very important defense against fungi, protozoa, mycobacteria and viruses. T Lymphocytes include helper T cells (or CD4 T Lymphocytes) and cytotoxic/killer T cells (or CD8 T Lymphocytes).

This subset of T cells is defined phenotypically by the presence on its surface of the CD4 molecule which serves as the primary cellular receptor for HIV. They release soluble factors lymphokines (cytokines), can regulate humoral suppressor cells and can become memory cells. So CD4 cell population is central in defending the body. It is the key cell and this is the cell HIV infects and destroys progressively. Infection with HIV irrespective of type (HIV-1 or HIV-2) subtype and route of infection leads to protracted disease and depletion of CD4 cells resulting inAIDS. The rate of progression of disease depends upon viral characteristics on one hand and host factors on the other hand and may take from 1 year to more than 15 years.

POINTS TO PONDER (5 minutes)

1. A 24 yeas old man gives a history of unprotected sexual exposure 3 days back. He gets his HIV test ELISA done from a local laboratory. What do you think the test result would be, considering that there is no other pertinent history of sexual exposure or blood transfusion or injection usage. What would you advise him?
2. Why is AIDS called slim disease?

SESSION - 6

CLINICAL MANIFESTATIONS AND OPPORTUNISTIC INFECTIONS

PURPOSE

There are several different ways to define HIV infection and AIDS. In this session, participants will learn about the clinical presentation of HIV/AIDS and common disorders associated with HIV infection, including the WHO laboratory and clinical classification systems.

Since initial diagnosis of HIV infection may be difficult because the more general signs and symptoms are common to many other infections, participants will also learn about diseases with a similar presentation to HIV and how to make a differential diagnosis.

OBJECTIVES

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

- Identify common disorders associated with HIV infection.
- Identify investigations which can diagnose HIV infection and stage of disease based on the WHO laboratory and clinical classification systems.
- Describe the importance of testing for HIV.
- Discuss follow-up procedures in their local situation.

TIME : 60 minutes

PREPARATION : Power point presentation and case studies

READINGS : 50 Minutes

MANIFESTATIONS OF HIV INFECTION

Clinical consequences in HIV infected patients encompass all organs and systems and include a host of infections and malignancies that rarely cause illness in immuno-competent individuals. Clinical features vary according to age, sex, race, geographic location, treatment status and behavioural history. In persons infected with HIV, virus replication and worsening of immunological status continues throughout the course of the disease.

1. Primary HIV Infection and Sero-conversion

a. Clinical features

- On first exposure, there is a 2-4 week period of intense viral replication before onset of an immune response and clinical illness.
- Acute illness lasts from 1-2 weeks and occurs in 53% to 93% of cases.
- Clinical manifestations resolve as antibodies to virus become detectable in patient serum.
- Patients then enter a stage of asymptomatic infection lasting months to years.

b. Seroconversion illness: Manifests as a flu-like syndrome. General symptoms may include:

- Acute onset of fever with or without night sweats
- Myalgia is common, may be associated with muscle weakness
- Lethargy and malaise are frequent and often severe, may persist for several months
- Depressed mood
- Pharyngitis/sore throat
- Lymphadenopathy
- Arthralgia
- Anorexia/weight loss
- Neurological symptoms
  - HIV readily isolated from the cerebrospinal fluid during primary infection
  - Early infection of central nervous system may results in aseptic meningoencephalitis with symptoms of headache, photophobia and retro-orbital pain.
  - Other more unusual features include myelopathy, peripheral neuropathy, brachial neuritis, facial palsy, Guillain-Barre syndrome
- Gastrointestinal symptoms
  - Mucocutaneous ulceration is a distinctive feature. Ulcers are generally small, round or oval. Surrounding mucosa looks normal.
  - Pharyngeal edema is common.
  - Oral/oropharyngeal candidiasis
  - Nausea/vomiting
  - Diarrhoea
- Dermatological symptoms
  - Erythematous, non-pruritic, maculopapular rash is common.
  - Roseola-like rash
  - Diffuse urticarias
  - Desquamation of palms and soles
  - Alopecia

c. Laboratory findings

- First 1-2 weeks:
  - Profound reduction in CD4 and CD8 lymphocyte counts with inversion of the CD4:CD8 (The normal ratio is 2:1 i.e. two CD4 cells to one CD8 cell.)
  - Followed by a peripheral lymphocytosis consisting of predominantly CD8 cells.
  - Mild thrombocytopenia is common.
  - C-reactive protein level and erythrocyte sedimentation rate are frequently elevated.
  - Hemoglobin level usually remains stable.
  - Elevated serum alkaline phosphatase and transaminase levels are common.
- First 2-6 weeks:
  - Antibodies to HIV are detectable.
  - HIV antigen (p24) may be detected in serum before detecting antibodies; therefore, antigen testing is important in diagnosing seroconversion.

Window period:
Period in which HIV-positive patients may not test positive for anti-HIV antibodies. Generally limited to first 2-6 weeks, but up to 3 months is given to be sure. In rare cases, the window period may last as long as 6-12 months.

Note: In high prevalence, high incidence settings such as STD or sex worker clinics, as many as 5% of those testing HIV antibody negative will actually be in the window phase and are really infected with HIV. People in these settings who test HIV negative should be counselled strongly to return in three months for repeat testing.

2. Stages of Disease Progression

a. Early immune depletion (CD4 cell count >500/µL)

- During this stage, level of virus in blood is very low.
- HIV replication taking place mostly within lymph nodes
- Generally lasts for five years or more
- Persistent Generalized Lymphadenopathy (PGL) without other symptoms may be noted.
- Usually symptom-free, but several autoimmune disorders may appear, such as Idiopathic thrombocytopenia (ITP), Guillain-Barre syndrome

b. Intermediate immune depletion (CD4 cell count between 500 and 200/µL)

- Immune deficiency increases.
- Infections start and persist or increase as the CD4 cell count drops.
- Less severe infections appear, particularly of skin and mucosal surfaces such as Tinea, Molluscum contagiosum, Seborrheic dermatitis, Bacterial folliculitis, Warts, Gingivitis
- Other infections begin to manifest
- Oral candidiasis appears late in this phase.
- Reactivation of herpes zoster and herpes simplex may occur.
- Infection with Mycobacterium tuberculosis occurs relatively early in this phase.
- Chronic sinusitis

c. Advanced immune depletion (CD4 cell count <200/µL)

- Case definition of AIDS is having a CD4 cell count of less than 200/µL.

TUBERCULOSIS AND HIV/AIDS

An alarming factor in the AIDS epidemic is the increasing link between the infection and tuberculosis. HIV is driving the TB epidemic in many countries, especially in sub-Saharan Africa and, increasingly, in Asia and South America. TB in populations with high HIV prevalence is a leading cause of morbidity and mortality. TB programmes and HIV/AIDS programmes, therefore, share mutual concerns. HIV probably increases susceptibility to infection with M. tuberculosis. HIV increases the risk of progression of M. tuberculosis infection to TB disease. This risk increases with increasing immunosuppression. HIV increases not only the risk but also the rate of progression of recent or latent M. tuberculosis infection to disease.

In early HIV disease TB may present with typical signs and symptoms of pulmonary TB. The diagnosis of TB with advanced HIV disease may be difficult because of its atypical presentation, lack of symptoms and paucity of findings in X-rays. The risk of drug resistant TB (first line drugs) is higher among persons with known HIV infection compared with others. Immune activation from TB enhances HIV replication. Early recognition, effective treatment and prevention are therefore imperative.

Table 5 : HIV status and risk of developing TB

HIV STATUS	LIFETIME RISK OF DEVELOPING TB
Negative	5-10%
Positive	50%

The HIV epidemic has increased the burden of Tuberculosis (TB), especially in populations where the prevalence of TB infection is high among young adults.

- In India, it is the commonest opportunistic infection
- Prevalence of HIV infection in TB patients in India is about 3%.
- TB in HIV infected is likely to occur more commonly with CD4 count <250/cumm.
- Atypical and extra-pulmonary TB is more common than pulmonary.
- In early HIV disease, TB may present with typical signs and symptoms of pulmonary TB. The diagnosis of TB with advanced HIV disease may be difficult because of its atypical presentation, lack of typical symptoms, and paucity of findings in X-Rays.
- The risk of drug resistant TB (first line drugs) is higher among persons with known HIV infection compared with others.
- Immune activation from TB enhances HIV replication.
- Early recognition, effective treatment and prevention are, therefore, imperative.

Table 6 : Commonly Seen Opportunistic Infections in AIDS

Infective Organism		Type of Infection
Viruses	Cytomegalovirus	Pneumonia, disseminated infection, retinitis, encephalitis
	Epstein-Barr virus	Important pathogenic factor in B cell lympho-proliferative disorder and Burkitt's lymphoma, oral hairy leukoplakia.
	Herpes simplex virus	Recurrent severe localized infection
	Varicella-zoster virus	Localized or disseminated infection
	Papovavirus	Progressive multifocal leukoencephalopathy
Fungi	Candida albicans	Mucocutaneous infection, oesophagitis. disseminated infection
	Cryptococcus neoformans	Meningitis, disseminated infection
	Histoplasma Capsulatum	Disseminated infection
	Aspergillus	Invasive pulmonary infection with potential for dissemination
Protozoa	Pneumocystis jiroveci (earlier called Pneumocystis carinii)	Pneumonia, retinal infection
	Toxoplasma gondii	Encephalitis
	Cryptosporidium	Enteritis
	Isospora belli	Enteritis
Mycobacteria	Mycobacterium avium-intracellulare	Disseminated infection
Bacteria	Mycobacterium tuberculosis	Disseminated infection
	Nocardia	Pneumonia, disseminated infection
	Legionella	Pneumonia
	Streptococcus pneumoniae	Pneumonia, disseminated infection
	Hemophilus influenzae, type B	Pneumonia, disseminated infection
	Salmonella	Gastroenteritis, disseminated infection

Table 7 : Spectrum of systemic involvement in AIDS

System	Opportunistic Infection	Observations
Gastrointestinal	• Oral candidiasis • Oral ulcers due to CMV, HSV • Kaposi sarcoma or lymphoma • Candidial oesophagitis • Large volume diarrhea due to OI or malabsorption • Colitis • Abdominal pain, fever, bleeding, perforation with peritonitis and acute abdomen • Anal ulceration.	CD4 <400/cumm
Respiratory	• Mycobacterium tuberculosis • Baceterial Pneumonia: H influenza, Pneumococcus • Pneumocystis jiroveci pneumonia	CD 4count<250/cumm Cigarette smoking increases risk CD 4Count<200/cumm
Dermatologic	92% of HIV infected would develop 1 or more skin disease during the course of illness	
Neurologic	• Meningitis • HIV encephalopathy (AIDS dementia complex) • Myelopathy • Peripheral neuropathy • Myopathy *Opportunistic infections:* • Toxoplasmosis • Cryptococcosis • Mycobacterium tuberculosis • Progressive multifocal leucoencephalopathy • Cytomegalovirus • Herpes simplex encephalitis • Varicella zoster meningioencephalitis • Syphilis *Neoplasms:* • Primary CNS lymphoma • Metastatic lymphoma, Kaposi sarcoma • Seizures • VasculitisDirectly related to HIV	Directly related to HIV Indirectly related to HIV
Reticuloendothelial system	Diffuse lymphadenopathy B-cell lymphoma	
Hepatobiliary system	Liver dysfunction due to infection, malignancy, medication, biliary tract disorders	
Pancreas	Pancreatitis due to • OI • Drugs • Malignancy	

Cardiovascular	• Myocarditis, cardiomyopathy • Pericardial effusion • Endocarditis • Pulmonary hypertension	
Kidney and Genitourinary	• HIV associated nephropathy with massive proteinuria, hematuria, azotemia, focal and segmental glomerulosclerosis with tubulointerstitial disease • Genitourinary infections • Vulvovaginal candidiasis	Seen predominantly in IV drug users, homosexuals, children
Hematological	• Impaired heamatopoisis • Immune mediated cytopenia • Coagulopathies	
Rheumatological	• Reactive arthritis • AIDS associated arthropathy involving knee, ankles • Painful articular syndrome with acute pain in knees, elbows & shoulders	Seen in 5-10% of HIV infected 10% of infected
Ocular	*Ocular infections due to* • CMV • V-Z retinitis • Toxoplasmosis • Pneumocystosis	
Malignancies	• Kaposi sarcoma • AIDS associated lymphoma • Primary CNS lymphoma • Cervical cancer • Hodgkin's disease	

Table 8 : Neurological syndromes and opportunistic infections in AIDS:

Syndromes	Clinical Features	Etiology
Meningitis	Headache, fever, nausea/vomiting, altered Consciousness, convulsions	(i) Cryptococcus
		(ii) TB
		(iii) Syphilis
Focal cerebral lesions	Headache, focal signs, convulsions	(I) Toxoplasmosis
		(ii) Progressive multifocal leukoencephalopathy
		(iii) Syphilis
		(iv) Cytomegalovirus
Encephalitis	Cognitive impairment, psychiatric features, altered consciousness	(i) Cytomegalovirus
		(ii) Herpes simplex
		(iii) Toxoplasmosis
		(iv) Cryptococcus
Myelitis	Convulsions, sensory, changes in limbs	(i) Cytomegalovirus
		(ii) Varicella zoster
		(iii) Herpes simplex
		(iv) Toxoplasmosis
		(v) Syphilis

CLINICAL STAGING

WHO clinical staging system for HIV infection and HIV-related disease.

WHO has developed a clinical staging system (originally for prognosis), based on clinical criteria. The definition of symptoms, signs and diseases is according to clinical judgment. Clinical condition or performance score, whichever is the higher, determines whether a patient is at clinical stage 1, 2, 3 or 4. Clinical stage is important as a criterion for starting antiretroviral therapy (ART).

Table 9 : WHO clinical staging system for HIV infection and related disease in adults (13 years or older)

Stage 1:
➢ Asymptomatic
➢ Persistent generalized lymphadenopathy
Stage 2:
➢ Moderate unexplained weight loss (under 10% of presumed or measured body weight)
➢ Recurrent upper respiratory tract infections (sinusitis, tonsillitis, otitis media, pharyngitis)
➢ Herpes zoster
➢ Angular cheilitis
➢ Recurrent oral ulcerations
➢ Papular pruritic eruptions
➢ Seborrhoeic dermatitis
➢ Fungal nail infections
Stage 3:
➢ Unexplained severe weight loss (over 10% of presumed or measured body weight)
➢ Unexplained chronic diarrhoea for longer than 1 month
➢ Unexplained persistent fever (intermittent or constant for longer than 1 month)
➢ Persistent oral candidiasis
➢ Oral hairy leukoplakia
➢ Pulmonary tuberculosis
➢ Severe bacterial infections (e.g. pneumonia, empyema, meningitis, pyomyositis, bone or joint infection, bacteraemia, severe pelvic inflammatory disease)
➢ Acute necrotizing ulcerative stomatitis, gingivitis or periodontitis
➢ Unexplained anaemia (below 8 g/dl), neutropenia(below 0.5 x 109/l) and/or chronic thrombocytopenia (below 50 x 109/l)
Stage 4:
➢ HIV wasting syndrome
➢ Pneumocystis(jirovecii) pneumonia
➢ Recurrent severe bacterial pneumonia
➢ Chronic herpes simplex infection (orolabial, genital or anorectal of more than 1 month's duration or visceral at any site)
➢ Oesophageal candidiasis (or candidiasis of trachea, bronchi or lungs)
➢ Extrapulmonary tuberculosis
➢ Kaposi sarcoma
➢ Cytomegalovirus disease(retinitis or infection of other organs, excluding liver, spleen and lymphnodes)
➢ Central nervous system toxoplasmosis
➢ HIV encephalopathy
➢ Extrapulmonary cryptococcosis including meningitis
➢ Disseminated nontuberculous mycobacterial infection
➢ Progressive multifocal leukoencephalopathy
➢ Chronic cryptosporidiosis
➢ Chronic isosporiasis
➢ Disseminated mycosis (extrapulmonary histoplasmosis, coccidiomycosis)
➢ Recurrent septicaemia (including nontyphoidal Salmonella)
➢ Lymphoma (cerebral or B cell non-Hodgkin)
➢ Symptomatic HIV-associated nephropathy or HIV-associated cardiomyopathy
➢ Recurrent septicaemia (including nontyphoidal Salmonella)
➢ Invasive cervical carcinoma
➢ Atypical disseminated leishmaniasis

Table 10 : WHO Clinical Staging of HIV for Infants and Children with established HIV Infection

Clinical stage 1
• Asymptomatic • Persistent generalized lymphadenopathy
Clinical stage 2
• Unexplained persistent hepatosplenomegaly • Recurrent or chronic upper respiratory tract infections(otitis media, otorrhoea, sinusitis, tonsillitis) • Herpes zoster • Lineal gingival erythema • Recurrent oral ulceration • Papular pruritic eruption • Fungal nail infections • Extensive wart virus infection • Extensive molluscum contagiosum • Unexplained persistent parotid enlargement
Clinical stage 3
• Unexplained moderate malnutrition not adequately responding to standard therapy • Unexplained persistent diarrhoea (14 days or more) • Unexplained persistent fever (above 37.5 °C, intermittent or constant, for longer than one month) • Persistent oral Candidiasis (after first 6 weeks of life) • Oral hairy leukoplakia • Acute necrotizing ulcerative gingivitis/ periodontitis • Lymph node TB • Pulmonary TB • Severe recurrent bacterial pneumonia • Symptomatic lymphoid interstitial pneumonitis • Chronic HIV-associated lung disease including bronchiectasis • Unexplained anaemia (<8.0 g/dl), neutropenia (<0.5x109/L) or chronic thrombocytopenia (<50 x109/L)
Clinical stage 4
• Unexplained severe wasting, stunting or severe malnutrition not responding to standard therapy • Pneumocystis (jirovecii) pneumonia • Recurrent severe bacterial infections(e.g. empyema, pyomyositis, bone or joint infection, meningitis, but excluding pneumonia) • Chronic herpes simplex infection; (orolabial or cutaneous of more than one month's duration, or visceral at any site) • Oesophageal candidiasis (or candiadisis of trachea, bronchi or lungs) • Extrapulmonary TB • Kaposi sarcoma • Cytomegalovirus (CMV) infection; retinitis or CMV infection affecting another organ, with onset at age more than 1 month • Central nervous system toxoplasmosis (after the neonatal period) • HIV encephalopathy • Extrapulmonary cryptococcosis including meningitis • Disseminated non-tuberculous mycobacterial infection • Progressive multifocal leukoencephalopathy • Chronic cryptosporidiosis (with diarrhoea) • Chronic isosporiasis • Disseminated endemic mycosis (extrapulmonary histoplasmosis, coccidioidomycosis, penicilliosis) • Lymphoma (Cerebral or B cell non-Hodgkin) • HIV-associated cardiomyopathy or nephropathy

Source: WHO. Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach. June 2013.

Table 11 : Presumptive and definitive criteria for recognizing HIV/AIDS related clinical events in adults (15 or older) with confirmed HIV infection

Clinical event	Clinical diagnosis	Definitive diagnosis
Clinical Stage 1		
Asymptomatic	No HIV-related symptoms reported and no signs on examination	Not applicable
Persistent generalized lymphadenopathy	Painless enlarged lymph nodes >1cm in two or more non-contiguous sites (excluding inguinal nodes) in the absence of known cause, and persisting for three months or more	
Clinical Stage 2		
Moderate unexplained weight loss (<10% o body weight)	Reported unexplained involuntary weight loss; in pregnancy failure of gain weight	Documented weight loss <10% of body weight
Recurrent upper respiratory tract infections (current event plus one or more in last six-month period)	Symptom complex, such as unilateral face pain with nasal discharge (sinusitis), painful inflamed eardrum (otitis media) or tonsillopharyngitis without features of viral infection (such as coryza or cough)	Laboratory studies where available, such as culture of suitable body fluid
Herpes zoster	Painful vesicular rash in dermatomal distribution of a nerve supply, does not cross the midline	Clinical diagnosis
Angular cheilitis	Splits or cracks at the angle of the mouth, not due to iron or vitamin deficiency, usually respond to antifungal treatment	Clinical diagnosis
Recurrent oral ulcerations (two or more episodes in last six months) Papular pruritic eruption	Aphthous ulceration, typically painful with a halo of inflammation and a yellow-grey pseudomembrane Papular pruritic lesions, often with marked post-inflammatory pigmentation	Clinical diagnosis Clinical diagnosis
Seborrhoeic dermatitis	Itchy scaly skin condition, particularly affecting hairy area (scalp, axillae, upper trunk and groin)	Clinical diagnosis
Fungal nail infections	Paronychia (painful red and swollen nail bed) or onycholysis (separation of the nail from the nail bed) of the fingernails (white discoloration-especially involving proximal part of nail plate-with thickening and Separation of the nail from the nail bed)	Fungal culture of the nail or nail-plate material
Clinical Stage 3		
Unexplained severe weight loss (more than 10% of body weight)	Reported unexplained involuntary weight loss (>10% of body weight) and visible thinning of face, waist and extremities with obvious wasting or body mass index <18.5 kg/ m2; in pregnancy the weight loss may be masked	Documented loss of more than 10% of body weight

Unexplained chronic diarrhoea for longer than one month	Chronic diarrhoea (loose or watery stools, three or more times daily) reported for longer than one month	Three or more stools observed and documented as unformed, and two or more stool tests reveal no pathogens
Unexplained persistent fever (intermittent or constant and for longer than one month)	Fever or night sweats for more than one month, either intermittent or constant with reported lack of response to antibiotics or antimalarial agents without other obvious foci of disease reported or found on examination; malaria must be excluded in malarious areas	Documented fever >37.5oC with negative blood culture, negative Ziehl-Nielsen stain, negative malaria slide, normal or unchanged chest X-ray and no other obvious focus of infection
Oral candidiasis	Persistent or recurring creamy white curd-like plaques that can be scraped off (pseudomembranous), or red patches on tongue, palate or lining of mouth, usually painful or tender (erythematous form)	Clinical diagnosis
Oral hairy leukoplakia	Fine white small linear patches or corrugated lesions on lateral borders of the tongue that do not scrape off	Clinical diagnosis
Pulmonary tuberculosis (current)	Chronic symptoms: (lasting more than two-to-three weeks) cough, haemoptysis, shortness of breath, chest pain, weight loss, fever, night sweats, and no clinical evidence of extrapulmonary disease. Discrete peripheral lymph node M. tuberculosis infection (especially cervical) is considered a less severe form of extrapulmonary tuberculosis	One or more sputum smear positive for acid-fast bacilli and/or radiographic abnormalities consistent with active tuberculosis and/or culture positive for Mycobacterium
Severe bacterial infection (e.g., pneumonia,meningitis, empyema,pyomyositis, bone or joint infection, bacteraemia and severe pelvic inflammatory disease)	Fever accompanied by specific symptoms or signs that localize infection and response to appropriate antibiotic	Isolation of bacteria from appropriate clinical specimens (usually sterile sites)
Acute necrotizing ulcerative gingivitis or necrotizing ulcerative periodontitis	Severe pain, ulcerated gingival papillae, loosening of teeth, spontaneous bleeding, bad odour, and rapid loss of bone and/or soft tissue	Clinical diagnosis
Unexplained anaemia (<8g/dl), Neutropenia (<0.5 x 109 per litre) or chronic (more than one month) thrombocytopenia (<50 x 109 per litre)	No presumptive clinical Diagnosis	Diagnosed on laboratory testing and not explained by other non-HIV conditions; not responding to standard therapy with haematinics, antimalarial agents or other anthelmintic agents.
Clinical Stage 4		
HIV wasting syndrome	Unexplained involuntary weight loss (>10% baseline body weight), with obvious wasting or body mass index < 18.5 PLUS unexplained chronic diarrhoea (looseOR	Documented weight loss >10% of body weight PLUS two or more unformed stools negative for pathogens

	or watery stools, three or more times daily) reported for longer than one month OR reports of fever or night sweats for more than one month without other cause and lack of response to antibiotics or antimalarial agents; malaria must be excluded in malarious areas	documented temperature of >37.5oC with no other cause of disease, negative blood culture, negative malaria slide and normal or unchanged chest X-ray
Pneumocystis pneumonia	Dyspnoea on exertion or nonproductive cough of recent onset (within the past three months), tachypnoea and fever AND chest X-ray evidence of diffuse bilateral interstitial infiltrates AND no evidence of bacterial pneumonia; bilateral crepitations on auscultation with or without reduced air entry	Cytology or immunofluorescent microscopy of induced sputum or bronchoalveolar lavage or histology of lung tissue
Recurrent severe presumed bacterial pneumonia	Current episode plus one or more previous episodes in the past six months; acute onset (two weeks) of severe symptoms (such as fever, cough, dyspnoea, and chest pain) PLUS new consolidation on clinical examination or chest-x-ray; response to antibiotics	Positive culture or antigen test of a compatible organism
Chronic herpes simplex virus infection (orolabial, genital or anorectal) of more than one month or visceral of any duration	Painful, progressive anogenital or orolabial ulceration; lesions caused by recurrence of herpes simplex virus infection and reported for more than one month. History of previous episodes. Visceral herpes simplex visura requires definitive diagnosis	Positive culture or DNA (by polymerase chain reaction) of herpes simplex virus or compatible cytology or histology
Oesophageal candidiasis	Recent onset of retrosternal pain or difficulty on swallowing (foods and fluids) together with oral Candidiasis	Macroscopic appearance at endoscopy or bronchoscopy, or by microscopy or histology
Extrapulmonary tuberculosis	Systemic illness (such as fever, night sweats, weakness and weight loss). Other evidence for extrapulmonary or disseminated tuberculosis varies by site, such as pleura, pericardia, meninges, mediastinum or abdominal. Discrete peripheral lymph node Mycobacterium tuberculosis infection (especially cervical) is considered a less severe form of extrapulmonary tuberculosis	M. tuberculosis isolation or compatible histology from appropriate site or radiological evidence of military TB (diffuse uniformly distributed small military shadows or microdules on chest X-ray)
Kaposi sarcoma	Typical gross appearance in skin or oropharynx of persistent, initially flat, patches with a pink or violaceous colour, skin lesions that usually develop into plaques or nodules	Macroscopic appearance at endoscopy or bronchoscopy, or by histology

Cytomegalovirus disease(other than liver, spleen or lymph node)	Retinitis only: may be diagnosed by experienced clinicians. Typical eye lesions on fundoscopic examination: discrete patches of retinal whitening with distinct borders, spreading centrifugally, often following blood vessels, associated with retinal vasculitis, haemorrhage and necrosis	Compatible histology or cytomegalovirus demonstrated in cerebrospinal fluid by culture or DNA (by polymerase chain reaction)
Central nervous systemsystem Toxoplasmosis	Recent onset of a focal nervous abnormality consistent with intracranial disease or reduced level of consciousness AND response within 10 days to specific therapy	Positive serum toxoplasma antibody AND (if available) single or multiple intracranial mass lesion on neuroimaging (computed tomography or magnetic resonance imaging)
HIV encephalopathy	Disabling cognitive and/or motor dysfunction interfering with activities of daily living, progressing over weeks or months in the absence of a concurrent illness or condition, other than HIV infection, which might explain the findings	Diagnosis of exclusion: and (if available) neuroimaging (computed tomography or magnetic resonance imaging)
Extrapulmonary cryptococcosis (including meningitis)	Meningitis: usually subacute, fever with increasing severe headache, meningism, confusion, behavioural changes that respond to cryptococcal therapy	Isolation of Cryptococcus neoformans from extrapulmonary site or positive cryptococcal antigen test on cerebrospinal fluid or blood
Disseminated tuberculous mycobacterial infection	No presumptive clinical diagnosis	Diagnosed by finding a typical non-mycobacterial species from stool, blood, body fluid or other body tissue, excluding the lungs
Progressive multifocal leukoencephalopathy (PML)	No presumptive clinical diagnosis	Progressive nervous system disorder (cognitive dysfunction, gait/speech disorder, visual loss, limb weakness and cranial nerve palsies) together with hypodense white matter lesions on neuroimaging or positive polyomavirus JC polymerase chain reaction on cerebrospinal fluid
Chronic cryptosporidiosis (with diarrhoea lasting more than one month Chronic Isosporiasis	No presumptive clinical diagnosis No presumptive clinical diagnosis	Cysts identified on modified Ziehl-Nielsen stain microscopic examination of unformed stool Identification of Isospora
Disseminated mycosis (such as coccidiomycosis, histoplasmosis, or penicilliosis)	No presumptive clinical diagnosis	Histology, antigen detection or culture from clinical specimen or blood culture
Recurrent non-typhoid Salmonella bacteraemia	No presumptive clinical diagnosis.	Blood Culture
Lymphoma (cerebral or cell non-Hodgkin)	No presumptive clinical diagnosis.	Histology of relevant specimen B or, for central nervous system tumours, neuroimaging techniques
Invasive cervical	No presumptive clinical diagnosis.	Histology or cytology Visceral carcinoma
leishmaniasis	No presumptive clinical diagnosis.	Diagnosed by histology (amastigotes visualized) or culture from any appropriate clinical specimen

HIV-associated nephropathy	No presumptive clinical diagnosis.	Renal biopsy
HIV-associated cardiomyopathy	No presumptive clinical diagnosis.	Cardiomegaly and evidence of poor left ventricular function confirmed by echocardiography
Disseminated mycosis (such as coccidiomycosis, histoplasmosis, or penicilliosis)	No presumptive clinical diagnosis	Histology, antigen detection or culture from clinical specimen or blood culture
Recurrent non-typhoid Salmonella bacteraemia	No presumptive clinical diagnosis.	Blood Culture
Lymphoma (cerebral or cell non-Hodgkin)	No presumptive clinical diagnosis.	Histology of relevant specimen B- or, for central nervous system tumours, neuroimaging techniques
Invasive cervical	No presumptive clinical diagnosis.	Histology or cytology Visceral carcinoma
leishmaniasis	No presumptive clinical diagnosis.	Diagnosed by histology (amastigotes visualized) or culture from any appropriate clinical specimen
HIV-associated nephropathy	No presumptive clinical diagnosis.	Renal biopsy
HIV-associated cardiomyopathy	No presumptive clinical diagnosis.	Cardiomegaly and evidence of poor left ventricula function confirmed by echocardiography

Source: WHO case definitions of HIV for surveillance and revised clinical staging and immunological classification of HIV related disease in adults and children. Geneva, WHO, 2006.

POINTS TO PONDER: (10 Minutes)

1. Discuss the symptomatology, with which the patients could possibly present with, where you would consider HIV/AIDS in the differential diagnosis?
2. What does 'Opportunistic Infection' mean?
3. What are the conditions which can cause immunodeficiency, apart from HIV?

SESSION - 7

LABORATORY DIAGNOSIS

PURPOSE:
This session details the laboratory test available for diagnosis of HIV infection. The strategies followed to diagnose HIV infection are also detailed.

OBJECTIVE:
By the end of this session the participants would be able to:

1. Identify tests commonly done to detect HIV
2. Detail the strategies available for diagnosis of HIV infection.
3. Describe the relevance of different tests with respect to the stage of the HIV disease?

TIME: 40 minutes

PREPARATION: Power-point presentation

READING : (40 minutes)

TESTING FOR HIV INFECTION

HIV/AIDS is different from other infectious diseases. It is far more complex because HIV infection is life long, outcome is invariably fatal and no cure or vaccine is available so far. Since, commonly HIV/AIDS is acquired through sexual contact, individuals known to be HIV infected are stigmatized and discriminated against. A number of moral, ethical, legal and psychosocial issues are related with a positive HIV status. So, anyone attempting to assess the HIV status of an individual must be conversant with these issues, strategies of HIV testing, protocols of testing, rationale of using test kits, correct method of informing the client, counselling, importance of confidentiality, technical and other pitfalls and quality assurance to name some. Confidentiality of a positive test result is of utmost importance. Counselling should be undertaken to motivate the individual to tell the spouse/family and induce behaviour change.

Purpose of HIV testing:

- Information is useful for prophylaxis, medical management and treatment of HIV and related illnesses.
- To assure blood safety and donation safety.
- To assess the efficacy of targeted intervention in a defined cohort.
- To monitor trends of epidemic (sentinel surveillance etc.).
- Identification of asymptomatic individuals (practising high risk behaviour).
- To plan personal and family's future if the result is positive.
- To motivate for behaviour modification through counselling amongst those who test negative and who practise high risk behaviours.
- To induce behaviour change and prevent transmission by counselling in those who test positive.
- To diagnose clinically suspected cases.

Specimens to be collected for detection of anti-HIV antibodies:
Most common specimen is blood. HIV test kits are also available for detecting HIV antibodies in various kinds of specimens like blood, plasma, serum, saliva and urine.

HIV antibody screening assays : The list of the screening assays for HIV testing is given below

1. Antibody blood tests
    - o HIV antibody enzyme immunoassays/enzyme linked immunosorbent assays (EIAs/ELISA)
    - o Rapid tests (Minutes)
    - o Immunoflourescent assays (IFA)
    - o Western Blot (WB), Immunoblot (IB) and Recombinant Immunoblot Assay (RIBA)

2. Antibody test on other fluids
    - o Oral HIV antibody EIAs/ELISAs
    - o Urine HIV antibody EIAs/ELISAs

3. Other blood tests
    - o p24 antigen assay
    - o Culture of peripheral blood mononuclear cells (PBMC) for HIV
    - o PBMC HIV DNA detection
    - o Plasma/serum viral load (HIV-1 RNA)
    - o Fluorimetric microparticle technologies
    - o Simple : Based on ELISA principle
        - Take 1/2 an hour

ELISA is the most commonly performed screening test. Screening assays must detect all positive sera i.e. should be highly sensitive even if some false positives do occur. However, results of a screening test should never be used as the final interpretation of HIV status, and individual is never identified on the basis of one screening assay as technical errors can occur. The serum reactive in screening assay is subjected to confirmatory tests (as per policy and strategy of testing) to be classified as reactive only if it is reactive in repeated assays.

Other screening tests were also introduced subsequently. These include latex, red cell and gelatin particle agglutination, comb tests and dot- blot assays. These tests are easy to perform, are rapid, do not require sophisticated equipment, technical expertise and are mostly cost effective. Some of them, particularly comb tests and dot- blot assays, are also discriminatory for HIV 1 and HIV 2 antibodies.
Commonly mentioned western blot test is not easily available and most of the laboratories do a repeat ELISA as a confirmatory test.

Indian national testing policy

1. No individual should be made to undergo a mandatory testing for HIV
2. No mandatory HIV testing should be imposed as a precondition for employment or for providing health care services and facilities.
3. Any testing where an individual is going to be informed about the result must be accompanied by a pre-test and post-test counseling services.
4. Informed consent and confidentiality are important issues to be considered when HIV testing is undertaken for diagnostic purposes.

5. HIV testing protocol should be commensurate with the objective of testing and the appropriate strategy should be followed to achieve the said objective.
6. Testing is part of the overall prevention and control programme.
7. Testing should be technically sound and appropriate.
8. Test procedure must be appropriate to the field situation.
9. Testing procedure must be cost effective.
10. Laboratory procedure must be monitored for ensuring quality.
11. Quality assurance should be practiced to avoid false- positive and false negative results.

The strategies followed for testing for HIV:

Strategy I: Blood/Plasma/Serum is subjected once to ELISA (Rapid/Simple) for HIV. If negative, the serum is to be considered free of HIV and if positive, the sample is taken as HIV-infected for all practical purposes.

- This strategy is used for ensuring donation safety (blood/blood products, organ, tissues, sperms etc.). The unit of blood testing reactive (positive) is discarded.
- Donor is not informed about the result. Unit of blood testing positive is destroyed as per guidelines.

However, if a blood donor wants to know the result of HIV test, then he/she is counseled to access the service of the linked VCCT and HIV testing in this case is performed as per ***strategy III***.

Strategy II: A serum sample is considered negative for HIV if the first ELISA or rapid test reports it so, but if reactive, it is subjected to a second ELISA which utilizes a testing system different from the first one i.e. either antigens employed by the manufacturer are different or the technology/principle of test is different. It is reported reactive only if the second ELISA confirms the report of the first i.e. sample is reactive in both tests. In case the second E/R is non reactive, then the result is taken as negative for sentinel surveillance purposes. This type of HIV testing is anonymous and unlinked.

Strategy IIB This strategy is used to determine HIV status of clinically symptomatic suspected AIDS cases in whom blood/plasma/serum is tested with highly sensitive screening test. The sample is considered negative if the test gives non-reactive result. In case the test result is reactive, the sample is tested with another test kit (based on a different principle of test or having different antigens compared to the first test). If the result is reactive with second test kit also the sample is considered to be positive in symptomatic AIDS case. In case sample is positive by first test kit and negative by second test kit, the sample is subjected to a tiebreaker third test. If the third test is reactive, sample is reported as indeterminate and follow up testing is undertaken after 2-4 weeks. In case the third test is negative, sample is reported as negative.

Strategy III: It is similar to strategy IIB, with the added testing by third test for positive result. Positive confirmation of a third reactive E/R test is required for a sample to be reported HIV positive. If the sample gives reactive result with 2 E/R and non reactive with the third assay it is reported as indeterminate and patient is called back for repeat testing after 2-4 weeks. The test utilized for the first screening is one with the highest sensitivity and for the second and third tests, tests with the highest specificity are to be used. This strategy is used for diagnosis of HIV infection in asymptotic individuals. Counseling and informed consent are a must in these cases. Three different kits with different antigens and/or different principles of tests are required to follow this strategy.

Strategy II & III are to be used for diagnosis of HIV infection. ELISA 2 and ELISA 3 ought to be tests with the highest Positive Predictive Value (PPV) possible to eliminate any chances of false positive results.

Figure 2 : Strategy I & II

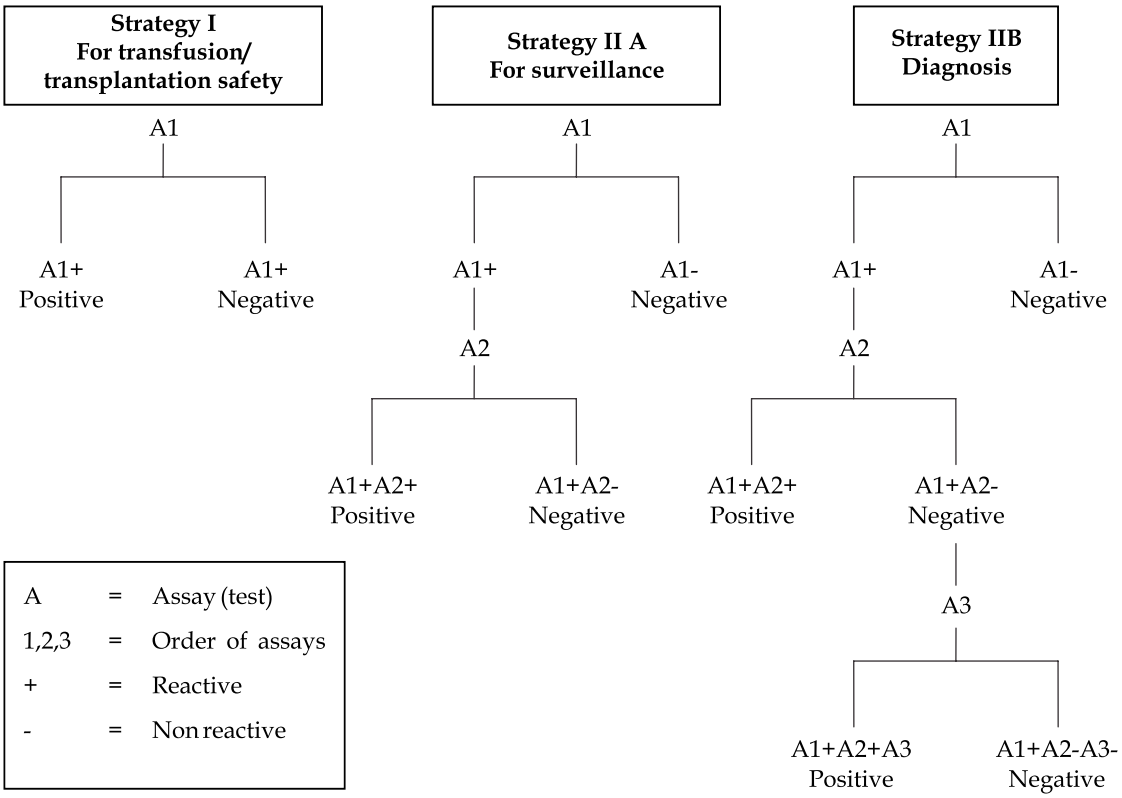
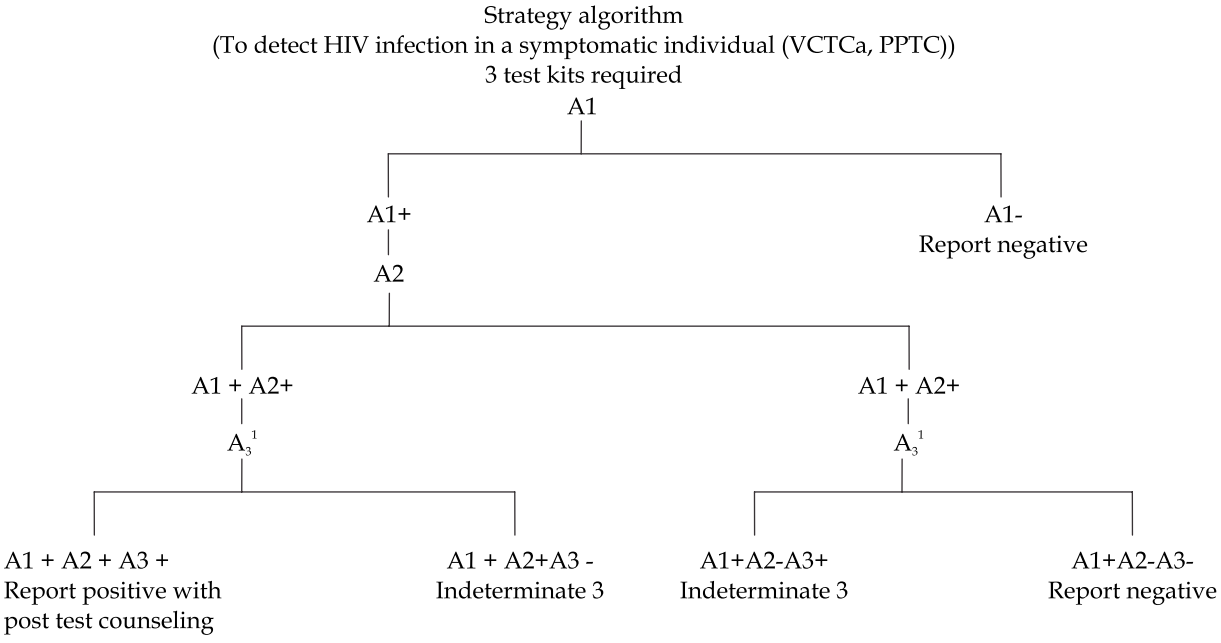


Figure 3 : Strategy III



Source: Guidelines on HIV Testing March 2007 NACO

Table 12: Recommended & desirable tests at HIV diagnosis & monitoring of anti-retroviral therapy

Phase of HIV management	Recommended	Desirable (if feasible)
HIV diagnosis	HIV serology, CD4 cell count TB screeming	HBV (HBsAg) serelogy HCV SERELOGY Crytococcus antigen if Cd4 count ⩽ 100 cells/mm3b Screening for sexually transmitted infections Assessment for major non communicable chronic diseases and comorbidities
Follow up before ARI	CD4 cell count (every 6-12 months)	
ARI initiation	CD4 cell count	Haemoglobin test for AZT[d] Pregnancy test Blood pressure measurement Urine dipsticks for glycosuria and estimated glomerular filtration rate (eGFR) and serum creatinine for TDF Alanine aminotransferase for NVP
Receiving ART	CD4 cell count (every 6 months) HIV viral load (at 6 months after initiating ART and every 12 months thereafter)	Urine dipstick for glycosuria and serum creatinine for TDF
Treatment failure	CD4 cell count HIV viral load	HBV (HBsAg) Serology(before switching ARV regimen if this testing was not done or if the result was negative at baseline)

Source: WHO. Consolidated Guidelines on the use of antiretroviral drugs for treating and preventing HIV infection. June 2013

SESSION - 8

MANAGEMENT OF HIV INFECTION

PURPOSE:
The purpose of this session is to acquaint the participants the currently used methodology in providing

GENERAL MEDICAL CARE TO HIV POSITIVE PERSONS

OBJECTIVE:
By the end of this session the participants would be able to:

1. Identify the meaning and goal of long term care of HIV infected persons
2. Discuss the management of palliative care through interdisciplinary teams
3. Describe the management of the symptoms like diarrhoea, oral thrush, nausea and vomiting,
4. Describe the assessment and management of conditions like anemia, stress.
5. Identify the role of complementary therapies in treatment of HIV infected persons.

TIME: 40 minutes

PREPARATION: Power point presentation

READING : (40 minutes)

MANAGEMENT OF HIV POSITIVE PERSONS

- A periodical estimation of CD4 cell count, almost every 6-12 months is essential for deciding prophylaxis in patients

- Initiation of Anti-retroviral therapy (ART) with falling CD4 cell counts or high viral loads and in the presence of AIDS defining illness.

- Appropriate referrals need to be made to tertiary care hospitals in case of development of AIDS or AIDS defining illness.

Laboratory parameters
Total lymphocyte count, CD4 cell counts, viral load (if possible) to be monitored.

Changes in life style
When a person is detected HIV sero-positive, he/she should be educated and counseled about HIV/AIDS. He/she should be counseled for

- positive way of life and
- advised to stop smoking, drinking, and
- should know the use of condoms during sexual practices.

Nutrition in HIV management

The nutritional status of the individual with HIV infection is important to consider in the early course of the infection. Studies have shown that this has a bearing upon improving the quality of life of such individuals.

Table 13 : Dietary Tips (Suggestive)

SIGNS / SYMPTOMS	TIPS	SUGGESTIVE DIET
Mouth Sores/Difficult Swallowing	• Eat soft and moderately warm food • Eat slightly flavoured foods, but avoid spicy and hot items	• Flavoured rice (well cooked) and • cool porridge (rice/Suji kheer) • Bananas, potatoes • Khichri (rice and green lentils Moong dal), • Finely minced meat (keema)
Nausea/Vomiting	• Eat frequent small meals • Drink plenty of liquids • Avoid strong tea, coffee, aerated drinks • Eat low fat food • Eat mildly salted food	• Vegetable soups, dal soups • Steamed or stir fried vegetables • Lemon tea, light tea • Coconut water, rice water, • tamarind water, lime water
Diarrhoea	• Eat low fat food • Drink plenty of fluids • Take ORS frequently to prevent dehydration.	• Khichri, rice • Banana • Yogurt (dahi) • Skimmed milk
Anaemia	• Foods high in iron • Combine iron rich foods with vitamin C rich foods	• Honey, sprouted green lentils (Moong dal), black gram (Chana) • Dark green vegetables. e.g. Spinach, Methi, Chulai, Mustar etc and Amla (Indian gooseberry), apple • Liver, red meat, fish, poultry
Loss of Appetite	• High caloric foods • High protein, high energy supplements • Take small frequent meals	• Nuts and sprouted/roasted grains • Honey with a dash of Lemon in water

Note:

- Vegetables and fruits which can be eaten raw must be eaten raw e.g. Cucumber (Kheera), Carrot(Gajar), Radish (Mooli), Apple, Guava, Bananas, etc.
- Grains that can be eaten in roasted form must be eaten so e.g. Black Gram
- Drink plenty of fresh, filtered or boiled and cooled water
- Chew properly whatever you eat.
- Eat as much as you would like without causing discomfort but make sure that you eat wholesome and nutritious food.

Table 14 : Golden Rules for Maintenance of Good Hygiene at Home and Workplace

Do's	Activities	Precautions that ensure good hygiene
ALWAYS Wash your hands before you-	• Cook food • Eat meals • Feed another person • Take/Give medicine • Change soiled bedding • Put dressing on the wounds	• Hands should be washed with plenty of free flowing water. • Use clean water as far as possible. Boil drinking water, especially for young children. • Wash bed linen, towels and clothes with soap and water. Soiled linen may preferably be washed in hot water and dried in sunlight.
ALWAYS wash your hands after you-	• Cook food • Eat meals • Feed another person • Change soiled bedding • Use a toilet • Change nappies • Put dressing on the wounds	• Store food properly so as to prevent it from spoiling. • When someone in the family is sick, wash drinking cups and tumblers before sharing them. • Cover your mouth when coughing or sneezing. • Avoid spitting or else spit in a container.
ALWAYS protect yourself	• Be careful, avoid cuts and injuries • Cuts and wounds should be washed with water and soap and treated with antiseptic solution and covered with a waterproof dressing from cuts	• Kiss babies on their forehead and not on their lips. • Wash eating utensils, including those for babies and children, with soap and water.
MAKE SURE that you-	• Decontaminate the blood spills at home and at workplace. 5 gm of house-hold bleach powder dissolved in 100 ml of water makes an effective solution. This solution (double the quantity of blood spill) may be gently poured over the spill and wiped clean after sometime. The wiper (cloth) should be disposed off properly.	• Wash all raw fruits and vegetables with clean water before eating. • Dispose off waste properly e.g. by using latrine or by burning or burying

Management of stress

Anxiety, tension which are very common in AIDS patients, do have a detrimental effect on the patient's ability to fight diseases and maintain good health. It has been advised that people with positive attitude and mental approach can help themselves to overcome infection. This can be brought about by a sympathetic attitude of the patient's physicians, relatives, friends and acquaintances. Reassurance and psychological support are necessary to help them overcome their periodic bouts of severe depression.

Clinical Management

AIDS is a wide term with different terminologies and symptomatology. Despite continuous researches being conducted all over the world, a cure for HIV and AIDS remains elusive, as yet. However, there are drugs that are reported to enhance immune function and help maintain the general health of the people with HIV, thereby, preventing occurrence of minor ailments consequential to the HIV infection.

Management of Diarrhoea:

First: Assessment of dehydration

Management

Table 15 : Assessment of dehydration

Look for Dehydration	No dehydration	Some Dehydration	Severe Dehydration
General Condition	Well alert	Restless, irritable	Lethargic, Unconscious or semicon scious
Eyes	Normal	Sunken	Very sunken and dry
Tears	Present	Present	Absent
Mouth and tongue	Moist	Dry	Very dry
Thirst	Drinks normally, not thirsty, able to drink	Thirsty, drink eagerly	Drinks poorly or not at all
Feel: Skin pinch	Goes back quickly	Goes back quickly in less than 2 seconds	Goes back quickly slowly in more than 2 seconds

Management has three basic aims:

1. Detection of treatable cause
2. Relief of symptoms
3. Prevention of malnutrition

Principles of managing HIV related gut infections

- Multiple pathogens may be involved concurrently.
- Dissemination from the gut can occur in some bacterial infections (MAC, Salmonella, Shigella, Campylobacter).
- Relapse following successful treatment is frequent (CMV, Salmonella, Shigella, Campylobacter, MAC, Cryptosporidia, Microsporidia, Cyclospora).
- Progressive weightloss and reduced performance status are frequent if resolution of diarrhoea is not achieved.
- Between 15% and 40% of cases do not have an identifiable pathogen and symptomatic therapy only is available.

Table 16 : Recommendations on when to start ART in adults, adolescents, pregnant & breastfeeding women and children

Population	Recommendation
Adults and adolescents (⩽10 years)	Initiate ART if CD4 cell count ⩽ 500 cells/mm3 • As a priority, initiate ART in all individuals with severe/advanced HIV disease (WHO clinical stage 3 and 4) or Cd4 count ⩽ 350 cells/mm3
	Initiate ART regardless of WHO clinical stage or CD4 cell count • Active TB disease • HBV co-infection with severe chronic liver disease • Pregnant and breastfeeding women with HIV • HIV-positive individual in a serodiscordant partnership (to reduce HIV transmission risk)
Children ⩾ 5 years old	Initiate ART if CD4 cell count ⩽ 500 cells/mm^3 • As a priority, initiate ART in all children with severe/advanced HIV disease (WHO clinical stage 3 or 4) or CD4 count ⩽ 350 cells/mm3
	Initiate ART regardless of CD4 cell count • WHO clinical stage 3 or 4 • Active TB disease
Children 1-5 years old	Initiate ART in all regardless of WHO clinical stage or CD4 cell count • As a priority, initiative ART in all HIV-infected children 1-2 years old or with severe/advanced HIV disease (WHO clinical stage 3 or 4) or with CD4 count ⩽ 750 cells/mm3 or 25%, whichever is lower
Infants ⩽1 year old	Initiative ART in all infants regardless of WHO clinical stage or CD4 cell count

[3]initiate ART in all HIV-exposed children below 18 months of age with presumptive clinical diagnosis of HIV infection

Source: WHO. Consolidated Guidelines on the use of antiretroviral drugs for treating and preventing HIV infection. June 2013

MANAGEMENT OF HIV/AIDS THROUGH HOMOEOPATHY

HIV infection is a disease of recent origin and world over a fight between HIV and practitioners of health is continuing where the health of the community is at stake. Therefore it is imperative that health practitioners of all streams come together to find a solution to this global emergency before this infection rules over. Despite continuing researches being conducted all over the world to find a cure for HIV and AIDS remains elusive as yet. However, there are drugs that are reported to enhance immune function and help maintain the general health of the people with HIV there by preventing occurrence of minor aliments consequential to the HIV infection.

Homoeopathic medicines are reported to have a positive action on the immune system and have shown efficacy in maintaining immunity of the HIV infected individual in a relatively healthy state. There are medicines to treat minor opportunistic infections and other complications such as oral candidiasis, diarrhea, fever, anorexia, weight loss. As such Homoeopathy assumes importance in asymptomatic phase of HIV infection with CD4 count over 200/cumm where antiretroviral therapy is not indicated. This is especially important in a country like India where the disease burden is high and majority of the patients have no access to antiretroviral therapy. Also the cost of antiretroviral therapy is out of bounds for majority of patients in India when most of those infected cannot even afford two square meals.

Response to Homoeopathic therapy

Keeping with the principle of individualization, the patients of HIV/AIDS may present differently with differing set of signs and symptoms and also respond differently to the therapy. Symptomatically, one patient is likely to come up with improvement in the symptoms related to anxieties and fear about the disease, or related to mild OIs like oral candidiasis or folliculitis where as another may show a resistance to these OIs.

Homoeopathic medicines may be helpful in slowing the progress of the disease process, the rate of improvement differing in different persons. Studies have shown that persons with HIV opting for Homoeopathic therapy may remain symptom free for 10-15 years following diagnosis of the infection. In AIDS, the immune system of an individual has undergone irretrievable damage, as a result of which the patient is prone to a myriad of life threatening opportunistic infections, autoimmune disorders and malignancies. From Homoeopathic perspective, this stage represents the state of final breakdown of the vital force or the life principle. The medicine given at this stage of disease though ideally curative is not likely to be so and therefore, act as a palliative. At this stage, ideally the Homoeopathic medicine can be given as an adjunct to the established conventional regimen. The response of the patient with AIDS to the therapeutic regimen varies in different patients. The response may be immediate and with improvement in health status, vigor and recovery from opportunistic infections or there may be a slow but progressive improvement in the state of health and gradual symptomatic improvement or there may not be any improvement in the status of the patient and there may even be worsening of the condition of the patient. The role of a homoeopathic practitioner is no less than that of any other health practitioner in prevention of the disease and in providing appropriate treatment and management to the infected individuals.

MANAGEMENT OF HIV/AIDS THROUGH AYURVEDA

The most prevalent users of Ayurveda are individuals who have incurable, non–life-threatening conditions that may be chronic. The second largest group of users are those struggling with chronic, potentially life-threatening diseases, such as cancer and HIV-AIDS. Both groups turn to Ayurveda for a variety of reasons, such as to improve immune functioning, to improve overall functioning, to increase quality of life, to cope with side effects from conventional therapies, and to relieve symptoms related to their illness.

Various historic and sociopolitical exigencies have contributed to the popularity of Ayurveda use for people living with HIV-AIDS. Early in the struggle with HIV, pharmacologic treatments were limited and often were accompanied by severe negative side effects that precluded their use. Later, with the advent of highly active antiretroviral therapies (HAART), access to these expensive therapies was limited for many communities. There are many reasons why people living with HIV-AIDS use Ayurveda. The physicians who work in integrated clinics that provide both conventional and complementary services may refer patients to these clinics for pain management, to learn adaptive coping strategies, to manage chronic and serious medical illness, and to manage HIV-related symptoms.

The social role of Ayurveda among people living with HIV-AIDS has been examined, some studies have examined the effectiveness of Ayurveda on symptom management and improvement of quality of life . The management of HIV-related symptomatology has become important because people living with HIV-AIDS are living longer as a result of HAART. Acceptance that a cure for HIV

will not be discovered in the near future has justifiably shifted attention to quality of life concerns for people living with HIV-AIDS and consequently redirected attention to improving the management of HIV-related symptoms. In addition, individuals who choose not to use HAART, who have limited access to conventional treatments, or who cannot tolerate the side effects of HAART may turn to Ayurveda for relief of HIV-related symptoms. The various factors that are associated with Ayurveda use among people living with HIV-AIDS have created a need to understand the role of Ayurveda in HIV-related symptom management.

Ayurvedic provides number of Single, Compound Herbal /Herbo –mineral Rasayana drugs contributing unique Rasayana therapy having diversified actions on different systems of the body viz. immuno-modulation (on immune system), antioxidant action(prevents bio-oxidation there by checking age related disorders, auto immune disorders, degenerative disorders), adaptogenic affects (on psychoneuroendocrine system) and so on. Besides the evidences from classical Ayurvedic literatures, scientific studies showed that Ayurvedic preparations were effective in improving immune status and QOL of the individual. They produce most of their effects by primarily acting on the immune system. It had been shown that Ayurvedic preparations, given to rats whose macrophages have been overloaded with a fat lipofyundin, were unable to stimulate macrophages and thus proving that stress induced damage is not preventable. Ayurveda provides a comprehensive individualistic approach for the selection of appropriate therapy considering the body as a whole not merely treating the disease. Besides this Ayurvedic swastavritta /sadvritta provides various counseling regimen to combat stress related problems there by improving immunity and QOL. Ayurvedic preparations act primarily by activating the macrophages. It increases the phagocytic activity of macrophges and also induces expression of MHC-II antigens indicating enhancement of their antigen-presenting ability. In vitro, treatment of mice splenocytes with Ayurvedic preparations stimulated the production of IL-2, IFN-Gamma and TNF-Alpha reflecting activation of Th-1 type of T cell responses. Since Th-1 type of response has been implicated with the cell mediated immunity the therapeutic effects of Ayurvedic preparation, as reported may be mediated by activation of cellular immune responses. Infact, the antimicrobial properties of Ayurvedic preparation have found to be mediated by the immune system.

In the Indian scenario, Ayurveda could possibly contribute in this respect by using rasayana and balya oushadi dravyas. The development of immune-potentiators with Ayurvedic drugs has opened an entirely new chapter in therapeutics. In AIDS the patient losses something essential. The cellular immunity becomes defenseless against the pathogens and suffers from various clinical manifestations. These manifestations are similar to that of OJOKSHAYA or BALAKSHAYA patients, depicted in Ayurvedic classics. Administrating the rasayana medicaments meant for ojovardhaka, balavardaka (immuno modulation/adoptogenic and nourishment)) will promote the process of dhatu poshana and enrich ojus and thus leads to improve the vital strength and immunity or vyadhi kshamatva (non-specific immunity) that ultimately helps in managing symptoms ,preventing Ois ,stress and improving QOL.

Case discussion: (30 minutes)

- A 30 year old male presents with white patches in mouth. His X-Ray chest shows evidence of miliary tuberculosis. Patient has not received any antibiotics or immuno-suppressive drugs in immediate past. Is there sufficient evidence to label him as symptomatic HIV infection?
- A 35 year old woman was diagnosed with herpes zoster of intercostals nerves. She gives a history of having similar complaints at another site, 2 months back. She had received 2 units of blood in 7-8 years back, HIV status of which is not known. What will you do next?
- A 30 year old male truck driver presents with cough, chest pain, breathing difficulty since 3-4 weeks. What will be your line of management?
- An infant is born to HIV positive mother. What vaccinations will you advise?
- A 26-year-old male reports as HIV positive. His wife is 3 months pregnant. Her HIV status is not known. How will you advise him?
- A 30 year old intravenous drug user (IVDU) comes to you for treatment of skin rashes. He says he got HIV test done 1 year back which was negative. How will you manage?
- An 8 month old infant is seen with inability to feed and excessive salivation. The infant has lost considerable weight in last 2-3 weeks. Father of the infant died 1 year back after a protracted illness. Infant is found to have extensive oral thrush. Infant is primarily on mother's milk. There is no history of receiving antibiotics or steroids over the last month. How will you manage?
- A 2year old child is brought with complaints of continuous fever, fretfulness, refusal to eat and loss of movement of right leg. The fever has been present for over 2 weeks. On examination, child is emaciated, has hepatospelnomegaly and oral thrush. He has tender inflamed swelling on right hip, because of which his right leg is swollen. What would be your line of management?
- 24 year old male presents with painless genital ulcer since 1 week. Gives history of sexual promiscuity, but says he has used condoms at all times. What will be your line of management?
- A 28 year old AIDS case is seen with high grade fever since 3 days, severe diarrhea since 4-5 hours. On examination the patient is found to be moderately dehydrated, semi-conscious and loss of orientation to time, place, person. What would be your line of management?

SESSION - 9

IMPACT OF HIV INFECTION

PURPOSE:
HIV/AIDS epidemic has perplexed not only the medical fraternity but has posed a large number of ethical and legal challenges. The purpose of this session is to acquaint the participants to these challenges, as being holistic practitioners, they are likely to face these queries from their patients.

OBJECTIVE:

- Examine the impact of the HIV infection process on persons with HIV infection as well as their support systems and health care providers
- Appreciate the psychosocial factors that affect the quality of life of persons with HIV infection
- Identify legal and ethical problems confronted by persons with HIV infection and their support systems
- Identify their personal values, attitudes or beliefs in dealing with the issue and anticipate their learner's responses.

TIME: 1 hour

PREPARATION: Power point presentation. Incidents of discrimination reported in the newspapers from time to time or from NACO or other websites/governmental or NGO reports, reporting true incidents.

READING : (30 minutes)
The impact of HIV infection would be studied in following aspects:

1. Psychological impact
2. Social issues
3. Legal and ethical issues

PSYCHOLOGICAL IMPACT

Impact on the infected individual:

- When one looses something the first response is denial.
- Anger then follows.
- Then appears bargaining,
- Before reaching to the state of acceptance, the person has to go through depression.

When one is confronted with the reality of positive test results one goes through all these steps rapidly. No one wants to admit the risk behaviour to begin with. Denial is strong. Slowly the blame game begins to result into anger and blame others game. Facts of confirmed results trigger the bargaining process. Longevity, life expectancy and sexuality become issues of relevance. Apprehension, Anger and Anxiety then turns inwards to cause depression. Mood fluctuations are present and are rapid.

Commonly encountered emotions in an HIV infected individual:
Anger, boredom, contempt, denial, depressive changes, despair, emotional instability, fear, guilt, hatred, indifference, loneliness, optimum lost, sadness, sorrow, shame, etc.

Impact on family:
- Shock
- Fear of infection
- Revelation of lifestyle
- Anxiety, fear, depression, anticipatory grief
- Disturbed equilibrium of family
- Fear of social position
- Fear of rejection
- Guilt
- Anxiety/fear of future
- Anxiety about children and family members

Impact on health care workers:
- Fear of contagion and transmission
- Facing own mortality
- Conflict over goal of treatment
- Discomfort with issues related to sexuality and drug use
- Intensive complicated care

Impact on other service providers:
- Fear of infection
- Fear of disease and death
- Disapproval of certain groups
- Questioning morale, lifestyles and behaviors
- Facing own mortality

SOCIAL ISSUES

HIV/AIDS is associated centrally with the collapse of communities and families; has raised deep questions about intergenerational relations and cultural transmission, as also created enormous questions about health, poverty, governance and; a huge population of orphans.

HIV/AIDS even today is seen by many as:
- *HIV/AIDS as punishment (e.g. for immoral behaviour)*
- *HIV/AIDS as a crime (e.g. in relation to innocent and guilty victims)*
- *HIV/AIDS as war (e.g. in relation to a virus which need to be fought)*
- *HIV/AIDS as horror (e.g. in which infected people are demonised and feared)*
- *HIV/AIDS as otherness (in which the disease is an affliction of those set apart)*

The fact, however, is that HIV/AIDS is a disease about us, our family, our society and can happen to anyone of us. It forces us to think about certain aspects of our society, which most commonly are brushed aside. For once, if we move out of denial, we would see that HIV/AIDS has created ripples in our social structure

Family structure

The disease has made raised questions about:

- Marriage
- Child bearing
- Breast feeding
- Abortion
- Infidelity
- Sexual partners
- Homosexual relations
- Prostitution
- Sexual crimes

Gender relations:

It has us rethink issues related to position of women in the house and in society.

Social relations:

Groups frequently discriminated against are:

- Orphans and street children
- Migrant labour
- Those in frequently traveling occupation
- Persons in marginalized sections like prisons, institutions and hostels
- Those infected

The reduced life expectancy consequent to the epidemic has also created an impact on the social structure, which is currently most evident in some African countries. However, if the progress of the epidemic is not checked in our country, this would be seen in India as well:

- People dying at most productive age
- Families are shattered
- The families comprise of old grandparents and orphaned children
- Sickness of earning members tend to impinge on the family resources
- Loss of earning members increases poverty
- Migration outside rural areas due to poverty leads to changed social strata

Poverty, migrations, deaths of close ones, stigma and discrimination and orphan status increase vulnerability towards acquiring HIV infection.

LEGAL AND ETHICAL ISSUES

Ethics of prevention and control

HIV/AIDS is primarily a disease associated with certain high risk behaviors. The transmission of the disease can be interrupted through modifications in the behavior. Public health systems need to base their prevention interventions directed to ensure desired changes in the behaviour. Preventive policies need to be such that they facilitate desired behavioral modification. The basic principles of ethics dictate that individuals should be treated with respect and their dignity is not violated. Therefore, local cultural norms need to be respected when planning prevention strategies. Frequently, confrontations are seen between different groups regarding the acceptability of certain

cultural practices and desired intervention strategies. However, for the control of HIV/AIDS, the consensus is to use public health strategies which are voluntaristic such as mass education, counseling and respect for privacy.

Some prevention strategies frequently associated with confrontation between different groups:

- Sexual education of school children
- Condom distribution
- Needle exchange programs
- Acknowledging homosexuality

Ethics of care and treatment

Ethics of care encompass providing all medical services to the HIV infected without discrimination, at the same time maintaining confidentiality.

It is important that:

1. HIV positive individuals should be treated with compassion and dignity

2. There is little risk of transmission of HIV through regular OPD/Clinical treatment, if recommended infection control procedures are routinely followed

3. A denial of treatment to an individual because the individual has AIDS or is HIV seropositive, based solely on that fact, is unethical.

Ethics of screening and testing for HIV

Consent:

A physician who performs any invasive procedure on a patient must do so after informed consent i.e. the patient must have or be given sufficient knowledge about the procedure to make an intelligent independent decision. Informed consent applies to HIV testing and it is real informed consent and not implied consent. Full disclosure of the nature of the HIV disease, nature of the proposed test, implications of the negative and positive test result and the consequences of no treatment must be made prior to taking consent. The consent must be voluntary and the patient must be able to understand the need for the test and its implications. Testing should always be accompanied with counseling. Informed consent for testing and disclosure must be in writing.

A person's written informed consent is must before:

- Test a person for HIV;
- Reveal to third-parties that a person took an HIV test; or
- Disclose to third-parties the results of a person's HIV test.

It must be:

- Written, not oral
- HIV-specific, not general
- Must state the purpose for which information can be released
- Must be signed and dated
- Must have the provision to withdraw the consent at any time

Confidentiality

Confidentiality of physician-patient encounters is a basic medical ethic, which prevents the divulgence of patient confidences except in extreme circumstances. The patient has the right to confidentiality. The physician should not reveal confidential communications or information, without the consent of the patient, unless provided for by law or need to protect welfare of the individual or public interest. Civil or criminal penalties may ensue for unlawful disclosure of HIV positive status. Even if a doctor does not have a patient's actual HIV test result, there is still a legal obligation to protect confidential HIV-related patient information. Confidentiality of HIV test result (HIV positive or negative) must be maintained.

Protection of confidentiality of patients:

- Disclosure of medical records violates a patient's right to privacy.
- Patients have right to inspect and copy records.
- Patients have a right to privacy during medical treatment in any hospital or clinic.

You can reduce risk of violation of privacy by:

- Train all staff and employees on privacy law.
- Segregate sensitive information from general medical information and limit access.
- Create own medical records or information release form. Make sure every record which goes out is inspected.
- Be wary of subpoenas.

However, the principle of confidentiality is not absolute. Only under circumstances where the clinicians feels that withholding the test result will put either the colleagues or others at risk, the confidentiality can be breached and shared in a limited manner with relevant individuals only (shared confidentiality). The exception to confidentiality can be made with regard to spouse and sexual partners (generally, steady and known and not casual partners) of the patient, where the risk of transmission is real and not assumed. Even in such cases, it is best that the physician/counselor convinces the HIV positive persons, to talk of their HIV positive status to their sexual partners, themselves. The physician/counselor can possibly facilitate this conversation, but decision of disclosure of HIV status should necessarily be that of the patient. Only in an exceptional circumstance, where the physician/counselor is assured that the health of the third party is at risk, confidentiality can be breached. If in doubt, you can talk to HIV/AIDS counselors/legal experts, without divulging specific patient details.

Discrimination

Discrimination is a major issue related to HIV/AIDS. It is not limited to a particular strata of the society. People who most frequently face discrimination are:

- People Living with HIV/AIDS
  - their families
  - their orphaned children
  - their friends and relatives
  - their care givers

- Persons who have had HIV test done irrespective of result

- Vulnerability towards HIV/AIDS increases vulnerability for discrimination:
  - Minorities
  - Women
  - Ethnic groups
  - Immigrants
  - CSW
  - Homosexuals
  - Drug abusers

But why does this discrimination occur? Why does a person discriminate towards other? The causes of discrimination can be many, some but not all are:

- Fear of infection, disease, death
- Ignorance about disease, routes of transmission
- Pre-existing disapproval of or discrimination against certain groups
- Social and religious mores regarding certain groups, lifestyles and behavior

Different forms of discrimination seen are:

- Discriminatory legislation: seen towards the beginning of the epidemic, there were incidents of legislation curtailing freedom of movement of the HIV infected. Although legislation, today is more towards curtailing various forms of discrimination, sporadic incidents may happen.
- Stigma by communities, families, individuals: various incidents are reported and many go unreported about discrimination of HIV positive persons from their families and society.

When talking of health authorities, various forms of discrimination have been reported and are still occurring in the form of:

- Denial of treatment
- Denial of access to
  - Information and Education about the disease
  - Social benefits/insurance benefits
  - Health services
- Isolation: Forced isolation due to fear of spread of infection to others.
- Refusal to touch, clean wards/beds occupied by HIV positive persons
- Mandatory screening
- Coerced abortions/sterilizations
- Lack of confidentiality

Discrimination by public health authorities:

- Travel/movement
  - Discretion of immigration officials to require testing/ certificates/ declaration from various individuals/ groups
- Public housing
  - Denial to access
  - Eviction
- Notification without confidentiality
- Refusal to provide education to HIV positive children or children born to HIV positive parents

Legal issues:

To protect the rights of the HIV Positive persons and prevent discrimination against them, various legal courses have been undertaken from time to time. Of particular relevance to the health physicians are given. Please remember this is not legal advice and does not necessarily simplify complex legal issues. It is important to consult a lawyer for information or advice on specific issues. The intent of this information is to provide an overview of pertinent legal issues to consider in your practice.

- Following practices can be illegal:
  - Denial of full and equal medical services or denial of "opportunity to benefit" from medical services in same manner as other patients
  - Establishing any eligibility criteria for receiving medical services, which tend to screen out HIV infected persons
  - Provide different or separate services to HIV-positive patients
  - Deny equal services to a person who is spouse, partner, child, friend, relative, associate of HIV infected person

- Also remember that:
  - A physician cannot decline to treat a person with HIV based on a perceived risk of HIV transmission or because the doctor simply does not feel comfortable treating a person with HIV.
  - A doctor cannot require that a patient take an HIV test prior to providing medical treatment, except where diagnosis of the condition is required
  - A doctor cannot increase the cost of services to an HIV-positive patient in order to use additional precautions beyond the recommended infection control procedures. Under certain circumstances, it may well be a violation even to use unnecessary additional precautions which tend to stigmatize a patient simply on the basis of HIV status.
  - A doctor cannot limit the scheduled times for treating HIV-positive patients, such as insisting that an HIV-positive patient come in at the end of the day.

Referral or refusal to treat?

Referral is an important activity in medical practice, where person is referred from one physician/ institution to another so as to provide optimum care to the patient. The rules of referral can be misapplied in case of HIV infected person. An HIV positive person can be shuttled from one physician to another not because of lack of expertise to treat and care but because of the fear or stigma associated with the disease.

- A doctor cannot refer an HIV-positive patient to another clinic or doctor, unless the required medical treatment is outside the scope of the doctor's usual practice or specialty. You can refer an HIV positive person to another physician, when you lack experience or expertise in treating HIV positive persons and not because you are scared of infection.
- The referrals of HIV-positive patients should be made on the same basis as are referrals for other patients.
- The treatment being sought is outside the referring provider's area of specialization.
- In the normal course of operations, the referring provider would make a similar referral for any individual who seeks or requires the same treatment or services.

HIV positive physician:
One of the less talked about issues is that of HIV positive physicians. HIV cannot be transmitted from providing routine medical care, neither from HIV positive patient to the physician nor from a HIV positive physician to the patient.

- The Centers of Disease Control has estimated of the risk of transmission from an HIV infected surgeon during an operation between 1 in 42,000 to 1 in 420,000.

- Despite these estimates there is no documented transmission from an infected health care worker to a patient.

- However, for health care workers, disclosure is tantamount to unemployment.

- Because the benefit of patient treatment far outweighs the miniscule chance of HIV-transmission, no ethical reasons should exist why a physician, seropositive, but otherwise unaffected by HIV should restrict his or her practice.

Doctors who think they may have been infected with HIV should seek appropriate diagnostic testing and counseling and, if found to be infected, have regular medical supervision. They should also seek advice regarding the limits to their clinical practice from competent local consultants so as not to put their patients at risk of HIV infection. Doctors infected with HIV have the same rights to confidentiality and support as afforded to other patients.

POINTS TO PONDER : (20 minutes)
Discuss the following issues with your participants. Remember that our own morals may dictate different replies, the correct ethically correct and legally acceptable solutions to the below mentioned scenarios should be provided.

- You are treating an HIV infected person. He is not willing to disclose his HIV status to his family and his wife. He reports that his wife is pregnant. Can you disclose his HIV status to his family or his wife?
- You are treating an HIV infected person. He tells you that his family wants him to get married soon.

How will you handle this situation?

- You are treating an HIV infected person. He informs you that he has recently got married. He does not want to disclose his HIV status to his wife. How will you handle this situation?
- A pregnant woman at the antenatal clinic is diagnosed to be HIV infected. Who should be told of her diagnosis? Her mother-in law accompanies her on every visit? Should she be told of the diagnosis in the presence of her mother-in-law? Can her mother or sister be told of the diagnosis if they accompanying her? Should her husband be told of her diagnosis?
- An HIV positive man comes with his friend who is HIV negative. She wants to marry him, despite knowing his HIV status. How would you like to handle the situation?
- An HIV positive widow comes with her friend who is HIV negative. He wants to marry her, despite knowing her HIV status. How would you like to handle the situation?
- A friend of yours discloses his HIV positive status to you. Should you inform his wife/her husband of his/her status?

DEBATE: (10 minutes)

Healthy, realistic and ethically acceptable debate needs to be encouraged. The participants are divided into 2 groups and asked to debate on the following topic:

- Should HIV infected persons be treated in special OPD or in hospital wards specially designed for HIV infected persons?
- You go to a restaurant. The person serving food is HIV infected. Will you eat at the restaurant?
- How would you react to the following situations?
  - Your maidservant cooking and cleaning the house is tested HIV positive?
  - Your driver is tested HIV positive?
  - Your pharmacist is tested HIV positive?
  - Your child's nursery school teacher is tested HIV positive?
  - Your close friend is tested HIV positive?

SESSION - 10

PREVENTION OF HIV/AIDS

PURPOSE:
This session is to reinforce the prevention modality of HIV/AIDS to the participants. The participants are informed of the various ways of prevention. The emphasis is on how they can communicate the message across to their patients.

OBJECTIVE
By the end of the session the participants would be able to :
• Identify specifically the ways of prevention of HIV transmission
• Identify methods by which they can communicate this knowledge to their patients

TIME : 2 Hours 30 Minutes

PREPARATION : Power point presentations, material for flip chart (5-6 cards clipped together, blank chart papers, coloured sketch pens), Slips for role plays, Slips for points to ponder

READING : 30 Minutes
The HIV/AIDS epidemic has far reaching implications-both for the individual as well as for the community and for the nation as a whole. Health education and behaviour modification is the prime focus of action for interrupting transmission. Prevention depends on an environment of openness and inclusion that enables all people to alter their own behaviour, undergo voluntary testing, seek and receive treatment and become allies in the fight against HIV/AIDS.

Primordial Prevention
This involves promotion of health education, healthy family environment, social support, family education and legislation against drug trafficking and prostitution.

PRIMARY PREVENTION
- Increasing awareness
- Counseling and promoting voluntary testing

PREVENTION OF SEXUAL TRANSMISSION OF HIV/AIDS

1. Avoiding indiscriminate sex and promoting safe sex practices
Promotion of safe sexual practices is a prerequisite to prevention of HIV/AIDS.

High risk sexual activities
There are certain high risk sexual activities. Any practice with a person who might have HIV infection that allows blood, semen or vaginal fluids inside the body through mucous membranes of the mouth, vagina, penis or anus or through broken skin, would be a high risk practice. These include:
- Vaginal or anal intercourse without condom
- Any type of blood contact including menstrual blood, semen or vaginal fluid entering breaks in skin.

- Sharing sex toys without cleaning them
- Any type of sex that damages the delicate tissues in the vagina, head of penis or rectum.

Low risk sexual activities

Certain sexual activities, as follows, are considered to be low risk activities i.e. the risk of transmission of HIV though lessens does not completely disappear. Adequate caution thus needs to be observed in such cases.

- Oral contact with genitals
- Sexual intercourse with an infected person using a condom
- Wet kissing

Safe Sexual Practices

These are sexual activities with no risk of HIV transmission. All sexual activity between two uninfected persons is safe. All activities that do not involve exchange/contact with semen or vaginal fluids from one person to another are safe. These include

- Monogamous relationship where both persons are uninfected
- Massage
- Hugging
- Body to body rubbing (not genitals)
- Dry kissing
- Sex talk, sharing fantasies.
- Using sex toys without sharing them.

HIV and Oral Sex

Research has shown that it is possible to transmit HIV through oral sex, but cases where this has happened are rare. The risk of HIV transmission through oral sex is greater if the person or partner has untreated STI such as Gonorrhea or Syphilis. Untreated STIs are easily transmitted through oral sex.

- Oral sex on a woman: this is risky when the person doing the oral sex has bleeding gums, mouth ulcers or open sores in the mouth or throat. Oral sex on a woman is less risky than oral sex on a man who has HIV. Barriers such as dental dams or latex squares can be used during oral sex with a woman. These can be prepared by cutting non-lubricated condoms.
- Oral sex on man: this is safer if a man wears a condom. It is risky without a condom if the person doing the oral sex has bleeding gums, mouth ulcers or open sores in the mouth or throat. Condom should, therefore, be used for oral sex as well.

2. USING CONDOMS

Condoms are an integral and essential part of comprehensive prevention and care programmes, and their promotion therefore needs to be accelerated. However, women will remain highly vulnerable to HIV exposure, until men and women share equal decision-making powers in their interpersonal relationships.

Studies indicate that condoms must be used consistently and correctly to provide maximum protection. Consistent use means using a condom from start to finish with each act of intercourse.

Correct condom use should include the following steps:

- Use a new condom for each act of intercourse.
- Put on the condom as soon as erection occurs and before any sexual contact (vaginal, anal, or oral).

- Hold the tip of the condom and unroll it onto the erect penis, leaving space at the tip of the condom, yet ensuring that no air is trapped in the condom's tip.
- Adequate lubrication is important, but use only water-based lubricants, such as glycerine or lubricating jellies (which can be purchased at any pharmacy). Oil-based lubricants, such as petroleum jelly, cold cream, hand lotion, or baby oil, can weaken the condom.
- Withdraw from the partner immediately after ejaculation, holding the condom firmly to keep it from slipping off

Condoms though are considered to be safe are not 100% protective. This can be because of improper usage, condom slips or tears.

Female condoms (FC)

Female condoms can provide women more control in protecting themselves. These are polyurethane sheath or pouch about 17 cm (6.5 inches) in length. A woman wears it during sex. It entirely lines the vagina and helps to prevent pregnancy and STIs including HIV. There is lubricant on the inside of the condom. The female condom should not be used at the same as a latex male condom because the friction between the two condoms may cause the condom to break.

Benefits

- Opportunity for women to share the responsibility for the condoms with their partners.
- A woman can use the condom if their partner refuses to use the male condom.
- It is less likely to cause allergic reaction than a male latex condom. The female condom is also larger, so it tears less often (40% stronger than latex).
- It will protect against most STIs and pregnancy, if correctly used.
- It can be inserted upto 8 hours before intercourse.
- The polyurethane is thin and conducts heat well so sensation is preserved.
- The expiry date for female condoms is 5 years from the date of manufacture.

Using the female condom:

- Squeeze the inner ring of the condom. Put the inner ring and pouch inside the vagina.
- With your fingers push, the inner ring as far into the vagina as it will go. The outer ring stays outside the vagina. Guide penis into the condom. Remove the condom before standing up. Pull out gently.

WHO and UNAIDS are encouraging the introduction of the female condom as a new method of preventing both pregnancy and sexually transmitted infections, including HIV/AIDS.

In India as of now, female condoms are less frequently available and are expensive and therefore, out of reach for most women.

To summarize: ways of preventing sexual transmission of HIV/AIDS:

1. Avoid sex at early age. There are different ways of giving and getting love and pleasure
2. Maintain sexual relationships with only one, faithful, uninfected partner
3. Avoid sexual activity in state of intoxication.
4. Use a condom during vaginal intercourse, anal sex or oral sex
5. Get STDs treated

PREVENTION OF PARENTRAL TRANSMISSION OF HIV/AIDS

1. Increasing awareness to reduce HIV transmission through blood transfusion

- Mobilizing voluntary blood donation
- Ensuring screening of blood donors for high risk practices
- Ensuring screening of all blood units for HIV, Hepatitis C virus
- Facilitating communications among blood banking services.

2. Prevention of transmission through injections, needles, pricks etc

This can be achieved by

- Limiting to use of therapeutic injections to the minimum
- Improving access to sterile injecting equipment
- Offer counseling and drug abuse treatment
- Offer realistic advice to persons regarding body piercing, tattooing, shaving
- Promote safe injecting practices by use of disposable syringes and ensuring adequate sterilization of other equipment.
- Where there is no access to disposable syringes or needles, the needles need to be sterilized by boiling for at least 20 minutes

3. Prevention in health care workers:

HIV, HBV, HCV cannot penetrate intact skin and are not transmitted through air. There is no report of transmission of these agents from contaminated surfaces. Practice of Standard safety Precautions and Post exposure prophylaxis are important to prevent HIV transmission to health care workers through needle stick injury.

Post exposure prophylaxis

Small amount of blood on intact skin	No risk
Risk with damaged skin/prolonged exposure	1 in 1000
Exposure on eyes, nose, mouth	1 in 1000
Needle stick/ other sharp injuries	1 in 300

Risk from all exposures increases further if exposure involves a large volume of blood, or a high amount of HIV in patients blood as in patients with acute HIV infection or patients with AIDS nearing death.

What to do after exposure

- Do not panic.
- Do not put cut / pricked finger into your mouth
- Wash hand after patient contact, removing gloves
- Wash hands immediately if hands contaminated with body fluids
- All needle stick injuries should be reported to infection control officer
- It is necessary to determine the status of the exposure and the HIV status of the exposure source before starting post-exposure prophylaxis (PEP)
- Post-exposure treatment should begin as soon as possible
- Preferably within two hours
- Not recommended after seventy -two hours
- Late PEP? may be yes
- Is PEP needed for all types of exposures? NO

Only Allopathic medicine has, as yet an established mode of post exposure therapy. It is strongly advised that homoeopathic/ayurvedic physicians do not attempt post exposure prophylaxis. Refer person to the district hospital or designated hospital.

Pre-exposure prophylaxis

Oral pre-exposure prophylaxis of HIV (PrEP) is the daily use of ARV drugs by HIV-uninfected people to block the acquisition of HIV. Clinical trials of daily oral PrEP have shown evidence of effectiveness with sero-discordant heterosexual couples, men and transgender women who have sex with men, high risk heterosexual couples, people who inject drugs. Guidelines for pre-exposure prophylaxis (PrEP) are being developed in some countries, based on research data.

Universal Precautions include:

I. Barrier protection
II. Hand washing
III. Safe techniques
IV. Safe handling of sharp items
V. Safe handling of specimen (blood etc.)
VI. Safe handling of spill of blood/body fluid
VII. Use of disposable/sterile items
VIII. Safe techniques including mechanical pipetting device
IX. Immunisation with Hepatitis B vaccine

i) Barrier protection: Protective barriers reduce the risk of exposure of the laboratory worker's skin or mucous membrane to potentially infective materials including blood and the body fluids.

Gloves

Can reduce the incidence of contamination of hands but cannot prevent penetrating injuries by needles and other sharp instruments.

Gloves should be:

- Worn while collecting/handling blood specimens, blood soiled items or whenever there is a possibility of exposure to blood or body fluids containing blood.
- Worn while disposing laboratory waste
- Well fitting disposable vinyl and must be changed if visibly contaminated with blood/
- breached
- Heavy duty general purpose rubber gloves for washing infected glassware/sharps.
- These utility gloves may be decontaminated and reused but should be discarded if they are peeling, cracked or discoloured or if they have puncture, tears etc.
- Removed before handling door knobs, telephones, pens, performing office work and leaving the laboratory.

Laboratory gowns

- Laboratory gowns or uniforms (preferably wraparound gowns) should be worn when in the laboratory and should be removed before leaving.
- Plastic aprons should be used while cleaning infected re-usables and during disposing wastes.

Facial protection

- Simple and cheap deflector masks and protective glasses may be worn if splashing or spraying of blood/body fluids is expected.

Occlusive bandage

- All skin defects e.g. cuts, scratches or other breaks must be covered with waterproof dressing before patient care.

ii) Hand Washing

This is an ideal safety precaution and is one of the most important in preventing HIV transmission in health care settings.

- Hands should be washed thoroughly in running water with soap without missing any area Washing of hands is mandatory
- immediately after contamination with blood/body fluids
- after removing gowns/coats and gloves
- before eating/drinking and leaving the laboratory
- ideally, liquid soap dispensers should be provided to the laboratories, which should be regularly cleaned and maintained. If not feasible, soap bars after washing should be left in a dry tray to prevent contamination with some microorganisms which grow in moist conditions
- A moisturizing hand cream should be used after every hand wash
- Gloves should not be regarded as substitute for hand washing

iii) Safe techniques

- Use of biological safety cabinets – Appropriate biological safety cabinets should be used for handling HIV infected material for handling materials containing the infectious
- All procedures and manipulations of potentially infectious material should be performed carefully to minimise the formation of droplets, aerosols, splashes or spills.
- Mouth pipetting should be strictly prohibited. Mechanical pipetting devices should be used for pipetting of all liquids in the laboratory.
- Centrifugation should be done in tubes with safety caps.

iv) Safe handling of sharps

- Extreme care should be taken to avoid auto-inoculation.
- All chipped or cracked glassware should be discarded in appropriate containers.
- Broken glass should be picked up with a brush and pan. Hands must never be used.
- The disposable needles should never be manipulated, bent, broken, recapped or removed from syringes.
- The used sharps should never be passed directly from one person to another.
- Always one should dispose of his/her own sharps.
- Used needles should be discarded in puncture-proof rigid containers (plastic or cardboard boxes) after disinfection in 0.5-1% freshly prepared sodium hypochlorite solution (common bleach) and never in other waste containers. If a needle shredder is available, only the needles or the needles along with syringe nozzle may be shredded depending upon the type of the shredder.
- Sharp disposable containers should be located close to the point of use.
- Sharp disposal containers should be sent for disposal when three-fourth full.

v) Safe handling of specimens (blood, etc.)

- Specimens, specially blood and body fluids, should be collected in pre-sterilised screw-capped plastic containers properly sealed to prevent spillage or leakage.
- Autoclaved/pre-sterilised disposable syringes and needles for venepuncture or lancets/ cutting needles for finger prick should be used.
- Cuts in hands should be properly covered with waterproof adhesive bandages.
- Disposable gloves should be worn while collecting blood/body fluids and proper asepsis should be maintained.
- If a sample shows evidence of breakage (in case not collected in the above container), leakage or soiling, it should be transferred with a gloved hand into a second sterile container. Any pertinent information should be re-written from the old to the new container.
- If the requisition slip is contaminated with blood, it should be rejected. In case of emergency, the contaminated slip may be handled using gloves.
- Hands should be thoroughly washed with soap and water particularly after handling specimens.
- Blood and other specimen containers should be labelled with a special warning sign "Biohazard precaution". If the outside of the container is visibly contaminated with blood it should be cleaned with disinfectant. All blood specimens should be placed In small leak-proof impervious plastic tubes for transportation to the laboratory.

vi) Safe handling of blood/body fluid spills

In case of a spill of blood/body fluid in the laboratory, the area should be flooded with a disinfectant solution. e.g. freshly prepared 0.5-1% Sodium hypochlorite solution and left for 30 minutes. After wearing gloves, the area should be covered with paper towels or gauze sponges to absorb the liquid followed by a thorough wash with soap and water. All contaminated materials should be disposed of as infectious waste.

PREVENTION OF MOTHER TO CHILD TRANSMISSION (MTCT)

This includes counseling of HIV positive women regarding contraception, risk related to pregnancy and potential risk of transmission of the infection to the new born.

- Women need to be encouraged to motivate their sexual partners to use condoms. Even if both the partners are infected further infection need to be checked.

- In case where the female opts for pregnancy
  - She must be given appropriate antenatal care and appropriate advice regarding food, work and life style needs to be given.
  - Vitamin A deficiency needs be prevented. However, Vitamin A supplements are not given to women during pregnancy for possible risk of teratogenicity. Vitamin A rich diet viz. yellow fruits like mango, papaya and green vegetables like spinach are to be promoted.
  - Short courses of Anti-retroviral therapy are given to an infected female during pregnancy to reduce the risk of transmission to the new born. As homoeopaths/ayurvedic physicians we need to refer these patients to appropriate health centers, where antiviral therapy can be initiated and monitored.
  - Homoeopathic/ayurvedic medicines for minor ailments can be given during the pregnancy.

- HIV positive woman need to go in for institutional care during labour, for which appropriate referrals need to be made.

- The risk of transmission through breast feeding should be weighed against the practically of providing safe bottle feeding by the mother.

- Routine HIV screening of all pregnant women can be encouraged after proving appropriate counseling to both the partners.

With appropriate care and caution, the risk of MTCT can be reduced to as low as 2% of cases.

Interventions aimed at decreasing the risk of mother to child

- General measures of proper diet, hygiene, rest etc., are to be strictly followed,

- Nutritional counseling should be instituted if difficulty is encountered in maintaining appropriate weight gain.

- She must have enough sleep and must avoid stress and fatigue. Alcohol, smoking and illicit drugs should be prohibited.

- Prevention of opportunistic infections is also a critical goal for the obstetrician.

- The mother should be kept in good health. Due to the concern regarding the potential teratogenicity of Vitamin A when administered early in gestation, Vitamin A supplementation over & above the Vitamin A in the diet is not recommended in first trimester.

Obstetric Measures

Obstetric measures are of considerable importance.

- Prevention and treatment of sexually transmitted diseases and chorioamniotis and discontinuation of cigarette smoking and illicit drug use during pregnancy could have important roles in reducing the transmission risk.

- The period of ruptured membranes should be kept as short as possible and no deliberate rupture of membranes should be done.

- Systematic birth canal cleaning has been attempted. A large proportion of mother-to child transmission is thought to occur at the time of delivery. It is suggested that a low cost, low-tech. approach, which could be adopted in many developing countries, is to disinfect the vagina prior to and during labour.

- Caesarean delivery is an expensive and invasive intervention & is associated with higher maternal morbidity and mortality than vaginal deliveries. As its relation with mother-to-child transmission is not proven yet; a caesarean section should be carried out only if indicated because of obstetric causes.

- Invasive procedures on the foetus like foetal scalp electrode or foetal scalp blood samples, umbilical cord blood sampling etc. are to be avoided during pregnancy

- Giving a bath to the baby immediately after birth is useful to wash out HIV virus on the foetal body as it might get a foothold on the skin of the newborn is also practiced. Mild disinfectants or baby soap and plain running water can be used. In fact, mechanical cleaning may play an important role.

Ante-natal care

- Counselling & knowing HIV status (Preferably before pregnancy)
- Choice of MTP or continuation of pregnancy
- Correct diet & correction of Anaemia
- Discontinue smoking & illicit drug use
- Regular check up
- Treat RTI/STI
- Detect & treat opportunistic infection
- Delivery in hospital
- Systematic cleaning of birth canal
- Do not do amniotomy, foetal scalp electrode monitoring, foetal scalp blood sample or umbilical blood sampling.
- Immediate bath to baby

ARV prophylaxis for pregnant women to reduce MTCT

HIV-infected pregnant women who are not in need of ARV treatment for their own health require effective ARV prophylaxis to prevent HIV infection in their infants. ARV prophylaxis should be started from the first trimester of pregnancy or as soon as feasible during pregnancy, labour and delivery or thereafter. The homoeopathic/ayurvedic physician must refer HIV infected pregnant women for appropriate ARV treatment for prevention of infection to the unborn child.

Role of education in prevention of HIV/AIDS

Health education is a must for all persons of all age groups. It is specially important for adolescents and young adults who at a vulnerable age and are prone to have illicit sexual practices and drug abuses. The parents, doctors, good friends, peers, sensible elders play, family physicians, mass media campaign, awareness programmes through information, education and communication (IEC) play a key role to prevent and HIV in healthy individuals and to prevent HIV patients to develop into full blown AIDS.

Until a vaccine or cure for AIDS is found, the only means at present available is to enable people make life- saving choices like:

- Avoiding indiscriminate sex.
- Using condoms.
- Avoidance of shared razors and tooth brushes
- Intravenous drug abusers should be informed that the sharing of needles and syringes involve special risk.
- Education material and guidelines for prevention should be widely available.

Identification of high risk groups

This involves identification of high risk populations and providing appropriate counseling towards behavior modification.

- Identifying groups at highest risk, chiefly commercial sex trade workers, truck drivers, injecting drug users, migrant laborers, persons away from home, persons with sexual promiscuity and their partners.
- Determine the access for health services among the groups of high risk.
- This can be assisted by promotion of peer counseling, condom promotion and treatment of STIs.

GROUP ACTIVITY (1 hour)

Participants to divide themselves in 4 small group each with 5-6 participants. Each group is to sit separately. Each group would choose a moderator among themselves.

Materials required: blank flip charts 6" by 6", blank papers, chart papers, colored pens and question box

Activity 1: Prevention of sexual transmission of HIV

Making a flip chart: all participants would sit in a circle. The moderator would write the heading on all the pages of the flip chart and one point related to each heading and passes on the flip chart to the next participant sitting on his/her right side. The next participant would write the next point he/she considers to be important and passes on to the next participant. This continues till all the participants feel that the issue has been completed in all aspects. Drawings, small sentences are to be used. Each subsequent point is to be in continuation to the above written point. Each participant would then explain all the contents of 1 page of the flip chart to all other participants as if talking to lay persons.

Activity 2: Prevention of parentral transmission of HIV

Note making: Each participant to write down on a piece of paper all the different ways of parentral transmission and ways to prevent them. The views of all participants of the group would then be compiled by the moderator and discussed among the participants

Activity 3: Prevention of perinatal transmission of HIV

Poster making: Each participant would be asked to explain and teach other participants on any 1 of the 5 issues in detail as if talking to a group of laypersons using chart papers and pens. Writing main points and drawing relevant diagrams would be encouraged. After each issue other participants who wants to add something can do so. The moderator would make a note of all the points discussed and summarize in the end

Activity 4: Talking to patients, students, family members, friends and their trainees

Each participant to write how they would talk about the topics about which they felt they were most comfortable and most uncomfortable. Each participant would then share his/her views with others and other participants would discuss their own feeling with regard to that of each participant.

ROLE PLAYS: 30 minutes

Participants would be divided into 5 groups and each group is given one role play to present. Each group would be asked to prepare a small role play/skit allotted to them. They would be given 15 minutes to prepare, with the help of the moderator of their group and 10 minutes to present it to the larger group. Each role-play can be followed by a small discussion on the situation being presented.

Role Play-1 : Pre-Marital Counseling
17-year-old female girl about to be married to her male friend with whom she is physically close. Does not know the risk of her partner. Wants to know about virginity, chastity, pregnancy and contraception.

Role Play-2 : Talking to Adolescents
Your school going son wants to go to a late-night party with his friends. How would you talk to him?
OR
Your 16 year old school going daughter wants to go out of town with her school. It would be a mixed group. How would you talk to her?

Role Play-3 : Handling peer-pressure
College going 20-year-old boy wants advise regarding homosexual activities and cocaine snuff use prevalent in the campus. Can you advise him how to handle peer pressure?

Role Play-4 : Behavior change in Adults
A female with multiple sex partners uses Multi load as a contraceptive. What would you advise her? She has got 3 HIV tests done in the past 2 years. All have been negative.

Following the role-plays a group discussion amongst the participants would be conducted. Scenarios for prevention of HIV/AIDS would be discussed.

POINTS TO PONDER: 30 minutes
Discuss the following scenarios with your participants. Each participant must take out a paper slip. Read aloud the scenario and try to give the best possible reply to the question given. The trainer would need to act more as a moderator and encourage participants to discuss the scenario, but at the same time provide factual, correct information and answer the queries that arise.

Sample scenarios to be discussed with prevention of HIV/AIDS

- College going student complains of sexual abuse in hostel. What are his/her risk of HIV infection?
- HIV positive couple wants advise regarding pregnancy. How can they minimize risk of infection to their child?
- A patient of yours tells you that she has found pornographic material with her 14 year old son/daughter. She wants you to talk to him/her.
- HIV positive couple wants to know if they should use oral contraceptive pills to avoid pregnancy?
- HIV positive female 8 months pregnant wants to minimize the risk of infection to her child. Should she breast feed her child?
- A mother wants to get her daughter's ears pierced from a local jeweler. She wants medicine to minimize infection in the ear. Will you advise her about HIV?
- A 14-15 year old maidservant of your patient asks you about menstruation. What will you tell her?
- Your friend wants to get a tattoo. She asks you about the risk of tattooing.
- A mother of 8 year old child tells you that her son has been bitten by a child in the school who reportedly remains generally unwell and sick. She is afraid that her son might have got some infection.

- A 28 year old female tells you that her husband has multiple sexual partners. She asks you if she should use female condom? How safe is vaginal sponge for her?
- A medical social worker tells you that she got a small prick in her finger with the needle, which she had used for a prick on a patient, to make a slide for malaria. How would you advise her?
- A married couple asks you about risks of group sex.
- An HIV positive man with HIV negative wife asks you about the risk of infection to his wife during oral sex.

SESSION - 11

COUNSELLING & BEHAVIOUR CHANGE COMMUNICATION

PURPOSE

Participants in session are acquainted with basics of counselling and behavior change communication.

OBJECTIVE

By the end of the session the participants would be able to

- Identify the specific skills needed for counselling;
- Gain information and knowledge on the qualities and attributes of counselling;
- Increase their knowledge about the need to respect clients irrespective of their culture, race, religion and value systems.
- Reflect on their attitudes towards HIV/AIDS and discuss means to widen their perspectives towards HIV/AIDS.
- Identify the importance of behaviour change communication in case of HIV/AIDS
- Be able to communicate with their patients more comfortably
- Identify conditions when the patients need to be referred to counsellors

TIME: 2 hour 30 minutes

READINGS : (1 hour)

COUNSELLING

HIV/AIDS is a communicable disease driven by the behavior of individuals. As a result, no one intervention is the key to success. The success stories of countries that have been able to check the spread of the infection show that:

1. *Knowledge is not enough:* behavioral change requires locally appropriate, targeted information, training in negotiating and decision making skills, social and legal support for safe behaviors, access to the means of prevention and motivation to change the behavior.
2. *The distribution of risk and vulnerability in societies varies greatly, as does the ability to locate and work with specific vulnerable populations:* no single prevention approach can be effective everywhere. To effectively produce and sustain a behavioral change on a national scale, focused prevention programs involving multiple components with input from vulnerable populations and addressing the specific needs of the vulnerable groups is needed.
3. *General population efforts are important:* effective programs taking into account the need to raise the awareness, knowledge and HIV prevention and care skills among the population, especially young is important.
4. *Partnerships are essential:* since multiple programs with multiple populations are needed it is crucial to create partnerships between population groups, including PLWHA
5. *Half measures bring partial results:* interventions that do not achieve sufficient coverage will fail to have a significant impact.

Definition of Counselling:
WHO defines HIV counselling as 'HIV/AIDS counselling is confidential communication between a client and a care provider aimed at enabling the client to cope with stress and take personal decisions relating to problems arising out of HIV/AIDS. The counselling process includes the evaluation of personal risk of HIV transmission, the facilitation of preventive behaviour and evaluation of coping mechanisms when the client is confronted with a positive result.'

Counselling is the process of helping a person solve or deal with his/her problems. Counselling is needed to help people change and sustain behaviour in regard to HIV/AIDS. It also helps people cope with HIV/AIDS. HIV/AIDS counselling is a crucial component in response to HIV/AIDS. Counselling in HIV/AIDS scenario involves counselling of persons who are worried about being infected or who have learnt that they or their family members are HIV positive to come to terms with their emotions and challenges they face. Counselling can also be an important opportunity to help client understand how they can avoid HIV infection. Counsellors can provide information that will help clients to make choices and decisions that could prolong and improve their quality of lives.

Counselling is:

- Not giving advice – it is a two way interaction
- Not guidance – do not tell the client how to solve their problem or what decisions to take
- Not interrogation – client is not being questioned to find out the truth
- Not preaching- it is not a forum to promote counsellors opinions

Counselling is NOT pushing people to conform to certain "acceptable" standards to live by. Effective counselling must therefore take into account the impact of values, attitudes and culture on the client's perception of the world.

What does counselling do?
Counselling has 2 important functions:

- Preventing HIV infection by promoting behaviour change
- Providing psychosocial support to people infected and affected by HIV

This is done by:

- Giving information about HIV/AIDS to clients and their partners
- Encouraging preventive behaviours
- Helping HIV – positive clients and those close to them cope with the diagnosis
- Discussing decisions that need to be made according to the clients life circumstances
- Referring clients to appropriate treatment and care services

A good counselling requires:

- Ample time – process cannot be rushed
- Acceptance – not be judgemental of clients
- Accessibility- clients need to feel they can ask for assistance
- Consistency and accuracy – right information provided
- Confidentiality – establishing trust through protecting clients identity

Stages of Counselling:
Counselling goes through the following stages:

1. Rapport / Relationship building.
2. Assessment or defining the problem.
3. Goal Setting in the direction of solution.
4. Initiating Action
5. Termination and follow up.

Can every body be a counsellor?
A counsellor requires special skills, which need to be developed and practiced over a period of time.

Skills and characteristics found in effective HIV counsellors:
An effective counsellor:

- Believes that HIV prevention counselling can make a difference in preventing the acquisition and the spread of HIV for the individual, the family and the community
- Utilizes active listening skills
- Balances well selected open-ended questions with statements, summaries, and reflections that guide the session and maintains the focus on risk issues
- Comfortable in discussing specific HIV risk activities
- Able to remain focused on risk issues
- Able to assist individuals to develop realistic, relevant and challenging risk reduction plans
- Has a working knowledge of lifestyles of patient groups
- Can recognize common psychological clinical complications arising from HIV infection including anxiety, depression, obsessive compulsive disorders, neurological disorders and suicidal risk, etc.
- Continues to reflect on and considers the quality of his/her sessions
- Interested in learning new counselling skills and approaches
- Invites ongoing supervision, quality assurance measures and feedback

Attitudes required of HIV / AIDS counsellor:

- Non judgmental
- Non critical
- Non discriminatory
- Non dependent
- Non questioning
- Non complaining

Also, an Effective Counsellor:

- Is sensitive to cultural (contextual/situational) differences.
- Encourages the client free expression of feelings.
- Rewards and facilitates client's talking.
- Enables the client to think of alternative ways for problem- solving.
- Recognizes own limitations and makes referrals.
- Respects the confidentiality of all that is disclosed by the client.
- Does not indulge in easy gossip.

Table 17 : Good Counsellors

Qualities of a Good Counsellor	Good Counsellors Should Stay Away From
Qualities perceived in the counsellor that can help the client feel secure enough and trust to engage in self-exploration are: • Self-confidence • Empathy • Acceptance • Genuineness • Trustworthiness • Confidentiality • Competence	• Pushing or threatening the client • Offering their opinion • Judging the client or their lifestyle • Telling a client they "know" how they feel • Impose your own beliefs • Side-step the client's presenting problem • Minimise client's problem • Interrupt • Take responsibility for client's problems and decisions • Become immersed in the client's situation • Use of words such as "should" and "must" • Block strong emotions

Counselling guidelines and session essentials

Remember to always:

- ➢ Demonstrate professionalism and maintain rapport throughout the session
- ➢ Convey to the client that his/her confidentiality will be strictly protected
- ➢ Communicate to the client at his/her level of understanding-speak in simple terms
- ➢ Conduct an interactive session focused on risk reduction
- ➢ Clarify important misconceptions, provide real fact based information wherever needed
- ➢ Stay organized. Avoid getting ahead and jumping around

Effective communication

Effective communication does not occur in isolation. The communication takes place non-verbally and verbally and is influenced by environmental forces.

Non-verbal communication

Non verbal communication is an important yet often overlooked part of a whole communication and the interactions, which occur between people. Non-verbal signals are particularly important for communicating emotions and attitudes to others about us. Attention to the nonverbal signals will prove invaluable when there is a wish to tune empathically to the real meaning of another person's message and is a crucial element in holistic assessment.

These include:

- ✓ Facial movements
- ✓ Gaze and eye contact
- ✓ Gesture and body movement
- ✓ Body posture and body contact
- ✓ Use of space
- ✓ Use of time
- ✓ Appearance
- ✓ Vocal aspects of speech

Verbal communication

What is spoken in any message is the content of the message. The deeper understanding of the message, by which we come closer to understand the real meaning of what one is saying to us is the music of the message.

Verbal and non-verbal messages allow human beings a greater variety of expression than any other animal. Communication is the basis of all human interaction.

Interpersonal relationship (IPR)

All health professionals need to understand their clients and develop effective interpersonal relationship to be effective counselors.

Tools of effective IPR

- Set the purpose
- Establish rapport
- Set limits
- Maintain confidentiality
- Maintain honesty
- Show sensitivity
- Be empathetic
- Show genuine concern

Do:

- Active listening, expressed by counsellor's verbal and non-verbal cues.
- Show genuine concern for the client
- Eye contact is necessary
- Assume relaxed posture to make the client relaxed.
- Be attentive and congruently respond

Do not:

- Interrupt the client while talking.
- Personalize or narrate your own experiences
- Moralize
- Judge
- Disregard clients fear and apprehensions
- Bypass professional relationship with the client

Communicating with your client:

When questioning clients you should:

- Acknowledge that you have heard and understood the client
- Ask appropriate follow up questions
- Ask questions about missing pieces, and missing links related to HIV risk, risk reduction, coping and support
- Ask client to elaborate on unclear issues
- Ask client to clarify confusing or contradictory information
- Blend reflective, guiding and directive statements with questions with well chosen open ended questions

When listening to client you should:

- Organize the client's risk history, issues and circumstances
- Bring together pieces of information, link issues, situations, feelings and actions
- Remember information for use later in the session
- Develop a picture of client's life to use later when questioning about missing pieces or links (related to HIV risk, risk reduction, coping and support)
- Internalize the information you receive from the client and strive to truly understand and empathize with the client

Do not:

- Judge, blame, interrogate or make decisions on behalf of clients
- Preach and lecture
- Make promises that cant be kept
- Argue or impose one's own belief

AYURVEDA & HOMOEOPATHY PHYSICIANS AS COUNSELLORS

Ayurveda & Homoeopathy practitioners are often consulted by urban and rural communities for their health needs, medication and support. They frequently act as counsellors and health promoters in any community. These practitioners can form powerful alliances with their patients and can, therefore, form a powerful force in conveying HIV prevention messages to their clients. Also, the symptomatic and emotional care of HIV-infected patients is a necessary responsibility of all health care professionals. Currently symptomatic management of HIV infected is sporadic since ARV is usually not prescribed till the immune status of the infected person falls dangerously low. Most of the HIV infected may not be able to afford the cost of antiretroviral treatment. The practitioners can not only provide treatment for opportunistic infections but can utilize this occasion effectively to promote behaviour and lifestyle changes of HIV infected to promote their state of well being and to prevent further spread of infection. The holistic community based approach of practitioners can go a long way in prevention of HIV/AIDS and in management of HIV infected persons.

Types of counselling:

- Risk identification and behaviour modification
- Pre test counselling
- Post test Counselling
- Counselling of HIV infected
- Counselling of care givers/family

BEHAVIOUR CHANGE COMMUNICATION AND COUNSELLING

Behaviour change communication is the process of communicating to the individuals and the community for the purpose of changing unfavourable behaviours and attitudes to those that are favourable for promoting a particular issue. In view of HIV/AIDS, behavioural change communication implies to promote lifestyle, which can prevent the spread of HIV infection in the community. Behavioural change communication also involves bringing positive lifestyle changes in those already infected with HIV so as to delay the progress of the disease state and also to prevent further transmission of the virus.

Role of behaviour change communication:

- Gives people right information so that they can change their behaviour and sustain good behaviour.
- Reduces stigma and discrimination
- Makes people aware of HIV/AIDS and challenges their attitudes to positive attitudes required to deal with HIV/AIDS
- Reduces inaccurate perceptions
- Encourages people to attend education sessions
- Changes behaviour and helps sustain their changed behaviour
- Promotes care and support for people living with HIV/AIDS.

Stages of behaviour change

1. Unaware
2. Aware
3. Concerned
4. Knowledgeable
5. Motivated to change
6. Practicing trial behaviour
7. Practicing sustained behaviour change

People go backward and forward through these stages

Enabling factors for behaviour change communication

1. Providing effective communication
2. Creating an enabling environment in terms of policies, community values and human rights
3. Providing easy to use, accessible services and material/methods

Counselling is vital for bringing about behavioural changes that will help to prevent HIV spread. The ability to listen coupled with skilful communication, enables the counsellor to confront the issue purposefully in a non-judgmental and non-threatening climate. Once trust and confidentiality are established, this increases the client's motivation to learn more about HIV and his/her self determination to change his/her behaviour whether or not he/she is HIV positive.

Pre-Test Counselling

Issues discussed:

- Accurate information about
- The illness, The Virus,
- How it spreads, How it does not spread
- Risk behaviour & Viral Transmission from infected to non-infected person
- Need for the test, Possible outcomes,
- Developing network and monitoring the illness.

Post test counselling

Issues discussed:

- Breaking of the news.
- Need of medical Monitoring & intervention.
- Importance of medicines and adherence.
- Relationships, resolving issues related to sexual problems, with spouse or otherwise

- Death.
- Health plan: Nutrition, Mobilization
- Finance

Counselling of HIV Positive Persons

The psychological response of the client to diagnosis or result is explained and placed in a manageable perspective. Other aspects of counselling include:

1. Appropriate adjustment in sexual behaviour are to be discussed and explained
2. Appropriate standards of hygiene, self care, nutrition and food intake, stress management are explained and discussed
3. Appropriate management of minor infections are discussed
4. Any misconceptions they may have about HIV transmission, HIV/AIDS disease are clarified
5. Prevention of others to avoid spread of disease further and to prevent further re-infection

Counselling of care givers

Counselling of HIV positive persons may also include family members particularly spouse who may or may not be HIV infected. The counselling is important even if the spouse or partner is not infected. The degree of involvement of care givers and family members will depend in part on the needs of the HIV infected person but will be influenced as well by the need of the individuals themselves. It is essential to maintain a view of the HIV infected person as not an isolated individual but as a person within a larger social framework.

Counselling of caregivers includes providing moral support to them, protecting themselves and others from HIV infection, caring for HIV infected. The linkages to community resources also need to be provided to them.

1. Caregivers frequently report higher levels of psychosocial morbidity than patients themselves. This is due to the pressures they face in caring for the patients. They are suffering the disease as much as the patient. The counselling physician must recognize the individual needs and responses of the spouse/partner and give them time in which to discuss their situation, preferably alone.
2. Care givers need to be trained for how to deal with excreta, vomitus and blood spills. They have to be trained how to clean them and to provide optimum home based care to the HIV infected person.
3. Family members should have knowledge of common opportunistic infections (OI) which a patient is likely to fall a victim of and possible home care for such OI
4. Family members also need to be trained about the necessary precautions, which they should take in order to protect themselves.

GROUP DISCUSSION (30 minutes)

The participants are encouraged to share their views, opinion and experiences about counselling. The difference between advise and counselling must be clearly delineated during discussion.

ROLE PLAYS: (1 hour)

General directions for conducting role plays:

Participants would be divided into 6 groups with 4-5 participants in each group. In each group the roles of physician/counsellor, client and observer will be assigned. Each group will conduct the role

play of 7 min. This role play would cover risk assessment and options for risk reduction. This would be followed by a group discussion

Directions for each role:

- Physician/Counsellor
  - Quickly read the main points of counselling.
  - Take your time
  - Use the questions
  - Stay organized
- Client:
  - Before the role play, read through the client scenario.
  - Refer to the scenario when responding to the counsellor.
  - Although the information given in the scenario may not cover all the questions you may be asked, try to make an appropriate response that does not contradict the facts outlined for you.
  - Try to be reasonable and uncomplicated. This is a learning experience and not a test of the counsellor's skill and abilities.
- Observer(s):
  - Before the role play, read through the counselling main points and the client scenario.
  - During the role play, quietly observe and make notes but, if counsellor is having difficulty or is not using the protocol, you may offer suggestions to the counsellor.
  - You may offer suggestions to the client if his/her responses do not follow the client scenario.

Sample client scenarios for role play:

Scenario 1: 18 year old male with complaints of backache, muscular pains
Athlete, football player
Lives with mother and brother
Good student
Occasional beer at parties
Frequent smoking
Some of his playmates have used injected steroids to increase strength
Sexually active since 2 years
Has had 4 partners: 2 men (oral and anal), 2 women (vaginal)
Doesn't know risks of partners
Condom use: sometimes
Other history: has frequent fever
Dominating mother
No one to talk to
No blood transfusions

Scenario 2: 36 year old female with complaints of vaginal yeast infections, leucorrhoea, frequent headaches and sleeping problems
Occupation: Housewife
Living with husband who travels frequently out of city for work purposes
Has 2 sons 15 year and 13 year old

Has been operated for gall stones, 10 years back. Blood transfusion at the time of surgery.
Non smoker. Never taken alcohol.
Using sleeping pills almost daily for the last 5 years.
Sexual partner: husband
Protection: Birth control pills
Risk of partner: Not known

Scenario 3: 24 year old female married for 1 year.
Presenting with amenorrhoea of 2 months. Excited about pregnancy
Slight nausea in morning for 15 days
Non smoker. Never had alcohol
Sexually active since 4 years
Partners: 2; Husband since one year, one male friend before marriage
Was sexually active with a friend before marriage. Wanted to get married to him, but family disagreed. No contact with him since marriage. Risk status not known.
Risk status of husband not known

Scenario 4: 20 year old college student
Living in a hostel
Presently complaining of fever, body ache, rash all over body since one week. Has not had these complaints before
Smoking since 5 years. Likes to try 'new stuff'.
Alcohol occasional at friends place and on all happy occasions.
Frequency of alcohol intake: 3-4 times/week.
Never injected drugs as they are too expensive
Sexually active since 2 years, after he came to hostel
Partners: many-friends, commercial sex worker (oral, anal, vaginal)
Condom use: only for vaginal sex. Wants to avoid HIV

Scenario 5: 19 year old female college student, presenting with loss of appetite, headache, and loss of sleep since 4-5 days.
Smoking occasional with friends
Alcohol: never taken before. Wants to try. Feels she can mange and would not get really drunk
Partner: one male friend. Very caring. Knows him for many years. Has been physically close few years. "Cannot deceive me". Has had oral sex once/twice in last month.
Had vaginal sex recently 5-6 days back. Did not use a condom. Worried about pregnancy since then.
Dominating and very strict parents
Two younger sisters studying in school
No other pertinent history
No blood transfusions

Scenario 6: 20 year old boy presenting with frequent backache

Goes to gym regularly. Wants to be body-builder
Has been using steroid injections with friends to improve muscle strength. 3 persons use same syringe, as "we want to take very small amount of it so as to minimize harm"
Very careful about his health
Non smoker, never had alcohol, no drugs
No blood transfusions, has been very healthy
2-3 girlfriends. Is physically close but no sex. Would like to be sexually active soon.
Had fever once when he used steroid injection for the first time, 6 months back. Took some medicines was all right very soon.

Scenario 7: 30 year old married man
Diagnosed as HIV positive 15 days back
Wife has been tested negative.
2 children, 8 year old son and 6 year old daughter, both tested negative
Working in private sector, monthly income of 15000/-
Wife educated, working in private school
Worried about future, his own and of family
Smokes a packet of cigarette every day. Alcohol occasional
Frequent traveler to various places in India as part of work profile, stays away from home for 3-4 weeks at a time

Scenario 8: 58 year old female, complaining of dermatitis.
Son died of HIV infection. Is living with daughter-in-law
Income is on son's pension received to daughter-in-law
One grandson 8 years old and one grand-daughter 10 years old, both HIV negative
Worried about her own and family's future
Daughter in law remains unwell with frequent cough, fever, diarrhea, mouth ulcers, repeated skin infections

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