Annexure 1: Basics of HIV/AIDS

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HIV is the virus that causes AIDS. HIV stands for human immunodeficiency virus.

HIV is a retrovirus, which affects the immune system and destroys the body’s defences against infections. It is well known that protein synthesis takes place in our cells. DNA present in the nucleus of the cell activates RNA. RNA assembles amino acids to form proteins. But the reverse transcriptase enzyme that is present in HIV produces DNA from RNA. That is, it goes a step backward in protein synthesis. Hence it is called a retrovirus.

HIV affects the most productive age group of 15 to 49 years, which is also the most sexually active age-group.

Are HIV and AIDS the same?

HIV stands for human immunodeficiency virus and AIDS stands for acquired immune deficiency syndrome.

In simple terms

HIV is a virus that makes the human body’s immune system weak or deficient, while AIDS is an outcome of an HIV infection. However, being infected with HIV is not the same as having AIDS.

AIDS is actually a late stage of the HIV infection and comes about only when HIV has made your body’s immunity (defence system) too weak to fight off other infections. It may take several years for AIDS to develop. The healthier your body and the better you take care of it, the longer it will take for AIDS to develop.

What Does AIDS Stand for?

The term ‘acquired’ implies that AIDS is not hereditary or present in your body from birth. It comes from an external source through certain behaviours or situations.

‘Immune deficiency’ means AIDS is something that makes your immunity deficient.

‘Syndrome’ implies that AIDS is a collection of diseases that attack your body when its immunity becomes weak. These diseases are often called opportunistic infections or OIs. An AIDS death is actually an outcome of these diseases. But if treated properly and in time, they need not be fatal. This means that AIDS need not be fatal. Two of the commonest OIs in India are tuberculosis and diarrhoea.
Some HIV/AIDS Facts and Figures

About 14,000 new infections occur every day throughout the world, and of these 2,000 occur among children (UNAIDS data).

About 95 per cent of the new infections occur in developing countries. In Sub-Saharan Africa, one in five adults is living with HIV/AIDS (UNAIDS data).

The National AIDS Control Organization (NACO) of India estimated in 2006 that there were about 2.50 million people infected with HIV in India. The adult HIV prevalence rate was 0.36 per cent in 2006. These data were based on the National Family Health Survey (NFHS) findings.

As of August 31, 2006, the total number of people who had reached the AIDS stage of HIV infection in India was 1,24,995. This included 88,245 males and 36,750 females. But there could be far more unreported or undetected cases (NACO data).

Data from voluntary confidential counselling and testing centres showed that 3,610 people got infected with HIV in West Bengal in 2006 (West Bengal State AIDS Prevention & Control Society data).

According to data for 2006 for West Bengal, HIV prevalence rates in West Bengal were 1.66 per cent, 0.40 per cent and 4.64 per cent among STI clients, ante-natal care clients (pregnant women) and injecting drug users. The figures for female sex workers and males who have sex with males were 6.60 per cent and 6.12 per cent, respectively (HIV Sentinel Surveillance Data, West Bengal State AIDS Prevention & Control Society / NACO).

History of HIV/AIDS

The disease was first discovered among gay or homosexual men (who had multiple sexual partners) in New York and Los Angeles in 1981. All these gay men suffered from severe defects in their immune functions. Some of them suffered from severe forms of a rare pneumonia (pneumocystis carinii), others suffered from a rare form of skin cancer (Kaposi’s sarcoma). As it was found among gay men initially, it was called gay-related immunodeficiency (GRID).

Later, such symptoms were also seen among injecting drug users (IDUs) and haemophiliacs (who had received multiple blood transfusions). By 1983 this disease was seen among many other groups in other parts of the globe. Many women were affected, which suggested that the disease might be passed on through heterosexual sex also. It was becoming clearer that a much wider group of people was going to be affected. The Centre for Disease Control, Atlanta, USA, named this disease acquired immune deficiency syndrome or AIDS.

In 1984, similar symptoms were seen among children born to mothers who had the symptoms. By 1985, it was clear that the disease spread through penetrative sex, blood and blood products and from mother to child. As the number of deaths soared, medical experts scrambled to find a cause and more importantly a cure.

In 1984, France’s Institut Pasteur discovered what they called the HIV virus, but it was not until a year later that US scientist Dr. Robert Gallo confirmed that HIV was the cause of AIDS. Following this discovery, the first test for HIV was approved in 1985. The term HIV or human immunodeficiency virus was first coined by the International Committee on the Taxonomy of Viruses in May, 1986.
In India, the first case of HIV infection was detected in 1986 in Chennai among female sex workers. Over the next several years, increasingly effective medications to combat the virus (anti-retroviral therapy or ART), and to treat OIs that flourish when the immune system is damaged by HIV, have been developed. An international HIV vaccine initiative is also underway.

While the medical and scientific communities continue their efforts, it is important to remember that HIV can affect all persons irrespective of age, gender, sex, sexuality, class, caste and race. It would therefore not be appropriate to name HIV or AIDS as a gay men’s disease or the disease of any other particular section of society.

**How Can You Get Infected With HIV?**

You can get infected with HIV if certain body fluids from an infected person’s body enter your body. By body fluids we mean blood, seminal fluids (semen, pre-cum) and vaginal fluids, which can host HIV and carry it from one person to another.

In almost 80-85 per cent of cases, HIV is passed on sexually. If you have unprotected penetrative sex – anal, vaginal or oral – with an infected person, body fluids from that person can enter your body. Different sexual acts have different risks. Unprotected anal sex and vaginal sex are considered to be more risky than unprotected oral sex.

You can get infected with HIV if you receive blood or blood products from an infected person.

HIV can enter your body if you share syringes or other sharp injectible instruments with an infected person because these instruments can lead to exchange of blood from the infected person to you.

HIV can also be transmitted from an infected mother to her child during pregnancy (through blood across the placenta), during delivery (through vaginal fluids or blood) or during breastfeeding (through milk).

HIV has also been detected in other body fluids such as saliva, skin oils, tears and sweat, but the concentration of the virus in these fluids is too little for transmission of the virus to take place. In addition to these – cerebrospinal fluid, amniotic fluid and faecal matter are some other body fluids where HIV can be found but these fluids are not very likely to be exchanged between people. Viral concentration is much higher in blood (including menstrual blood), vaginal fluids, seminal fluids, and breast milk.

**Sexually Transmitted Infections (STIs)**

As the name suggests, STIs are infections that are transmitted through sexual contact. Like HIV, many STIs are transmitted through unprotected penetrative (anal, vaginal or oral) sex. Therefore these STIs can also be prevented in the same way as HIV – by staying in a mutually faithful and monogamous sexual relationship with an uninfected partner or practicing safer sex with each and every sexual partner.

However, there are some STIs that can also be transmitted through non-penetrative sexual acts. Activities involving close body contact during sex (such as body rubbing and deep kissing) may transmit these STIs. Maintaining oral and overall personal hygiene is the best way to prevent transmission of these STIs.
Like HIV, some STIs are also transmitted non-sexually, and are preventable in similar ways – safer sharing of injecting equipment, safer sharing of blood and blood products, and early and complete treatment of STIs in pregnant women for preventing mother-to-child transmission.

There Are a Large Number of STIs Known to Medical Science

Some of the common ones are: chlamydia, genital warts, gonorrhoea, hepatitis A, hepatitis B, hepatitis C, herpes simplex virus, pubic lice, syphilis, and trichomoniasis.

Some Generic Symptoms of Common STIs

In males

- Discharge or pus from the penis or anus
- Sores, blisters, rashes or boils on the penis or testicles/in or around anus or mouth
- Lumps on or near the penis, testicles, anus
- Swelling on the penis or testicles
- Pain or burning during urination
- Itching in and around the genital areas – penis, testicles, thighs, anus

In females

- Pain in the lower abdomen
- Unusual and foul smelling discharge from the vagina
- Lumps on or near the vagina or anus
- Pain or burning during penetrative sex (vaginal)
- Itching in and around the genital areas – vagina, thighs, anus
- Sores, blisters, rashes or boils in or around vagina, anus or mouth

Attention: While STI symptoms in men are more likely to be visible, in women they are often inside the body and therefore not readily visible. This makes women more vulnerable to the harmful effects of STIs such as infertility and miscarriage. Regular medical check-ups are the best way to check STIs in early stages in women, particularly if a woman feels she may have been exposed to STIs through a certain behaviour or experience.

Link Between STIs and HIV

The predominant mode of transmission of both HIV and STIs is sexual (in that sense, HIV is also an STI). The presence of STIs in a person is often considered as a marker for potential HIV infection as well. Many of the measures for preventing the sexual transmission of HIV and STIs are also the same.
In addition: STIs often cause ulcers, blisters, sores and boils and most of these are located in/on/around the mouth, penis, vagina, or anus. During sexual intercourse HIV transmission can take place more easily through these openings in the skin or mucous membrane present in these organs. The T-cells, which are responsible for warning the immune system about invading organisms, are present in large numbers around these openings. Since HIV can very readily attach with T-cells, it becomes easy for it to enter the body riding piggyback on the T-cells.

Early and complete treatment of STIs is therefore desirable not only to reduce or prevent the harmful effects of STIs themselves, but also to prevent HIV infection.

In people already infected with HIV, STIs tend to compromise the immunity further, making it easier for HIV infection to progress in the body.