CHAPTER-I

INTRODUCTION

A virus that is sweeping the world for the past two decades, causing a serious disease that killed millions of people and which looks likely to kill millions more. The virus is called Human Immunodeficiency Virus (H.I.V.). After a certain period this virus damages the immune system, and the disease caused by H.I.V. is known as A.I.D.S.. In the absence of treatment, the average time between H.I.V. infection and progression to A.I.D.S. is around ten years.

Each year there are more and more new H.I.V. infections, which shows that people either are not learning the message about the dangers of H.I.V., or are unable unwilling to act on it. Many people are dangerously ignorant about the virus of A.I.D.S..

A.I.D.S. does not discriminate caste, creed, race, religion, education or social status. A.I.D.S. pandemic is tightening its grip around the human kind and the whole world is under its way but its spread is rapid in the developing countries like India. The reasons for this are well known. The main ‘levels’ responsible for the rapid spread of H.I.V./A.I.D.S. infections are gender inequality, poverty, economic crisis, under development, migration, population movement, illiteracy, weak health infrastructure and mainly the ignorance about transmission methods and prevention.

In the present scenario A.I.D.S. has become one of the most serious pandemic which is no longer restricted to region or individuals with high risk behaviour rather it can infect and affect anybody children old aged rich to poor male or female and anywhere rural-urban remote developed developing or undeveloped countries. WHO has estimated that A.I.D.S. has acquired epidemic like proportion as world over more than sixty million people have been infected with H.I.V.. H.I.V./A.I.D.S. has
emerged as one of the most dreaded, most devastating pandemic ever witnessed by mankind. H.I.V./A.I.D.S. is spreading at a rapid rate all over the world with an estimated 16000, new infections everyday. India is estimated to bear the largest load of H.I.V. infected on account of the size of its population. It is estimated that about two-third cases in south and south-east Asia are from India. More and more individuals infected with H.I.V. are going to develop A.I.D.S. as there is no cure and or vaccine available for them. Antiretroviral drugs though, suppress the virus and prolong life are very expensive and have side-effects.

H.I.V./A.I.D.S. is not only a medical illness, but a psychological as well. Infections and the subsequent progression of this disease present the patient with a broad range of personal experience to negotiate. People with H.I.V./A.I.D.S. must deal with strong emotional issue; they have to face a variety of emotional responses such as fear, shame, loss, grief, anger, depression, stress, feelings of dependency and hope. Those who become more emotionally distressed become extremely vulnerable to above emotional ‘levels’, and feel less equipped to cope with the helplessness and hopelessness which are present along with cognitive distortions, misinterpretation and a poor sense of personal control. Anxiety, depression and anger can easily escalate stress.

A.I.D.S. is a relatively new disease that involves sex and drugs which mainly affects young adult. For these reason, it has generated wide spread concern. The acronym refers to the fact that A.I.D.S. severely damages the immune system, the body’s most important defence against disease.

A.I.D.S. not only damages the physiological state of the person but when patient knows that he has H.I.V. infection, he starts suffering from great psychosocial and psychological stresses through a fear of rejection, social stigma, disease progression and uncertainties associated with future
management. The psychological effects are deeply felt by the patients themselves as well as their families.

H.I.V./A.I.D.S. is not a disease, which spreads randomly but it transmitted as a consequence of a specific behavioural pattern and has strong socio-economic implications. It not only costs huge sums of money in terms of controlling the opportunistic infection such as tuberculosis, pneumonia and Cryptococcus meningitis, but also seriously affects individuals in the prime reproductive years causing serious economic loss to them, their families and the community. The situation is further complicated due to strong social stigma attached to H.I.V./A.I.D.S.

The San Francisco A.I.D.S. Foundation has explained the acronym H.I.V. & A.I.D.S. as:

**H.I.V.**

- Human - H.I.V. affects only human beings
- Immunodeficiency - H.I.V. affects the immune system, affecting the way we respond to illness
- Virus - A very small living organism that reproduces itself inside the body.

**A.I.D.S.**

- Acquired - A.I.D.S. is not contagious and is not ‘caught’ (not born with)
- Immunodeficiency - The body immune system, or ability to defend ourselves against infection and disease, has been affected (Deficiency-not working properly)
- Syndrome - Number of symptoms which collectively indicate an often abnormal condition of the body or mind (A group of signs and symptoms)
FROM 'GRID' TO 'A.I.D.S.'

Even in 1982 it was clear that a new term was needed for the conditions since it was obviously not necessarily connected with homosexuality. In the autumn of 1892, the term “Acquired Immunodeficiency Syndrome” was introduced.

“Acquired” indicates that the condition, unlike some previously known kind of immune deficiency, is acquired rather than inherited.

“Immunodeficiency” means that the patients “previously well functioning immune system gradually deteriorates and leaves the patients defenceless against various kind of infections and tumours.

“Syndrome” is a Greek word which is used about a number of symptoms which together are indicative of one single cause.

- In everyday language, the acronym “A.I.D.S.” came to be used about this condition.
- During 1983 and 1984 we learnt a great deal about A.I.D.S. in certain parts of Africa. It became increasingly clear that it was passed on from men to women as well as from men to men. Since women is Africa were as affected by the condition as men, many women gave birth to infected children and other children were infected through breast-feeding.
- As early as 1983, the cause of the syndrome was discovered. A French research team found a previously unknown virus in a man with swollen lymph glands, a symptom that doctors knew was a precursor to A.I.D.S..

This new virus belonged to a group of viruses which scientists knew could cause damage to the immune and nervous system in animals but which was believed to have no adverse effects on humans. The new virus, however, proved to have such effects.
After a few years of dispute over who had really discovered the virus and what is should be called, it was agreed in 1986 that the virus which causes the immune deficiency in A.I.D.S. patients should be called “Human Immunodeficiency Virus (H.I.V.).” “Human” because it causes illness in people and “Immunodeficiency virus” because it leads to a weakening of the immune system.

**Some basic’s about H.I.V.**

- H.I.V. infection is detected through analysis of a sample of blood. If a person is infected with H.I.V., the sample will contain antibodies to the virus and the person in question is said to be “H.I.V. positive”.
- Most H.I.V.-positive people remain healthy for many years. Thus being H.I.V.-positive and having A.I.D.S. is not the same thing.
- The time lapse from the moment of infection until the point when the immune system has become so weak that a fatal disease is imminent is usually about ten years. More precisely, about half of all H.I.V. carriers do not develop serious symptoms until about ten years after infection.

Consequently, a person can be H.I.V.-infected for many years without knowing about it. An H.I.V. test is the only way to find out for certain whether or not a person is infected.

- The number of known H.I.V.-infected people in the world is much lower than the actual number of infected people.
- Infected people who have not had an H.I.V. test are not aware of their infection.
- Once a person is infected, he will remain infectious for the rest of his life. The degree of infectiousness will vary over time, but there is no way of knowing when a person is more infectious or less infectious.
H.I.V. can not be passed on through social contacts. A high degree of intimacy is required for the virus to be communicated from a carrier to another person, i.e., the kind of intimacy which is usually only connected with sexual intercourse.

There is no vaccine against H.I.V.. Despite extensive research, it is not likely that an efficacious vaccine will be in general use during the next decade.

Nor is there a cure for H.I.V.. The H.I.V. drugs now available will at best slow the advance of the disease. It may however, be quite different in a near future. During 1995 and 96 progress has been made introduced. Combination treatment with two or more drugs at a time has shown promising results.

During the past few years, doctors have become increasingly good at treating complications of H.I.V.-infection, so called opportunistic infections and tumors. As a result even those who have developed A.I.D.S. can be live a better and longer life. But the basic disease, i.e., H.I.V. infection, is still there and will lead to new complications from which the patient will eventually die.

Many people who have been diagnosed as having A.I.D.S. may feel well and live a more or less normal life. Some may still be working. An A.I.D.S. diagnosis does not mean that a person cannot lead a meaningful life in various respects.

The Course of Infections

Being H.I.V.-infected is not the same as having A.I.D.S.. Being infected with H.I.V. means having an ongoing infection from a virus which only very slowly causes serious damage. Knowing that one is H.I.V.-infected means that one has to live with a very serious disease that may eventually end one’s life. Of course it can also be very aressing to know that one may infect others during sexual intercourse and that one cannot
have children without the risk that one’s partner and the baby will become infected. However, being H.I.V.-infected does not necessarily mean that one feels physically ill.

Once or a few weeks after the moment of infection, some of those infected (we don't know how many) develop symptoms similar to those of an acute virus infection: Fever, a sore throat, headache and sometimes a rash or swollen lymph glands. These symptoms last one or two weeks are called acute or primary H.I.V. infection. When the symptoms of the acute H.I.V. infection has disappeared, the infected person usually feels well again. After a couple of weeks, and almost always within twelve weeks after the moment of infection; antibodies to H.I.V. will develop (in rare cases, it may take longer for antibodies to develop) and these remain in the person’s body for the rest of his life.

For the next few years an H.I.V.-infected person will not usually have any health problems as a result of the H.I.V. infection, not because the virus is inactive but because the immune system has significant redundancy. During these symptoms –free years, the virus gradually subverts certain parts of the immune system in various way, primarily by daily destroying billions of helper T lymphocytes which play an important part in our defence against infection.

When this has been going on for several years the capacity of the immune defence for regeneration comes to an end and symptoms will arise, usually in the form of diseases which the body normally has no trouble defeating. One example is a type of pneumonia caused by Pneumocystis Carinii, a pathogen which most of us carry from childhood without falling ill. When the immune system has suffered considerable damage, the H.I.V. positive person who now has A.I.D.S., risk contracting a large number of different diseases and some cancers. Some of these diseases can be treated for some time.
What is H.I.V.

H.I.V. stands for Human Immunodeficiency Virus. Like all viruses, H.I.V. cannot grow or reproduce on its own. In order to make new copies of itself it must infect the cells of a living organism.

H.I.V. belongs to a special class of viruses called retroviruses. Within this class, H.I.V. is placed in the subgroup of lentiviruses. The name ‘lentivirus’ literally means 'slow virus' because they take such a long time to produce any adverse effect in the body. Other lentiviruses include SIV, FIV, Visna and CAEV, which cause disease in monkey, cat, sheep and goats.
The Origin/Discovery Of H.I.V. & The First Case Of A.I.D.S.

Origins: Every disease has a history of evolution. However the origin of H.I.V./A.I.D.S. is shrouded in mystery. No one exactly knows where H.I.V. actually comes from.

H.I.V. is thought to have originated in non-human primates in sub-Saharan Africa and was transferred to human late in the 19th or early in the 20th century. The first paper recognizing a pattern of opportunistic infections characteristic of A.I.D.S. was published in 1981. Both H.I.V.-I and H.I.V.-2 are believed to have originated in West-Central Africa and to have jumped species (a process known as Zoonosis) from non-human primates to humans. H.I.V.-I appears to have originated in southern cameroon through the evolution of SIV (cpz), a simian immunodeficiency virus (SIV) that infects wild chimpanzees (Pan troglodytes troglodytes). The closest relative of H.I.V.-2 is SIV (agm), a virus of the sooty mangabey (Cercocebus atys), and old world monkey of Guinea-Bissau, Gabon and Cameroon. New World monkeys such as the owl monkey are resistant to H.I.V.-I Infection, possibly because of a genomic fusion of two viral resistance genes.

Discovery

A.I.D.S. was first clinically observed between late 1980 and early 1981. A group of five men showed symptoms of Pneumocystis Carinii Pneumonia (PCP), a rare opportunistic infection that was known to present itself in people with very compromised immune systems. Soon thereafter, another set of men developed a rare skin cancer called Kaposi sarcoma (KS). Many more cases of PCP and KS quickly emerged, alerting U.S. Centers for Disease Control and Prevention (C.D.C.). A C.D.C. task force was formed to monitored the outbreak. After recognizing a pattern of anomalous symptoms presenting themselves in patients, the task force named the condition acquired immune deficiency syndrome (A.I.D.S.).
In 1983, two separate research groups lead by Robert Gallo and Luc Montagnier independently declared that a novel retrovirus may have been infecting A.I.D.S. patients, and published their findings in the same issue of the journal Science. Gallo claimed that a virus his group had isolated from an A.I.D.S. patient was strikingly similar in shape to other human T-lymphotropic viruses (HTLVs) his group had been the first to isolate. Gallo’s group called their newly isolated virus HLTV-III. At the same time, Montagnier’s group isolated a virus from a patient presenting lymphadenopathy (Swelling of the lymph nodes) of the neck and physical weakness, two classic symptoms of A.I.D.S.. Contradicting the report from Gallo’s group, Montagnier and his colleagues showed that core proteins of this virus were immunologically different from those of HTLV-1. Montagnier’s group named their isolated virus lymphadenopathy-associated virus (LAV).

Whether Gallo or Montagnier deserve more credit for the discovery of the virus that causes A.I.D.S. has been a matter of considerable controversy. Together with his colleague Francoise Barre-Sinoussi, Montagnier was awarded one half of the 2008 Nobel Prize in Physiology or Medicine for his “discovery of human immunodeficiency virus”. Harald zur Hausen also shared the prize for his discovery that human papilloma virus leads to cervical cancer, but Gallo was left out. Gallo said that it was “A disappointment” that he was not named a co-recipient. Montagnier said he was “Surprised” Gallo was not recognized by the Nobel Committee. “It was important to prove that H.I.V. was the cause of A.I.D.S., and Gallo had a very important role in that. I’m very sorry for Robert Gallo”.

A.I.D.S. was first reported June 5, 1981, when the U.S. Centers for Disease Control (CDC) recorded a cluster of Pneumocystis carinii pneumonia (now still classified as a PCP but known to be caused by Pneumocystis jirovecii) in five homosexual men in Los Angeles. In the
beginning, the CDC did not have an official name for the disease, often referring to it by way of the diseases that were associated with it, for example, lymphadenopathy, the disease after which the discoverers of H.I.V. originally named the virus. They also used Kaposi Sarcoma and opportunistic infections, the name by which a task force had been set up in 1981. In the general press, the term GRID, which stood for Gay-related immune deficiency, had been coined. The CDC, in search of a name, and looking at the infected communities coined “The 4 H disease”, as it seemed to single out Haitians, homosexuals, hemophiliacs, and heroin users. However, after determining that A.I.D.S. was not isolated to the homosexual community, the term GRID became misleading and A.I.D.S. was introduced at a meeting in July 1982. By September 1982 the CDC started using the name A.I.D.S., and properly defined the illness.

A more controversial theory known as the OPV A.I.D.S. hypothesis suggests that the A.I.D.S. epidemic was inadvertently started in the late 1950s in the Belgian Congo by Hilary Koprowski’s research into a poliomyelitis vaccine. According to scientific consensus, this scenario is not supported by the available evidence.

A recent study by Gilbert MT, Rambaut A, Wlasiuk G et al. (2007) states that H.I.V. probably moved from Africa to Haiti and then entered the United States around 1969.

The International Committee on Nomenclature of viruses named it the “Human Immunodeficiency Virus” (H.I.V.) and to date two types, H.I.V.-1 and H.I.V.-2 are identified. Probable origins of H.I.V.s is depicted in the Table-I.
Table –I : Probable Origin of H.I.V.

<table>
<thead>
<tr>
<th>Probable Origin of H.I.V</th>
<th>Natural Host</th>
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<tbody>
<tr>
<td>SIV Chimpanzee</td>
<td>Natural host African ape</td>
</tr>
<tr>
<td>HIV-1 Progenitor</td>
<td></td>
</tr>
<tr>
<td>HIV1-A</td>
<td>African monkey</td>
</tr>
<tr>
<td>HIV1-B</td>
<td>No disease, high transmission</td>
</tr>
<tr>
<td>HIV1-C</td>
<td></td>
</tr>
<tr>
<td>HIV1-D</td>
<td></td>
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<tr>
<td>HIV1-E</td>
<td></td>
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<tr>
<td>HIV1-F</td>
<td></td>
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<tr>
<td>HIV1-0</td>
<td>Human</td>
</tr>
<tr>
<td>HIV1-N</td>
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Theories of the Origin of H.I.V./A.I.D.S.:

There are some theories of the origin of H.I.V. which is usually a curiosity for most learners to know about the H.I.V./A.I.D.S.:

1. The ‘Hunter’ Theory.
2. The oral Polio Vaccine (OPV) theory.
3. The contaminated Needle theory.
5. The Conspiracy Theory (‘Man-made virus’ Theory).

How can we prove that H.I.V. causes A.I.D.S.?:

Koch’s Postulates

In the nineteenth century, the German scientist Robert Koch developeds a set of four “postulates” to guide people trying to prove that a germ causes a disease. Scientists agree that if H.I.V. satisfies all of these conditions with regard to A.I.D.S. then it must be the cause of A.I.D.S.:

• Koch 1: The germ must be found in every person with the disease.
• Koch 2: The germ must be isolated from someone who has the disease and grown in pure culture.
• Koch 3: The germ must cause the disease when introduced into a healthy person.
• Koch 4: The germ must be re-isolated from the infected person.
**H.I.V.-Classification**

Human immunodeficiency virus (H.I.V.) belongs to the class Retroviruses and family lentivirinae. Two types are recognised H.I.V.-1 and H.I.V.-2. Both differ in geographical distribution, biological and molecular characteristics and extent of transmissibility. These viruses store their genetic information as ribonucleic acid (RNA). RNA must be converted to DNA by a special enzyme reverse transcriptase. H.I.V.-1 has 3 groups, H.I.V.-I major group (H.I.V.-1 m), outlier (H.I.V.1-0) and normal (H.I.V.1-N) group. The strains of H.I.V.-1 isolated from people in USA and Europe are genetically diverse from strains isolated in Africa and Asia. H.I.V.-1 major group can be further classified into subtypes or clades designated A through K. Such subtypes have envelope gene sequences that vary by 20% or more between subtypes. The subtypes differ in geographical distribution, biological characteristics and major mode of transmission etc. H.I.V.-I subtypes O and N are more distant to all other H.I.V.-1 subtypes but less so compared to H.I.V.-2. So these are classified under H.I.V.-1 only and have limited distribution in West Africa. H.I.V.-2 has also been reported from other countries and this also comprises of heterogenous group of viruses. Table II shows the distribution of common subtypes:

**Table II. H.I.V.-1 Major Subtypes**

<table>
<thead>
<tr>
<th>Major epidemic pattern</th>
<th>Geographic Region</th>
<th>H.I.V.-I Subtype</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>Heterosexual hosts</td>
<td>Sub-Saharan Africa</td>
<td>+</td>
</tr>
<tr>
<td></td>
<td>South East Asia</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>India</td>
<td>+</td>
</tr>
<tr>
<td>Intravenous drug users and homosexual hosts</td>
<td>North America</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Western Europe</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>South East Asia</td>
<td>-</td>
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<tr>
<td></td>
<td>India</td>
<td>-</td>
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</tbody>
</table>
What is A.I.D.S.?

Before we can begin to look for a cause, we must first work out exactly what type of illness we are talking about.

In early 1981, doctors in New York and California began to report some bizarre new disease outbreaks. In both places, previously healthy young men were showing up with rare illnesses including Kaposi’s sarcoma (a kind of tumour) and PCP (a type of pneumonia), which until then had been virtually unheard of among such people. Within months, dozens of similar cases had been reported in 23 American states and in the UK, representing the start of a massive and unprecedented epidemic.

Doctors soon discovered a distinctive feature of these cases. More than anything else, the men were lacking a specific type of white blood cell, which is essential to a healthy immune system. Normally, people have between 600 and 1,500 “CD4+ cells” (also called T helper cells) in each cubic millimetre of their blood. But the men with the strange new disease typically had very much lower levels. This immune deficiency explained why they were so vulnerable to disease.

The cases were clearly related in time and by population group (initially gay men; [for infected gay men the condition was sometimes referred to as “gay-related immune deficiency” (GRID)] and injecting drug users). No cause of immune deficiency could be found, but it was clearly not inherited. Scientists therefore grouped together all of these strange new cases under the heading “Acquired Immune Deficiency Syndrome” - or A.I.D.S. for short.

In 1982, no-one claimed to know the cause of A.I.D.S., so the first definition was based on the diagnosis of one of 13 rare diseases known to be linked to immune deficiency (including Kaposi’s sarcoma and PCP) “occurring in a person with no known cause for diminished resistance to that disease”. Over the years, the US definition has been refined as
hundreds of thousands of similar cases have been documented, sometimes involving other diseases, but always associated with the same distinctive immune deficiency. Other definitions have also been developed to suit different situations elsewhere in the world.

The latest US A.I.D.S. definition was created in 1993. Under this definition, someone has A.I.D.S. if they have one of 26 specific diseases (28 in children) but no known cause of immune deficiency other than H.I.V. (with some diseases, a positive H.I.V. test is required); or if they have a CD4+ cell count below 200 cells per cubic millimetre of blood, or less than 14% of all lymphocytes, plus a positive H.I.V. test.

Europe and Canada have similar A.I.D.S. definitions to the US, but do not include low CD4+ cell counts.

**Transmission of H.I.V.**

H.I.V. is a virus that infects white blood cells, primarily CD4 cells, that are central parts of the immune system. The virus eventually destroys CD4 cells, inhibits the effectiveness of immune system functioning, disabling the body from fighting off infections and disease. CD4 cells are found primarily in blood and genital secretions (semen, vaginal fluids, menstrual blood). The H.I.V. virus is primarily transmitted through sexual intercourse and through contact with infected blood that enters the bloodstream of the uninfected person. Sharing of syringes during intravenous drug use is an additional method of contagion. A mother who is infected can also pass the virus to her child during pregnancy and through breast feeding. Injecting large amounts of infected blood during a transfusion can easily transmit the virus. The H.I.V. virus can be transmitted to health care professionals by accidental needle-stick injuries while treating H.I.V. positive patients.

The H.I.V. virus has been found in the tears and saliva of some H.I.V. positive patients but in amounts too low to transmit the virus (Bartlett and
Finkbeiner, 1993) The H.I.V. virus has not been found in feces or urine. The skin and mucus membranes in the mouth are barriers for the H.I.V. virus. If skin is unbroken (sores and cuts leave a person susceptible) the possibility for transmission of the virus is improbable. Shaking hands, sharing a toilet, sharing eating utensils, being sneezed upon, living in the same household, working in the same room, and closed mouth kissing are biologically impossible ways for transmitting the virus.

**Stages and Physical Manifestations of H.I.V./A.I.D.S.**

**Acute Infection:** Within one to six weeks after the transmission of H.I.V., people develop symptoms that resemble infectious mononucleosis. This stage lasts approximately one to two weeks. These symptoms can go unnoticed. Bartlett and Finkbeiner (1993) report that 50 to 90 percent of people with H.I.V. infection experience symptoms, such as fever, sweats, fatigue, joint pain, headaches, sore throat, difficulty swallowing, that resemble infectious mononucleosis. During this stage, traditional blood tests for the presence of H.I.V. may be negative.

**Seroconversion:** Seroconversion occurs within four to twelve weeks of infection. During this stage, the body develops antibodies to H.I.V.. Blood tests that detect the presence of H.I.V. are positive due to the immune systems production of antibodies to H.I.V..

**Asymptomatic Period:** During this period, people infected with H.I.V. experience no symptoms of the disease but remain capable of transmitting it to others. Formal H.I.V. testing for the presence of antibodies to H.I.V. is the only way for the person to know if they are infected. The asymptomatic period lasts approximately from five to eight years. Specific strains of the virus can cause the disease to progress faster. Virus exposure can also affect the progression. An increased number of viruses that the person was exposed to during time of infection can decrease the length of the asymptomatic period. Age is another important
factor: children and the elderly experience a shortened asymptomatic period. A person’s genetic composition can also affect disease progression. Conclusive evidence has not been obtained, but it is hypothesized that health factors such as mental health, nutrition, and exercise may possibly effect the asymptomatic period.

During the asymptomatic period the virus slowly infects and destroys CD4 cells. After a number of years, the cumulative loss of CD4 cells disables the body from fighting off infections and diseases. The average CD4 cell count in healthy people is approximately 1,000. Symptoms usually do not develop until a person’s CD4 count is below 300. Severe complications develop when the CD4 count is 50-100. Blood counts are routinely performed to monitor the progression of the disease. Persistent Generalized Lymphadenopathy (PGL) and persistent swollen lymph nodes can affect patients during the asymptomatic period. Lymph nodes throughout the body can be swollen, and painful but other symptoms of H.I.V. are not present.

**Early Symptomatic H.I.V. Infection:** First symptoms of immune system dysfunction become evident during the early symptomatic stage of infection. This period is also referred to as A.I.D.S.-related complex (ARC). The symptoms and conditions that develop during this period resemble but are not as severe as symptoms that define the diagnosis of A.I.D.S.. “The most common early conditions are thrush, oral leukoplakia, shingles, idiopathic thrombocytopenic purpura, and constitutional symptoms, which include chronic fever, weight loss, and chronic diarrhoea (Bartlett and Finkbeiner, 1993, p. 64).”
Late Symptomatic H.I.V. infection (A.I.D.S.): Occurs approximately eight years after the time of infection. A.I.D.S. defining conditions are opportunistic infections or tumors and a CD4 cell count below 200. The most common opportunistic infections and tumors are Pneumocystis carinii pneumonia (PCP) and Kaposi’s sarcoma (KS). PCP is an infection of the lung. Eighty percent of all H.I.V. patients eventually develop PCP and over ninety-five of all people who develop PCP also are H.I.V. positive (Bartlett and Feinkbeiner, 1993). KS is a tumor of the blood vessels that is purple or black in color and is usually painless. These tumors usually appear on the skin but can also occur in the gastrointestinal tract, under the arms, in the groin, in the neck, in the lungs, in the liver, in the brain, and within other organs. Other conditions such as tuberculosis, encephalitis, meningitis, and herpes simplex infection occur frequently as the immune system weakens.

Neuropsychological complications frequently develop during the course of A.I.D.S.. A.I.D.S. Dementia Complex (ADC) is the most common neurological complications of A.I.D.S. and is defined as global cognitive impairment, due to brain infection caused by H.I.V.. Cognitive impairment is usually characterized by mental slowing and deficits in memory and attention. ADC also results in blunted affect, incontinence, gait problems, ataxia, and other motor problems (Tross and Hirsch, 1988). Disorders of the central nervous system also effect the neurological functioning of those diagnosed with H.I.V. and A.I.D.S..
HIV (Virus)

Human being is the reservoir or host

HIV Transmission Through

- Blood/Blood Products
- Vaginal Fluid
- Seminal Fluid
- Breast Milk
- Other body fluids

Infects other uninfected persons through

- Unprotected sexual contact
- Transfusion of Contaminated blood and blood products
- Use of unsterilized syringes, needles and other instruments.
- Mother to child (In-Utero, during delivery and breast feedings)

HIV Infected Persons increase

AIDS Cases

Deaths

Fig. II : Transmission Cycle of H.I.V.
**EXPOSURE TO H.I.V. INFECTION**

- Seroconversion illness
- Asymptomatic period
- Subtle symptoms and Signs of Immunodeficiency
- Full Blown A.I.D.S. Symptoms and Signs of Opportunistic Infections

**ANTIBODY TITRE AND INFECTIVITY**

- Not Detectable (Window Period) Highly Infectious
- Detectable Antibodies Infectious
- Detectable Antibodies Infectious
- Antibodies may or may not be detectable Highly infectious

**TIME PERIOD**

- 12 Weeks
- 3-5 Years
- 2-3 Years
- 1-2 Years

**STAGE OF H.I.V. DISEASE**

- Primary Infection (CD4 cell count near normal)
- Early Immunodeficiency (CD4 cell count >500 cells/ml)
- Intermediate Immunodeficiency (CD4 cell count <500 > 200 cells/ml)
- Terminal illness (CD4 cell count < 200 cell/ml)

---

**Fig. III : Natural History of H.I.V. infections in Adults**

**DEVELOPMENT OF H.I.V. / A.I.D.S.**

Like an Impending Train Wreck

![Train Wreck Diagram](Image)

*Viral load = Speed of the train  
CD4 count = Distance from site of crash*

**Figure : IV . Development of H.I.V./A.I.D.S.**

*(Source : 2006© Clinton Foundation H.I.V./A.I.D.S. Initiative, Basic of H.I.V. : P.11)*
MODE OF H.I.V. TRANSMISSION

Epidemiological studies throughout the world have shown three modes of H.I.V. transmission:

I) **Sexual Intercourse**: Whether heterosexual or homosexual, is the major route of transmission. H.I.V. can be transmitted through any individual act of unprotected sexual intercourse that is any penetrative sexual act in which a condom is not used where one partner is infected with H.I.V.. The risk of becoming infected through an act of unprotected sexual intercourse depends on four main factors:

**The likelihood that the sex partner is Infected**: The probability that a person has become infected with H.I.V. 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 in recent years.

**The type of sex act**: All unprotected acts of sexual penetration (anal, vaginal, oral) carry a risk of H.I.V. 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, H.I.V. can be transmitted even through unbroken mucous membrane.

**The amount of virus present in the blood or sexual secretions (semen, vaginal or cervical secretions)** of the infected partner:
Individuals with H.I.V. infection become more infectious as they progress to H.I.V. related diseases and A.I.D.S.. There is also an early period of high infectiousness around the time of seroconversion.

The presence of other sexually transmitted diseases and/or genital lesions in either partner: H.I.V. 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 H.I.V..

ii) Blood borne infections: H.I.V. infected blood, blood products, transplanted organs or tissues and the use of improperly sterilized needles and syringes that have been in contact with infected blood can transmit H.I.V.. This is the most efficient way of transmission of H.I.V.. Even a small transfusion of infected blood results in virtually 100% seroconversion.

iii) H.I.V. infected woman can transmit H.I.V. to her foetus or infant before, during, or after birth: A pregnant women with H.I.V. 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.
## EPIDEMIOLOGY OF H.I.V./A.I.D.S.

### Table III: Global Summary of the A.I.D.S. Epidemic [December 2008]

#### Number of People living with H.I.V. in 2008

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>33.4 million [31.1 million – 35.8 million]</td>
</tr>
<tr>
<td>Adults</td>
<td>31.3 million [29.2 million – 33.7 million]</td>
</tr>
<tr>
<td>Women</td>
<td>15.7 million [14.2 million – 17.2 million]</td>
</tr>
<tr>
<td>Children under 15 years</td>
<td>2.1 million [1.2 million – 2.9 million]</td>
</tr>
</tbody>
</table>

#### People Newly infected with H.I.V. in 2008

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2.7 million [2.4 million – 3.0 million]</td>
</tr>
<tr>
<td>Adults</td>
<td>2.3 million [2.0 million – 2.5 million]</td>
</tr>
<tr>
<td>Children under 15 years</td>
<td>430000 [240000 – 610000]</td>
</tr>
</tbody>
</table>

#### A.I.D.S.-related deaths in 2008

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2.0 million [1.7 million – 2.4 million]</td>
</tr>
<tr>
<td>Adults</td>
<td>1.7 million [1.4 million – 2.1 million]</td>
</tr>
<tr>
<td>Children under 15 years</td>
<td>280000 [150000-410000]</td>
</tr>
</tbody>
</table>
The ranges around the estimates in this table define the boundaries within which the actual number lie, based on the best available information.

The number of people living with H.I.V. worldwide continued to grow in 2008, reaching an estimated 33.4 million [31.1 million - 35.8 million]. The total number of people virus living with the virus in 2008 was more than 20% higher than the number in 2000, and the prevalence was roughly three fold higher than in 1990.

In 2008, an estimated 2.7 million [2.4 million-3.0 million] new H.I.V. infections occurred. It is estimated that 2 millions [1.7 million 2.4 million] deaths due to A.I.D.S.-related illnesses occurred worldwide in 2008. An estimated 430000 [240000-610000] new H.I.V. infections occurred among children under the age of 15 in 2008. Most of these new infections are believed to stem from transmission in utero, during delivery or post-partum as a result of breast feeding. The epidemic appears to have stabilized in most regions, although prevalence continues to increase in Eastern Europe and Central Asia and in other part of Asia due to high rate of new H.I.V. infections. Sub-Saharan Africa remains the most heavily affected region, accounting for 71% of all new H.I.V. infections in 2008. The resurgence of the epidemic among men who have sex with men in high-income countries is increasingly well demounted. Differences are apparent in all regions, with some national epidemics, continuing to expand even as the overall regional H.I.V. incidence stabilizes.
### Table IV: Regional H.I.V. and A.I.D.S. Statistics, 2008.

<table>
<thead>
<tr>
<th>Region</th>
<th>Adults &amp; Children living with H.I.V./A.I.D.S.</th>
<th>Adult and children newly infected with H.I.V.</th>
<th>Adults Prevalence (%)*</th>
<th>Adult &amp; Child death due to A.I.D.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-Saharan Africa</td>
<td>22.4 million (20.8 million – 24.1 million)</td>
<td>1.9 million (1.6 million – 2.2 million)</td>
<td>5.2 (4.9-5.4)</td>
<td>1.4 million (1.1 million- 1.7 million)</td>
</tr>
<tr>
<td>Middle – East and North Africa</td>
<td>310000 (250000-380000)</td>
<td>35000 (24000-46000)</td>
<td>0.2 (&lt;0.2-0.3)</td>
<td>20000 (15000-25000)</td>
</tr>
<tr>
<td>South and South-East Asia.</td>
<td>3.8 million (3.4 million -4.3 million)</td>
<td>280000 (240000-320000)</td>
<td>0.3 (0.2-0.3)</td>
<td>270000 (220000-310000)</td>
</tr>
<tr>
<td>East Asia</td>
<td>850000 (700000-1.0 million)</td>
<td>75000 (580000-880000)</td>
<td>&lt;0.1 (&lt;0.1)</td>
<td>590000 (460000-710000)</td>
</tr>
<tr>
<td>Oceania</td>
<td>59000 (51000-68000)</td>
<td>3900 (2900-5100)</td>
<td>0.3 (&lt;0.3-0.4)</td>
<td>2000 (1100-3100)</td>
</tr>
<tr>
<td>Latin America</td>
<td>2.0 million (1.8 million–2.2 million)</td>
<td>170000 (150000-200000)</td>
<td>0.6 (0.5-0.6)</td>
<td>77000 (66000-89000)</td>
</tr>
<tr>
<td>Caribbean</td>
<td>240000 (220000-260000)</td>
<td>20000 (16000-24000)</td>
<td>1.0 (0.9-1.1)</td>
<td>12000 (9300-14000)</td>
</tr>
<tr>
<td>Eastern Europe and Central Asia</td>
<td>1.5 million (1.4 million -1.7 million)</td>
<td>110000 (100000-130000)</td>
<td>0.7 (0.6-0.8)</td>
<td>87000 (72000-110000)</td>
</tr>
<tr>
<td>Western and Central Europe</td>
<td>850000 (710000-970000)</td>
<td>30000 (23000-35000)</td>
<td>0.3 (0.2-0.3)</td>
<td>13000 (10000-15000)</td>
</tr>
<tr>
<td>North America</td>
<td>1.4 million (1.2 million – 1.6 million)</td>
<td>55000 (36000-61000)</td>
<td>0.6 (0.5-0.7)</td>
<td>25000 (20000-31000)</td>
</tr>
<tr>
<td>Global Total</td>
<td>33.4 million (31.1 million - 35.8 million)</td>
<td>2.7 million (2.4 million -3.0 million)</td>
<td>0.8 (&lt;0.8 -0.8)</td>
<td>2.0 million (1.7 million -2.4 million)</td>
</tr>
</tbody>
</table>

(* Proportion of adults aged 15-19 who were living with H.I.V./A.I.D.S.)

**Source:**

[ISBN 9789291738328, NLM Classification : WC 503.41]
Globally, around 11% of H.I.V. infections are among babies who acquire the virus from their mother's; 10% result from injecting drug use; 5-10% are due to sex between men; and 5-10% occur in healthcare settings. Sex between men and women accounts for the remaining proportion around two thirds of new infections.

More than 26 million people have died of A.I.D.S. since 1981. At the end of 2008, women accounted for 50% of all adults living with H.I.V. worldwide, and for 59% in sub-Saharan Africa. Young people (under 25 years old) account for half of all new H.I.V. infections worldwide.

The number of people living with H.I.V. has risen from around 8 million in 1990 to 33.4 million today, and is stills growing.

In developing and transitional countries, approximately 9.8 million people are in immediate need of life saving A.I.D.S. drugs; of these only 2.99 million (31%) are receiving the drugs.

**India H.I.V. and A.I.D.S. Statistics**

India's population surpassed the one billion mark in 2001, around half of whom are adults in the sexually active age group; with 67.2 percent of its people living in rural areas, and 32.8 percent in urban areas. The first A.I.D.S. case in India was detected in 1986 and since then H.I.V. infection has been reported in all states and union territories.

The revised H.I.V. estimate indicates 2.47 million persons in India live with H.I.V., equivalent to approximately 0.36 percent of the adult population. Out of these, 39 percent are women and 3.8 percent are children. The revised estimates, which are based on last five years data, reflects the availability of improved data rather than a substantial decrease in actual H.I.V. prevalence in India. The revised estimate trends points at a stabilisation of the epidemic. India now moves down to third place in the list of countries for largest number of persons living with H.I.V.. This
report uses largely four key sources for Data computerised Management Information System of NACO, H.I.V. Sentinel Surveillance, National Behavioural Surveillance Survey (BSS) and the Population based study, National Family Health Survey-Round III (NFHS-III).

The transmission route is predominantly sexual (87.4 percent). In the North Eastern States/Provinces, besides injecting drug use, which is the main route of H.I.V. transmission, heterosexual route is emerging as an important mode of transmission. The other routes of transmission by order of proportion includes perinatal (4.7 percent), unsafe blood and blood products (1.7 percent), infected needles and syringes (1.8 percent) and unspecified and other routes of transmission (4.1 percent).

The H.I.V. /A.I.D.S. epidemic in India is characterized by heterogeneity; it seems to be following the Type 4 pattern, where the epidemic shifts from the most vulnerable populations (such as FSW, IDU, MSM) to bridge populations (clients of sex workers, STI patients, partners of drug users) and then to the general population. The shift usually occurs when the prevalence in the first group exceeds 5 percent, with a two-three year time-lag between shifts from one group to another.

The spread of H.I.V. within the country is as diverse as the societal and cultural patterns between its different regions, districts and metropolitan areas. However, even within the low prevalent states there are pockets of high prevalence. In view of the vast variations of the nature and intensity of the epidemic, the districts (smaller geo-political administrative units –sub provinces) in the country have been classified into four categories based on the sentinel surveillance data for the last three years. Category A denotes those districts where H.I.V. prevalence among general population is high (>1 percent among ANC clinic attendees) while category B denotes those districts where the H.I.V. prevalence among high
risk group is high (>5 percent among high risk groups). Currently, 156 districts are categorized as A, 39 as B, 296 as C and 118 as D.

The spread of H.I.V. in India has been uneven. Although much of India has a low rate of infection, certain places have been more affected than others. H.I.V. epidemics are more severe in the southern half of the country and the far north-east. The highest H.I.V. prevalence rates are found in Andhra Pradesh, Maharastra, Tamil Nadu and Karnataka in the south; and Manipur and Nagaland in the north-east.

In the Southern states, H.I.V. is primarily spread through heterosexual contact. Infections in the north-east are mainly found amongst injecting drug users (IDU’s) and sex-workers.

The National Family Health Survey, which tested more than 100000 people for H.I.V., also found prevalence to be higher in urban areas (0.35%) than in rural areas (0.25%).

In India, the actual member of people living with A.I.D.S. are significantly under represent figures. Many A.I.D.S. deaths go unreported in India, due to unprecedented levels of stigma and discrimination. In many situations a patient will die without H.I.V. having been diagnosed, and with the death attributed to an opportunistic infection, such as tuberculosis.

**Preventing H.I.V./A.I.D.S. in India**

India has among the highest number of persons living with H.I.V./A.I.D.S. in the world today, although the overall prevalence remains low. Some states experience a generalized epidemic with the virus transmitted from high-risk groups into the general population. A major challenge is to strengthen and decentralize the program to the state and district levels to enhance commitment, coverage and effectiveness.
EPIDEMIOLOGICAL FEATURES IN INDIA:

Agent factors:

1) **Agent** - H.I.V., the virus which causes A.I.D.S. is a lentivirus one of sub family of retroviruses. They have a unique enzyme, reverse-transcriptase, which copies the viral ribonucleic acid (RNA) into deoxyribonucleic acid (DNA), which eventually integrates into host cell chromosome. Hence, H.I.V. persists within cells for years and cannot be eradicated from host cells with any of the currently available anti-retroviral drugs. There are two type of H.I.V.; H.I.V.-1 and H.I.V.-2. Both have many strains.

2) **Reservoir of infection** : People harbouring H.I.V. in their body are the reservoir of infection. They may be asymptomatic healthy carriers or full blown A.I.D.S. cases. According to latest observations in developed countries, 50% of people with H.I.V. infection are likely to develop A.I.D.S. within 10 years after first becoming infected. In developing countries the interval between infection and disease is probably shorter.

3) **Source of infection**: Contaminated blood, semen, vaginal fluids are the prime source of infection. Contaminated breast milk may be source of infection for transmission from mother to child. Saliva and tears are not considered to be epidemiologically important sources of infection.

Host Factors:

i) **Age and sex**: Young people are disproportionately affected by H.I.V. and A.I.D.S.. Around half of the new H.I.V. infections are in people aged 15-24 years, the range in which most people start their sexual lives. In North America, Europe and Australia 70 percent cases are homosexuals.
or bisexual men. In Africa the picture is very different. A.I.D.S. occurs almost as frequently among females as males.

ii) **High Risk Groups:** H.I.V. prevalence in certain populations is an important factor in determining on which target populations the programme’s efforts and resources should focus. If estimated level of infection in targeted populations, such as injecting drug users is high, it is more likely that they will infect each other and also their sexual partners. So, this population will need to be focused for targeted intervention. When prevalence is high in a country, child bearing age becomes more at risk as also the population receiving blood transfusions.

a) **Presence of STD:** There is strong evidence that men and women with genital ulcer disease or urethral discharge are at increased risk of acquiring and transmitting H.I.V.. If there is data suggesting high prevalence of STD in a population, this would be an influencing factor for increased risk of H.I.V. infection in the community.

b) **Frequency of exposure:** The probability that a person has become infected with H.I.V. sexually is, in general, proportional to the frequency of unprotected sex acts and number of high risk partners with whom the person has had sexual contact in recent years.

c) **Mixing pattern of population:** The way (risk) behaviours are distributed among groups of people can be uneven. For example, injecting drug users might only share injecting equipment within their own groups but have sexual partners that are both within and outside their identified groups.

d) **Immunity:** It was found that the A.I.D.S. victim had normal B cell function, that is their anybody levels were normal or elevated. But their antibodies were of non neutralizing variety which have no demonstrable effect on the virus. However, their T-cell function was far from normal. In a healthy immune system, specialized T-cells called "helper T cells"
(CD4) assist B cells and antibodies to fight infection while their counterparts, "suppressor T cells" inhibit this activity. Healthy individuals have twice as many helper cells as suppressor cells. In A.I.D.S. patients, the ratio is reversed. One of the most striking features of the immune system of patients with A.I.D.S. is profound lymphopenia with total lymphocyte count often below 500/ c.mm.

POLITICAL AND CULTURAL FACTORS:

I) **Acceptability of certain Indigenous sexual practices**: Certain indigenous sexual practices may be culturally acceptable and these may contribute to H.I.V. transmission. For example, man having sex with man (MSM) may be a common accepted practice but contributes to H1V transmission. Also the national A.I.D.S. programme may not be able to promote certain safer sexual practices if they are not culturally acceptable.

ii) **War and civil disturbance**: These limit the regular importation of commodities, such as STD treatment drugs, condoms and H.I.V. testing kits. This is not only logistic and supply disruptions but also due to profound 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.

iii) **Limitations on Interventions**: These hinder the progress of prevention interventions such as distribution of condoms to youth or commercial sex workers (CSWs).

iv) **Social unacceptance of condoms**: This may be a determinant of risk in certain populations. Such populations are at high risk of transmission through unsafe sexual practices.

V) **Women’s status**: May limit 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. If a woman is economically dependent on her partner, it is especially difficult for her to influence him to use condoms.

vi) **National policies**: That serve 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 safe drug injection practices.

viii) **Norms and practices**: Can increase the risk of becoming infected in certain populations. For example, sharing needles to “belong” to a group of drug injectors might be a common ritual that needs to be considered before designing prevention interventions for the drug injecting community. Also, it may not be culturally acceptable to discuss homosexuality.

viii) **Culture and ethnic practices**: Such as circumcision in males and females, tattooing, and scarification may be well accepted but can also contribute to the risk of becoming infected in certain populations because of use of poorly sterilized piercing equipment.

ix) **Marginalised population**: Economically depressed populations may never be able to benefit from prevention efforts because the social system refuses to recognise them. Example of such populations are CSWs and injecting drug users.

**SOCIAL AND ECONOMIC FACTORS:**

i) **Low literacy**: May limit access to written, risk reduction information..

ii) **Urbanization**: For economic reasons many people may move to the larger cities, where they may indulge in high risk behaviours such as commercial sex and injecting drug use etc.
iii) *Imprisonment*: May restrict men’s access to women and encourage men to have sex with men.

iv) *High mobility*: Certain target population may be highly mobile and increase the geographic spread of H.I.V. transmission. For example, truck drivers may increase the spread by engaging in sex with CSWs at several truck stops.

v) *Migration and separation from families*: Industries such as fishing, trucking and mining may force people to travel to another country or region of the country to find work. The resulting separation from families and situations may drive them to seen commercial sex and casual sex.

vi) *Drug use*: Drug use may impair judgement and limit the ability to practise safer sex.

**RISK AND VULNERABILITY**

Several factors put India in danger of experiencing a rapid spread if effective prevention and control measures are not scaled up and expanded throughout the country. These risk factors include:

**Unsafe Sex and Low Condom Use**: In India, sexual transmission is responsible for 84 percent of reported A.I.D.S. cases. H.I.V.-prevalence rates are highest among sex workers and their clients, injecting drug users, and men who have sex with men (many of whom are married). When surveyed, 70 percent of commercial sex workers in India reported that their main reason for not using of condoms was because their customers objected.

**Migration and Mobility**: Migration for work for extended periods of time takes migrants away from the social environment provided by their families and community. This can place them outside the usual normative
constraints and thus more likely to engage in risky behavior. Concerted efforts are needed to address the vulnerabilities of the large migrant population.

**Injecting Drug Use (IDU):** Studies indicate that many drug users are switching from inhaling to injecting drugs. This phenomenon is more localized in the Northeastern states of India, and injecting drug users show sharp increases in H.I.V. prevalence. Forty-one percent of IDUs in a national survey reported injecting with used needles or syringes. Of those who cleaned their needles and syringes, only three percent used an effective method such as alcohol, bleach, or boiling water. Appropriate strategies are also needed to address the double impact of drug use and unsafe sexual practices.

**Low Status of Women:** Infection rates have been on the increase among women and infants in some states. As in many other countries, unequal power relations and the low status of women, as expressed by limited access to human, financial, and economic assets, weakens the ability of women to protect themselves and negotiate safer sex, thereby increasing vulnerability.

**Widespread Stigma:** Stigma towards people infected with H.I.V./A.I.D.S. is widespread. The misconception that A.I.D.S. only affects men who have sex with men, sex workers, and injecting drug users strengthens and perpetuates existing discrimination. The most affected groups, often marginalized, have little or no access to legal protection of their basic human rights. Addressing the issue of human rights violations and creating an enabling environment that increases knowledge and encourages behavior change are thus extremely important to the fight against A.I.D.S.
PERSPECTIVES OF THE INDIVIDUALS

The perspective’s of an individual suffering from H.I.V./A.I.D.S. can be divided into:

1. Somatic (i.e., Physical) perspectives
2. Psychological perspectives
3. Social perspectives, and
4. Spiritual perspectives

1. Somatic (i.e., Physical) perspectives:

A person who is H.I.V. positive may not have any symptoms at all. He may look and feel quite healthy. It is only having his blood tested for H.I.V. that he comes to known that he is H.I.V. positive. This state may last from many years (5-10 years and evenmore) and the person may continue to do his routine work and continue with his life as usual. However, as the immune system becomes weaker, he begins to develop signs and symptoms the disease. There may be episodes of fever on and off, White, curdy plaques may develop in the mouth and on the tongue. He begins to feel weak and tired. There can be pain in the muscles. He develops opportunities infections and there may be several infections going on at the same time. He begins to lose weight. He becomes extremely thin, sick, emaciated and ultimately succumbs to the opportunistic diseases.

A.I.D.S. Related Physical Symptoms:

The concept of H.I.V. disease, in those patients with symptomatic disease, is now firmly established. Along with this, patients and physicians are increasingly focused on the medical management of patients in early forms of the disease in the hope that this will delay the progression to the more life threatening manifestations.

The clinical features of H.I.V. infection are a consequence of the immune deficit. At the time of acute infection there may be an acute
seroconversion illness. This can be similar to glandular fever with fever, malaise, muscle aches, joint pains, swollen lymph-glands, and sore throat (Lee 1991). The clinical manifestations of symptomatic stage of A.I.D.S. is characterized by enlarged lymph gland, fatigue, breathlessness, dry cough, fever, loss of weight, diarrhoea, skin ailment and night sweats. It is useful to identify patients with constitutional disease because these patients may progress rapidly to A.I.D.S..

Data from an ongoing cohort study in Uganda, for example, suggest that H.I.V.-infected individuals die of malaria, pneumonia, diarrhoea and other causes at much higher rates than H.I.V. uninfected individuals, without necessarily ever meeting the WHO clinical case definition of A.I.D.S. (Wawer, 1993; personal communication). No single pattern of symptoms fits all cases of A.I.D.S.. The principal findings are progressive, unexplained weight loss, persistent fever (sometimes accompanied by night sweats), swollen lymph nodes, herpes zoster. When symptoms first appear they may remain unchanged for months or they may be quickly followed by one or more opportunistic infections, that is infections that occur when immunity is compromised. These infections include an unusual form of pneumonia caused by Pneumocystis Carinii, fungal infections, tuberculosis, and various forms of herpes. Although treatment may sometimes fend off these infections, the typical course is for one after another overwhelming infection to occur until the victim finally succumbs because the depressed condition of the immune system never returns to normal. At present, it appears that A.I.D.S. is almost invariably fatal within a matter of two or three years.
**Symptomatic H.I.V. Infection**

Various systemic manifestations in patients with H.I.V. include weight loss (more than 10% of body weight), fever (more than one month duration), asthenia, diarrhoea, cough, pruritis, dysphagia, headache, dyspnea, amenorrhea (females). The various common manifestations in different organ systems are listed below:

**Cutaneous and Oral manifestation of A.I.D.S.**

Infections : Herpes Zoster and Simplex
Fungal infection (candidiasis)
Cryptococcosis
Histoplasmosis
Molluscum Contagiosum
Folliculits
Pyomyosits
Hairy leukoplakia
Neoplastic
Kaposis Sarcoma
Lymphoma
Basal cell carcinoma
Others
Pruritis papular dermatitis
Seborrhoeic dermatitis
Drug eruptions
Vasculitis Gingivitis
Gastrointestinal Manifestation

Persistent Diarrhoea  Cryptosporidiosis
                      Isospora
                      Shigella
                      Salmonella
                      E. Histolytica
                      Giardia, Microspora

Colitis  Cytomegalovirus
           Kaposis sarcoma

Dysphagia  Oral & oesophageal candidiasis
           CMV oesophagitis
           Oral hairy leukoplakia
           Gingivitis/Ulcer

Perianal discomfort  Herpes viral proctitis
                    Herpes Viral Ulceration

Respiratory Manifestations of A.I.D.S.

Persistent cough, dyspnoea  Mycobacterium tuberculosis
Cyanosis tachypnoea  Bacterial Penumonia
                      Streptococcus, H. Influenza
                      Atypical mycobacterium
                      Cytomegalo virus
                      Pneumocystitis carinii
                      Legionella, candida
                      Histoplasma
                      Lymphoid interstitial pneumonitis
                      Herpes simplex virus
Haemoptysis pleural  Mycobacterium tuberculosis
Effusion  Kaposis sarcoma

**Neurological Manifestations of A.I.D.S.**

Headache, lethargy  H.I.V. Encephalopathy
Dementia, ataxia, altered  Cryptococcal meningitis
Personality, convulsions,  Lymphoma
Incontinence  Herpesvirus

A.I.D.S. dementia complex
Meningism  Cryptococcal meningitis

Tubercular meningitis
Bacterial meningitis
Visual impairment  CMV retinitis

(Eye changes)  Toxoplasmosis

Keratoconjunctivitis
Microsporidia
Focal sizers, hemiplegia &  Abscess due to
Other focal  toxoplasma cryptococcus
Neurological deficits  Mycobacteria, lymphoma
Peripheral neuropathy  H.I.V. vasculitis
Lymphoma

Various haematological, renal, cardiac, endocrinal, reproductive and other manifestations have also been reported and must be kept in mind.
WHO CLINICAL CASE DEFINITION

A.I.D.S. in an adult is defined by the existence of at least two of the major signs associated with at least one minor sign, in the absence of known causes of immunosuppression such as cancer or severe malnutrition or other recognized etiologies.

**Major signs:**

a) Weight loss for >1 month  
b) Chronic diarrhoea for >1 month  
c) Prolonged fever for >1 month

**Minor signs:**

a) Persistent cough for > 1 month  
b) Generalized pruritic dermatitis.  
c) Recurrent herpes zoster  
d) Orpharyneal candidiasis  
e) Chronic progressive and disseminated herpes simplex infection  
f) Generalized lymphadenopathy

The presence of generalized Kaposis sarcoma or cryptococcal meningitis are sufficient by themselves for the diagnosis of A.I.D.S..

**CHILDREN**

Paediatric A.I.D.S. is suspected in an infant or child presenting with at least two major signs associated with at least two minor signs, in the absence of known case of immunosuppression.

**Major Signs:**

a) Weight loss or abnormally slow growth (failure to thrive)  
b) Chronic diarrhoea for >1 month  
c) Prolonged fever for > 1 month
Minor Signs:

a) Generalized lymphadenopathy
b) Oropharyngeal candidiasis
c) Repeated common infections (Otitis, pharyngitis and so forth)
d) Persistent cough for > 1 month
e) Generalized dermatitis
f) Confirmed maternal H.I.V. infection.

CLINICAL CASE DEFINITION FOR A.I.D.S. (NACO, INDIA)

A.I.D.S. in an adult is defined as an individual who has been identified as meeting the criteria as explained in A and B below

A. Positive test for H.I.V. infection by two tests based on preferably two different antigens.

B. Having one of the following clinical criteria.
   • Weight loss of 10% body weight or cachexia, not known to be due to a condition unrelated to H.I.V. infection,
   • Chronic diarrhoea of more than one month duration, intermittent or constant
   • Disseminated, miliary or extra pulmonary tuberculosis or bilateral pulmonary tuberculosis
   • Neurological impairment restricting daily activities, not known to be due to a condition unrelated to H.I.V. (eg. Trauma).
   • Candidiasis of the oesophagus diagnosable as dysphagia (odynophagia) and oral candidiasis.
   • Kaposi sarcoma.
OPPORTUNISTIC INFECTIONS PROFILE

A person infected with H.I.V. develops into a case of full blown A.I.D.S. by the appearance of a variety of infections, labelled as opportunistic infections and malignancies. Common opportunistic infections seen in America and Europe are Penumocystis carinii pneumonia (PCP). Cryptococcal meningitis, cytomegalovirus (CMV) and Toxoplasmosis. But in developing countries of Africa, South and Southeast-Asia. Mycobacterium tuberculosis ranks as the most common infection seen in the reported A.I.D.S. cases. About 64% of the A.I.D.S. cases were found to be suffering from extensive pulmonary tuberculosis. Out of these 42% had Pul. T.B., 8% had extra-pulmonary tuberculosis and 12% had both Pul. & extra pulmonary tuberculosis. Some of these cases were also suffering from military tuberculosis. Disseminated disease and lymphadenitis were the most common forms of extrapulmonary tuberculosis. Incidentally, atypical mycobacteria (mycobacterium avium intracellulare), which is commonly seen in A.I.D.S. cases in the Western hemisphere has not been seen in a single case of A.I.D.S. in India. The fact that persons coinfected with H.I.V. and TB are ten times more likely to develop active disease may cause an even further increase in the number of tuberculosis and H.I.V. coinfected cases. Keeping this in view, the case definition of A.I.D.S. in India has been modified to include extensive bilateral pulmonary tuberculosis for the diagnosis of A.I.D.S..

Oral and oesophageal candidiasis is the second most common opportunistic infection reported from India accounting from 58% of cases. This is followed by cryptosporidial diarrhoea (35%), Herpes zoster (11.8%), Toxoplasmosis (7.4%), Bacterial infection (7.6%) PCP (4%), Cryptococcal meningitis (3%) and Kaposi Sarcoma (0.5%). PCP is being
increasingly seen in our country with a high index of clinical suspicion and better diagnostic techniques. Kaposi Sarcoma is not seen frequently though it is being specifically looked for. Certain infections as Herpes simplex, coccidiomycosis, progressive generalized lymphadenopathy (PGL), lympho-interstitial, pneumonia (LIP), oral hairy leukoplakia, A.I.D.S. demential complex and non- Hodgkis lymphoma are also reported. Certain newer infections like Penecillium marffenei are being reported quite frequently from north eastern part of our country and further studies are in progress.

It is important to note that certain infections like Histoplasmosis, Blastomycosis, Mycobacterium Avium intra cellulare have not been reported from our country so far.

Most of the opportunistic infections broadly correlate with CD4 lymphoctye count in majority of the cases, for example, Tuberculosis tends to develop when CD4 count has just started declining and in between 500-200/c.mm. Candida albicans also appears at around to same time and may be the first indication of immune deficiency. PCP occurs when CD4 count falls below 200/c.mm and CMV & Cryptococcal infections occur when CD4 count has fallen below 150/cmm.

As regards the presenting sign and symptoms of A.I.D.S. cases, fever is seen in 88% weight loss in 89% chronic diarrhea in 86%, cough in 68% asthenia in 72% and lymphadenopathy in 28%. The overall frequency of presenting various signs and symptoms has been more or less similar over the past few years.
<table>
<thead>
<tr>
<th>Stage of Disease</th>
<th>CD4 cell count</th>
<th>Prevalent opportunistic infection/diseases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial infection (Acute seroconversion syndrome)</td>
<td>Much above 500 cells/µl</td>
<td>Rarely reported and self limiting variety of pneumocystis carinii, esophageal candidiasis.</td>
</tr>
<tr>
<td>Early H.I.V. disease</td>
<td>&gt;500 cells/ µl</td>
<td>Occasionally reported: Pulmonary tuberculosis, MAC, histoplasmosis, Herpes simplex labialis, EB virus (hairstly cell leukoplakia)</td>
</tr>
<tr>
<td>Intermediate stage</td>
<td>200-500 cells/µl</td>
<td>Strept. Pneumonia, H. Influenzae, Moraxella, Catarrhalis, Mycoplasma Pneumonae</td>
</tr>
<tr>
<td>Late Stage</td>
<td>50-200 cells/µl</td>
<td>Pneumocystis carinii, Toxoplasma gondii, Cryptosporidia, Isospora, Oesophageal candidiasis</td>
</tr>
<tr>
<td>Advanced stage</td>
<td>&lt;50 cells/µl</td>
<td>MAC disease, Cryptococcal meningitis, invasive forms of aspergillosis, histoplasmosis, coccidiodomycosis, bartonellosis, Penicillium marneffei infection, CMV retinitis, PML</td>
</tr>
</tbody>
</table>

Infection with H.I.V. may indirectly lead to neuropsychiatric disturbances due to CNS opportunistic infections, neoplasms and metabolic disorders. These infections are unusual in the absence of H.I.V. and tend to occur late in the course of illness, when immune function is waning, CD4+ cell counts fall to very low levels and viral load is rising. With the widespread use of highly active antiretroviral therapy (HAART), the incidence of opportunistic infections and other complications of H.I.V. infection have fallen dramatically. The identification of the underlying cause of neuropsychiatric disturbance in an individual ‘infected with H.I.V.’ is very important because some of these conditions are responsive to treatment, and delayed diagnosis and treatment may result in permanent CNS damage.

The most common CNS opportunistic infections are cerebral toxoplasmosis, cryptococcal meningitis and progressive multifocal.
leukóencephalopathy. Less common CNS opportunistic infections include meningitis caused by Mycobacterium tuberculosis and other fungal CNS infections, such as candidiasis, coccidioidomycosis, aspergillosis and histoplasmosis. Opportunistic viral infections involving the CNS include cytomegalovirus, herpes simplex virus and varicella-zoster virus. Acute mental status changes can also occur as a result of metabolic disturbances, such as hypoxia, fever, dehydration, electrolyte disturbances, uremia and hepatic encephalopathy. Central nervous system involvement also occurs as a result of primary CNS lymphoma, which tends to occur late in the course of H.I.V. infection. Central nervous system manifestations of metastatic systemic lymphoma and Kaposi’s sarcoma have been reported in patients with A.I.D.S., but are uncommon. Finally, many antibacterial, antifungal, antineoplastic and antiviral medications, in addition to the antiretroviral therapies, have CNS side effects. An awareness of the types of pharmacological treatments used and their potential side effects is important in the evaluation of psychiatric symptoms in patients who are H.I.V. positive.

**II. Psychological Perspectives of H.I.V./A.I.D.S.:**

Patients response to H.I.V. disease in relation to psychological perspectives are variable. Responses are likely to be intense and changeable. Each of these feelings or reactions is part of a normal response to a situation of great stress & anxiety.

H.I.V. infected individuals and A.I.D.S. patients experience psychological sequelae at all stages in their disease process. This disease complex, perhaps more so than any other in recent history, has highlighted the intricacy of the relationship between the physical &
psychological aspects of health and disease. In particular, it has dramatized the tension experienced by individuals throughout the course of the infection, and their need to adapt to the changing personal and familial relationships and the challenge of their health circumstances.

There are a number of common responses to H.I.V./A.I.D.S. disease. A person might move from one response to the next in a progression leading finally to acceptance of their situation, or more commonly their feelings will keep changing. Some days they might feel rejected and lonely and other’s hopeful and energetic, one day depressed, another day angry. Availability of support, the course the patient’s life has taken thus far, and how the patient feels about himself or herself are important factors.

Crisis points, such as diagnosis, development of new opportunistic infections, change in physical ability or appearance, rejection by others, Denial, loss of job, shock, self blame, fear, isolation, loss of self image & relationship, loss of future & certainty and so on, are likely to trigger intense emotional responses. Occasionally, patients will experience diagnosis as a relief, either because they now have an explanation for their symptoms or because they perceive their diagnosis as a way out of a troubled life.

**Anxiety** : Anxiety about illness progression can ruin patients lives. This may be characterized by obsessive compulsive behaviour, worried, easily rattled, tense, sleep disturbances , emotionally upset, easily angered, high strung, easily annoyed behaviour of such as constantly looking for lesions and other physical changes or requesting overly frequent monitoring of T-cells. Patients may fear that minor illnesses are or will turn into life threatening infections. Sleep disturbances are common.
Anxiety is a feeling of nervousness, fear or dread of the unknown. It manifests in several symptoms; physical and mental. Some symptoms are lack of appetite, sweating, feeling faint, insomnia, feeling very worried, a feeling of being out of control, difficulty in concentration, feeling very irritable or confused.

And also there is anxiety for himself, his future and of the dependents. He/She is anxious about his health and about the response of society.

**Stress**: Stress about illness progression & social stigma associated with H.I.V./A.I.D.S. can rule patients lives. This may be characterized by feelings a lot of pressure, unable to take time off and relax, constantly on the go, feeling hectic, experiencing great strain, unhappy with own performance and attitude, experiencing lots of demands etc. etc.

**Depression**: If some one finds out they have H.I.V. or A.I.D.S., they may feel there is no good reason for living. They may feel unhappy, disagreeable, pessimistic, in poor spirits, disappointed, useless, hopeless, worthless and want to stay at home, neglecting all activities of daily living. Due to their depressed mood state they may not be in a position to socialize and maintain basic requirements of interpersonal relationships with others.

Depression is a feeling of sadness and hopelessness. This may be due to loss of ability in usual activities or loss of physical appearance. These may manifest due to lack of energy, poor concentration, sleep disorders, isolating oneself and irritability. Care needs to be taken to prevent the person from harming himself/herself (suicidal feelings) and others.
Different people belonging to different cultures differ in their ability to cope with anxiety and depression. Usually, in the Indian context, the elderly and religious provide such support to their own. H.I.V. being a social problem, cultural differences are notable to the extent of communities being unsupportive in reaching out to the affected person and family. Thus families are often left to tend to themselves.

People need to express their thoughts and feelings to help them to overcome anxiety and depression. Gently encourage them to go through the stages of grief by encouraging them to talk and then listen to them. It helps to talk to someone who has been through the coping process previously. The contact with peers can be a great support and inspiration. Encourage sick people and family members to learn how to relax. This includes both physical and mental relaxing activities that are extremely helpful.

**Regression** : Patients living with H.I.V./A.I.D.S. may feel confused, unorganized, unable to concentrate, experiencing difficulty coping, acting impulsively, lower ratio of accuracy to speed, lower accuracy in spatial judgement, poorer two-hand coordination, higher score on neurotic symptom checklist, lower speed of Gestalt closure etc. These are the some symptoms ; which show H.I.V./A.I.D.S. Patient’s regression level.

**Fatigue** : The symptom of Fatigue include feeling of surround exhausted, no energy, sluggish, tiredness, need rest, weary, below par in performance etc. features of the person. This is characterized by extreme tiredness, weakness, feebleness, latharginess of the H.I.V./A.I.D.S. patients.

**Guilt** : Acute anguish is an uncomfortable emotion that can be transitory or long term. Guilt may surround mode of infection, recrimination about
care and response, and negative feelings about level of commitment. Patient living H.I.V./A.I.D.S. have regretful, concerned about own misdeeds, experiencing difficulties in sleeping, unkind, dissatisfied with self and Guilt can often interact when someone watches their loved one suffer and a side of them actively anticipates the end of such suffering. When it comes it may be hard to accommodate.

**Extraversion** : When a person has been found sociable, outgoing, adventuresome, talkative, enthusiastic, more confident, less authority submission, less tendency to agree with any other person arguments. These symptoms represent his/her extraversion level at that moment.

**Control** : Throughout the course of H.I.V. disease, patients find themselves losing control. This can be control over one’s body, disease progression, the ability to act independently, mental status changes, living circumstances, and so on. Diminished control is a major source of frustration and anger for patients. Often, they will lash out at whoever is helping them, because help is another reminder of loss of control. It is useful to maximize patients sense of control whenever possible. Giving patients choices in their care, involving them in decision making, and respecting their wishes are important means of maximizing patient control.

**Loss** : People with H.I.V. suffer a multitude of losses. These include some of the previously mentioned losses, such as loss of control, identity, role, social network, physical and mental ability, and a future. For some people, losses may include loss of friends and family to this disease, changes in body image, and the psychological or physical ability to be sexual. Anticipatory grief over impending losses and death is common.
**Arousal**: When a person has been found alert, keyed up, excited, stimulated, keen and sharp senses to particular situation. These symptoms represent his/her arousal level at that moment.

**Shock**: Feelings of impending catastrophe. There is no time, it cannot be happening. The patient may collaps.

No matter how much you counsel it is shock to learn that they have H.I.V./A.I.D.S.. They may feel confused and not know-what to do?

**Grief**: There may be intense grief at having brought so much trauma into a family. Grief at loss of life; grief at having H.I.V. positive children.

All of these emotion can occur one at a time or all together. In addition, there may be so many other emotions. There may be a lack of self-esteem, feeling of unworthiness, a desire to attempt suicide. These feelings may worsen as the disease progresses, because of associated deterioration in physical appearance.

**Denial**: At first, some people cannot believe that they have H.I.V./A.I.D.S.. They react saying:

“The doctor must be wrong”,

“It can’t be true. There must be some mistake”.

Many of them will get the blood tested at different centres in the hope of getting H.I.V. negative report.

**Anger**: Some people get very angry when they find out they have H.I.V. or A.I.D.S.. They blame themselves or the person they think gave them the H.I.V. infection. Some may even blame God & there may be anger at the powerlessness and hopelessness that accompanies an incurable illness and at the negative reactions of the family, friends & society. The patients as results, may become abusive, aggressive and non-cooperative.
Revengeful: Some people want to take revenge when they find out that they have H.I.V./A.I.D.S.. They want to infect other people.

Bargaining: Some people try to bargain. They think “God will cure me if I stop having sex”. “I will do a pooja, God will cure me”.

Loneliness: People with H.I.V. often feel lonely.

Fear: People with H.I.V. fear losing their jobs, other people knowing their H.I.V. status, discrimination, death etc.

Self-consciousness: Some people with H.I.V.-A.I.D.S. think everyone is looking at them or talking about them. This makes them want to hide. Sometimes they feel rejected by others or they reject themselves. They are often feeling guilty.

Acceptance: After sometime most people with H.I.V./A.I.D.S., accept their situation. This is helpful. They often feel more serene. They are able to plan the best way to lead their life or plan for future.

Hope: Being hopeful lifts once spirits and gives them strength to face each situation. Hope can help a person to fight H.I.V. and A.I.D.S. and live longer. Hope to live long time, of cure being found, of treatment being made available etc.

III. SOCIAL PERSPECTIVES OF H.I.V.

H.I.V./A.I.D.S. has immense stigma attached. There is great fear of contracting H.I.V. and therefore people isolate the H.I.V. positives. There are many instances of the entire families of H.I.V. positive being isolated by the villages, people been thrown out of the jobs, asked to vacate the houses etc. Spouse’s and family have deserted H.I.V. positive women even when she has contracted the infection from her husband. Health care providers have hurriedly discharged patients on one pretext or the other as
soon as they found out the H.I.V. status. Widespread H.I.V. testing of patients is being done prior to surgery, for the protection of the health care provider, which is unnecessary.

As the most common mode of spread is sexual intercourse with an infected person, all H.I.V. positives are looked at suspiciously. Each and every H.I.V. infected person it thought to have multiple sex partners and considered to be immoral. It is especially more distressing for women who has contracted the infection from the faithful relationship with her husband. There are few people who have contracted the H.I.V. infection through transfusion of infected blood, but nobody believes them and are looked down upon as a person with loose character.

H.I.V. positive children are not given admissions in school, isolated in the class. Children of H.I.V. infected parents are not cared for by other family members after the death of parents.

H.I.V. positives are being exploited by many dubious people proclaiming to have cure for H.I.V.. People have incurred huge debts to buy antiretrorival drugs and other drugs supposedly effective in curing H.I.V..

Here, the issue of confidentiality becomes very important. At the present time as there is much stigmatization and rejection associated with the disease and if the knowledge that a person is H.I.V. positive becomes public, it could have disastrous consequences. Hence, it is important that confidentiality is maintained. The person living with A.I.D.S. (PLWA) also has considerable tension about informing this to his or her spouse and rest of the family. These social concerns have to be taken care of within families. There is conflict between the wish to confide and to receive
emotional and practical support and the wish to protect others form distress, particularly children or frail parents. A conspiracy of silence is a source of tension. It blocks discussion of the future and preparation for parting. If it is not resolved, the bereaved often experiences much regret. There should, however, be respect for the right of privacy. Issues related to life insurance, assets, will etc., may have to be taken care of and will require the help and support of the care giver.

**Adjustment and mental health**

H.I.V./A.I.D.S. is a chronic and life-threatening illness. Adjusting to the illness is a lifelong process. It seems unnecessarily pathologizing to see news of H.I.V./A.I.D.S. as inevitably producing this diagnosis, but something like an adjustment disorder must be anticipated almost always. After testing seropositive, individuals must address a number of issues common to those suffering from a chronic, life-threatening illness. How shall one live the rest? of a life? How shall one pay staggering medical expenses? What shall one do in the face of the likelihood of death. Moreover, the discovery of infection precipitates many of the emotional dilemmas described for such illnesses. Shock, anger, denial, guilt and anxiety are just some of the emotions one must expect. However there are also a number of questions specific to this particular illness: Shall one disclose one’s serostatus to others? How shall one face the immediate and practical worries of stigmatization, e.g. the possible abandonment of social circle, the possible loss of work? Consequently, although the high rates of attempted suicide upon discovery of seroconversion -- predicted earlier in the history of the disease - have not developed, adjustment to H.I.V./A.I.D.S. is never easy. Persons who are young, undereducated,
unemployed, make heavy use of avoidance coping, or perceive themselves as having a low level of social support are particularly vulnerable.

The most prevalent other clinical conditions associated with H.I.V. infection from a mental health perspective are anxiety syndromes, mood disorders, psychotic disorders and substance use disorders. Studies show that each of these enters the H.I.V./A.I.D.S. picture in different ways.

IV. SPIRITUAL PERSPECTIVES

‘Spiritual’ relates to values, and to a person’s reach for meaning and purpose in life. It also refers to experiences and relationships, which transcend sensory phenomena.

The spiritual dimension holds together the physical, psychological and social dimensions. For those nearing the end of life, there is commonly an increase or renewed need for:

- Affirmation and acceptance
- Forgiveness and reconciliation, and
- The discovery of meaning and direction.

Most patients dying from A.I.D.S. are in need of spiritual help and we seeking answers. Often, they think about their suffering and pain, why they were chosen to acquire this affiliation and so on. Is there a God? Why is god allowing me to suffer like this?

What is the meaning of life?
What will death be like?
Is there life after death? etc.

The majority of dying patients would like to discuss the spiritual aspects of life and death, At least with a team member, if not with the doctor.
Prevention of Transmission

People who find out they have H.I.V. may feel powerless against the virus. But they are not powerless to prevent its spread. The pandemic’s growth depends on an infected person who transmits the infection and an uninfected person who receives it. To slow the epidemic, people who are infected must be educated to avoid transmitting it. Thus, on diagnosis and during subsequent visits, prevention information needs to be provided and reinforced. As part of this reinforcement, a health care provider might emphasize that despite their infection, patients still have some control over where the epidemic goes in their community and a responsibility not to become another link in the chain of transmission. This will need to be balanced against the stigma of being identified as being H.I.V.-infected, e.g. through condom use.

The ABC Prevention Approach: Uganda has significantly reduced the transmission of H.I.V. by using the ABC approach: Abstinence, Be faithful, use Condoms. This harm-reduction approach provides each person with several strategies for preventing H.I.V. transmission to themselves and others. Abstinence from intercourse is likely to be most useful with adolescents, who may be encouraged to delay intercourse, and in situations where families or partners are separated by work or travel. Being faithful (staying with one sexual partner) will prevent H.I.V. transmission if both partners have the same H.I.V. status (both negative or both positive with the same strain of H.I.V.), which can be known only through testing. If only one partner is faithful, the activities of the unfaithful partner may put the faithful one at risk. Where there is a high prevalence of H.I.V. in the population, even one or two additional partners may make infection likely.
Using condoms consistently and properly prevents H.I.V. transmission and significantly reduces transmission of other sexually transmitted infections (STIs) such as syphilis, gonorrhea, and Chlamydia. Because having an STI greatly increases the risk of contracting H.I.V. (via infected membranes and sores), both condom use and treatment of any STIs are important.

It must be emphasized that people must be given all relevant information and allowed to make their own choices as to which prevention method is most appropriate. What works for one person will not always work for another, and what works at one point in life may not work for the same person later on. Regardless of their own points of view, health workers are ethically bound not to withhold any information from patients that might prevent transmission of H.I.V. or other STIs. The benefits and drawbacks of each approach should be explained. We can give our patients the tools in the form of information, and it is up to them to use the most appropriate ones at the most appropriate times.

**Situational Approaches to Prevention**: Sometimes health care providers assume that patients have more individual power to practice prevention than they actually have. For example, someone may have the power to practice prevention in one situation but not in others. One useful approach is to ask patients to list the situations in which they can successfully use any of the ABC approaches and the situations in which they cannot. Issues of power and stigma will often be the determinants of prevention, with the weakest person in the situation having the least power. Ask patients to list “risk situations” rather than “risk behaviors.” Then ask how they might avoid getting into such a risk situation if at all possible, or how they might
reduce the risk if the situation is unavoidable. Explore ways in which patients have some power in the situation to control or modify risk.

**Knowledge, Attitudes, Beliefs, and H.I.V. Prevention**: A common myth among many health professionals is that information about H.I.V./A.I.D.S. is an effective way to prevent H.I.V. transmission. It is true that adequate information is a necessary condition to prevent transmission, but it is often not a sufficient condition. In other words, there needs to be basic information, but by itself information will not always overcome barriers to actually doing preventive activities. The best predictor of whether people will carry out preventive activities is their intention to do so. People will have good intentions if they see some value (for themselves, for their family, and for their community) in preventing the spread of H.I.V., either to themselves or from themselves.

Even with the best intentions, people may come up against barriers to prevention of H.I.V. transmission. These barriers may be situational (low power in a situation, the influence of alcohol or other drugs, potential violence, no condoms, or a need for food, shelter, or money). They may also be emotional (when people are highly attracted to their partner, when they want children, when they are sexually aroused); often, despite what people know, their emotions override their intentions. It is useful to have people describe the situations in which emotions may override their knowledge and judgment, and to identify the “point of no return” beyond which unsafe sex is likely to occur. A helpful concept to introduce is “anticipated regret.” Here you can ask patients to describe how they would feel after putting themselves or others at risk, and how significant others in their family or community might feel about their actions. How might
infected patients feel upon learning that they have infected their partner, when that partner gets a positive H.I.V. test? Can they imagine explaining infection to their partner? Seeing risk situations by envisaging one’s regrets afterward can help to balance the emotional pressures at critical times.

**Knowledge and Myths**

Increasing knowledge about H.I.V. transmission and prevention (or treatment) cannot occur where the mythology about H.I.V./A.I.D.S. is actively contradictory. Myths will often constitute “folk epidemiology” — a description of beliefs and explanations about H.I.V.. These will underlie all aspects of H.I.V./A.I.D.S. — the stigma, H.I.V. transmission beliefs, H.I.V. treatment beliefs, and the way people cope with H.I.V.. Cultures will differ on these myths and beliefs, but it is critical that health workers be able to list the most prevalent myths. Attempting to deal with H.I.V./A.I.D.S. while ignoring the folk epidemiology will almost always be a failure. Health care personnel need to be able to credibly refute myths that are in direct contradiction to appropriate psychosocial approaches to H.I.V./A.I.D.S., or that stigmatize such approaches, while reinforcing those that are supportive of optimal psychosocial care and prevention. Myths that have been reported include:

- That people who look healthy cannot have H.I.V.
- That there are medical and/or folk cures for H.I.V.
- That religious and cultural rituals can remove H.I.V./A.I.D.S..
- That being a member of certain religions protects against H.I.V./A.I.D.S.
- That H.I.V./A.I.D.S. is a punishment
• That intact condoms will allow transmission of H.I.V.
• That H.I.V. cannot be transmitted from females to males
• That having only one partner will prevent H.I.V. (one partner may put someone at risk, depending on what that one partner has done)
• That H.I.V. infection will not harm a person, and only A.I.D.S. is dangerous
• That having sex with a virgin will cure H.I.V./A.I.D.S.
• That H.I.V. does not cause A.I.D.S.

All of these myths have the potential to hinder H.I.V. prevention or treatment, and health care providers must be prepared to counter them effectively.

**Effective drug treatments:**

The first drug licensed for fighting H.I.V. was zidovudine, better known as AZT, which gained approval in 1987. Multiple studies found that AZT reduced opportunistic infections and increased CD4+ cell counts and survival among people with A.I.D.S.. However, the positive effects of AZT did not last very long, and a major investigation known as the Concorde Study found that people who started taking the drug at an early stage of H.I.V. infection, before the onset of symptoms, received little or no long-term benefit (though neither did they fare any worse).

Since the mid-1990s, other types of anti-H.I.V. drugs have also been available, including protease inhibitors, which were designed specifically to target H.I.V. proteins. It has been found that when different drugs are taken together, they bring much longer-lasting benefits than AZT alone.

Numerous large-scale, controlled studies have consistently shown that the right combination of drugs can dramatically reduce incidence of A.I.D.S. and death. One drug is better than none, and two is better than one, but a combination of three drugs (from two different classes) is much
better still. Virologists explain that this is because H.I.V. finds it a lot harder to evolve resistance to several drugs at the same time. Modern three-drug combinations reduce the risk of A.I.D.S. and death by over 80%.

In most people, the drugs cause a sharp fall in viral load. However, some patients do not experience such an effect, and these people are far more likely to develop, A.I.D.S. or to die. This fact in itself very strongly suggests that H.I.V. causes A.I.D.S..

A large number of relevant studies and researches on physical, psychological and psychiatric disturbances in H.I.V. positive subjects have been published form the beginning of the epidemic to the present time. Some of studies and findings are given below:

**Peter A. Vanable; Michael P. Carey; Donald C. Blair and Rae A. Littlewood (2006),** examined the relationship among stigma related experiences and depression, medication adherence, serostatus disclosure, and sexual risk among 221 H.I.V.-positive men and women. In bivariate analyses that controlled for background characteristics, stigma was associated with depressive symptoms, receiving recent psychiatric care, the greater H.I.V.-related symptoms. Stigma was also associated with poorer adherence and more frequent serostatus disclosure to people other than sexual partners, but showed no association to sexual risk behaviour. In a multivariate analysis that controlled for all correlates, depression, poor adherence, and serostatus disclosure remained as independent correlates of stigma related experiences. Findings confirm that stigma is associated with psychological adjustment and adherence difficulties and is experienced more commonly among people who disclose their H.I.V. status to a broad range of social contacts. Stigma should be addressed in stress management, health promotion, and medication adherence interventions for H.I.V.-positive people.
Lisanne Brown; Kate Macintyre; Lea Trujillo (2003) reviewed 22 studies that test a variety of interventions to decrease A.I.D.S. stigma in developed and developing countries. They assessed published studies that met stringent evaluation criteria in order to draw lessons for future development of interventions to combat stigma. The target group, setting, type of intervention, measures, and scale of these studies varied tremendously. The majority (14) of the studies aimed to increase tolerance of persons living with H.I.V./A.I.D.S. (PLHA) among the general population. The remaining studies tested interventions to increase willingness to treat PLHA among health care providers or improve coping strategies for dealing with A.I.D.S. stigma among PLHA or at risk groups. Results suggest some stigma reduction interventions appear to work, at least on a small scale and in the short term, but many gaps remain especially in relation to scale and duration of impact and in terms of gendered impact of stigma reduction interventions.

Becky L. Genberg; Surinda Kawichai; Alfred Chingona; et al. (2008) noticed that H.I.V./A.I.D.S. related stigma and discrimination are barriers to H.I.V. prevention effectiveness, voluntary counselling and testing uptake, and accessing care in many international settings. Most published stigma scales are not comprehensive and have been primarily tested in developed countries. Becky L. Genberg' et al. sought to draw an existing literature to develop a scale with strong psychometric properties that could easily be used in developing countries. From 82 compiled questions, Becky L. Genberg; et al. tested a 50-item scale which yielded 3 dimensions with 22 items in pilot testing in rural northern Thailand (n=200) and urban and peri-urban Zimbabwe (n=221). The three factors (Shame, blame and social isolation; perceived discrimination; equity) had high internal consistency reliability and good divergent validity in both
research settings. Systematic and significant differences in stigmatizing attitudes were found across countries, with few differences by age or sex noted within sites. This short, comprehensive and standardized measure can be easily incorporated into questionnaires in international research settings.

**Sibnath SD (2002)** Collected data from 32 H.I.V. and 12 A.I.D.S. patients by an in-depth interview guide and they were selected following the incidental sampling method & revealed that guilt feelings, anxiety and fear (the fear that other will know about their H.I.V. status and the fear generated by the anticipation of death) were more prominent among most of the patients followed by hopelessness, depression and severe withdrawal. Besides common health problems caused by this virus, they mainly encountered problems in regard to interpersonal relationships especially with the family members. Some of the patients had to leave their houses and localities because of the social stigma associated with the disease. In general, social boycott was not found to be very strong – as most of them did not disclose their H.I.V. status to outsiders. On the other hand, H.I.V./A.I.D.S. patient's found no real meaning in life. Their main objective of survival was to do something for the family members as found in most of the cases. In depth interviews further revealed that about 10% of the patients possessed suicidal thoughts, which requires special attention during counselling and/or psychotherapy.

meaning was associated with a higher level of psychological well being and a lower level of depressed mood. Further, meaning contributed significantly to predicting both psychological well being and depressed mood over and above the contributions of problem focused coping and social support. These findings have implications for H.I.V. coping and adjustment models and for H.I.V.-related psychotherapy.

Andrew C. Blalock, J. Stephen Mc Daniel, and Eugene W. Farber (2002) studied, 200 volunteer H.I.V./A.I.D.S. patients completed questionnaires assessing medical and vocational histories, quality of life, and psychological functioning. Employed and unemployed participants did not significantly differ in terms of gender, education level, ethnicity, prevalence of diagnosed psychiatric and substance use disorders, or overall level of psychological functioning. However, with H.I.V. illness severity statistically controlled, employed participants reported significantly higher overall quality of life.

C.M. Singh; B.L. Verma; M. Dabral; R.K. Agarwal; D. Govil (2004) studied 803 subjects of different high risk groups (Truck drivers, Jail-inmates, S.T.D. patients, Police and P.A.C. personnel); to assess the prevalence of H.I.V./A.I.D.S. in groups of high risk behaviour & to study the socio-economic and demographic correlates of H.I.V./A.I.D.S.. Out of 803 subjects, 7 (0.87%) were detected positive for H.I.V.. All of these were of below 54 years of age. Bachelor status and lower educational level was found to be significantly (commercial sex workers) and irregular use of condom were also found to be associated with a higher seropositivity.

Thus, to prevent the transmission of infection to the general population, people must be aware about severity of the disease, mode of transmission and more over safe sex behaviour.
NEED OF THE STUDY

H.I.V./A.I.D.S. is not only a biomedical phenomenon; but a social reality rooted in human behaviour. It is a product of human actions in social contexts. The actions and their circumstances are shaped by longer cultural and social structures. Therefore to have a significant impact on the epidemic, education interventions must be rigorously designed according to best practices and adapted to local needs.

Among the Indians, sexual norms are still to abide by the life long rule of monogamy. While, in most societies severely hit by the H.I.V./A.I.D.S. epidemic. The norms have been “Changed of partners’. Virginity before marriage is still highly valued among most Indians and families have by and large greater control over the behaviour of children at least until they are married and settled.

However, with Indians shift from a predominantly agricultural, low subsistence and low consumption economy and a community based social structure, to an industrially developing nation with urbanization, migration and break down of rural economies, joint family system and communities, there have been shifts in social values and world views. The degree and nature of this impact has been various across different sections. The weakening controls have allowed greater individual freedom and releasing the stifling controls on young people.

High status life styles have raised aspiration of others and increased the consumption gap between the top and bottom sections. Along with the increasing value placed on material consumption. There has also been an increase in perception of sexuality as a common to be ‘consumed’ for pleasure. The gap between material aspirations and socio-economic status has led to distortions such as the spread of promiscuity, corruption, growth
of the mafia, drug trafficking etc. All these factors have also contributed to the spread of H.I.V./A.I.D.S. in the subcontinent.

*India now moves down to third place in the list of countries for the largest number of persons living with H.I.V.*

The H.I.V./A.I.D.S. pandemic is a complex and evolving phenomenon, with both somewhat predictable and unpredictable elements. In this pandemic, what has already occurred H.I.V. infections and disease, continues to exist as people living with H.I.V. infection and disease as those infected develop disease and die. Also influences the future through further spread of H.I.V. and multidimensional impact of disease and death.

It is clear that there are currently a number of unmet needs in the area of H.I.V./A.I.D.S. research and care in our country. Several judicious initiatives in the sphere of H.I.V./A.I.D.S. research and intervention would go a long way in the prevention, control and care of H.I.V./A.I.D.S. in India. As of now there is no cure or vaccine for A.I.D.S.. Thus, more and more trust should be laid on psychosocial research, which in turn would help in formulating and implementing culturally viable intervention programmes.

There is lot of misconceptions, misinformation and inaccurate information on the subject of H.I.V./A.I.D.S.. What we require today is to manage the illness through indigenously developed prevention stratetigies and not relying on materials prepared for people belonging to other social and cultural settings.

There is stigma attached to the H.I.V./A.I.D.S. disease which forces the infected to hide. Education with appropriate information will help people to provide better home care and emotional support.
The purpose of this study is to include promoting behaviours, that prevent the transmission of H.I.V./A.I.D.S., fostering attitude and behaviour that will prevent discrimination against those who are infected with H.I.V./A.I.D.S., and promoting solidarity among them and to increase the level of knowledge about the impact of H.I.V./A.I.D.S. and substance abuse on the community, society, economy of the country etc.

The aim of the present study is to see how psychological and somatic changes do take place in patients suffering from H.I.V./A.I.D.S. with the passage of time, irrespective of gender difference. The Independent Variable in the present study is Duration (i.e., Time Period) of the H.I.V./A.I.D.S. patients. Do Previously Diagnosed Group of H.I.V./A.I.D.S. patients develop more Psycho-Somatic changes in comparison to Recently Diagnosed Group of H.I.V./A.I.D.S. patients. Hence the main objective was to see the effect of duration of disease on the H.I.V./A.I.D.S. patients. Hence H.I.V./A.I.D.S. patients have not been compared with normal.