



HIV/AIDS EDUCATION

...a training programme for teachers involved in the delivery of basic and higher education in Africa

...without a vaccine, a major pathway to HIV/AIDS prevention is through education

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Lesson 1



Lesson Objectives

After completing this lesson, you will be able to:

- give the full meanings of HIV and AIDS;
- explain what a virus is;
- name two types of HIV; and
- state how HIV is contracted.

Basic Content

HIV is the shortened form for **H**uman **I**mmunodeficiency **V**irus. It is a virus, such as the virus that causes the flu or cold. A virus is a minute particle that lives as a parasite in plants, animals, and bacteria. It consists of an inside (core) made of a substance known as **nucleic acid** and an outside (sheath) made of **protein**. Viruses can only replicate within living cells and are not considered to be independent living organisms.

In order to make more viruses (and to do all of the other nasty things that viruses do), a virus has to infect a cell. HIV mostly infects the white blood cells of the body's immune system. These cells are known as T-cells or CD4 cells. Once inside the T-cell or CD4 cell, HIV starts producing millions of little viruses, which eventually kill the cell and

then go out to infect other cells. All of the drugs marketed to treat HIV work by interfering with this process

If one is infected with HIV, the body will try to fight the infection. It will make "antibodies", special molecules that are supposed to fight HIV. When you get a blood test for HIV, the test looks for these antibodies. If a person has them in the blood, it means that the person has HIV infection. People who have the HIV antibodies are called "**HIV-Positive**".

Infection with HIV does not necessarily mean that a person has AIDS. Some people who have HIV infection may not develop any of the clinical illnesses that define the full-blown disease of AIDS for ten years or more. Physicians prefer to use the term *AIDS* for cases where a person has reached the final, life-threatening stage of HIV infection.

What about AIDS? AIDS is a shortened form for **A**cquired **I**mmune **D**eficiency **S**ndrome. It is a condition caused by HIV. This virus, as stated earlier, attacks the immune system, the body's "security force" that fights off infections. When the immune system breaks down, this protection is lost and can lead to the development of many serious, often deadly infections and cancers. These are called "opportunistic infections (OIs)" because they take advantage of the body's weakened defenses. You have heard it said that someone "died of AIDS." This is not entirely accurate, since it is the opportunistic infections that cause death. AIDS is the condition that lets the OIs take hold.

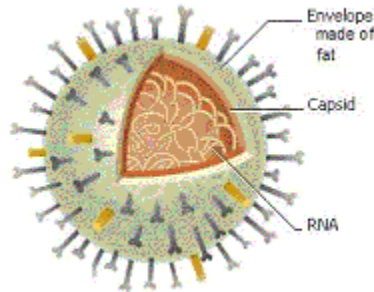
There are some specific criteria for determining when a person living with HIV progresses to AIDS. One thing they look at is T-cell counts: if a person falls below 200 T4 cells, then they have officially progressed to AIDS. Another thing they look for are OIs: if an HIV+ individual is diagnosed with an opportunistic infection the list of over two dozen possible HIV-related OIs, then they are diagnosed with AIDS.



What is a Virus?

A virus is an infectious agent that is found in virtually all life forms, including humans, animals, plants, fungi, and bacteria. Viruses consist of two major parts- an outer protective coat called a **capsid** which is

made of protein; and an inside which consists of genetic material. The genetic material is either of two substances with rather long names. These names have been abbreviated as **DNA** and **RNA**. DNA stands for **d**eoxyribo**n**ucleic **a**cid while RNA stands for **r**ibo**n**ucleic **a**cid. It is also worth noting that the capsid may or may not have an outer envelope made of fat.



Viruses are between 20 and 100 times smaller than bacteria and hence are too small to be seen by the light microscope. Viruses vary in size from the largest poxviruses of about 450 nanometre in length to the smallest polioviruses of about 30 nanometres. (Note: 1 nanometre is a billionth of a metre) Viruses are not considered free-living, since they cannot reproduce outside of a living cell; they have evolved to transmit their genetic information from one cell to another for the purpose of replication.

Viruses often damage or kill the cells that they infect, causing disease in infected organisms. A few viruses stimulate cells to grow uncontrollably and produce cancers.

Types of HIV

There are two types of this virus: HIV-1, which is the primary cause of AIDS worldwide, and HIV-2, found mostly in West Africa. On its surface, HIV carries a protein structure that recognizes and binds only with a specific structure found on the outer surface of certain cells. HIV attacks any cell that has this binding structure. However, white blood cells of the immune system known as T cells, which orchestrate a wide variety of disease-fighting mechanisms, are especially vulnerable to HIV attack. Particularly vulnerable are certain T cells known as CD4 cells. When HIV infects a CD4 cell, it commandeers the genetic tools within the cell to manufacture new HIV virus. The newly formed HIV virus then leaves the cell, destroying the CD4 cell in the process. No

existing medical treatment can completely eradicate HIV from the body once it has integrated into human cells.

The loss of CD4 cells endangers health because these immune cells help other types of immune cells respond to invading organisms. The average healthy person has over 1,000 CD4 cells per microlitre of blood. In a person infected with HIV, the virus steadily destroys CD4 cells over a period of years, diminishing the cells' protective ability and weakening the immune system. When the density of CD4 cells drops to 200 cells per microlitre of blood, the infected person becomes vulnerable to any of about 26 opportunistic infections and rare cancers, which take advantage of the weakened immune defences to cause disease.



HOW DO YOU GET AIDS?

You don't actually "get" AIDS. You might get infected with HIV, and later you might develop AIDS.

You can get infected with HIV from anyone who is infected, even if they don't look sick, and even if they haven't tested HIV-positive yet. The blood, vaginal fluid, semen, and breast milk of people infected with HIV has enough of the virus in it to infect other people. Most people get HIV by:

- Having sex with an infected person.
- Sharing a needle with someone who's infected.
- Being born when the mother is infected, or drinking the breast milk of an infected woman.
- Using unsterilised instruments in some traditional practices such as circumcision, tattooing, manicure, pedicure, and using unsterilised clippers in barbing saloons.

Getting a transfusion of infected blood used to be a way people got AIDS, but now the blood supply is screened very carefully and the risk is extremely low.

There are no documented cases of HIV being transmitted by tears or saliva, but it is possible to be infected with HIV through oral sex or in rare cases through deep kissing, especially if you have open sores in your mouth or bleeding gums.



IS THERE A CURE FOR AIDS?

Currently, there is no cure for AIDS. There are drugs that can slow down the HIV virus, and slow down the damage to your immune system. But there is no way to get all the HIV out of your body. There are other drugs that you can take to prevent or to treat opportunistic infections (OIs). In most cases, these drugs work very well. The newer, stronger anti-HIV drugs have also helped reduce the rates of most OIs. A few OIs, however, are still very difficult to treat.



Resources: Three charts: (A) showing the expansion of HIV as Human Immunodeficiency Virus; and AIDS as Acquired Immune Deficiency Syndrome; (B) showing two diagrams- one of the virus – HIV, the other of an AIDS patient; and (C) listing ways of contracting the disease with relevant illustrative sketches.

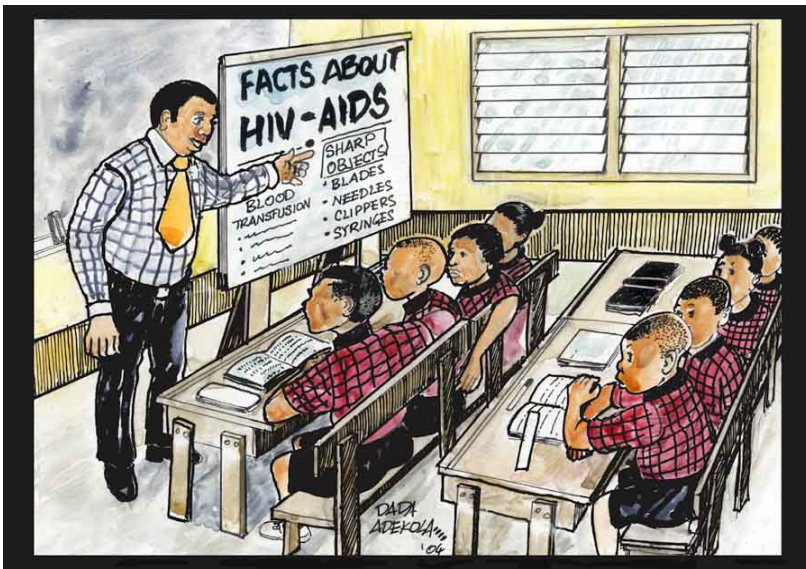
Procedure: Using chart A, lead pupils to give the full meanings of HIV and AIDS. Remove the chart and call pupils randomly to give the meanings.



Using chart B, explain to the pupils that a virus is an infectious agent that is found in virtually all life forms, including humans, animals, plants, fungi, and bacteria. Viruses are not considered free-living,

since they cannot reproduce outside of a living cell; they have evolved to transmit their genetic information from one cell to another for the purpose of replication. Viruses often damage or kill the cells that they infect, causing disease in infected organisms. A few viruses stimulate cells to grow uncontrollably and produce cancers.

Name the two types of HIV as HIV-1, which is the primary cause of AIDS worldwide, and HIV-2, found mostly in West Africa. Emphasise that the virus attacks the immune system, the body's "security force" that fights off infections. When the immune system breaks down, this protection is lost and can lead to the development of many serious, often deadly infections and cancers. The infections are called "opportunistic infections (OIs)" because they take advantage of the body's weakened defenses. You have heard it said that someone "died of AIDS." This is not entirely accurate, since it is the opportunistic infections that cause death. AIDS is the condition that lets the OIs take hold.



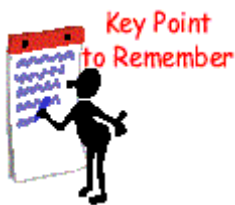
Using chart C, explain to the pupils how HIV can be contracted. Most people get HIV by:

- Having sex with an infected person.
- Sharing a needle with someone who's infected.
- Being born when the mother is infected, or drinking the breast milk of an infected woman.
- Using unsterilised instruments in some traditional practices such as circumcision, tattooing, manicure, pedicure, and using unsterilised clippers in barbing saloons.

Let pupils know that there are no documented cases of HIV being transmitted by tears or saliva, but it is possible to be infected with HIV through oral sex or in rare cases through deep kissing, especially if you have open sores in your mouth or bleeding gums.

Conclude with the discussion on the cure for AIDS that currently, there is no cure for AIDS. There are drugs that can slow down the HIV virus, and slow down the damage to the immune system. But there is no way to get all the HIV out of the body.

Assist pupils to develop a simple concept map of the lesson. An example is given below.



In this lesson, we learned that

- HIV is the shortened form for **H**uman **I**mmunodeficiency **V**irus.
- A virus is an infectious agent that is found in virtually all life forms consisting of two major parts- an outer protective coat called a **capsid** which is made of protein; and an inside which consists of genetic material- **DNA** or **RNA**.
- HIV mostly infects T-cells, also known as CD4+ cells, or T-helper cells. These cells are white blood cells that turn the immune system on to fight disease. Once inside the cell, HIV starts producing millions of little viruses, which eventually kill the cell and then go out to infect other cells.
- There are two types of this virus: HIV-1, which is the primary cause of AIDS worldwide, and HIV-2, found mostly in West Africa.
- AIDS is a shortened form for **A**cquired **I**mmune **D**eficiency **S**yndrome). It is a condition caused by HIV.
- Most people get the HIV virus by having sex with an infected person; sharing a needle or sharp instruments with someone who's infected; and being born when the mother is infected, or drinking the breast milk of an infected woman.

We also learned how to teach the lesson to our pupils using three charts and a concept map.

Lesson 2



Lesson Objectives

After completing this lesson, you will be able to:

- give a brief narrative of the history of HIV/AIDS;
- describe the global picture of the prevalence of the disease; and
- share your knowledge on the topic with your pupils, friends and relations.

Basic Content

AIDS was first identified in 1981 among homosexual men and intravenous drug users in the United States in New York and California. Shortly after its detection in the United States, evidence of AIDS epidemics grew among heterosexual men, women, and children in sub-Saharan Africa. AIDS quickly developed into a worldwide epidemic, affecting virtually every nation. By 2003 over 40 million adults and 4 million children worldwide were living with HIV infection or AIDS. The World Health Organization (WHO), a specialised agency of the United Nations (UN), estimates that from 1981 to the end of 2002 about 20 million people died as a result of AIDS. About 4.5 million of those who died were children under the age of 15. In the short time since the first cases of the AIDS epidemic were reported in 1981, scientists have identified the viral cause of the illness, the basic modes of transmission, accurate tests for the presence of infection, and effective drugs that slow or halt the progression of the disease. During that same period, governments and grassroots organisations

around the world were spurred into action to meet the growing need for AIDS education, counselling, patients' rights, and clinical research. Despite these advances, critics observe that many governments were slow to respond to the crisis.



History of the Virus

There is a raging controversy about the origin of HIV. Using computer technology to study the structure of HIV, some scientists have claimed that HIV originated around 1930 in rural areas of Central Africa, where the virus may have been present for many years in isolated communities. According to this theory which is contested by African scientists, the virus probably did not spread because members of these rural communities had limited contact with people from other areas. But in the 1960s and 1970s, political upheaval, wars, drought, and famine forced many people from these rural areas to migrate to cities to find jobs. During this time, the incidence of sexually transmitted infections, including HIV infection, accelerated and quickly spread throughout Africa. As world travel became more prevalent, HIV infection developed into a worldwide epidemic. Studies of stored blood from the United States suggest that HIV infection was well established there by 1978. Many scientists from Africa have argued that HIV originated from North America.

Beginning in June 1981 reports were published on clusters of gay men (homosexuals) in New York and California who had been diagnosed with pneumocystic pneumonia or Kaposi's sarcoma. These two rare illnesses had previously been observed only in people whose immune systems had been damaged by drugs or disease. These reports triggered concern that a disease of the immune systems was spreading quickly in the homosexual community. Initially called gay-related immunodeficiency disease (GRID), the new illness soon was identified in population groups outside the gay community, including users of intravenous drugs, recipients of blood transfusions, and heterosexual partners of infected people. In 1982 the name for the new illness was changed to acquired immunodeficiency syndrome, or AIDS.

While the disease was making headlines for the speed with which it was spreading around the world, the cause of AIDS remained

unidentified. Fear of AIDS and ignorance of its causes resulted in some outlandish theories. Some thought the disease was God's punishment for behaviours that they considered immoral. These early theories created a social stigma surrounding the disease that still lingers.

Scientists quickly identified the primary modes of transmission—sexual contact with an infected person, contact with infected blood products, and mother-to-child transmission. From these modes of transmission it was clear that the new illness was spread in a specific manner that matched the profile of a viral infection. In 1983 French cancer specialist Luc Montagnier and his colleagues isolated what appeared to be a new human retrovirus from AIDS patients. They named it lymphadenopathy virus (LAV). Eight months later Gallo and his colleagues isolated the same virus in AIDS patients, naming the virus HTLV-III. Eventually, scientists agreed to call the infectious agent human immunodeficiency virus (HIV). In 1985 a new AIDS-causing virus was discovered in West Africa. Named HIV-2, the new virus is closely related to the first HIV, but it appears to be less harmful to cells of the immune systems and reproduces more slowly than HIV-1.

Research leading to the development of the ELISA test was conducted simultaneously by teams led by Gallo in the United States and Montagnier in France. In 1985 the ELISA test to identify HIV in blood became available, followed by the development of the Western Blot test. These tests were first employed to screen blood for the presence of HIV before the blood was used in medical procedures. The tests were later used to identify HIV-infected people, many of whom did not know they were infected. These diagnostic tests also helped scientists study the course of HIV infection in populations.

In 1970, American molecular biologist David Baltimore and American virologist Howard Temin independently discovered the enzyme called reverse transcriptase, which could be used to identify retroviruses. Over the next ten years, many retroviruses were identified in animals. But not until 1980, shortly before the first AIDS cases were recognized in the United States, did American virologist Robert Gallo identify the first human retroviruses, HTLV-I and HTLV-II (HTLV stands for human T cell lymphotropic virus).

Other studies demonstrated that these human retroviruses were more closely related to a retrovirus found in African chimpanzees than to each other. This discovery suggests that the human retroviruses may have evolved from retroviruses that originally infected chimpanzees. The chimpanzee retrovirus likely infected people and underwent

mutations to form the human retrovirus. In 1999 some scientists found that HIV spread from chimpanzees to humans on at least three separate occasions in Central Africa, probably beginning in the 1940s or 1950s.



Diagnosing Illness as AIDS

Physicians diagnose AIDS if a person has an illness known to be caused by immune deficiency, as long as there is no known cause for this immune deficiency (people who undergo radiation therapy or who take certain drugs may impair their immune systems). As more information became known about the course of HIV infection and the nature of the virus itself, this definition of AIDS was revised repeatedly to expand the list of illnesses considered diagnostic indicators of the disease. Early definitions were based on the opportunistic infections commonly found in HIV-infected men. As a result, many women who did not have symptoms covered in the official AIDS definition were denied disability benefits and AIDS-related drug therapies.

The current definition of AIDS was created in 1993 and includes 26 opportunistic infections and cancers, known as diagnostic indicators, that affect both men and women. The definition also emphasizes the importance of the level of CD4 cells in the blood. Today doctors make the diagnosis of AIDS in anyone with a CD4 count below 200 cells per microlitre of blood, regardless of the associated illnesses they may have.



Prevalence of HIV/AIDS: The Global Picture

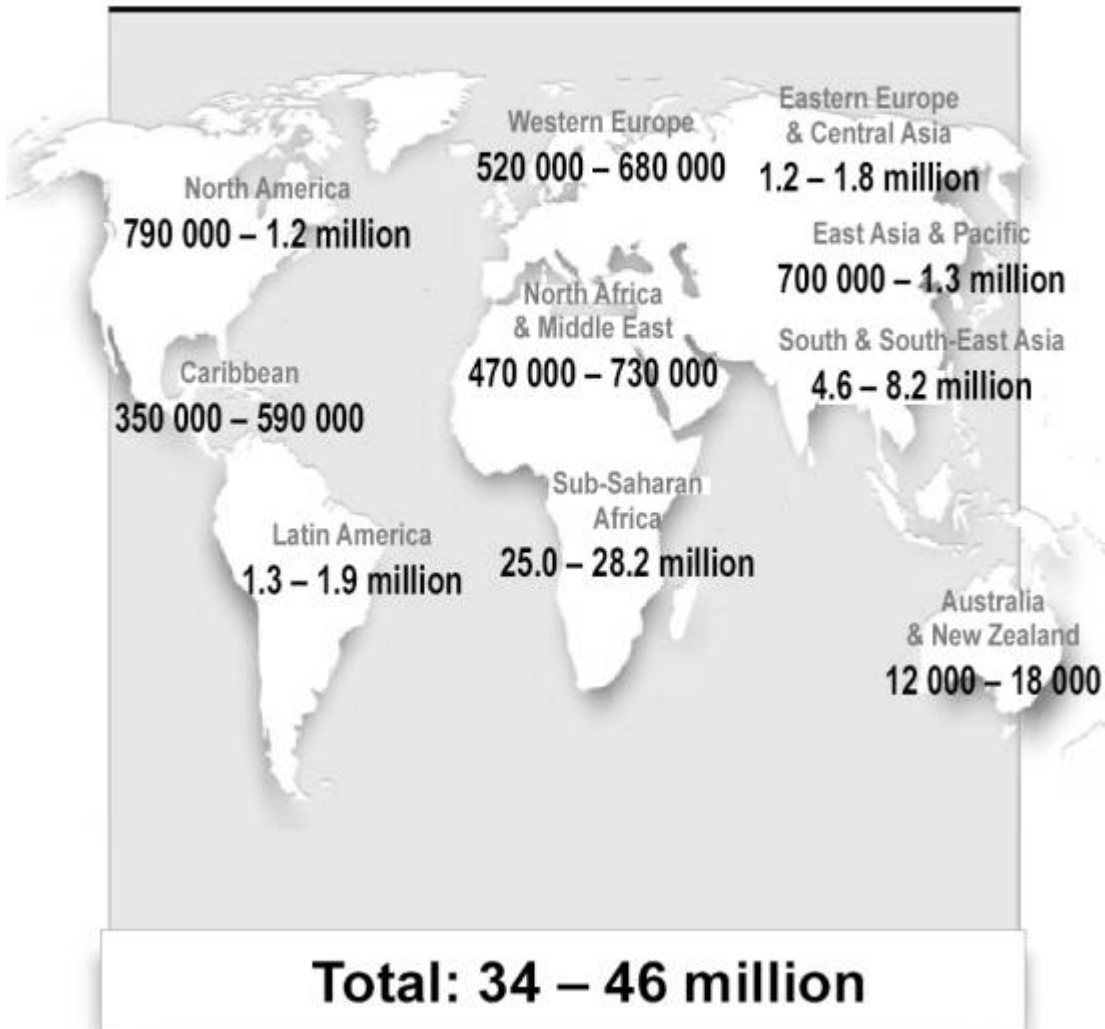
The global HIV/AIDS epidemic killed more than 3 million people in 2003, and an estimated 5 million acquired the human immunodeficiency virus (HIV)—bringing to 40 million the number of people living with the virus around the world.

REGIONAL HIV/AIDS STATISTICS AND FEATURES, END OF 2003

Region	Adults and children living with HIV/AIDS	Adults and children newly infected with HIV	Adult prevalence (%) [*]	Adult & child deaths due to AIDS
Sub-Saharan Africa	25.0 – 28.2 million	3.0 – 3.4 million	7.5 – 8.5	2.2 – 2.4 million
North Africa & Middle East	470 000 – 730 000	43 000 – 67 000	0.2 – 0.4	35 000 – 50 000
South & South-East Asia	4.6 – 8.2 million	610 000 – 1.1 million	0.4 – 0.8	330 000 – 590 000
East Asia & Pacific	700 000 – 1.3 million	150 000 – 270 000	0.1 – 0.1	32 000 – 58 000
Latin America	1.3 – 1.9 million	120 000 – 180 000	0.5 – 0.7	49 000 – 70 000
Caribbean	350 000 – 590 000	45 000 – 80 000	1.9 – 3.1	30 000 – 50 000
Eastern Europe & Central Asia	1.2 – 1.8 million	180 000 – 280 000	0.5 – 0.9	23 000 – 37 000
Western Europe	520 000 – 680 000	30 000 – 40 000	0.3 – 0.3	2 600 – 3 400
North America	790 000 – 1.2 million	36 000 – 54 000	0.5 – 0.7	12 000 – 18 000
Australia & New Zealand	12 000 – 18 000	700 – 1 000	0.1 – 0.1	<100
TOTAL	40 million (34 – 46 million)	5 million (4.2 – 5.8 million)	1.1% (0.9 – 1.3%)	3 million (2.5 – 3.5 million)
<p>* The proportion of adults (15 to 49 years of age) living with HIV/AIDS in 2003, using 2003 population numbers.</p> <p>The ranges around the estimates in this table define the boundaries within which the actual numbers lie, based on the best available information. These ranges are more precise than those of previous years, and work is under way to increase even further the precision of the estimates that will be published mid-2004.</p>				

Source: UNAIDS, 2003

ADULTS AND CHILDREN ESTIMATED TO BE LIVING WITH HIV/AIDS, END 2003



How Do I Teach Students?

Resources: Guest teacher and map of the world showing regional HIV/AIDS statistics.

Procedure: Invite a teacher in your school or from another school to lead discussions on the history of HIV/AIDS. Share the contents of this lesson with the guest teacher to enable him/her prepare for the lesson. Invite 3-4 students who will serve as group leaders for a briefing on the topic. After the presentation by the guest teacher, the class will break into groups (3 to 4) for follow-up round-table group

discussions. The group leaders will summarise the main points made by each group. With the aid of the map of the world, lead pupils to discuss the distribution of HIV/AIDS afflicted persons by region. Call on a random selection of pupils to describe, using the map of the world displayed in front of the class, sub-regional and national distribution of adults and children estimated to be living with HIV and AIDS in Africa.



In this lesson, we learned that:

- AIDS was first identified in 1981 among homosexual men and intravenous drug users in the United States in New York and California.
- AIDS quickly developed into a worldwide epidemic, affecting virtually every nation. By 2003 over 40 million adults and 4 million children worldwide were living with HIV infection or AIDS.
- Some scientists have claimed that HIV originated around 1930 in rural areas of Central Africa, where the virus may have been present for many years in isolated communities.
- Studies of stored blood from the United States suggest that HIV infection was well established there by 1978. Many scientists from Africa have argued that HIV originated from North America.
- In 1985 a new AIDS-causing virus was discovered in West Africa. Named HIV-2, the new virus is closely related to the first HIV, but it appears to be less harmful to cells of the immune systems and reproduces more slowly than HIV-1.
- In 1999 some scientists found that HIV spread from chimpanzees to humans on at least three separate occasions in Central Africa, probably beginning in the 1940s or 1950s.
- The global HIV/AIDS epidemic killed more than 3 million people in 2003, and an estimated 5 million acquired the human immunodeficiency virus (HIV)—bringing to 40 million the number of people living with the virus around the world.

Lesson 3



Lesson Objectives

After completing this lesson, you will be able to:

- describe the basic structure of the immune system of the human body;
- outline the activities of the immune system
- define immune deficiency; and
- identify the role of HIV in human immune deficiency;

Basic Content

Every minute of every day wars rage within our bodies. The combatants are too tiny to see. Some, like the infamous virus that causes AIDS, or acquired immune deficiency syndrome, are so small that 200 million would fit on the tip of a needle. Yet they employ tactics that can kill much larger cells they swarm upon.

Usually we never even notice the battles in the incessant wars within us. We have evolved legions of defenders, specialised cells that silently rout the unseen enemy. Sometimes these warriors mistake harmless invaders, such as pollen, for deadly foes, and they mount an allergic reaction. Sometimes our defenders are caught unprepared, and we

develop a cold, the flu, or worse. Occasionally some of our own cells begin the mutinous proliferation of cancer and manage to evade the surveillance of our body's defence forces. But for every successful penetration of our defences, thousands of attempts are repelled. We sleep securely, trusting the invisible vigilantes of our immune system.

The **immune system** of the human body is made up of group of cells, molecules, and organs that act together to defend the body against foreign invaders that may cause disease. The health of the body is dependent on the immune system's ability to recognise and then repel or destroy these invaders.

In humans the immune system consists of about a trillion (10^{12}) cells called lymphocytes and about 100 million trillion (10^{20}) molecules called antibodies that are produced and secreted by the lymphocytes. The special capability of the immune system is pattern recognition and its assignment is to patrol the body and guard its identity.

White blood cells are the mainstay of the immune system. Some white blood cells, known as *macrophages*, play a function in innate immunity by surrounding, ingesting, and destroying invading bacteria and other foreign organisms. *Lymphocytes* are specialised white blood cells whose function is to identify and destroy invading antigens. All lymphocytes begin as "stem cells" in the *bone marrow*, the soft tissue that fills most bone cavities, but they mature in two different places. Some lymphocytes mature in the bone marrow and are called B lymphocytes. *B lymphocytes*, or *B cells*, make *antibodies*, which circulate through the blood and other body fluids, binding to antigens and helping to destroy them. Other lymphocytes, called *T lymphocytes*, or *T cells*, mature in the thymus, a small glandular organ located behind the breastbone. Mature lymphocytes constantly travel through the blood to the lymphoid organs and then back to the blood again. This recirculation ensures that the body is continuously monitored for invading substances.



Immune Deficiency

Deficiencies in immune function may be either inherited or acquired. ***Inherited immune deficiencies*** usually reflect the failure of a gene important to the generation or function of immune system components. DiGeorge syndrome is an inherited immune disorder in

which a person has no thymus and, therefore, cannot produce mature T lymphocytes. People with this disorder can mount only limited humoral immune responses, and their cell-mediated immune responses are severely limited. The most extreme example of a hereditary immune deficiency is severe combined immunodeficiency (SCID). Individuals with this disease completely lack both T and B lymphocytes and thus have no adaptive immune responses. People with SCID must live in a completely sterile environment, or else they will quickly die from infections.

Acquired immune deficiencies can be caused by infections and also other agents. For example, radiation therapy and some kinds of drugs used in treating disease reduce lymphocyte production, resulting in damaged immune function. People undergoing such therapies must be carefully monitored for lowered immune function and susceptibility to infections. Environmental and lifestyle factors, such as poor nutrition or stress, can also affect the immune system's general status.

An infectious agent resulting in fatal immune deficiency is the human immunodeficiency virus (HIV). This virus causes acquired immunodeficiency syndrome (AIDS) by infecting and eventually destroying helper T cells. Because helper T cells regulate all immune responses, their loss results in an inability to make adaptive immune responses. This complete lack of immune function makes individuals with AIDS highly susceptible to all infectious agents.



Activity of the Immune System

Of the one hundred trillion cells that make up a human body, one in every hundred is there to defend us. They are the white blood cells that are born in the bone marrow. When they emerge, they form three distinct regiments of warriors—the **phagocytes** and two kinds of lymphocytes, the **T cells** and **B cells**. Each has its own strategies of defence. The first defenders to arrive would be the phagocytes—the scavengers of the system. Phagocytes constantly scour the territories of our bodies, alert to anything that seems out of place. What they find, they engulf and consume.

Phagocytes are not choosy. They will eat anything suspicious that they find in the bloodstream, tissues, or lymphatic system. In the lungs, for instance, they consume particles of dust and other pollutants that

enter with each breath. They can cleanse lungs that have been blackened with the contaminants of cigarette smoke, provided the smoking stops. Too much cigarette smoking, over too long a time, destroys phagocytes faster than they can be replenished. Environmental pollutants like silica and asbestos also overwhelm them.

We can watch phagocytes at work when our skin is injured. The skin is our first defence line—until a cut allows bacteria and other microorganisms to invade. Immediately cells near the wound release substances that stimulate nearby blood vessels to dilate, causing swelling and reddening around the cut. Phagocytes flow in through the distended blood vessels, devouring the invaders. In time the body weaves threads of fibrin across the wound to restore the skin's barrier.

There is a special kind of phagocyte called a macrophage. As the macrophage engulfs a stray virus, it plucks a special piece, an antigen, from the invader. It displays that small piece on its own cell surface like a captured banner of war. That flag plays a critical role in the immune system's response: It alerts a highly specialised class of lymphocytes, the T cells. All our lives a small contingent of those lymphocytes has circulated through our bodies, waiting for this particular virus. They recognise it, as the virus identified its victim among the cells, by shape. The antigens on the surface of the virus fit exactly into these T cells' receptors.

How did that particular group of T cells know the shape of the antigen? Their training takes place in the thymus, a mysterious pale grey gland that sits behind the breastbone, above the heart. (The "T" in T cell stands for thymus-derived.) This unsung little gland swells in size from birth to puberty and then begins to shrink. Somehow, as the T cells mature in the thymus, one learns to recognise the antigens of, say, the hepatitis virus, another to identify a strain of flu antigens, a third to detect rhinovirus 14, and so on.

Most T cells die in the thymus, We do not know why. A guess is that the thymus is selecting only the best T cells, those with the sharpest powers of recognition. And what a staggering task the thymus confronts. Nature can create antigens in hundreds of millions of different shapes. The thymus must turn out a group of T cells that recognises each one. Remarkably, we have T cells trained to recognise even artificial antigens created in the lab—antigens the body has never encountered in its millions of years of evolution.

The thymus pumps out T cells by the tens of millions. Even though only a few of them may recognize any one antigen, the collective scouting force is vast enough to identify the almost infinite variety of antigens nature produces.

So diligent are our T cells that even desirable cells transplanted from one person to another are quickly recognised as foreign and destroyed. The process, called rejection, can defeat a lifesaving heart or kidney transplant unless surgeons use drugs to keep the immune system at bay.

The T cells that first detect antigens, known as **helper T's**, carry no weapons. Rather they send urgent chemical signals to a small squadron of allies in the body—the **killer T cells**. The message: Multiply fast!

Like all T cells, killer T's are trained to recognise one specific enemy. When alerted by the helper T's, the squadron reproduces into an army. The killer T's are lethal. They can trigger a chemical process that punctures the cell membranes of bacteria or destroys infected cells before viruses inside have time to multiply.

Besides summoning the killer T's, helper T cells call more phagocytes into the battle. They also rush toward the spleen and the lymph nodes. There they will alert the last major regiment of the immune system, the B cells.

B cells migrate after their birth in the bone marrow, with many of them concentrating in our lymph nodes. These small bean-shaped capsules are scattered along the intricate branching of the lymph system. We are aware of them only during certain infections, when they become swollen and sometimes painful to the touch. Our lymph nodes are small munitions factories, staffed by the B cells. Their product: the chemical weapons called antibodies.

By sticking to the surface of unwelcome cells, antibody molecules slow them down, making them easier targets—as well as more attractive ones—for phagocytes. Antibodies can also kill. Locking on to the enemy's antigens, which they precisely mirror in shape, the antibodies collect substances in the bloodstream called complement. When this complement comes together in the right sequence, it detonates like a bomb, blasting through the invader's cell membrane. At the peak of operation, each B cell can churn out thousands of antibodies a second. As the immune defences gather, the tide of battle turns. Normally

within a week or so the invader is in retreat. Then the third member of the T-cell family takes over—the ***suppressor T***, the peacemaker.

Suppressor T's release substances that turn off B cells. They order killer cells to stop the fight. Suppressor T's even command helper T's to cease and desist. The battle is won. In the aftermath phagocytes range over the area, cleaning up the litter of dead cells and spent substances. Tissue damage is repaired. The threat is over—but not forgotten. Most of the T and B cells recruited for battle die off within days of an infection.

There is one simple reason why the AIDS virus is so deadly. It kills the one lymphocyte most critical to the immune response: the helper T cell. Like Greeks hidden inside the Trojan horse, the AIDS virus enters the body concealed inside a helper T cell from an infected host. Almost always it arrives as a passenger in blood or semen. In the invaded victim, helper T's immediately detect the foreign T cell. But as the two T's meet, the virus slips through the cell membrane into the defending cell. Before the defending T cell can mobilise the troops, the virus disables it.

Some researchers believe the AIDS virus also may change the surface of helper T cells in such a way that they fuse together. That strategy makes it even easier for the virus to pass from cell to cell undetected.

Once inside an inactive T cell, the virus may lie dormant for months, even years. Then, perhaps when another, unrelated infection triggers the invaded T cells to divide, the AIDS virus also begins to multiply. One by one, its clones emerge to infect nearby T cells. Slowly but inexorably the body loses the very sentinels that should be alerting the rest of the immune system. Phagocytes and killer cells receive no call to arms. B cells are not alerted to produce antibodies. The enemy can run free!

By the late 1960s, it had become clear that stem cells give rise to two broad lineages of lymphocytes (as well as the other blood cells). One consists of the *B* cells, which originate in the bone marrow and produce antibodies that bind to foreign proteins and mark them for attack by other cells. They act against extra-cellular pathogens such as bacteria. The other, the *T* cells, arises in the thymus. *T* cells handle such intracellular pathogens as viruses in addition to such intracellular parasites as tuberculosis. *T* cells also secrete molecules known as lymphokines, which direct the activity of *B* cells, other *T* cells and other parts of the immune system.

Once formed, cells of both types migrate to the spleen, lymph nodes and intestinal lymphoid tissues. There they can encounter antigen, the molecular signature of microbial or viral invaders, and be called into action. Lymphocytes continuously circulate through the body's vascular and lymphatic systems, stopping periodically in the lymphoid organs as they patrol for foreign antigens.

Use the drama method to teach this lesson. Pupils should be assigned roles as invading germs and white blood cells. Let pupils act their roles based on a script developed from the basic content of this lesson.

In this lesson, we learned that

- The **immune system** of the human body is made up of group of cells, molecules, and organs that act together to defend the body against foreign invaders that may cause disease.
- The system consists of about a trillion (10^{12}) cells called lymphocytes and about 100 million trillion (10^{20}) molecules called antibodies that are produced and secreted by the lymphocytes.
- White blood cells also called lymphocytes are the mainstay of the immune system.
- Some lymphocytes mature in the bone marrow and are called B lymphocytes. Other lymphocytes, called *T lymphocytes*, or *T cells*, mature in the thymus, a small glandular organ located behind the breastbone.
- Deficiencies in immune function may be either inherited or acquired. ***Inherited immune deficiencies*** usually reflect the failure of a gene important to the generation or function of immune system components. ***Acquired immune deficiencies*** can be caused by infections and also other agents.
- An infectious agent resulting in fatal immune deficiency is the human immunodeficiency virus (HIV). This virus causes acquired immunodeficiency syndrome (AIDS) by infecting and eventually destroying helper T cells. Because helper T cells regulate all immune responses, their loss results in an inability to make adaptive immune responses. This complete lack of immune function makes individuals with AIDS highly susceptible to all infectious agents.
- Once inside an inactive T cell, the virus may lie dormant for months, even years. Then, perhaps when another, unrelated infection triggers the invaded T cells to divide, the AIDS virus

also begins to multiply. One by one, its clones emerge to infect nearby T cells. Slowly but inexorably the body loses the very sentinels that should be alerting the rest of the immune system. Phagocytes and killer cells receive no call to arms. B cells are not alerted to produce antibodies. The enemy can run free!

Lesson 4



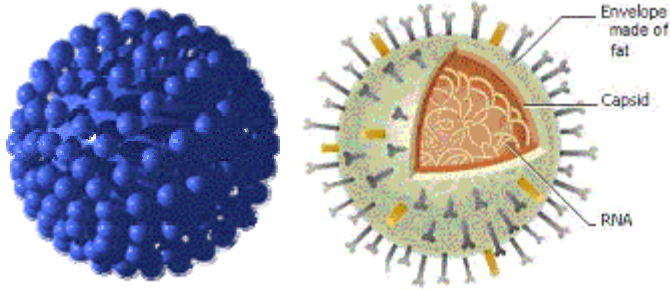
Lesson Objectives

After completing this lesson, you will be able to:

- describe the life cycle of HIV;
- identify stages in the life cycle targeted by antiretroviral drugs; and
- teach pupils the simplified form of the life cycle of HIV.

Basic Content

In this lesson, we shall describe the life cycle of HIV as a series of steps. Six steps are commonly seen. These are binding; reverse transcription, integration, transcription, translation, and viral assembly. Before we begin, let us review what we learned in lesson 1 about the structure of HIV. In that lesson, we learned that viruses consist of two major parts- an outer protective coat called a **capsid** which is made of protein; and an inside which consists of genetic material. The genetic material is either of two substances with rather long names. These names have been abbreviated as **DNA** and **RNA**. DNA stands for **d**eoxyribonucleic **a**cid while RNA stands for **r**ibonucleic **a**cid. It is also worth noting that the capsid may or may not have an outer envelope made of fat.

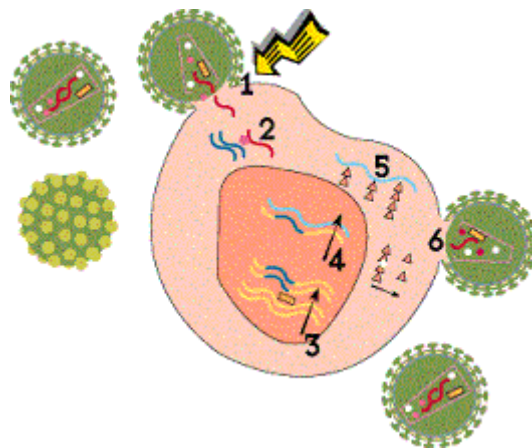


Representation of HIV Structure of the virus

In lesson 3, we also learned that the body's immune system is made up of white blood cells (otherwise known as lymphocytes). One type of lymphocyte is called T-lymphocytes or T-cells with surface receptors known as CD4+. Let us now examine the stages in the life cycle of HIV. As stated earlier, six stages will be described.

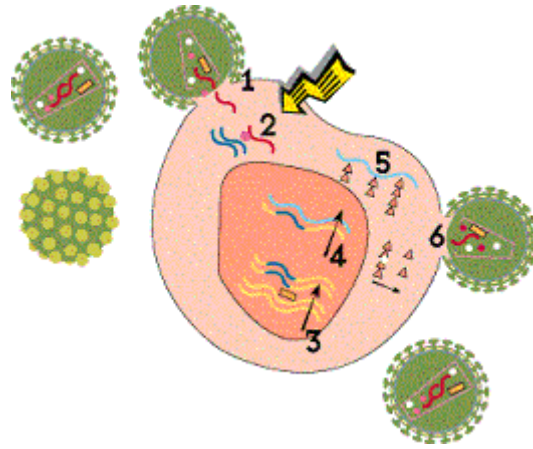
Step 1: Binding

HIV binds to a CD4+ surface receptor, it activates other proteins on the cell's surface, allowing the HIV envelope to fuse to the outside of the cell.



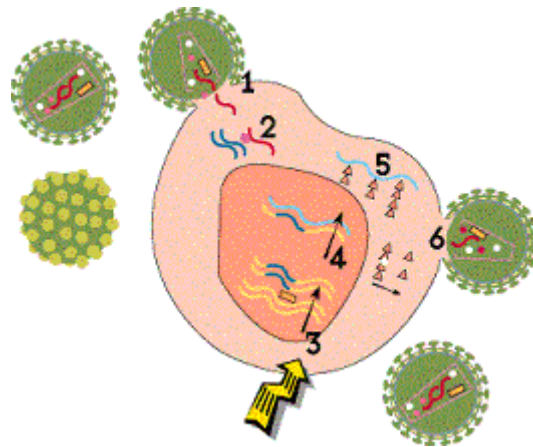
Step 2: Reverse Transcription

The virus infects the cell- a process called "reverse transcription" takes place. At the end of the process the cell makes a DNA copy of the virus's RNA. After the binding process, the inside of the virus which contains the RNA and important enzymes is released into the host cell. A viral enzyme called reverse transcriptase makes a DNA copy of the RNA. This new DNA is called "proviral DNA."



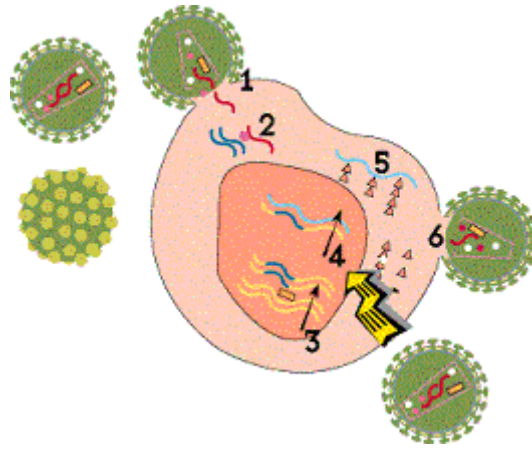
Step 3: Integration

The HIV DNA is then carried to the cell's nucleus, where the cell's DNA is kept. Then, another viral enzyme called integrase hides the proviral DNA into the cell's DNA. When the cell tries to make new proteins, it can accidentally make new HIVs. Integration can be blocked by integrase inhibitors, a new class of drugs that are in the earliest stage of research.



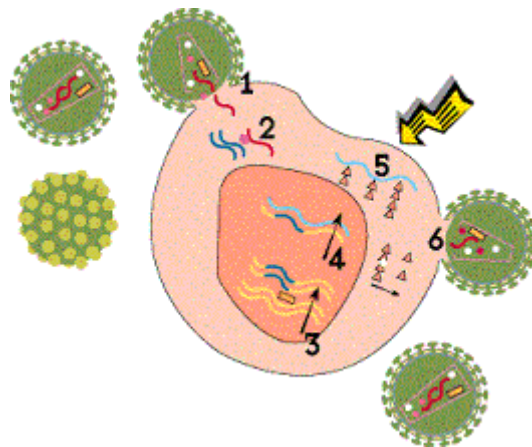
Step 4: Transcription

Once HIV's genetic material is inside the cell's nucleus, it directs the cell to produce new HIV. The strands of viral DNA in the nucleus separate, and special enzymes create a complementary strand of genetic material called messenger RNA or mRNA (instructions for making new HIV). Transcription can be blocked by antisense antivirals or transcription inhibitors (TIs), new classes of drugs that are in the earliest stage of research.



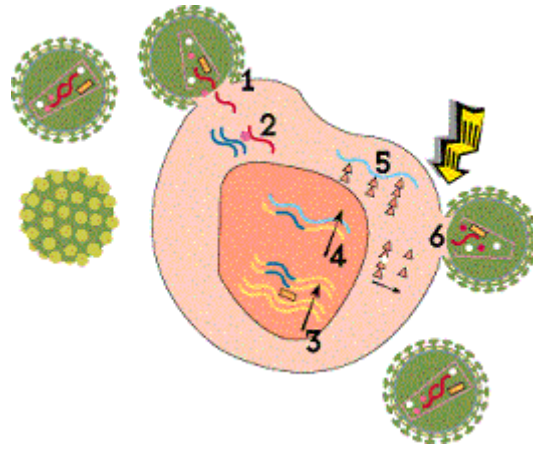
Step 5: Translation

The mRNA carries instructions for making new viral proteins from the nucleus to a kind of workshop in the cell. Each section of the mRNA corresponds to a protein building block for making a part of HIV. As each mRNA strand is processed, a corresponding string of proteins is made. This process continues until the mRNA strand has been transformed or "translated" into new viral proteins needed to make a new virus.



Step 6: Viral Assembly

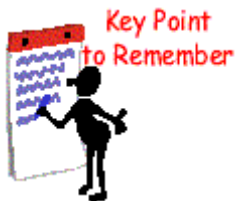
Finally, a new virus is assembled. Long strings of proteins are cut up by a viral enzyme called protease into smaller proteins. These proteins serve a variety of functions; some become structural elements of new HIV, while others become enzymes, such as reverse transcriptase. Once the new viral particles are assembled, they bud off the host cell, and create a new virus. This virus is then able to infect new cells. Each infected cell can produce a lot of new viruses.



How Do I Teach Students?

Resources: Chart showing six stages in the life cycle of HIV.

Procedure: Using the chart showing the life cycle of HIV, lead a class discussion to describe the different stages in the life cycle of HIV. As the lesson progresses, call on pupils to describe what they see in the chart, stage by stage. Explain at each stage what role(s) antiviral drugs play in slowing down the process. Pupils to stage a drama to illustrate the stages.



In Summary

In this lesson, we learned about six stages in the life cycle of HIV as follows:

Step 1: Binding

HIV binds to a CD4+ surface receptor, it activates other proteins on the cell's surface, allowing the HIV envelope to fuse to the outside of the cell.

Step 2: Reverse Transcription

The infected cell makes a DNA copy of the virus's RNA.

Step 3: Integration

A viral enzyme called integrase hides the proviral DNA into the cell's DNA. Then, when the cell tries to make new proteins, it accidentally make new HIVs.

Step 4: Transcription

Once HIV's genetic material is inside the cell's nucleus, it directs the cell to produce new HIV.

The strands of viral DNA in the nucleus separate, and special enzymes create a complementary strand of genetic material called messenger RNA or mRNA (instructions for making new HIV).

Step 5: Translation

The mRNA carries instructions for making new viral proteins from the nucleus to a kind of workshop in the cell. As each mRNA strand is processed, a corresponding string of proteins is made. This process continues until the mRNA strand has been transformed or "translated" into new viral proteins needed to make a new virus.

Step 6: Viral Assembly

Finally, a new virus is assembled. Once the new viral particles are assembled, they bud off the host cell, and create a new virus. This virus is then able to infect new cells. Each infected cell can produce a lot of new viruses.

Lesson 5



Lesson Objectives

At the end of this lesson, you should be able to

- identify three ways by which HIV is transmitted;
- dispel misconceptions about HIV transmission; and
- learn how to teach your students the topic *“How HIV is Transmitted”*

Basic Content

HIV is passed on in the sexual fluids or blood of an infected person. This usually happens by either having sexual intercourse with an infected person or by sharing needles or sharp objects that had come in contact with the blood of an infected person. People can also become infected by being born to a mother who has HIV. A very small number of people become infected by having medical treatment using infected blood transfusions.



Sex with an infected person

HIV transmission occurs most commonly during intimate sexual contact with an infected person, including genital, anal, and oral sex. The virus is present in the infected person's semen or vaginal fluids. During sexual intercourse, the virus gains access to the bloodstream of

the uninfected person by passing through openings in the mucous membrane—the protective tissue layer that lines the mouth, vagina, and rectum—and through breaks in the skin of the penis. In some parts of the world especially the United States and Canada, HIV is most commonly transmitted during sex between homosexual men, but the incidence of HIV transmission between heterosexual men and women has rapidly increased. In most other parts of the world, HIV is most commonly transmitted through heterosexual sex.



Contact with infected blood

Someone can get infected with HIV when transfused with infected blood. Also, infected blood occurs when people who use heroin or other injected drugs, share hypodermic needles or syringes contaminated with infected blood. Sharing of contaminated needles among intravenous drug users is the primary cause of HIV infection in many countries. Less frequently, HIV infection results when health professionals accidentally stick themselves with needles or other sharp objects containing HIV-infected blood or expose an open cut to contaminated blood. To combat this, government regulations have required that all donated blood and body tissues be screened for the presence of HIV before being used in medical procedures. As a result of these regulations, HIV transmission caused by contaminated blood transfusion or organ donations have reduced. However, the problem continues to concern health officials in sub-Saharan Africa. Less than half of the 46 nations in this region have blood-screening policies. By some estimates only 25 percent of blood transfusions are screened for the presence of HIV. The World Health Organisation (WHO) had hoped to establish blood safety programmes in more than 80 percent of sub-Saharan countries by 2003.



Parent-to-Child Transmission

HIV can be transmitted from an infected mother to her baby while the baby is still in the woman's uterus or, more commonly, during childbirth. The virus can also be transmitted through the mother's breast milk during breastfeeding. Mother-to-child transmission accounts for 90 percent of all cases of AIDS in children. Mother-to-child transmission is particularly prevalent in Africa, where the number of women infected with HIV is ten times the rate found in other

regions. Studies conducted in several cities in southern Africa in 1998 indicate that up to 45 percent of pregnant women in these cities carry HIV.



Misconceptions about HIV Transmission

The routes of HIV transmission are well documented by scientists, but health officials continually grapple with the public's unfounded fears concerning the potential for HIV transmission by other means. HIV differs from other infectious viruses in that it dies quickly if exposed to the environment. No evidence has linked HIV transmission to casual contact with an infected person, such as a handshake, hugging, or kissing, or even sharing dishes or bathroom facilities. Studies have been unable to identify HIV transmission from modes common to other infectious diseases, such as an insect bite or inhaling virus-infected droplets from an infected person's sneeze or cough.



Resources: Four posters: Poster A showing HIV transmission through sexual contact with an infected person; Poster B showing HIV transmission through contact with infected blood; Poster C showing mother-to-child HIV transmission; and Poster D showing that HIV cannot be transmitted through hand shake, hugging or sharing dishes and bathrooms facilities.

Procedure: Using charts A, B, and C, lead pupils in interactive discussions on the three major ways of contracting HIV; viz: having sexual intercourse with an infected person; by sharing needles or sharp objects that had come in contact with the blood of an infected person; and being born to a mother who has HIV. Using chart C, dispel misconceptions about HIV transmission. Each pupil to draw a concept map of what he/she learned. Ask pupils to share what they learned in class with family and friends.



In Summary

In this lesson, we learned that HIV

- is transmitted by having sexual intercourse with an infected person; by sharing needles or sharp objects that had come in contact with the blood of an infected person; and being born to a mother who has HIV.
- is NOT transmitted through casual contact with an infected person, such as a handshake, hugging, or kissing, or even sharing dishes or bathroom facilities. Studies have been unable to identify HIV transmission from modes common to other infectious diseases, such as an insect bite or inhaling virus-infected droplets from an infected person's sneeze or cough.

Lesson 6



Lesson Objectives

After completing this lesson, you will be able to:

- describe the symptoms of infection with HIV in adults and children;
- suggest some therapies for HIV infection; and
- share with your pupils the characteristics of persons infected with HIV.

Basic Content

Symptoms in Adults

In the period immediately after infection with HIV, no specific symptoms are noticeable. However, within one to three weeks after infection, most people experience the following:

- flu-like symptoms, such as fever, sore throat, headache;
- skin rash;
- tender lymph nodes; and
- a vague feeling of discomfort.

These symptoms usually go away after a week or two. Often, if they occur at all, they are so mild they are hardly noticeable, although for some people they are severe enough to warrant calling a doctor. *It is important to keep in mind that these symptoms are almost identical to those of many other illnesses. That is why testing is so important.*

Very often people who have the symptoms are worrying unnecessarily. Only by taking the HIV test can someone reliably know their HIV status. Everything else is just guessing and HIV is too important an issue to merely guess about.

The symptoms last one to four weeks. During this phase, known as **acute retroviral syndrome**, HIV reproduces rapidly in the blood. The virus circulates in the blood throughout the body, particularly concentrating in organs of the lymphatic system. The normal immune defenses against viral infections eventually activate to battle HIV in the body, reducing but not eliminating HIV in the blood. Infected individuals typically enter a prolonged asymptomatic phase, a symptom-free period that can last ten years or more. While persons who have HIV may remain in good health during this period, HIV continues to replicate, progressively destroying the immune system. Often an infected person remains unaware that he or she carries HIV and unknowingly transmits the virus to others during this phase of the infection.

When HIV infection reduces the number of CD4 cells to around 200 per microlitre of blood, the infected individual enters an **early symptomatic phase** that may last a few months to several years. HIV-infected persons in this stage may experience a variety of symptoms that are not life-threatening but may be debilitating. These symptoms include:

- extensive weight loss and fatigue (wasting syndrome);
- periodic fever;
- recurring diarrhea;
- and thrush, a fungal mouth infection.

An early symptom of HIV infection in women is a recurring vaginal yeast infection. Unlike earlier stages of the disease, in this early symptomatic phase the symptoms that develop are severe enough to cause people to seek medical treatment. Many may first learn of their infection in this phase.

If CD4 cell levels drop below 200 cells per microlitre of blood, the **late symptomatic phase** develops. This phase is characterised by the appearance of any of 26 opportunistic infections and rare cancers. The onset of these illnesses, sometimes referred to as **AIDS-defining complications**, is one sign that an HIV-infected person has developed full-blown AIDS. Without medical treatment, this stage may last from

several months to years. The cumulative effects of these illnesses usually cause death.

Symptoms in Children

HIV infection in children progresses more rapidly than in adults, most likely because the immune system in children have not yet built up immunity to many infectious agents. The disease is particularly aggressive in infants—more than half of infants born with an HIV infection die before age two. Once a child is infected, the child's undeveloped immune system cannot prevent the virus from multiplying quickly in the blood. This extensive virus burden speeds the progression of the disease. In contrast, when adults become infected with HIV, their immune system generally fights the infection. Therefore, HIV levels in adults remain lower for an extended period, delaying the progression of the disease.

Children develop many of the opportunistic infections that befall adults but also exhibit symptoms not observed in older patients. Among infants and children, HIV infection produces wasting syndrome and slows growth (generally referred to as failure to thrive). HIV typically infects a child's brain early in the course of the disease, impairing intellectual development and coordination skills. While HIV can infect the brains of adults, it usually does so toward the later stages of the disease and produces different symptoms.

Children show a susceptibility to more bacterial and viral infections than adults. More than 20 percent of HIV-infected children develop serious, recurring bacterial infections, including meningitis and pneumonia. Some children suffer from repeated bouts of viral infections, such as chicken pox. Healthy children generally develop immunity to these viral illnesses after an initial infection.

Wasting Syndrome and Weight Loss

Weight loss and wasting syndrome are two AIDS-related complications that, if not adequately treated, can be life threatening. Even though anti-HIV therapies have helped reduce the risk of weight loss and wasting syndrome, both problems still occur. Is there a difference between weight loss and wasting? Yes. As its name implies, weight loss refers to a loss of body weight. Wasting syndrome refers to a loss of body mass or size, most notably muscle mass (sometimes referred to as "lean body mass"). Very often, both occur at the same time. However, this is not always the case. It is possible that someone who is losing weight might not lose muscle mass. It is also possible that someone losing muscle mass might not lose a lot of weight. For

example, some HIV-positive people lose a lot of muscle. Yet they may experience an increase in fat. This can cause weight to stay the same, even though muscle wasting is going on. In people who do not have HIV, weight loss is not usually a serious problem. For example, someone who goes on a diet will eventually lose weight. To make up for the lack of food being eaten, the body will naturally burn fat – either in the blood or stored in cells – to help meet its energy needs. At the same time, the body works to protect protein during periods of dieting or physical activity. Protein is needed to build muscle, cells, and organs in the body. In other words, most people can afford to lose fat. They cannot afford to lose protein.

In people with HIV, especially during periods of illness (e.g., MAC or tuberculosis), the energy demands of the body increase. Turning fat into energy also requires a lot of work in the body. To help save energy, the body may go after protein to fuel its energy needs. This is because protein is much easier to convert into energy than fat. Also, protein is needed to help repair damaged organs and to replace immune system cells lost during periods of illness.

Figuring out the underlying cause of weight loss is very important. In some cases, the cause of weight loss or wasting is obvious, particularly when an opportunistic infection (OI) that is known to cause weight loss has been diagnosed. Other times, weight loss or wasting can be a symptom of an underlying OI that has not yet been diagnosed. Thus, weight loss that cannot be easily explained often requires that doctors examine their HIV-positive patients carefully, especially if they are losing weight.

There are a number of treatment strategies that have been proven effective in terms of weight gain and, in some cases, muscle growth and maintenance:

Diet Improvements: Diet improvement is crucial for virtually all HIV-infected individuals suffering from mild to severe forms of weight loss. Forms of dietary improvement include nutritional counselling and oral nutrition supplements. In terms of counselling, a registered dietitian can help identify weaknesses in an existing diet and make suggestions regarding dietary needs and how best to tailor them to meet individual tastes, schedules, and tolerances. Nutritional supplementation can also be extremely useful.

Treating Side Effects or General Symptoms of HIV: There are a number of treatments available to control symptoms, including drug side effects that make eating undesirable. Drugs to control nausea and vomiting (anti-emetics), diarrhea (anti-diarrheals), and decreased appetite (appetite stimulants) are widely available.

Treating the Opportunistic Infection (OI): Treating an active opportunistic infection, especially one that causes malabsorption, can halt and possibly reverse weight loss. Unfortunately, there are no effective treatments for intestinal diseases such as cryptosporidiosis and microsporidiosis, however a number of recent reports have suggested that anti-HIV may be extremely helpful in terms of boosting the immune response against these chronic infections and ultimately increasing weight. But, like appetite stimulants, treatments for OIs associated with weight gain usually contribute to fat accumulation, not muscle.

Hormonal Therapy: Treating metabolic disorders associated with wasting has been a large focus of research over the past few years. In particular, results from clinical trials of anabolic therapies have suggested that certain agents can increase and protect muscle mass in HIV-positive people with wasting and weight loss.

Immune-Based and Anti-HIV Therapies: In terms of treating immune system disorders, promising results have been seen using the drug thalidomide (Synovir), a drug that was once banned because of its ability to cause birth defects in pregnant women taking the drug. Yet, the most promising therapy in terms of stabilizing the immune system has been taking the anti-HIV drug combinations currently recommended. By drastically reducing the amount of virus circulating in the body, anti-HIV therapy allows the immune system to recover from the damage of HIV. In fact, a large number of studies have demonstrated that people receiving anti-HIV therapy, especially those with wasting, gain a great deal of weight while on therapy.

Lesson 7



When we hear about the percentage of people in our country who are HIV positive, we may become anxious about our HIV status. Also, when we hear about the death from AIDS complications of a neighbour, relation or friend, we get worried as to whether or not we have HIV. In order to get our worries allayed, we need to do a test for HIV.



Lesson Objectives

After completing this lesson, you should be able to

- state reasons why a person should test for HIV;
- describe commonly used tests for HIV;
- interpret results of an HIV test; and
- share knowledge with your students about HIV testing.

Basic Content

Need for HIV testing

Getting tested for HIV is a smart thing to do. Yet many people refuse to get tested. They find the idea of getting tested so frightening they just do not want to do it, even though they will often continue to be stressed and worried about whether they are infected. Others think of

testing as unnecessary because they want to believe that they cannot be infected with HIV.

Many times when someone gets tested, they happily find out their concern about being infected was unfounded. Getting the assurance of that negative test result can provide an enormous relief. For others, getting tested and learning they are HIV positive is the first important step towards staying healthy.

Being unaware of HIV status also makes it more likely for a person to unknowingly pass the HIV virus to others. One of the most basic truths about HIV is that gender, age, race and economic status are irrelevant when it comes to vulnerability to HIV. Anyone can become infected.

Who Should Be Tested?

Testing is recommended for those who:

- have multiple sexual partners (2 or more sexual partners in the last 12 months)
- have received a blood transfusion recently in a place where blood is not screened before transfusion, or if a sexual partner received a transfusion and later tested positive for HIV.
- are uncertain about their sexual partner's risk behaviours.
- are homosexuals
- have used street drugs by injection especially when sharing needles and/or other equipment.
- have a sexually transmitted disease (STD), including pelvic inflammatory disease (PID).
- are health care workers with direct exposure to blood on the job.
- want to make sure they are not infected with HIV before getting pregnant.
- are infected with tuberculosis.

Even if you have no risk factors for HIV infection, you may still want to get tested to ease your own mind. This also encourages everyone to be more responsible about HIV transmission.

HIV Tests

Since HIV was first identified as the cause of AIDS in 1983, a variety of tests have been developed for diagnosing HIV infection as well as determine how far the infection has progressed. Doctors determine if HIV is present in the body by identifying HIV antibodies, specialised

proteins created by the immune system to destroy HIV. The presence of the antibodies indicates HIV infection because these antibodies form in the body only when HIV is present. HIV antibodies form anywhere from five weeks to three months after HIV infection occurs, depending upon the individual's immune system. The antibodies are produced continually throughout the course of the infection. There is a "window period" which is the time it takes the body to produce antibodies after HIV infection has begun. For the vast majority of those who will test positive, antibodies to HIV will develop within 4-6 weeks after exposure. Thus, to receive a reliable test result, it is necessary to wait at least three months (13 weeks) after the last possible exposure to the virus before being tested.

Getting tested before three months may result in an unclear result or a false negative. Some testing centres may recommend testing again at six months. All but less than 1% of those who are going to seroconvert will do so within three months (*seroconversion is the development of detectable antibodies to HIV in the blood as a result of infection.*) It is extremely rare for seroconversion to take more than six months to develop detectable antibodies.

There are a number of tests for the presence of the HIV virus. Generally speaking, these tests yield conclusive results within 48 to 72 hours after infection has occurred. However, in some cases, it can take as long as 28 days for results to be considered accurate. Some of these tests are described below.

The ELISA AND WESTERN BLOT TEST

The standard test for detecting HIV antibodies in the blood is the **enzyme-linked immunosorbent assay (ELISA)**. In this test, a blood sample is mixed with proteins from HIV. If the blood contains HIV antibodies, they attach to the HIV proteins, producing a telltale colour change in the mixture. This test is highly reliable when performed two to three months after infection with HIV. The test is less reliable when used in the very early stage of HIV infection, before detectable levels of antibodies have had a chance to form. Doctors routinely confirm a positive result from an ELISA test by using the **Western Blot test**, which can detect lower levels of HIV antibodies. In this test a blood sample is applied to a paper strip containing HIV proteins. If HIV antibodies are present in the blood, they bind to the HIV proteins, producing a color change on the paper. The combination of the ELISA and the Western Blot test is more than 99.9 percent accurate in detecting HIV infection within 12 weeks following exposure.

P24 Antigen Test: This test uses ELISA technology to look directly for key pieces of the HIV virus – the p24 protein found on HIV's outer coat. This test can reduce the chance of a false-negative in standard (antibody) ELISA testing if it is done too early (i.e., less than 13 weeks after exposure). The p24 antigen test may be ordered if there is a very recent risky exposure to HIV, such as a healthcare work-related incident. Blood banks also use it for screening donations. The test is valuable in detecting HIV infection early in the window period after exposure, this test is only useful for a period of approximately three weeks after exposure, before the production of antibodies begins. A p24 test result should be confirmed by antibody testing once the window period has passed.

Viral Load Test

Viral load testing measures the amount of new virus being produced and released into the bloodstream. Several studies have shown that higher levels of viral load are associated with more rapid disease progression and a greater risk of death. Lower levels are associated with stability and reduced risk of progression, infection, or death. Ideally, an HIV infected person should have no detectable level of virus, which means that the level of virus activity is too low to be measured. Currently available tests measure down as low as 200 to 500 copies of virus, the lowest amount presently measurable. This is associated with the best possible clinical outcome. Higher levels, ranging from several hundred upwards of millions of copies of virus, are associated with higher rates of disease progression. In short, the higher the number, the more rapid the rate of disease progression.

The viral load test gives a more accurate picture of the *rate* of disease progression. There are two commonly available tests for measuring viral load. One is called "quantitative PCR" (or "Q-PCR"), the other "branched DNA" (or "b-DNA"). Though there are small differences between the two tests, they are for practical purposes one and the same.

The Quantitative Polymerase Chain Reaction (QPCR): is considered to be highly reliable for someone who may have recently been exposed to the virus, particularly in a high-risk situation. If the virus is present, the quantitative PCR will reveal how much virus is in a person's bloodstream (the viral load). In most cases, a quantitative PCR is highly accurate within 48 to 72 hours. However, a small number of people do not have viral loads that are high enough to confirm a diagnosis until 28 days

after exposure. The standard recommendation is that a negative PCR result be confirmed with an ELISA test at 13 weeks.

Qualitative PCR: The qualitative PCR, also known as the PCR-DNA test, looks for DNA in cells that suggest that HIV infection has taken place. It is not a viral load test, meaning that it will only determine if the virus is present, not how much virus is present. This test is frequently used to determine if an infant born to an HIV-positive is infected with the virus, given that it can detect virus before viral load becomes detectable. However, it is not at all clear if the qualitative PCR test has any advantages over the quantitative PCR test, which appears to be just as reliable, more widely available, and cheaper to perform.

Clinical trials of new drugs use these tests to measure the effect of drugs. A good antiviral drug can quickly reduce the level of virus at least ten fold and often as much as a thousand fold. The goal of therapy is to reduce the viral load to the lowest level detected by the test, usually below 200-500 viral copies.

HIV infected people and their physicians use these tests to make decisions about when and if to use antiviral drugs, and to determine if a drug is working or not. When the virus levels begin to rise again while using a drug, most physicians believe it is time to switch to another drug or combination of drugs.

Knowing the viral load helps doctors estimate an infected person's survival time. For example, studies show that without treatment, the average survival time for people with an HIV viral load greater than 30,000 per microlitre of blood is 4.4 years, while those with a viral load below 10,000 per microlitre of blood live for an average of ten years.

CD4+ Testing

For many years, testing the number of CD4+ cells was the most common way to measure the effects of HIV disease. Low numbers of these cells (below 200) accurately predicts the risk of major infections. The meaning of test results in between this critical level of 200 and the normal level of 1000 is unclear. Physicians once typically started treatment for people when the CD4+ was below 500, but this was always an arbitrary number simply selected from clinical trials. By itself, this number does not tell us enough about the state of disease. It only shows that the level of CD4+ cells is below normal, to varying

degrees. Getting the full picture of HIV disease requires additional tests, especially the Viral Load Test.

CD4+ Cell Ranges

Low	Medium	High
(under 300)	(300-500)	(500 plus)

High Range:

In general, a CD4+ count above 500 suggests no immediate danger, even though it may represent a loss of half the normal CD4+ cell count (1000). The 500 level is sometimes cited as the bottom of the "normal" range, but this can be misleading. While an occasional drop to 500 may be normal, a steady or falling count of 500 or even 600 is not normal and indicates suppressed immunity. At the very least, dietary counselling, nutritional supplements, CD4+ cell monitoring, and periodic use of other tests are recommended in this range, whether or not treatments are used.

Medium Range:

CD4+ counts in this range indicate significant decline of the immune system. However, serious symptoms are uncommon in this range. Some researchers believe this is the optimum time to begin treatment, especially if the viral load test also indicates significant viral activity.

Low Range:

CD4+ counts below 300 indicate the greatest risk of infections and according to the 1993 definition of AIDS, a CD4+ count of 200 or less constitutes an AIDS diagnosis. A person with counts below 300 CD4+ may remain stable for many years, especially with careful health management. While some people have warning signs in the form of symptoms before major infections occur, this is not always the case.

How Testing is Done

Rapid Testing: A blood sample is obtained through finger stick and analyzed using the ELISA test. The results are usually available within ten to sixty minutes. If the result is positive, a follow-up test is required, usually by drawing blood and sending the sample to a laboratory for Western blot testing. If the result is negative, there is no need for additional testing and the result can be considered conclusive. Convenient and faster, this method is often used in healthcare settings, particularly where urgency is an issue such as with someone

who is pregnant or about to give birth. Because it provides a result so quickly, this is an increasingly popular method for testing.

Oral Fluid Test: A device is used to collect oral (mouth) fluid (i.e. saliva). Oral fluids can contain antibodies to HIV, which can be detected using the ELISA and Western blot tests. Typically, it takes one to two weeks to get a result. Because it is so easy and comfortable to accomplish, this test is often used in clinics, doctors' offices, hospitals, and school-based and university health centres.

Urine-Based Test: A urine sample, collected in a cup, is used for the ELISA/Western blot tests. The results of this non-invasive and non-technical method can be obtained typically in one to two weeks. It is commonly used in community-based and outreach settings, adolescent, school and university-based settings. Anyone with a positive urine result must have a confirmatory test.

What Do My Test Results Mean?

A negative test result means:

- If you have not engaged in any risky behaviours for the last 6 months, you are not currently infected with HIV. If you have had unprotected sex or shared needles or have other risk factors in the last 6 months, you should be tested again. You could still be HIV positive, and pass the HIV on to other people, even though your test is negative.
- A negative test does not mean that you are immune to HIV.
- Some people who have a negative test may be tempted to continue risk behaviours, believing "It can't happen to me." If you continue unsafe behaviours, you are still at risk.

A positive test result means:

- The person is infected with HIV. This does not necessarily mean that he/she has AIDS.
- A person with HIV is infected for life. He or she can pass the virus to others by having unprotected sex, or by sharing drug use needles or equipment. To protect yourself and others, you need to avoid doing these things. A woman who has HIV can pass it on to her unborn or breast feeding baby. Those carrying the HIV should not donate blood, plasma, semen, body organs, or other tissue.

- One should get a doctor to monitor the progression of HIV in the body, and advise on when it is appropriate to begin treatment. There are differing opinions about how early to begin treatment, but it is clearly much better to begin treatment long before symptoms of AIDS develop.
- If one's HIV test is positive, sexual partners and anyone with whom one has shared drug injection equipment may also be infected. They should be told they have been exposed to HIV and advised to seek HIV counselling and antibody testing.

Need for periodic testing

Many people continue to engage in some degree of risky behaviour, and choose to be tested for HIV periodically (every six months, every year, or every other year.). Since the window period for developing a positive test result can be as long as six months, it would rarely make sense to be tested more often than this. There are clear benefits to early medical attention for infection with the HIV virus. There is little agreement on how early this must be. But if you wait longer than two years, treatment of the disease may be less effective. If you are beyond the six month window period from a possible HIV transmission event and were reported HIV negative by an accurate HIV test (and you are not subsequently put at risk for HIV), you can consider yourself HIV negative. There is no need to retest. However if it eases your anxiety, you may wish to take the test again periodically.



Resources: Chart A showing (i) a person having his blood drawn preparatory to being tested for HIV and (ii) a person pricking self ready to test for HIV using HIV testing kit; Chart B listing different types of HIV test; and Chart C showing low, medium and high viral loads.

Procedure:

Step 1: In small groups, ask students to discuss why people should test for HIV and the procedure commonly adopted. Request a member of each group to present the summary of the group's discussion to the whole class. List the summaries on the board.

Step 2: Engage pupils in interactive discussion on the class summaries, giving further explanation on why people should be tested for HIV. Request pupils to consider taking the HIV test and in turn, to encourage member of their family and friends to take the test at the nearest clinic where such facility exists.

Step 3: Using Charts A and B, discuss with pupils the following HIV tests:

The ELISA and Western Blot Test

The standard test for detecting HIV antibodies in the blood is the **enzyme-linked immunosorbent assay (ELISA)**. In this test, a blood sample is mixed with proteins from HIV. If the blood contains HIV antibodies, they attach to the HIV proteins, producing a telltale colour change in the mixture. This test is highly reliable when performed two to three months after infection with HIV. Doctors routinely confirm a positive result from an ELISA test by using the **Western Blot test**, which can detect lower levels of HIV antibodies.

Viral Load Test

Viral load testing measures the amount of new virus being produced and released into the bloodstream. Higher levels, ranging from several hundred upwards of millions of copies of virus, are associated with higher rates of disease progression. In short, the higher the number, the more rapid the rate of disease progression.

Using Chart C, explain to the pupils the meanings of the results of HIV tests. Let pupils lead the discussion on what should be done when the result is (a) positive; and (b) negative. Contribute the following to the discussion.

If the result is negative:

- you are not currently infected with HIV if you have not engaged in any risky behaviours for the last 6 months,. If you have had unprotected sex or shared needles or have other risk factors in the last 6 months, you should be tested again. You could still be HIV positive, and pass the HIV on to other people, even though your test is negative.
- A negative test does not mean that you are immune to HIV.

- Some people who have a negative test may be tempted to continue risk behaviours, believing "It can't happen to me." If you continue unsafe behaviours, you are still at risk.

A positive test result means:

- The person is infected with HIV. This does not necessarily mean that he/she has AIDS.
- A person with HIV is infected for life. He or she can pass the virus to others by having unprotected sex, or by sharing drug use needles or equipment. To protect yourself and others, you need to avoid doing these things. A woman who has HIV can pass it on to her unborn or breast feeding baby. Those carrying the HIV should not donate blood, plasma, semen, body organs, or other tissue.
- One should get a doctor to monitor the progression of HIV in the body, and advise on when it is appropriate to begin treatment. There are differing opinions about how early to begin treatment, but it is clearly much better to begin treatment long before symptoms of AIDS develop.
- If one's HIV test is positive, sexual partners and anyone with whom one has shared drug injection equipment may also be infected. They should be told they have been exposed to HIV and advised to seek HIV counselling and antibody testing.

Step 4: Close the lesson with a summary and review questions.



In this lesson, we learned the following:

Testing is recommended for those who:

- have multiple sexual partners (2 or more sexual partners in the last 12 months)
- have received a blood transfusion recently in a place where blood is not screened before transfusion, or if a sexual partner received a transfusion and later tested positive for HIV.
- are uncertain about their sexual partner's risk behaviours.

- are homosexuals
- have used street drugs by injection especially when sharing needles and/or other equipment.
- have a sexually transmitted disease (STD), including pelvic inflammatory disease (PID).
- are health care workers with direct exposure to blood on the job.
- wants to make sure they are not infected with HIV before getting pregnant.

The standard test for detecting HIV antibodies in the blood is the **enzyme-linked immunosorbent assay (ELISA)**. In this test, a blood sample is mixed with proteins from HIV. If the blood contains HIV antibodies, they attach to the HIV proteins, producing a telltale colour change in the mixture. This test is highly reliable when performed two to three months after infection with HIV. The test is less reliable when used in the very early stage of HIV infection, before detectable levels of antibodies have had a chance to form. Doctors routinely confirm a positive result from an ELISA test by using the **Western Blot test**, which can detect lower levels of HIV antibodies.

The P24 Antigen Test uses ELISA technology to look directly for key

pieces of the HIV virus – the p24 protein found on HIV's outer coat. This test can reduce the chance of a false-negative in standard (antibody) ELISA testing if it is done too early (i.e., less than 13 weeks after exposure).

Viral load testing measures the amount of new virus being produced and released into the bloodstream.

In general, a CD4+ count above 500 suggests no immediate danger, even though it may represent a loss of half the normal CD4+ cell count (1000). The 500 level is sometimes cited as the bottom of the "normal" range, but this can be misleading. While an occasional drop to 500 may be normal, a steady or falling count of 500 or even 600 is not normal and indicates suppressed immunity.

Testing methods include (a) Rapid Testing: A blood sample is obtained through finger stick and analyzed using the ELISA test; (b) Oral Fluid Test: A device is used to collect oral (mouth) fluid (i.e. saliva). Oral fluids can contain antibodies to HIV, which can be detected using the ELISA and Western blot tests; and (c) Urine-Based Test: A urine sample, collected in a cup, is used for the ELISA/Western blot tests. The results of this non-invasive and non-technical method can be

obtained typically in one to two weeks. It is commonly used in community-based and outreach settings, adolescent, school and university-based settings. Anyone with a positive urine result must have a confirmatory test.

Lesson 8

Opportunistic Infections

Lesson Objectives

After completing this lesson, you will be able to:

- list at least ten opportunistic infections associated with HIV infection;
- suggest therapies for such infections; and
- teach your students the topic "Opportunistic Infections".

Basic Content

As we learned in Lesson 2, HIV attacks the immune system, the body's "security force" that fights off infections. When the immune system breaks down, you lose this protection and can develop many serious, often deadly infections and cancers. These are called "opportunistic infections" (OIs) because they take advantage of the body's weakened defenses. Listed below are the major OIs & cancers that can occur during late-stage HIV disease.

Candidiasis

There are two main types of candidiasis (of the mouth and throat, and of the vagina) and systemic disease (of the oesophagus, and disseminated disease). The mouth and throat variant (oropharyngeal candidiasis or OPC) is believed to occur at least once in the lifetime of all HIV-infected patients. While OPC is not a cause of death, it causes oral pain and makes swallowing difficult. The symptom of oesophageal candidiasis is pain in the chest that increases with swallowing, and causes difficulty in swallowing. Disseminated candidiasis causes fever and symptoms in the organs affected by the disease.

Herpes simplex and Herpes zoster

Herpes simplex virus infection (HSV, which causes sores around the mouth and genitals) and herpes zoster virus infection ('zonal' herpes or shingles) are not life-threatening but can be extremely painful. Both

can cause encephalitis, which can be life threatening. Treatment with acyclovir is only marginally effective in herpes zoster but it is sometimes dramatic in HIV-associated herpes simplex with extensive ulceration.

Cryptococcal meningitis

Cryptococcal infection is caused by a fungus which primarily infects the brain. Systemic mycoses such as cryptococcosis probably cause about 5% of all HIV-associated deaths worldwide. Cryptococcosis most often appears as meningitis and occasionally as pulmonary or disseminated disease. Cryptococcal meningitis (CRM) is the most frequent systemic fungal infection in HIV-infected persons. Without treatment, life expectancy is probably less than a month. Cryptococcosis is relatively easy to diagnose.

Tuberculosis

Tuberculosis is a bacterial infection that primarily infects the lungs. Tuberculosis is the leading HIV-associated opportunistic disease in developing countries. For people who are dually infected with HIV and TB, the risk of developing active tuberculosis is 30-50 fold higher than for people infected with TB alone. And because Mycobacterium can spread through the air, the increase in active TB cases among dually infected people means:

- more transmission of the TB germ
- more TB and carriers
- more TB in the whole population.

Tuberculosis is harder to diagnose in HIV-positive people than those who are uninfected. The diagnosis of TB is important because TB progresses faster in HIV-infected people. Also, TB in HIV-positive people is more likely to be fatal if undiagnosed or left untreated. TB occurs earlier in the course of HIV infection than other opportunistic infections.

A proper combination of anti-TB drugs achieves both prevention and cure:

- Effective treatment quickly makes the individual non-contagious. This prevents further spread of the TB germ.
- The DOTS (directly observed short course) treatment strategy recommended by WHO treats TB in HIV-infected persons as

effectively as it treats those without the virus. A complete cure takes 6 to 8 months and uses a combination of antibiotics. In addition to curing the individual, it also prevents further spread of the disease to others. This is why treating infectious cases of TB has important benefits for society as a whole. Isoniazid preventive therapy is recommended as a health-preserving measure for HIV-infected persons at risk of TB. TB prophylaxis has been shown to increase the survival of HIV-infected persons at risk of TB.

Diagnosis and treatment of the following HIV related opportunistic infections require medium infrastructure.

Cryptosporidiosis - isosporiasis

Cryptosporidiosis (crypto) and isosporiasis are both caused by parasite. Crypto is easily spread by contaminated food or water, or direct contact with an infected person or animal. Crypto causes diarrhoea, nausea, vomiting and stomach cramps. In people with healthy immune systems, these symptoms do not last more than about a week. However, if the immune system is damaged crypto can continue for a long time. Diarrhoea can interfere with the absorption of nutrients and this can lead to serious weight loss. To confirm diagnosis, the stool is normally checked for parasites and their eggs. There is no drug treatment that clears up or cures crypto.

Kaposi Sarcoma

HIV -associated Kaposi Sarcoma causes dark blue lesions, which can occur in a variety of locations including the skin, mucous membranes, gastrointestinal tract, lungs or lymph nodes. The lesions usually appear early in the course of HIV infection. Treatment depends on the lesions' symptoms and location.

Leishmaniasis

Leishmaniasis is transmitted by sandflies. The most serious of its four forms is visceral leishmaniasis (VL)- also know as kala azar-, which is characterised by irregular bouts of fever, substantial weight loss, swelling of the spleen and liver and anaemia (occasionally serious). Recently, there has been an increase in overlapping of VL and HIV infection.

PCP

Pneumocystis carinii pneumonia is caused by a parasite that infects the lungs.

PCP is the most frequent HIV associated opportunistic infection in industrialised countries but appears to be less frequent for example in Africa. The symptoms are mainly pneumonia along with fever and respiratory symptoms such as dry cough, chest pain and dyspnoea. Definitive diagnosis requires microscopy of bodily tissues or fluids.

List of Opportunistic Infections

Bacterial Infections

- Mycobacterium Avium Complex (MAC)
- Mycobacterium Kansasii
- Salmonellosis
- Syphilis & Neurosyphilis
- Tuberculosis (TB)

Malignancies (Cancers)

- Anal Dysplasia/Cancer
- Cervical Dysplasia/Cancer
- Kaposi's Sarcoma (KS)
- Lymphomas

Viral Infections

- Cytomegalovirus (CMV)
- Hepatitis C
- Herpes Simplex Virus (oral & genital herpes)
- Herpes Zoster Virus (shingles)
- Human Papiloma Virus (HPV, genital warts, anal/cervical dysplasia/cancer)
- Molluscum Contagiosum
- Oral Hairy Leukoplakia (OHL)
- Progressive Multifocal Leukoencephalopathy (PML)

Fungal Infections

- Aspergillosis
- Candidiasis (thrush, yeast infection)

- Coccidioidomycosis
- Cryptococcal Meningitis
- Histoplasmosis

Protozoal Infections

- Cryptosporidiosis
- Isosporiasis
- Microsporidiosis
- Pneumocystis Carinii Pneumonia (PCP)
- Toxoplasmosis

Neurological Conditions

- AIDS Dementia Complex (ADC)
- Peripheral Neuropathy

Other Conditions and Complications

- Aphthous Ulcers
- Thrombocytopenia
- Wasting Syndrome

TREATMENT OF HIV-RELATED OPPORTUNISTIC INFECTIONS

Some of the opportunistic infections are easier to treat than others. Some opportunistic infections and symptoms such as candidiasis of the mouth and throat and vaginal candidiasis ('thrush'), herpes zoster and herpes simplex can be managed effectively through home-based care. In a home-based care setting diagnosis is made by symptoms.

Some opportunistic infections can be treated when there is minimum health infrastructure present. When minimum infrastructure is available, diagnosis can be made by symptoms or use of a simple microscope. Infections that can be diagnosed in minimum infrastructures are oral candidiasis, pulmonary TB, herpes, and cryptococcal meningitis.

In medium infrastructure setting, the facilities available are x-ray equipment or culture facilities. Using these, opportunistic infections as extra-pulmonary TB, cryptosporidiosis-isosporiasis, PCP and Kaposi Sarcoma can be diagnosed and treated.

Opportunistic infections such as toxoplasmosis, Mycobacterium avium complex disease (MAC) and Cytomegalovirus infection (CMV) can be diagnosed and treated in places with advanced infrastructure. Treating these infections is often impossible in resource poor countries. Many developing countries lack the advanced equipment and infrastructure (such as CT scanning) needed to treat these more complex infections.

Drugs for treatment of HIV-related opportunistic infections

HIV/AIDS care requires a range of essential medicines, in addition to antiretrovirals. If available, these effective and relatively inexpensive drugs can prevent or treat many of the common HIV-related diseases. These are the diseases that are responsible for the main burden of illness and death in high-prevalence countries.

Effective treatment depends on general health services being able to procure, store, select and administer the necessary drugs and to provide related treatment, care and diagnostic services to monitor health status and treatment response. Where health centres and district hospitals are available and accessible, diagnosis of the common infections and complications related to HIV/AIDS (e.g. TB, pneumonia, diarrhoea and candida infection of the mouth and throat) is usually possible, and these conditions can be treated with inexpensive, effective antibiotics and basic nursing procedures.

Prevention of HIV-related opportunistic infections

Several HIV-related infections can be prevented. Following successful treatment, prophylaxis can also prevent disease recurrence (TB, salmonella, cryptococcus). Although the variety of HIV-related illnesses, for example in Africa, differs from that in industrialised countries, several of the most common opportunistic infections are open to prevention through antibiotic prophylaxis.



Resources: Posters showing a listing of opportunistic infections and diagrams of symptoms of some of the infections.

Procedure: Display the poster listing the opportunistic infections in class. Ask students to work in groups to discuss the symptoms of the infections. Assign at least four OIs to each group. At the end of the group work, request a representative of the group to report to the

whole class. Evaluate the lesson through a series of questions derived from the posters.



In this lesson, we learned that HIV attacks the immune system, the body's "security force" that fights off infections. When the immune system breaks down, you lose this protection and can develop many serious, often deadly infections and cancers. These are called "opportunistic infections" (OIs) because they take advantage of the body's weakened defenses.

List of Opportunistic Infections

Bacterial Infections

- Mycobacterium Avium Complex (MAC)
- Mycobacterium Kansasii
- Salmonellosis
- Syphilis & Neurosyphilis
- Tuberculosis (TB)

Malignancies (Cancers)

- Anal Dysplasia/Cancer
- Cervical Dysplasia/Cancer
- Kaposi's Sarcoma (KS)
- Lymphomas

Viral Infections

- Cytomegalovirus (CMV)
- Hepatitis C
- Herpes Simplex Virus (oral & genital herpes)
- Herpes Zoster Virus (shingles)

- Human Papilloma Virus (HPV, genital warts, anal/cervical dysplasia/cancer)
- Molluscum Contagiosum
- Oral Hairy Leukoplakia (OHL)
- Progressive Multifocal Leukoencephalopathy (PML)

Fungal Infections

- Aspergillosis
- Candidiasis (thrush, yeast infection)
- Coccidioidomycosis
- Cryptococcal Meningitis
- Histoplasmosis

Protozoal Infections

- Cryptosporidiosis
- Isosporiasis
- Microsporidiosis
- Pneumocystis Carinii Pneumonia (PCP)
- Toxoplasmosis

Neurological Conditions

- AIDS Dementia Complex (ADC)
- Peripheral Neuropathy

Other Conditions and Complications

- Aphthous Ulcers
- Thrombocytopenia
- Wasting Syndrome



1. List any ten opportunistic infections associated with HIV/AIDS.
2. Describe the symptoms of any two of the infections.
3. State the common treatment for any two of the OIs.

Lesson 9

THE IMPACT OF HIV/AIDS IN AFRICA

Lesson Objectives

After completing this lesson, you will be able to:

- describe the scope of the HIV/AIDS problem in Africa;
- enumerate the impact of HIV on socio-economic conditions in the region; and
- share knowledge of the topic with your students.

Basic Content

Sub-Saharan Africa is the region of the world that is most affected by HIV/AIDS. An estimated 26.6 million people are living with HIV/AIDS and approximately 3.2 million new infections occurred in Sub-Saharan Africa in 2003. In 2002, the epidemic claimed the lives of an estimated 2.3 million Africans. Ten million young people (aged 15-24) and almost 3 million children under 15 are living with HIV. An estimated eleven million children have been orphaned by AIDS in Sub-Saharan Africa.

The extent of the epidemic is only now becoming clear in many African countries, as increasing numbers of people with HIV are now becoming ill. In the absence of massively expanded prevention, treatment and care efforts, the AIDS death toll on the continent is expected to continue rising before peaking around the end of the decade. This means that the worst of the epidemic's impact on these societies will be felt in the course of the next ten years and beyond. Its social and economic consequences are already being felt widely not only in health but in education, industry, agriculture, transport, human resources and the economy in general.

Large variations exist between individual countries. In some African countries, the epidemic is still growing despite its severity. Others face a growing danger of explosive growth. The sharp rise in HIV prevalence among pregnant women in Cameroon (more than doubling

to over 11% among those aged 20-24 between 1998 and 2000) shows how suddenly the epidemic can surge.

National HIV prevalence rates vary greatly between countries. In Somalia and Gambia the prevalence is under 2% of the adult population, whereas in South Africa and Zambia around 20% of the adult population is infected.

In four southern African countries, the national adult HIV prevalence rate has risen higher than was thought possible and now exceeds 30%. These countries are Botswana (38.8%), Lesotho (31.5%), Swaziland (33.4%) and Zimbabwe (33.7%).

West Africa is relatively less affected by HIV infection, but the prevalence rates in some countries are creeping up. In west and central Africa HIV prevalence is estimated to exceed 5% in eight countries including Cameroon (11.8%), Central African Republic (12.9%), Côte d'Ivoire (9.7%) and Nigeria (5.8%).

Until recently the national prevalence rate has remained relatively low in Nigeria, the most populous country in sub-Saharan Africa. The rate has grown slowly from 1.9% in 1993 to 5.8% in 2001. But some states in Nigeria are already experiencing HIV prevalence rates as high as those now found in Cameroon. Already more than 3 million Nigerians are estimated to be living with HIV/AIDS.

HIV infection in Eastern Africa varies between adult prevalence rates of 1% in Somalia to 15% in neighbouring Kenya. In Uganda the countrywide prevalence among the adult population is 5%, but recent HIV infections appear to be on the decline in several parts of the country.

The prevalence of HIV infections among a country's adult population - that is, the percentage of the adult population living with HIV, is a measure of the overall state of the epidemic in a country. But the prevalence gives a less clear picture of recent trends in the epidemic, because it does not distinguish between people who acquired the virus very recently and those who were infected a decade or more ago.

Regular measurement of HIV prevalence amongst groups of young people can give an indication of the HIV incidence amongst them, that is, the number of new infections occurring. The steadily dropping HIV prevalence over the last few years, among 15 - 19 year olds in Uganda, provide a more accurate picture of the trend in the epidemic

in Uganda, and in this instance the effectiveness of prevention efforts among young people.

The Impact on the Health Sector

In all affected countries the HIV/AIDS epidemic is bringing additional pressure to bear on the health sector. As the epidemic matures, the demand for care for those living with HIV/AIDS rises, as does the toll among health workers. In sub-Saharan Africa, the annual direct medical costs of AIDS (excluding antiretroviral therapy) have been estimated at about US\$30 per capita, at a time when overall public health spending is less than US\$10 for most African countries.

Health-care services face different levels of strain, depending on the number of people who seek services, the nature of their need, and the capacity to deliver that care.

The Effect on Hospitals

As HIV infection progresses to AIDS, there is an increase in total hospitalisation. The 2001 Swaziland Human Development Report estimated that people living with HIV/AIDS occupied half of the beds in some health care centres in Swaziland. HIV prevalence among hospitalised patients was almost 33% in one Tanzanian hospital, making HIV infection the major cause of illness leading to hospitalisation. Without major interventions, the problem will worsen. The World Bank estimates that the number of hospital beds needed for AIDS patients could exceed the total number of beds available in Swaziland by 2004 and in Namibia by 2005¹.

The HIV/AIDS epidemic is also having a negative impact on the overall quality of care provided in hospitals. A shortage of beds, for example, means that people tend to be admitted only at the later stages of illness, reducing their chances of recovery, as some Kenyan hospitals have discovered. Lengthy hospital stays are being reported in Botswana's hospitals, along with staff shortages and staff burnout. Also, more time has to be spent diagnosing cases that are more complex as the epidemic deepens.

Health Care Workers

At the same time as the demand for health services is expanding, so more health care professionals are being affected by HIV/AIDS. For example, Malawi and Zambia are experiencing a 5-6 fold increase in health worker illness and death rates. Increased workloads and stress might also spur emigration by health professionals.

The antiretroviral programme in Botswana has faced an acute shortage of trained staff, which has had a significant effect on the programme. There are not enough trained staff to carry out the health checks required for enrolment on the programme, and this has contributed to the enrolment and treatment rates being lower than was first hoped. The problem is compounded by the fact that over 90% of the doctors are foreign and do not speak Setswana, the local language. Another problem faced when recruiting health care staff from abroad is that it takes time for them to become familiar with the local culture.²

Community/Home-Based Care

The emergence of community-based care programmes, often organised by people living with HIV/AIDS, has become one of the outstanding features of the epidemic. They are also playing a key role in easing the impact. Although many of these programmes are operated by religious groups or non-governmental organisations, the effectiveness of the care does depend on support from formal health, welfare and other social sectors. Also, a study in South Africa has suggested that while home-based care is not cheap it is still an affordable option for the care of people with HIV/AIDS.

The Impact on Households

The toll of HIV/AIDS on households can be very severe. Although no part of the population is unaffected by HIV, it is often the poorest that are the most vulnerable to HIV/AIDS and on whom the consequences are most severe. In many cases, the presence of AIDS means that the household will dissolve, as parents die and children are sent to relatives for care and upbringing. A study in Zambia revealed that 65% of households in which the mother had died had dissolved. But much happens to a family before this dissolution happens: HIV/AIDS strips the family of assets and income-earners, further impoverishing the poor.

Household Income

A study in Côte d' Ivoire revealed that income in affected households was half that of the average household income. This was often the result not only of the loss of income due to illness among household members, but also because other members had to divert more time and effort away from income-generating activities³.

Household Income

A study in three countries, Burkina Faso, Rwanda and Uganda, has calculated that AIDS will not only reverse efforts to reduce poverty, but will increase the percentage of people living in extreme poverty (from 45% in 2000 to 51% in 2015). In Botswana, household income for the poorest quarter of households is expected to fall by 13%. Income earners in these households are also expected to take on an average of four more dependants because of HIV/AIDS.

Basic Necessities

A study in South Africa found that already poor households coping with an AIDS-sick member were reducing spending on necessities even further. The most likely expenses to be cut were clothing (21%), electricity (16%) and other services (9%). Falling incomes forced about 6% of households to reduce the amount they spent on food and almost half of households reported having insufficient food at times.⁴

"She then led me to the kitchen and showed me empty buckets of food and said they had nothing to eat that day just like other days"⁴

Food Production

It is estimated that in Burkina Faso, 20% of rural families have reduced their agricultural work or even abandoned their farms because of AIDS. In Ethiopia, AIDS-affected households were found to spend 11-16 hours per week performing agricultural work, compared with an average 33 hours for non-AIDS affected households.

Illness

Taking care of a person sick with AIDS is not only an emotional strain for household members, but also a major strain on household resources. Loss of income, additional care-related expenses, the reduced ability of caregivers to work, and mounting medical fees and funeral expenses together push affected households deeper into poverty. According to the study in Côte d'Ivoire, health care expenses rose by up to 400% when a family member had AIDS.

Funerals

But the financial burden of death can also be considerable, with some families in South Africa spending three times the total household monthly income on a funeral.

The Impact on Children

It is hard to overemphasise the trauma and hardship that children affected by HIV/AIDS are forced to bear worldwide. Not only does HIV/AIDS mean children lose their parents or guardians, but sometimes it means they lose their childhood as well.⁷

As parents and family members become ill, children take on more responsibility to earn an income, produce food and care for family members. It is harder for these children to access adequate nutrition, basic health care, housing and clothing. Fewer families have the money to send their children to school.

Often both of the parents are HIV-positive in Africa. This has resulted that more children have been orphaned by AIDS in Africa than anywhere else. Also many children will be part of a generation of to be raised by their grandparents or left their own in child-headed households. As projections of the number of AIDS orphans rise, some calls have been heard for an increase in institutional care for children. This solution is not only expensive but also detrimental to the children. Institutionalisation stores up problems for society, which is ill equipped to cope with an influx of young adults who have not been socialised in the community in which they have to live. There are other alternatives available. An example is the approach developed by church groups in Zimbabwe, where they recruit community members to visit orphans in their homes where they live either with foster parents, grandparents, other relatives or in child-headed households.

The way forward is prevention. It is important to prevent children from becoming infected with HIV at birth and later on in their life. Also, generally preventing more people from becoming infected with HIV in the future, and care to prevent people from dying of AIDS is essential. Then fewer children will be orphaned by HIV/AIDS.

The Impact on Education Sector

The extent to which schools and other education institutions are able to continue functioning (as part of the essential infrastructure of societies and communities) will influence how well societies eventually recover from the epidemic.

Fewer Children will Receive a Basic Education

A decline in school enrolment is one of the most visible effects of the epidemic. This will in itself have an effect on HIV prevention, as a good basic education ranks among the most effective and cost-effective means of preventing HIV.⁸

"Without education, AIDS will continue its rampant spread. With AIDS out of control, education will be out of reach" - Peter Piot, Director of UNAIDS⁹

This reduction in the number of children attending school, will have a significant impact on the ability of many countries to achieve the Education For All targets.¹⁰

Why are Fewer Children Attending School in Africa?

Contributing factors include:

- The removal of children from school to care for parents and family members
- An inability to afford school fees and other expenses
- AIDS-related infertility and a decline in birth rate, leading to fewer children
- More children are themselves infected and either do not live long enough to start school or do not survive the years of schooling.

For example, research in South Africa showed that the number of pupils enrolling in the first year of primary school in 2001 in parts of KwaZulu-Natal Province, was 20% lower than in 1998. In the Central African Republic and Swaziland, school enrolment is reported to have fallen by 20-36% due to AIDS and orphanhood, with girls being most affected.

*"If there is a shortage of money the girl child stays behind and the boy child goes to school. Even if a girl is more intelligent."*¹¹

The Impact on Teachers

HIV/AIDS does not only affect pupils but teachers as well. A study in Zimbabwe found that 19% of male teachers and almost 29% of female teachers were infected with HIV.

Teacher absenteeism is increased by HIV/AIDS as the illness itself causes increasing periods of absence from class. Teachers with sick families also take time off to attend funerals or to care for sick or dying relatives and teacher absenteeism also results from the psychological effect of the epidemic.¹²

When a teacher falls ill, the class may be taken on by another teacher, may be combined with another class or left untaught. But even when there is a sufficient supply of teachers to replace losses, there can be a significant impact on the students.

"Some of the schools have lost teachers due to this disease. Eventually after a year or two they are replaced with another teacher. But they are not the same as the ones who have died. They cannot teach or do the work as well as the one affected by AIDS. And also the learners, the learners used to know their teachers very well." - School principal, Namibia.¹³

The illness or death of teachers is especially devastating in rural areas where schools depend heavily on one or two teachers. Moreover, skilled teachers are not easily replaced. Swaziland has estimated that it will have to train 13,000 teachers over the next 17 years, just to keep services at their 1997 levels - 7000 more than it would have to train if there were no AIDS deaths.

The Impact on Enterprises and Workplaces

HIV/AIDS dramatically affects labour, setting back economic activity and social progress. The vast majority of people living with HIV/AIDS in Africa are between the ages of 15 and 49 - in the prime of their working lives.

AIDS weakens economic activity by squeezing productivity, adding costs, diverting productive resources, and depleting skills. Also, as the impact of HIV/AIDS on households grows more severe, market demand for products and services can fall. The epidemic hits

productivity through increased absenteeism. Comparative studies of East African businesses have shown that absenteeism can account for as much as 25-54% of company costs.

A study in several southern African countries has estimated that the combined impact of AIDS-related absenteeism, productivity declines, health-care expenditures, and recruitment and training expenses could cut profits by at least 6-8%. NamWater, Namibia's largest water purification company, has reported that HIV/AIDS was hindering its operation as absenteeism rose and productivity dropped. A study of a sugar mill in South Africa put the cost per worker per year at R9,500 (about £800). Of this, the cost of replacement workers, lost productivity, and absenteeism account for about a quarter each.¹⁴

Company costs for health-care, funeral benefits and pension fund commitments are likely to rise unexpectedly as early retirement and deaths rise. A study of a commercial agricultural estate in Kenya showed that AIDS-related medical expenditure exceeded projected expenses by 400%. Funeral costs are also provided by a number of employers in Africa and they are rising sharply.

As HIV/AIDS related costs have risen, so more and more employers have set up HIV/AIDS related programmes at their workplaces. These programmes work more effectively when they also consider the wider realities of the workers' lives. An example is the gold-mining districts in South Africa. The gold mines attract thousands of workers, often from poor and remote regions. Most live in hostels, separated from their families and as a result a thriving sex industry operates around many mines and high HIV prevalence is common. In recent years, mining companies have been working with a number of organisations to implement prevention programmes for the miners. These have included mass distribution of condoms, medical care and treatment for sexually transmitted diseases and awareness campaigns. However, work and social conditions make it difficult to achieve and sustain reductions in HIV and other sexually transmitted infection levels.

In Swaziland, an employers' anti-AIDS coalition has been set up to promote voluntary counselling and testing. The coalition not only includes larger companies but also small and -medium -size enterprises. In Botswana, the Debswana diamond company offers all employees HIV testing, and if they are HIV positive, they and their spouses are offered HIV antiretroviral drugs.¹⁵ This policy was introduced in 1999 when the company found that many of their work force were HIV positive. With a skilled workforce, it is financially worth

their while to protect the health and therefore the productivity of their workers. They also discovered that retirements due to ill health and AIDS-related deaths had risen markedly. In 1996, 40% of retirements and 37.5% of deaths were due to HIV/AIDS. By 1999, the proportion had risen to 75% and 59% respectively.

The Impact on Life Expentancy

In many countries of sub-Saharan Africa, AIDS is erasing decades of progress in extending life expectancy. Life expectancy reflects the conditions in a community, but also life expectancy affects conditions in the community. Average life expectancy in sub-Saharan Africa is now 47 years, when it would have been 62 years without AIDS. Life expectancy at birth in Botswana has dropped to a level not seen in Botswana since before 1950. In less than ten years time, many countries in Southern Africa will see life expectancies fall to near 30, levels not seen since the end of the 19th Century.¹⁶

Average life expectancy in 11 African Countries (age in years)

Country	Before AIDS	2010
Angola	41.3	35.0
Botswana	74.4	26.7
Lesotho	67.2	36.5
Malawi	69.4	36.9
Mozambique	42.5	27.1
Namibia	68.8	33.8
Rwanda	54.7	38.7
South Africa	68.5	36.5
Swaziland	74.6	33.0
Zambia	68.6	34.4
Zimbabwe	71.4	34.6

By 2010, the populations of five countries - Botswana, Mozambique, Lesotho, Swaziland and South Africa will have started to shrink because of the number of people dying from AIDS. In two more countries, Zimbabwe and Namibia, the population growth rate will have slowed almost to zero.

The Economic Impact

Through its impacts on the labour force, households and enterprises, HIV/AIDS can act as a significant brake on economic growth and development. Besides the human cost, HIV/AIDS is having deep effects on Africa's economic development. In turn, this effects to Africa's ability to cope with the epidemic.¹⁷ The impact of HIV/AIDS on the economies of African countries is difficult to measure. The economies of many of the worst affected countries were already struggling with development challenges, debt and declining trade before HIV/AIDS started to affect Africa. Together with other factors, HIV/AIDS has had a devastating effect on many countries economies.

HIV/AIDS has an impact on labour supply, through increased mortality and morbidity. This is multiplied by the loss of skills in key sectors of the labour market. Long periods of AIDS-related illness reduce labour productivity. Government income also declines, as tax revenues fall, and governments are pressured to increase their spending, to deal with the rising prevalence of AIDS, as a result creating a potential financial crisis. One review reported that the annual costs associated with sickness and reduced productivity as a result of HIV/AIDS varied from US\$17 per employee in Kenyan manufacturer firm to US\$300 in the Ugandan Railway Corporation.¹⁸

A recent calculation has suggested that the rate of economic growth has fallen by 2-4% in sub-Saharan Africa. Meanwhile, some studies have forecast that, by 2015, the economies of Botswana and Swaziland would grow by 2.5% and 1.1% points less, respectively, than they would have in the absence of the epidemic. By the beginning of the next decade, South Africa, which represents about 40% of sub-Saharan Africa's economic output, faces a real gross domestic product 17% lower than it would have been without AIDS.

The Overall Impact of HIV/AIDS

This page has only been able to outline some of the ways in which HIV/AIDS is already having a devastating impact on African countries. If the impact is going to be reduced in the future, then it is going to need many people and organisations to work together in many different areas.

Sources

The basic content component of this lesson was adapted from Jenni Fredriksson and Annabel Kanabus

The main sources include:

UNAIDS (2002) 'AIDS epidemic update', December

UNAIDS (2002) 'Report on the global HIV/AIDS epidemic 2002', July

Footnotes

¹ Haacker M (2001) Providing Health Care to HIV Patients in Southern Africa. IMF Policy Discussion Paper. Washington: International Monetary Fund (PDP/01/3).

²HIV and AIDS in Botswana <http://www.avert.org/aidsbotswana.htm>

³Béchu N (1998) The impact of AIDS on the economy of families in Côte d'Ivoire: Changes in consumption among AIDS-affected households. In :M Ainsworth, L Fransen and M Over (eds) Confronting AIDS: Evidence from the developing world: Selected background papers for the World Bank Policy Research Report Brussels: European Commission.

⁴Henry J. Kaiser Family Foundation and Health Systems Trust (2002) 'Hitting Home: How households cope with the impact of the HIV/AIDS epidemic', October

⁵Food and Agriculture Organization of the United Nations (2001) Rural Women Carry Family Burdens. Focus, AIDS -A Threat to Rural Africa.

⁶Henry J. Kaiser Family Foundation and Health Systems Trust (2002) 'Hitting Home: How households cope with the impact of the HIV/AIDS epidemic', October

⁷HIV and AIDS orphans in Africa
<http://www.avert.org/aidsorphans.htm>

⁸The World Bank (2002) 'Education and HIV/AIDS: A window of Hope', May

⁹Joint World Bank, Unesco UNAIDS Press release (2002) 'In turning the tide against HIV/AIDS, education is key', October 18

¹⁰EFA Global Monitoring Report, 2002: Is the World on Track?
www.unesco.org/education/efa/index.shtml

¹¹Malaney P (2000)The impact of HIV/AIDS on the education sector in southern Africa.Consulting Assistance on Economic Reform II Discussion Paper No.81 (August).Boston:CAER II

¹²The World Bank (2002) 'Education and HIV/AIDS: A window of Hope', May

¹³Malaney P (2000)The impact of HIV/AIDS on the education sector in southern Africa.Consulting Assistance on Economic Reform II Discussion Paper No.81 (August).Boston:CAER II

¹⁴Haacker M (2002)The Economic Consequences of HIV/AIDS in Southern Africa. IMF Working Paper.Washington: International Monetary Funds (Africa Department) WP/02/38

¹⁵How widely available are HIV& AIDS antiretroviral drugs in Africa?
<http://www.avert.org/aidsdrugsafrika2.htm>

¹⁶Stanecki K. A. (2002) 'The AIDS Pandemic in the 21st century', Draft Report, July 2002, XIV International Conference on AIDS, Barcelona, US Census Bureau

¹⁷Dixon S., McDonald, S and Roberts J. (2002) 'The impact of HIV and AIDS on Africa's economic development', BMJ 2002; 324:232-4

¹⁸Bollinger L., Stover J. (1999) The economic impact of AIDS', Glastonbury, CT: Futures Group International

How Do I Teach Students?

Resources: Map of Africa showing the distribution of HIV/AIDS prevalence rates, and charts summarising the impact of HIV/AIDS on different sectors of the economy of African countries.

Procedure: With the aid of the map, lead students to discuss the distribution of HIV/AIDS prevalence in Africa. Ask students to list the countries in descending order of recent data on sero-prevalence. Follow up with a class symposium on the impact of HIV/AIDS on socio-economic conditions in Africa. Let a member of the class be the symposium facilitator. He/She should lead the symposium to discuss the impact on health, education (including teachers and children), economy and on the household. An appointed scribe for the class should summarise the major points. The role of the teacher should be to add more points (possibly derived from the Basic Content section of this lesson) after the class summary is presented.



In Summary

In this lesson, we learned that:

- Sub-Saharan Africa is the region of the world that is most affected by HIV/AIDS. An estimated 26.6 million people are living with HIV/AIDS and approximately 3.2 million new infections occurred in Sub-Saharan Africa in 2003.
- In 2002, the epidemic claimed the lives of an estimated 2.3 million Africans. Ten million young people (aged 15-24) and almost 3 million children under 15 are living with HIV. An estimated eleven million children have been orphaned by AIDS in Sub-Saharan Africa.
- National HIV prevalence rates vary greatly between countries. In Somalia and Gambia the prevalence is under 2% of the adult population, whereas in South Africa and Zambia around 20% of the adult population is infected. In four southern African countries, the national adult HIV prevalence rate has risen higher than was thought possible and now exceeds 30%. These countries are Botswana (38.8%), Lesotho (31.5%), Swaziland

(33.4%) and Zimbabwe (33.7%). West Africa is relatively less affected by HIV infection, but the prevalence rates in some countries are creeping up. In west and central Africa HIV prevalence is estimated to exceed 5% in eight countries including Cameroon (11.8%), Central African Republic (12.9%), Côte d'Ivoire (9.7%) and Nigeria (5.8%).

- In all affected countries the HIV/AIDS epidemic is bringing additional pressure to bear on the health sector. As the epidemic matures, the demand for care for those living with HIV/AIDS rises, as does the toll among health workers. In sub-Saharan Africa, the annual direct medical costs of AIDS (excluding antiretroviral therapy) have been estimated at about US\$30 per capita, at a time when overall public health spending is less than US\$10 for most African countries.
- The toll of HIV/AIDS on households can be very severe. Although no part of the population is unaffected by HIV, it is often the poorest that are the most vulnerable to HIV/AIDS and on whom the consequences are most severe. In many cases, the presence of AIDS means that the household will dissolve, as parents die and children are sent to relatives for care and upbringing.
- A decline in school enrolment is one of the most visible effects of the epidemic. This will in itself have an effect on HIV prevention, as a good basic education ranks among the most effective and cost-effective means of preventing HIV. This reduction in the number of children attending school, will have a significant impact on the ability of many countries to achieve the Education For All targets.
- Teacher absenteeism is increased by HIV/AIDS as the illness itself causes increasing periods of absence from class. Teachers with sick families also take time off to attend funerals or to care for sick or dying relatives and teacher absenteeism also results from the psychological effect of the epidemic.
- HIV/AIDS dramatically affects labour, setting back economic activity and social progress. The vast majority of people living with HIV/AIDS in Africa are between the ages of 15 and 49 - in the prime of their working lives.
- AIDS weakens economic activity by squeezing productivity, adding costs, diverting productive resources, and depleting skills. Also, as the impact of HIV/AIDS on households grows more severe, market demand for products and services can fall. The epidemic hits productivity through increased absenteeism. Comparative studies of East African businesses have shown that absenteeism can account for as much as 25-54% of company costs.

- In many countries of sub-Saharan Africa, AIDS is erasing decades of progress in extending life expectancy. Life expectancy reflects the conditions in a community, but also life expectancy affects conditions in the community. Average life expectancy in sub-Saharan Africa is now 47 years, when it would have been 62 years without AIDS. Life expectancy at birth in Botswana has dropped to a level not seen in Botswana since before 1950. In less than ten years time, many countries in Southern Africa will see life expectancies fall to near 30, levels not seen since the end of the 19th Century.



(Please write answers to the questions in your notebook)

1. Draw a map of Africa showing the prevalence rate of HIV/AIDS. In a few sentences, summarise the distribution in sub-Saharan Africa by sub-region, that is: West, East, Central and Southern.
2. Describe the impact of HIV/AIDS on education and on the economy of your country.
3. State ways by which the impact of HIV/AIDS on education can be reduced and the role you as a VIHEAF student can play in implementing programmes aimed at reducing the impact.

Lesson 10

The Driving Force of HIV Infection in Africa

Lesson Objectives

After completing this lesson, you will be able to:

- identify the factors that promote HIV infection in Africa;
- describe the interplay of such factors; and
- share your knowledge of the topic with your students.

Basic Content

We have learned in lesson 9 that Sub-Saharan Africa is the region of the world that is most affected by HIV/AIDS. With an estimated 26.6 million people living with the condition and 3.2 million new infections occurring in 2003 alone. This assertion could be said to be true for most other preventable infections like tuberculosis and cholera. Why should this be so? Why should Sub-Saharan Africa be the region mostly affected? What are the forces or interplay of forces that drive the HIV/AIDS pandemic in Sub-Saharan Africa aside from an individual's intrinsic vulnerability. Various social, cultural and economic factors greatly influence the individual's risk to acquiring HIV infection in addition to accelerating the progression from infection to full-blown AIDS. These factors, which cumulatively drive the epidemic to its present state in Sub-Saharan Africa include; ignorance, fear and stigma, cultural factors, poverty and conflicts. The forces, which are mutually synergistic, usually affect the same individual or populations in different ways.



Ignorance

Ignorance could be of two types; “real” and “informed”. “Real ignorance” refers to the lack of information on some or all aspects of the HIV/AIDS infection which may include information on the transmission, spread and preventative measures. “Informed Ignorance” or partial ignorance refers to those that are fully aware of the infection including its transmission and control but somehow for some reasons refuse to believe on some aspect of the infection (like causative agent) or believe that the condition can be cured either through local herbs or some other methods.

Overcoming ignorance is the essential first step towards achieving behavioural change which for now, remains the most important strategic option for control of the epidemic. This ignorance is still high in many parts of Africa especially the rural areas. Studies in Nigeria in 1999 (UNICEF 2001) found that about 90 per cent of men and 74 per cent of women knew of AIDS with variations within age groups. In some parts of the country, the study showed only 47 per cent and 50 per cent of women and men respectively knew about HIV/AIDS. Significant percentages of people were reported to be unaware of any way of preventing HIV infection (in some places as high as 30 per cent). Similar picture may prevail in other parts of sub-Saharan Africa especially West Africa.



Fear and Stigma

Fear and Stigma associated with HIV/AIDS is at two levels; individual and institutional. At individual level, the stigma associated with the disease at both family and community results in fear, withdrawal or even suicidal tendencies. This has been shown to contribute greatly to the reluctance of individuals to go for voluntary testing or in some cases concealing the true status from family and friends. The consequence of this is the “business as usual” approach by such people and the limitation to access to treatment options, care and

support. It also has the potential of spreading the infection to many other people.

“Institutional” fear of stigmatisation is manifested through under-reporting by some states or regions within a country or even a whole country. This is to avoid their perceived stigmatization as “HIV endemic” region or country.



Cultural Factors

Some cultural values, beliefs and attitudes further compound the problem of ignorance and reinforce each other to promote the spread of HIV infection. One such cultural value is shyness which prevents open discussion and education on sexuality and reproduction thus leaving adolescents to acquire such information from their uninformed peers or by experimentation, and trial and error! Similarly, the culture of polygamy and frequent divorce in Sub-Sahara Africa greatly promote and aid the spread of HIV. Other equally negative practices include female genital mutilation, mass circumcision for boys especially in rural areas, traditional face markings and culturally – based gender discrimination in access to education.

Poverty

Poverty drives the HIV/AIDS phenomenon in two broadways; by increasing the population of people at risk and secondly by limiting the management of those already infected. Poor people are more prone to engage in high risk behaviour such as commercial sex work and drug use. They are also more likely to become migrant workers, (being un- or semi-skilled), a group that has been identified as being among those at the greatest risk of acquiring and spreading the infection.

Poor people with Sexually Transmitted Infections (STIs) are similarly more likely to resort to self medication and the use of traditional herbs being unable to afford full hospital diagnosis and management thus creating another pool of people at great risk of acquiring HIV/AIDS. Tuberculosis, a disease closely associated with HIV/AIDS in Africa is basically a disease of poverty.

Poverty further limits the education of children and adolescents, especially girls thus making them more ignorant. AIDS, by its very nature impoverishes the affected individuals, families and communities as indicated in Lesson 9. The synergistic relationship and vicious cycle of poverty, ignorance and disease is thus clearly manifested in HIV/AIDS.

CONFLICTS AND SOCIAL STRIFE

Sub-Saharan Africa has been going through various conflicts and social strife for decades either within or between nations. These conflicts have created a large population of refugees and caused damaging social vices within the continent. Child soldiers, social violence, drugs and prostitution have become the norm in many of the countries involved. This is aside the total breakdown in social services and infrastructure like health and education. The net result of all these is the total absence of any meaningful HIV/AIDS control programmes in such countries and the phenomenal increase in the people at risk and promotion of high risk behaviour.

For Africa to fight HIV/AIDS effectively, the implementation of the various control programmes must go in tandem with measures that address the driving forces of the infection in the continent especially poverty alleviation, conflict resolution and improved access to social services like health and education.



Resources: Costumes and stage settings for a drama on the topic

Procedure: Facilitate the conduct of a drama presentation by your students on the topic. The drama should project the influence of wars, poverty, and illiteracy on the spread of HIV/AIDS in Africa.



In this lesson, we learned that

- Various social, cultural and economic factors greatly influence the individual's risk to acquiring HIV infection in addition to accelerating the progression from infection to full blown AIDS. These factors, which cumulatively drive the epidemic to its present state in Sub -Sahara Africa include; ignorance, fear and stigma, cultural factors, poverty and conflicts. The forces, which are mutually synergistic, usually affect the same individual or populations in different ways.
- Ignorance could be of two types; "real" and "informed". "Real ignorance" refers to the lack of information on some or all aspects of the HIV/AIDS infection which may include information on the transmission, spread and preventative measures. "Informed Ignorance" or partial ignorance refers to those that are fully aware of the infection including its transmission and control but somehow for some reasons refuse to believe on some aspect of the infection (like causative agent) or believe that the condition can be cured either through local herbs or some other methods.
- Some cultural values, beliefs and attitudes further compound the problem of ignorance and reinforce each other to promote the spread of HIV infection. The culture of polygamy and frequent divorce in Sub-Sahara Africa greatly promote and aid the spread of HIV. Other equally negative practices include female genital mutilation, mass circumcision for boys especially in rural areas, traditional face markings and culturally – based gender discrimination in access to education.
- Poverty drives the HIV/AIDS phenomenon in two broadways; by increasing the population of people at risk and secondly by limiting the management of those already infected. Poor people are more prone to engage in high risk behaviour such as commercial sex work and drug use. They are also more likely to become migrant workers, (being un-or semi-skilled), a group that has been identified as being among those at the greatest risk of acquiring and spreading the infection.

A rounded rectangular button with a purple-to-red gradient. On the left, the text "Review Questions" is written in white. On the right, there is a yellow icon of three stylized human figures with their arms raised, set against a white background.

Review Questions

(Write the answers in your notebook)

1. Describe ways by which poverty and illiteracy fuel the spread of HIV in Africa.
2. State factors other than those presented in the lesson that are significant in accelerating the rate of HIV infection in your country or sub-region.

LESSON 11

CLAIMS TO CURE FOR HIV/AIDS IN AFRICA

Lesson Objectives

At the end of this lesson, you will be able to:

- review some claims to cure for HIV/AIDS; and
- teach your students the topic.

Basic Content

Is there a cure or vaccine for HIV/AIDS?

There is currently no cure for AIDS, and no vaccine to prevent infection with HIV, but there are drugs that can slow down the multiplication of the virus and the rate at which it weakens the immune system. In some patients the virus has been reduced to undetectable levels.

A number of candidate vaccines are undergoing clinical trials with some promising results. There are also drugs that can prevent or treat most opportunistic infections (OI).

Africa's potential for cure

There is no doubt that the most ravaged continent could be the pioneer in the cure of HIV/AIDS. We can live up to the ancient name for Africa – Chemet.

Chemet means the “land of the blacks” and the word Chemistry or chemetic science (the basis of synthesis) means the “black man’s science”. So science is the gift of Africans to the modern world.

Africa is rich in rainforest that is home to plants or medicinal herbs that are widely celebrated for their useful role in the development of safe and efficacious medications. We cannot forget **DIGITALIS** for its product – **Digoxin** - in the treatment of heart failure. **RAUWOLFIA SERPENTINA** in developing **Reserpine** for the treatment of depression.

However, most medicinal herbs employed in the treatment of diseases in Africa are not subjected to critical analysis. So for African traditional herbal medicine to be universally acceptable, there is need for concerted efforts to determine its specific ingredients. Potential effects and side-effects has to be thoroughly researched. Scientific quantification of doses need be attempted.

Traditional Medicine in Africa and HIV/AIDS

The hopeless status of HIV positive persons has continually expose them to exploitation by most traditional healers. Several traditional or alternative medicine practitioners in Africa have claimed to have the cure to HIV/AIDS. There are 3 categories of African traditional healers:

Those who only use medicinal substances;

Those working with “intangible forces and rites”; and

Those who combine these two aspects.

The first group, perhaps, has a basis for their claims because a number of medicinal herbs are successfully used in the treatment of malaria and some psychiatric disorders. But, the second group relies only on dreams and consultation with supernatural beings or ancestral spirits for diagnosis and cure. No single case of cure for HIV/AIDS has been **objectively** reported or documented by this group of African alternative medicine practitioners. So, the question of suppressing a particular culture does not arise.

This is captured in the oral submission to the parliamentary committee on TRADITIONAL HEALERS AND THE HEALTH CARE SYSTEM on February 18, 1998 by a professional organization (“Doctor for life”):

*“The heart of the matter is therefore not a cultural-ethnic one, but rather the struggle to promote, attain and secure **true healing – true wholeness of individuals, families and communities...** in a way*

that will not lead to exploitation of, or harm to any person in South Africa, but especially the rural people”.

It is worth noting that some of the herbal medicines used in some of the settings improve general health conditions of AIDS' patients especially opportunistic infections, but they are not in any way curative of HIV/AIDS.

CLAIMS TO CURE

Traditional Medicine

Herbs and scarification marks sometimes with incantations are used as so-called cure for HIV/AIDS. Scarification marks is very common in most African settings. The “medicine-man” makes multiple incisions with a razor blade in the skin of an HIV positive person, then rub “medicine” into the wounds and uses same razor blade in the same way for the next patient possibly with disease other than HIV. The “cure” of the one becomes the lethal side-effect for the next patient.

The sad side of this claim is that some treatable AIDS defining opportunistic infections like Tuberculosis are left untreated. Accelerated progression and ultimately death is what the patient is offered.

“Medical Astrology”

The gloomy reality of HIV/AIDS in Africa has generated so much interest that Astrology and Transcendental Medicine (“TM”) are beginning to take on a role with controversial prophecies on the cure of HIV/AIDS. Astrologer Mahendra Sharma said there would be a cure for AIDS in 2002. He did not make an open prophecy, but with affirmation that the medicine that will lead to cure of HIV/AIDS would come from Africa. Succour to a continent most stricken by the scourge we thought! Unfortunately that did not happen.

Paedophilia as cure for HIV/AIDS

Myths, as in traditional Africa, have surfaced in the cure for HIV. There is a widespread rumour from unscrupulous healers that an HIV positive person could rid himself of the deadly virus through having sexual intercourse with a young virgin. Countless rapes of girls, from as young as 3 years upwards, are the sad consequence. Words cannot

describe the horror for the children: The bodily mutilations, the psychological trauma and finally HIV infection.

This myth is particularly common in South Africa's northeastern province of Kwazulu-Natal. Read the ordeal of a young African girl:

"I was raped by my own dad when I was 16", Ennie said the morning after learning she was infected with the virus that causes AIDS. "The love I had for him failed after that, and I couldn't stand seeing him. But I called him yesterday. He is very sick and couldn't talk much. He said, 'Sorry if I was the one'." Her father is bedridden and failing. Her mother died in April. She knows that she will be the next.^{1}*

(1*: Sunday Report Los Angeles Times, August 16, 1998)

This myth is based on ignorance and a lack of education in most African cultures where confronting sexual issues is a taboo.

A recent United Nations (U.N.) report says that about one-fifth of female AIDS cases in Zimbabwe involve girls in their teens or younger, while the equivalent number among males is one-seventh. Imbalances in infection rates among girls and boys exist in other African countries as well. Perhaps child prostitution may account for this but also, the recent belief in the paedophilia remedy cannot be ruled out.

"Pseudo-orthodox Medicine"

Charlatans now exists among the supposed orthodox medical practitioners and laboratory technologists who take the advantage of HIV/AIDS to exploit and further worsen the suffering of the already impoverished HIV patients and their family.

The alleged "cure" is not based on methods and technology that can be scientifically and practically justified. Their knowledge is usually based on subjective reasoning instead of being derived from critical analytical observation or from controlled, repeatable and standardized experimentation based on already defined conventional principles. The agents used are often not disclosed hiding under the guise of protection of intellectual property.

Religion

Lacking access to expensive western drugs, HIV positive persons are increasingly resorting to spirituality. They have faith in God or seek

spiritual consultation with their ancestors for remedy. A number of claims of healing AIDS patients by religious leaders exist today with no documented proof.

Overall, there is need for vigilance and caution, on the part of HIV/AIDS patients and the general public, not to be deceived by the unfounded claims that could further strip them of their already depleted resources.



Resources: Newspaper cuttings of claims to cure for HIV/AIDS

Procedure: Lead students to discuss local claims to cure for HIV/AIDS and emphasise on the doubtful efficacy of the claims. Post the newspaper cuttings for students to review over a two week period. Arrange a visit to a local site where claim is made for a cure. Engage students in discussions to evaluate local, national and international claims to cure for HIV/AIDS. Emphasise the non-availability of a vaccine for HIV and that scientists are actively working in this domain.



- Herbs and scarification marks sometimes with incantations are used as so-called cure for HIV/AIDS. The sad side of this claim is that some treatable AIDS defining opportunistic infections like tuberculosis are left untreated. Accelerated progression and ultimately death is what the patient is offered.
- Myths, as in traditional Africa, have surfaced in the cure for HIV. There is a widespread rumour from unscrupulous healers that an HIV positive person could rid himself of the deadly virus through having sexual intercourse with a young virgin. Countless rapes of girls, from as young as 3years upwards, are the sad consequence. Words cannot describe the horror for the children:

The bodily mutilations, the psychological trauma and finally HIV infection.

- Charlatans now exists among the supposed orthodox medical practitioners and laboratory technologists who take the advantage of HIV/AIDS to exploit and further worsen the suffering of the already impoverished HIV patients and their family.
- Lacking access to expensive western drugs, HIV positive persons are increasingly resorting to spirituality. They have faith in God or seek spiritual consultation with their ancestors for remedy. A number of claims of healing AIDS patients by religious leaders exist today with no documented proof.



List the claims to cure for HIV/AIDS that are prevalent in your community.

1. Evaluate the efficacy of such claims and the factors which make them acceptable to some sections of the community.

LESSON 12

MYTHS AND MISCONCEPTIONS ABOUT HIV/AIDS

Lesson Objectives

After this lesson, the student should be able to:

- state the common myths and misconceptions about HIV/AIDS; and
- explain such myths and misconceptions to your students, friends and relations.

Basic Content

As is with all new diseases whose causes have not been discovered, there has been some myths and misconceptions built around HIV/AIDS. A myth is an imaginary, fictitious or invented story about a thing or event. A misconception on the other hand is a wrong understanding of a thing or concept. Indeed, lack of adequate knowledge of a thing leads to misconception which in turn leads to the development of myths around the subject matter. Therefore, most of the myths and misconceptions about HIV/AIDS grew out of lack of adequate knowledge of the disease. The problem has also been exacerbated by the difficulties being faced today about finding a cure for the disease.

Years ago when there was a general outbreak of small pox, a viral infection, the Yorubas of Western Nigeria attributed it to an evil spirit commonly called "Sopona" by the local people. Although small pox had virtually been eradicated, the name "Sopona" is still commonly used to refer to small pox and it is still believed that the sopona spirit can be invoked to attack a person or an imaginary enemy.

So it is with HIV/AIDS and most of the very weird things people do in their quest for a cure for the disease are informed by the myths and misconceptions that are harboured about it. For instance in South Africa, it is believed that a carrier can be cured if he sleeps with a baby, a problem that has led to many horrendous happenings in that country.

Some of the myths and misconceptions about HIV/AIDS will include the following:

- (1) sharing food with an infected person; can lead to infection;
- (2) hugging an infected person; will lead to an infection;
- (3) insect bites; can cause infection;
- (4) that HIV/AIDS is a disease of the gay community;
- (5) that it cannot be contacted through oral sex;
- (6) since two individuals are in love, they cannot infect each other irrespective of their sexual history;
- (7) that it is better not to go for an HIV test because, what a man does not know does not kill him;
- (8) that people over 50 years of age cannot contract the diseases.
- (9) If sexual intercourse can take place without bruises through which the virus can gain entry into the blood stream, a man cannot be infected.

All these myths and misconceptions have since been proved to be untrue by science. For instance it has been proved that the amount of the virus in saliva is so infinitesimal that it cannot cause an infection. Hence sharing food or drinking glasses with an infected person does not lead to an infection. Same goes for hugging, sitting with or being in close contact with an infected person.

In the early days of HIV/AIDS, the general belief was that it was a disease of the gay community, understandably so because the first set of diagnosed cases came from homosexuals. However, scientific investigations have proved that HIV/AIDS infection is present in all

populations, homosexuals, **heterosexuals**, children, men or women of varying backgrounds.

When people are in love, they also harbour some wrong conceptions about the possibility of being infected by their partner. The misconception is that since my partner is not sleeping around, he or she cannot possibly be a carrier. This kind of misconception can be very deadly because more often than not, we are very ignorant of the sexual activities of our partners before we meet them. Since the virus can incubate in the human system for many years before the first symptoms start appearing, we stand a great risk of HIV Infection and the only assurance we have is for both partners to go for a test and hopefully thereafter remain faithful to each other.

Another misconception is the belief that if we go for an HIV test and it turns out to be positive, the life of the infected person get shorter because of the **trauma** that follows that knowledge. The common saying is that “what one does not know, does not kill him”. This is another deadly believe because an early detection of HIV presence will ultimately prolong the carrier’s life because of the efficacy of the latest drugs that are available on the disease. HIV carriers now live more normal lives and longer than hitherto possible.

A growing myth about HIV/AIDS is that for oral sex you do not need a condom. This is a misconception because the amount of the virus in the semen is much larger than in the saliva. Hence, while infection cannot occur through kissing, it can occur through oral sex. Related to this myth also is the misconception that HIV can only be contracted through the mixing of bloods. Thus it is erroneously believed that a sexual intercourse that does not lead to the bruising of the sex organ of the man leaves him free of infection.



Resources: Newspaper cuttings myths and misconceptions about HIV/AIDS

Procedure: Lead students to discuss the myths and misconceptions about HIV/AIDS. Post the newspaper cuttings for students to review over a two week period. Engage students in discussions to evaluate local, national and international myths and misconceptions about HIV/AIDS.



In this lesson we learnt that:

- HIV/AIDS cannot be contracted through hugging, sharing food or eating utensils with infected persons;
- HIV/AIDS is not caused by some supernatural spirit. Its cause has been scientifically researched and identified;
- That your partner is faithful now is not a guarantee against an infection if he or she had previously had other relationships;
- HIV/AIDS is not limited to a group of people such as homosexuals. It is a disease that has been found in all populations.
- HIV/AIDS can be contracted through oral sex contrary to the common believe among lovers of oral sex;
- An early diagnosis of HIV/AIDS does indeed prolong the live of the infected person rather than shorten it as previously held due to the efficacy of available drugs.

Lesson 13

ANTI-HIV THERAPY

Lesson Objectives

After completing this lesson, you will be able to:

- describe major anti-HIV therapies; and
- share your knowledge of the topic with your students.

Basic Content

Once HIV was identified as the cause of AIDS, stopping or slowing the replication of the virus became a major goal. Significant progress has been made towards reaching this goal, particularly with the advent of potent drugs and the use of combination therapy that has made it possible to develop long-term strategies for the management of HIV.

The objectives of anti-HIV therapy are to:

- prolong life and improve quality of life for the long-term;
- Suppress virus to below the limit of detection on the currently available tests (below 50 copies HIV RNA), or as low as possible, for as long as possible;
- optimise and extend the usefulness of the currently available therapies; and
- minimise drug toxicity and manage side effects and drug interactions.

It is important to remember that people can live a long time, without symptoms of HIV disease, without the use of anti-HIV therapy. Thus many (if not most) people do not have to make a decision about using anti-HIV therapy immediately after learning that they are living with HIV. Assessing personal risk of HIV disease progression and making decisions that one feels comfortable with and empowered by is part of the key to a successful long-term anti-HIV strategy.

When a person is first infected with HIV, high virus levels develop that are often accompanied by flu-like symptoms and a decline in the

number of CD4+ cells. These are key cells in maintaining and directing immune responses against disease. They are also a common measure of immune health.

Without the use of anti-HIV therapies, the immune system produces a dramatic but incomplete suppression of the virus. In most cases, CD4+ cell counts return partially toward normal levels and a person usually regains good health for many years. Studies demonstrate that even during this time of seemingly good health, there is an aggressive battle waged daily between HIV and the immune system. Over time the immune system is overwhelmed by the virus' rapid and constant activity. There is a clear relationship between increased levels of HIV found in blood (viral load), more advanced disease states and increased risk of disease progression. As a general rule, the more virus being produced in the body, the more rapidly disease progresses. Several studies have now shown that when viral load is reduced and CD4+ cell counts increase for six months or longer, disease progression and death are delayed.

Considering these points, it makes sense to attempt to slow down or stop the replication of HIV as much and for as long as possible. A number of drugs have been shown to significantly reduce viral load, and these drugs almost always cause some rise in CD4+ cell counts. The reduction in viral load and increase in CD4+ cell counts indicate some improvement in the immune system. Anti-HIV drugs that fail to reduce viral load also generally (but not always) fail to improve measures of immune health such as CD4+ cell counts.

It remains unclear when the best time to start therapy is. The "best" time for one person might not be the "best" time for another. Several factors, including viral levels, CD4+ cell count as well as how you feel about therapy, are important to consider when determining if and when anti-HIV therapy is right for you.



When Should Treatment Start?

There is much debate about when to start anti-HIV therapy, which therapies to start, and in what combinations. Should treatment be used immediately when people first learn they are infected, or should

it be saved until there are changes in immune health (noted by a decrease in CD4+ cell counts), increases in viral load or until symptoms of HIV develop? These and other questions need to be considered when deciding when and which combinations to use. In deciding when to start, switch or change anti-HIV regimens there are generally three medical factors to consider:

- What is happening with the virus (HIV RNA) levels;
- What is happening with measures of immune health (particularly CD4+ cell counts);
- What is happening with general health status (e.g. symptoms of HIV disease or recurrent health conditions despite treatment).

The decision to begin treatment is not solely a medical matter. Several other factors must be considered, including:

- How you feel about anti-HIV therapy (if you believe a particular drug or anti-HIV treatment regimen will harm you, then you should consider carefully before deciding to take that drug or regimen);
- A person's readiness and willingness to commit to the use of therapy, including the ability to take therapies as prescribed;
- The impact therapy will have on quality of life;
- The side effects of the therapies;
- How long therapies can last, and whether or not there will be new and better drugs to replace them if or when they fail; and,
- A person's risk of disease progression in the short-, medium- and long-term.

There is no single, right answer to the question of when to start anti-HIV treatment. Some researchers and physicians believe that everyone who is HIV infected—regardless of viral load, symptoms or CD4+ cell counts—should be on treatment. Some believe people should begin therapy only when their CD4+ cell count consistently reads below 500 or their viral load consistently exceeds 10,000-20,000 copies of virus. Others believe that only people with symptoms of HIV disease should consider anti-HIV therapy.

One note of agreement is that most researchers and physicians believe that the decision to start therapy should be guided by looking at overall general health and measures of both CD4+ cell counts and viral load. Increasingly information suggests that the viral load tests, coupled with CD4+ cell counts, provide the most accurate tool to monitor the risk of HIV disease progression.

Recommendations

Advanced Stage Disease: (e.g. severe symptoms of AIDS, with any CD4+ or viral load level): All people with severe symptoms of AIDS should be treated with anti-HIV therapy. In this setting the use of anti-HIV therapy is shown to prolong life and is associated with improvements of symptoms. When starting therapy for opportunistic infections at the same time as starting anti-HIV therapy, special care should be taken to avoid drug interactions. A person experiencing an opportunistic infection is generally encouraged to continue anti-HIV medications.

No symptoms of HIV disease, with CD4+ cell counts below 200 and any viral load: Treatment should be offered after consideration of the issues affecting treatment decision-making.

No symptoms of HIV disease, with CD4+ cell counts between 200-350 and any viral load: Treatment should generally be offered, though controversy exists. Some experts believe it is often safe to wait until the CD4+ count falls to 200. Others believe this offer too little room to accommodate individual differences and feel it is safe to initiate therapy at 350 CD4+ cells.

No symptoms of HIV disease, with CD4+ cell counts above 350 and viral load above 30,000 copies by bDNA or 55,000 by RT-PCR: There are two unproven approaches to treatment in early HIV infection when people are not experiencing symptoms: aggressive and conservative. For people with CD4+ cell counts above 350 and viral load above 30,000 (by bDNA) or 55,000 (by RT-PCR), there are no available data to suggest which approach results in longer survival. Very early, aggressive treatment might lead to longer life. Or it might lead to using up the limited supply of therapies too early in the course of disease. Moreover, it also risks early exposure to possible long-term side effects associated with therapies. As a result many experts would delay starting therapy and continue to monitor CD4+ cell counts and viral load. On the other hand, the risk of disease progression over the next 3 years is somewhat high (over 30%) in people who meet this definition and other experts prefer to initiate treatment without further delay.

No symptoms of HIV disease, with CD4+ cell counts above 350 and viral load below 30,000 copies by bDNA or 55,000 by RT-PCR: Many experts would defer therapy and continue to monitor CD4+

cell counts and viral load; the risk of disease progression over the next three years in this group is low (less than 15%).

Acute Infection (very early, typically within first weeks after infection): If infection is suspected, test for HIV using sensitive and sophisticated techniques. (Note: technologies to measure for viral load are not approved and are discouraged for use in diagnosing HIV infection.) Experts agree that if treatment is offered in this very early setting, it should only be done in the context of a study. People interested in exploring very early treatment should be made aware of all the potential risks of such early treatment. The true long-term effect of immediate treatment is unknown because current studies are not yet complete, but the hope is that early treatment might alter the course of disease. Whether or not this is the “right” approach remains unknown.



Points to Think About for People Who Consider Taking Anti-HIV Therapy

There are many issues that people thinking of taking anti-HIV therapies are encouraged to consider and discuss with their healthcare providers prior to taking the medication. The following issues are offered for consideration for people who are starting anti-HIV therapies for the first time (first line therapy) as well as those who are switching therapies (second or third line therapy).

Successful long-term use of therapies is more important than short-term gains

It is possible to get short-term benefits at the cost of wasting potential long-term benefits. An example of this would be starting on a two-drug NARTI* regimen in a person with a high viral load (more than 100,000 copies of HIV RNA). Studies have shown that resistance can develop within weeks to months after starting a two-drug NARTI regimen and this may impact the usefulness of other similar drugs as well as eliminating options for future therapies.

* Note: NARTIs are a class of anti-HIV drugs.

Reducing viral load as low as possible, preferably below the level of detection with current tests, should be an important goal of anti-HIV therapy

Drug regimens that have a larger, more consistent and longer-lasting effect in reducing viral loads and increasing CD4+ cell counts are more likely to produce longer-lasting health and survival benefits. People with viral load below the limit of detection have a much longer lasting anti-HIV response to a given regimen than people with consistently detectable viral loads. When therapy fails to reduce viral load below the limit of detection, it is usually a sign that the therapy will fail over the next several months. Studies have shown, however, that occasional "blips" in viral load, a detectable reading every now and again, does not represent a major concern.

Today, viral load tests measure reliably down to 50 copies of virus. Any number below this is considered "undetectable." Many researchers believe that people who do not reach undetectable levels after six months of therapy should consider either switching to a new regimen or, if viral levels are detectable but remain very low (e.g. below 1,000 copies), adding another drug. Others believe it might be okay to continue using a regimen if it's controlling viral levels at a low (e.g. below 5,000 copies), yet detectable level. While studies show that achieving "undetectable" viral load is optimal, the cost of side effects or complexity of a regimen necessary to achieve this goal might not be realistic for all people.

There may be some degree of cross-resistance between the drugs in the same class

Cross-resistance refers to when resistance to one drug results in resistance to another drug in the same class. Resistance usually occurs when the drugs being used are not potent enough to completely stop HIV replication or when the drugs are not taken as indicated, resulting in very low levels of drug in the blood which allows HIV to mutate. For instance, someone who has become resistant to one of the non-nucleoside reverse transcriptase inhibitors (NNRTIs) is almost certainly going to be cross-resistant with the other approved NNRTIs. What this means is that once resistance to one NNRTI develops, the other drugs in this class are less effective, and possible wholly ineffective.



Should I get a resistance test?

Several studies have shown that people who selected therapies based on resistance testing had longer lasting responses to anti-HIV regimens compared to people who were not given results from the tests to inform treatment decision-making. Some researchers are proposing that people get a resistance test before they start anti-HIV therapies for the first time as well as before they switch to a new regimen. (Note: In order to run a resistance test, an individual must have a viral load above 1,000 copies of HIV. Resistance testing cannot be done accurately on people with viral load levels below the limit of detection.)

The use of treatment that is only partly effective speeds the development of viral resistance

If a treatment reduces viral load but still permits a measurable level of viral activity (a measurable viral load), the virus that is still present is capable of mutating and developing resistance to that treatment. When a three-drug combination doesn't quite succeed in stopping measurable viral activity, many researchers believe it may be wise to either change two of the drugs, or perhaps add a fourth drug. It makes sense to try and fully suppress viral replication if this can be done with a reasonable quality of life. When this goal cannot be achieved, people should realize they can still benefit from therapy and that longer-term solutions may become apparent when additional therapies are available. Again, using resistance testing may help in guiding which therapies are not working or which therapies may be useful to add to a regimen.

Learn about drug interactions

With the number of drugs available to treat HIV and prevent or treat opportunistic infections, as well as other conditions, the potential for drug interactions becomes an increasing concern. Not only does each particular therapy have potential side effects, but also each therapy may augment or diminish the benefit of other drugs. Drug interactions are not always considered when developing a treatment strategy, but may play a major role in the success of any plan for managing HIV disease. Make sure that your healthcare provider knows about all the therapies that you are taking, including experimental and over-the-

counter products to discuss the potential for drug interactions. For more information on drug interactions, call the Project Inform

Using a drug exactly as prescribed is critical to success

Using an inadequate dose, reducing the dose below prescribed levels or failing to take the drug at regularly spaced intervals will increase the risk of developing viral resistance. If intolerance or side effects develop, it is often better to try to overcome the side effects than to immediately change the regimen. If side effects aren't manageable, it is better to temporarily stop all the drugs in the regimen rather than reduce doses, and try to solve the problem with a doctor's guidance.

This runs counter to early experience with NARTI drugs, when physicians routinely lowered doses to deal with side effects. In retrospect, this was probably unwise. The fastest way to develop resistance to anti-HIV drugs is to use them at inadequate or inconsistent dose levels. If you need to interrupt therapy, it is best to stop all anti-HIV therapies at the same time (with the exception of nevirapine (Viramune) and efavirenz (Sustiva)) rather than just stopping one drug.

There are a number of reasons that people may need to stop taking their medications, including side effects, drug interactions, pregnancy or their drug supply runs out. Stopping anti-HIV drugs, if they are all stopped simultaneously, is unlikely to increase drug resistance. Because nevirapine and efavirenz remain in the body longer than any other anti-HIV therapies, they should be stopped two or three days before stopping the other therapies otherwise there is an increased risk of developing resistance to these drugs.

In the presence of a partially effective anti-HIV regimen, the virus is able to reproduce, mutate and develop resistance to the remaining therapies. However, if all drugs are stopped simultaneously (except nevirapine and efavirenz), there is no pressure for the virus to mutate. Stopping and starting a regimen frequently (e.g. on a weekly or even biweekly basis) may lead to an increased risk of drug resistance.

A Structured Treatment Interruption (STI), as discussed later, may include stopping therapy for a two-week period or longer, then restarting therapy for some period of time. It is important for people considering a STI to be closely monitored for viral load and CD4+ cell counts as many studies have shown that some people experience a dramatic increase in viral loads and decrease in CD4+ cells.

People who consider taking a vacation should wait until they return before starting a new anti-HIV drug regimen

Most side effects occur within the first two to four weeks after starting a new drug regimen. Some, but not all, people experience some mild-to-moderate side effects and usually only a small percentage of people experience moderate-to-severe side effects upon starting a new regimen. People should avoid starting a new anti-HIV drug regimen right before taking a vacation so that, in the unlikely event of serious side effects, they will have to be hospitalized and left with a physician who may not be experienced with treating HIV or managing side effects from a particular drug.

Not all people have access to the same treatment options and people respond differently to individual drugs

Treatment options include existing approved drugs and combinations, experimental drugs accessed through studies and access programs and other unapproved drugs. Even though all studies that have compared two- versus three-drug combinations have concluded that people fare better on three-drug combinations, not everyone has access to three drugs. Still others can't tolerate three drugs or cannot find three drugs they have not used before.

Lesson 14

Preventing the Spread of HIV through Sexual Activity

Lesson Objectives

After completing this lesson, you will be able to:

- Describe how the spread of HIV can be prevented through (a) safe sex; and b) sexual abstinence; and
- Teach your pupils how to prevent the spread of HIV by transmission through sexual activity in a non-offensive manner.

Basic Content

Sexual Abstinence

Any risk of HIV can be avoided if one practices abstinence (not having sex). A person is also not infected if the penis, mouth, vagina or rectum do not touch anyone else's penis, mouth, vagina, or rectum.

Safe sex

When we talk about safe sex, we normally talk about practising sex in a way that will not put any of the partners at risk. It is safe to have sex with one partner on the condition that:

- Both are uninfected (HIV-negative)
- Both have sex only with their partner
- Neither gets exposed to HIV through drug use, transfusion or other activities

Oral sex has a lower risk of infection than anal or vaginal sex, especially if there are no open sores or blood in the mouth. You can reduce the risk of infection with HIV and other sexually transmitted diseases by using barriers like condoms. Traditional condoms go on

the penis, and a new type of condom goes in the vagina or in the rectum. Let us consider some things worth knowing about condoms and their use.

Brief History

Condom use can be traced back several thousand years. It is known that around 1000 BC the ancient Egyptians used a linen sheath for protection against disease. The first known published description and trials regarding prophylactic condom use were recorded in Italy in the 1500s. Gabrielle Fallopius claimed to have invented a sheath made of linen, and conducted trials amongst 1,100 men using the condom, none of whom became infected with Syphilis. Having been found useful for prevention of infection, it was only later that the usefulness of the condom for the prevention of pregnancy was recognised. In 1844, Goodyear and Hancock began to mass produce condoms made out of vulcanised rubber. Vulcanisation is a process which turns crude rubber into a strong elastic material. In the 1880s, the first latex condom was produced, although it was to be the 1930s before these were in widespread use. In the laboratory, latex condoms are very effective at blocking transmission of HIV because the pores in latex condoms are too small to allow the virus to pass through.

Why do I need to use a condom?

Condoms are the only form of protection which can both help to stop the transmission of viruses such as HIV and prevent pregnancy.

Getting ready, Choosing the right condom

A number of different types of condom are now available. What is generally called a condom is the 'male' condom, a sheath or covering which fits over a man's penis, and which is closed at one end.

There is also now a female condom, or vaginal pouch, which is used by a woman and which fits inside her vagina. The rest of this section is about the male condom.

What are condoms made of, and what shapes are there?

Condoms are usually made out of latex or polyurethane. If possible you should use a latex condom as these are the most effective against viruses such as HIV, and in most countries they are the type most readily available.

Condoms come in a variety of shapes. Most have a reservoir tip although some do have a plain tip. Condoms may be regular shaped (with straight sides), form fit (indented just below the glans or "head" of the penis), or they may be flared (wider over the glans).

Ribbed condoms are textured with ribs or bumps, which can increase sensation for both partners. Condoms also come in a variety of colours.

The lubrication on condoms also varies. Some condoms are not lubricated at all, some are lubricated with a silicone substance, and some condoms have a water-based lubricant. The lubrication on condoms aims to make the condom easier to put on and more comfortable to use.

So when do you use a condom?

You need to use a new condom every time you have sexual intercourse. Never use the same condom twice. Put the condom on after the penis is erect and before any contact is made between the penis and any part of the partner's body. If you go from anal intercourse to vaginal intercourse, you should consider changing the condom.

How do you use a condom?

Condoms can deteriorate if not stored properly. They can be affected by both heat and light. So it is best not to use a condom that has been stored in your back pocket, your wallet, or the glove compartment of your car.

Open the condom package at one corner being careful not to tear the condom with your fingernails, your teeth, or through being too rough. Make sure the package and condom appear to be in good condition, and check that if there is an expiry date that the date has not passed.

Place the rolled condom over the tip of the hard penis, and if the condom does not have a reservoir top, pinch the tip of the condom enough to leave a half inch space for semen to collect. If the man is not circumcised, then pull back the foreskin before rolling on the condom.

Pinch the air out of the condom tip with one hand and unroll the condom over the penis with the other hand. Roll the condom all the

way down to the base of the penis, and smooth out any air bubbles. (Air bubbles can cause a condom to break).

If you want to use some extra lubrication, put it on the outside of the condom. But always use a water-based lubricant as oil-based lubricant will cause the latex to break.

When do you take off the condom?

Pull out before the penis softens, and hold the condom against the base of the penis while you pull out, so that the semen does not spill. Then tie a knot in the condom and throw it away. It is not good to flush condoms down the toilet – they are bad for the environment.

What do you do if a condom breaks?

If a condom breaks during sexual intercourse, then pull out quickly and replace the condom. Whilst you are having sex, check the condom from time to time, to make sure it has not split or slipped off.

Is using a condom effective?

If used properly, a condom is very effective at reducing the risk of being infected with HIV during sexual intercourse. Using a condom also provides protection against other sexually transmitted diseases, and protection against pregnancy. In the laboratory, latex condoms are very effective at blocking transmission of HIV because the pores in latex condoms are too small to allow the virus to pass through. However, outside of the laboratory condoms are less effective because people do not always use condoms properly.

How can I persuade my partner that we should use a condom?

These are some comments that might be made and some answers that you could try.

EXCUSE	ANSWER
Don't you trust me?	Trust isn't the point, people can have infections without realising it
I can't feel a thing when I wear a condom	Maybe that way you'll last even longer and that will make up for it

I don't stay hard when I put on a condom	I'll help you put it on, that will help you keep it
I don't have a condom with me	I do
I'm on the pill, you don't need a condom	I'd like to use it anyway. It will help to protect us from infections we may not realise we have.
But I love you	Then you'll help us to protect ourselves.
Just this once	Once is all it takes



Resources: Charts depicting (A) safe sex; and (B) male and female condoms. Packets of condoms.

Procedure:

(Note: Care needs to be taken not to indulge your pupils in details about sex. Only language and terminologies that are permissible within the school's socio-cultural context should be used).

Review the three major ways of HIV transmission with pupils – sexual intercourse, contact with infected blood through blood transfusion and sharing of needles, and mother-to-child transmission.

Through interactive class discussions, lead pupils to enhance their understanding of prevention of transmission of HIV through sexual activities.

Describe the following expectations for safe sex:

Mature adults have sex only with people they are married to.

For condom use:

- Open the condom package at one corner being careful not to tear the condom
- Place the rolled condom over the tip of the hard penis and roll the condom all the way down to the base of the penis, and smooth out any air bubbles.

- After intercourse, pull out before the penis softens, and hold the condom against the base of the penis while you pull out, so that the semen does not spill. Throw the condom away. It is not good to flush condoms down the toilet – they are bad for the environment.

Give pupils a demonstration of the use of condoms.

For the unmarried youth, emphasise abstinence. You also won't get infected if your penis, mouth, vagina or rectum don't touch anyone else's penis, mouth, vagina, or rectum.

Conclude the lesson by asking pupils to share the message of the lesson with their friends and relations.



In this lesson, we learned that

- the spread of HIV can be prevented through (a) safe sex; and b) sexual abstinence;
- it is safe to have sex with one partner on the condition that:
 - Both are uninfected (HIV-negative)
 - Both have sex only with their partner
 - Neither gets exposed to HIV through drug use, transfusion or other activities
- Oral sex has a lower risk of infection than anal or vaginal sex, especially if there are no open sores or blood in the mouth. You can reduce the risk of infection with HIV and other sexually transmitted diseases by using barriers like condoms.
- For condom use:
 - Open the condom package at one corner being careful not to tear the condom.

- Place the rolled condom over the tip of the hard penis and roll the condom all the way down to the base of the penis, and smooth out any air bubbles.
- After intercourse, pull out before the penis softens, and hold the condom against the base of the penis while you pull out, so that the semen does not spill. Throw the condom away. It is not good to flush condoms down the toilet – they are bad for the environment.
- We also learned how to teach the topic to our students.

Lessons 15 and 16

Preventing the Spread of HIV: Blood Transfusion, Sharing Needles and Sharp Objects

Lesson Objectives

After completing this lesson, you will be able to:

- describe how the spread of HIV can be prevented by avoiding contact with infected blood through blood transfusion, sharing of needles and sharp objects; and
- promote awareness of your pupils on the prevention of the spread of HIV by avoiding contact with infected blood through sharing needles and sharp objects.

Basic Content

Blood transfusion

Blood transfusion is the procedure of introducing the blood of a donor into the bloodstream of another person- the recipient. It is employed routinely in cases of surgery, trauma, gastrointestinal bleeding, and in childbirths that involve great loss of blood.

Transmission through contact with blood

HIV is one of many diseases that can be transmitted by blood. Be careful if you are helping someone who is bleeding. If your work exposes you to blood, be sure to protect any cuts or open sores on your skin, as well as your eyes and mouth. Your employer should provide gloves, facemasks and other protective equipment, plus training about how to avoid diseases that are spread by blood.

Danger in sharing sharp objects

There is a common saying that "AIDS doesn't show on the face". People who have HIV do not normally display physical manifestation of

the infection. We are aware that the virus is found in the blood and other body fluids of infected persons. Infection results if the blood of such persons comes into contact with that of another person.

Contact with infected blood can come in the form of sharing shaving razors, clippers in the barbing salon, and injection syringes.

Danger in the use of injected drugs

If you are high on drugs, you might forget to use protection during sex. If you use someone else's equipment (needles, syringes, cookers, cotton or rinse water) you can get infected by tiny amounts of blood. The best way to avoid infection is to not use drugs. If you use drugs, you can prevent infection by not injecting them. If you do inject, don't share equipment. If you must share, clean equipment with bleach and water before every use.



Resources: razors, pair of clippers, injection syringes

Procedure

Divide pupils into three groups- A, B, and C. Give the groups some razors, clippers and syringes. Ask each group work together cooperatively to list the uses of the objects, the dangers inherent in the sharing of the objects and the preventive action that can be taken. Each group to summarize its discussions and report to the whole class. Lead discussion in the summary to the conclusions such as:

- Contact with infected blood can come in the form of blood transfusion, sharing shaving razors, clippers in the barbing salon, and injection syringes.
- Drug users who use someone else's equipment (needles, syringes, cookers, cotton or rinse water) can get infected by tiny amounts of blood.
- We must avoid sharing razors, clippers, syringes and other sharp objects to prevent contamination with our blood and hence infection with HIV.
- Pupils to prepare small-sized posters on the topic of the lesson and best entries mounted in the class.
- Pupils should be asked to share the message of the lesson with their friends and relations.

THE OVERALL MESSAGE

If you think you have been exposed to HIV, visit a doctor and get tested. If you are sure that you have been exposed, see your doctor immediately to discuss whether you should start taking anti-HIV drugs. This is called "post exposure prophylaxis" or PEP. You would take two or three medications for several weeks. These drugs can decrease the risk of infection, but they have some serious side effects. HIV does not spread easily from person to person. To get infected with HIV, infected blood, sexual fluid, or mother's milk has to get into your body. HIV-infected pregnant women can pass the infection to their new babies. To decrease the risk of spreading HIV:

- Use condoms during sexual activity
- Do not share drug injection equipment
- If you are HIV-infected and pregnant, talk with your doctor about taking anti-HIV drugs
- If you are an HIV-infected woman, don't breast feed any baby
- Protect cuts, open sores, and your eyes and mouth from contact with blood.

If you think you've been exposed to HIV, get tested and ask your doctor about taking anti-HIV medications.



In this lesson, we learned

- that sharing of sharp objects with persons who are infected with HIV can lead to one being infected;
- that we must avoid sharing razors, clippers, syringes and other sharp objects to prevent contamination with our blood and hence infection with HIV; and
- how to raise the level of awareness of our pupils about the topic of the lesson who are in turn expected to pass the message on to friends and relations.

LESSON 17

Preventing the Spread of HIV/AIDS -General Considerations

Introduction:

There are four major sources of HIV infection:

sexual transmission, transfusions of blood or blood products, or transplanted tissue or organs obtained from HIV-infected donors, using skin piercing instruments or injecting equipment that is contaminated with HIV (Fact Sheet 1), and transmission from mother to child during pregnancy, labour, or following birth through breast feeding (Fact Sheet 10).

This Fact Sheet will attend to prevention through sexual transmission, blood transfusions and injecting drug use. There is ample evidence globally that well-designed prevention programmes can reduce the incidence of HIV. In societies where services and programmes were in place before the epidemic, the creation of new initiatives and the re-orientation of existing initiatives led to a gradual decline in the incidence of HIV by the mid-1990's. A similar trend is observed even in resource-poor settings, in part a result of rigorous prevention efforts. However, prevention is a very complex challenge. Some prevention strategies need to be addressed at the greater society (or macro) level, such as strengthening or changing government policies, modifying laws, and enforcing new laws or human rights policies. Other prevention strategies must address the behavioural, social and cultural context (the micro level) of the individual. At both the macro and micro level, policies, programmes and practices should address both harm reduction and prevention of HIV. At the macro level, governments and governing bodies have to be aware of the magnitude of the HIV epidemic in their country, and be mobilized to face this challenge. Nurses and midwives can play an important role in promoting such awareness. However, it is at the micro level, where behavioural, social and cultural influences have the most affect on communities, families, and individuals, that nurses and midwives can make the greatest contribution to HIV prevention. Although HIV prevention and harm reduction have been separated into challenges at the macro and micro level, in practice, they are interdependent and closely related.

Sexual transmission

The most common form of HIV transmission (as well as other STD transmission) is through sexual intercourse or through sexual contact with infected blood, semen, or cervical and vaginal fluids transmitted from any infected person to his/her sexual partner, whether it be man to woman, man to man, or woman to woman, although the latter is less likely. HIV transmission through sexual contact can occur vaginally, orally, anally or rectally. Man to woman transmission, usually from a single partner, is now the most common form of HIV sexual transmission. Women (and to a lesser extent men) who remain faithful in their partnership, contract HIV when their partner has sexual contact with an HIV-infected person outside (or before) their relationship. Although this is the most common form of transmission, women still suffer more stigma, discrimination, and isolation than their male partners. As a result there is often denial or a "conspiracy of silence." Acts of violence may also be directed toward the woman. In addition, other sexually transmitted diseases, which often go undiagnosed in women, contribute to a higher rate of HIV transmission.

Man to man transmission (Men who have sex with men: MSM)

Unprotected penetrative anal sex carries a high risk of HIV transmission, especially in the receptive partner. This risk is several times higher than vaginal intercourse because the lining of the rectum is thin and can easily tear, and even small lesions can allow the virus easy access. Worldwide, a large percentage of MSM are married, or have sex with women as well. These men often do not identify themselves as homosexual or "gay." In addition, MSM is often stigmatized or criminalized, and therefore there is difficulty in reaching these men. The results are inadequate or inappropriate health care, and health promotion/preventive programmes.

Woman to woman transmission

Transmission of HIV from woman to woman is less common than MSM or heterosexual contact. However, the risk still remains. HIV transmission can occur through rough sex play where the mucous membrane of the external genitalia, vagina or cervix is torn. Also, if the woman has an STD, the likelihood of HIV transmission is increased.

Male condom (Credit: JHU/CCP)

Prevention of sexually transmitted HIV

The safest form of prevention of sexually transmitted HIV is abstinence. However, in most instances, such practices are neither realistic nor desirable. Barrier methods that prevent semen and other bodily fluids from passing from one partner to another are the next most effective preventive methods. These barrier methods also reduce the risk of STDs, however, they also act as a contraceptive. Such barrier methods include the male and female condom.

Male condom

The male condom is placed over the erect penis before penetration occurs. The condom then remains on the penis until after ejaculation when it should be immediately removed, knotted and discarded in a safe place such as a toilet, latrine, or in a safe disposal unit. It is vitally important that people are given accurate information and an opportunity to practice using condoms. Information should include: how to place the condom on the erect penis, leaving space at the top to receive the ejaculate, how to unroll the condom down to the base of the penis, how to ensure that the condom remains in place throughout intercourse, and how to remove the condom before the penis loses its erection.

It is important to emphasize that individuals may practice using condoms on a model or other object, such as a banana or cucumber. A new condom must be used for each sexual act. Condoms should be easily accessible for both men and women, and are best distributed in places where a sense of privacy is increased and embarrassment is reduced. Wherever possible, free condoms should be available.

Female condom

The female condom is a soft yet strong polyurethane sheath, about the same length as the male condom, only wider. A plastic ring at the closed end helps keep the condom fixed within the vagina during sex. A larger ring at the opening stays outside the vagina, spreading over the woman's external genitalia. The female condom provides extra protection to men and women because it covers both the entrance to the vagina and the base of the penis, both of which are areas where STD sores make it easy for HIV to enter. Female condoms should only be used once and do not require a prescription. However, they are more expensive than male condoms and not as easily acceptable or accessible. Because the external ring is visible outside the vagina,

using a female condom might require the agreement of both partners. However, because it can be inserted hours before intercourse, it can provide protection in situations where consumption of alcohol or drugs may reduce the chances that a male condom will be used. Less is known by the public about the female condom than about the male condom, and use of the female condom is less widespread. Therefore, there needs to be education for both health care workers and women in general. The condom is inserted with the finger, making sure no damage is done to the polyurethane by finger nails or other sharp objects. The condom should then fit snugly against the cervix. During intercourse, it is necessary to guide the penis in or check that the penis has entered the condom and not entered the vagina outside the condom wall. The condom should be removed as soon possible after male ejaculation, and disposed of in the same ways as the male condom.

Other barrier methods

Other barrier methods exist to help reduce the sexual transmission of HIV, but these are less reliable, and often not as readily available. The female diaphragm prevents semen from entering the cervix. However, it does not protect the vagina or the external genitalia from exposure to HIV. Special mouth condoms are available for oral sex. However, these are not readily available and are rarely used. Scientists are working on a vaginal cream that would kill the HIV virus, but it is not yet available.

Blood transfusions

There is a 90-95% chance that someone receiving blood from an HIV infected donor will become infected with HIV themselves. Millions of lives are saved each year through blood transfusions, even in countries where a safe blood supply is not guaranteed. However, recipients of blood have an increased risk of HIV-infection. This risk can be virtually prevented by a safe blood supply, and by using blood transfusions appropriately. Difficulties hindering a safe blood supply include:

lack of national blood policy and plan

lack of an organized blood transfusion service

lack of safe donors or the presence of unsafe donors

lack of blood screening, and

unnecessary or inappropriate use of blood.

Minimizing the risk of HIV infected blood transfusions

In many countries, regulations on blood donations, screening and transfusions exist, but are not adhered to. It is vitally important that regulations be established and rigorously enforced.

Three essential elements must be in place to ensure a safe blood supply:

1. There must be a national blood transfusion service run on non-profit lines which is answerable to the Ministry of Health.
2. Wherever possible, there should be a policy of excluding all paid or professional donors, but at the same time, encouraging voluntary (non-paid) donors to come back regularly. People are suitable donors only if they are considered to have a low risk of infection.
3. All donated blood must be screened for HIV, as well as for hepatitis B and syphilis (and hepatitis C where possible). In addition, both donors and patients must be aware that blood should be used only for necessary transfusions.

Screening

The majority of tests done for detection of HIV detect the presence of antibodies to HIV, not the virus (Fact Sheet 1). However, there is a window period (with the most sensitive tests about 3 weeks, and longer with less sensitive tests) when the test may provide a false negative result and the blood be infected with HIV. Tests also exist (called HIV antigen tests), that detect the virus in the blood, but these are more expensive and of limited value. In many countries, correct screening of blood is still applied to some but not all blood donations. For example, in many developing countries, blood is screened in the capital city, and perhaps in one or two other larger towns, but not screened in rural districts. Lack of screening is most often due to lack of funding, and it is expensive to set up a national system to test all donated blood. Good organization, planning, and management are necessary, as well as trained staff at all levels and the availability of test kits.

Selecting blood donors

Paid donors very often come from the poorest sectors of society. They may be in poor health, undernourished and at risk of having infections that can be passed on through transfusions. In some places, paid donors sell blood in order to buy drugs to inject themselves, often using shared, unsterile equipment. In addition, paid donors are more likely to give blood too frequently, making their blood substandard, and increasing the possibility of damage to their own health. The practice of paying donors usually goes hand-in-hand with the practice of selling blood to people who need it. Under such a system, poor families may not be able to afford vitally needed blood.

Replacement donors have also been found to be problematic. In the replacement donor system, families of people needing a transfusion are asked to donate the same quantity as that given to their relation. This blood may be used directly for the relative, or placed in the general pool. This practice is strongly discouraged because the "relation" is often a paid donor, and even if the person is a relative, there are doubts about the safety of the blood, as normal criteria for selecting donors cannot be applied.

Therefore, the safest type of blood donor is the voluntary, unpaid donor. Such donors give their blood for humanitarian reasons and are more likely to meet national criteria for low-risk donors. Every effort should be made to educate, motivate, recruit and retain low-risk, unpaid donors.

Avoiding unnecessary or inappropriate transfusions

Unnecessary transfusions increase the risk of transmitting HIV, especially in places where there is no adequate screening programme. Additionally, unnecessary or inappropriate transfusions can create a shortage of the blood supply, which in turn encourages professional donors to become more active, thus reducing the safety of the supply.

Doctors and other health care workers should be educated to avoid prescribing inappropriate transfusions. Blood substitutes should be given where appropriate. In addition the underlying cause for the blood transfusion should be considered. For example, blood transfusions are often given for anaemia. Instead, the underlying cause of the anaemia should be investigated. Anaemia may be due to malnutrition, slow blood loss, and to infections such as malaria. Blood is often needed during complications accompanying childbirth.

However, providing proper care for women before, during and after delivery, can decrease the need for blood transfusions.

Creating a national blood transfusion service

A national blood transfusion service means making all transfusion centres and blood banks part of a national network accountable to a government appointed nonprofit organization. This service must be developed within the framework of the country's health service, and must have an adequate budget and trained staff. There must be a national system of regulations, and regular, independent monitoring of the blood transfusion service. There is no guarantee that blood can be 100% free of HIV, however, with political commitment, good organization, sufficient funding and donation of blood from low-risk, voluntary, non-paid donors, the risks can be reduced to a minimum.

Body organs and tissue transplantation

HIV transmission can also occur through transplantation of body tissue or organs from an HIV-infected donor. This body tissue should follow the same screening programme as blood.

Injecting drug users and other skin piercing practices

This Fact Sheet focuses on HIV prevention in injecting drug users (IDUs). Prevention of HIV infection through other skin piercing such as accidents at work, surgical interventions, tattooing, female and male circumcision, and scarification have been described earlier (see Fact Sheet 11 Universal Precautions).

Injecting drug users

HIV can spread very rapidly among IDUs, and from them to their sex partners and children. However, this spread can be prevented or slowed significantly if interventions are designed which take into account specific local characteristics of the IDUs. IDUs are usually a hidden and stigmatized group, because their drug-usage behaviour is illegal. Often caught in a cycle of poverty and faced with the cost of the drugs, IDUs often engage in criminal activities such as theft, and in high risk behaviours for HIV infection such as commercial sex work and paid blood donation. To date, the only effective responses to HIV transmission among IDUs to date are those based on the philosophy of harm reduction. Harm reduction is compatible with proven public health principles, and need not conflict with demand and supply

reduction (law enforcement) programs. Harm reduction programs approach drug abuse primarily as a public health rather than a law and order issue. Such programs take into account:

Promoting use of sterile equipment

The most common pathway for HIV transmission among IDUs is the sharing of non-sterile injecting equipment. Scarcity, or lack of access to safe injecting equipment, and legal sanctions against possessing injecting equipment, are the two main reasons for reusing or sharing needles and syringes. Other reasons include ignorance of the risks of HIV infection and prevention methods.

The two strategies that have proven effective are:

The sale of needles and syringes at minimum prices through pharmacies or other outlets,

Needle and syringe exchange programs.

These exchange programs ensure that dirty syringes and needles are exchanged for sterile ones. In addition, if community acceptance of these programs is to occur, then needles and syringes must be safely and discretely disposed of after use, and must not pose a threat to the non-IDU community. Ball (1998) recommends a **hierarchy of decision making** related to the prevention of HIV through intravenous drug use:

Reducing the frequency of sharing, and the number of sharing partners, cleaning injecting equipment with bleach, not sharing injecting equipment, using sterile needles and syringes, and not sharing other equipment, changing from the injection of illicit drugs to use of non-injecting drugs, reducing the frequency of non-injecting drug use, and abstaining from all drug use.

This hierarchy of decision-making can be a useful framework to consider HIV prevention programmes. However, it should be noted that people do not fall neatly into any one of these categories. For example, a person may regularly engage in a needle and syringe exchange program, but, because of unforeseen circumstances, finds him/herself sharing used injecting equipment. This hierarchy also assumes that there is collaboration between the principles of public health (i.e. Safe injection practices) and law enforcement. This is often not the case. In order for DU HIV prevention programs to be effective,

national and local policies must achieve a balance between their attempts to reduce the supply and use of illicit drugs and their efforts to decrease unsafe injection practices. The principles of harm reduction that have been proven effective in reducing HIV transmission in IDUs include:

Education, especially peer education (Fact Sheet 9) and counseling (Fact Sheet 7);

Promotion of the use of sterile injecting equipment for every injection; increasing the availability of equipment; removing barriers that prevent access to the use of sterile equipment (especially policing and legal barriers);

Increasing drug treatment availability, accessibility and options;

Increasing access to primary health care, particularly through services designed to be "friendly" to, and appropriate for, the DU community;

Research and education performed in collaboration with the affected community.

Other mood altering drugs

It is important to note that although DU carries the greatest risk of HIV transmission, taking other mood altering drugs can also promote at risk behaviours. Alcohol, and other legal and illegal drugs taken orally or as an inhalant can affect a person's decision making abilities. In such circumstances, the use of condoms is less likely, and other behaviours and sexual practices that increase the risk of transmission of HIV/AIDS might occur.

Populations at risk

The vast majority of people who become infected with HIV are from vulnerable segments of the population. Children and youth (including street youth), women (Fact Sheet 10), prisoners, refugees, migrant workers, ethnic minorities, the military and people who live in poverty are some of the most vulnerable populations.

Youth

Over 50% of new infections with HIV are now occurring in young people ages 10-24. That is, 7,000 young people are infected with HIV every day with young women being infected and affected more frequently than young men (Fact Sheet 10).

The reasons for these alarming figures are very complex. The life situations of many young people may contribute to infection. They may be gay or bisexual youth, use alcohol or drugs, have been sexually abused, or live on the margins of society. Many live on the streets, where violence, abuse, and drug use (particularly intravenous drug use) are common. In addition, young people often feel invincible, and do not consider themselves to be at risk for HIV or any other life threatening situations.

Women

Women are particularly vulnerable to HIV because of their status in many societies. Poverty, lack of education, poor access to health care and jobs, and social and cultural practices all contribute to women's lack of power and control over decision making (see Fact Sheet 10).

Infants

Mother to child transmission accounts for most HIV infections in infants (Fact Sheet 10).

Prisoners

Prisoners are often injecting drug users before they enter prison. They continue (or begin) this practice while in prison, often with shared, unsterilized needles and syringes. In addition, they may have unprotected penetrative sex with other men, and may be tattooed with shared, unsterilized equipment.

Refugees and migrant workers

Poverty, drought, flood, earthquakes, and war or civil strife cause many people to leave their homes and communities. These people end up in special camps where there is increased danger of HIV transmission. Blood transfusions are often required in large numbers, especially during times of war. Social systems and ties disintegrate and unprotected sexual contact and prostitution is common. Refugees, particularly women and children, are highly vulnerable to sexual violence, rape and drug trafficking. Where drug injecting occurred before the emergency, it is likely to continue in the camps where the sharing of injecting equipment increases the risk of HIV infection.

Military personnel

People in the military (mostly men) are separated from their homes, communities and social support networks and are often placed in positions where they can exert considerable control over others. This situation often leads to violence and abuse (physical and sexual) of the

people they are charged with protecting. In such circumstances, HIV transmission is common.

Ethnic minorities

Like women, youth and children, people who are part of a visible minority are particularly at risk of HIV infection. These people often have limited social support, live on the margins of society, are poor, less educated, with little or no political representation. Such people have limited power or control, and are vulnerable to abuse, violence, and sexual exploitation. In addition, injecting drug use is common, often involving the use of unsterile, shared equipment.

Poverty

Poverty is the single common factor related to the transmission of HIV. People who are economically deprived usually have little access to education, social and health care services, and other forms of social and financial support. As a result, these people are often forced into becoming sex workers or in exchanging sex for food and supplies. Drug trafficking and injecting drugs with shared, unsterile equipment is also common. Also, poverty often leads people to sell their blood for transfusion, blood which can be infected with HIV.

Principles and strategies for prevention

Prevention programs have to take into account strategies that must be addressed at the macro (national/regional) level, and those requiring change at the micro (community) level. At the macro level, public health policies and law enforcement must focus on harm reduction. National and local policies must be developed and enforced that promote the reduction in HIV transmission. Where there is potential for law enforcement and public health policy to conflict (for example, prevention programs for IDUs), then partnerships must be forged to overcome these difficulties. At the micro level, the behavioural, social and cultural context within which people live must be taken into account. Strategies to promote the prevention of HIV transmission include:

Peer support and education

It has been widely documented that behavioural change is most likely to occur if peers educate and support each other (see Fact Sheet 9). Youth programs that are run by youth, women's collectives, groups involving street children, refugees, and IDUs, are all effective in promoting practices and behaviours that lead to reduction in HIV transmission. Frank discussions about sexual practices, drug taking, and other at risk behaviours are more likely to be explored and

understood within these safe environments. It is important to note that these groups should be run by and for their particular populations. There are many powerful examples throughout the world of peer involvement in prevention strategies. Nurses and midwives can play an important role in facilitating the formation of these groups and providing expert knowledge where necessary. See fact sheet 9 for effective educational strategies.

Involving PLHA

People living with HIV/AIDS (PLHA) are often the best advocates and activists for social and behavioural change. The personal story of someone living with HIV presents a powerful message. These messages can mobilize people and resources, and thus initiate successful prevention programmes. In addition, involving PLHAs in various prevention programs helps to ensure that they are relevant and meaningful to the different population groups.

Combining resources

The combination of counselling, education, support, care services, and resources is necessary to provide a holistic continuum of prevention and care (Fact Sheet 3). For example, STD, antenatal, family planning, home care, hospital care, and community care, as well as other resources and services, can be combined to provide a comprehensive programme. In this way, programmes and services can be combined that address the various modes of HIV transmission without the stigma and discrimination often associated with HIV specific programs.

Forging partnerships

Governments, policy makers, law enforcement agencies, health and social service agency personnel, non-governmental organizations (NGOs), religious leaders and religious groups should join together in preventing HIV transmission. Nurses and midwives can play a central role in advocating for, and creating and participating in, such partnerships.

Cultural/religious/social sensitivity

There is no one programme that will be relevant, meaningful, and effective for all people. Prevention programmes must be sensitive to the local customs, cultural practices, religious beliefs and values, as well as to other traditional norms and practices. However, where such beliefs, values and practices conflict with the prevention of HIV (eg. circumcision, scarification, sexual abuse of children), then these must be challenged. Nurses/midwives can play an important role in

supporting local practices and traditions while also challenging those practices that cause HIV transmission.

Facilitating empowerment

Involving individuals, groups, and communities in addressing their own health concerns and finding solutions to their problems promotes empowerment. People who are empowered are more likely to implement effective HIV prevention programs.

Challenging denial

HIV is surrounded by a conspiracy of silence and denial. People are afraid to be tested for HIV or admit their HIV status because they fear discrimination, violence, stigma and isolation (Fact Sheet 6). Nurses and midwives can help support and counsel people to be HIV tested (Fact Sheet 7) and to be open about their HIV status. Only when HIV becomes a public concern can prevention strategies that address the complex and diverse issues related to HIV transmission be addressed.

Combating stigma, isolation and marginalization

Nurses and midwives have a responsibility to care for all people, regardless of their health or social status (Fact Sheet 6). They can act as role models to others in helping combat stigma, discrimination and isolation of PLHA. Prevention strategies will be more successful if HIV is treated like any other chronic illness.

Ensuring the use of Universal Precautions

Nurses and midwives should play a central role in monitoring and ensuring that universal precautions are practiced in their workplace (Fact Sheet 11). Maintaining quality assurance programs and ensuring the availability of adequate supplies and human resources help promote a safe work environment. In addition, adequate care for the care provider is an important consideration.

Building on success

Many groups, communities and individuals have been successful in improving their quality of life. The strategies they developed for this improvement can also be applied to prevention programs. For example, if communities have been successful in lobbying for improved housing, these same lobbying tactics can be applied to HIV prevention programs. In addition, people can learn from one another. Stories of successful HIV prevention programs throughout the world should be shared with others so that they too may initiate similar programs.

Respect for human rights

Nurses/midwives should advocate for vulnerable populations to ensure that their human rights are respected and not violated (Fact Sheet 6). Prevention programs will only succeed where human rights are respected and maintained.

Questions for reflection and discussion

What are the most common ways that HIV is transmitted?

Which populations are most at risk for HIV transmission? Why is this the case?

What role could you play in HIV prevention within your local community?

What role might you play in promoting larger societal change?

What strategies and policies do you consider to be essential before effective HIV prevention programs could be implemented?

What role might you play in ensuring these strategies and policies are considered?

LESSON 18

COUNSELLING AND CARE

HIV/AIDS care and counselling is essentially about educating and counselling communities in the control, management and prevention of HIV/AIDS. There is widespread recognition of the misconceptions in communities that lead to negative attitudes and stereotypes, and these issues are addressed. Furthermore, it is generally accepted that there is an increasing need for a functional system of services to address HIV/AIDS. In order to meet this demand, individual service providers need to train others in the community in HIV/AIDS counselling.

Lesson Objectives

At the end of this lesson, you will be able to

- offer basic (non-expert) counseling service to people living with HIV and AIDS;
- describe how to properly care and support children and adults with HIV/AIDS; and
- advocate community care for HIV positive people

Basic Content

Numerous studies suggest that good counselling assists people to make informed decisions, cope better with their health condition, lead more positive lives, and prevents further transmission of HIV. HIV/AIDS counselling is sometimes provided by trained counsellors, though nurses and caregivers are often in the ideal position to provide effective counselling, advice, and support. However, when nurses and caregivers are busy, emotional caring and support are often overlooked, despite evidence that providing emotional support does not take any longer than not providing such care. Frequently, nurses and others indicate that they do not know how to provide more subtle

counselling and emotional support, and therefore avoid this aspect of care.

Pre test counselling

The aim of pre test counselling is to provide information to the individual about the technical aspects of testing and the various implications of being diagnosed as either HIV positive or negative. Pre test counselling should focus on two main topics: (a) the person's personal history of risk behaviours, or having been exposed to HIV , and (b) assessment of the person's understanding of HIV/AIDS (including methods of transmission) and the person's previous experiences in crisis situations. Information should be up to date and given in a manner that is easy to understand. Pre-marital testing of couples and testing of blood donors is different from testing of those suspected of having HIV/AIDS. However, both groups require sensitivity. Testing should be discussed as a positive act that is linked to changes in risk behaviour, coping and increasing the quality of life.

Benefits of pre test counselling

Pre test counselling helps people to make informed choices. However, it is important to note that people who do not want pre test counselling before taking the HIV test should not be required to have it. In addition, a decision to be tested should be an informed decision. Informed consent implies awareness of the possible implications of a test result (including the window period). In some countries, the law requires explicit informed consent; in others, implicit consent is assumed whenever people seek testing. The nurse/midwife must help the person understand the policy on consent, and should explain the limits and consequences of testing. Therefore, it is important to be knowledgeable about the policies and guidelines governing your region. Access to pre-test counselling is not always available, and some people might refuse this option.

Post test counselling

In post test counselling, it is important to put the person being counselled at ease. If possible, the room should be quiet, without the fear of being disturbed. Arrange the chairs so that bright light will not shine in anyone's eyes. The counsellor should then tell the person the test result. The result (either positive or negative) should then be discussed, including how the person feels about the result. Further information can be provided, though the person may be shocked, and

may not fully understand all the information. In some circumstances, the post test setting might provide the only chance to counsel this person. Thus, asking them to repeat the information just presented, or to have some basic facts written down might be helpful. It is important for the person to have time to reflect on the result and understand the next course of action. Ideally, couple and/or family counselling should be started at this time and further counselling follow-up arranged.

HIV-positive test result counselling

When the test result is positive, the nurse/midwife should tell the person as gently as possible, providing emotional support and discussing how best to cope with the results. This is not a time for speculation, but rather a time to give clear, factual explanations of what the news means. Assess the emotional impact of the news, and validate the person's reactions as normal. Fear of dying, job loss, family acceptance, concern about the quality of life, the effects of treatment and response by society can be explored. If there is a concern that the person might not return for follow up counselling, then information about relevant health services should be mentioned. This would include available medical treatments such as antiretroviral therapy or treatment for opportunistic infections, and social services for financial and ongoing emotional support.

However, if follow up counselling is an option, then it would be advisable to leave this information to a later date when the person is better able to absorb the details and explore the available options. Assess the person's understanding and ability to use preventive methods. Free condoms can be given out during this session, together with advice on how to use them and where to get more.

Counselling and support activities need to address feelings of shock, fear, loss, grief, guilt, depression, anxiety, denial, anger, suicidal activity or thinking, reduced self esteem, and spiritual concerns. In addition, social issues such as loss of income, discrimination, social stigma, relationship changes, and changing requirements for sexual expression need to be explored.

HIV-negative test result counselling

If the HIV test is negative, then counselling about at risk behaviours and methods of prevention are vitally important (see Fact Sheet 12). Also, the counsellor must explain about the "window period" (between 3-6 months) when a negative result may be a false negative. If there

is concern about the HIV status of the person, counsel them to return for a repeat test in 3-6 months, and ensure that they take appropriate precautions in the meanwhile, explaining that they could become infected at any time. The counselling session is an ideal time to discuss sexual practices and preferences, potential drug abuse (particularly intravenous drug use) and other at risk behaviours. Upon learning their HIV-negative status, the person may be more open to learning about safe sex practices and modifying risk behaviours. Free condoms can be given out during this session together with advice on how to use them and where to get more when needed.

Bereavement counselling

Families and friends often have little social support, or may have become isolated while caring for the PLHA. Bereavement support should be made available before the person dies, and for as long afterwards as people need it. People react to death in different ways, and need different types of support. For some, it can take months or years to come to terms with loss. Additionally, people's responses may be affected by the way the person died: for example, whether the PLHA died alone and in pain, or died peacefully, surrounded by loved ones. Those left behind often blame themselves if they think they could have done more.

Bereavement counselling should:

give people an opportunity to talk about events leading up to the death, about the death itself, and the observances and rituals immediately after the death

reassure people that feelings of disbelief, denial, sadness, pain and anger are normal

allow people to express their feeling and concerns, especially if it is difficult for them to do this with friends and family

enable people to accept their loss and start to look to the future.

Continued counselling and support

The HIV-infected person and his/her family require further counselling and support following the initial meeting. Such support helps to improve their quality of life as well as to enhance their ability to cope and make informed decisions about ongoing care. Such counselling and support might include encouraging the PLHA to join a peer support group to learn where and how to access services, to find educational resources, and to obtain treatment. Spiritual and religious support might also be required, as well as support related to financial concerns and care for the family after the person's death. Where services exist, further individual counselling might also be beneficial. Such counselling might include discussions on safer sex practices, birth control counselling, and counselling and support during the ante natal, intra partum and post natal period etc.

Care for the caregiver

In many communities, there is little value placed on counselling. Consequently, counselling receives little if any financial support. As a result, counselling services are often fragmented, with no designated time or place for counselling sessions. In addition, health care professionals are expected to fit counselling activities into their already overburdened worklife, with little financial compensation. If counselling is not valued by policy makers and governments, it will be difficult for nurses, midwives and other health care professionals to value their roles as counsellors. There is considerable evidence to suggest that nurses, midwives and other counsellors themselves need ongoing support and care, since caring for the sick and dying is very stressful. Unless there is adequate education, supervision, counselling and other support services available for caregivers, the result can be "caregiver burnout." What follows are some strategies to address these concerns.

NURSING CARE

Nursing care of the person with HIV-related illness is the same as the nursing care for any person who is ill. Consequently, all trained nurses/midwives are competent to care for patients with HIV-related illness as the same principles of nursing practice apply. In addition, many of the health care problems people will have as a result of HIV infection will be familiar to nurses because of their knowledge and experience of caring for people with other chronic, progressive diseases. The use of universal precautions for infection control are critical in the care and prevention of HIV.

Almost all (if not all) HIV-infected people will ultimately develop HIV-related disease and AIDS. This progression depends on the type and strain of the virus and certain host characteristics. HIV infects both the central and the peripheral nervous system early in the course of infection, often causing a variety of neurological and psychiatric problems. As HIV infection progresses and immunity declines, people become more prone to opportunistic infection and other conditions. Opportunistic infections are those that can invade the body when the immune system is not working adequately.

Basic nursing care for opportunistic infections

Infection control: Maintain good hygiene. Always wash hands before and after caring for the PLHA. Make sure linen and other supplies are well washed with soap and water. Burn rubbish or dispose of it in leakproof containers. Avoid contact with blood and other body fluids and wash hands immediately after handling soiled articles

Skin problems: Wash open sores with soap and water, and keep the area dry. Use the medical treatment, and prescribed ointment or salve. Local remedies, oils and calamine lotion might also be helpful.

Sore mouth and throat: Rinse mouth with warm water mixed with a pinch of salt at least three times a day. Eat soft foods that are not too spicy.

Fevers and pain: Rinse body in cool water with a clean cloth or wipe skin with wet cloths. Encourage the person to drink more fluids than usual e.g. water, tea, broth or juice. Remove thick clothing or too many blankets. Use antipyretics and analgesics such as aspirin, paracetamol etc.

Cough: Lift head and upper body on pillows to assist with breathing, or assist the person to sit up. Place the patient where he/she can get fresh air. Vaporisers, humidifiers, and oxygen might be helpful.

Diarrhoea: Treat immediately to avoid dehydration, either using oral rehydration or intravenous therapy if necessary. Ensure that the person drinks more than usual, and continues to take easily digestible nourishment. Cleanse the anus and buttocks after each bowel movement with warm soap and water and keep the skin dry and clean. Antibiotics used to treat other infections can worsen the diarrhoea. Always wash hands and, where possible, wear gloves when handling faecal or soiled materials

Nutrition: Where available, encourage foods that are high in fat and protein as they will help reduce weight loss.

Local Remedies: There are often local remedies that alleviate fevers, pains, coughs, cleanse sores and abscesses. These local remedies can be very helpful in alleviating many of the symptoms associated with opportunistic infections. In many countries, traditional healers and women's associations or home care programs are collecting information about remedies which alleviated symptoms and discomfort.

Antenatal care

Voluntary HIV testing and counselling (VCT) should be available in antenatal clinics. Many HIV-positive women will be diagnosed for the first time during pregnancy, therefore, this service is critical to the ongoing treatment, care and support for the mother, her family and new born child. The benefits of VCT in antenatal care include:

Knowledge of a negative result can reinforce safer sex practices.

Women diagnosed with HIV can encourage their partners to be counselled and tested.

Knowing their HIV status enables women and their partners to make more informed choices related to breast feeding and future pregnancies

A woman (and her family) who knows she is HIV infected can be encouraged to enter into the continuum of care in order to seek early medical treatment and care of opportunistic infections for herself and her child as well as be linked to other health and social services and resources.

Widespread access to VCT can help normalize the perception of HIV in the community.

Knowledge of their HIV-positive status can enable women to access peer support.

Access to VCT is important in antenatal clinics because there are ways to prevent transmission, such as:

- termination of pregnancy,
- antiretroviral therapy (ARV),
- modifying midwifery and obstetrical practices, and
- modifying infant feeding.

However, prevention of MTCT is dependent upon the identification of the HIV-positive woman.

Termination of pregnancy

Where termination of pregnancy is both legal and acceptable, the HIV-positive woman can be offered this option. However, many women learn of their HIV status during pregnancy, and will not be diagnosed in time to be offered termination. If termination is an option, the woman, or preferably the couple, should be provided with the information to make an informed decision without undue influence from health care workers and counsellors.

Antiretroviral therapy (ARV)

Recent study showed that the administration of zidovudine (AZT) during pregnancy, labour, delivery and to the new born reduced the risk of MTCT by 67%. This regimen has become standard practice for HIV-positive women in most industrialized countries and many women are receiving a combination of ARV treatments. This long-course regimen is often not available for women in developing countries because of cost and lack of adequate infrastructure. However, there is a concerted effort to provide short term AZT to all HIV-positive pregnant women. Short course AZT is taken orally from 36 weeks of pregnancy through labour and delivery. This treatment does not prolong the life of the mother, but has been found to be effective in reducing transmission of HIV to the infant. Nevirapine is a much cheaper antiviral drug than AZT, costing about \$4 per mother and baby treated. Recent studies have shown it to be effective in reducing MTCT if a single dose is given to mothers just prior to delivery and to newborns immediately afterwards. In terms of both cost and infrastructure requirements Nevirapine offers a more optimistic and realistic alternative for ARV for developing countries. Many countries are in the process of developing guidelines and an effective infrastructure to support ARV. Because ARV treatments vary

considerably throughout the world and are still in the experimental stages, nurses/midwives are encouraged to learn more about the ARV treatments and protocols available within their community and country.

Post-natal care of the HIV-infected mother and her infant

In many instances, the basic post natal care of the HIV-infected woman and her infant will be no different from routine postnatal care. However, the mother (and possibly partner/family) might need additional counselling and support. Such counselling might include decisions on infant feeding (although this decision should have been made in the antenatal period), and advice on birth control. It is important that the woman and her family are involved in a continuum of care, so that comprehensive linking of resources and services can be provided where and when they are most necessary and effective. HIV-infected women are more prone to medical complications such as urinary tract infections, chest infections, episiotomy sepsis, and uterine and Caesarian section wound sepsis. Nurses/midwives should be alert for signs of infection such as fever, rapid pulse, episiotomy or lower abdominal pain, and foul smelling lochia (vaginal discharge). HIV infected women should be taught about perineal care and safe handling of blood and lochia.

Care for infants and children with HIV-related illness

Most HIV-related illness is caused by common infections which can be prevented or treated at home or in a health centre. However, the illnesses often last longer in HIV infected children, and are slower to respond to standard treatments. The standard treatments are nevertheless the most appropriate treatments. The following general recommendations should be used in the management of HIV infected infants/children and in teaching/counselling mothers and other caregivers.

Maintain good nutritional status in weight loss and failure to thrive

In most countries of the developing world, HIV-infected mothers are still breast-feeding their infants. However, with the knowledge that HIV can be passed through breast milk (approximately 30% risk), this practice might be changing. In some countries, substitutes for breast milk may be recommended for infants of HIV-infected mothers. However there needs to be a safe and adequate supply of affordable breast milk substitutes, access to a clean water supply and adequate means to boil water and to sterilize equipment. In some communities, where supplies and equipment are limited or unavailable, the risk of

babies dying if not breastfed will be greater than the risk of passing on HIV. In countries where ARV is available, breast milk substitutes will probably be recommended. Nurses and midwives are encouraged to refer to local policies and practices on nutritional counselling and breast feeding. Regular growth monitoring (preferably every month) is an appropriate way to monitor nutritional status. If growth falters, additional investigations should be done to determine the cause.

Provide early and vigorous therapy for common paediatric infections as early as possible

All infants with HIV antibodies should be treated vigorously for common paediatric infections such as measles and otitis media. (see Table below) Because the immune systems of children with HIV infection are often impaired, these diseases may be more persistent and severe, and the children may respond poorly to therapy and develop severe complications. Consequently, the mothers of all HIV-positive infants should be encouraged to take their infants for examination and treatment as soon as possible whenever symptoms of common paediatric infections develop.

Paediatric infection	Treatment
Oral thrush (Often recurs after treatment and can be the first indication of HIV infection)	Treat with gentian violet application, polyvidone iodine and chlorhexidine mouthwash, and antifungal tablets and lozenges (depending on child's age)
Other skin diseases	Calamine, topical steroids, antibiotics orally or topically
Unexplained fever	Paracetamol; aspirin (in children older than 6 years of age)
Sexually transmitted diseases in the newborn	Antibiotics such as benzylpenicillin, kanamycin, erythromycin and others have been found to be effective for newborn treatment of syphilis, gonorrhoea, and chlamydia
Otitis media	Broad Spectrum antibiotics

OTHER ISSUES

Fear of death

Fear is a normal reaction and can make people angry, depressed, or aggressive. Caregivers should not give false reassurances, but should encourage the person to talk about their fears. Spiritual support might also be helpful.

Loneliness and depression

Sometimes when someone is dying, people stop coming to visit because they fear death, or do not know how to react. Such isolation can lead to a sense of loneliness and depression. People should be encouraged to visit (if the PLHA wishes). In some cultures, people will also need an opportunity to discuss their feelings about being with someone who is dying.

Feelings of guilt and regret

The PLHA may feel responsible for exposing his/her partner to infection, or may feel guilty for having brought shame to their family or friends. Failure to settle debts, fulfill ambitions, or attend to their responsibilities to children can all cause feelings of guilt, sorrow, and regret. A person may seek forgiveness or wish to discuss ways of resolving problems for which he/she feels responsible.

Spiritual support

This support can come either through an organized religion, or through the exploration of the PLHA's own spirituality, beliefs and values is very important. The PLHA might have been cut off (whether by him/herself or by their community) from his/her religion. Caregivers should acknowledge a person's spiritual needs, respect their religious beliefs (or lack of them), identify an appropriate person who can provide spiritual support, and discuss whether the person wants any religious observances to be performed, including funeral arrangements, in the event of their death.

Making a will

A will helps to make clear what a person wishes to happen after his/her death. The surviving women and children are often left impoverished and unprovided for unless a will is made.

A will must be made in accordance with local law and may:

ensure that property, land and valuables are passed on to people that the PLHA stipulates

make clear who has custody of children; and, if there is no partner, appoint guardians

specify trustees or executors who will ensure the will is acted upon

provide instructions about funeral arrangements

To be valid, a will must usually be:

written in permanent ink or typed

signed by the person and clearly dated. Signing and dating must be witnessed. (Those who benefit from the will should not be witnesses.)

written when the person is of sound mind, and not being forced to do so by someone else.

When death comes it is important not to leave the dying person alone.

Many people are very afraid of dying alone. Respect should be given to rituals, observances, and customs related to laying out the body. Mourners can be given time alone with the body if they wish. However, all persons should be warned about the risk of contamination

Risk of HIV transmission in the health care setting

HIV can be transmitted in the following ways:

To patients through contaminated instruments that are re-used without adequate disinfection and sterilization; transfusion of HIV-infected blood, skin grafts, organ transplants; HIV-infected donated semen; and contact with blood or other body fluids from an HIV-infected health care worker.

To health care workers skin piercing with a needle or any other sharp instrument which has been contaminated with blood or other body fluids from an HIV infected person; exposure of broken skin, open cuts or wounds to blood or other body fluids from an HIV infected person; and splashes from infected blood or body fluids onto the mucous membranes (mouth or eyes).

Creating a safe work environment

The context and environment in which health care is provided influence not only the quality of care delivered, but also the safety and well being of care providers. Measures that promote a safe and supportive work environment include:

education of employees about occupational risks, methods of prevention of HIV and other infectious diseases, and procedures for reporting exposure;

provision of protective equipment such as gloves, goggles, plastic aprons, gowns, and other protective devices;

provision of appropriate disinfectants to clean up spills of blood and other body fluids;

increasing the accessibility of puncture resistant "sharps" containers;

maintaining appropriate staffing levels;

ensuring that Universal Precautions are implemented, monitored and evaluated;

providing post-exposure counselling, treatment, follow-up and care;

implementing measures that reduce and prevent stress, isolation and burnout;

controlling shift lengths and providing supervision of inexperienced staff;

addressing the healthcare, compensation and financial needs of HIV positive health care workers;

providing flexible work allocation for HIV positive personnel and continuing their employment for as long as possible. Their participation will be dependent upon their condition, job demands, and the need to protect them from other infections such as tuberculosis ;

providing dispute settlement mechanisms for HIV infected personnel.

In many resource poor situations, it might not be possible to meet all of the above requirements. However, working toward these goals should be the responsibility of nurses and midwives, other health care workers and their employers. Preventive measures are difficult to practice when supplies and protective equipment are not always available. Priorities must be set and low-cost alternatives sought. Yet, even when supplies are available, the use of Universal Precautions may be influenced by management policy, personal practices, attitude and complacency of staff.

Prevention of occupational exposure to HIV also includes risk assessment and risk reduction activities such as:

using Universal Precautions;

wearing heavy-duty gloves when disposing of "sharps";

assessing protective and other equipment for risk and safety;

adopting safe techniques and procedures, such as disposing of needles without recapping, or recapping using the single-handed method, using sterile nasal catheters and other resuscitation equipment, using a separate delivery pack for each delivery, and not using episiotomy scissors to cut the umbilical cord.

making appropriate disinfectants and cleaning materials available;

sterilizing equipment properly;

eliminating unnecessary injections, episiotomies, and laboratory tests; avoiding, or covering, breaks in the skin, especially the hands.

Universal Precautions

Universal Precautions are simple standards of infection control practices to be used in the care of all patients, at all times, to reduce the risk of transmission of blood borne infections. They include:

careful handling and disposal of "sharps";

hand washing with soap and water before and after all procedures; use of protective barriers such as gloves, gowns, aprons, masks, goggles for direct contact with blood and other body fluids;

safe disposal of waste contaminated with blood or body fluids;

proper disinfection of instruments and other contaminated equipment;

proper handling of soiled linen.

Safe handling and disposal of "sharps"

The greatest hazard of HIV transmission in health care settings is through skin puncture with contaminated needles or "sharps". Most "sharps" injuries involving HIV transmission are through deep injuries with hollow-bore needles. Such injuries frequently occur when needles are recapped, cleaned, disposed of, or inappropriately discarded.

Although recapping needles is to be avoided whenever possible, sometimes recapping is necessary. When this is the case, a single-handed scooping method should be used. To do this, place the needle cap on a hard, flat surface and remove your hand. With one hand, hold the syringe and use the needle to scoop up the cap. When the cap completely covers the needle, use the other hand to place the cap firmly on the hub of the needle.

Puncture-resistant disposal containers must be available and readily accessible for the disposal of "sharps". Many easily available objects, such as a tin with a lid, a thick plastic bottle, or a heavy plastic or cardboard box, can work as suitable "sharps" containers. These can be burned in a closed incinerator, or can be used to transport the "sharps" to an incinerator. It is important to empty containers when

they are 3/4 full, to wear heavy-duty gloves when transporting "sharps" containers, to incinerate used equipment at a hot enough temperature to melt the needles. Where the sharp container is not burned, bury it in a deep pit. Added precautions to prevent "sharp" injuries include wearing gloves, having an adequate light source when treating patients, locating sharps containers directly at the point of use, never discarding "sharps" in general waste, and keeping "sharps" out of the reach of children. Whenever possible, needle holders should be used when suturing.

"Sharps" accidents

Each health care facility should develop standards, policies and procedures to be followed in case of "sharps" injury or other exposure. Many health care workers neglect to report such injuries. This can lead to inaccurate data on health care worker exposure and more importantly, to a lack of follow-up counselling, testing, treatment and care (Fact Sheet 7). Following a "sharps" injury, immediate first aid should be given, such as flushing the site with running water, hand washing with soap and water, and, where there is bleeding, allowing the site to bleed briefly. Any exposed mucous membranes should be flushed with large amounts of water. Antiseptic solutions can have a caustic effect and have not been proven to be effective. However, in the absence of water, antiseptic solutions should be used. Following exposure, the type of exposure and the actions taken should be recorded and the appropriate authorities notified. Accident forms should be completed including information about the type of injury, any witnesses and the name of the patient if known. The accident victim should then report to the accident or emergency department for further care and advice. Voluntary confidential counselling should be available immediately, and HIV testing and follow up counselling made available (Fact Sheet 7). Post exposure prophylaxis (PEP) with antiretroviral treatments (ARV) can reduce the risk of becoming infected. PEP should be guided by local policies and is dependent upon the availability of drugs. If available, a combination of ARV should be taken as soon as possible after the accident (within 24 hours) and for four weeks following exposure. Many health care workers find reporting and undergoing voluntary testing and counselling stressful, and some chose to remain silent. This silence is often due to the fear, stigma and discrimination associated with HIV (Fact Sheet 6).

Evaluating "sharps" practices

If the same accident occurs more than twice, "sharps" practices must be evaluated. Methods for avoiding "sharps" use should be considered, for example, drugs might be given by methods other than injection; stapling rather than suturing; using adhesive tape or skin closure strips; and avoiding unnecessary incisions such as episiotomies.

Safe decontamination of equipment

Efficient cleaning with soap and hot water removes a high proportion of any micro-organisms. All equipment should be dismantled before cleaning. Heavy gloves should be worn for cleaning equipment and if splashing with body fluid is likely, then additional protective clothing such as aprons, gowns, and goggles should be worn. The following table helps in selecting the method for decontamination:

Level of Risk	Items	Decontamination Method
High risk	Instruments which penetrate the skin/body	Sterilization, of single use of disposables
Moderate risk	Instruments which come in contact with non-intact skin or mucous membrane	Sterilization, boiling, or chemical disinfection
Low risk	Equipment which comes in contact with intact skin	Thorough washing with soap and hot water

Sterilization and disinfection

All forms of sterilization will destroy HIV. Recommended methods of sterilization include steam under pressure (e.g. autoclave or pressure cooker), or dry heat such as an oven. Disinfection will usually inactivate HIV. Two commonly used disinfection methods are boiling and chemical disinfection. If boiling, equipment should be cleaned and boiled for 20 minutes at sea level, and longer at higher altitudes. Chemical disinfection is not as reliable as sterilizing or boiling. However, chemical disinfection can be used on heat sensitive equipment, or when other methods of decontamination are not

available. Equipment should be dismantled, thoroughly cleaned and rinsed after disinfection. Chemicals that have been found to inactivate HIV include chlorine-based agents (for example, bleach), 2% glutaraldehyde, and 70% ethyl and isopropyl alcohol.

Cleaning

Detergents and hot water are adequate for the routine cleaning of floors, beds, toilets, walls, and rubber draw sheets. Following a spillage of body fluids, heavy-duty rubber gloves should be worn and as much body fluid removed with an absorbent material. This can then be discarded in a leak proof container and later incinerated or buried in a deep pit. The area of spillage should be cleaned with a chlorine-based disinfectant and the area thoroughly washed with hot soap and water.

All soiled linen should be handled as little as possible, bagged at the point of collection and not sorted or rinsed in patient care areas. If possible, linen with large amounts of body fluid should be transported in leakproof bags. If leakproof bags are not available, the linen should be folded with the soiled parts inside and handled carefully, with gloves.

Safe disposal of waste contaminated with body fluids.

Solid waste that is contaminated with blood, body fluids, laboratory specimens or body tissue all should be placed in leak proof containers and incinerated, or buried in a 7 foot deep pit, at least 30 feet away from a water source. Liquid waste such as blood or body fluid should be poured down a drain connected to an adequately treated sewer or pit latrine.

Planning and management

Proper planning and management of supplies and other resources are essential in reducing the occupational risk of HIV infection. Such measures should include risk assessment, setting of standards and protocols that address safety, risk reduction, post-exposure follow-up and first-aid. In addition, occupational risks can be reduced by introducing measures to prevent or reduce stress, maintain an optimum workload, orientate new staff and provide education and supervision. Staff burnout, characterized by feelings of depletion, loss of vitality, energy, and motivation is a major occupational hazard and can lead to increased risk for occupational exposure to HIV. In

addition, fear of occupational exposure to HIV in health care settings may discourage potential recruits from pursuing nursing and midwifery as a career, thus reducing the future supply of trained professionals. Strategies that address these concerns include:

Gaining and maintaining adequate supplies and resources

Nurses/midwives need to explore different approaches to meet their resource needs, such as:

Finding out what can be obtained from government and non governmental sources, through regular distribution systems;

Finding out what is locally available and can be bought. To what extent can patients and their relatives contribute?

Reviewing the quality of available supplies;

Developing or improving systems for ordering, transporting, and storing, and ensuring there is not an oversupply that will be wasted;

Developing a schedule for obtaining and maintaining supplies which includes taking into consideration travel, delivery time, and weather;

Establishing sustainable acquisition and payment procedures.

Developing creative strategies

In resource poor settings, some supplies may not be available. In such cases, nurses/midwives must creatively about how to manage care. Can plastic bags or condoms be used instead of gloves; can cooking utensils be used for boiling equipment; are there herbal and traditional alternatives to detergents and soaps? Can leaves, thimbles, or plastic wrap be used instead of bandaids to protect cuts? Are the resources that are available being used appropriately? For example, if gloves are in short supply, prioritize -- they are less necessary for giving routine injections and making beds than for deliveries and suturing.

One way to assign priorities is to classify the commonly performed procedures into low, medium and high risk, and allocate resources accordingly. Consideration should be given to cost effectiveness as opposed to cost containment noting that the cheapest equipment is not always the safest or most cost effective in the long run. In home care settings, nurses/midwives will need to be even more creative in finding solutions to infection control. Wherever possible, a home care kit should be available to all health care personnel working in the community and in homes. This kit should include disinfectants, soap, utensils for boiling, gloves, protective garments, and containers for safe disposal of equipment and waste.

Setting and maintaining standards, and political action

Nurses and midwives should be active in developing and maintaining quality assurance programs, and in developing and participating in infection control committees. Nurses and midwives must also develop, maintain, and evaluate standards, procedures and protocols for safe, adequate and effective control of infections. In addition, nurse managers should exert political pressure upon employers and upon national and international agencies to provide funds for essential supplies and equipment for providing safe quality care.

Care for the care giver

Understandably, many nurses and midwives fear becoming infected with HIV. Stigma, prejudice and discrimination surrounding HIV and its life threatening effect may compromise their ability to provide quality care, and even their commitment to remain in the profession. There should be adequate insurance and compensation for HIV-infected health workers. However, such compensation will depend upon the country's ability to pay, the place of employment and the employer. Particular attention should be given to:

Continued employment

Being HIV-infected is not a cause for termination of employment, regardless of whether HIV was acquired on the job or not. As with any other illness, HIV-infected nurses/midwives should be allowed to work as long as they are fit, provided they practice universal precautions. HIV infected health care workers can make considerable contributions to care by helping to educate others, reducing the stigma and discrimination associated with HIV, and providing sensitivity training, support and counselling. Employers should provide work assignments

that both support the HIV infected worker's ability to perform tasks and enable them to avoid infections (particularly TB).

Workplace issues

Health care workers, like the general population, may feel fear, stigma and discrimination towards HIV-infected individual (see Fact Sheet 6). In fact, HIV- infected health care workers are often subjected to severe sanctions from their colleagues. As a result, many careworkers are reluctant to be tested and to enter into counselling, treatment and care. This is problematic, because if nurses/midwives do not know their HIV status, they can put themselves and others in the health care setting at risk. Therefore, employers should develop policies that:

- protect the privacy of the HIV-infected employee;
- prevent social isolation of the HIV-infected employee by co-workers;
- keep HIV-positive personnel in a supportive occupational setting as long as possible;
- educate all employees, management and union leaders about the rights and care of HIV-infected health care workers.

Initiating a package of services

Depending on the stage of the disease and the resources that are available, HIV positive nursing/midwifery personnel require a package of services that might include:

- convincing employers, managers and insurance agencies not to discriminate against HIV positive personnel;
- providing support, legal assistance and referral;
- fostering networking with other HIV positive employees;
- counselling on career change and job retraining opportunities;

advising about continued practice and the disclosure of their HIV status;

developing and disseminating position statements on issues such as mandatory testing (not supported), ethical obligations for HIV positive personnel, and ethical treatment by health care workers for people living with HIV;

providing up-to-date and accurate information about compensation benefits, occupational risks, and follow-up care;

clarifying professional ethical norms and obligations in regard to health care and HIV.

LESSON 19

The Role of the School and the Teacher

Lesson Objectives

After completing this lesson you will be able to

- state the role of the school in HIV/AIDS education; and
- describe the role the teacher should play in HIV/AIDS education.

Basic Content

Why are Schools Important?

Many young people cannot talk about AIDS either at home or in the community. Nor can they talk about the risk behaviours that can lead to HIV infection. They may feel equally uncomfortable talking to their parents, and their parents in turn may also be embarrassed or lack the confidence to discuss the subject with their children. However, most young people do attend school at some point, and school is an entry point where these topics can be addressed. The potential strengths of a school setting are that children there have a curriculum, teachers, and a peer group. And school can teach them not only information, but also skills. School can also help to shape attitudes.

Despite the desirability of AIDS education in schools, there are a number of obstacles which often stand in the way. Some countries have no policies on AIDS education, and in others there can even be policies specifically against AIDS education.

At the level of individual schools, one major obstacle is that often the subject can be considered by adults such as policy-makers, teachers and parents, as too sensitive for children or too controversial. Another obstacle, which is often encountered, is that the school curriculum is already full and that it is therefore impossible to find a slot for AIDS education.

Even when HIV and AIDS education is provided in a school, it is often inadequate for one or more of the following reasons:

- HIV and AIDS education is often provided that deals only with medical and biological facts, and not with the real-life situations that young people find themselves in. Only if life skills are taught, and matters such as relationships, sexuality and the risks of drug use discussed, will young people be able to handle situations where they might be at risk of HIV infection.
- Only one option in terms of sexual behaviour may be offered (for example, that of abstinence) regardless of the age of the students.
- Materials for teachers may not exist, and teachers may not be properly trained to organise classroom activities on sensitive issues.
- No education is provided on referral services, such as further information and skills training, counselling, and youth-friendly STD services.

Overcoming the Obstacles - Designing A Good Curriculum

The starting point for designing a good curriculum for AIDS education should be to make a proper situation assessment. This involves studying students' patterns of behaviour relating to the risk of HIV and finding out, for example, what is the average age at which they first have sexual intercourse, what are their most common forms of sexual behaviour and of drug consumption (including alcohol) and when they tend to leave school.

Such an assessment should start by asking young people's views. Asking young people is essential as young people do not necessarily share adults' attitudes on sexual and drug behaviour. The students must be assured of confidentiality so that they give honest responses. The results of this assessment will have a direct bearing on the rest of the curriculum design which should then involve undertaking the following steps.

- Defining the type of programme (including the age at which it is to be introduced).
- Selecting objectives for the programme.
- Making a curriculum plan.
- Planning specifically for the production of learning materials, and for activities of the students.
- Developing teachers' guides.

- Overcoming the Obstacles - Ensuring an Effective AIDS Education Programme

Effective programmes are those that have had a positive influence on behaviour as regards sex, drug use and non-discrimination, and not simply increased knowledge and changed the attitudes of students.

It has been shown that effective programmes do all the following things:

- Focus on life skills with the double aim of delaying first sexual intercourse and encouraging protected intercourse.
- Concentrate on personalising risk through appropriate role playing and discussions.
- Discuss clearly the possible result of unprotected sex, and in equally clear terms the ways to avoid such an outcome.
- Explain where to turn for help and support among peers, school staff, and outside facilities.
- Stress that skills useful for self-protection from HIV also help build self-confidence and avoid unwanted pregnancy, sexual abuse, and the abuse of drugs (including tobacco and alcohol).
- Reinforce values, norms and peer group support for practising and sustaining safe behaviour and resisting unsafe behaviour, both at school and in the community.
- Provide sufficient time for classroom work and interactive teaching methods such as role play and group discussions.
- Start at the earliest possible age and certainly before the onset of sexual activity. Effectively this means that age appropriate programmes should start at primary school level.

Other Roles for Schools

- Use the education system to deliver preventive HIV/AIDS education, in formal and informal ways that are responsive and effective; and
- Work with the broader community (religious leaders, NGOs, informal groups) to help raise children with protective values from an early age.
- School-based programmes are important for reaching youth before behaviours are established. Because risk behaviors do not exist independently, topics such as HIV, STDs, unintended pregnancy, tobacco, nutrition, and physical activity should be integrated and ongoing for all students in kindergarten through high school. The specific scope and content of these school

health programs should be locally determined and consistent with parental and community values. Research has clearly shown that the most effective programs are comprehensive ones that include a focus on delaying sexual behaviour *and* provide information on how sexually active young people can protect themselves.

- Efforts to reach out-of-school-youth are made by community-based programs. Addressing the needs of adolescents who are most vulnerable to HIV infection, such as homeless or runaway youth, juvenile offenders, or school drop-outs, is important.
- We must address sexual and drug-related risk. Many students report using alcohol or drugs when they have sex.
- STD treatment must play a role in prevention programs for young people. Research has shown that biological factors make people who are infected with an STD more likely to become infected with HIV if exposed sexually; and HIV-infected people with STDs also are more likely to transmit HIV to their sex partners. Expanding STD treatment is critical to reducing the consequences of these diseases and helping to reduce risks of transmitting HIV among youth.
- Persons living with HIV/AIDS should have equal access on a non-discriminatory basis to institutions of primary, secondary and tertiary education, as well as to scholarship schemes.
- Culturally appropriate formal and non-formal education programmes and information on HIV/AIDS should be accessible on a continuous basis to all, to enable people to make informed decisions about their life and sexual practices. Education should also promote respect, tolerance and non-discrimination in relation to persons living with HIV/AIDS.
- Appropriate information regarding parent to child transmission, breastfeeding, treatment, nutrition, change of lifestyle and safer sex should be freely available.

Role of the teacher

All we have learned from lesson 1 through 18 are what the teacher should do. He/she should be able to educate, counsel and offer help to his/her students and members of his community who are infected with HIV or living with AIDS. In an event the teacher is infected, he/she should adopt coping strategies that will be the subject of the next Discussion Forum. Please watch out in a few days for the Forum where you as a teacher, is expected to provide your suggestions on how to cope if infected.



In this lesson, we learned that:

- The potential strengths of a school setting are that children there have a curriculum, teachers, and a peer group. And school can teach them not only information, but also skills. School can also help to shape attitudes.
- Despite the desirability of AIDS education in schools, there are a number of obstacles which often stand in the way. Some countries have no policies on AIDS education, and in others there can even be policies specifically against AIDS education.
- Even when HIV and AIDS education is provided in a school, it is often inadequate for one or more of the following reasons:

HIV and AIDS education is often provided that deals only with medical and biological facts, and not with the real-life situations that young people find themselves in. Only if life skills are taught, and matters such as relationships, sexuality and the risks of drug use discussed, will young people be able to handle situations where they might be at risk of HIV infection.

Only one option in terms of sexual behaviour may be offered (for example, that of abstinence) regardless of the age of the students.

Materials for teachers may not exist, and teachers may not be properly trained to organise classroom activities on sensitive issues.

No education is provided on referral services, such as further information and skills training, counselling, and youth-friendly STD services.

There is a need to design an HIV/AIDS curriculum which should involve the following steps.

Defining the type of programme (including the age at which it is to be introduced).

Selecting objectives for the programme.

Making a curriculum plan.

Planning specifically for the production of learning materials, and for activities of the students.

Developing teachers' guides.

Overcoming the Obstacles - Ensuring an Effective AIDS Education Programme

It has been shown that effective HIV/AIDS programmes do all the following things:

Focus on life skills with the double aim of delaying first sexual intercourse and encouraging protected intercourse.

Concentrate on personalising risk through appropriate role playing and discussions.

Discuss clearly the possible result of unprotected sex, and in equally clear terms the ways to avoid such an outcome.

Explain where to turn for help and support among peers, school staff, and outside facilities.

Stress that skills useful for self-protection from HIV also help build self-confidence and avoid unwanted pregnancy, sexual abuse, and the abuse of drugs (including tobacco and alcohol)

Reinforce values, norms and peer group support for practising and sustaining safe behaviour and resisting unsafe behaviour, both at school and in the community.

Provide sufficient time for classroom work and interactive teaching methods such as role play and group discussions.

Start at the earliest possible age and certainly before the onset of sexual activity. Effectively this means that

age appropriate programmes should start at primary school level.

The teacher should be able to educate, counsel and offer help to his/her students and members of his community who are infected with HIV or living with AIDS.

A decorative header for the review questions section. It features a rounded rectangular shape with a gradient from purple to red. On the left, the text "Review Questions" is written in a white, bold, sans-serif font. To the right of the text is a stylized graphic of three yellow human figures with their arms raised, set against a white background within the red part of the header.

Review Questions

1. Enumerate four activities carried out in your school that address HIV/AIDS issues.
2. What are the outcomes of these activities and what should the school have done to improve on these outcomes?
3. State five roles that a teacher is expected to play in the development and implementation of a national policy on HIV/AIDS.

LESSON 20

The Role of Parents

This lesson is important for our VIHEAF students since we believe that many are parents. We anticipate therefore, that you will relate well with the contents. The thrust of the lesson is how you and the other parents who are not VIHEAF students can be part of the HIV/AIDS education crusade.

Lesson Objectives

After completing this lesson, you should be able to

- state the major roles of parents in educating children about HIV/AIDS;
- state the major roles of parents in counselling and managing children with HIV/AIDS; and
- identify the responsibilities of parents living with HIV/AIDS to their children.

Basic Content

Parents can influence their children's actions. They exert substantial influence on sexual behaviour of their children in at least three ways: by communicating with them, by acting as role models and by providing direct supervision.

The Role of Parents

Parents need to play significant roles in teaching their children correct information on HIV/AIDS. Unfortunately, many parents lack the proper information, skills or are reluctant to communicate with their children. The communication gap between many parents and their children does exist and may lead children to find alternative sources of trust and information. It is of great importance to put parents in the heart of any effort to combat HIV/AIDS.

As Mari Hudson of Health24.co.za notes, you can help protect your child from HIV infection, and contribute to the fight against HIV/AIDS, in the following ways:

- **Pregnant mothers:** If you know you are HIV positive, tell your doctor so that precautions can be taken to reduce the risk of transmission to the unborn baby. Antiretroviral medication taken by pregnant mothers can reduce the rate of mother-to-child transmission during pregnancy or delivery from 25 per cent (without medication) to eight per cent (with medication). If you aren't sure if you're HIV positive but have engaged in high-risk behaviours (unsafe sex, sharing drug needles) that increase the likelihood of HIV transmission, you should get tested for the virus. If you find you are HIV positive, precautions can be taken to reduce the risk of transmission. You can also start looking after your own health, so that you are as well as possible to take care of your child.
- **Be a good role model.** Children model their parents' behaviour, so set them a good example by exhibiting behaviour that demonstrates healthy, responsible attitudes to sexuality and informed decision-making, and that discourages prejudice against people with HIV/AIDS. Good role modelling has a positive effect not only on your children, but also on the community in which your family lives.
- **Educate yourself and your children about HIV/AIDS and sexuality.** Parents need to be knowledgeable about transmission and prevention of HIV/AIDS if they are to teach their children how to protect themselves. AIDS and sex education policies in terms of what can be taught vary among schools, so do not rely solely on the school system to provide your children with sufficient information. Practise talking openly with your children about important issues and let them feel free to express their feelings and concerns. If children are used to discussing problems and worries openly with you, by the time they reach the age of sexual experimentation, they will be more likely to confide in you and approach you for advice.
- **Educate your children about risks associated with alcohol and drug use and promote abstinence or moderation** - by practising what you preach! Alcohol and drug use is considered a risk factor for the transmission of HIV because these substances decrease inhibition, thus increasing the likelihood of engaging in high-risk behaviour such as unprotected sex. Intravenous (injected) drug use carries a very high risk of HIV transmission.

- **Remember that HIV cannot be transmitted through casual contact**, so do not be fearful if your child is in a classroom with a child who has HIV/AIDS, and make sure your child understands they have nothing to fear. There are no reported cases of HIV being transmitted from child to child or child to staff member in a school due to casual contact, fights, biting or contact sports. Therefore, the risks of infecting other children cannot be used as a reason to exclude HIV positive children from a school. Legally, parents do not have to tell the school authorities if their child has HIV, even if they are asked to disclose this on the application form. Make sure children understand that they should get help if someone is bleeding, and not to touch other people's blood or other body fluids or let anyone touch theirs without gloves.

Responsibilities of an HIV positive parent

- Focus on living positively with HIV and taking care of your health as best you can, so you can be more productive and take care of your children better for longer. It should reduce the amount of time your child might need to spend nursing you, and postpones orphanhood. A positive approach does much to improve you and your family's psychological well-being and quality of life.
- Acknowledge children's changing roles: children living with HIV-positive parents often have to shoulder responsibilities at a younger age than other children. Children affected by HIV/AIDS need not only material support, but also psychological support and skills to help them cope with future challenges. Involving children in working out solutions to problems, such as economic difficulties in the household, helps them feel that their contribution is valued and teaches them useful life skills.

Telling your child you are HIV-positive

You face a difficult decision as a parent, in whether or not to tell your child you are HIV positive. Children have varying abilities to cope with this news, depending on their age and individual maturity. It's your right to decide whether telling your children will help them deal with the present and future challenges of your illness, or if it may cause them excessive distress and contribute to their stigmatisation and discrimination at school and in the community. Before telling your child, it's a good idea to consider the following:

- Many experts feel that children of about seven are old enough to understand death and dying, and have heard about HIV/AIDS at school. This does of course depend on the maturity of the individual child. One approach is to start with simple explanations of issues as they come up, and to try to gauge how much information your child can understand and cope with psychologically at each point. If you live in a context where it may be necessary to protect your family from discrimination, be careful how you talk about HIV around your child until she or he is old enough to know when to be discreet.
- Some parents feel that telling their child would just cause distress and make the child's life harder. However, there are many positive and practical reasons for children to be told:

Avoiding talking to children about illness in the household can make them feel anxious, guilty and depressed, and can lead to long-term psychological problems. Children are very aware of adult emotions and actions, and may sense that something is wrong. Discussing the situation helps ease their fears and allows them to cope better with the stress.

Children who are living or caring for an infected parent need to be instructed in the basic precautions so they can protect themselves against contracting HIV or other infections, should the parent have opportunistic diseases.

Giving children the opportunity to talk about their feelings and experiences allows them to realise they are not alone, and builds self-confidence.

Talking about death and dying seems morbid, but can in fact be a positive experience for both parents and children. It gives children the chance to get used to the idea of losing you while you are still there to support them, and to eventually say goodbye and start the process of healing. It gives parents peace of mind knowing that the child will be prepared to live without them.

Children hear incorrect and frightening information about HIV/AIDS, which may be particularly disturbing to them if they suspect you have the disease. Without open communication, your child could get the message that HIV is shameful and should be kept secret.

- If you yourself haven't yet come to terms with being HIV positive, it's unlikely that you will share this information with your child in a positive way, and it may make him or her highly distressed. If you find the idea of telling your children very difficult, and you are uncertain whether or how to do it, advice from a counsellor is often very helpful. Also try discussing your situation with a trusted friend or relative. Children may also benefit from counselling, if they do not seem to be coping.
- A useful tool in the process of saying goodbye is a 'memory book': a journal of family facts and memories for children who are facing the loss of a parent. Compiling the book together with the parent gives children an opportunity to ask questions, strengthens their sense of identity and belonging, allows them to preserve important memories, and helps them cope with present and future stress.

Let us share some views from Rajan Gupta from India

BEING A GOOD ROLE MODEL by Rajan Gupta

Today many parents complain that their children

- do not listen to them
- do not study or work hard
- are abusing drugs and alcohol

These are very serious issues that keep many parents awake at night. Many factors, both within the control of parents and outside, contribute and solutions seem impossible. Nevertheless, in most cases simply spending time with the children and listening to them will make a huge difference. To facilitate this, parents need to develop habits and activities that are fun and which all can share, i.e., activities that can be done together with enjoyment. Also, we need to share and communicate ideas, feelings, emotions and talents. In short, we need to become good Role models.

To effect change and fix these "problems" we have to discover the underlying causes. My deeply held belief, no doubt simplistic and over-generalized, is that my generation of parents, collectively the society, are failing. I would like to emphasize and stress that this failure is not because we are "bad" or uncaring people but because we have not known how to respond to changes in society, and because enough

people in society have not stood their ground and become public role models. We can change this environment as most of us are doing the right things, but just need to connect the issues and establish clear priorities. To succeed we must, however, feel the urgency and work collectively towards an enlightened goal and not in isolation.

I will give three examples of how simple changes can create a big difference. I leave it to you to draw your own conclusions on how prevalent these practices are and how effectively you can implement changes to become role models. Once again I stress that please do not take home a message that we have failed because we are "bad" or uncaring, instead I hope that what I have to say empowers you to deal with the issues.

EXAMPLE 1: I was visiting a family friend and our conversation was interrupted by a telephone call. My friend asked his son to find out who was calling. When the son told him that Mr. So-and-so was on the phone, my friend swore under his breath and said aloud, looking at me, that this person is always harassing him and asking him to perform a favour that he is not comfortable doing. In frustration my friend told his son to tell Mr. So-and-so that he was out of station and would not be back for a few days. He then turned to me and by way of explanation said that because of his official position people do not leave him alone but keep calling to ask for favours. What I would like to ask you is what was wrong with this incident?

First, my friend was not willing to resolve the issue but kept Mr. So-and-so guessing and hoping. The reason for this delaying tactics is that we have made personal connections the central reason for doing things rather than keeping merit as the overriding criteria. Our links and relationships with each other, and our dependence on each other, prevents us from saying no. We perceive that a frank answer will lead to burned bridges. We are afraid that in our times of need and want there will be no one there to help us. Second, my friend was involving his son in telling a lie. Third, he was turning to me for sympathy, thus showing his own weakness. Lastly, his son did not react to this exchange as if something was wrong.

There are many simple ways in which such issues could have been resolved honourably and without involving the son. He could have gotten on the phone and said please call me in the office; or, I don't have a solution to your problem and will not have time to think about it during the next week; or, I am sorry but I cannot do this favour. Instead, he chose to tell a lie and set a bad example before his son.

EXAMPLE 2: I was giving a lecture on HIV/AIDS to students of one of the best schools in India. During the discussion on why corruption

prevents effective implementation of any policy by authorities, one of the students challenged me. His claim was that some forms of corruption were necessary and OK and others not. For example, he said that if a policeman had initiated the process for towing away an illegally parked car, it was OK to bribe him for otherwise a lot of time would be pointlessly wasted. On the other hand, it was not OK for a policeman to accept a bribe for a truck carrying drugs to continue to its destination or for a prostitute to solicit customers.

The student would not understand/accept the connection between the two behaviours: a policeman who has been corrupted and will accept bribes of the "small" kind will also accept bribes for acts that cause grave societal harm. My question to you is -- from whom and how are the children learning such distorted values? Children are certainly not born with such concepts!

My message was that that there is no such thing as a "small" or "big" corruption. Also, there is no such thing as an acceptable and unacceptable corruption. Corruption is a very addictive habit. Once you fall for it, it does not stop; the appetite grows indefinitely. We desperately need role models who teach "don't ever start" by example.

EXAMPLE 3: I was at dinner with three industrialists. This was a night out for the "men" when they could drink and talk. Our conversation shifted to corruption and black money. All three industrialists were very clear in their minds that there was no problem with corruption, and especially with black money. They stated very animatedly that black money circulates and helps run businesses just like white. Very little of it leaves the country to foreign banks so there is no loss to the nation. When I asked them - if the government does not collect taxes, how can it provide services - they got very agitated and replied in one voice that the government officials were a bunch of crooks, their programs very inefficient, so the government did not deserve a penny. When I suggested to them that if they were willing to break the law so casually, then why did they expect the government officials to behave any different, they were adamant. In their minds the government officials were paid to do their job and should therefore not be corrupt irrespective of circumstances and environment. The business people would stop being corrupt as soon as the bureaucrats stop, otherwise their businesses cannot run.

The host's sixteen year old son had been listening to this whole discussion (and fetching soda and beer to keep our throats from getting dry) very patiently. At this point he turned to me and said "uncle you do not understand Indian circumstances. If you are honest

you will starve. No business can run honestly." To me they had turned the problem into the riddle of which came first - the chicken or the egg. They had abdicated responsibility by simply pointing a finger at someone else. Today, it is amply obvious that the politicians, bureaucrats, and the businesspersons are equally implicated, have worked out a system that works for them even though each constantly complains, and fight any attempt to change and bring about transparency. To me, even the question of how we got into this mess is less important than how we start to stop the widespread corruption? So friends we are back to the fundamental question - who sets the standards for society and who are the role models? How do we expect the children to develop good moral character, a spirit of hard work, honesty, and respect for the parents? Everyone is pointing their fingers at someone else for the many problems facing India. In people's view everyone else is corrupt and dishonest. Their own actions are out of necessity and forced upon them by others.

Today the teachers are blaming the parents for not paying any attention to their children or teaching them any values while the parents are blaming the teachers for being incompetent, uncaring, and only interested in promoting lucrative private tuitions. The children are caught in the middle of all this and surrounded by a fast changing world They have no role models; do not know how to establish solid anchors which will remain firm during times of crises, trouble and hardships. They are growing up in a very strange and unhealthy environment. I would like to illustrate this with a very disturbing example.

I was at a dinner party at the local prestigious club when I was introduced to a couple who were the envy of all. They were in their early thirties, their business was thriving and they were always having a good time. It was evident that the couple was very lively, had a spark, were aware of their success, and enjoyed being the centre of attention. The conversation shifted to children and my attention was further drawn to them when they said that they had a nine year old daughter and a five year old son since I have two sons that are nine and four. While we seem to be constantly chasing our tails - cooking, cleaning, driving them to various activities, and reading to them - here was a counter-example showing how to maintain fun and excitement of life before children. Since we all want lives with frequent fun filled parties I wanted to know their secret.

In response to my query as to how they managed the wife pointed out that they too could not have enjoyed the daily club life had it not been for the fact that they have a wonderful nanny, a great cook, a maid to

care for the house, and a chauffer to drive the children around. They could not imagine how anyone could live life without domestic help. At this point visions of a conversation with an OBGyn cum paediatrician, from just the day before, came to my mind. The doctor had told me of the very rapid increase in the number of cases of sexual abuse of children (both girls and boys) by nannies, servants, uncles and cousins. She was lamenting the fact that in many cases this abuse carries on for years before the parents wake up and bring the child in for treatment, by which time the trauma is deep and long lasting. I regret to say that I did not have the courage to caution the couple; I just hope they would not become part of the depressing statistics.

Our failure to provide role models, our failure to appreciate our role in defining children's behavior and actions, especially in these very challenging times, is what prompts me to say that we as a generation of parents are not recognizing the fast pace of change and are not changing our own behaviours to respond to the challenges. It is in this sense we are failing.

Friends, I would also like to address the issue of how to develop awareness on addictions and how children fall prey to alcohol, tobacco and drugs. The biggest influence on adolescents comes from their peers and what they observe their role models in society doing. I would like to share with you an experience I had during a visit to India seven years ago. I was very impressed by the sudden acquiring of taste for single malt scotch by my friends. Glenmorange and Glenfiddich were household names and out were the old favourites like Chivas Regal and Johnny Walker. Not being a whiskey drinker I asked my friends how they choose one brand over the other since they all taste harsh to me. It is a question of "smoothness" one friend told me. Good scotch has a different kind of "buzz" said another. A third said that he could tolerate more of a single malt scotch. And finally one said that it was a question of status and class. Today nobody he knew drank Chivas (too bad I had brought along a bottle of Chivas!).

Friends, how do such tastes, fashions and appreciations develop? Mostly by word of mouth, media, movies, and now the internet, spreads news of what is cool (what our generation calls status and class); what has a gentler come down (no hangover); which gives a better high (buzz); which drug can be ingested more easily (pill or inhaled or smoked or injected); which has a beautiful rush (smooth); and finally which is supposedly not addictive or damaging (good quality scotch versus local whiskey). By this example I hope to highlight that adolescents have the same drivers in their choice of

drugs and very similar thought processes that lead them to try alcohol, smoking or drugs.

Today, a dinner invitation in North India is an invitation to an evening of drinking. The food is served around midnight, after about 3 hours of drinking, eaten quickly. Usually, this part of the socializing is over in about fifteen minutes and then everyone departs. Why should getting together to party be any different for adolescents? Talking and dancing becomes secondary to smoking, getting high on alcohol and drugs, and possibly exploring their emerging sexuality. The parallels between adult behaviour and those of the adolescents are obvious for anyone to see - both are seeking status and class and defining what they consider fun lifestyles. Only the choice of drug is different!

How do adolescents move from one drug to another? Down the grapevine comes information on what is cool, what is "hip", and kids respond out of curiosity and seeking new thrills. Another reason is simply what is at hand and readily available. For example, if some adult, habituated to drinking single malt scotch, is at a party where only Chivas Regal is being served, would he/she refuse to have any or give in to an "inferior" brand just for that one day? Similarly, someone used to getting high on hashish may find himself/herself at a party where speed and ecstasy are freely available. Unfortunately, some of the hashish smokers will try these "new" drugs and many of them will like it and continue using them in the future.

So friends, I don't believe there is a real mystery in the behaviour of children today. They are doing what society around them is defining as "cool" and "in". They are impatient and want their thrills quick and easy. The issues confronting parents are that life has become very complex, there are many distractions, and changes are taking place incredibly fast. We need to understand these changes and develop safe behaviours for ourselves and for our children. We have to learn to be role models in a changing world, preserving a value system that is honourable and lasting. Our children are looking up to us to provide this leadership by example - let us not disappoint them lest they in turn disappoint us.

How Do I Teach Students?

You should share the basic contents of this lesson with a group of parents of the students you teach. Use the focus group discussion method.



In Summary

In this lesson we learned that

- Parents should be good role models and set a good example by exhibiting behaviour that demonstrates healthy, responsible attitudes to sexuality and informed decision-making, and that discourages prejudice against people with HIV/AIDS.
- Parents should educate themselves and their children about HIV/AIDS and sexuality.
- Parents should educate their children about risks associated with alcohol and drug use and promote abstinence or moderation.
- If you are an HIV-positive parent, focus on living positively with HIV and taking care of your health as best you can, so you can be more productive and take care of your children better for longer. It should reduce the amount of time your child might need to spend nursing you, and postpones orphanhood. A positive approach does much to improve you and your family's psychological well-being and quality of life.
- Children who are living or caring for an infected parent need to be instructed in the basic precautions so they can protect themselves against contracting HIV or other infections, should the parent have opportunistic diseases.
- Giving children the opportunity to talk about their feelings and experiences allows them to realise they are not alone, and builds self-confidence.
- Talking about death and dying seems morbid, but can in fact be a positive experience for both parents and children. It gives children the chance to get used to the idea of losing you while you are still there to support them, and to eventually say goodbye and start the process of healing. It gives parents peace

- of mind knowing that the child will be prepared to live without them.
- Children hear incorrect and frightening information about HIV/AIDS, which may be particularly disturbing to them if they suspect you have the disease. Without open communication, your child could get the message that HIV is shameful and should be kept secret.

Review Questions

A graphic with a purple-to-red gradient background. It features the text "Review Questions" in white, a stylized yellow and orange figure resembling a person or a flame, and two white circles on either side.

1. If the family had HIV tests and one of the parents - the father, and two of the adolescent children tested positive, what should be the role of both parents to the family members who are positive?
2. What lessons can you draw for the African context from the three examples given by Rajan Gupta?

LESSON 21

The Role of the Community

Lesson Objectives

After completing this lesson, you should be able to:

- enumerate the roles of the local, national and international communities in HIV/AIDS education, prevention and counselling; and
- describe roles that you can play in enhancing greater participation of your community in HIV/AIDS education.

Basic Content

Role of Community Participation in the AIDS Control Programme

Some people with HIV or AIDS think everyone is looking at them or talking about them. This makes them want to hide. Sometimes they feel rejected by other people or they reject themselves. Sometimes they feel guilty. And some people with HIV or AIDS feel there is no good reason for living. Sometimes they stay at home, not eating, nor talking to anyone. If we have a friend who has HIV or AIDS we should be supportive and kind. We can also help our friend to live positively. We should give them moral support.

It is our moral duty to get the messages across to all members of the society who need to share the prevention challenge. Herein lies the role of the community. The community is very important in supporting people with HIV and AIDS. The community can be a shelter where infected persons can be assured that they are loved, accepted and where they do not have to hide their feelings. If a friend or someone we know in the community has HIV or AIDS, we can encourage them to continue leading a normal life.

We can ensure that they take healthy food, enough rest, avoid stress, take light exercise and continue with their work. It is good if a community feels free to talk about AIDS, just as it talks about any other sickness. Then the people who want to gossip in an unkind way will find themselves isolated and with nothing to say.

We should also have continuous interaction with the people about how can we prevent AIDS from spreading. It must be emphasized that if we want to help the person affected with AIDS, we must have complete knowledge about AIDS - what it is, how it is caused, how spread and how not spread etc.

There are countless ways to spread awareness on HIV/AIDS in the community. We can consult about HIV/AIDS with knowledgeable persons or doctors. Thereafter, we can make ourselves individual helpers or we can form a social organization, clubs etc. In the community hall or in the club, we can organize an audiovisual program on AIDS awareness or a public interaction with a knowledgeable person.

Training programs on AIDS for the teachers especially the schoolteachers should be organized. School students, who are in the teenage stage, cannot decide what is good or what is bad, and require guidance from teachers to steer them away from risky behaviour. So, interaction on AIDS between teachers and students is a must in every school. Students are the pillars of the nation, so it is quite important that they be healthy and AIDS free.

We need to remind the people that the AIDS virus is not spread through:

- (i) Casual touch, hugging, kissing, tears and sweats.
- (ii) (ii) Sharing food and drinks with an HIV Positive person.
- (iii) (iii) Sharing toilets, towels and clothes, combs, sheets.
- (iv) (iv) Bites from mosquitoes, bed bugs or any other insect and cats.

There is currently no treatment for AIDS. But the people with AIDS and HIV should be comforted by the fact that there are medicines that can help them to fight off sickness that come with HIV infection or AIDS. Antibiotics and other medicines can help people with AIDS to feel much better and to live longer.

Unfortunately, these drugs and medicines are often very expensive and not yet available in sufficient quantities in our state. Until such time as they are and until a treatment is found, we in the community have the task of helping the HIV/AIDS in dealing with the disease and living as normal a life as possible.

It is natural that fear of the unknown should haunt many people with HIV or AIDS get fear of the unknown who are afraid to die. At such moment they need people who can share their thoughts and comfort and encourage them. If death comes, they must be helped to accept it with courage and dignity. We may tell them that if they accept death in serenity, their courage can transform the lives of those they leave behind.

The community should work with open heart and open mind with the goal of prevention further spread of HIV infection and providing care and support to those affected by AIDS in the spirit of joint solidarity without considering for reward.

Coming to grips with the challenges

- Experience shows that controlling the epidemic depends in large measure on communities' and families' abilities to confront the gender-driven behaviour that increases the chances of infection for girls and boys, men and women. That, in turn, calls for strong and coherent national policies, strategies and plans.
- The Convention on the Elimination of Discrimination Against Women (CEDAW) is a key basis for legal reforms and other steps aimed at countering the violation of women's human rights and protecting women who are infected and affected by HIV/AIDS.
- Comprehensive prevention and care programmes that take into account a wide range of social, economic, cultural and political factors are more likely to stem the epidemic. Such programmes should be marked by high-level political commitment for steps that tackle the gender dimension of the epidemic in a variety of ways (including legal reforms, as provided in CEDAW, and national HIV/AIDS policies, plans and strategies).
- Such programmes would also ensure that health information, care and other services are improved and provided in ways that are culturally appropriate and gender-sensitive. As important is the development of sex-specific, gender-balanced information about HIV/AIDS and other sexually transmitted infections for different audiences in different settings (for example, for young people in and outside school, or for workers at home or in the workplace).
- Innovative activities targeting boys and girls are needed to promote more equitable and mutually respectful attitudes and behaviour, especially in sexual relationships. Also needed are targeted anti-poverty programmes that extend credit and other forms of support to both women and men in need, as well as measures that address the special needs of widows and child-headed households.

The Role of Religious Organisations in HIV Prevention

The AIDS epidemic has preyed upon our fear, ignorance, lack of leadership in mobilising prevention strategies, and our non-support of people infected and affected by the disease. Throughout the world the AIDS epidemic is completely out of control.

Combating HIV requires bold, steadfast leadership. To stop the escalating slaughter of African peoples by HIV, we must seek and receive leadership from the religious organizations such as churches and mosques. Churches and mosques remain the cornerstone of the African global community. They are institutions with ability to mobilise the masses and disseminate appropriate information. It can be effective in doing so because it still enjoys the respect and the support of the people. In the face of a disease that is 100% preventable, our churches and mosques must begin to provide prevention education and to support those persons who are infected and affected by HIV. No longer can we afford the luxury of succumbing to the "NIMBY" syndrome: "not in my backyard." Only when churches and mosques are willing to admit that people living with AIDS are not "them;" only when our churches recognize that AIDS is not, by any stretch of the imagination, confined to those outside the faith community, can we begin to be effective. We look out over the casualties of the AIDS war-children homeless and orphaned; teens who for lack of information will become infected and who will not live to be 25; mothers suffering from abuse and obligated to have unprotected sex with their husbands who are known to be infected. We are numbed by the chilling fact that there is neither a vaccine nor a cure.

Role of National Communities

National communities can engage in the following roles:

- Education - seminars, training programmes and workshops.
- Youth activities - education on HIV/AIDS and narcotics awareness, prevention and care through youth camps and other youth activities.
- Home/Community visits - to provide moral support, counselling, advice on self/home-based care and give donations.
- Vocational training - provide venues and materials, coordinate with trainers, funding sources and marketing.
- Resource centre - printed/audiovisual materials, brochures, posters and speakers.
- Education Fund - for children orphaned or affected by HIV/AIDS.

- Milk Bank - for children orphaned or affected by HIV/AIDS.
- Medicine Bank - for people living with HIV/AIDS.
- Funeral robes bank - for families of people who have died of AIDS.

What about the international community? Jacqui Ala in the article below, provides some perspectives.

The role of the international community^a in combatting HIV/AIDS in sub-Saharan Africa

Jacqui Ala

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Southern Africa is at present the epicentre of the global HIV/AIDS pandemic. Statistics for seven countries in this region indicate that one out of five adults are HIV positive. The region is classified by epidemiologists as having a generalised epidemic. Botswana currently has the world's highest infection rates with approximately 36 per cent of the adult population HIV positive. South Africa has the highest number of people living with HIV globally. Out of a population of 40 million an estimated 4,2 million South Africans are HIV positive.¹ Governments on the whole have failed to deal with their epidemics timeously, resulting in enormous infection rates which are set to stabilise at exceptionally high levels. The political, social and economic ramifications for this region are enormous.

The rationale for the involvement of external actors

The challenge of HIV/AIDS for southern African countries is awesome. It is vital that prevention efforts targeted the entire population. What further exacerbates the situation is that in addition to these preventative measures, provision also needs to be made to assist those already infected.

Providing both preventative and treatment programmes for the entire population places an enormous burden on the already hard pressed economies of sub-Saharan countries especially those in the southern cone. HIV/AIDS threatens to destroy much of the economic progress made to date by many of these states. A government report states that Botswana's epidemic will cost almost one-third of the country's economic potential over the next ten years. Government revenue is also expected to drop over the same period while expenditure is set to rise, creating a budget deficit of 21 per cent.² These predictions are very serious as the country is one of the wealthiest in Africa.

The report labels HIV/AIDS as the single greatest threat to human welfare and development in Botswana. UNAIDS believes that the South African economy would be 17 per cent smaller in 2010 than it would have been without HIV/AIDS. By that time the disease would have cost the country in excess of \$ 22 billion.³ HIV/AIDS is expected to continue to dominate the business environment over the next five to fifteen years. Metropolitan life forecasts that 20 per cent of the workforce will be HIV positive by 2005 and 22,5 per cent by 2010, if no inventions were taken.³

A report compiled by the Namibian Health Minister Libertina Amathila states that the government health system will not be able to sustain treatment for its growing HIV-positive population. At present, Namibia has approximately 150 000 HIV positive adults and 67000 AIDS orphans.³ Since 1996, the cost of treating HIV/AIDS patients has risen to an estimated \$ 61 million. At present, most HIV-positive people rely on their family for care. This burden falls largely on rural women who often have to care for two or three people. Unfortunately, having to care for HIV-positive family members places an enormous economic pressure on these women, one that many are unable to cope with. In addition, HIV/AIDS is not the only crisis faced by many of these states. There are other pressing issues requiring government resources.

Although, these countries can make an impact on their epidemics by wisely employing the resources at their disposal, their financial and often their technical resources are limited. Thus, to sustain the fight against HIV/AIDS in Africa it is imperative that the international community or more broadly speaking global civil society render as much assistance as possible. Without this external assistance the war against HIV/AIDS in sub-Saharan Africa promises to be short lived and futile.

External assistance to sub-Saharan Africa: The current state of play

A myriad of actors are currently involved in assisting African states with their HIV/AIDS policies and programmes. The contribution of some of these organisations is discussed below.

The United Nations

The United Nations has placed the issue of HIV/AIDS firmly on its own agenda. Last year Richard Holbrook, United States ambassador to the UN placed the issue before the Security Council citing it as a threat to international security and stability. This was the first time that a health issue has been afforded this type of attention. Subsequently, it

unanimously adopted a resolution calling for increased international co-operation and for concrete action by member countries to counteract the impact of HIV/AIDS on the health of international peacekeepers. In June, the General Assembly will hold a special session devoted to HIV/AIDS with emphasis on the developing world. The session will then put forward a resolution to the Security Council. Following recent trends in such events, individuals, CBOs and NGOs will be allowed to give input to the process. Thereby allowing civil society a voice in the process. Whether this initiative will deliver a positive outcome is unclear.

Under the auspices of the UN there are plans to launch a global AIDS fund. The project intends to raise approximately \$6 billion dollars annually from industrialised countries, including \$2 million dollars a year from the US. Initially 50 per cent of the funds would be used to purchase HIV/AIDS medicine for more than 10 per cent of the estimated 25,3 million infected Africans. The remaining 50 per cent will be used to strengthen and accelerate existing prevention programmes.⁴ Although the fund will almost exclusively focus on HIV/AIDS, the project also aims to improve treatment for other killer diseases in developing world countries such as malaria and tuberculosis. The AIDS fund is an attempt to create a public-private partnership similar to the Global Alliance for Vaccines and Immunisation. It has endeavoured to include key non-state players in the field of HIV/AIDS such as the Gates Foundation, the Rockefeller Foundation as well as the pharmaceutical industry.

In addition, to the work being done at the upper echelons of the organisation Secretary General Kofi Annan has been an active participant in launching the International Partnership Against AIDS (IPAA) in Africa which was formally established in December 2000. According to Annan, the Partnership will be the focus for a new spirit of co-operation in building the response to AIDS. It seeks to galvanise intensive efforts bringing together African governments, the United Nations, donors, community organisations and the private sector. The Secretary General acknowledged that so far the response to the epidemic in Africa has been far from adequate. The IPAA aims to rectify this problem. Its goals over the next decade are to reduce the number of new HIV infections in Africa, promote care for those who are already HIV positive and mobilise society to halt the advance of HIV/AIDS.

Although an initial meeting took place in December 2000 it is too early to determine the kind of contribution it will make. The IPAA appears to be a move in the right direction. It has attempted to be inclusive in its membership, especially by bringing CBOs and NGOs to the table. However, success will probably be determined by the type of

commitment individual governments make to the adopting recommendations made by the partnership. One only has to look at South Africa to see the detrimental impact of minimal government commitment to the issue of HIV/AIDS.

UNAIDS

Initially, as HIV/AIDS was perceived by the UN as a health issue the World Health Organisation was tasked with addressing the issue. However, due to the dramatic increase in the spread of the virus globally it was determined that a specialised UN agency sole devoted to HIV/AIDS was necessary. The scope of the pandemic meant that no single UN agency was equipped to deal with the problem. Greater co-ordination was necessary to maximise the impact of the UN's efforts. Thus, in 1996 UNAIDS was created. It draws on the expertise of 7 other international organisations namely UNICEF, UNDP, UNFPA, UNESCO, WHO, UNDCP and the World Bank. These organisations were included as the pandemic has impacted upon their work.

The following are the goals of the UNAIDS co-sponsors:

- To draw on unique expertise of each organisation with respect to combating HIV/AIDS.
- To co-ordinate responses to the HIV pandemic.
- Working through UNAIDS these co-sponsors seek to expand their outreach through strategic alliances with other UN agencies, national governments, corporations, media, religious organisations, community-based groups, regional and country networks of people living with HIV/AIDS and other non-governmental organisations.

At country level UNAIDS' function is to inform, plan and monitor co-ordinated actions, and advise government. It assists the host country in mounting an effective and comprehensive response to HIV/AIDS and attempts to ensure that each state employs a multi-sectoral response to its epidemic.

In principle, the concept of UNAIDS is excellent. The UN has attempted to adopt a multi-sectoral approach by main streaming HIV/AIDS into work of all seven co-sponsors. However, a major problem with the UNAIDS partnership is its size. Co-ordinating HIV/AIDS policy among seven co-sponsors is extremely difficult. Each organisation has a different agenda and therefore a different focus. Unfortunately factors that make populations vulnerable to high rates of HIV infection are interconnected. Thus, for the UNAIDS partnership to be effective and

efficient there needs to be considerable interaction between the members.

What weakens UNAIDS is the appearance of competing agendas between agencies. The rivalry between the various UNAIDS co-sponsors is well documented. The WHO wants to take the lead on technical issues. In addition, the UN Children's Fund and the UN Development Programme also desire to assume leadership roles. The World Bank has lobbied the US Congress to enable them to determine how money allocated to HIV/AIDS is spent. ⁵ The pharmaceutical industry has used this rivalry and lack of co-ordination to play UNAIDS off against WHO in order to negotiate the best deal for itself with regards supplying low-cost anti-AIDS drugs to the developing world.

Individual states

Many Western states have also assisted African states with various initiatives. The range of projects funded by foreign governments are enormous. Not only do they fund initiatives directly but they also contribute indirectly through their financial support of UN agencies. For example, Mozambique is receiving both bilateral and multilateral assistance in dealing with its AIDS orphans problems. HIV/AIDS is spreading so rapidly through Mozambique that there are already an estimated 350 000 orphans. According to a UNICEF study, this figure will probably rise to 1 million within the next five years. The international donor community is actively assisting the government in its fight against the disease. UNICEF is currently spending \$ 3 million on HIV/AIDS projects in the central and northern provinces.⁶

The new Bush administration in the United States has committed \$200 million dollars to the Global AIDS and Health fund. However, activists have criticised this contribution as being far too small. Nevertheless, this contribution is being used by the UN to leverage donations from other governments.

Although the West seems quite content to dole out aid they seem reluctant to support initiatives that will substantially empower the developing world in the area of HIV/AIDS. It is acknowledged by UNAIDS that debt write off would make an enormous contribution. The money freed up by this could be employed in HIV/AIDS prevention and treatment programmes. However, despite the promise that the 2000 G-8 Conference would address this issue very few developing world states have benefited from debt write off. Harvard economist, Jeffrey Sachs, believes that for debt write off to be effective it must be a 100 per cent write off. Unfortunately the West is extremely reluctant to do this. Furthermore, many HIV/AIDS projects are funded by loans for external actors. The implications of this is that ultimately African states

will have to pay these amounts back further increasing their debt burden which once again feeds into the poverty cycle in these states. Considering how much money states need to spend to effectively cope with their HIV/AIDS crisis, obtaining most of this money as loans will have serious ramifications for their economic development. Where possible financial assistance for HIV/AIDS projects should be given as aid so as not further pressurise these states.

The private sector/multinational corporations

As we enter the 21st century there seems to be a trend towards the private sector becoming involved in humanitarian assistance. The area of HIV/AIDS has seen considerable support from the private sector. In fact it is probably the private sector that could most effectively mobilise the resources required to adequately respond to the HIV/AIDS crisis. What are of particular interest are the public-private partnerships currently being formed. Beside their money the private sector also brings novel and innovative approaches in dealing with problems.

Currently this type of public-private partnership is being used in Botswana. The key players are pharmaceutical company Merck and the Bill and Melinda Gates Foundation working in conjunction with the Botswana government. Other partners included various Western governments, academic institutions such as Harvard University's AIDS Institute and global health and development agencies including UNAIDS. Titled the Botswana Comprehensive HIV/AIDS Partnership, the programme aims to increase public awareness, prevention, diagnosis and treatment of HIV infection. The initial five-year programme will be overseen by an international advisory panel managed by an in country multidisciplinary team which aims to develop local leadership and commitment to ensure its long-term sustainability. In terms of the plan, the Gates Foundation will contribute \$50 million to improve the primary health care system. Merck will fund the development and management of the programme and contribute antiretroviral drugs. The project is one of the first to come from an agreement brokered between UNAIDS and five other drug companies which undertook to slash drug prices to developing world companies by 90 per cent. It is hoped that lessons learnt by the project will strengthen the global response to HIV/AIDS.⁶

Mining house Anglo American has also joined the fight against HIV/AIDS. In its HIV/AIDS strategic plan launched in February 2001 it announced that it would provide HIV employees with free antiretroviral drugs.⁷ This a significant move given the fact that HIV prevalence rates among miners are extremely high due to their engaging in high-

risk behaviour. Anglo's plan to provide HIV/AIDS care not only to South Africa but also to all its mining ventures throughout the southern African region. Ironically it is local government, NGOs, CBOs, the private sector and the international community, which appear to be spearheading the fight against HIV/AIDS in South Africa.

Anglo's bold strategy has been welcomed by South Africa's National Union of Mineworkers (NUM) as a step in the right direction. However, NUM is concerned that Anglo's real motive for encouraging testing and counselling is to enable it to close down those units where the majority of people are HIV positive. It also fears that the company will not back up its rhetoric with hard cash. ⁷ Anglo has realised that NUMs support of its project is crucial for its success and has agreed to consult with Union regularly.

Aside from Anglo American other South African companies doing business in southern Africa have also been proactive. Transnet has devised HIV/AIDS programmes for its workers. Eskom has offered its employees the opportunity to be tested for HIV and counselled. It has also allocated R30 million over the next three years to assist in research for the development of a HIV/AIDS vaccine.

Despite the bold initiative adopted by many in the private sector there is one set of players who seem incapable of acting in a dynamic manner, namely the pharmaceutical industry. Unfortunately they are key players in any successful HIV/AIDS venture in Africa. It is vital that Africa which has the worst HIV/AIDS epidemic has access to affordable anti-AIDS drugs. Although much negotiation has been done in this area with some success, large-scale access for African states remains elusive.

Suggestions have been made that a segmented pharmaceutical market be created where AIDS drugs are sold to the developing world at cost or marginally above cost in exchange for high prices in the developed world. This would improve access to drugs while still protecting drug companies' intellectual property. This idea is beginning to find credibility among a few drug companies. Other proposals by UNAIDS to increase access to affordable AIDS drugs include:

- Competition between manufacturers of patented medicine and generic manufacturers to reduce prices.
- Regional procurement where countries collaborate to purchase large volumes of drugs to get bulk discounts.
- Voluntary licensing, where manufacturers of patented drugs allow others in developing countries to make their drugs.
- Using provisions in the Trade Related Aspects of Intellectual Property Agreement (TRIPS) and domestic law that allows for compulsory licensing where HIV/AIDS is a national emergency.⁷

It is interesting to note that the United States has strongly opposed the invocation of the above clause in TRIPS. It seems that the US possesses a rather duplicitous standpoint on the HIV/AIDS issue where it supports giving aid but not those measures that would provide sustainable solutions to the problem.

Drug manufacturers have offered to reduce the price of AIDS drugs to the Southern African Development Community (SADC) and assist these countries establish a health infrastructure. However, SADC Health Ministers believe that this is not a sustainable solution. They accuse drug manufacturers of not putting forward a clear offer. Instead they argue that manufacturers do not want to negotiate with the SADC but prefer to price their products according to what they believe each individual country can afford. Nevertheless, Rwanda, Senegal and Uganda have benefited from the above offer.⁷

A study released by Harvard University in April 2001 stated that delivering HIV/AIDS drugs, specifically highly active antiretroviral therapy (HAART), to Africa is within the realm of possibility. It documents a scientifically based plan and guidelines for providing HIV/AIDS drugs to Africa. The plan also addresses many of the practical concerns raised by the pharmaceutical industry in the large-scale distribution especially those concerning lack of medical infrastructure in these states. The Harvard study endorses the creation of a global AIDS fund, which would finance HIV/AIDS treatment programmes. The study will also feed into discussion at the June 2001 Special General Assembly on HIV/AIDS.

Conclusion

Despite the fact that there is considerable activity in many southern African states HIV/AIDS infection rates have not seen a dramatic decline. The bottom line is that more attention needs to be given, more innovative programmes need to be created and more money needs to be spent on the disease. Public-private partnerships such as the one proposed by Harvard University and the United Nations could hold the key to winning the HIV/AIDS war. However, there still seems to be reluctance on the part of key players within the international community to make the kind of commitment that would make this a reality.

References

1. UNAIDS. Report on the Global HIV/AIDS Epidemic. UNAIDS, Geneva, 2000: 11.

2. UN Wire. HIV/AIDS: Botswana To Lose One-Third of Economic Potential. 17/05/2000 p.1.
3. Shevel A. AIDS Will Shrink Economy 17% by 2010. Business Report, 29 November 2000: 1.
4. UN Foundation. HIV/AIDS: UN Led Effort to Combat Pandemic to be Announced. p.1.
5. AIDS Fund Held Back by Feuding and Cash Shortage. Saturday Star, 26 May 2001: 5.
6. UN Wire. HIV/AIDS: Mozambique AIDS Orphans To Reach 1 Million By 2005. 08/06/2000 p.1.
7. Bisseker C. Anglo's Leap of Faith. Financial Mail, 23 February 2001: 38-39.



In this lesson we learned that:

- The community is very important in supporting people with HIV and AIDS. The community can be a shelter where infected persons can be assured that they are loved, accepted and where they do not have to hide their feelings. If a friend or someone we know in the community has HIV or AIDS, we can encourage them to continue leading a normal life.
- We can ensure that they take healthy food, enough rest, avoid stress, take light exercise and continue with their work. It is good if a community feels free to talk about AIDS, just as it talks about any other sickness.
- There are countless ways to spread awareness on HIV/AIDS in the community. We can consult about HIV/AIDS with knowledgeable persons or doctors. Thereafter, we can make ourselves individual helpers or we can form a social organization, clubs etc. In the community hall or in the club, we can organize an audiovisual program on AIDS awareness or a public interaction with a knowledgeable person.
- Churches and mosques must begin to provide prevention education and to support those persons who are infected and affected by HIV.
- National communities can engage in the following roles:

Education - seminars, training programmes and workshops

Youth activities - education on HIV/AIDS and narcotics awareness, prevention and care through youth camps and other youth activities.

Home/Community visits - to provide moral support, counselling, advice on self/home-based care and give donations.

Vocational training - provide venues and materials, coordinate with trainers, funding sources and marketing

Resource centre - printed/audiovisual materials, brochures, posters and speakers.

Education Fund - for children orphaned or affected by HIV/AIDS.

Milk Bank - for children orphaned or affected by HIV/AIDS.

Medicine Bank - for people living with HIV/AIDS.

Funeral robes bank - for families of people who have died of AIDS.

The international community should provide funding support for HIV/AIDS projects.



- Describe five ways by which your community (local and national) is playing roles in HIV/AIDS education and reduction of infection rates.
- As a student of VIHEAF, list roles that you can play in enhancing greater participation of your community in HIV/AIDS education.

LESSON 22

Eliminating Violence, Stigma and Discrimination

Lesson Objectives

After completing this lesson, you should be able to

- state the nature of violence, stigma and discrimination to which people living with HIV/AIDS are exposed; and
- suggest ways by which such violence, stigma and discrimination can be eliminated.

Basic Content

Stigma and Discrimination

Two weeks ago, some Management staff of an establishment in Abuja were given self-test kits for HIV. The Director in charge of the project requested those who got the kits to inform him of their HIV status. Nobody did. The fear of stigma or discrimination would appear to account for such lack of disclosure. People around the world living with HIV and AIDS face obstacles on a daily basis, stigma and discrimination remain the two most often encountered. Comments commonly heard include: "If I shake your hand, I'll catch it." "I can't work with you, you'll infect me." Fear of HIV/AIDS has had a devastating effect on those infected and affected. Just the threat of discrimination prevents many people from being tested, seeking much needed treatment for AIDS, and disclosing their HIV status. Meanwhile, individuals with, or suspected of having, HIV have been turned away from health care facilities, denied housing and employment, rejected by their friends and families, turned down for insurance coverage or refused entry into foreign countries. There have been cases where people with HIV/AIDS have been evicted from homes by their families, have been abandoned by their spouses or partners, and have suffered physical violence and even murder. The stigma attached to HIV and AIDS also may extend beyond those with the disease into their next generation, placing an added emotional

burden on children who may also be trying to cope with the death of their parents from complications related to AIDS. It is only by confronting stigma and discrimination can a complete fight against HIV/AIDS be won. Let us now examine three views on the subject.

Domestic Violence and HIV Infection in Uganda *Human Rights Dialogue 2.10 (Fall 2003): "Violence Against Women"*

Lisa W. Karanja

Jacqueline is a thirty-two-year-old Ugandan woman who tested HIV-positive after her husband died of AIDS. Before he died, he routinely raped and beat her, and refused to use a condom during sex. Her four children are infected with HIV, as is her co-wife. The similar experiences of many Ugandan women illustrate the ways in which domestic violence can play a critical role in rendering women vulnerable to HIV infection. As a result of violence or a fear of violence, Ugandan women are unable to protect themselves from infection and to access HIV/AIDS services. Although Uganda has ratified international and regional human rights treaties providing for women's rights to protection against violence and women's rights to health, the unchecked domestic violence and the lack of access for women to HIV/AIDS services are clear indications that the government is failing to meet its responsibilities.

In addition to women's greater physiological susceptibility, social, cultural, and legal forms of discrimination compound their vulnerability to HIV. Domestic violence, already a leading cause of female injury, deprives women of bodily integrity by eliminating their ability to consent to sex, negotiate safer sex, and determine the number and spacing of their children. In many cases, the threat of abandonment or eviction constrains economically dependent women to remain in abusive relationships, thereby exacerbating their vulnerability to HIV infection. One HIV-positive woman said, "He used to force me to have sex with him. He would beat and slap me when I refused. The very first time I asked my husband to use a condom because I didn't want to give birth he said no. He raped me and I got pregnant. I'm still with him because I don't have a cent. He at least pays the rent."

Ugandan women confront a male-dominated power structure that upholds and entrenches male authority in the home. In 2002-03, as a researcher for a Human Rights Watch report on the correlation between domestic violence and women's vulnerability to HIV infection, I talked with many women who viewed domestic violence as a natural

by-product of marriage. Customs such as the payment of “bride price,” whereby men essentially purchase their wives’ sexual favors and reproductive capacity, underscore men’s entitlement to dictate the terms of sex. Practices such as widow inheritance by a man of his brother’s widow can expose women to unprotected and unwanted sex with HIV-positive partners. When women in polygynous marriages are coerced into unprotected sex, they are exposed to a higher risk of HIV transmission as a result of the man having unprotected sex with multiple partners.

The Ugandan government has failed to enact laws for the effective prosecution and punishment of acts of violence against women. Inequitable divorce laws make it difficult for women to terminate their marriages legally. The government has yet to criminalize marital rape. Draft legislation to regulate domestic relations and sexual offenses has been pending since at least the early 1990s, despite vigorous lobbying by many of our local NGO partners. Moreover, none of the pending legislation adequately addresses domestic violence—nor will it as long as the government upholds the notion of the inviolability of marital privacy and fails to address discriminatory marriage and property laws that impede women’s escape from abusive marriages. State prosecutors told us that few domestic violence cases are actually prosecuted. In addition, women we spoke with said government officials often address domestic violence charges by attempting to reconcile the parties and pressuring the women to return to their abusive husbands.

Human Rights Watch is working with several local women’s and human rights groups in Uganda to hold the government accountable for its failure to prevent and remedy domestic violence, establish relevant medical protocols, and modify and transform harmful traditional practices. International human rights law has been a useful advocacy tool. By systematically failing to enact and enforce criminal laws and address violence against women in the home, the government in effect condones and endorses it. When government agents such as the police pay inadequate attention to domestic violence compared to other forms of violence, we argue that this violates provisions upholding the right to equal protection under the law and provides proof of tacit state complicity.

Despite oversight by UN committees of Ugandan state implementation of international treaties such as the International Covenant on Civil and Political Rights, the International Covenant on Economic, Social and Cultural Rights, and the Convention on the Elimination of All

Forms of Discrimination against Women (CEDAW), Ugandan NGOs assert that government efforts to improve the socioeconomic status of women have been minimal. They argue that despite the government's gender-progressive reputation and a rhetorical commitment to women's rights, many changes are cosmetic and do not impact women on the ground. The abdication of state responsibility has left many of the NGOs working with Human Rights Watch in Uganda as the only providers of any recourse to battered women in the form of legal education and representation, shelters for abused women, and care and support for women living with HIV/AIDS.

Uganda is blessed with a developed and vibrant network of NGOs working on women's rights and a coherent and well-established HIV/AIDS movement. NGOs such as Raising Voices are addressing domestic violence at the community level with programs that specifically aim at male participation and include strategies such as the enhancement of the police response to domestic violence. In addition to providing us with our initial access to domestic violence survivors and women living with HIV/AIDS, Ugandan NGOs collaborate with us on advocacy through press releases and radio broadcasting. A particularly notable outcome expressed by our NGO partners has been their increased awareness of the intersection between the work of rights-based and HIV/AIDS NGOs.

Domestic violence leading to a heightened risk of HIV transmission is a widespread phenomenon, and research similar to that reported here could have been conducted in any one of a number of countries. Yet this is a critical time for Uganda: while a wide range of bilateral and multilateral donors is contributing extensively to HIV/AIDS initiatives, our interviews with Ugandan health officials revealed that the impressive decline in overall HIV/AIDS prevalence rates in Uganda is levelling off. These health officials also acknowledged the dangers of complacency. The failure to address the very serious underlying and contributing issue of domestic violence may compromise Uganda's continued success in the fight against HIV/AIDS.

Uganda also provides an important case study for the region. The fact that domestic violence is not addressed in a country widely considered a success story in the fight against HIV/AIDS holds grim implications for African women. If women are unable to protect themselves in a country where national adult prevalence rates declined from 18.5 percent in 1995 to 8.3 percent at the end of 1999, what are the chances in countries such as Kenya, which, until recently, had no coherent government strategy to tackle HIV/AIDS, and where AIDS

has reduced the average life expectancy from sixty-five to forty-six years? With Uganda included among fourteen countries slated to receive five years of AIDS program support from the United States and a grant from the Global Fund worth over U.S. \$36 million to support the ongoing fight against HIV/AIDS, this is a pivotal time for addressing the links between domestic violence and women's vulnerability to HIV—a topic unfortunately not mentioned during President Bush's recent trip to the country.

The correlation between domestic violence and women's vulnerability to HIV infection adds considerable impetus to the need for all governments to address seriously and meaningfully domestic violence against women. Otherwise, in a continent devastated by HIV/AIDS, any strategy to combat the pandemic will be compromised. Programs that attempt to prevent the spread of HIV/AIDS by encouraging abstinence from sex, fidelity, and consistent condom use are a start, but they do not address women's unequal decision-making power and status within their intimate relationships. Human rights law, which clearly establishes state responsibility to protect women from battery, is a useful tool for holding governments accountable. The words of one victim describe it best: "After testing he would force me to have sex without a condom. I don't know why he was opposed to condoms after testing and yet he had used them for birth control [before testing]. He said, 'Why bother, we're already victims.' There should be a law to stop husbands forcing wives to have sex. I would use the law."

Applying Human Rights to the HIV/AIDS Crisis

Nathan Geffen

In the United States and Europe, people with HIV/AIDS are living longer, healthier lives primarily because of the availability of antiretroviral treatment. Yet in the developing world, we are faced with death on a scale comparable to World War II, by a disease more lethal than any since the Black Death decimated Europe's population 600 years ago. Accounting for this disparity is simple, according to Justice Edwin Cameron, formerly a judge on the South African constitutional court and himself an HIV patient: "There are people throughout Africa...and nearly 34 million people in our whole world who are this moment dying. And they [are] dying because they don't have the privilege that I have, of purchasing my health and life."

The Treatment Action Campaign (TAC) is a South Africa-based grassroots NGO that campaigns for access to treatment, with a focus

on HIV/AIDS patients. For us, a human rights framework is not merely an academic tool, but the fundamental basis of our advocacy. Achieving social justice on the issue of obtaining the drugs necessary to sustain life requires efforts on both the domestic and the international levels. In South Africa, we have been using legal action and the threat of legal action to force the government and pharmaceutical companies to recognize and adhere to basic rights, such as the right to health care, that are enshrined in the constitution. The international community, however, must reconsider the patent abuse of pharmaceutical companies and move faster to develop a global trust fund for combating the HIV/AIDS epidemic in all developing countries.

Out of the South African revolution against apartheid emerged an internationally respected constitution with a bill of rights, encompassing the rights to life, dignity, health care, and reproductive choices--the core issues underlying TAC's campaign. With the new constitution and the establishment of the constitutional court, legal action is a critical part of achieving social justice. Human rights arguments and legal action alone are, however, of limited use. It is crucial to combine them with mass mobilization, including rights awareness campaigns. In the context of HIV/AIDS, this means organizing people affected by the disease. Treatment literacy programs, protests, marches, and even civil disobedience are crucial components of grassroots pressure. This is a difficult challenge in a poor country like South Africa, which has low levels of scientific literacy, a high rate of poverty, and a high incidence of people infected with HIV/AIDS being unaware of their status.

We have already seen practical results in gaining access to medicine from this approach. Last year, TAC threatened legal action against the government for not implementing an HIV/AIDS mother-to-child transmission prevention (mtctp) program using antiretroviral medicines. The threat of action, coupled with protests and non violent street action, led to immediate results: The Department of Health announced the implementation of mtctp in eighteen pilot sites around the country, reaching 10 percent of pregnant mothers attending public antenatal clinics. While this was insufficient, it indicated a gradual realization of the rights being argued for. TAC halted its legal action in response to these measures. Since then, however, the government has wavered on its commitment and delayed the implementation of the eighteen sites. The minister of health has also suggested that there are no plans to go beyond the pilot program. TAC is thus once more considering legal action on mtctp. More important, popular action

demanding a countrywide mtctp program has gained momentum, which has had the effect of speeding up the implementation of the pilot sites.

Another example of combining legal action on a human rights basis with popular protest was the highly publicized court case between forty pharmaceutical companies and the South African government, which began in 1997. The pharmaceutical industry attempted to block the introduction of legislation that would substantially lower the prices of medicines. TAC joined the case as an *amicus curiae* (friend of the court) in support of the government. A number of aspects of the legislation were contested by the industry, but best known was the principle of parallel importation, which the new legislation would allow.

Parallel importation is the importation of a product under patent from a distributor in another country. This does not refer to generic versions of the product, only to the patented product sold at a lower price elsewhere. Changing the law to allow these medicines into the country is important if one considers that some essential patented drugs are sold at lower prices in countries such as Spain and India than they are in South Africa. Though the reduced cost would benefit all HIV/AIDS patients, the pharmaceutical industry sees this eventuality as a breach of their property rights, which are protected under the South African constitution. TAC's counsel argued that all other constitutional rights should be considered within the context of the rights to life and dignity--the most fundamental of all human rights.

TAC coupled its legal action with a call to its allies around the world to participate in a global day of protest against the pharmaceutical industry's stand. The response was huge. In more than ten countries, including developing countries like Brazil, Kenya, and the Philippines (as well as South Africa), crowds gathered to protest this unjust policy. The result was a public relations disaster for the pharmaceutical industry and their swift withdrawal from the case. The industry's legal action has, however, succeeded in delaying the implementation of the new legislation from 1997 until the recent court case. Within the next two months, the legislation will be enacted.

Though important, TAC's domestic initiatives must be complemented by more concerted action on the part of the international community to get medicine to people in need. Treatment activists argue that the pharmaceutical industry is charging excessively high prices on essential patented medicines. Only competition from generic manufacturers (with royalty-based compensation for the patent-

holders) offers a sustainable means of driving prices on these medicines to their marginal cost, as has happened in Brazil. The World Trade Organization Trade Related Aspects of Intellectual Property agreement, which establishes minimum standards for WTO members with regard to intellectual property law, has been partly responsible for the failure of developing countries to allow generic competition on patented medicines.

Though the agreement contains exceptions that are, in our opinion, sufficient from a legal perspective to allow the issuing of licenses for generic versions of products under patent to be produced and imported (with compensation to the patent-holder), developing countries have been fearful to act on these exceptions. This is because the agreement is poorly drafted and ambiguous, which leaves much scope for trade action by rich countries--influenced by the pharmaceutical industry--against poor ones at the WTO. Essentially, many developing countries have simply been intimidated out of pursuing generic importation or production. Furthermore, many poor country governments, though not all, cannot afford to supply HIV/AIDS drugs, even if they are sold close to their marginal cost. TAC and its allies are therefore promoting the establishment of a global trust fund financed predominantly by the United States, the European Union, Canada, and Japan. This fund would pay for medicines (including antiretrovirals), the development of health care infrastructures, and prevention programs. Such a fund is in the process of being established, but it requires a much larger financial commitment from the rich countries to be successful. If the human rights to health and medical care enshrined in Article 25 of the Universal Declaration of Human Rights--surely the most important global agreement and the one to which all bodies like the WTO should adhere--are to have meaning beyond mere platitudes, then the global trust fund for alleviating the HIV/AIDS pandemic must be given full support.

Health Workers Lead Fight against HIV-Related Discrimination By Dr. Mirta Roses

Science has yet to find a cure for AIDS. But there is a cure for discrimination. It can be found in the thousands of health workers in the Americas.

HIV/AIDS has become the biggest threat to human survival in the last 700 years. Important gains made in child health and life expectancy in the Americas are being threatened by this epidemic, which is destroying many of the efforts and investments of past decades. It is

already emerging as the leading cause of death in some countries of the region for people aged 15 to 44.

One harmful effect of the epidemic, which also acts as a barrier against prevention efforts, is discrimination against people who live with the virus. This discrimination can take despicable forms. Many people are turned away from schools on the basis of their HIV status, denied housing and shunned by friends and colleagues. Some even suffers physical violence. These actions are often extended to their families and communities and even to orphans whose parents died of AIDS. Worse, they can keep people from getting the treatment they need.

In part this discrimination derives from the understandable fear of a virus that is transmissible, incurable and potentially deadly. But we have learned a lot since the beginning of this epidemic.

Today there is widespread awareness that the virus cannot be transmitted through everyday contact. Most people know that there is nothing to fear if they adopt basic precautions. They know that is no reason to keep a distance from people with HIV.

Discrimination against people with HIV persists because it has additional, deeply rooted causes. Among them is the prejudice against groups hardest hit during the early stages of the epidemic, such as men who have sex with men, sex workers and drug users.

Segregating these already stigmatised groups allows some people to feel invulnerable to HIV. It provides an excuse for them to neglect to take those basic precautions. It is an irony of tragic consequences: The ones who most discriminate are precisely the ones less likely to protect themselves against HIV transmission.

In many countries, heterosexual transmission and female rates in general population are now the highest.

When discrimination against people with HIV creeps into health services the consequences can be very serious. Discriminatory health practices include refusing to treat people on the basis of their HIV status, testing for the virus without people's knowledge or permission, and supplying names of people with HIV to others.

Sometimes this discrimination is barely noticeable, like when health workers have an uncaring attitude towards people with HIV. This practice is extremely harmful, because fear of mistreatment prevents people from using health services when they most need them.

Combating discrimination does not mean that differences should not be acknowledged. It only means that different treatment must be

based on objective and reasonable criteria, intended to rectify, not exacerbate, inequities within society.

Health workers need all the support we can muster for the difficult task of caring for people with HIV and AIDS. Some of them need help to overcome their own prejudices. Others may need assistance in dealing with fear, coping with the stress of caring for the very ill and to prevent the emotional detachment that can occur among those who look after patients dying of AIDS. Caregivers also deserve the necessary training and resources to assure that the risk of accidental transmission of the virus is kept to a minimum.

Most health workers do not need any external encouragement to be on the front lines in the fight against discrimination against people with HIV. They do it because of their duty to improve health, their mandate to nurture, and their oath to take the necessary risks to care for fellow human beings. These and other public health interests provide a compelling justification for identifying and eliminating discrimination on the grounds of HIV status.

It is important to recognize the dedication of the thousands of health workers in the Americas who are striving both to provide good health care and to combat discrimination against people with HIV. We need to show special appreciation for the altruism and the courage of many doctors, nurses, laboratory workers and other staff who joined the response to the epidemic in its early stages. Their commitment to care for people with AIDS overshadowed the danger of catching an unknown disease. Their determination to serve overcame any alienation they may have suffered vis-à-vis their own colleagues.

The daring example of these pioneers is proof that health workers are set to play a leading role in the community and in society in building a supportive, non-discriminatory environment for people with HIV.

The Importance of Supportive Environments

In addition, there is a need for education, training, and programming that will change discriminatory attitudes in the community, at school, in the workplace, among professionals, and in research, in order to create environments that will decrease the risks to health, including HIV infection, among people who are not heterosexual, and that will support gay men, bisexuals, and lesbians with HIV/AIDS.

No Quick Fix

There is no quick fix or easy answer to the many problems raised by HIV/AIDS. While the impact on human rights cannot be the only consideration in designing public health policy, the fight against discrimination and for respect of the dignity of all people must be treated "as seriously as science, medicine, and public health," recognising that HIV and AIDS have disproportionately affected vulnerable populations, including gay men, at least in part because of their vulnerability and the discrimination they have been subjected to.

Prevention campaigns, public health measures, and the other interventions that have been undertaken to reduce the spread of HIV have been and continue to be important, but they often do not address the underlying problems that cause vulnerability to HIV. We must address these problems. Sometimes, this requires only minor changes in laws. Sometimes, it requires changes in attitudes that can only be achieved in the longer term. In all cases, it requires a commitment to fight HIV/AIDS, rather than the people most affected by it and their behaviours, and to fight bigotry and prejudice in society. It also requires recognition of the fact that discrimination, although it has diminished and although certain rights have been extended to gay men and lesbians, remains pervasive and that gay men and lesbians deserve to be treated with equal respect as a matter of justice and, in the context of HIV/AIDS, because this would help reduce the spread of HIV and allow us to better care for those with HIV/AIDS.

Violence and Vulnerability

There is a clear link between HIV transmission and acts of sexual violence, rape in particular. Those most affected by this cycle of violence are women sex workers, whose clients accuse them of transmitting the virus while, ironically, many demand services without condoms. With the increasing incidence of sex tourism and migration, more and more women and girls are infected with HIV. Trafficking networks take advantage of the poverty, unemployment and abandonment faced by thousands of women, misleading them with promises of work and money and finally forcing them to work in prostitution.

Another aspect of women's vulnerability to HIV/AIDS is linked to age and economic status. AIDS is more common among young and poor women, and not by chance: the virus mainly affects the sectors of the population that are most discriminated against, those lacking basic

education, decent housing, adequate food and access to quality medical care. The drugs used to treat HIV/AIDS are either unavailable or far too expensive for limited budgets. As a result, HIV is the third leading cause of death for men between 25 and 44 years of age and the thirteenth leading cause of death for women of the same age group. (CIMAC 1998)

This situation is compounded by right-wing Catholic campaigns that oppose condom use, increase levels of misinformation and reinforce the ignorance of the general population, especially young people who are potentially at risk. According to statistics from CONASIDA in Mexico, of the 53,000 people registered with HIV/AIDS since January 1998, none used condoms as a form of protection. Of the nearly 10,000 young Mexicans who are living with the virus — 8,000 men and 2,000 women — 70% were infected as adolescents (CIMAC, 1998). UNAIDS asserts that correct use of condoms reduces the probability of transmission to one in 90,000.

For women, this situation is twice as serious since, in most cases of extreme poverty, they alone bear the burden of providing for their family. It is not unusual for women to have several partners as a survival strategy, which places them at a disadvantage since they must submit to the men's desires with all the risks that this implies for their lives and health. Equally serious is the discrimination and moral censure to which HIV-positive women are subjected. AIDS is often viewed as "a punishment for immorality." Women diagnosed with HIV often suffer abuse, loss of employment, divorce and abandonment by their families, which are all violations of their human rights.

Children in a home with an HIV positive relative can also suffer trauma and stress caring for infected family members. This is aggravated by the stigma often associated with HIV/AIDS.

Children who lose their parents and are taken in by relatives who already live in poverty, often forfeit their education and usually must work to support their new extended family. In other circumstances, children who are not cared for by relatives become discriminated against and are often forced to fend for themselves, which places them at high risk of exploitation and abuse which can result in HIV infection, as they struggle to survive on their own.

Because HIV/AIDS thrives in an atmosphere of shame and secrecy, it often goes undetected and spreads quickly. By breaking the silence and by making prevention information and services available and

encouraging open communication, the rates of transmission can be reversed. Children and young people must have access to information and services to better protect themselves from the disease.

To tackle HIV/AIDS, particularly in the developing world, Save the Children urges:

- Removing the social stigma of HIV/AIDS, to allow communities to start having open discussions about the disease.
- Youth awareness to ensure future generations of healthy adults and parents. This most vulnerable population of 15-24 year olds can learn how to make healthy lifestyle choices that will protect them in the future.
- Family Planning: Increase access for women and adolescent girls to family planning services within reproductive health programs that educate women on how to stay safe before and during pregnancy and child birth, including the distribution of condoms.
- Reducing mother-to-child transmission by providing Nevirapine, a drug used to reduce the risks of transmission from pregnant HIV-positive women to their children.
- Provide support for AIDS orphans and HIV/AIDS affected children, by ensuring their financial security and making sure their nutrition, health and education needs are met.
- Invest in education and income-earning opportunities, particularly for women and girls. Those who are educated and financially secure have more options in life and greater ability to keep themselves and their children safe from violence, exploitation, poverty and HIV/AIDS infection.

In Summary

In this lesson we learned that:

- Discrimination against people living with HIV/AIDS is rampant. Individuals with, or suspected of having, HIV have been turned away from health care facilities, denied housing and employment, rejected by their friends and families, turned down for insurance coverage or refused entry into foreign countries. There have been cases where people with HIV/AIDS have been evicted from homes by their families, have been abandoned by

- their spouses or partners, and have suffered physical violence and even murder.
- Domestic violence, already a leading cause of female injury, deprives women of bodily integrity by eliminating their ability to consent to sex, negotiate safer sex, and determine the number and spacing of their children. In many cases, the threat of abandonment or eviction constrains economically dependent women to remain in abusive relationships, thereby exacerbating their vulnerability to HIV infection.
 - Elimination of violence, stigma and discrimination will come with enactment of laws for the effective prosecution and punishment of acts of violence and stigmatisation against people living with HIV/AIDS. Also, Governments need to criminalise marital rape.
 - Education is a potent tool for eliminating violence and discrimination. It should be combined with mass mobilisation, including rights awareness campaigns. In the context of HIV/AIDS, this means organizing people affected by the disease. Treatment literacy programmes, protests, marches, and even civil disobedience are crucial components of grassroots pressure.

A graphic with a purple-to-red gradient background. On the left, the text "Review Questions" is written in a white, sans-serif font. To the right of the text is a stylized yellow and orange icon of three human figures with their arms raised, resembling a group hug or a celebratory gesture. The graphic is framed by a thin white border.

- What are typical discriminating practices against people living with HIV/AIDS in your community?
- What measures are in place to eliminate such discriminating practices?
- How can such measures be improved?