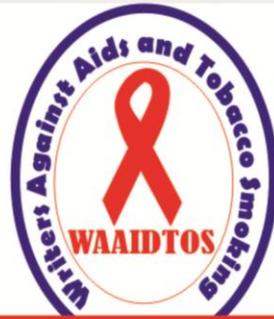


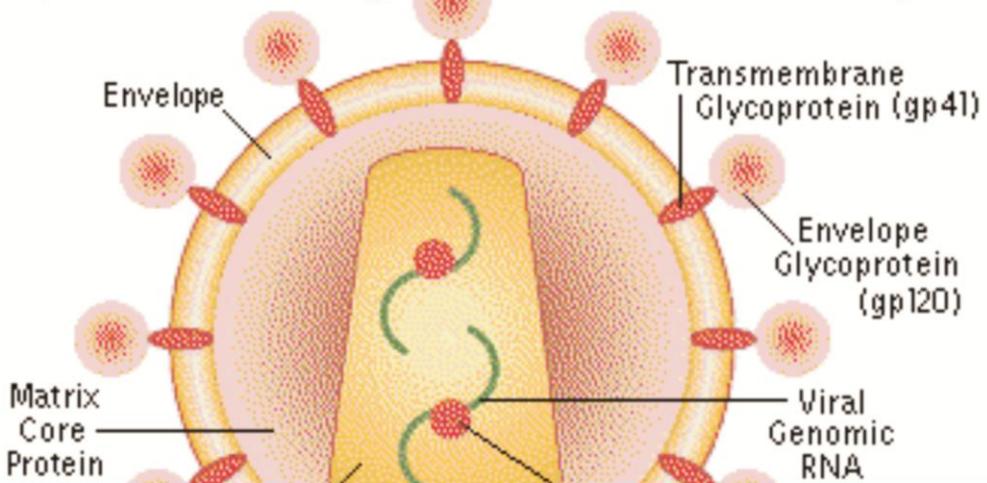
Writers Against Aids and Tobacco Smoking



We Preach Total Abstinence

HIV/AIDS A THORN IN HUMAN FLESH

(A Collection of Poetry, Essays and Articles on HIV/AIDS)



Edited By;
Wole Adedoyin

**A Publication of the Society of Young Nigerian
Writers**

Compiled by:

Wole Adedoyin



For The Literary And Creative Development Of Nigerian Young Writers

Dedication

Dedicated to all the Contributors.

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What Is AIDS? What Is HIV?

AIDS (Acquired immune deficiency syndrome or acquired immunodeficiency syndrome) is a disease caused by a virus called **HIV** (Human Immunodeficiency Virus). The illness alters the immune system, making people much more vulnerable to infections and diseases. This susceptibility worsens as the disease progresses.

HIV is found in the body fluids of an infected person (semen and vaginal fluids, blood and breast milk). The virus is passed from one person to another through blood-to-blood and sexual contact. In addition, infected pregnant women can pass **HIV** to their babies during pregnancy, delivering the baby during childbirth, and through breast feeding.

HIV can be transmitted in many ways, such as vaginal, oral sex, anal sex, blood transfusion, and contaminated hypodermic needles.

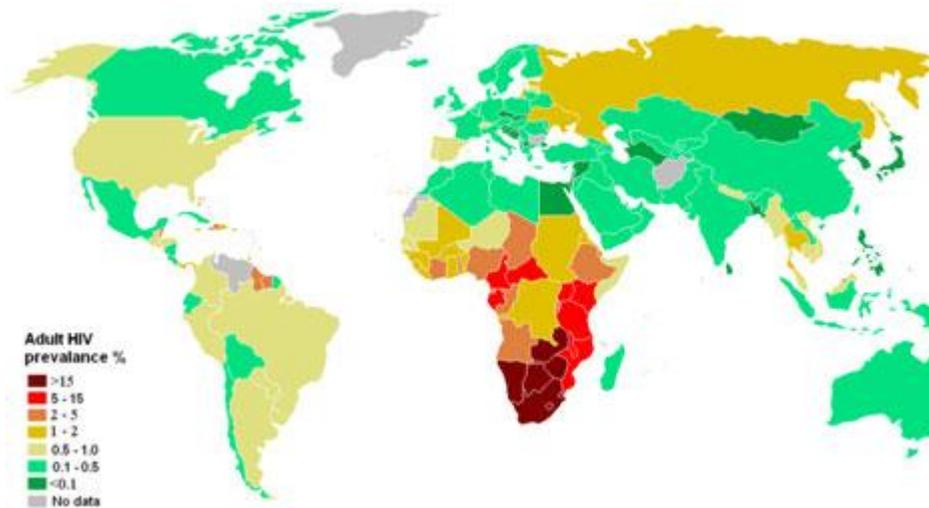
Both the virus and the disease are often referred to together as **HIV/AIDS**. People with HIV have what is called HIV infection. As a result, some will then develop AIDS. The development of numerous opportunistic infections in an AIDS patient can ultimately lead to death.

According to research, the origins of HIV date back to the late nineteenth or early twentieth century in west-central Africa. AIDS and its cause, HIV, were first identified and recognized in the early 1980s.

There is currently no cure for HIV/AIDS. Treatments can slow the course of the disease - some infected people can live a long and relatively healthy life.

Update September 25th, 2013 - UNAIDS reported that since 2001, the number of HIV infections among

children fell by 52% worldwide, and by 33% among adults and children combined.



Estimated HIV/AIDS prevalence among young adults (15-49) by country as of 2008. UNAIDS 2008 report

What is the difference between HIV and AIDS?

HIV is the virus which attacks the T-cells in the immune system.

AIDS is the syndrome which appears in advanced stages of HIV infection.

HIV is a virus.

AIDS is a medical condition.

HIV infection causes AIDS to develop. However, it is possible to be infected with HIV without developing AIDS. Without treatment, the HIV infection is allowed to progress and eventually it will develop into AIDS in the vast majority of cases.

HIV testing can identify infection in the early stages. This allows the patient to use prophylactic (preventive) drugs which will slow the rate at which the virus replicates, delaying the onset of AIDS.

AIDS patients still have the HIV virus and are still infectious. Someone with AIDS can pass HIV to someone else.

What are the signs and symptoms of HIV/AIDS?

What is the difference between a sign and a symptom? A sign is something other people, apart from the patient can detect, such as a swelling, rash, or change in skin color. A symptom is something only the patient feels and describes, such as a headache, fatigue, or dizziness.

Main symptoms of **AIDS**

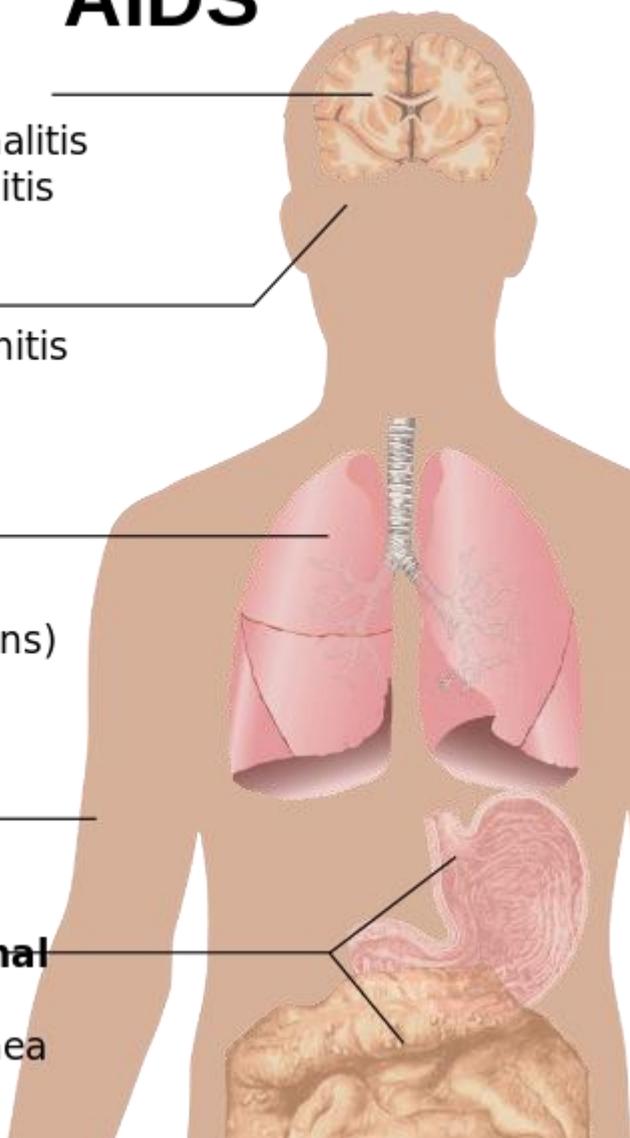
- Central**
- Encephalitis
 - Meningitis

- Eyes**
- Retinitis

- Lungs**
- Pneumocystis pneumonia
 - Tuberculosis (multiple organs)
 - Tumors

- Skin**
- Tumors

- Gastrointestinal**
- Esophagitis
 - Chronic diarrhea
 - Tumors



For the most part, the symptoms of HIV are the result of infections caused by bacteria, viruses, fungi and parasites. These conditions do not normally develop in individuals with healthy immune systems, which protect the body against infection.

Signs and symptoms of early HIV infection

Many people with HIV have no symptoms for several years. Others may develop symptoms similar to flu, usually two to six weeks after catching the virus. The symptoms can last up to four weeks.

Symptoms of early HIV infection may include:

- fever
- chills
- joint pain
- muscle ache

- sore throat
- sweats (particularly at night)
- enlarged glands
- a red rash
- tiredness
- weakness
- weight loss

Asymptomatic HIV infection

In many cases, after the initial symptoms disappear, there will not be any further symptoms for many years. During this time, the virus carries on developing and damages the immune system. This process can take up to 10 years. The infected person will experience no symptoms, feel well and appear healthy.

Late-stage HIV infection

If left untreated, HIV weakens the ability to fight infection. The person becomes vulnerable to serious illnesses. This stage of infection is known as AIDS.

Signs and symptoms of late-stage HIV infection may include:

- blurred vision
- diarrhea, which is usually persistent or chronic
- dry cough
- fever of above 37C (100F) lasting for weeks
- night sweats
- permanent tiredness
- shortness of breath
- swollen glands lasting for weeks
- weight loss
- white spots on the tongue or mouth

During late-stage HIV infection, the risk of developing a life-threatening illness is much greater. Examples include:

- esophagitis (an inflammation of the lining of the lower end of the esophagus)

- infections to the nervous system (acute aseptic meningitis, subacute encephalitis, peripheral neuropathy)
- pneumonia
- some cancers, such as Kaposi's sarcoma, invasive cervical cancer, lung cancer, rectal carcinomas, hepatocellular carcinomas, head and neck cancers, cancers of the immune system known as lymphomas
- toxoplasmosis (a disease caused by a parasite that infects the brain. It can also cause disease in the eyes and lungs)
- tuberculosis

Life-threatening illnesses may be controlled and treated with proper HIV treatment.

What causes HIV/AIDS?

HIV is a retrovirus that infects the vital organs of the human immune system. The disease progresses in the absence of antiretroviral therapy. The rate of disease

progression varies widely between individuals and depends on many factors (age of the patient, body's ability to defend against HIV, access to health care, existence of coexisting infections, the infected person's genetic inheritance, resistance to certain strains of HIV).

HIV can be transmitted through:

- **Sexual transmission.** It can happen when there is contact with infected sexual secretions (rectal, genital or oral mucous membranes). This can happen while having unprotected sex, including vaginal, oral and anal sex or sharing sex toys with someone infected with HIV.
- **Perinatal transmission.** The mother can pass the infection on to her child during childbirth, pregnancy, and also through breastfeeding.

- **Blood transmission.** The risk of transmitting HIV through blood transfusion is nowadays extremely low in developed countries, thanks to meticulous screening and precautions. Among drug users, sharing and reusing syringes contaminated with HIV-infected blood is extremely hazardous.

Thanks to strict protection procedures the risk of accidental infection for healthcare workers is low.

Individuals who give and receive tattoos and piercings are also at risk and should be very careful.

Myths: There are many misconceptions about HIV and AIDS. The virus **CANNOT** be transmitted from:

- shaking hands
- hugging
- casual kissing

- sneezing
- touching unbroken skin
- using the same toilet
- sharing towels
- sharing cutlery
- mouth-to-mouth resuscitation
- or other forms of "casual contact"

How is HIV/AIDS diagnosed?

A 2011 report issued by the CDC (Centers for Disease Control and Prevention), USA, found that about 1 in every 5 HIV-positive Americans is unaware of their HIV-status, and only 49% of those who are aware receive ongoing medical care and treatment.

HIV blood test

Diagnosis is made through a blood test that screens specifically for the virus.

If the HIV virus has been found, the test result is

"positive". The blood is re-tested several times before a positive result is given to the patient.

For those whose tests came back positive, they will be asked to undergo some other tests to see how the infection has progressed, and also to decide when to start treatment.

If a person has been exposed to the virus, it is crucial that they get tested as soon as possible. The earlier HIV is detected, the more likely the treatment will be successful. Also, precautions can be taken to prevent the virus from spreading to other people.

After infection with HIV, it can take up from three weeks to three months for the virus to show up in testing. Re- testing may be necessary.

If a patient's most at risk moment of becoming HIV infected was within the last three months, he/she can have the test immediately. However, a good doctor will urge that another test be carried out within a few weeks.



A virology form for HIV blood tests.

Ultra-sensitive HIV sensor - scientists from Imperial College London reported in *Nature Nanotechnology* (October 2012 issue) that they have developed an extremely sensitive sensor that detects viral infections, including HIV. They say the sensor is ten times more sensitive at detecting an HIV biomarker than anything else on the market today; it is also extremely cheap. The

doctor can see the results by looking at the color change in a liquid solution.

What are the treatment options for HIV/AIDS?

Earlier HIV antiretroviral treatment is crucial - it improves quality of life, extends life expectancy and reduces the risk of transmission, according to the World Health Organization's new guidelines issued in June 2013.

When an HIV-positive adult's CD4 cell count is 500 cells/mm³ or lower they should start treatment immediately.

According to Margaret Chan, WHO Director-General "These guidelines represent another leap ahead in a trend of ever-higher goals and ever-greater achievements. With nearly 10 million people now on antiretroviral therapy, we see that such prospects - unthinkable just a

few years ago - can now fuel the momentum needed to push the HIV epidemic into irreversible decline."

Currently, there is no vaccine or cure for HIV/AIDS. But treatments have evolved which are much more efficacious - they can improve patients' general health and quality of life considerably.

Emergency HIV pills. If an individual believes they have been exposed to the virus within the last 72 hours (three days), anti-HIV medication, called PEP (post-exposure prophylaxis) may stop infection. The treatment should be taken as soon as possible after contact with the virus.

PEP is a very demanding treatment lasting four weeks. It is also associated with unpleasant side effects (diarrhea, malaise, nausea, weakness and fatigue).

After a positive HIV diagnosis, regular blood tests are necessary to monitor the progress of the virus before starting treatment. The therapy is designed to reduce the

level of HIV in the blood.

Antiretroviral drugs. HIV is treated with antiretrovirals (ARVs). The treatment fights the HIV infection and slows down the spread of the virus in the body. Generally, patients take a combination of medications called HAART (highly active antiretroviral therapy).

The combination of drugs is adapted to each individual. HIV treatment is usually permanent and lifelong. HIV treatment is based on routine dosage. Pills must be taken on a regular schedule, every time. Common side effects include nausea, fatigue, diarrhea, skin rashes, moodiness, alterations to the adipose (fat) tissue, birth defects.

HIV/AIDS and diarrhea - HIV-positive patients, and those with AIDS tend to suffer from diarrhea. It is the main reason people go off their medications, or switch to other antiretroviral therapies prematurely. On January 2nd 2013, the US Food and Drug Administration approved Fulyzaq (crofelemer 125 mg delayed-release tablets), the first anti-diarrheal medication for patients

with HIV/AIDS. Fulyzaq was created specifically for patients taking antiretroviral therapy for HIV/AIDS.

Antifungal cream Ciclopirox eradicates HIV - researchers at the Rutgers New Jersey Medical School reported in the journal *PLoS ONE* that Ciclopirox, a widely used antifungal cream, as well as Deferiprone, a medication used to remove excess iron from the body, eradicate HIV in cultured cells. They added that when treatment stops, the virus does not return.

Complementary or alternative medicine. Although widely used, alternative/complementary medications, such as herbal ones, have not been proven to be effective or ineffective. According to some limited studies, mineral or vitamin supplements may provide some benefits. Patients are urged to discuss these options with their doctors.

New gene may prevent HIV from spreading

Scientists at King's College London say they have discovered a new gene that can stop HIV from spreading once it is inside the human body.

According to the authors, who published their study in the journal *Nature*, the gene - MX2 - could be included in new more effective and less toxic HIV treatments.

Lead researcher, Professor Mike Malim, said "This is an extremely exciting finding which advances our understanding of how HIV virus interacts with the immune system and opens up opportunities to develop new therapies to treat the disease. Until now, we knew very little about the MX2 gene, but now we recognize both its potent anti-viral function and a key point of vulnerability in the life cycle of HIV."

Saving money with generic HIV medications

Researchers from the MGH Medical Practice Evaluation Center wrote in *Annals of Internal Medicine* (January 2013 issue) that the American health care system could save more than \$1 billion each year if current antiretroviral drugs for HIV infection were replaced with generic versions of the medications.

They also wondered whether the cost-savings might be at the expense of the efficacy of HIV treatment.

Team leader, Rochelle Walensky, MD, MPH, said "The switch from branded to generic antiretrovirals would place us in the uncomfortable position of trading some losses of both quality and quantity of life for a large potential dollar savings. By estimating the likely magnitude of these offsetting effects now - before generic antiretrovirals actually hit the shelves - we can confront our willingness as clinicians, patients and as a society to make these difficult choices."

Approximately \$9 billion are spent annually on antiretroviral drugs in the USA. Most of this expenditure

is funded by the government.

The problem with switching to generic medications is treatment adherence. On generic drugs patients have to take more separate tablets, making it less likely that they will follow their doctor's instructions.

The researchers concluded "There's no getting around the fact that savings from generics will only be realized if we deliberately route patients away from the most effective, branded treatment alternative. This is a trade-off that many of us will find emotionally difficult, and perhaps even ethically impossible, to recommend. All of us - consumers, providers and advocates - would be far likelier to embrace such a policy change if we knew the savings would be redirected towards other aspects of HIV medicine."

Generic drugs played a vital role in the US government's plan for AIDS relief abroad, which helped save millions of lives.

New clue towards an AIDS vaccine

The outer shell of HIV has a vulnerable spot, which enabled two HIV-positive people to make antibodies powerful enough to kill off the majority of HIV types known globally.

A glycan, a form of sugar, in a specific part on the protein coat that covers HIV (location known as "position 332") is a vulnerable spot that allows the body to mount an effective attack using broadly neutralizing antibodies.

The scientists, from the University of the Witwatersrand, Johannesburg, South Africa, said their discovery offers new clues about stimulating the body to produce "broadly neutralizing antibodies". They believe these antibodies are key for making an AIDS vaccine, because they destroy most of the HIV types around the world. They published their findings in *Nature Medicine* (21 October, 2012 issue).

April 2013 - A step closer to an HIV vaccine

A team led by scientists from the Duke Human Vaccine Institute, and the NIH Vaccine Research Center say they have charted a new route that may help develop a vaccine which boosts an individual's ability to destroy HIV. They published their findings in the journal *Nature* (April 2013 issue).

Barton F. Haynes, M.D., John Mascola, M.D. and team studied an HIV-infected patient whose immune system attacked the virus, allowing them to describe the co-evolution of the antibodies.

HIV has proven especially difficult in inducing an antibody response, making it very hard to develop a vaccine. As soon as HIV antibodies are produced, the virus changes rapidly to avoid them.

The team used a new form of technology that can detect infection early on and track the body's immune system.

Prevention

Unprotected sex. Having sex without a condom can put a person at risk of being infected with HIV and other sexually transmitted infections (STIs). HIV can be spread by having unprotected sex (vaginal, oral and anal sex). It can also be caught from sharing sex toys with someone infected with HIV.

Drug abuse and needle sharing. Intravenous drug use is an important factor in HIV transmission in developed countries. Sharing needles can expose users to HIV and other viruses, such as hepatitis C.

Strategies such as needle-exchange programs are used to reduce the infections caused by drug abuse.

Body fluid exposure. Exposure to HIV can be controlled by employing precautions to reduce the risk of exposure to contaminated blood. At all times, health care workers should use barriers (gloves, masks, protective

eyewear, shields, and gowns). Frequent and thorough washing of the skin immediately after being contaminated with blood or other bodily fluids can reduce the chance of infection.

Pregnancy. Anti-HIV medicines can harm the unborn child. But an effective treatment plan can prevent HIV transmission from mother to baby. Precautions have to be taken to protect the baby's health. Delivery through caesarean section may be necessary. Breastfeeding may have to give way to bottle-feeding if the mother is infected.

A study by scientists from Columbia University, New York, found that breastfeeding for 6+ months with antiretroviral therapy could help reduce mother-to-child HIV transmission as well as improve chances of infant's survival.

Education. Health education is an important factor in reducing risky behavior.

Managing HIV

Adherence. HIV treatment is effective if the patient is committed and constant in taking the medication on time. Missing even a few doses will jeopardize the treatment. A daily methodical routine has to be programmed to fit the treatment plan around the patient's lifestyle and schedule. "Adherence" is sometimes known as "compliance".

General Health. It is crucial for patients to take medication correctly and take steps to avoid illness. Patients should seek to improve their general health and reduce the risk of falling ill by practicing regular exercise, healthy eating, and not smoking.

Additional precautions. HIV-infected people should be extra cautious to prevent exposure to infection. They should be careful around animals, avoid coming into contact with cat litter, animal feces. Meticulous and regular washing of hands is recommended.

Long-term condition. HIV is a lasting condition, and therefore patients have to be in regular contact with their healthcare team. Treatment plan is reviewed regularly.

Psychological. Common misconceptions about AIDS/HIV are diminishing. However, the stigma of the disease persists in many parts of the world. People infected with the virus may feel excluded, rejected, discriminated and isolated.

Being diagnosed with HIV can be very distressing, and feelings of anxiety or depression are common. If you feel anxious or have symptoms of depression, seek medical help immediately.

Written by Christian Nordqvist

CAPITAL PUNISHMENT

AIDS spreads across the Globe

AIDS is slowly becoming the number one killer across the globe. Throughout numerous small countries, AIDS has destroyed lives, taken away mothers, and has left hopeless children as orphans. The problem remains that funding for the diseases' medical research is limited to none. In the country Brazil, HIV/AIDS has been compared to the bubonic plague, one of the oldest yet, most deadly diseases to spread rapidly across Europe (Fiedler 524). Due to this issue, Brazil's government has promised that everyone who has been diagnosed with either HIV or AIDS will receive free treatment; however, this treatment does not include help in purchasing HIV medications, that "carry astronomical price tags" (Fiedler 525). Generic drug companies have been able to produce effective HIV medications that are not as costly if compared to the prices given by the huge pharmaceutical companies. In contrast, the U.S.

government has now intervened with these generic companies hindering them from making HIV medications, which may not be as efficient if made by the pharmaceutical companies. Not only are these drug companies losing thousands of dollars against generic drug companies, but also tremendous profit that is demanded for marketing these expensive drugs as well. “How many people must die without treatment until the companies are willing to lower their prices, or to surrender their patents so generic makers can enter market? (Fiedler 525).” With this question in mind, what ways can we eliminate the HIV/AIDS epidemic across the world? With research, education, testing, and funding we can prevent the spread of HIV to others and hopefully find a cure.

Everyday researchers have proposed new methods of how to control the HIV virus from turning into AIDS. A combination of effective HIV medicines help stop the formation of new copies of HIV as it reproduces in your body. This technique helps to keep your CD-4 cell count

up and your viral load down. CD-4 cells are one type of immune cells that assist to fight off the virus, the higher your count the stronger your immune system (Nakashima 77). Whereas, your viral load is a measure of HIV in your blood and your treatment goal is to have the lowest viral load possible. People with higher viral loads tend to progress to AIDS and become sick sooner than those with lower viral loads (Nakashima 80). Successful HIV medications can prevent other infections common with AIDS and can help you live longer. People may not necessarily develop AIDS if diagnosed with HIV. Some people with HIV may live without signs of AIDS for 10 years or longer, especially if they are receiving correct treatment, while, others may start showing signs much sooner (Institute of Medicine). Research has proven that by having unprotected sex with a person who has HIV, the virus can be in an infected person's blood, semen, or vaginal secretions and can enter your body through tiny cuts or sores in your skin, or in the lining of your vagina, penis, or rectum (Altman 25). Secondly, the usage of sharing

needles or syringes to inject drugs, pierce a body part, make tattoos, or for any other reason are at risk of contracting the disease due to contact of blood. A third factor may occur from a blood transfusion or blood clotting issue that you got before 1985. Today, it is unlikely you could get infected that way because all blood in the United States has been tested for HIV since then (Altman 36). Finally, babies born to women with HIV/AIDS also can become infected during pregnancy, birth, or breastfeeding. There are certain medicines that the pregnant mother can take from preventing her child from contracting the disease. Five times out of ten, a cesarean will be performed to lessen the chances of the baby to contract the disease because there will be no vaginal contact with the baby. This factor is determined upon how well your body is adjusting to the disease and working with the medications. Depending upon an infected mothers' CD-4 count, pregnant women may have a vaginal delivery. Blood may also be found in breast milk, so doctors will not recommend breastfeeding to HIV positive mothers (Amaro 285).

Researchers have also found that HIV can not be spread through the air or casual activities, such as: sitting next to someone, shaking hands, sharing food, using restrooms, swimming, or from hugging and kissing. It is safe to have casual contact with people who have HIV or AIDS. With this information we need to educate others and ourselves to know what further steps can be taken from becoming infected (Institute of Medicine).

Another way to prevent the spread of HIV/AIDS is by educating others with statistics. This can help get the word on the street by allowing people to realize that this disease is real. Many foundations such as: Bebash (Blacks Educating Blacks About Sexual Health Issues), Closing the GAP, HIV/AIDS service Corps., and The National AIDS Foundation, are just a few HIV/AIDS organizations aimed towards helping those who are infected and providing helpful information to those who are not infected, as well. These foundations provide case management, treatment, insurance help, food, clothing, and housing to HIV/AIDS patients who need assistance.

They also provide support groups and educate those who are infected to understand what is going on inside their body and what steps can be taken to live a longer and healthier life. Numerous health clinics provide pamphlets on HIV/AIDS and have free testing available.

An additional way to abolish the spread of this disease is by talking with a health care provider or counselor both before and after you are tested. You might have HIV and still feel perfectly healthy. Go to your doctor or a free health clinic to test for HIV antibodies. They can give you a confidential HIV test where they record only a number or code with the test result, not your name. This number is given at the time your blood, saliva, or urine is taken for the test. The number is used only when you return back to the testing site for your results. The sooner you know your results, the sooner you and your health-care provider can plan your treatment (Vermund 1186-88). For precise testing to be conducted, funding towards HIV/AIDS is the solution to end this deadly equation. Funding is received by various

groups and organizations through donations and contributions. The AIDS walk is the number one event that helps provide funding towards medical research and other necessary needs in regards to the disease. On this day, thousands of people walk eight miles towards finding a cure. Many people come to symbolize a family member or love one who they may have lost in the battle, while others come to represent them; therefore, to show others that you are not in this fight alone. In order for us to spread the news and educate others, funding is a major key to gather the accurate information and research that is needed to find a cure or to help bring the number of HIV/AIDS cases down (Altman 55-60).

Overall, HIV/AIDS is spreading rapidly across the world. The main causes of HIV infections are through unprotected sex, sharing needles, and the birth of a baby. Hopefully, by educating others we can get the knowledge out in the community of ways to prevent HIV/AIDS from spreading to others. Also, by educating HIV/AIDS patients we can assure them to live healthy

and longer lives, as well as, offer proper medical treatment and resources that are available to them. If you think you may be infected the best thing to do is get tested, so you know what steps you will need to take next. Funding for HIV/AIDS is donated to many organizations and groups in efforts to aid infected patients with purchasing medicines, food, clothing, or other related medical needs. There is no cure for AIDS. Although everyday, researchers learn more and more about living with the virus. “We need to protect each other so we can bring our numbers down together. This can be accomplished by getting tested, knowing your status, and taking advantage of your options so that everyone can play they’re part to stop the spread of this disease. We have to be responsible for ourselves and know that a positive attitude and positive actions can improve the quality of life—for ourselves and for others (Johnson).”

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AIDS - WOMEN DIE SOONER THAN MEN

Given the varying types of gender-specific opportunistic diseases associated with AIDS such as cervical cancer, there is reason to believe that the biological progression of HIV/AIDS is different in women and men. Still, there is no conclusive evidence in support of the hypothesis that the progression of HIV/AIDS is more accelerated in women than it is in men. Regardless, the fact that women infected with HIV/AIDS become sicker faster and die sooner than men can be entirely attributable to social factors that do not depend on the scientific details of the HIV virus. Two social factors primarily responsible for the rapid demise of HIV-positive women in the United States are the mis- and under-representation of women in the national AIDS discourse and the disproportionate number of woman living in poverty.

From the moment AIDS first appeared in the United

States as "Gay-Related Immuno Deficiency", women (among others) were left out the national AIDS dialogue. Even though the first case of HIV/AIDS infection in an African-American woman was reported in 1982 (Goldstein 114), the general public believed for the most part of the 1980s that women would remain unaffected by the epidemic. Since then, women have been slowly incorporated into the national AIDS debate, albeit in a very limited and qualified manner. In her essay, "Seeing AIDS: Race, Gender, and Representation," Evelyn Hammonds recognizes an array of contemporary AIDS narratives depicting different female stereotypes, but contends that the majority of African-American women are not identifying with these narratives. In a study on commercial street sex workers, Kim Blankenship shows how such non-identification with an at-risk population can lead to a false sense of security while engaging in risky behaviors and can ultimately lead to a late diagnosis of HIV/AIDS. This is particularly problematic for African-Americans, who will account for 64% of

new infections among women in the year 2002 according to the Center for Disease Control but do not "see" themselves as being affected by the epidemic. Consequently, African-Americans women will be diagnosed later in the progression of HIV/AIDS than men, the vast majority of whom identify themselves either with the at-risk population of men who have sex with men or with that of intravenous drug users (IDU). These women will therefore become sicker faster and die sooner.

Another mis-representation of women in the AIDS epidemic that contributes to the speedy progression of HIV/AIDS in females is the characterization of women as "vectors" of transmission. Michelle Murrain argues that "...[t]his framing of women as 'vectors' of HIV has been the dominant paradigm for research on women with AIDS" and much of the research conducted on women with HIV/AIDS has been aimed at reducing the rate of vertical transmission from mothers to their newborns, not at improving the quality of living of women with HIV/AIDS (Goldstein 64). As a result,

inadequate testing is conducted to determine the effect certain HIV/AIDS drugs (AZT, for example) will have on women with HIV/AIDS, and thus such drugs are not as effective in women as in men. Closely related to this idea of HIV-positive women being the "vector" of transmission, is the idea of the fetus of an HIV-positive woman being an "innocent victim". In an essay concerning the exclusion of women from AIDS research, Theresa McGovern claims "...[t]he FDA has purportedly provided protection to the fetus by restricting the access of women of childbearing potential to clinical trials rather than by mandating an adequate analysis of a drug's reproductive effects prior to human testing" (Goldstein 45). For people with AIDS who live in poverty, clinical trials are a good source of drugs, health care, and counseling. Such a representation of the HIV-positive mother and her fetus prevents women from receiving the same life-preserving benefits given to men in these clinical trials.

In addition to the social mis- and under-representations

of women in the national AIDS dialogue, the disproportionate number women who live in poverty also contributes to the accelerated loss of health for females with HIV/AIDS. There is a strong correlation between poverty and the two health hazards, IDU and domestic violence. According to CDC, about 50 percent of HIV-positive women were infected through IDU and about 20 percent were infected by sex with an injection drug user. Because a woman is more likely to engage in IDU if she is poor, these percentages increase for a woman living in poverty. But not only does drug-abuse take a serious toll on one's physical health, it has also been identified by Dr. John Bartlett of Duke University Medical Center as an indication of non-compliance for taking medication. Both of these factors contribute directly to the increased rate of the HIV/AIDS progression among women relative to men. The second health hazard is domestic violence; Diane Monti-Catania cites this statistic: "...[o]ne out of every three adult women will be victims of domestic violence in their lives" (Goldstein 243). Because a woman is more

likely to suffer domestic violence if she is poor, this statistic increases if the woman lives in poverty. Though not yet quantified, there seems to be a strong correlation between HIV and violence, which Sally Zierler addresses in her essay, "Hitting Hard". For an HIV-positive woman dependent on physically abusive relationships, her serostatus must remain a secret or else she runs the risk of violence or abandonment. Thus, she is hindered from actively and openly pursuing treatment and counseling for HIV/AIDS, and she will grow sicker faster than a man receiving proper medical attention. As a matter of fact, there is also a correlation between women living in poverty and limited access to health care. Monti-Catania says 13 percent of women in the United States failed to receive the medical care they needed in a given year, with the statistic being even greater for women living in poverty (Goldstein 243). In no way can a woman with HIV/AIDS maintain her physical health if she cannot get the medical care she needs; she will obviously get sicker sooner than the average man who does have access to health care.

Despite conclusive evidence of biological differences in the progression of HIV/AIDS in men and women, once infected with HIV/AIDS, women become sicker faster and die sooner than men. This phenomenon can be attributable to two primary social factors: the mis- and under-representation of women in the national AIDS dialogue and the disproportionate number of women living in poverty. Although the second factor seems to be closer linked to the health of HIV-positive woman and deals with more fundamental necessities such as universal health care, the first factor can be more easily altered through public policy. In truth, most of the injustices uncovered by the second factor are not at all AIDS-specific and will require a uniform, sustained pressure to bring about gradual change. But in order to effect an immediate increase in the life span of HIV-positive women, the FDA can mandate that a significant portion of HIV-positive women be included in all clinical AIDS trials, such as is already occurring in clinical trials at the Duke University Medical Center.

Finally, and most importantly, as a society we must re-shape the "face" of AIDS to include all peoples of all races and genders. For HIV/AIDS is no longer a disease affecting this group or that group, it is a disease that affects all types of people from all walks of life - even yours.

Works Cited

Goldstein, Nancy and Jennifer L. Manlowe, eds. *The Gender Politics of HIV/AIDS in Women: Perspectives on the Pandemic in the United States*. New York University Press: New York, 1997.

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CONSEQUENCES OF HIV/AIDS EPIDEMIC TO SOCIETY

Assignment question: 3. A) What are some of the possible consequences of HIV/AIDS epidemic to:

1. Society

2. The infected individual

b) What are some of the Human Rights, confidentiality and criminal law implication of HIV/AIDS?

Q1. HIV/AIDS has increasingly taken a toll on the society in a myriad of dimensions which are worth discussing in order to find the best solutions. Due to HIV/AIDS epidemic, the economies of various countries have been badly affected and societies have experienced major losses. There is a rapid increase in the number of HIV infected people with resultant financial burden and major psychological and emotional consequences. The rising HIV prevalence has adversely affected the quality of labour in that many skilled and

experienced workers have succumbed to the disease. Due the loss of skilled workers to HIV/AIDS, the standard of labour quality has been badly affected resulting in low levels of production, development and low labour inputs (Nations, n.d).

HIV/AIDS also threatens the quality and supply of future labour in that infected people are incapacitated from engaging in any productive work as their bodies are rendered extremely weak. People who stay out of work need to be supported by others and this creates a high dependence on the limited resources available. The socioeconomic consequences of HIV/AIDS to the society are enormous. For instance, many children whose parents are infected with HIV are often forced to stay out of school and look for work to support their ailing parents. Consequently, a huge and dangerous gap in education is created and the future of these children is marred with uncertainties. At the same time, the ability of the affected children to serve the society is compromised (Dyk, 2008, p. 165).

Another major consequence of HIV/AIDS is that it triggers a change in the demographic composition of the population. For instance, the high infection rates among young people have led to an increase in the number of elderly people with no young energetic people to support them. The ultimate result of this trend is a huge loss in labour and thus many resources in the society remain unexploited. Minimum productivity sets in a society where labour is in short supply leading to poor development and poor living standards. The HIV/AIDS pandemic is the principal cause for the high number of orphans who are left without any reliable help. The society is left to carry the heavy burden of catering for the needs of these orphans and this has major social and economic implications (Work, 2006, p. 25). Indeed, AIDS pandemic has shuttered the hopes of many children of pursuing their education and achieving their dreams as the disease continues to snatch from them their most reliable source of help; their parents. Due to the high prevalence of HIV/AIDS among pregnant women particularly in the Sub-Sahara Africa,

infant mortality is on the rise. This is especially true when viewed against the backdrop of poor access to medical services and health information and the menace of poverty. Therefore, HIV/AIDS has led to major demographic changes (Fund, 2004). In the developing countries, there have always been a high number of vulnerable children and orphans. HIV/AIDS and poverty have significantly contributed to this trend. In addition, high mortality rates and maternal mortality in particular have continued to chock the support mechanisms set in place to cope with the situation. The demand for medical care has continued to escalate amidst the rapid spread of HIV/AIDS. Cases of stigmatization and marginalization of orphans are common in many developing countries thus adding insult to injury. Girls who have been orphaned are highly vulnerable to sexual abuse and other forms of exploitation which further predisposes them to HIV infection. With the world seeing 13 million children left orphans due to HIV/AIDS, it leaves no doubt that the consequences of the pandemic are severe and collective

action is urgently needed to salvage the situation (Africa, 2004).

The agricultural sector has not been spared the blunt of HIV/AIDS. For instance, due to loss of labour and capital, hunger, famine, and frequent food insecurities have continued to plague many parts of the world (The Impact of HIV & AIDS in Africa, n.d). According to Waal (n.d), the New Variant Hypothesis attributes famine to four major factors. These are loss of skills and assets due to adult mortality, house labour shortage, the vicious interaction between HIV infection and progression and malnutrition, and the burden of caring for the sick orphans and adults. The combination of all these factors may contribute to hunger and famine. Programs devoted towards prevention and treatment of HIV/AIDS have been faced with major challenges in their effectiveness due to stigma and discrimination. For instance, due to the fear of being discriminated against, most people fear volunteering for HIV tests. Consequently, many people fail to access vital information for instance on how to protect themselves.

This trend encourages further spread of HIV/AIDS with its accompanying devastating effects. There are a number of consequences that are related to stigma. They include a feeling of being hopeless or worthless, loss of income and livelihood, withdrawal of home-based care, loss of reputation, and poor care within the health sector (ICRW, 2006). When a society is deprived of work force and resources necessary for development, there is low confidence and motivation which stagnates progress (Work, 2006).

HIV/AIDS have major economic consequences since it not only affects households, but also firms and the government. Following the death of a family member from the disease particularly where the member was the bread winner, the household income level suffers a major blow. Consequently, pressure mounts on the family to reallocate internal resources and expenditure (The Impact of HIV & AIDS in Africa, n.d).

Among the common changes that happen in such households is the withdrawal of children from schools

so that they can work to fill the gap left after the death or sickness of the main income earner. If this happens on a wide scale, it gives rise to a population whose members have poor educational levels. Such people will have to work in low-income jobs thus creating more deficiencies in the socioeconomic welfare of the society. Due to HIV/AIDS, the Government may also experience effects on both revenue and expenditure aspects of the budget. This normally results from changes in expenditure pattern following reduction in household income levels. Government revenues are adversely affected due to loss of skilled labour and low productivity (Nations, n.d).

The consequences of HIV/AIDS are so severe that it can even threaten the national security in a myriad of ways. For instance, massive loss of work force can leave a country without enough people to serve in the armed forces thus putting the security of a country at risk. In addition, HIV/AIDS leads to poverty which is a source of political instability as people fight to protect the little resources they have for survival. Therefore, conflicts

and civil wars are also more likely to arise in places where HIV is highly prevalent (Fund, 2004). Stressors exert a significant negative influence on the national economic health and political stability. In Zimbabwe for example, a mixture of powerful stressors such as political corruption, a land distribution crisis, and enduring drought, are best interpreted in the context of HIV and AIDS epidemic. HIV has triggered a systemic loss of productivity, savings, economic strength, and a rise in the country's debt load (Kirton & Cooper, 2009, p. 41).

The consequences of HIV to the individual start with the denial that they are infected and this stage later progress to anger, where a feeling of unfairness and failure sets in with many questions about why them. This is a critical stage because if counselling is not done, infected people may attempt to seek revenge by deliberately infecting others. By arresting this stage through counselling, it ushers the infected individuals into another stage characterized by feelings of hope. Ultimately, individuals accept the fact that they have

been infected and have to live positively (UNAIDS, 1997). HIV/AIDS wrecks havoc on the immune system of infected individuals by weakening it and rendering them highly susceptible to opportunistic infections. Without timely medical intervention, infected individuals are overwhelmed by sicknesses and may not live long (Brown, 1997).

In addition, infected individuals face stigma and discrimination which is still the biggest challenge facing the fight against HIV/AIDS. Due to the fear of discrimination, individuals who are infected, fear to declare their statuses (Work, 2006, p. 43). This escalates the progress of the disease and quickens their death. Infected people have to take a balanced diet with a high protein content so as to prevent muscle wasting. Unfortunately, poverty in many developing countries makes individuals financially weak to meet their dietary needs (HIV and Nutrition, n.d). When it comes to bearing children, couples where either partners or both of them are infected face serious challenges due to the possibility of infecting the foetus. Even with close

monitoring by specialists, cases of mother-to-child transmission are still significantly high in the Sub-Saharan Africa due to factors such as poverty (HIV and Nutrition, n.d).

The emergence of multi-drug resistant tuberculosis creates a new challenge to individuals infected with HIV because if they develop resistance, getting second line antiretrovirals (ARVs) is difficult. This might occur when infected individuals engage in unprotected sex with people who are also infected. Cross infection with different strains can occur in such situations. People usually fear the side effects of taking medication and the fact that they will take medication for life (WHO, 2011).

Q2. The basic rights and freedoms entitled to all humans are often held to include the right to life and liberty, freedom of thought and expression, and equality before the law. Unfortunately, human rights and fundamental freedoms have been widely abused in people with HIV, and this has been a major problem in all parts of the world. In order to ensure effective social, civil, economic, political, and cultural fundamental freedoms,

human rights among HIV infected people have to be safeguarded (UNAIDS, International Guidelines on HIV/AIDS and Human Rights, 2006).

Human right treaties and declarations have come up with a number of provisions geared towards protecting human rights among HIV infected people including the right to attainable health. The International Covenant on Economic, Social and Cultural Rights recognises the need for everyone to attain the highest standards of physical and mental health. In health concerns that are behaviour related such as sexually transmitted infections and HIV/AIDS, establishment of prevention and educational programs can go a long way in fostering social and environmental safety, education, economical development, and gender equality (UNAIDS, International Guidelines on HIV/AIDS and Human Rights, 2006).

Interrelated elements comprise the Right to health. These include; availability of care facility, adequate medical supply, trained staff, clean drinking water, and

sanitation. In addition, there should be equal access to health facilities and goods and services. The concept of acceptability need to be upheld in that the facilities must be culturally appropriate and medical ethics followed to the letter. Moreover, the quality of services provided in health facilities has to be medically and scientifically appropriate (UNAIDS, International Guidelines on HIV/AIDS and Human Rights, 2006).

In order to prevent the transmission of HIV, the rights of women and girls must be protected. This is because the majority of women are vulnerable to inequality, which prevents them from deciding circumstances of sexual relations. Many women are sexually abused in or out of marriage and low access to education makes them dependant on low income jobs which puts them at a risk of financial constraints which can lead to behaviour change, and put them at a risk of infection. The rights of children must also be respected in terms of protecting them from sexual exploitation, prostitution, sexual abuse, and trafficking. They have a right to information on HIV and the right to special protection if deprived of

their family environment (UNAIDS, International Guidelines on HIV/AIDS and Human Rights, 2006).

Things such as forced marriages, sterilization of women, and forced abortion would amount to violation of these rights. As a precondition for marriage, premarital testing is mandatory. People living with HIV/AIDS also have a right to confidentiality and a right to be informed before HIV testing. Their personal information need to be protected from unwarranted access and misuse. According to the 2006 political Declaration on HIV/AIDS, increase in HIV testing and treatment facilities need to implement full protection of informed consent and confidentiality (UNAIDS, International Guidelines on HIV/AIDS and Human Rights, 2006). As far as the right to education is concerned, access to education opportunities must be equality granted to people living with HIV. Education should endeavour to promote understanding, non-discrimination, respect, and tolerance (mishra, 2009, p. 248).

People living with HIV/AIDS also have the right to

freedom of movement since HIV has no public health restriction. The only disease, which requires certificate for international travel, is yellow fever according to international health regulation (WHO, INTERNATIONAL HEALTH REGULATIONS (1969), 1983). In addition, HIV infected people have the right to seek and enjoy asylum and countries may not return refugees to persecution on the basis of their HIV statuses. People living with HIV also have the right to participate in cultural and political life as it is vital that people living with HIV remain integrated in political, economical and cultural aspects of community life (UNAIDS, International Guidelines on HIV/AIDS and Human Rights, 2006).

Confidentiality means information about a patient should not be shared without permission. Breach of confidentiality is sharing information verbally or in written form regarding a resident or client without having a form granting the permission to release the information. Confidentiality is imperative since it protects people living with HIV from discrimination and

stigma. Disclosure of patient's status may cause the patient to refuse medical care because of breach of confidentiality. The General Medical Council (GMC) explains that disclosing in the public interest can be necessary to protect individuals from serious harm. Patient's confidentiality and privacy are very important aspects within our health care system (Council, 2009). Deliberate transmission of HIV to a person is considered the most serious form of criminal offence. This involves people intentionally using contaminated needles to infect others with HIV virus or people who are aware of their HIV positive status but harbour a primary intent to transmit the virus to their partners. Criminal law protects vulnerable women who can acquire the infection through reckless male partners. Criminalization of HIV has triggered debate in which people argue that criminalising HIV infected people does not address the complexities involved in disclosure and instead increases HIV stigma (UNAIDS, International Guidelines on HIV/AIDS and Human Rights, 2006).

In addition, imprisonment cannot help people come to terms with their status and develop better attitude. Instead, a better course would be to promote education and psychological counselling. Treating HIV transmission as murder offence increases stigma and discrimination because it is like saying HIV equals death, while we know with the availability of antiretrovirals, people can lead healthy lives even when they are HIV positive. No illness has been treated with the same hysteria as HIV and this is because of its associated stigmatization and promiscuity.

Comprehensive Essay on HIV / AIDS

Acquired Immunodeficiency Syndrome (AIDS) is a disease caused by Human Immunodeficiency Virus (HIV).

The AIDS pandemic is a major concern in both developed and developing countries. The World Health Organization estimates that the cumulative number of AIDS cases in the world amounted to 2.5 million persons. AIDS, the Acquired Immunodeficiency Syndrome is not a hereditary disease but is caused by HIV (Human Immunodeficiency Virus).

HIV from an infected person can pass to a normal person through blood contact generally during unprotected sex with infected persons and sharing needles or syringes contaminated with small quantities of blood from HIV positive person.

HIV can also pass from infected mothers to their babies during pregnancy, delivery or breast feeding. HIV does not spread through tears, sweat, urine, faces or saliva

during Normal kissing. It does not spread by sharing utensils, towels, clothing, and toilet seats or insects bite like that of mosquito or bed bug.

AIDS was discovered in 1983. Most evidence has suggested that AIDS spread from Africa. It is believed that the virus has been transferred to humans from primates like Africa monkey or Chimpanzees.

Important features of AIDS

1. A person, which is HIV positive, carries the HIV in his body. The virus damages the immune system.
2. With time, the immune system becomes very weak.
- 3- Symptoms of AIDs include persistent cough, generalized pruritic dermatitis, or pharyngeal candidacies, chronic progressive and disseminated Herpes simplex and generalized lymphadenopathy, recurrent Herpes Zoster, weight loss, chronic diarrhoea and prolonged fever.

4. Nobody knows exactly when with HIV will become sick of AIDS.

5. Human Immunodeficiency Virus is transmitted through semen and vaginal fluids.

The virus and course of infection

The main cellular target of HIV is a special group of white blood cells critical to the immune system which is known as helper T lymphocytes, or helper T cells. Helper T cells play a key role in normal immune responses by producing factors that activate almost all immune cells.

HIV is a retrovirus, the genetic material of which consists of RNA (not DNA) surrounded by a lipoprotein envelope. HIV cannot multiply on its own and instead relies on the machinery of the host cell to produce new viral particles. Once the virus has infected a T cell, HIV copies its RNA into a double stranded DNA copy by means of viral enzyme reverse transcriptase.

Because the reverse transcriptase lacks the 'proof reading' function that most DNA synthesizing enzymes have, many mutations may arise as the virus replicates, further hindering the ability of the immune system to combat virus.

The viral genome copied on DNA transcript is integrated into host cell DNA. This integration may occur at any accessible site in the host genome and results in permanent acquisition of the viral genes by the host cell. The course of HIV infection involves three stages: primary HIV infection, the asymptomatic phase, and AIDS.

During the first stage, the transmitted HIV replicates rapidly, and some persons may experience an acute flu-like illness that persists for one or two weeks. During this time a variety of symptoms may occur, such as fever, enlarged lymph nodes, sore throats, muscles and joint pain, rash and malaise.

The second phase of HIV infection, the asymptomatic period, lasts an average of 8-12 years. During this

period, which is symptomless phase, the virus continues to replicate, there is a slow decrease in the number of helper T cells.

When the helper T cell count falls to about 200 cells per micro liter of blood, patients begin to experience opportunistic infection, i.e., infections that arise only in individuals with a defective immune system. This is AIDS, the final stage of HIV infection.

HIV AND ITS CORECEPTORS OUTLINE

WHAT IS HIV?

THE HUMAN IMMUNE SYSTEM

* In order to understand HIV, one must understand the human immune system. The first line of defense is a person's skin, mucous membranes, and other secretions which prevent pathogens from ever entering your body. Pathogens are considered things your body does not want, for example bacteria and viruses.

* The second line of defense includes nonspecific mechanisms which attempt to contain the spread of pathogens throughout one's body. The second line of defense relies heavily on the use of white blood cells, which ingest invading organisms. About 5% of white blood cells are made of monocytes, which develop into macrophages. The role of these macrophages is vital to the human immune system, as they are able to engulf

pathogens without having to self destruct.

* The body's third line of defense is a highly specific means of distinguishing "self" from "non-self" and destroying all "non-self". All of one person's cells are marked with a unique set of proteins which label them as "self". Certain cells in the body are capable of recognizing every antigen (molecules belonging to viruses/bacteria) that may enter one's body over a lifetime. These cells include macrophages, T-Cells, B Cells, and interior thymus cells. These cells rely on Helper T-Cells to alert them of antigens in the body, thus creating an immune response. Once recognized, Killer T-Cells actively destroy pathogens and even the body's own cells if that have been invaded by a pathogen.

How HIV attacks the Body

* As commonly known, HIV cannot penetrate your immune systems first line of defense. You cannot contract HIV by breathing bad air or by holding the hand of somebody who is HIV positive. You have to work hard to become infected by doing things such as sharing

contaminated needles, or by having unprotected sex with an infected person. Unfortunately, infected mothers can also transmit the virus to their unborn children or by means of breast milk. Basically, once HIV is in your system it is already to your third and final line of defense.

* HIV doesn't target just any cell, it goes right for the cells that want to kill it, i.e. the monocytes, macrophages, and Helper T-Cells. Once HIV infects these cells, T-Cells come along and destroy those infected cells, thus one's own body is killing off the mechanisms needed to destroy the virus. The virus can infect 10 billion cells a day, yet only 1.8 billion can be replaced daily. Thus, after many years of a constant battle, the body has insufficient numbers of T-Cell to mount an immune response against infections. At the point when the body is unable to fight off infections, a person is said to have the disease AIDS. This means that it is not the virus or the disease that ultimately kills a person; it is the inability to fight of something as minor as the common cold.

How does HIV get into cells and infect them?

* Helper T-Cells bind to antigen presenting cells (APC's) by means of a receptor on the cell surface called CD4. HIV is able to use it's own gp120 (a protein on the surface of HIV) to bind to a cells CD4. HIV also binds to coreceptors CCR5 and CXCR4 of the cell surface. HIV's membrane fuses to the cell membrane and gains entry into the cell. HIV is one of the few retroviruses, meaning that it can convert its two strands of RNA into DNA by use of the enzyme reverse transcriptase. Because it has two copies of its RNA, it has two chances to in case one of the strands does not work properly or is damaged. The virus then permanently integrates the newly formed DNA into the host's genome. This means the cells is able to release more HIV into your body, and the process continues.

Interpreting and Understanding:

"CC CKR5: A RANTES, MIP-1a, MIP-1B Receptor as a Fusion Cofactor for Macrophage-Tropic HIV-1"

Summary

* HIV virus type 1 (HIV-1) uses fusin as a cofactor, with CD4+cells in order to enter the cell.

* Fusin is a coupled coreceptor, G protein. It is a cofactor for T-tropic strains of the HIV virus.

* Certain chemokines inhibit cell fusion by inhibiting infection by M-tropic cell lines. This is done selectively through mediation by analogous envelope glycoproteins. These specific chemokines are RANTES, MIP-1a, AND MIP-1B.

* CC CKR5 is a recombinant coupled receptor, G protein for the aforementioned chemokines. CC CKR5 conferred CD4-expressing, nonhuman cells able to employ fusin preferentially with M-tropic envelope glycoproteins.

- * CC CKR5 mRNA was selectively found in cells likely to be infected by M-tropic lines.
- * This leads to the conclusion that CC CKR5 is a cofactor for M-tropic HIV-1 strains.

Questions/Purpose of Study

- * To study the specific cytotropisms for infection of primary macrophages on HIV-1 isolates versus infection on CD4+ T cell isolates. This cytotropism is determined by the corresponding envelope glycoprotein, where HIV binds. It is suggested that the cytotropism of the various isolates is a result of the inherent membrane fusion selectivities of the analogous envelope glycoproteins for different CD4+ target cell types.

Hypothesis

- * Suppressive C-C chemokines exert infection-inhibition by binding to a chemokine receptor that acts as a fusion

cofactor for M-tropic HIV-1 isolates, thus inhibiting fusion determined by the corresponding envelope glycoprotein.

Methods of Study

- * Direct assays (vaccina-based) of fusion mediated recombinant envelope glycoproteins.
- * Recombinant vaccina-based systems where fusion between envelope-expressing (Envs-expressing) and CD4-expressing cells causes expression of E. coli lacZ gene. Thus, B-galactosidase (B-gal) is produced in fused cells, selectively.
- * Measurement of cell specificity with these assays
- * Examination of effects of C-C chemokines on fusion reaction, using phytohemagglutinin PHA-activated peripheral blood mononuclear cells (PBMC's). ---used as the CD4+ target cell type.
- * Comparison of envelope glycoproteins from prototypic M-tropic Ba-L isolate and T-tropic LAV isolate.

- * Tested effects of C-C chemokines on fusion by CC

CKR5 and CD4

* DNA probing

* Northern blot analysis

Results/Conclusions

* Recombinant CC CKR5 allowed nonhuman cells to go through fusion, mediated by Envs from M-tropic isolates.

* Inhibition of Ba-L Env-mediated fusion according to dose, in RANTES, MIP-1a, MIP1B, not in MCP-1, MCP-3

* The presence of a correspondence between CC CKR5 selectivity and specificity of chemokine inhibition of HIV infection and Env/CD4 determined cell fusion with human PBMCs and nonhuman cells coexpressing CC CKR5 and CD4.

- * Differences in expression levels of different target cell molecules affects inhibition quantitatively.
- * CC CKR5 and fusin are the only fusion cofactors for HIV-1 (One must also take into account the corresponding Envs.)

Future Studies/Connotations

- * Practical applications in transgenic models of HIV-1 infection
- * Possible treatment of HIV-1 infection
- * Chemokines RANTES, MIP-1a, MIP-1B may have possible therapeutic effects, as they are now known to have suppressive activity.

Interpreting and Understanding:

"Coreceptors: Implications for HIV Pathogenesis and Therapy"

M-Tropic vs. T-Tropic

* In 1984, the main receptor on the cell for the HIV to bind to was found to be the CD4 molecule. However, HIV (Human Immunodeficiency Virus) must bind to two key molecules on the cell surface in order to enter the cell. It wasn't until the 1990s that the coreceptors were found to be CCR5 and CXCR4 (fusin). HIV must bind to CD4 and one of these coreceptors in order to enter the cell. There are two types of HIV strains in the transmission of the virus, which are M-tropic viruses and T-Tropic viruses. The M-Tropic viruses utilize the β -chemokine receptor CCR5, mentioned above, and sometimes the CCR3 coreceptor. On the other hand, T-Tropic virus strains utilize the α -chemokine receptor, CXCR4, as its coreceptor. In summary, both M-Tropic viruses and T-Tropic viruses bind to the CD4 receptor, however, they utilize different coreceptors in order to enter the cell. M-Tropic viruses replicate in the primary CD4⁺ T-Cells and in the microphages. T-Tropic viruses replicate in the primary CD4⁺ T-Cells, but also

established CD4+ T-Cells in vitro by means of CXCR4 (fusin). T-Tropic viruses can also enter macrophages by using both CCR5 and fusin.

M-Tropic Virus contraction is much more common.

* In sexual-related transmissions, ninety percent of the time, the M-Tropic virus strain is contracted. This means that CCR5 is the predominant coreceptor for most patients, and that contracting the T-Tropic virus initially tend to be rare. This can be viewed as a positive fact because a patient infected with the M-Tropic virus tends to progress in the disease more slowly than those infected with the T-Tropic virus. However, M-Tropic viruses have the ability to evolve into T-Tropic viruses in vivo, which causes faster disease progression. Basically, a patient's disease progression depends on how quickly the M-Tropic evolves into T-Tropic in his/her body.

A defective CCR5 allele can provide a person resistance

to HIV Infection

* Some people have one or two defective alleles in their CCR5, which can either be a homozygous defect (for example “rr”) or heterozygous defect (for example “Rr”). A normal person could be represented by “RR”. A person with no defect (RR) has twenty times more CCR5 expression on the surface of the cell than a person with two defective alleles (rr). This can greatly affect the efficiency of HIV infection, due to the fact that with only 1/20 the amount of the primary coreceptor CCR5, it is much more difficult for the M-Tropic virus to bind to the cell and enter it. People with two defective alleles (rr) tend to show a strong resistance to HIV infection in vivo and in vitro. However, people with only one defective allele (Rr) are “at best weakly protected against infection and have only a modestly slowed disease progression”.

Another factor affects coreceptor expression

* “The state of activation of CD4+ T-cells also affects coreceptor expression.” Cells that are inactive or

“quiescent” hardly express CCR5, making it very difficult for the M-Tropic virus to bind to the cell surface. However, these cells do express fusin (CXCR4) quite well.

The Bad News

* Usually a person is infected by an M-Tropic strain of HIV virus. Although this infection is not a good thing, it is certainly not as bad as initial infection by a T-Tropic virus. When a small or limited amount of CCR5 is expressed on the surface of the cell, it is difficult for a person to be infected by an M-Tropic virus, however, because there is still an ample supply of fusin, it is likely that the HIV will bind to cell by using fusin as the coreceptor. This means that if CCR5 expression is reduced, it is more likely that a person will become infected with a T-Tropic virus.

A Phenotypic switch may create new set of cells.

* During disease progression, a phenotypic switch from M-Tropic to T-Tropic may occur. This can be associated with escape from CCR5 or a reduced production of fusin. This switch has the potential to create a “new set of naïve CD4+ T-Cells that are susceptible to efficient HIV-1 infection (through CXCR4).”

The Great Unknown

* The interaction of CD4 with CCR5 and fusin is still unknown. It is believed that once this interaction is known, it will help scientists understand HIV-1 infection.

Prospects for vaccine testing

* A major problem in testing for an HIV vaccine is the fact that HIV-1 replication in nonhuman cells is quite inefficient. However, it may be possible to “create a human CD4+, CCR5+ transgenic mouse or rabbit for vaccine testing.”

* However, scientists are looking to simian immunodeficiency virus (SIV) which also uses CCR5 as

a coreceptor. SIV stock seems to resemble HIV T-tropic strains because they use multiple coreceptors to enter the CD4⁺ T cells. Scientists hope to use a model SIV strain which enters the cells via CCR5 as a model for an HIV vaccine.

Neutralizing antibodies more commonly inhibit the binding of CCR5

* Scientists have found that antibodies more commonly inhibit the binding of HIV gp120 with CCR5 than binding between gp120 and CD4. Studies have shown that, “The gp120 variable loops probably shield critical, conserved structures from antibody attack”. HIV protects itself by limiting the chances of the virus being neutralized by means of only allowing the ‘critical, conserved structures’ to be exposed for only a short period of time. This means that antibodies have a very little time window in which they can attack the virus. “Because neutralization of other subtypes by human antibodies can occur, a cross-reactive, antibody-based

vaccine is possible- if only we could learn how to induce such antibodies. The CCR5 molecule itself is poorly immunogenic and so may not be a good candidate to use as a vaccine.”

Statistics

*

In the year 2001 there were a total of 5 million new people that were infected with HIV. 800,000 of these were children.

*

World wide there are, by some reports, a total of some 40 million people infected with HIV/AIDS. Of these 40 million people, 37.1% are adults, 18.5 million are women, and 3 million are children ages 15 years or less.

*

AIDS deaths in 2001 totaled 21.8 million people. 17.5 million of these people were adults, 9 million were women and 4.3 million were children 15 years of age or less.

*

These statistics are startling. Even with all that we know about HIV and preventing its spread, we seem to be losing the battle in most areas against this epidemic. In Africa, where AIDS/HIV is most rampant, there is an ever increasing rate of aids infection. The expected life span in Africa has dropped from 62 to 47 years since the onset of the AIDS epidemic in the early 1980s. It has been calculated that there is a 74% probability that a boy or girl in Africa who turned 15 in the year 2000 will contract AIDS/HIV before his or her 50th birthday. Current trends show that unless something is changed, the number of people that are infected and die due to AIDS/HIV complications will continue to increase. This

is clearly demonstrated by the following information: “In Guyana, where adult prevalence is 2.7%, the probability of HIV contraction between the ages of 15 and 50 from 2000-2035 is 19%.”(UNAIDS website “Report on the global HIV/AIDS Epidemic 2002”)

*

Africa is certainly not alone in its plight. Countries across the world are feeling the effects of this global epidemic. Indonesia, the worlds fourth most populated country, reported an increase from a 15.4% infection rate in 2000, to a 40% infection rate by the middle of 2001. Eastern European counties are for the most part seeing more, and more cases of HIV/AIDS infection across continent as the years go by with no sign of the pattern slowing or decreasing.

*

The Caribbean and Latin America are suffering as well.

There are an estimated 1.9 million adults and children that are infected and living with HIV/AIDS. This statistic includes roughly 200,000 people that contracted HIV/AIDS in 2001 alone. In all there are close to 1.5 million people in Latin America who have the HIV/AIDS infection and close to 420,000 in the area including the Caribbean.

*

In the USA there was a reported 793,026 new cases of AIDS across the country. It is believed that there are currently 800,000 to 900,000 people with HIV/AIDS in the US although the number that is actually recorded with the CDC (Center for Disease Control) is much less, around 455,750. The reason for this discrepancy is due to several factors, including the fact that the reporting of people with HIV/AIDS has not yet been imposed in all states. Also any anonymous tests are excluded from the over-all count, and many people just do not know they are infected with HIV/AIDS.

Treatment

We can not cure HIV, but antiretroviral therapy has extended life for HIV positive clients. The goal of antiviral therapy is to lower the viral count in the bloodstream. There are three major classes of drugs. Despite this progress, these drugs typically lose their effectiveness after a period of treatment because the virus mutates and becomes resistant, much like bacterial resistance to antibiotics. Cross-resistance, or the virus' ability to mutate to be resistant to multiple drugs of the same class, is also a potential problem.

Nucleoside Reverse Transcriptase Inhibitors

* The drugs work by blocking the reverse transcription mechanism in HIV. Reverse transcription is a necessary step to incorporate HIV into human cells, therefore preventing the virus from being taken up by the cell. This inhibits the virus' ability to reproduce. It is the most studied drug class to date. Drugs of this class include

AZT, videx, HIVID, and Epivir, among others.

Non-Nucleoside Reverse Transcriptase Inhibitors

* This drug class also blocks reverse transcription in HIV, but differently than NRTI's. These drugs are available through prescription. Drugs in this class include Viramune, Rescriptor, and Sustiva.

Protease Inhibitors

* This is the newest class of antiviral drugs. They block the action of protease, a protein the virus must have in order to reproduce and infect new cells. This allows these drugs to block, or at least minimize, mutations. This class has drugs like Invirase, Norvir, and Viracept.

Effects on Antiviral Therapy on Viral Burden

* Monotherapy, the use of one drug to treat infection, typically results in a relatively small drop in viral burden, followed by a spike in viral levels, and

sometimes drug resistant strains. Combination therapy, typically three or more drugs used in tandem has been shown to significantly decrease viral load, even over a sustained period of time. "several such studies showed that triple-drug combination therapy decreased the amount of viral RNA in blood to below limits of detection" (JAMA) Antiviral therapy has shown to decrease viral load in both semen and vaginal secretions.

This information must all be taken with a grain of salt. It is possible that semen and vaginal secretions may be special circumstance which responds differently to treatment. Studies are also contradictory, as viral load may sometimes be detected in semen, even when it can't be detected in the blood and vice versa.

Present Research

*

Years of research have allowed us to conclude how HIV infects cells, but how it causes to immune system to

collapse is still a mystery. There are three main theories that most researchers believe cause the immune system to crash. The first is that HIV actually destroys immune cells, such as CD4 and CD8 cells. Another is that HIV does not allow new immune cells to form, and the third is that HIV causes immune cells to redirect their movement which causes self destruction.

*

David D. Ho of Aaron Diamond AIDS Research Center in New York, and Alan S. Perelson of Los Alamos, New Mexico calculated that HIV infects and destroys several billion DC4 cells daily. The immune system is not able to keep up the production of new cells because it can only produce a certain number of new cells. What researchers are hoping to find is an antiretroviral drug that is able to stop the virus from spreading and destroying immune cells, as well as therapies that can ensure that immune cells will continue to replicate.

*

Mike McCune, of Gladstone Institute of Virology and Immunology at the University of California, with the help of colleagues, compared blood samples of people who were infected with HIV that had not yet received antiretroviral drugs to HIV infected people who had gone through 12 weeks of antiretroviral drug treatment. They also had a control group of people who were not infected with HIV. The samples of blood taken from the group who had received the antiretroviral drug had a higher concentration of CD4 cells than those who had not taken the drug. On the other hand, CD4 cells in those who had not take the drug survived longer. These observations show that the antiretroviral drug affects the overall amount of CD4 cells by increasing production, not decreasing the destruction of CD4 cells.

*

In January of 1999 there was a paper published in the

Journal of Immunology that stated that HIV seizes a natural immune process that causes CD4 cells to flood out of the bloodstream and into the lymph nodes. This process is known as homing. Healthy immune cells flow from the lymph nodes, through tissues, into the blood, and back to the lymph nodes. Their journey is necessary to patrol the body for invaders. In February of 1997 Miles W. Cloyd at the University of Texas Medical Branch, along with some colleagues, tested why the journey of the immune cells was being rerouted. They proved, through testing mice, that when HIV binds to the immune cells the production of protein (CD62L) increases. With the increase of protein the immune cells head directly to the lymph nodes. Once the HIV command the immune cells to leave their normal flow, though the blood, they self destruct.

*

All of the assumptions and research done on how HIV causes the immune system to fail has brought AIDS

research closer to finding a way to help rebuild the immune system, but it has also made researcher realize that with more answers come more questions.

*

Jack T. Stapleton at the University of Iowa, along with his colleagues took blood samples from 362 people (mostly caucasian men) that were being treated for HIV between 1998-2000. The reason for this study was the recent findings of a potentially beneficial virus, GBV-C. GBV-C is a virus similar to others that may cause the liver disease Hepatitis. However, GBV-C does not lead to any known illnesses, instead it might slow the progression of HIV.

The study led by Stapleton showed that there were 144 patients that contracted HIV, as well as GBV-C. Out of those samples, 41 people died by the time the researchers had analyzed the data. On the other hand, out of the 218 patients that only contained the HIV virus, 123 died.

Taking into account age, severity of the illness, and type of treatment, patients infected with HIV are four times as likely to survive if they also contain the virus GBV-C, Stapleton suggests.

Another experiment created by the Iowa researches tested the production of HIV cells in test tubes. They infected immune cells with both HIV and GBV-C. The cells containing both viruses produced 30-60% less HIV strands. Through these observations, Stapleton and his research team concluded that GBV-C might cause biological differences to occur, allowing some to be more capable of fighting HIV than others.

*

David Phipps of Toronto Hospital, and Donald Branch from the Canadian Red Cross Society, found an early detection test for strands of HIV. Previously, the time between when a person became infected and when HIV was actually detected was anywhere between six weeks

to six months. HIV, because of Phipps and Branch's discovery, can now be detected within 30 minutes of infection.

The researchers decided to focus on the activity of the enzyme, Fyn Kinase, instead of the measuring of antibodies that are produced due to infection. Fyn Kinase is believed to be the initiator of biochemical signals that follow the activation of Tcell antigen receptor on CD4+ and CD8+ T lymphocytes. Phipps and Branch observed Fyn Kinase activity in patients with and without HIV. Those with HIV contained high Fyn Kinase activity and low levels of Fyn protein. They also found that Fyn Kinase activity increases within 30 minutes of infection of the CD4+ T cells. This new-found information revolutionized the way testing for HIV occurs.

References:

Alkhatib, G. et al, "CC CKR5: A RANTES, MIP-alpha, MIP-1 beta Receptor as a Fusion Cofactor for macrophage-tropic HIV-1." Science 272, 1955 (1996).

Grimes, W., R. Hallick, M. Hewlett, J. Aronson, and B. Fishel. *Biology 181 Laboratory Manual 2002*. Hayden-McNeil Publishing, Inc.

Moore, J.P. "Co-receptors: Implications for HIV Pathogenesis and Therapy." *Science* 276, 51, 1997.

Purves, W., D. Sadava, G. Orians, and H. Heller. *Life: The Science of Biolog*

EARLY UNDERSTANDING OF HIV AND SYPHILIS

In the last few weeks of class we have looked at several different cases of disease outbreaks throughout the world, and how different cultures have diverse understandings of these outbreaks. Of the sicknesses we have studied, I feel that the HIV and Syphilis outbreaks stand apart from the others because of their massive infections in many different cultures and parts of the world, and also due to the fact that the diseases cannot be cured, along with the unfortunately high rate of death among its victims.

When the outbreaks of syphilis and HIV first became present, science at the time was unable to come up with a clear cause for the sicknesses. People witnessing the diseases, however, were quick to assign their own cause. Unfortunately, most put the blame on African Americans. While Syphilis may have been introduced to the western worlds by slave trade according to Philip D.

Curtin, inefficient evidence is present to call this fact, and most blame when these diseases first became present were completely racially based. This blind prejudice led to an extremely limited understanding of the diseases. Many felt the diseases were so racially specific that whites were completely immune to the epidemics. Some even felt that Blacks became infected because they were inferior unchristian beings, and as being so, they were being punished by god. (PBS/NOVA “The Deadly Deception”) As an effect of this logic, many more fell victim to the sicknesses, refusing treatment due to these beliefs. This racial attitude of the time also severely hindered the discovery of the real causes of HIV and Syphilis.

Many years later, and after a very large progression in medical research, scientists have finally come to a clear agreement on the causes of these diseases. It is now obvious that there are three main causes to an HIV or Syphilis infection. A victim may become infected through blood transfusions or sexual contact with another, or the diseases may be carried from a mother to

her child. These conclusions vary greatly from what was first thought as the cause of the epidemics. The incorrect causes initially found by those in early times most likely were based on a lack of knowledge in the areas of sanitary blood transfusions, safe sex, and the extremely racist attitude of the time. This lack of knowledge can be seen in what the diseases first became known as: “Bad Blood” (CDC).

While scientist have now found the real causes of the diseases, the apprehensions and blame-placing on these diseases certainly have helped cause them to spread just as much as all other causes, whether behavioral, social, or biological. Behavioral causes are helping to spread the diseases just as much now as ever before, through such things as needle-sharing and unsanitary medical practice. Also a high level of sexual activity coupled with a lack of knowledge about safe sex is spreading the sicknesses as well. Social conflicts may be the only causes that led to the apprehensions of the time. As many blamed the African Americans for the disease, the

horrible conditions found through the slave trade system may have led to an increase in the cases of Syphilis and may have introduced it to Europe (Philip D. Curtin). In any case, the racist causes put on the diseases in early times did much more harm to people than good. It helped spread the sicknesses, handicapped the scientific understandings of the diseases, and further fueled the racism at the time.

With any disease, a very large part in how victims of a disease are treated comes from the cultural understanding of that disease. It is possible that even just how people talk and think about a disease can affect those suffering from it and the treatments developed for it. In the case of HIV and syphilis, Brazil can be pointed to as a chief example of how cultural understanding affects a disease. While Brazil was once one of the most heavily HIV-infected nations in the world, it is now progressively improving not only because of many well thought out programs, but also because of a changed perspective people in the nation now have on HIV. The

country is very open sexually, causing topics such as HIV to become openly discussed. This fact helped Brazil's president in 1999, Fernando Henrique Cardoso, to make an educated decision to stick with the AIDS program, deciding that it was a priority. (Rosenberg "Look At Brazil"). Also, as with most other nations, the first citizens infected are part of the gay community. Unlike most other nations, however, the gays in Brazil were much more open and helped spread knowledge of the disease to others, creating a better common understanding of HIV and AIDS. (Rosenberg "Look At Brazil").

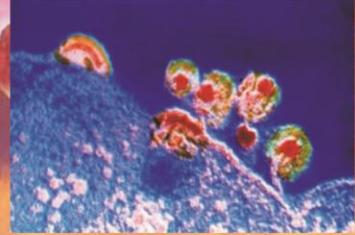
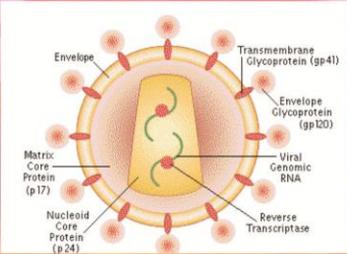
While we can see that very positive effects can come from the cultural understanding of a disease, the opposite is also unfortunately true. The Tuskegee experiments are a shocking example of this fact. For forty years between 1932 and 1972, the U.S. government conducted an experiment on 399 black men suffering from syphilis. These men were never told what disease they were suffering from or of its

seriousness. All they were told was that they were being treated for “bad blood,” the doctors had no intention of curing them of syphilis at all. (InfoPlease) The lack of understanding and common knowledge of the disease led these men through forty years of pain and suffering. It is very possible that the entire incident could have been prevented if the topic of Syphilis and STD’s was not considered taboo at that time in the U.S.

After looking at the effects that blame-placing and apprehension can have on a newly discovered outbreak of a disease, and the results of cultural understandings on the treatment of a disease and those suffering from it, it becomes clear that all societies must strive to establish a clear and unbiased knowledge of that disease. As important as establishing the knowledge, is it also critical to spread that knowledge to create at the very least a basic understanding of the sickness. Doing so is the first step in curing any epidemic on any area of earth.

RYAN WHITE STDS/HIV-AIDS CORRESPONDENCE COURSE

By Postal and E-mail



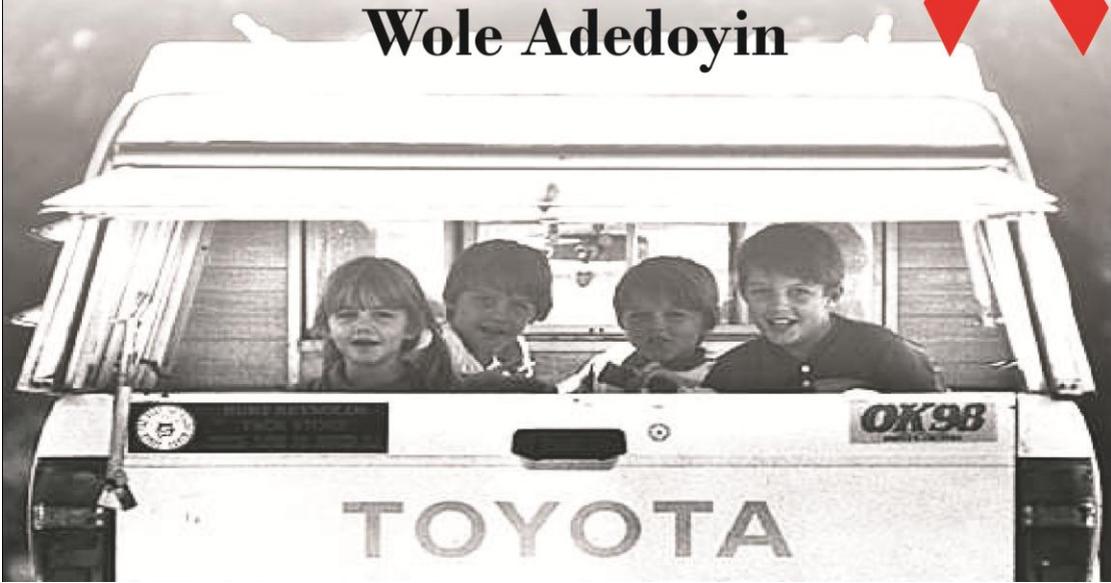
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Prepared by:

Wole Adedoyin



RYAN WHITE STDS/HIV-AIDS CORRESPONDENCE COURSE

The questions are written by recognized and dedicated HIV/AIDS educators. We have nearly ten to fifteen educators working on our questions. They are educators who have had years of practical experience and often they are people who have written recognized HIV/AIDS books for youths.

These HIV/AIDS educators not only prepare your questions of studies they also keep them constantly updated. Every year there are changes, both because of syllabus and text. It is vitally important that your courses are kept up to date. That is why this HIV/AIDS Correspondence Course insists on using the very best expertise available in preparing and updating your course of studies.

Secondly, these expertly prepared questions are available for you to study at your own pace, in your own time, in your own home.

At the end of the day you can relax by your fireside and read through your studies. No turning out at night and traveling to evening classes. No taking notes from lectures, everything is written down for you to study at will and revise as often as you like.

No being held back because of slower students in the class. No being rushed too quickly ahead because a lecturer has to keep up with a time-table.

You don't have to take a chance on how good you are. You can rest assured that your interests are in our interest and we make the best talent available to you to achieve your aim.

How to Enroll

This Letter of Introduction is normally accompanied by an enrolment form. If you require further copies of these documents, please contact the following addresses.

Interested applicants should contact the below listed addresses for registration form or call Wole Adedoyin - +2348072673852 or +2348142693764 or send your e-mail to: olaase10@yahoo.com

**RYAN WHITE HIV/AIDS CORRESPONDENCE
COURSE BY E-MAIL OR POSTAL MAIL**

AIMS AND OBJECTIVES

1. To put a stop to the spread of HIV/AIDS in the country
2. To promote HIV/AIDS Education
3. To encourage HIV/AIDS victims and HIV/Educators
4. To give recognition, reward and award (RRA) to deserving HIV/AIDS educators to serve as role models
5. To highlight the roles of HIV/AIDS education in the education

COURSE ONE

1. Mention and explain 4 different ways by which HIV/AIDS is spread?
 - a. Mention 7 different ways by which HIV/AIDS is not spread?
 - b. Gonorrhoea is caused by Bacteria – Yes or No
2. Write out 2 causes, 3 symptoms and 2 havocs caused by the following STDs when entered into the body
 - i. Syphilis
 - ii. HIV/AIDS
 - iii. Genital Warts
 - iv. Vaginitis
 - v. Chlamydia
- b. List 8 signs and symptoms of HIV/AIDS infection

3. In a 3 paragraphs, write down the brief history of HIV/AIDS, how it was

Discovered and when it was discovered.

b. How can you tell if someone has the virus HIV/AIDS?

4. Mention 5 different ways to protect yourself from HIV/AIDS?

b. Differentiate between diseases and infections

5. Mention 5 different ways to cope with an HIV/AIDS victim?

COURSE TWO

1. What is PMTCT?
 - b. How does the pregnant woman become HIV infected?

2. What are the benefits of testing pregnant woman for HIV?
 - b. How can mother-to-child transmission of HIV can be prevented?

3. How does the baby get HIV from the infected mother?
 - b. What conditions increase the chances of a baby getting HIV infection from the mother?

4. What is the consequence of babies acquiring HIV?
 - b. How will a pregnant woman know if she has HIV?

5. For women who turn out to be HIV positive, what are the appropriate measures that could

reduce or eliminate the chances of passing HIV
to the baby?

COURSE THREE

1. What is the full meaning of STD?
 - b. Mention 8 STDs that you know
 - c. Which out of the 8 TSDs is the deadliest disease?

2. Mention 8 sense organs of your body
 - b. Expatriate fully the functions of each organ
 - c. What is Sexual Relationship?

3. What is a Drug?
 - b. Differentiate between drug addiction and drug addicts
 - c. What type of people could become addicts?

4. Write out the full meaning of the followings
 - i. STI
 - ii. HIV
 - iii. AIDS

iv. PID

v. NGU

b. Differentiate between HIV/AIDS

c. Write short notes on the followings and how they can be contacted?

i. Virus

ii. Bacteria

iii. Fungus

5. Out of the above mentioned STDs which one has no cure?

b. Write short note on the following terms

i. miscarriage

ii. Burning Sensation

iii. Cervix

iv. Sterility

COURSE FOUR

1. Who is a potential Drug Addict
 - b. What is a Hard Drug?

2. What type of people could become addict?
 - b. What is Drug Addiction?

3. What is Drug Abuse?
 - b. Why do young people turn to drugs?

4. What are the consequences of addiction?

5. Is it possible for an addict to withdraw?
 - b. What role can you play to discourage or to terminate Drug addiction in spreading among youth?

COURSE FIVE

1. What is Youth Friendly Clinic?
 - b. Why Youth Friendly Clinic?

2. Why should you encourage your brother/sister to use Youth friendly clinic?
 - b. What types of services are provided?

3. What type of staff do you find at the Youth Friendly Clinic?
 - b. What are the social and reproductive health problems of young people?

4. What is teenage pregnancy?
 - b. What is an unwanted pregnancy?

5. What is child trafficking and child labor?