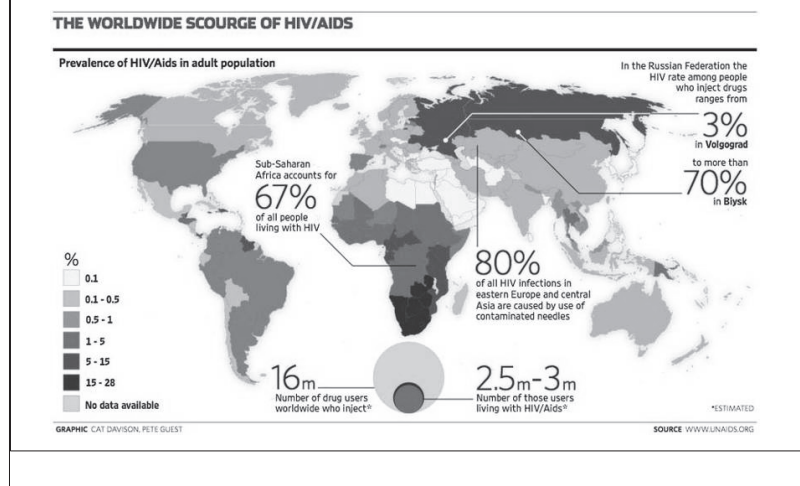


AIDS: A Worldwide Plague



AIDS stands for Acquired Immune Deficiency Virus. It is caused by the Human Immunodeficiency Virus (HIV). HIV-AIDS is a worldwide plague that claimed over 26 million lives between 1980 and 2009, making it one of the deadliest diseases in world history. This figure is probably an understatement, too, because many of these deaths occurred in developing parts of the world where medical recordkeeping is haphazard. Approximately 1.5 millions AIDS deaths and 2.7 new HIV infections occur each year. One estimate by population experts predicts that by 2030, 75 million people will have died of AIDS.

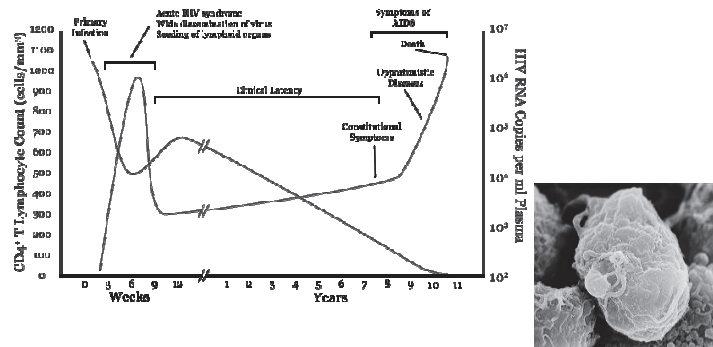
In comparison, the influenza pandemic of 1918 killed approximately 20 million people around the world, but it was gone by the end of 1919. The Black Death—the bubonic plague that ravaged Europe from 1349–1351—killed between one-third and one-half of the people of Europe (an estimated 75 million deaths). It returned throughout the years until the 19th century, but never with the virulence it had the first time.

AIDS, on the other hand, has existed for over 30 years and will still pose a major health problem for decades to come. Because a person can be infected with the AIDS virus (HIV) for a decade or more before showing symptoms of the disease itself, one person can pass the virus on to many other people before becoming aware that he or she is sick. This makes preventing the spread of the virus one of the highest health priorities in the world.

Essential Questions

- What causes AIDS?
- How is AIDS transmitted?
- Why has AIDS been viewed differently than other epidemics?
- What accounts for the different ways in which countries have responded to this disease?
- Do the wealthier countries of the world have an obligation to help poorer countries deal with AIDS?

The AIDS Virus



The HIV virus that causes AIDS

AIDS is caused by the Human Immunodeficiency Virus (HIV), which was identified in 1983 by researchers both in the United States and in France. HIV is a lentivirus, a subgroup of the retrovirus family. Unlike most viruses, it does not go away. Once infected with HIV, there is no cure, and as of 2012 no vaccine against it had been found. It has been difficult to develop drugs and vaccines against HIV and AIDS because the virus builds up tolerance to drugs over time and often mutates.

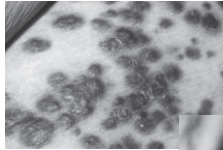
The most common way to become infected with HIV is through the transmission of bodily fluids during sex, exposure to infected blood that then enters the body through a cut or orifice, or an infection passed from a pregnant mother to her fetus or through breast milk after the child is born. AIDS cannot be caught through casual physical contact.

Once in the bloodstream, the AIDS virus attacks the cells of the immune system, known as CD4 cells, which help our bodies fight infection. These cells act as a host for the virus. All cells have surface proteins called receptors. HIV is able to attach itself to the receptors of the CD4 cells. After it has attached itself to the cell, HIV injects its RNA into the cell's fluids (cytoplasm). The RNA then does what is called "reverse transcription"—it designs a DNA strand that mimics the RNA sequence. When this is accomplished, the DNA strand is inserted into the host cell's DNA. The cell then begins producing many copies of the viral RNA. Once the copies have been made, they are released through "buds" on the host cell's surface that then break off and go infect other cells.

Image source:

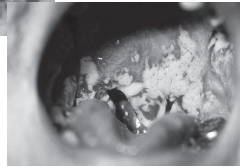
- <http://commons.wikimedia.org/wiki/File:Hiv-timecourse.png>

Symptoms of AIDS



Kaposi's Sarcoma lesions

- Kaposi's Sarcoma
- Pneumocystosis Pneumonia Carinii (PCP)
- Oral candidiasis (Thrush)



Oral candidiasis, or Thrush

HIV works by destroying the body's immune system, which leaves it vulnerable to what are called opportunistic infections—ones that seldom cause disease in people with normally functioning immune systems, but can be deadly to those whose immune systems have been weakened or destroyed.

Some of the opportunistic infections that were first detected in the early days of the AIDS epidemic were Kaposi's Sarcoma, Pneumocystosis Pneumonia Carinii (PCP), and oral candidiasis. Kaposi's Sarcoma is a form of skin cancer that produces purple and red-colored spotty lesions. It is usually found only among older men of Mediterranean heritage. When young, otherwise healthy men began showing up in physicians' offices with these lesions, doctors were mystified as to the cause. PCP can be easily treated by antibiotics, but when it attacks someone with a weak immune system these drugs will do no good. Many early AIDS patients died of PCP. Oral candidiasis, or "thrush," is a yeast infection. The fungus is normally found in the human body, but a functioning immune system keeps it under control. While thrush is not usually dangerous, if it proliferates in the throat and esophagus it can interfere with breathing and swallowing. Like antibiotics, in cases of advanced AIDS most anti-fungal drugs are not very effective. Another disease that has made significant inroads into the HIV-infected population—especially in developing countries and among poor population groups—is tuberculosis. This disease has caused hundreds of thousands of AIDS patients to die.

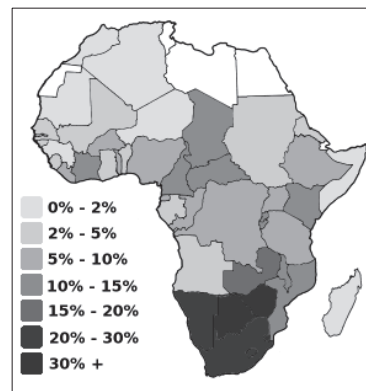
HIV also leaves those infected at risk for developing several neurological disorders which can affect their ability to function. Toxoplasmosis is a disease that results from a parasite. It can cause headaches, confusion, and seizures. It can also lead to encephalitis, a brain infection which can be fatal. The most common neurological disease that affects AIDS patients is cryptococcal meningitis. This disease can start out with a stiff neck and headaches, but can progress to confusion, sensitivity to light, vomiting, seizures, and psychosis. Cryptococcal meningitis can also lead to increased pressure on the brain, which can result in moving brain tissue, blood vessels, and cerebral spinal fluid from their normal locations in the skull. Another complication of this condition is papilledema, in which there is increased pressure on the optic nerve; this can lead to severe headaches and blindness. Cryptococcal meningitis is always fatal if left untreated and in AIDS patients, with their compromised immune systems, normal treatments do not work.

Many medical treatments for disease work because they rally the body's immune system and make it work more effectively. Vaccines contain a small dose of a dead virus, such as smallpox or influenza, which the body then produces antibodies against so that if the person is exposed to that disease, his or her immune system will fight it off. Once the immune system has been damaged, drugs that can easily cure these diseases are ineffective.

No one dies of HIV infection. The destruction of the immune system is what kills, because it leaves the body vulnerable to a variety of diseases that are usually not fatal in people whose immune systems are operating normally.

Some antiviral drugs have been developed that can stop HIV from attaching itself to cells. People afflicted with the virus who take these drugs can slow down the development of the infection into AIDS and more successfully fight off infections.

Out of Africa



Percentage of people ages 15-49
with HIV/AIDS

- Scientists have traced AIDS to a virus that developed in chimpanzees in central Africa
- The virus jumped to humans, probably through contact with or eating infected chimpanzees, in the late 19th or early 20th century
- Since HIV takes a long time to develop into full-blown AIDS, people can have the virus for as much as a decade without becoming sick
- The earliest known case of HIV infection was discovered in a plasma sample taken in 1959 from an adult man who lived in what is now the Democratic Republic of the Congo

Where did the AIDS virus come from? After years of study, the consensus among scientists is that HIV developed from the SIV (Simian Immunodeficiency Virus) that developed in monkeys and apes around 32,000 years ago. (Scientists can determine how long a virus has been around by analyzing its DNA.) However, monkeys and apes that carry SIV do not develop any disease comparable to AIDS.

Contact with animals can lead to viruses crossing from one species to another. This has happened with influenza, which can originate in pigs or birds, and smallpox, which is related to cowpox, a mild disease from which the first smallpox inoculations were derived. Scientists believe that sometime in the late 19th or early 20th century, the SIV virus crossed from monkeys and apes to humans (probably through eating the meat of infected animals) and then mutated to HIV once inside the human body.

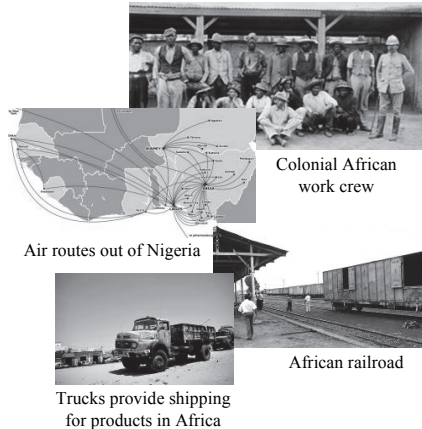
In the early days of the disease developing in humans, many things prevented it from becoming an epidemic. One thing was simply low life expectancies. In the late 19th and early 20th centuries, Africans could expect to live approximately 35–40 years. The HIV virus takes so long to develop into AIDS that many who became infected probably died before they started showing any signs of the disease. Others died before passing on the infection to their children. Furthermore, the disease was confined to small villages. People from central Africa did not travel widely before European countries started colonizing that area.

Picture source:

- http://commons.wikimedia.org/wiki/File:Africa_HIV-AIDS_300px.png

How did AIDS Spread Beyond Africa?

- Colonization of Africa probably helped the virus to spread from its central African origins
- Increased urbanization
- Population migration for work crews
- Food supply
- Malnutrition
- Increased travel within Africa
- Modern travel by air, railroad, and trucks



Several theories about the spread of AIDS cite European colonization as a major contributing factor. As countries such as France, the United Kingdom, and Belgium colonized areas of Africa, they built cities, railroads, and seaports. They used men recruited from small villages as laborers. These men were concentrated in work camps and spent months away from their families. This weakening of traditional family structures led to more use of prostitutes who, once they became infected, spread the disease to multiple sex partners. Colonial authorities also provided “bush meat” (wild game that sometimes included chimpanzees) to their workers, which probably gave the virus to many more men than would have otherwise caught it, since bush meat was not an everyday food source for villagers. In addition, Europeans took food from villages to feed workers, which left the women, children, and old men in the villages malnourished and more susceptible to disease.

As railroads and roads proliferated within Africa, people were able to move about the continent more easily. This led even more people to migrate in search of jobs in the cities, where they often lived in unsanitary conditions. Prostitution was also more common in the cities, as was contact with other people from different areas.

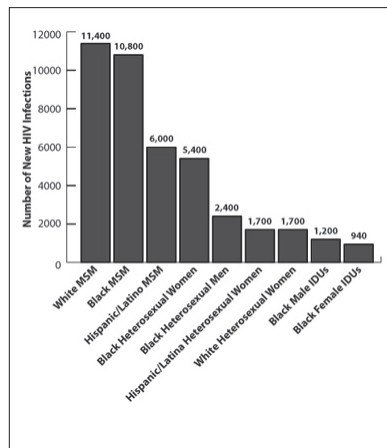
Air travel made this trend worse, as did the arrival of transportation by automobile and truck. With airplanes, people with the virus could not only travel within Africa but to other continents as well. Within Africa, increased dependence on trucks to transport goods from place to place created a new mode of transmission for the virus, since long-distance truckers have frequent contact with prostitutes, become infected, and then pass the virus to their wives upon their return.

African workers have also traveled to other continents in search of jobs and the AIDS virus has traveled with them.

Picture sources:

- Air routes out of Nigeria: <http://commons.wikimedia.org/wiki/File:ArikAirRoutes.png>
- African railroad: http://commons.wikimedia.org/wiki/File:Uganda_railways_assessment_2010_-_Flickr_-_US_Army_Africa_%2822%29.jpg
- African truck: <http://commons.wikimedia.org/wiki/File:African.truck.jpg>

The United States



Dr. Robert Gallo, one of the discoverers of the AIDS virus



Surgeon General C. Everett Koop



Dr. Anthony Fauci of the Center for Disease Control in Atlanta, Georgia

AIDS first came to the attention of doctors in the United States in the early 1980s. Physicians in New York, Los Angeles, and San Francisco were seeing young male patients who were suffering from rare opportunistic infections such as Kaposi's Sarcoma and Pneumocystosis Pneumonia Carinii. These infections did not respond to treatment with antibiotics or other treatments. The only thing the young men had in common was that they were gay. In 1981, the U. S. Centers for Disease Control in Atlanta reported on the condition for the first time in its weekly mortality newsletter. It was the first official recognition that the men in question were suffering from a common syndrome. By 1982, hundreds of cases were being reported from 20 states; although the majority of those who were sick were gay men. Because of this, the disease was first called Gay Related Immune Deficiency (GRID). Some intravenous drug users had also developed the disease.

In July 1982, doctors at a conference gave the disease a name: Acquired Immune Deficiency Syndrome, or AIDS. In addition to gay men and intravenous drug users, cases appeared that year for the first time in heterosexual hemophiliacs, all of whom had used a clotting product made from donated blood. In addition, the CDC received reports (largely from Florida) of cases among immigrants from Haiti.

Because the disease seemed concentrated among gay men and IV drug users, social disapproval of these groups made support for research and AIDS education made many in President Reagan's administration uncomfortable speaking about the subject. Even some doctors were embarrassed discussing their patients' sex lives with them.

In 1984, two doctors—Robert Gallo of the U. S. National Cancer Institute and Dr. Luc Montagnier of the Louis Pasteur Institute in France—each discovered a virus they believed caused AIDS. The two viruses were the same, and were soon named the Human Immunodeficiency Virus (HIV).

The number of AIDS cases and deaths from the disease kept rising. By 1985, over 15,000 people in the United States had AIDS. In that same year, a blood test to detect the virus was developed, but by that time it is estimated that thousands of hemophiliacs had contracted the virus.

Despite reluctance on the part of the Reagan administration, Surgeon General C. Everett Koop issued a report which recommended measures to prevent the spread of AIDS, including educating children about the disease.

In the late 1980s the U. S. Food and Drug Administration approved AZT, an antiviral drug, for use in HIV positive and AIDS patients. AZT was also found to prevent pregnant women from passing the virus to their babies in the womb or afterward through breastfeeding. However, a year's supply of AZT cost over \$7000 and few AIDS patients had sufficient funds or health insurance to cover the costs of the drug. Many felt that the FDA was slow to approve new drugs to fight the disease, and ACT UP, an organization founded by gay writer Larry Kramer, staged several protests against the agency and pharmaceutical companies, which they accused of profiting off people's deaths.

Combating AIDS

- 1990—Congress passes Comprehensive AIDS Resources Emergency Act
- Prevention measures
- AIDS walks and AIDS quilts
- New drugs made AIDS more of a chronic condition rather than a fatal disease



This red ribbon became a symbol of AIDS awareness



Panels of the AIDS quilt at a rally in Washington, D.C.

By 1989, in the 25–44 age group AIDS was the second leading cause of death for men and the sixth leading cause for women. By 1990, over 100,000 people had died of the disease in the United States.

In 1990, Congress passed the Comprehensive AIDS Resources Emergency Act, which was designed to improve access to healthcare for poor people and those lacking health insurance who suffered from HIV/AIDS. By this time, the public had become much more aware of the disease and understood that it did not only affect homosexuals and drug abusers. Many cities started holding AIDS walks that raised millions for research. The AIDS Memorial Quilt Project also raised awareness and commemorated those who had died of the disease. People created individual 3-by-6-foot panels celebrating a friend or relative who had died from AIDS. The quilt was nominated for a Nobel Peace Prize in 1989, and represents the largest community art project ever created. Together, the quilt's panels form an unforgettable display designed to ensure that the victims of the disease won't be forgotten.

A study done in the early 1990s showed that free condom distribution and handing out sterile needles and bleach were successful in decreasing new cases of HIV infection, but no federal money was available to sponsor such programs. Cities therefore often did it on their own, handing out thousands of condoms and needles. Such programs helped decrease the number of new AIDS patients in those cities. Advertising programs also encouraged people to use condoms and get tested for HIV.

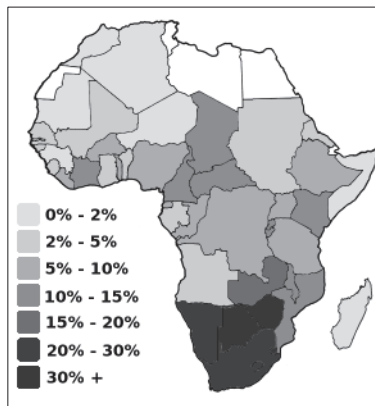
By 1997, testing and condom use had helped decrease the number of deaths from AIDS significantly in the United States, particularly among gay white males and hemophiliacs. However, infection rates and new cases of AIDS were still prevalent in the African American community; most of those infected were IV drug users, along with their partners and children.

Although by 2010 new drugs were developed that, particularly taken in combination with other anti-AIDS drugs, could suppress HIV by 99 %, the costs of these drugs and access to them limited their effectiveness in certain high-risk populations, such as African Americans and Hispanics who were IV drug users.

In 2010, Congress passed the Affordable Care Act, which was designed to require health insurance companies to provide coverage to people with pre-existing conditions, including HIV and AIDS. It was hoped that as more people can get access to new drugs, the death rate would continue to drop.

There is still no cure for AIDS, but new drugs developed between 2000–2010 have, for many, made it more of a chronic condition that can be controlled. How long these drugs will stave off the development of AIDS remains to be seen.

AIDS in Africa



- Of the world's total number of HIV infected people and those suffering from AIDS, two-thirds live in sub-Saharan Africa
- The rates of HIV and AIDS prevalence vary from country to country, from under 1% of the adult population in Senegal to 26% in South Africa
- Over 14.8 million children in Africa are AIDS orphans, having lost either one or both of their parents to AIDS
- Unlike the United States, in Africa the primary modes of transmission are heterosexual sex and in-utero infection
- HIV-AIDS has ravaged Africa's economic and social systems in addition to the impact upon healthcare

AIDS originated in sub-Saharan Africa, which has the world's largest number of people living with HIV—approximately 23 million in 2010. In that same year, there were 1.2 million deaths from AIDS and 1.9 million new infections. The main modes of transmission of the virus are heterosexual and homosexual sex. In North Africa, where the vast majority of people are Muslims, religious strictures against sex between men and premarital sex seems to have kept the number of cases of AIDS and HIV infection lower than those on the rest of the continent.

Although the rates of HIV infection and AIDS differ between countries, the nations of sub-Saharan Africa share some features that make the fight against HIV-AIDS more difficult than it is in some areas of the world. These factors include poverty, struggling economies, poor health and education infrastructures, scarcity of health workers and medical supplies, scarcity of teachers, stigmatizing of groups at risk (such as sex workers and male homosexuals), and, in some cases, slow response by governments to the epidemic.

HIV-AIDS has also ravaged many countries' economies. Most African countries have struggled economically, and HIV-AIDS has hurt the productivity of these economies because AIDS deaths have decreased the overall labor force and increased absenteeism by sick workers. Skilled workers (such as engineers, teachers, and healthcare workers) are not easily replaced. Businesses in those countries that have the highest rates of infection reported that as of 2009, the epidemic had decreased profits for 40% of companies. Economists have estimated that the countries most affected have Gross Domestic Product (GDP) that has decreased by about 1.5% per year; at that rate, the economies in these nations will have been reduced by almost a third by 2015.

This decrease in the economies also results in lower taxes collected by governments at a time when more funds are needed to fight the epidemic. It is a cycle that threatens what progress has been made so far.

HIV-AIDS has put an enormous strain on the healthcare systems of the area. Some countries have lost as much as 17% of their health care workers to AIDS, and a study in South Africa showed that 40% of midwives were infected with HIV, which can put the mothers and infants under their care at risk. Most hospital care is only available in the cities, which lessens the amount of people who can be treated as well as distribution of antiviral drugs that can slow down the progression of HIV into AIDS. In addition, over 50% of all hospital beds are occupied by AIDS patients; many of these people don't get to the hospital until they are extremely ill, so when they are hospitalized it means they need more intensive care and stay hospitalized for longer periods of time.

Picture source:

- http://commons.wikimedia.org/wiki/File:Africa_HIV-AIDS_300px.png

The Effect of AIDS on African Families

- Financial
- AIDS orphans
- Education
- Loss of key members of a village's community



AIDS orphans, Malawi

Perhaps the most heartbreaking effects of HIV-AIDS are the ones on families. The poorer a family, the more severe the consequences of the illness can be. In Africa, men are usually the primary income providers for the family. In rural areas, men are responsible for raising cash crops (coffee, tea, sugar, cocoa) and women grow the grains and yams that make up much of the rural African's diet; women are also responsible for caring for their children. When a man dies, his wife often has to try to earn a living, leaving her children unsupervised. This often leads to children dropping out of school, either because the family cannot afford the school fees or because an older child has to take care of younger ones while the mother works. Furthermore, having a sick parent in a household eats up income that would otherwise go to necessities—even food. When a family member suffers from AIDS, almost 50% of households end up lacking an adequate amount of food at least some of the time. In addition to lost income, families have more expenses when someone gets sick with AIDS because of the money they have to pay for healthcare. They often lose everything of value as they sell anything they can to raise money—even their tools and land. They are often destitute by the time a family member dies, and funeral expenses can then drive them further into debt.

Almost 15 million children have lost parents to AIDS. These deaths often lead to the breakup of families if the remaining parent cannot care for them. Children are also sometimes farmed out to relatives who have economic and/or health concerns of their own. Some children are simply abandoned, and it is not unusual to find one child—perhaps as young as 10 or 12—responsible for the total support of younger siblings. Finally, there are some orphanages that take care of these children, but this is not an ideal solution either for survivors of severe emotional trauma, as is often the case with AIDS orphans. Children raised in orphanages—particularly if they enter at a very young age—often develop problems as they grow older because they have not been socialized to the society they will enter as adults. In addition, babies in orphanages rarely get the nurturing they need in order to be able to form loving, trusting attachments to others as they grow older. Children raised in these circumstances often have difficulty learning, which limits their ability to succeed later in life.

AIDS also has a negative effect on education. In many countries, AIDS has severely decreased the number of teachers, who were already in short supply. In rural areas, village schools often have only one or two teachers. If one or both of them contracts the disease, children's education gets disrupted or ends entirely. In addition, teachers often play an important role in educating the public about HIV-AIDS; with fewer teachers, the community loses an important source of information on how to combat the disease.

Picture source:

- http://en.wikipedia.org/wiki/File:Malawi_AIDS_Orphans.jpeg

African Governments' Response to AIDS



President Thabo Mbeki
of South Africa



President Yoweri Kaguta Museveni
of Uganda

The actions a country's government takes can have an enormous impact on how it deals with the epidemic. Two countries offer prime examples of this: South Africa and Uganda.

From 1999 to 2008, South Africa was headed by President Thabo Mbeki, who doubted that AIDS was caused by a virus. He felt that AIDS was due to poverty, malnourishment, and unsanitary living conditions. His health minister, Manto Tashabalala, doubted the efficacy of antiviral drugs and at one point, Mbeki prohibited public hospitals from distributing them to HIV-AIDS patients. Instead, the health minister recommended eating beetroot and garlic to fight the infection. The long delay in taking measures to prevent further spread of the disease probably cost thousands of South Africans their lives.

Mbeki resigned in late 2008. By 2009, almost six million South Africans had become infected with HIV or had developed AIDS—the highest number of people in any sub-Saharan country, with over 300,000 AIDS deaths occurring that year. The government that took power after Mbeki committed itself to combating the epidemic through mass testing for HIV, educating the public, and distributing condoms. The percentage of people receiving antiviral drugs increased from Mbeki's days to 55% by the end of 2010, and the government made it a goal to soon reach 80% of people. Between February 2010 and May 2011, the number of people receiving antivirals had grown from 923,000 to 1.4 million.

Still, many problems have to be overcome. Rape is rampant in South Africa and with the high rate of HIV infection in men, rape victims often get infected as a result. Obtaining enough antiviral drugs is still difficult, and efforts to increase education about AIDS need to be increased as well. The country has made great strides since the Mbeki days, but as Health Minister Dr. Aaron Motsoaledi said in 2010, "If we stop [doing] anything, we will just reverse all our gains."

In contrast, Uganda started fighting HIV-AIDS aggressively much sooner than South Africa did. In the early 1980s, many people began dying of what was being called the "slim disease," which was recognized as AIDS in 1982. President Yoweri Naguta Museveni came to power in 1986 and immediately recognized that an epidemic was sweeping the country; 29% of urban dwellers were infected with the virus. The major form of transmission was heterosexual sex, particularly between men and female sex workers; the men would then infect their wives, who in turn could pass the virus on to their unborn children.

In 1987, Uganda began to make concerted efforts to control the spread of the disease. It focused on educating the public as to safe sex practices (abstaining, monogamy, and condom use), making sure that the virus was not present in the blood supply so that people could not get it from transfusions, and encouraging a grassroots effort in rural areas to provide medical care and other support to those infected with the virus. As a result of these efforts, by 2001 the number of adults in Uganda with HIV fell from its 1991 high point of 15% to around 5%.

Uganda has dedicated a lot of money to fighting HIV-AIDS, some of it from the government and much of it from international donations. This money allowed the country to supply antiviral drugs free to HIV-AIDS patients since 2004. These drugs have helped cut the transmission of HIV from mothers to their children.

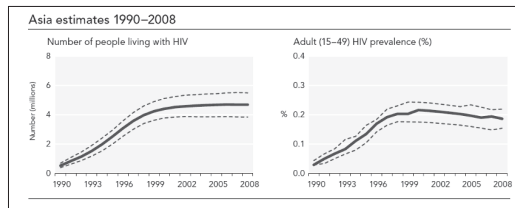
In 2010 over 200,000 people in Uganda received antivirals, but that still was under half the amount needed. One reason for the shortfall is that the world's supply cannot keep up with the need. To counter this problem, Uganda started manufacturing generic forms of the drugs in 2009. Another reason more people are not receiving the drugs has to do with the stigma attached to being identified as having HIV or AIDS, which leads people to avoid treatment for fear of being ostracized by their community. The country has also used almost every form of communication (even including music to billboards) to spread the message not only about changing behavior, but to fight the stigma and prejudice those with the disease often face.

Uganda was also the first country in sub-Saharan Africa to start offering free voluntary AIDS testing, not only in the cities but through a door-to-door campaign in the rural areas. In addition, all patients who visit any healthcare facility—no matter the reason—are tested for HIV unless they "opt out." Only 5% of people told about the test chose not to have it done.

The experience of Uganda shows what can be done when a government puts its full support behind programs designed to prevent the spread of HIV-AIDS and treat those who are already ill.

AIDS in Asia

- 4.79 million HIV-positive people live in Asia
- Asia is home to two of the world's most populous countries: India and China
- Even though infection rates in these countries are relatively low compared to sub-Saharan Africa, millions of people are still affected
- Rates of HIV prevalence vary according to country.
- Main ways the virus spreads: unprotected sex, intravenous drug use, mother-to-child transmission



AIDS came later to Asia than to other parts of the world. The first cases were not discovered until almost a decade after the disease appeared in the west, but by the end of the 20th century the virus had started to appear in many Asian countries.

By 2010, Asia had accounted for more AIDS-related deaths than any other part of the world except sub-Saharan Africa. Some countries have made a lot of progress fighting the disease (such as Cambodia, Myanmar, and Thailand) while in others such as Indonesia, Pakistan and Vietnam, the number of people affected continues to rise.

HIV-AIDS has spread in Asia primarily through unprotected heterosexual and homosexual sex, IV drug use, and mother-to-child transmission. Sex tourism is widespread in certain Asian countries such as Thailand and the Philippines; it is possible that the virus entered the continent through such tourists. Moreover, many men in Asia visit sex workers regularly and then transmit the virus to their wives and girlfriends.

IV drug use is the predominant mode of transmission in China, India, Malaysia, and Vietnam. Over 50% of infected people in China are IV drug users. Drug use is common among sex workers, who often take their earnings and buy IV drugs. At the end of 2010, almost 160,000 children were HIV positive; most of them got the virus from their mothers.

As in Africa, countries in Asia have taken different approaches to dealing with the spread of HIV-AIDS.

The first cases of AIDS that appeared in China in 1985 involved people who had traveled abroad. The government responded by refusing to allow students from outside the country to enroll in schools unless they submitted to an HIV test. Until 1989, when cases involving drug users were identified in Yunnan, China refused to believe that AIDS was a domestic problem. By 1998, all of China's 31 provinces had reported cases of HIV infection.

The new century brought forth a new attitude on the part of the government. To fight infection among drug users, it sponsored massive needle-exchange programs in the provinces most affected by AIDS. In 2004, China tried to fight drug use by opening methadone treatment centers. This pilot program resulted in a decrease in drug use and led to more than 600 treatment centers being opened by 2010. Although China's legal system treats drug users harshly, which discourages many of them from coming forward for treatment, programs are in place that try to provide sufficient antiviral drugs to all who need them and to educate the public about safer sex practices.

Thailand's aggressive approach to preventing the spread of HIV-AIDS can serve as a model for all nations, especially in the developing areas of the world. AIDS made its first appearance in Thailand in the mid-1980s; most of the people who developed the disease were sex workers, IV drug users, and sex tourists from abroad. By 1991, HIV prevalence had risen to 40% among IV drug users and 44% among sex workers. These people belonged to groups who were looked down on by most of Thai society, but Prime Minister Anand Panyatchun's government made AIDS prevention a priority. Radio and television stations aired anti-AIDS ads every hour and AIDS education was required in all schools.

One of the biggest sources of HIV infection was sex tourism. The government responded by distributing free condoms to all businesses that catered to the sex trade and insisting that sex workers use them. Follow-up inspections took place later, and any business that ignored the directives was closed down. Without this step, health experts say, the rate of infection among sex workers and their customers would probably be ten times what it is today. Between 1992 and 1996, the government also spent more than \$80 million dollars on its AIDS prevention programs each year. Thailand also made it a priority to provide antiviral drugs to pregnant women to prevent mother-to-child transmission.

All of these measures reduced the prevalence of HIV in the Thai population, but in recent years some complacency has set in and the government has cut funding for these programs. Health officials are worried that there may be a second wave of infection looming in the future.

AIDS in the Caribbean and Latin America



Patients at a clinic in Haiti



UNAIDS Director Michel Sidibé visits Brazilian children afflicted with AIDS

- As of 2009, the Caribbean islands had a higher rate of HIV infection than anywhere else in the world outside sub-Saharan Africa, but rates varied from country to country
- Heterosexual sex is the main form of AIDS transmission in the Caribbean
- In 2008, Latin America had more people living with HIV than the United States, Canada, Japan, and the United Kingdom combined, but countries have different rates of infection
- Homosexual sex and IV drug use are the main forms of transmission in Latin America

The Caribbean is made up of several island nations with different cultures, languages, political systems and economic conditions. All of these factors affect both the prevalence of HIV in the population and the countries' ways of handling the epidemic. Predominant modes of transmission also differ from country to country; overall though, heterosexual sex is the most common throughout the region.

One example of how geography has affected a nation's response to HIV-AIDS is Haiti. Haiti is the poorest country in the Western Hemisphere and one of the poorest in the world. It also has one of the highest infection rates in the region. Before 2010, the country was making progress in reducing the number of new infections by promoting safe sex methods. Training in AIDS education was provided to teachers and volunteers, who would then pass on the information to others. In January 2010, however, a very powerful earthquake centered in the capital, Port-au-Prince, struck the island nation. Since then, efforts to restrict the spread of the disease have been undermined by the country's damaged infrastructure (including roads, airfields, and hospitals) a displaced population, and the diversion of funds for anti-AIDS programs to rebuilding projects help the country recover from the earthquake. Haiti depends greatly on donations from abroad to supply it with antiviral drugs.

Brazil provides another example. The largest country in South America discovered its first AIDS case in 1982 while it was still under a dictatorship. However, a consortium of non-governmental organizations (NGOs) and citizen groups demanded not only that Brazil move towards democracy, but that the disease not be ignored. In 1985, Brazil became a democracy and the government set up a program that focused on gay men, the group in which the disease had first occurred. In 1988, Brazil passed a new constitution, which included legal protection against discrimination for people with HIV and asserted their right to free healthcare. Anti-AIDS education continued along with free condom distribution. When antiviral drugs became available, Brazil made them available for free. Since this policy went into effect, the annual death rate from AIDS dropped from 9.6 per 100,000 in 1996 to 6.1 in 2008. In an act that caused tensions with the United States, Brazil contracted with a private drug company to violate the patent on an AIDS drug and produce it on its own. Brazil's public health system also provides free HIV treatment; the process includes counseling and since antiviral drugs became widely available, more people have come forth to be tested.

One advantage Brazil has over other countries in the region is its culture portrays sex not as something to be ashamed about, but as something that can be discussed openly. This has made it easier to educate people about safe sexual behavior. A program to increase condom use has had a great impact on sexual behavior. In 2008, the country opened its first condom factory and, in 2009 almost half a billion condoms were distributed. Condoms are handed out during the carnivals that are celebrated around the country before Lent, when tourism is also high. Brazil has also used celebrities and media to pass along messages about preventing HIV. One of the most innovative uses involves inserting messages into popular soap operas. These shows now feature characters who have HIV. The media campaign also targets sex workers and encourages them to take care in their trade. In Brazil, prostitution is legal. This has resulted in the government being able to approach these workers and establishments without them being afraid of arrest.

Brazil's success has resulted from strong government leadership; effective links between the government, civic groups and NGOs; the promotion of condoms; testing and free treatment; and a strong commitment to overcome the stigma often associated with those affected by HIV-AIDS.

AIDS in Europe

- In Russia and eastern Europe, most of HIV and AIDS patients are intravenous drug users
- In western Europe, most cases of AIDS and HIV infection come both from men having sex with men and from intravenous drug use
- In western Europe, where universal health care is provided by governments, treatment is available to all at little or no cost
- In Russia and eastern Europe, treatment availability is uneven, and social stigma attaches to those who have the virus or the disease



HIV Prevalence in Russia's provinces



A poppy field in Afghanistan

A wide disparity exists between the HIV-AIDS epidemic in the nations of western Europe and those of eastern European countries and the Russian Federation.

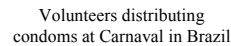
As of 2010, about 1.5 million people in eastern Europe, Russia, and central Asia (Kazakhstan, Uzbekistan, etc.) have HIV. More than 90% of those affected live in Russia and the Ukraine. Since 2001, the rate of HIV infections in this region increased by about 250% while sub-Saharan Africa and Asia saw their rates of infection fall.

The most common form of transmission of HIV comes through intravenous drug use. Much of southern Russia borders on Afghanistan and other opium-producing areas. Drug trafficking is rampant throughout the region. Eastern Europe and central Asia are home to more than 3.5 million people who inject drugs; about 25% percent of these people are infected with HIV. Only 70 needle exchange programs exist in Russia, which has over two million IV drug users. Sexual contact accounts for many of the new cases as well. This includes both heterosexual and homosexual sex; one out of every ten new infections afflicts an inmate in prison. Prisoners, drug users, and homosexuals are all regarded with seen as disreputable by eastern European and Russian societies; many education efforts have often been stymied by prejudice.

Distribution of antiviral drugs in these regions falls behind that of several countries that have a much higher percentage of HIV-AIDS sufferers. Part of this is the result of reluctance of drug users to be identified because they may face incarceration. In addition, Russia does not produce its own antiviral drugs, as do India and Brazil, so it remains dependent on imports from other countries. Sometimes the supply is not adequate to fill the need.

In Western Europe, Portugal has the highest rate of HIV infection, at 0.6% of the population. Central European countries generally have the lowest rates, around .01%. The primary mode of transmission of HIV-AIDS in western Europe is through men having sex with other men, while in Central Europe heterosexual sex is the most common means. Western Europe is composed of countries that have strong economies and state-of-the-art, government-run healthcare systems. Both western and central Europe have been most successful in reducing infections passed from mothers to children by testing all pregnant women and putting the ones with HIV on antiviral drugs, thus reducing the number of children born with the virus. In addition, because the healthcare system is well-funded, hospitals do not have to reuse hypodermic needles (as is often the case in Africa) and healthcare workers are well-supplied with the equipment they need to protect themselves from accidental transmission from patients. European countries have also made strong efforts to set up needle exchanges to cut down the incidents on virus transmission in injection drug users. Another problem that still needs to be more effectively addressed is the fact that most European countries have large numbers of immigrants from countries where HIV-AIDS is more prevalent. Often these groups are marginalized within the larger society; language barriers and cultural differences also lead to difficulty in contacting people within these groups. Some countries now offer voluntary counseling, testing, and information leaflets in a variety of languages for immigrants.

However, the very success in fighting the epidemic in Europe has left many complacent, according to virologist François Barré-Sonoussi. "They see HIV-AIDS as a chronic disease—not as one that can kill." This feeling has led to an increase in unsafe sexual behavior, particularly among homosexual men. If this attitude of complacency continues, Europe might see an increase in the number of new cases of HIV-AIDS.

[illegible]

- Needles: http://commons.wikimedia.org/wiki/File:Needle_exchange_supplies.jpg
- Condom distribution: Evane Manco