

- PN-ACF-186

INFORMATION
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Introduction
References

International Control Programme
World Health
Director of Population and Development

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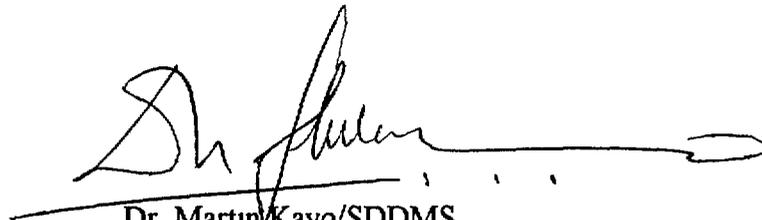
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Foreward

AIDS has quickly become a very serious problem in Kenya. By June 1994 almost 50,000 deaths due to AIDS had been reported to the Ministry of Health. This booklet and the presentation on which it is based are intended to provide accurate information about the current status of the epidemic, the likely future consequences and the programmes that can combat it.

This booklet and the companion presentation have been prepared through a joint effort of the Kenya National AIDS Control Programme and the National Council for Population and Development. This effort has also benefited from the feedback provided by many individuals who saw early versions of the presentation. We welcome additional comments from people who read this booklet so that future versions can be improved.

Finally, I would like to thank the United States Agency for International Development for financial support and The Futures Group International and Research Triangle Institute for technical assistance provided through the RAPID Project.



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National AIDS/STD Control Programme
July 1994

Introduction

The disease called AIDS, Acquired Immune Deficiency Syndrome, has become a serious health problem in many countries around the world. Over 850,000 AIDS cases worldwide have been reported to the Global Programme on AIDS (GPA) as of the end of 1993 [GPA, 1994]. GPA estimates that the actual number of cases is about 3 million. In addition, another 12 million people are estimated to be infected with HIV, Human Immunodeficiency Virus, the virus that causes AIDS. (A person can be infected with HIV without having any of the symptoms of the disease. During the 5 to 10 year period before a person develops symptoms, that person can transmit the infection through sexual contact to other, uninfected people.) In sub-Saharan Africa about 7 million people are infected.

The virus that causes AIDS already infects many Kenyans. For every 18 adults, one is infected. In urban areas, one of every nine adults is infected. Most of these people do not know they are infected. More than 150,000 people have already developed AIDS since the beginning of the epidemic (although only about one-third of these have been recorded in the official health statistics). Since there is no cure for AIDS, this disease threatens the social and economic well-being of the country. However, this is not inevitable. If we act now, there is much we can do to slow the spread of AIDS.

This booklet is intended to provide information about the AIDS epidemic in Kenya. This material is also available as a slide or interactive computer presentation. The information is provided in four major topics:

| | |
|----------------------|--|
| Background | What we know about AIDS in Kenya today |
| Projections | The number of people who might develop AIDS in the future if current trends continue |
| Impacts | The social and economic impacts of AIDS |
| Interventions | What needs to be done to prevent the spread of AIDS |

Requests for presentations of this material or copies of this booklet should be directed to the National AIDS Control Programme or the National Council for Population and Development. Their addresses are located on the last page.

I. Background

The HIV/AIDS Pyramid

Sentinel Surveillance Results

Current Estimates of HIV Prevalence

Transmission Mechanisms

Incubation Period

Age Distribution of Reported AIDS Cases

The HIV/AIDS Pyramid

There have been 49,879 cases of AIDS reported to the Ministry of Health since the beginning of the AIDS epidemic in Kenya through June 24, 1994 [Kenya National AIDS Control Programme, 1994] AIDS has spread throughout the country, cases have been reported from every district. These reported AIDS cases represent the visible part of the epidemic. This is what most people see. However, there is much more to the epidemic than the number of reported cases.

We know that not all AIDS cases are reported. This can happen for several reasons:

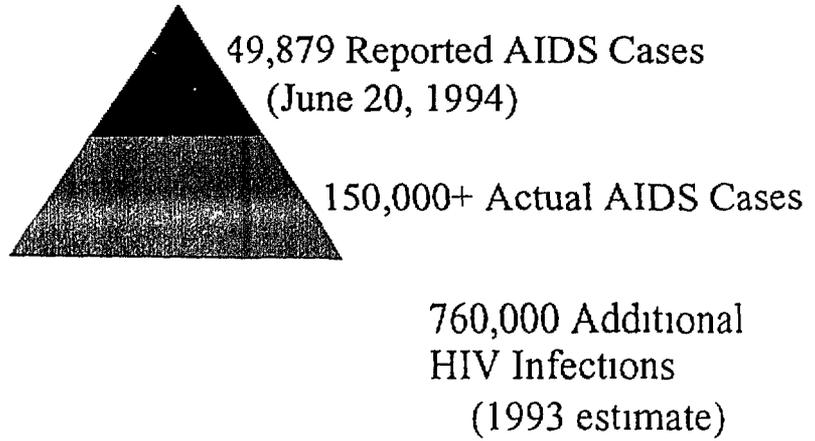
- some people never seek hospital care for AIDS,
- some doctors may not want to record a diagnosis of AIDS because of the stigma attached to AIDS,
- some people with HIV infection may die of other diseases before they are ever diagnosed as having AIDS, and
- some rural health care facilities may not have the capability to test for HIV infection.

The true number of AIDS cases in Kenya is not known, but probably numbers well over 150,000.

AIDS cases are only the tip of the pyramid. Many more people are infected with HIV, the virus that causes AIDS. In 1993 it is estimated that there were about 760,000 people infected with HIV. This includes about 730,000 adults and 30,000 children. Most of these people do not know they are infected. They may have no symptoms at all. However, almost all, if not all, will develop AIDS and die within the next 10 years or so. There is very little we can do about that. There is no cure for AIDS.

| |
|--|
| <p>AIDS stands for Acquired Immune Deficiency Syndrome. It is a disease that is caused by the HIV virus. It acts by weakening the immune system, making the body susceptible to other diseases.</p> |
|--|

The HIV/AIDS Pyramid

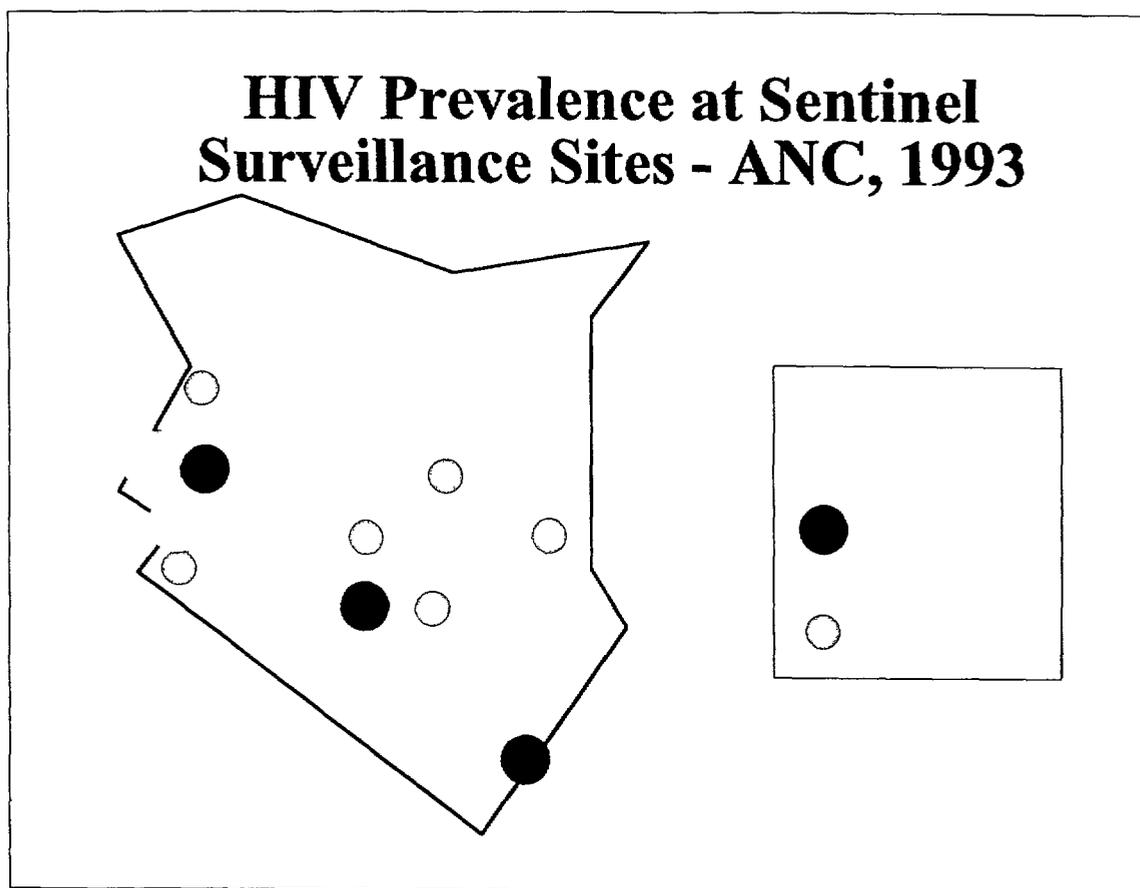


Sentinel Surveillance Results

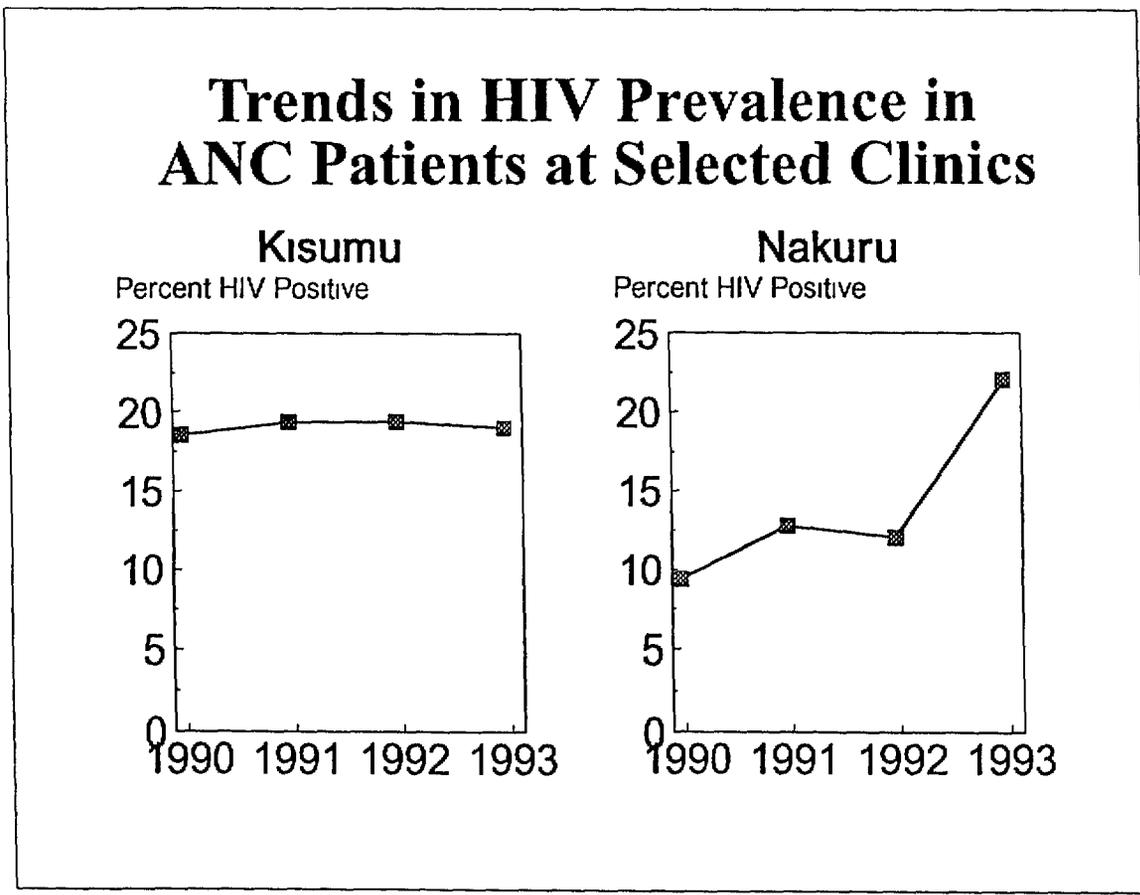
Kenya has a sentinel surveillance system that provides the basis for estimating the extent of HIV infection. The sentinel surveillance system operates in 13 sites around the country. These sites are all ante-natal clinics, where pregnant women go for care during pregnancy. Each year, 200-300 pregnant women are tested for HIV in each site. The results are reported to the National AIDS Control Programme.

The results for 1993 show that there are several places in Kenya — Busia, Kisumu, Nakuru — where the proportion of pregnant women who are infected with HIV is between 20 and 30 percent. In several other sites — Mombasa and Nairobi — 10-20 percent of pregnant women are infected. In Kitale, Kakamega and Nyeri infection rates are 5-10 percent. Finally, there are some other sites — Kisii, Kitui, Meru and Garissa — where infection rates are 2-10 percent. These sites may have lower infection rates because behavior patterns are different or because the epidemic started later in these areas. However, it is clear that the levels of HIV infection are alarmingly high in some parts of the country.

Using the sentinel surveillance data and adjusting it to be representative of the total population, the National AIDS Control Programme has estimated that there are over 760,000 people in Kenya with HIV infection.



Trends in HIV infection are shown for two sentinel surveillance sites — Kisumu and Nakuru — for the last four years. They show the percentage of pregnant women visiting the clinic who are infected with HIV. Kisumu is representative of an area that has high infection levels for some time. The fact that HIV prevalence is not changing does not mean that there are no new infections. It means that the number of new infections each year equals the number of people dying each year from AIDS. Nakuru is an example of an area that had lower infection levels in the past, but is experiencing rapid increases in the number infected. The rapid spread of HIV infection means that no district in Kenya can be complacent about AIDS, even if HIV levels are currently low. HIV can spread very rapidly and become a major problem in a time period as short as three or four years.



Results for each of the sentinel surveillance sites are shown in the table below. It should be noted that these are not exact estimates since the number of women tested varies by year and by site. When the number tested is small, the uncertainty associated with the estimate is high. However, taken as a whole, these results describe the extent of HIV infection in urban Kenya.

**Pregnant Women Testing Positive for HIV
(Percent)**

| <u>Sentinel Site</u> | <u>1990</u> | <u>1993</u> |
|----------------------|-------------|-------------|
| Busia | 17 | 22 |
| Garissa | 4.9 | 3.8 |
| Kakamega | 5.3 | 8.6 |
| Kisii | 1.6 | 2.5 |
| Kisumu | 19 | 20 |
| Kitale | 3.5 | 7.5 |
| Kitui | 1.0 | 2.0* |
| Meru | 2.7 | 2.3 |
| Mombasa | 10 | 16 |
| Nairobi | 5.8 | 17.1 |
| Nakuru | 9.9 | 22 |
| Nyeri | 2.9 | 6.4 |
| Thika | 2.5 | NA |

*1992 data

Current Estimates of HIV Prevalence

HIV probably started to spread in Kenya in the late 1970s or early 1980s. One commonly used measure of the extent of HIV in a population is adult prevalence, the percentage of adults (ages 15 and older) who are infected with HIV. Although HIV prevalence was very low in Kenya during the early 1980s, it has been increasing rapidly in the past few years. The National AIDS Control Programme estimates that by 1993, adult HIV prevalence had increased to about 5.7 percent (with a range for the estimate of 5.2-6.2 percent).

In urban areas prevalence is estimated to be twice as high, about 11-12 percent. That means that there are about 250,000 HIV-infected adults in urban areas.

There is very little information about HIV prevalence in rural areas. It is probably around 4-5 percent. This implies that there are about 480,000 HIV-infected adults living in rural areas.

Although prevalence is higher in urban areas, the number of people infected in rural areas is larger than in urban areas. AIDS is not just an urban problem.

Adult HIV Prevalence

1990 → 1991 → 1992 → 1993
3.5% → 4.5% → 5.3% → 5.7%

Urban prevalence = 11-12% (1993)

Rural prevalence = 4-5% (1993)

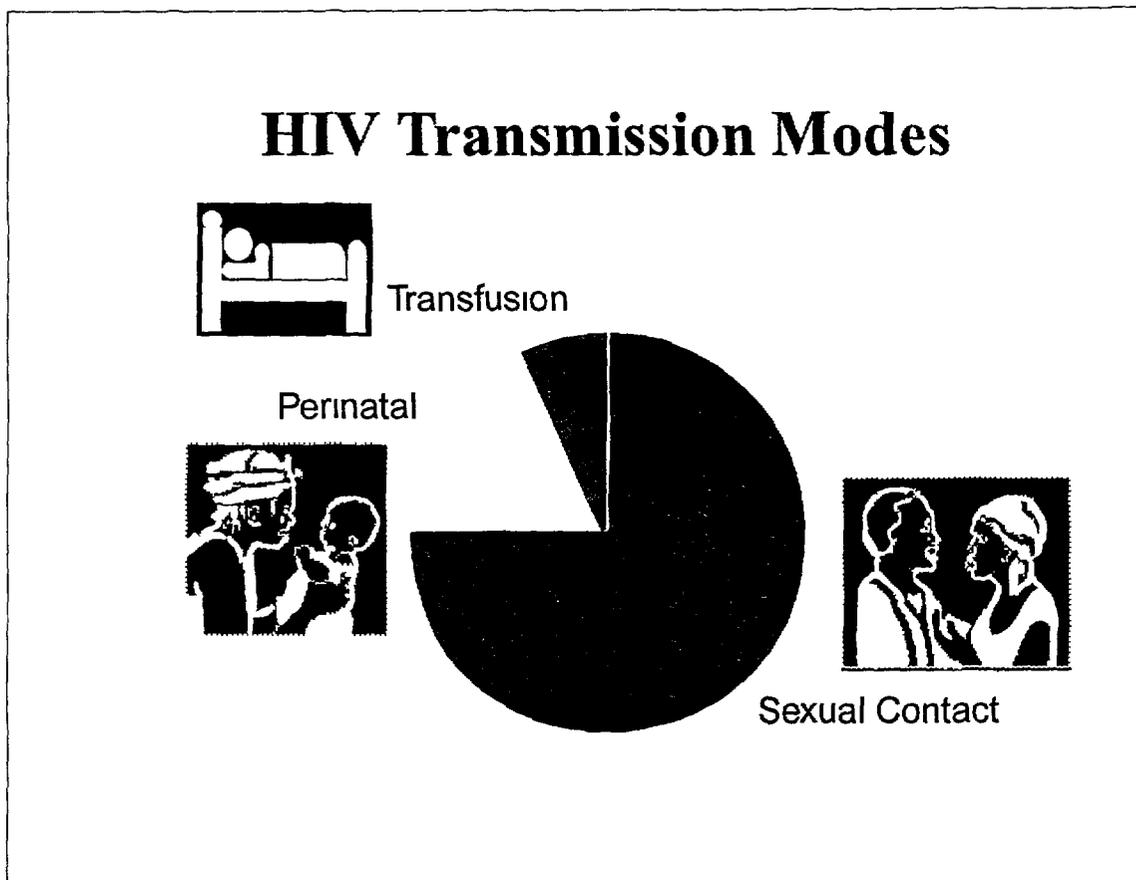
Number infected with HIV (1993)

730,000 adults

30,000 children

Transmission Mechanisms

HIV can be transmitted from one person to another in a number of ways. In Kenya, three transmission mechanisms are most important: blood transfusion, perinatal transmission and heterosexual contact.

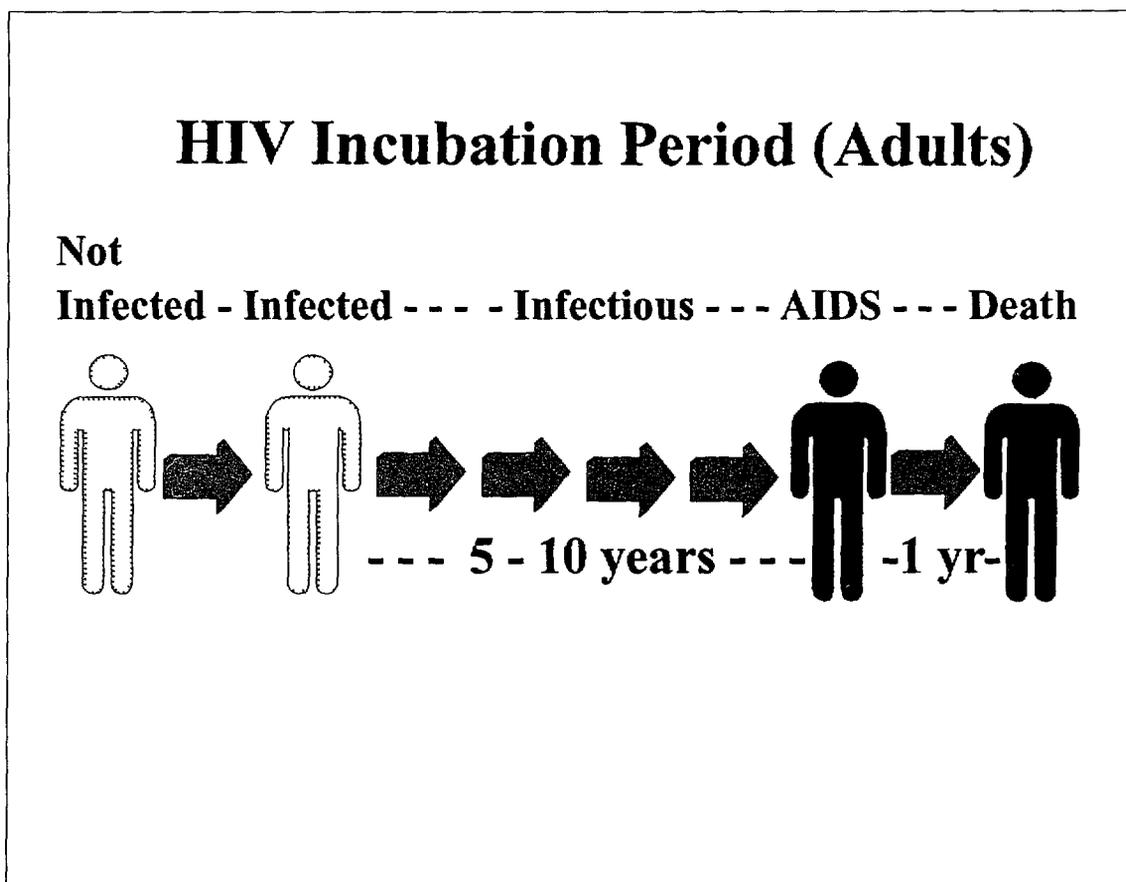


| | |
|-------------------------------|---|
| Blood transfusion | Transfusion with infected blood will almost always transmit HIV. However, in Kenya most blood is screened for HIV. Therefore, few new infections are due to blood transfusions. |
| Perinatal transmission | Many children are infected perinatally, that is, they receive the infection from their mothers during pregnancy, at the time of birth or through breastmilk. About 40 percent of babies born to infected mothers will themselves be infected. The other 60 percent will not be infected, but are at risk of becoming orphans when their parents die from AIDS. Our best estimate is that about 30,000 children under the age of 5 are infected today. |
| Heterosexual contact | The majority of infections are transmitted through heterosexual contact. Although the probability of transmitting HIV in a single act of intercourse can be quite low, a number of factors increase the risk of infection dramatically. The two most important are the presence of a sexually transmitted disease (STD), such as syphilis or gonorrhoea, in either partner and having a large number of sexual partners. A significant number of Kenyan adults do suffer from STDs and many have a number of sexual partners. As a result, most new HIV infections are due to heterosexual contact. Programmes designed to slow the spread of HIV will need to focus on reducing transmission through sexual contact. |

Incubation Period

A person does not develop AIDS as soon as he or she becomes infected with HIV. There is a lengthy incubation period. The average time from infection with HIV to development of the disease AIDS is about 7 to 8 years. That is, on average, a person does not develop AIDS until 7 to 8 years after becoming infected. For most of this period the person may not have any symptoms and, therefore, may not be aware that he or she is infected. This contributes to the spread of HIV, since the person can transmit the infection to others without realizing it.

For children the incubation period is much shorter because their immune systems are not yet fully developed. Most children who are infected at birth develop AIDS and die within two years.



HIV Incubation Period (Infants)

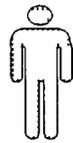


HIV Positive
Mother



30-40% of babies of HIV
positive mothers are infected

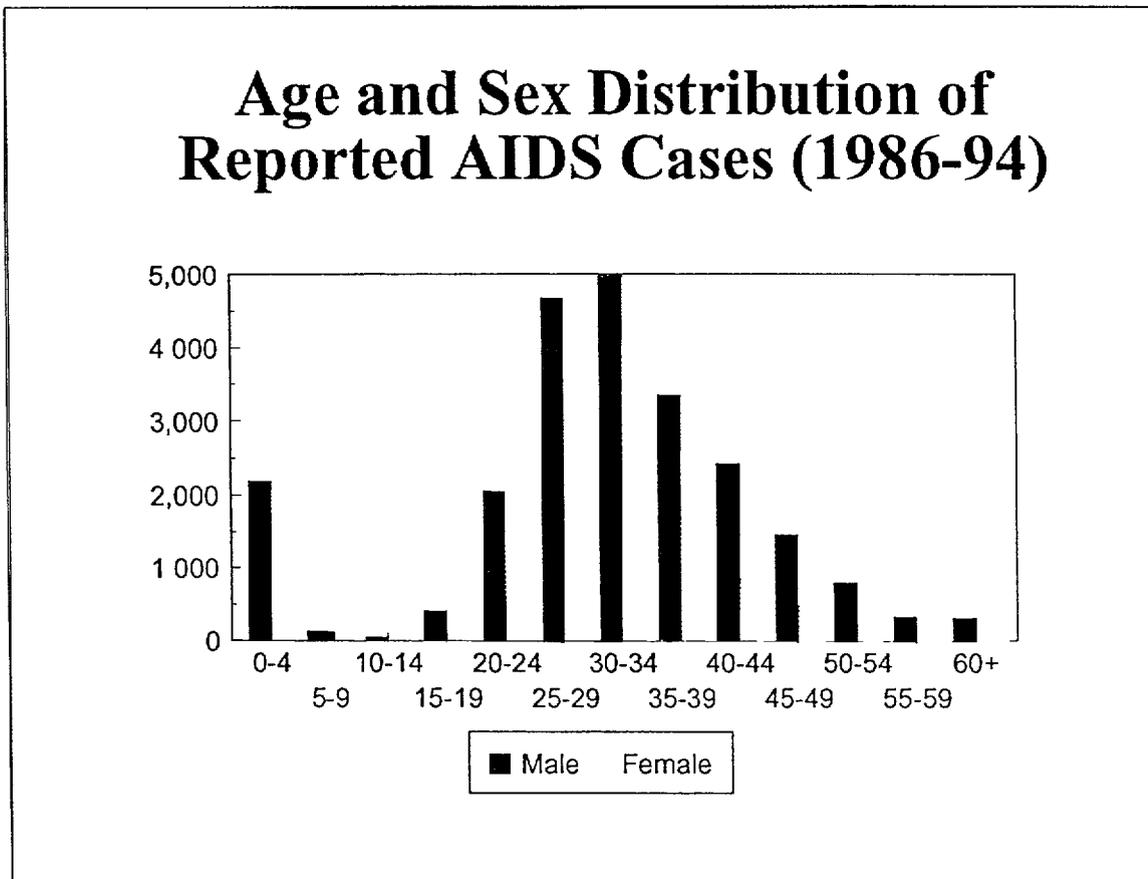
Infected - - - - Infectious - - - AIDS - - - Death



- - - 1 - 3 years - - - <1 yr-

Age Distribution of Reported AIDS Cases

This is an age/sex bar chart. It shows the number of AIDS cases reported since 1986 by age group and sex. Each vertical bar shows the number of reported AIDS cases in a particular five-year age group. Males are shown on the left and females on the right.



Several interesting facts are illustrated by this bar chart

- About 75 percent of AIDS cases occur to adults between the ages of 20 and 45. Since this is the most economically productive part of the population, these deaths constitute an important economic burden. This is also the age when investments in education are just beginning to pay off. These deaths also have important consequences for children since most people in this age group are raising young children.
- There is roughly an equal number of male and female cases. This is because most infection is acquired through sexual contact. Actually, there are a few more reported male cases than females. This may be due partly to poor reporting of female cases and to the concentration of male population in the large towns and cities with the highest infection rates.
- The peak ages for AIDS cases is 25-29 for females and 30-34 for males.
- There have been a significant number of AIDS cases reported among young children. Most of these received the infection from their mothers when they were born.
- The absence of many AIDS cases in the 5-14 year old age group shows that infection is not transmitted by mosquitoes or casual contact such as shaking hands.

II. Projections

Projected HIV Prevalence

Number of Future HIV Infections and AIDS Cases

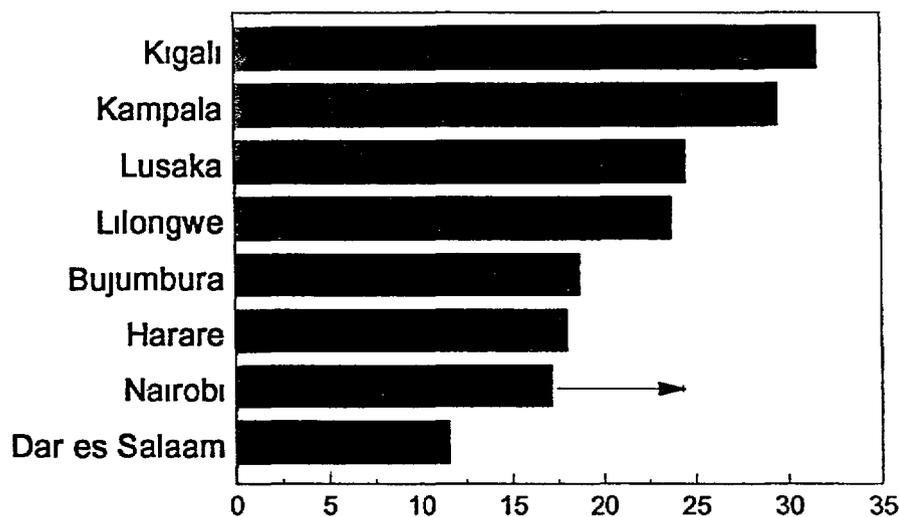
Adult Deaths

Projected HIV Prevalence

In order to project the number of new infections in the future, it is necessary to make an assumption about how rapidly HIV will continue to spread. Will adult HIV prevalence increase above the 1993 level of about 5.7 percent? If it does, how high might it go in the absence of expanded AIDS control programmes and significant behavioral changes: 8 percent, 12 percent, 20 percent?

Since prevalence seems to be increasing rapidly in most areas of Kenya, it is likely that prevalence will continue to increase, at least for the next six or seven years. Although the national prevalence in 1993 was estimated at 5.2-6.2 percent, it was 11-12 percent in urban areas. There are areas in urban Kenya today where prevalence is already 20-30 percent. In other countries in the region, urban HIV prevalence is even higher than in Kenya [U.S. Census Bureau, 1992]. Higher prevalence in other countries may be due to an earlier start of the epidemic in those countries or to different behavior patterns or both.

HIV Prevalence Among Pregnant Women in Selected Capital Cities



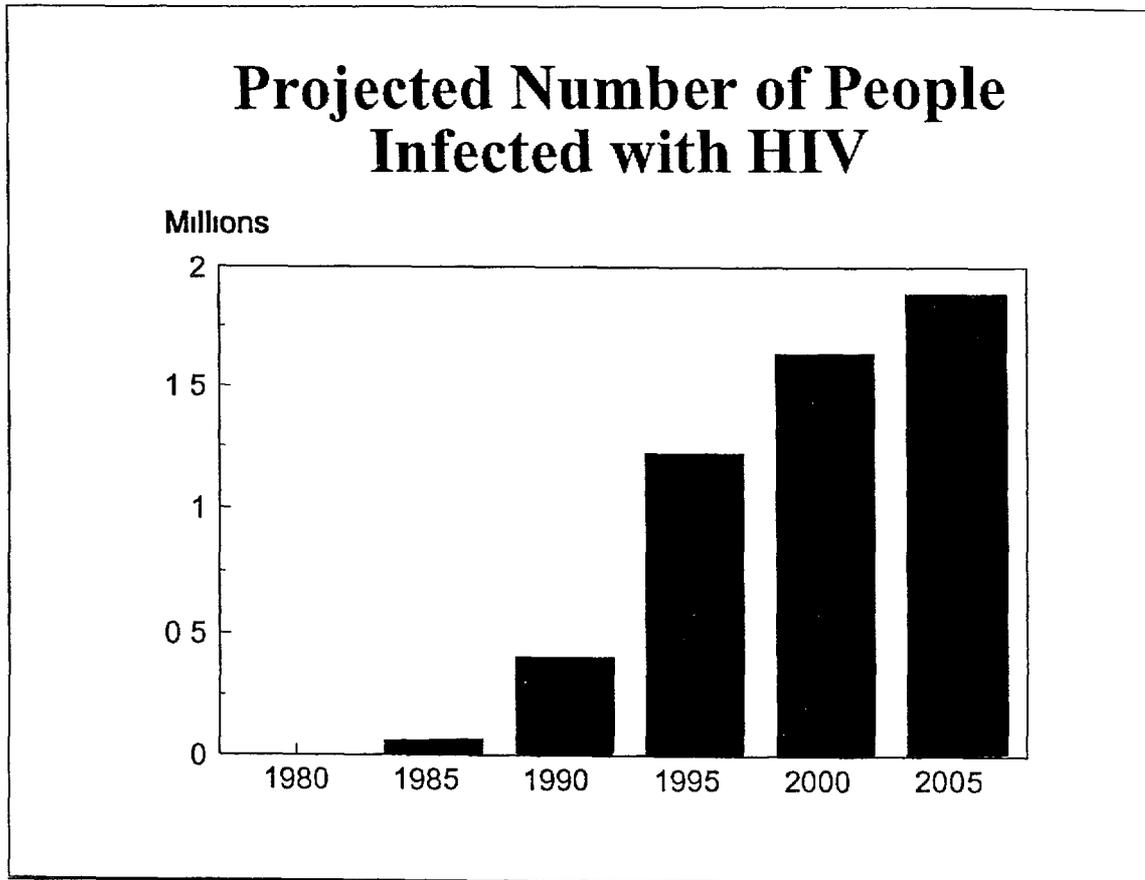
Assumption: By 2000 prevalence increases to 24% in Nairobi and to 9% in Kenya.

For purposes of this study, we have assumed that adult HIV prevalence in all of Kenya will increase from about 5.7 percent of the adult population today to 9 percent by 2000 and then stabilize at that level. Evidence from other countries does seem to suggest that adult prevalence will stabilize at some level. Nine percent is probably a conservative estimate of the level at which it would stabilize in Kenya. Without effective interventions, it could be much worse. However, given the uncertainty about prevalence in rural areas, it seems best to select a conservative estimate.

Number of Future HIV Infections and AIDS Cases

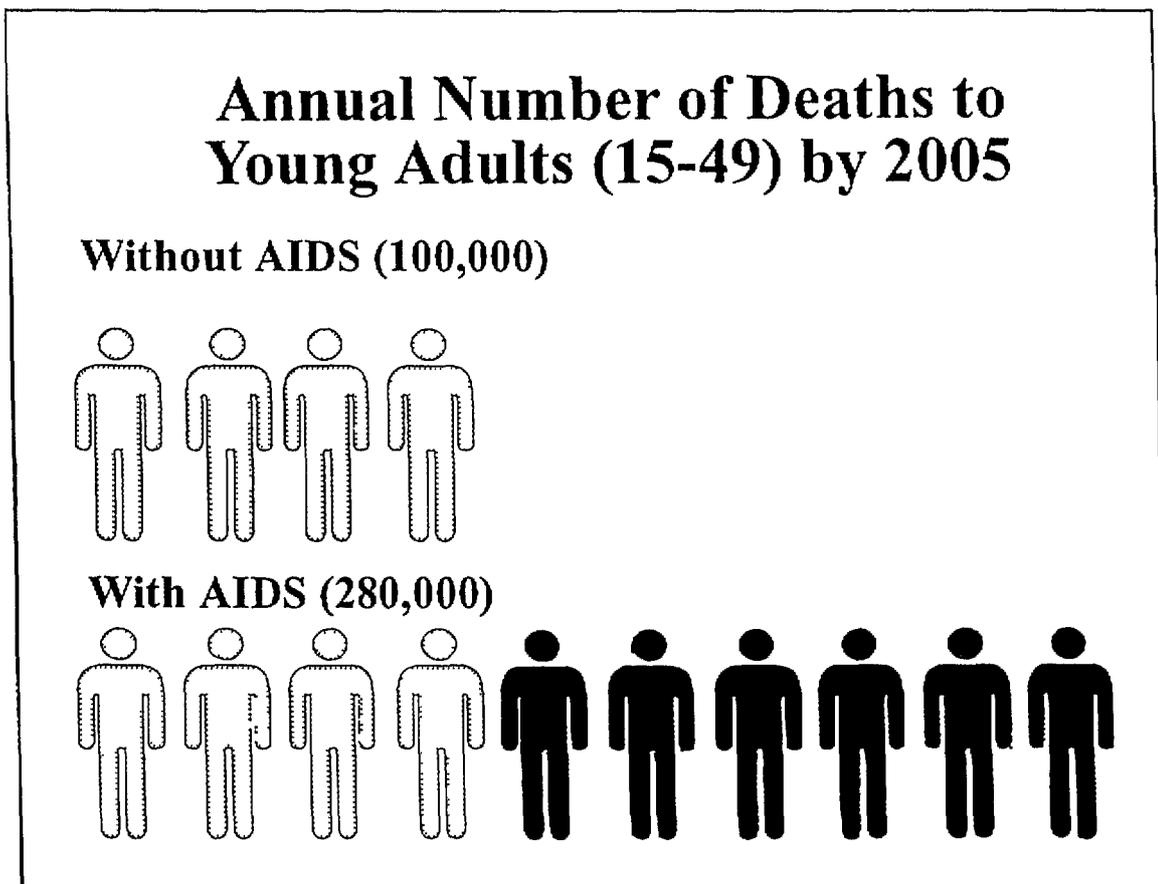
If HIV prevalence does increase to 9 percent by the year 2000, then the number of infected people in the population would increase to 1.6 million people by 2000 and to 1.9 million by 2005. The number of new AIDS cases each year resulting from these infections would increase to over 230,000 by 2000.

The cumulative number of AIDS deaths would increase from about 100,000 today to 1 million by 2000 and to over 2 million by 2005.



Adult Deaths

AIDS will increase the death rate at all ages. However, the impact will be most severe among young adults and children under the age of five. Without AIDS, and assuming a gradual decline in the death rates from other causes, the annual number of deaths among young adults (ages 15 to 49) would increase slowly (because of the growing population) from about 90,000 today to 100,000 by 2005. However, AIDS will dramatically increase that number, more than doubling it to 220,000 a year by 2000 and increasing it by 180 percent (to 280,000) by 2005. This rapid increase in young adult deaths would have serious consequences for economic and social development. Many of these impacts are examined in the next section of this report.



III. The Social and Economic Impacts of AIDS

AIDS Orphans

Population Size and Growth

Costs of Health Care

Childhood Deaths

HIV and Tuberculosis

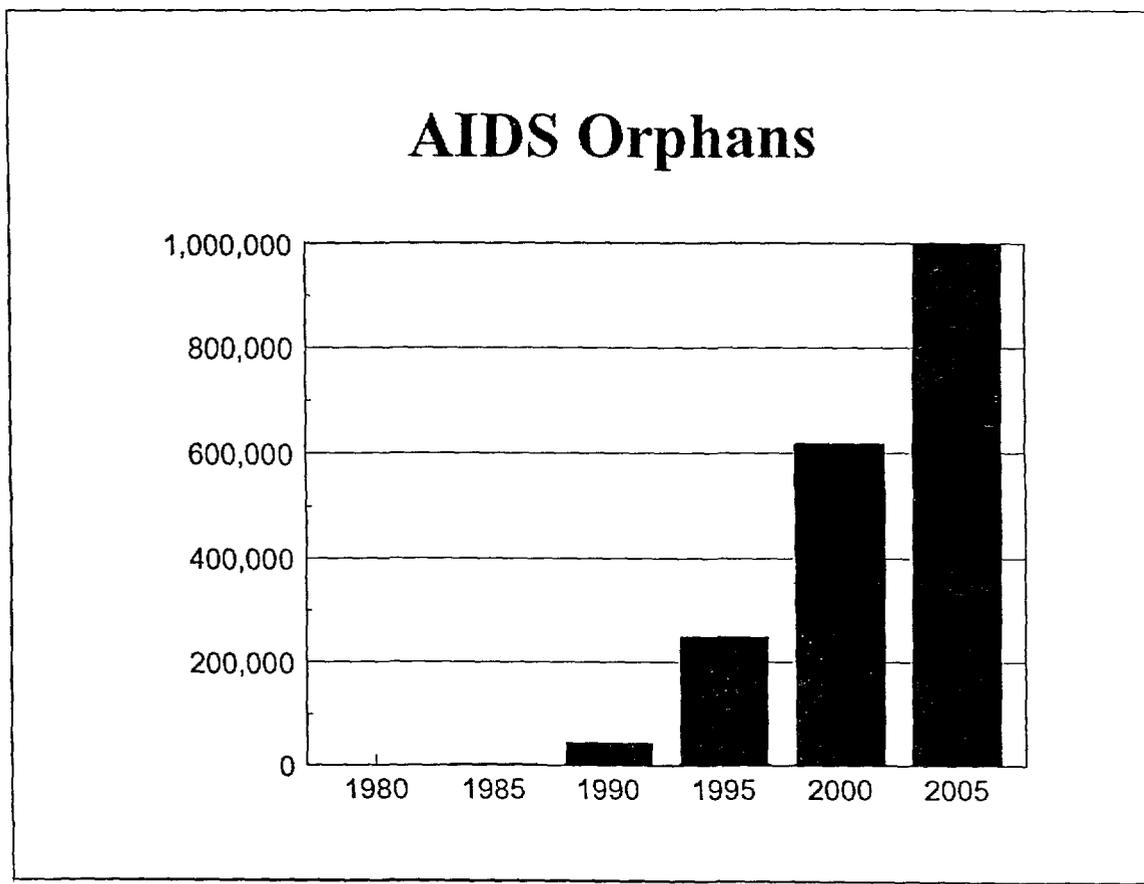
The Economic Impacts of AIDS

AIDS Orphans

One of the worst impacts of AIDS deaths to young adults is an increase in the number of orphans. We define an AIDS orphan as a child under the age of 15 who has lost its mother to AIDS. With this definition, the number of AIDS orphans would increase to 600,000 by 2000 and to almost 1 million by 2005.

These children may lack the proper care and supervision they need at this critical period of their lives. There will be a tremendous strain on social systems to cope with such a large number of orphans.

- At the family level there will be increased burden and stress for the extended family which will try to care for these orphans. Many grandparents will be left to care for young children. Some families will be headed by children as young as 10-12 years old.
- At the community and national level there will be an increased burden on society to provide services for these children, including orphanages, health care and school fees. Many children will go without adequate health and schooling, increasing the burden on society in future years. There may also be an increase in the number of urban street children.



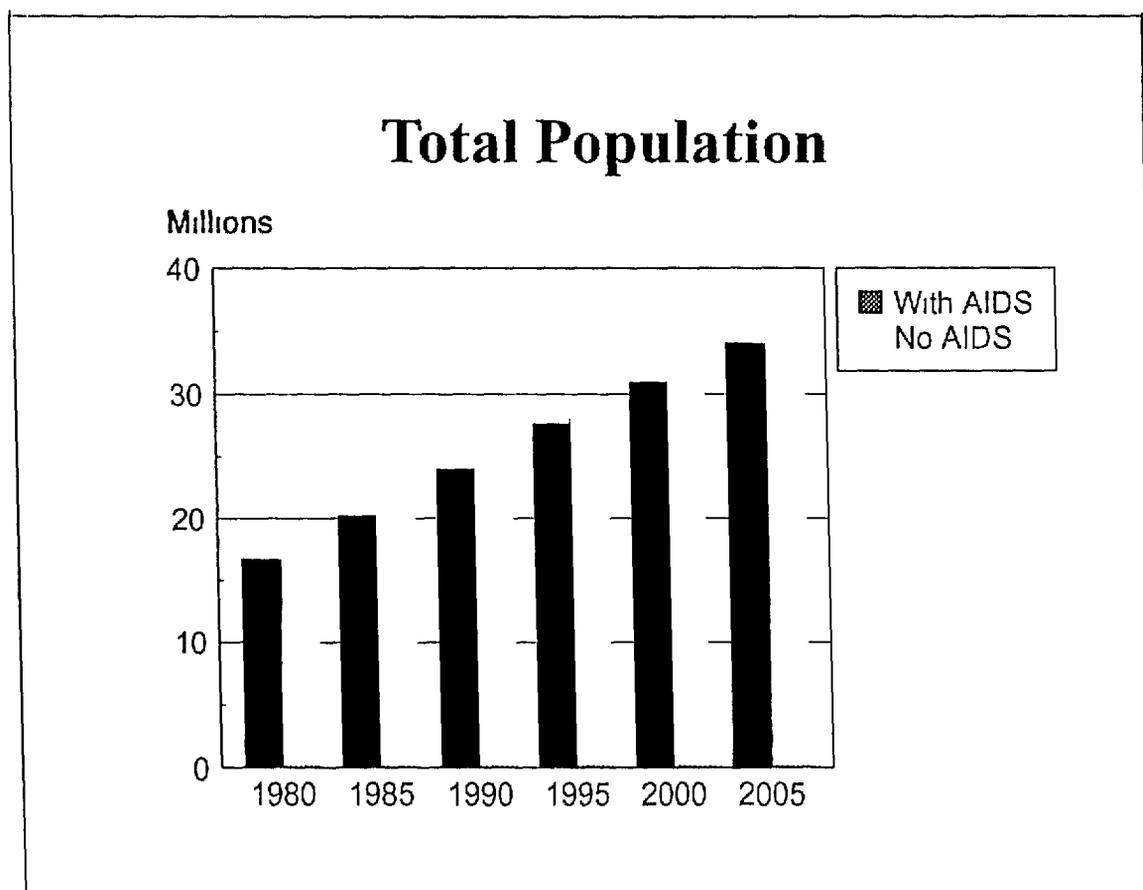
Population Size and Growth

AIDS will have a large impact on population size. However, it will not cause population growth to stop or become negative. The following projection illustrates this point. The projection assumes that the total fertility rate (the average number of births per woman during her lifetime) continues to decline, from about 5.4 during 1990-93 to 4.2 by 2000 and 3.5 by 2010. It also assumes that mortality from all causes other than AIDS continues to decline so that life expectancy would increase from about 57 years today to 67 by 2010 if there were no AIDS deaths.

With no AIDS, the population would increase from about 26 million today to 32 million by 2000 and to 37 million by 2005. By 2005 the population would be growing at 2.5 percent per year.

With AIDS, the population would be 1.4 million smaller by 2000 and 2.9 million smaller by 2005. Thus, the combined impact of AIDS deaths and fewer births because of a smaller reproductive age population would result in almost 3 million fewer people by 2005. However, by 2005 the population would still be growing at 1.7 percent per year.

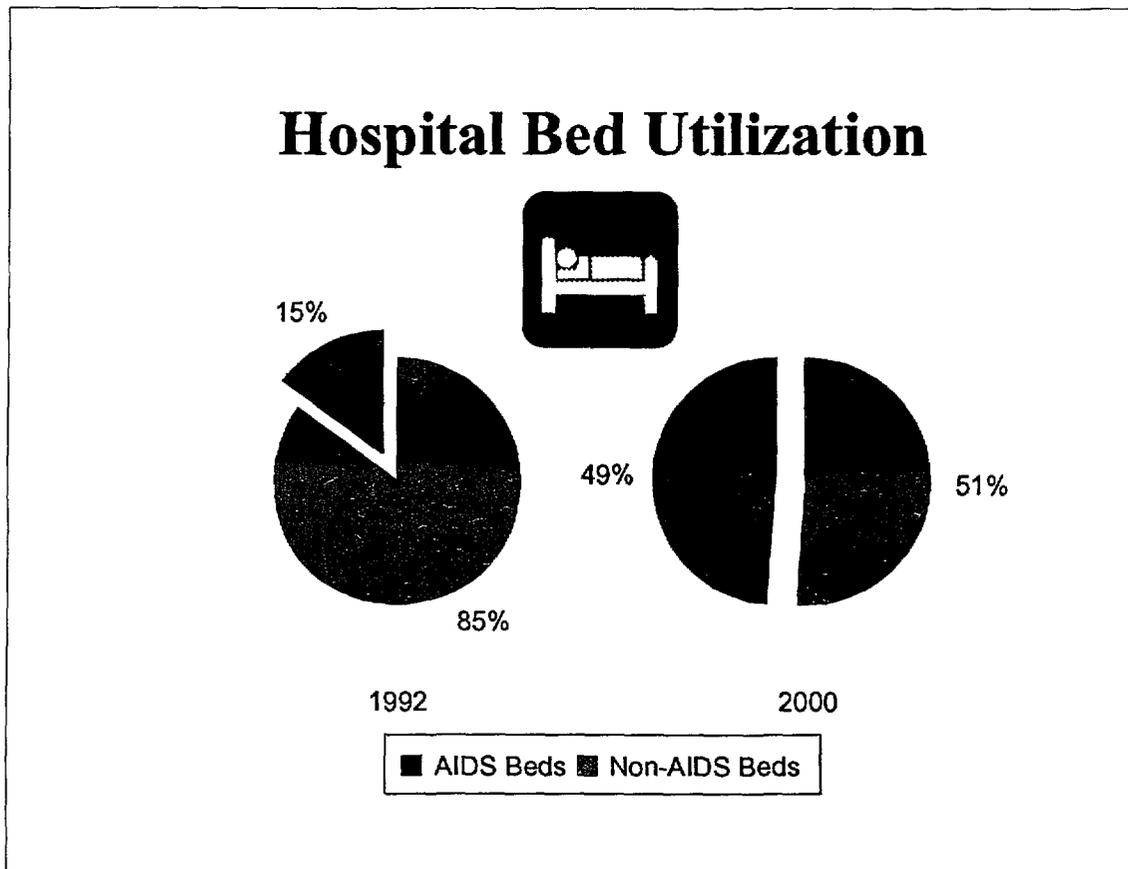
AIDS will have a significant impact on population size, but the population will still grow by over 30 percent by 2005. The growth rate of the population will be less because of AIDS, but it will still be 1.7 percent per year. Changes in the total fertility rate will have much more impact on the population growth rate than will AIDS deaths.



Costs of Health Care

AIDS is an expensive disease that will require a considerable amount of resources from the health system. A recent study [Forsythe, 1992] estimated that the cost of hospital care for AIDS patients averaged about 27,200 KSh during the course of their illness. If this expenditure rate remains constant then the total hospital costs for AIDS care, expressed in 1992 KSh, would increase to about 3,700 million KSh by 2000 and to 4,800 million KSh by 2005. This could amount to as much as half of public expenditures for health care. Clearly, this would place a tremendous burden on the public health care system to provide adequate care for AIDS patients and still try to meet all the other health needs of the population.

The demand on health services caused by AIDS can also be illustrated by looking at hospital beds. Not all people with AIDS seek hospital care. But, for those that do, the average length of stay is considerably longer than for most other diseases, perhaps as long as 60 days of total hospital stay. In 1992, as much as 15 percent of all hospital beds in the country were currently occupied by AIDS patients. As the epidemic grows, so will the hospital bed requirements. By 2000 about half of all hospital beds would be required for AIDS patients. This would leave an insufficient number of beds for patients for all other causes. Therefore, AIDS must be controlled or it will seriously affect the provision of health services to all.



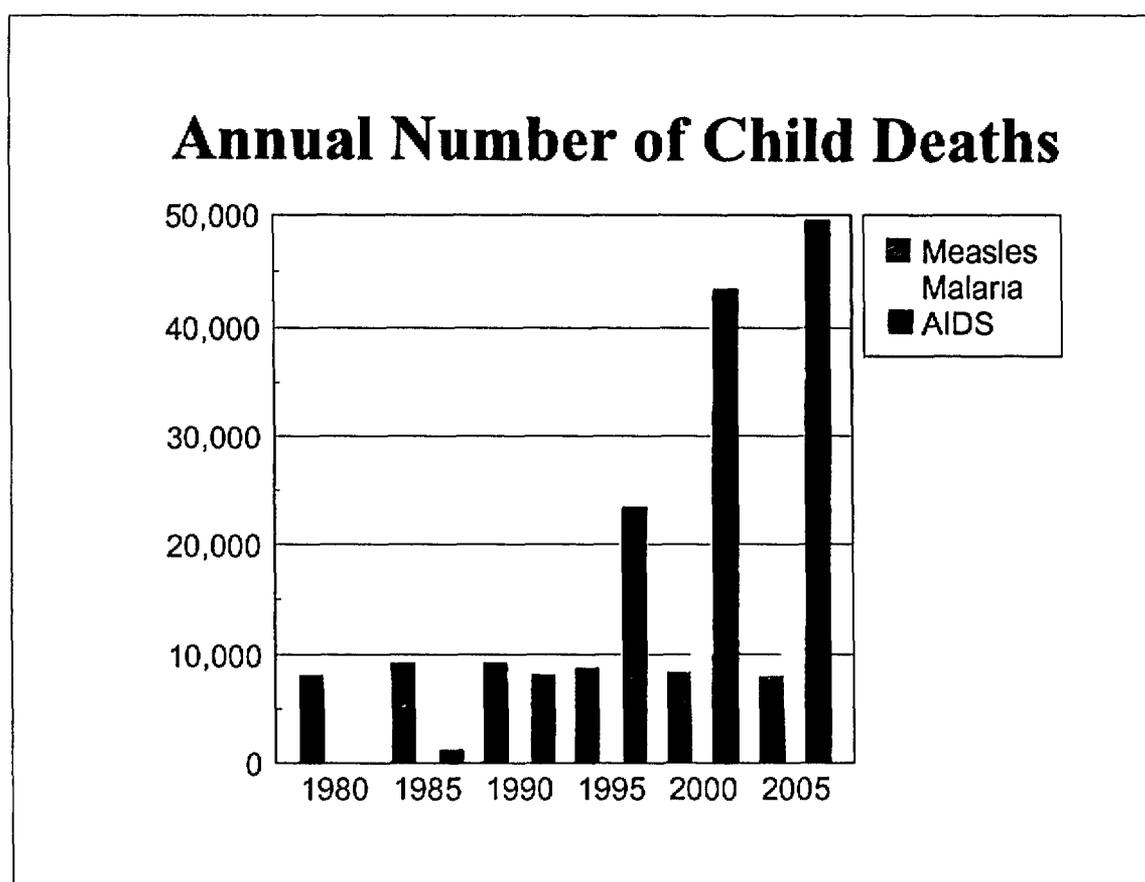
Childhood Deaths

AIDS also affects child survival. About 30-40 percent of babies born to infected mothers will also be infected with HIV. Most of these babies will develop AIDS and die within two years. Few will survive past the age of five.

AIDS could soon become the major cause of child death, worse than other major causes such as measles and malaria. For example, the annual number of child deaths due to measles and malaria is expected to range between 5,000 and 10,000 through the year 2005 [UNICEF, 1992]. The annual number of deaths due to AIDS could reach 40,000 to 50,000 over the same time period.

The increasing number of child deaths due to AIDS threatens to reverse many of the recent gains of child survival programmes.

- The infant mortality rate is the number of infants who die during the first year of life per 1000 live births. It is currently around 72. Without AIDS the infant mortality rate might be expected to decline to 45-50 by 2005. However, with AIDS, it would decline to only about 55-60.
- The child mortality rate is the number of children who die before reaching their fifth birthday per 1000 live births. It is currently around 115. Without AIDS it might be expected to decline to around 70 by 2005. However, with AIDS it is likely to remain constant or rise slightly to 115-120.



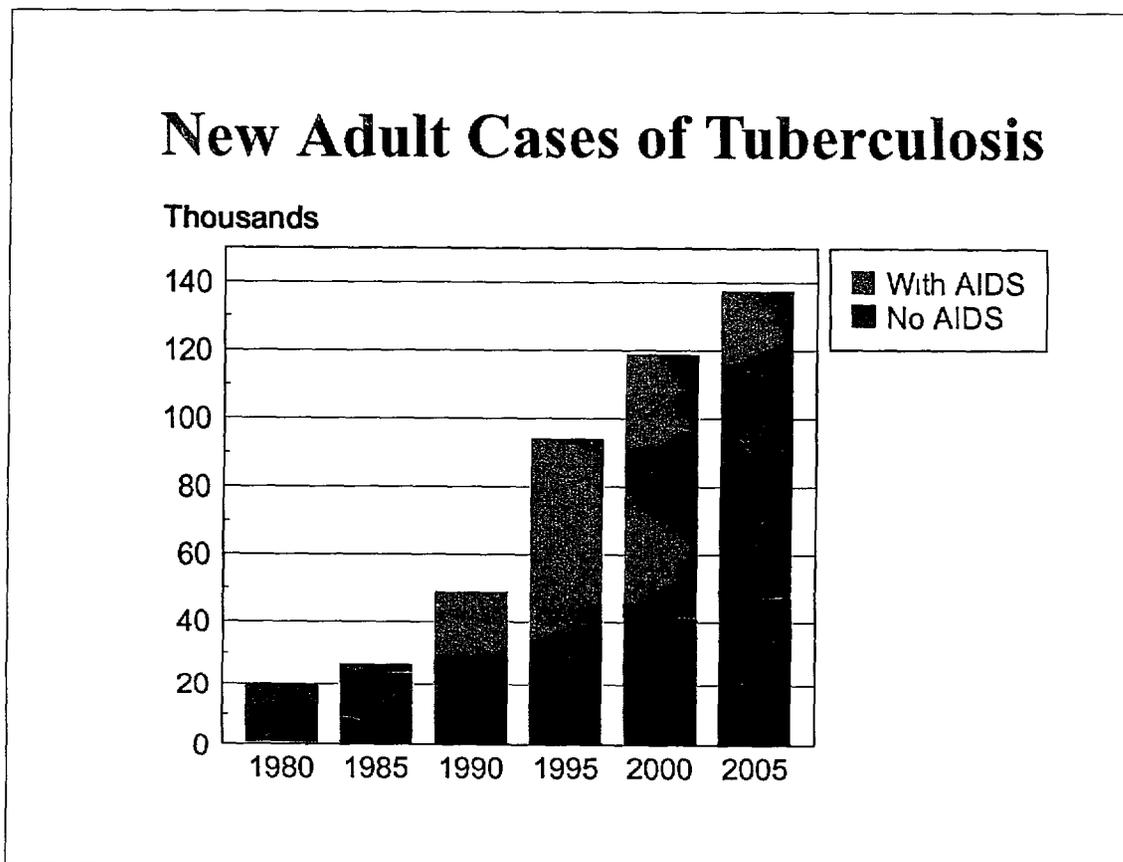
HIV and Tuberculosis

Efforts over the past 20 years to control tuberculosis had been showing some success. However, recently the number of TB cases has been rising rapidly. This is due to the spread of HIV infection. HIV infection weakens the immune system of otherwise healthy adults. Many, perhaps half, of all adults in Kenya carry a latent TB infection which is suppressed by a healthy immune system. When that immune system is weakened by HIV, it can no longer control the TB infection and overt TB can develop.

In the absence of HIV, the number of new TB infections would be limited to about 0.2 percent of the population [Harries, 1990]. This would result in 30,000 to 50,000 new TB cases each year.

With AIDS, a number of new cases will develop. If we assume that, among people with both HIV and latent TB infections, 8 percent develop TB each year, then the additional number of TB cases due to HIV infection would be about 90,000 by 2005. Even this is likely to be an underestimate since these new cases may transmit the disease to others.

The impact of HIV infection on tuberculosis is a serious problem because TB is infectious through casual contact. It threatens to vastly increase the risk of tuberculosis for the entire population. Also drug-resistant strains of TB are appearing, making it much more difficult and expensive to treat tuberculosis.



The Economic Impacts of AIDS

AIDS will impact the economic development of Kenya in a number of ways. The loss of young adults in their most productive years of life will certainly affect overall economic output. The magnitude of the effect could be large or small depending on several factors. If AIDS is more prevalent among the economic elite, the best-educated people with the highest-paying jobs, then the impact could be much larger than the absolute number of AIDS deaths would indicate. It is also important to consider how the private costs of AIDS will be paid. These costs include expenditures for medical care, drugs, funeral expenses, etc. If most of these extra expenditures are financed out of savings then the reduction in investment could lead to a significant reduction in economic growth. A recent World Bank study [Over, 1992] of the economic impacts of AIDS in Africa concluded that the macroeconomic impacts of AIDS could be significant if these two factors are taken into account.

An analysis conducted by the Long Range Planning Division of The Office of the Vice President and Ministry of Planning indicates that the costs of AIDS could be a major burden to the economy in Kenya. This study projected that the cost of caring for AIDS patients by the year 2000 could be equal to the entire 1993/94 recurrent budget of the Ministry of Health. This analysis also projects that the total direct and indirect costs of AIDS could increase from 2-4 percent of GDP in 1991 to 15 percent by 2000 [Ministry of Planning, 1993].

The economic impacts are likely to be larger in some sectors than others. Certainly, health care and insurance are likely to be significantly affected. The military will also be severely affected. Infection rates tend to be quite high among military personnel since many are young, sexually active men who are away from their families for long periods of time. Other sectors that require a mobile work force may also be adversely affected, including transportation, extension services and banking.

The impacts on agriculture are likely to vary by agricultural system. In rainy areas, where a variety of crops are planted throughout the year, families can cope relatively well with the loss of a few laborers. They may reduce area cultivated and cut back on the number of crops planted, but may still be able to produce an adequate amount of food. In dry areas, where farming depends on one or two crops that must be planted and harvested at specific times of the year, the impacts are likely to be more severe. In these areas the loss of a few workers at the crucial periods of planting and harvesting can significantly reduce the size of the harvest. In these areas, the loss of labor force because of AIDS could make it difficult for families to feed themselves.

A loss of agricultural labor is likely to cause farmers to switch to less-labor-intensive crops. In many cases this may mean switching from export crops to food crops. Thus, AIDS could affect the production of cash crops as well as food crops.

A more detailed examination of the economic impact of AIDS in Kenya is provided in *An Assessment of the Economic Impact of AIDS in Kenya* [Forsythe, 1992].

IV. Interventions to Slow the Spread of AIDS

Transmission Mechanisms

Knowledge of AIDS

The Effects of Interventions

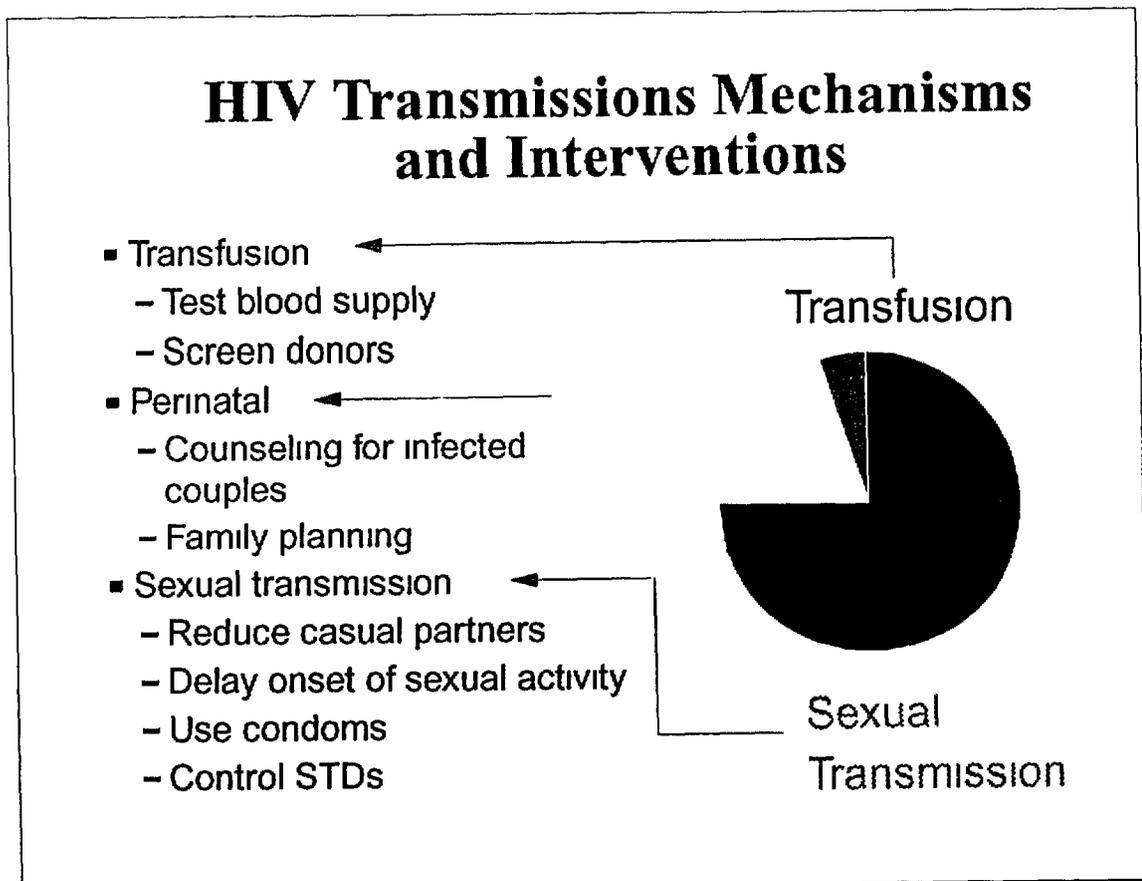
The National AIDS Control Programme of Kenya

What Needs To Be Done

Transmission Mechanisms

The impact of AIDS will be very severe in Kenya if HIV infection continues to spread rapidly. However, there are several things that can be done to slow the spread of HIV.

- To avoid infection through blood transfusion the blood supply needs to be made as safe as possible. This means screening blood through laboratory tests and screening potential blood donors through interviews in order to reject as donors those that have a high probability of being infected.
- To reduce perinatal transmission it is important that young women know whether they are infected. If they are HIV-positive, they may wish to use family planning to avoid pregnancies. Counseling needs to be available for couples to help them understand the HIV test and the choices facing them.
- The major mode of transmission is through heterosexual contact. People can protect themselves by avoiding sexual contact with multiple partners. The use of condoms can also reduce the risk of acquiring the HIV infection. Since the presence of a sexually transmitted disease can increase the chances of acquiring HIV during unprotected contacts, programmes to control STDs can also help reduce the number of new infections.



Knowledge of AIDS

Information about the knowledge of AIDS in Kenya was collected in a recent national survey on fertility, family planning and health, the Kenya Demographic and Health Survey, 1993 (National Council for Population and Development, 1994) The survey interviewed 7540 women between the ages of 15 and 49 and 2336 men between the ages of 20 and 55 The results illustrate the current level of knowledge and awareness of AIDS in the general population

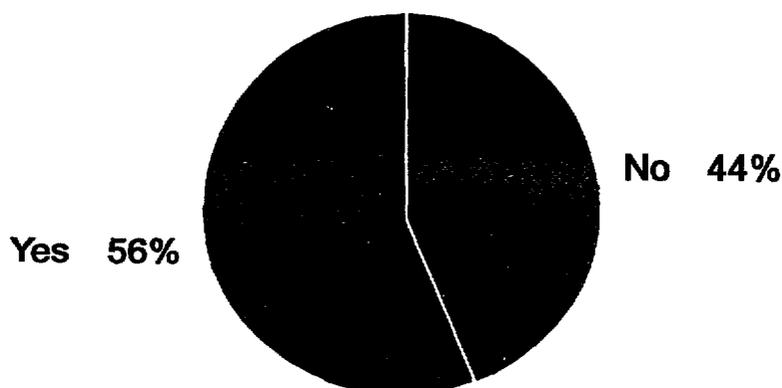
Knowledge of AIDS and the key transmission mechanisms is widespread Practically everyone has heard of AIDS (99 percent of women and 99 percent of men) Almost everyone knows that the AIDS virus is transmitted through sexual intercourse (96 percent of men and 90 percent of women)

However, there are many misconceptions about how the AIDS virus can be transmitted More than half believe that the AIDS virus can be transmitted through mosquito bites One-quarter to one-third believe the virus can be transmitted through kissing, sharing clothes, sharing eating utensils, or touching the dead In reality, the virus is not transmitted through any of these situations

Most people believe that they can protect themselves from AIDS When asked how a person can avoid catching the AIDS virus, 70-75 percent mentioned limiting the number of sexual partners However, only 35 percent of men and 20 percent of women mentioned using condoms and only 9 percent of men and 19 percent of women mentioned abstaining from sex

More than half of the men (66 percent) and almost half of the women (46 percent) believe they are at risk of acquiring AIDS Most of them think that they are likely to get the virus from their spouses or sexual partners

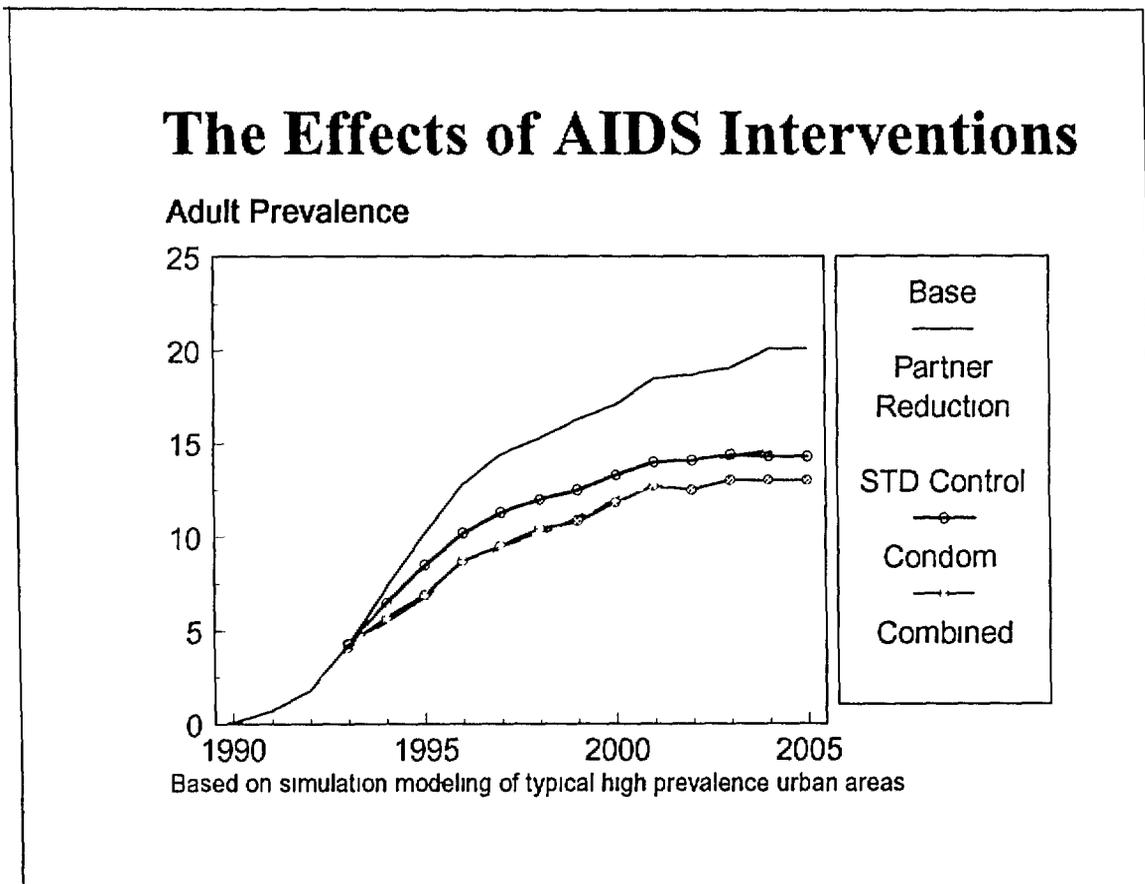
Proportion of Respondents Who Think They Are At Risk of AIDS



The Effects of Interventions

There has been much research worldwide to discover the best ways to slow the spread of HIV. These activities include information, education and counseling programmes, counseling and HIV testing programmes, condom promotion and distribution, and STD control. Much success has been achieved in pilot studies, but much work needs to be done to apply these lessons at the national scale.

The potential impact of successful interventions can be illustrated using computer modeling. The following information was developed using two different models: the iwgAIDS simulation model [Seitz, 1991] and Simul-AIDS [Auvert, 1991]. These models show the expected impact of interventions in a typical urban setting. In these illustrations it is assumed that adult HIV prevalence would increase to 20 percent with no interventions. The interventions are based on model intervention programmes being developed by the Global Programme on AIDS of the World Health Organization.



Reduction in number of sexual partners The first intervention focuses on encouraging people to remain faithful to a single partner. This could be done through a combination of mass media, counseling and education programmes. We assume that the result is a reduction of 50 percent in the number of men who visit prostitutes and an increase of three years in the average age at which sexual activity begins. If these interventions are implemented when prevalence has reached about 5 percent (about the prevalence in Kenya today) the result would be a 25 percent reduction in prevalence after 10 years. This is an important reduction in the spread of HIV, but not by itself a complete solution.

Promotion and availability of condoms The second intervention is to promote condoms through mass media, counseling and education and to increase the availability of condoms through expanded public distribution, social marketing programmes with prostitutes and programmes in the workplace. This illustration assumes that condom use increases to 60 percent for prostitutes, to 10 percent in contacts between men and their casual girl friends and to 5 percent among couples. Under these assumptions, prevalence is reduced by 35 percent after 10 years.

STD control The next intervention focuses on controlling the spread of sexually transmitted diseases such as syphilis and gonorrhoea. This intervention involves improved services to detect and treat STDs. However, it should be noted that a full STD programme would also include condom promotion and education. It is assumed that through this intervention correct treatment of STDs increases to 60 percent for men and prostitutes and to 10 percent for all other women. The result is a 30 percent reduction in HIV prevalence after 10 years.

Combined intervention Each of the interventions described above can make an important contribution to controlling the spread of HIV. However, none by itself solves the problem completely. A much larger effect can be achieved by implementing all the interventions together. In the case illustrated here, combining the interventions would reduce HIV prevalence by two-thirds within 10 years. It is important to implement combined interventions in order to reach the maximum number of people. Some people will respond to one intervention while others will respond to another.

Treatment and Vaccines There is no known cure for AIDS. There are several drugs that are approved for the treatment of people with HIV infection or AIDS, however, the effectiveness of these drugs is primarily limited to combating opportunistic infections that arise because of the weakened immune system. They do not cure the HIV infection or prevent AIDS. Research on vaccines continues in many laboratories around the world. Trials of vaccines may begin as early as 1994. However, most scientists believe that vaccines are not likely to be ready for mass use before the year 2000. Even once vaccines are available there will be problems in producing large quantities and delivering the vaccine to large numbers of people. Therefore, it does not appear that vaccines or drugs will contribute much to the fight against AIDS in the next several years.

There are three important lessons to be learned concerning interventions.

- 1 Pilot tests have shown that interventions can be successful in significantly reducing the spread of HIV.

- 2 We do not yet have much experience with applying interventions successfully on a nation-wide scale
- 3 It is important to intervene in many different ways in order to reach the largest possible number of people and have the maximum impact

The National AIDS Control Programme of Kenya

In 1987 the Government of Kenya created the AIDS Programme Secretariat (APS) to organize the nation's efforts against AIDS. The National AIDS Control Programme (NACP) was created within the Ministry of Health to be the major implementing organization of the Government's programme. Also in 1987 the APS developed a Medium Term Plan (MTP I) for the period 1987-1991. That plan focussed on public awareness campaigns, strengthening of laboratory services, surveillance of HIV/AIDS and training of health workers. In 1992, the second Medium Term Plan (MTP II 1992-1996) was prepared. Although the medium-term plan has not been fully implemented due to a number of constraints, it does represent an attempt to design a comprehensive intervention programme for Kenya. The plan adopts a multi-sectoral approach to mobilize a widespread effort against AIDS. The plan calls for action in six primary areas. These focus areas and the major activities within each area are shown below.

1 Prevention of sexual transmission of HIV

- AIDS education to youth in and out of school, including family life education, to provide children with the information to protect themselves from HIV when they become sexually active
- Community-based AIDS education, including promotion and provision of community counseling services and public sex education to provide information to adults who are already sexually active about how to protect themselves against AIDS
- AIDS/STD in the workplace
- Control of sexually transmitted diseases, diagnosis and treatment of STDs, in order to reduce the prevalence of STDs in the population and, as a result, reduce the transmission of HIV
- Promotion of condom use

2 Prevention of HIV transmission through blood and blood products

- Training, quality assurance, supplies, equipment and maintenance, re-organization of blood donor services

3 Mitigation of the socio-economic impacts of HIV/AIDS

- Care of AIDS orphans
- Empowerment of women
- Counselling
- Patient care (institutional care and home-based care)
- Socioeconomic impacts

4 Epidemiological surveillance

5 Co-ordination of research

6 Management and coordination of the multi-sectoral AIDS control programme

In addition to these government efforts, a number of NGO and private sector programmes are also contributing to the fight against AIDS. The NGO AIDS Coordinating Council helps to organize the efforts of a large number of NGOs who are making a major contribution to the provision of AIDS prevention and care. Some commercial sector organizations are developing AIDS in the workplace programmes to protect employees and their families.

What Needs To Be Done

Actions can be taken to slow the spread of HIV in Kenya and to avert the serious personal, social and economic consequences that would result from a continued AIDS epidemic. Much is being done today in Kenya to care for HIV/AIDS patients and to educate people about the dangers of AIDS. However, these efforts are not enough. HIV is still spreading rapidly in most parts of Kenya. In order for prevention efforts to succeed, a number of changes are required. Among the most important are

- Strong political commitment by top leaders. Experience from development programmes around the world has shown that with such a difficult problem as AIDS, the strong support of the top leaders of the country is crucial to success.
- Adoption of a multi-sectoral approach to AIDS interventions. It is clear that AIDS is not just a health problem. It will affect all areas of society. It will affect individuals, families, villages, towns, economic growth and social development. Therefore, it is important that all sectors of society be involved in the solution to this problem.
- Establishment of an effective National AIDS Council with a strong leader and the backing of the President. This is necessary in order to effectively coordinate a multi-sectoral approach to AIDS prevention.
- Recognition of STD control as a priority programme with strong support for prevention and treatment programmes.
- Incorporation of effective family life education into school curricula in order to inform young children about how they can protect themselves from AIDS.
- Participation by all sectors of society in the fight against AIDS, including government, NGOs, private sector organizations, religious organizations, unions, professional societies, etc.
- Substantially increased funding from both international donors and local sources.

V. Sources

- Auvert, Bertrand "The Auvert Approach A Stochastic Model for the Heterosexual Spread of the Human Immunodeficiency Virus" *The AIDS Epidemic and Its Demographic Consequences* Proceedings of the UN/WHO Workshop on Modeling the Demographic Impact of AIDS in Pattern II Countries Progress to Date and Policies for the Future, December 13-15, 1989, New York.
- Forsythe, Steven, David Sokal, Lois Lux, Tim King, Alan Johnston *An Assessment of the Economic Impact of AIDS in Kenya* AIDSTECH. Chapel Hill, NC Family Health International, 1992
- Global Programme on AIDS, *Global AIDSnews*, 1994, No 1 World Health Organization, Geneva, 1994
- Harries, A D "Tuberculosis and Human Immunodeficiency Virus Infection in Developing Countries" *Lancet* 335 (1990) 387-390
- Ministry of Planning "Chapter 12 HIV/AIDS and Development", *National Development Plan 1994-1996*, Nairobi, 1993
- National AIDS Control Programme of Kenya. AIDS Case Reporting System and Sentinel Surveillance System, various reports, 1993
- National AIDS Control Programme of Kenya. *The Second Five Year Medium Term Plan for AIDS Control, 1992-1996* Nairobi, Kenya, 1991
- National Council for Population and Development *Demographic and Health Survey, 1993* Nairobi, 1994
- Over, Mead "The Macro-Economic Impact of AIDS in Sub-Saharan Africa" Population and Human Resources Department Washington, DC The World Bank, April 20, 1992
- Stanley, E A , S T Seitz, P D Johnson, P O Way and T F Curry "The United States Interagency Working Group Approach The IWG Model for the Heterosexual Spread of HIV and the Demographic Impact of the AIDS Epidemic" *The AIDS Epidemic and Its Demographic Consequences* Proceedings of the UN/WHO Workshop on Modeling the Demographic Impact of AIDS in Pattern II Countries Progress to Date and Policies for the Future, December 13-15, 1989, New York.
- UNICEF *Children and Women in Kenya A Situation Analysis* UNICEF and the Government of Kenya, August 1992
- U S Bureau of the Census Center for International Research *Recent HIV Seroprevalence Levels by Country November 1992* Washington, DC, 1992

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