

**AIDS in  
Kenya**

**AIDS in Kenya:  
Background, Projections, Impact and Interventions**

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## List of Abbreviations

AIDS	Acquired immune deficiency syndrome
APS	AIDS Programme Secretariat
AZT	Zidovudine
GDP	Gross Domestic Product
GPA	Global Programme on AIDS
HIV	Human immunodeficiency virus
KANCO	Kenya AIDS NGOs Consortium
MTP	Medium term plan
NASCOP	National AIDS and STDs Control Programme
NCPD	National Council for Population and Development
NGO	Non-governmental organization
NLTP	National Leprosy and Tuberculosis Programme
STDs	Sexually transmitted diseases
TB	Tuberculosis
UNAIDS	Joint United Nations Programme on AIDS
USAID	United States Agency for International Development
IAVI	International AIDS Vaccine Initiative
DNA-MVA	Naked DNA combined with Modified Vaccinia Ankara

## Foreword

AIDS is a major health and development problem in Kenya. At the end of 1998, about 1.9 million adults aged between 15 and 49 including over 100,000 children were living with HIV, the virus that causes AIDS. This book 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 edition comes at an important time when the Government of Kenya through the Sessional Paper No. 4 of 1997 on AIDS in Kenya, has laid down a policy framework to guide all the partners in the nation's response to the challenges of HIV and AIDS. A third strategic plan for the Kenya National HIV/AIDS and STDs Control Programme (1999-2004) was released in August 1999. The policies, commitments and plans made by the government are explained throughout this booklet.

This 1999 edition has benefited from the comments provided by many individuals who saw earlier versions. 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 (USAID) for printing this edition and The Futures Group International and Research Triangle Institute for technical assistance provided through the USAID-funded POLICY Project. Special thanks go to all the people who reviewed this edition particularly; Dr. Ruth Nduati, Allan Johnston, Don Dickerson, M.O. Lukoye, T. Takona, M. Strong and Lilian Njoroge for their very useful comments. It is also a pleasure to thank the UNAIDS for their continued support for the sentinel surveillance system in Kenya which has produced the data on HIV infection rates quoted in this edition. The editors are most grateful to the authors for the information quoted from the various publications.



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## Introduction

HIV/AIDS has become a serious health and development problem in many countries around the world, particularly in Africa. The Joint United Nations Programme on AIDS (UNAIDS) estimates that by the end of 1998, about 14 million people had already died from AIDS.

In addition, another 33.4 million people are estimated to be infected with Human Immunodeficiency Virus (HIV), the virus that causes AIDS. In sub-Saharan Africa about 22 million people are infected.

Many Kenyans are infected with HIV. **For every eight adults aged 15-49, one is infected.** In urban areas, one out of every six adults is infected. Most of these people do not know they are infected. In Kenya more than 700,000 people have already developed AIDS since the first case was described in the country in 1981 (although only a small proportion 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 and reduce its negative impact on development.

This booklet is intended to provide information about the AIDS epidemic in Kenya. This material is also available as a slide presentation. The information is provided in five sections:

<b>Background</b>	What we know about HIV/AIDS in Kenya today
<b>Projections</b>	The number of people who might develop AIDS in the future if current trends continue
<b>Impacts</b>	The social and economic effects of AIDS
<b>Interventions</b>	What needs to be done to prevent further spread of AIDS
<b>Policy</b>	The Sessional Paper No. 4 on AIDS in Kenya

Requests for presentations of this material, brochures or copies of this booklet or copies of the Sessional Paper on AIDS should be directed to the National AIDS and STDs Control Programme. The address is located on the last page.

## **I. Background**

The HIV/AIDS pyramid

Sentinel surveillance results

Current estimates of HIV prevalence

Transmission mechanisms

Patterns of infection by age and sex

Incubation period

Age distribution of reported AIDS cases

Frequently asked questions

## The HIV/AIDS Pyramid

Over 87,000 cases of AIDS have been reported to the Ministry of Health since the first case was described in Kenya in 1984 through June 1999. All districts are affected. Reported AIDS cases represent only 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:

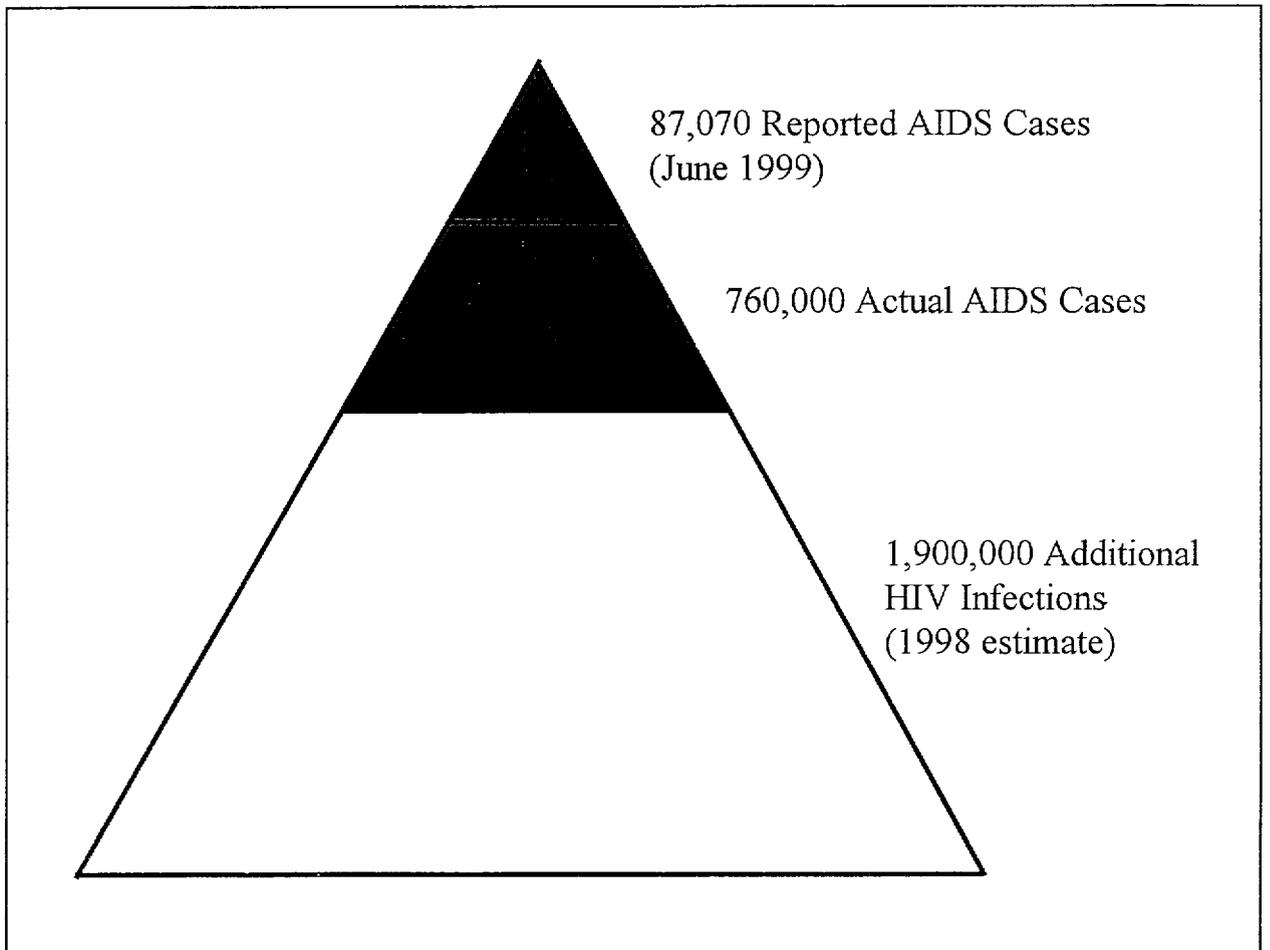
- some people never seek hospital care for AIDS,
- some doctors may not want to record a diagnosis of AIDS because of the stigma attached to AIDS,
- some people with HIV infection may die of other diseases before they are ever diagnosed as having AIDS, and
- some rural health care facilities may not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

The true number of AIDS cases in Kenya is not known. However, it is estimated that over 700,000 adults and children had developed AIDS by the end of 1998.

AIDS cases are only the tip of the pyramid. Many more people are infected with HIV, the virus that causes AIDS. In 1998 it is estimated that there were about 1.9 million people infected with HIV. This includes about 100,000 children. Most of these people do not know they are infected. They may have no symptoms at all. However, almost all will develop AIDS and die within the next 10 years or so. There is no cure for AIDS and no effective vaccine.

**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.

# The HIV/AIDS Pyramid



## **Sentinel Surveillance Results**

Sentinel surveillance is the systematic collection of data on trends in HIV infections in selected populations. Sentinel surveillance systems for HIV are designed to provide information to policy makers and programme planners for action. The data is useful for understanding the magnitude of the HIV/AIDS problem in certain areas and monitoring the impact of interventions.

The HIV sentinel surveillance system in Kenya is coordinated by the National AIDS and STDs Control Programme. It became operational in 1990 and has been conducted annually. Sentinel surveillance complements the passive AIDS surveillance system (routine reporting) which has its own limitations. These limitations include the fact that AIDS cases do not reflect current transmission rates of HIV infection since the interval between HIV infection and the onset of AIDS is between 3 and 10 years. Furthermore, reported AIDS cases represent only a small proportion of AIDS cases which have occurred.

HIV sentinel surveillance involves the selection of specific sites at which a pre-determined number of persons from specific population group(s) are routinely tested in a regular and consistent procedure according to a pre-determined protocol. Data is collected for both ante-natal clinic (ANC) clients and for STDs patients. The STDs data is primarily designed to represent high risk populations while the ANC data represent the general health population. In estimating the general HIV prevalence rate the ANC data is applied.

Blood used for HIV testing is obtained through an unlinked anonymous procedure - after testing for syphilis, which is the purpose for which the blood was originally drawn, all the personal identifiers are removed. The remaining serum sample is then later tested for HIV. The key advantage in the unlinked procedure is the reduction of self selection bias with a resultant increase in accuracy.

The objectives of the Kenya HIV sentinel surveillance system are:-

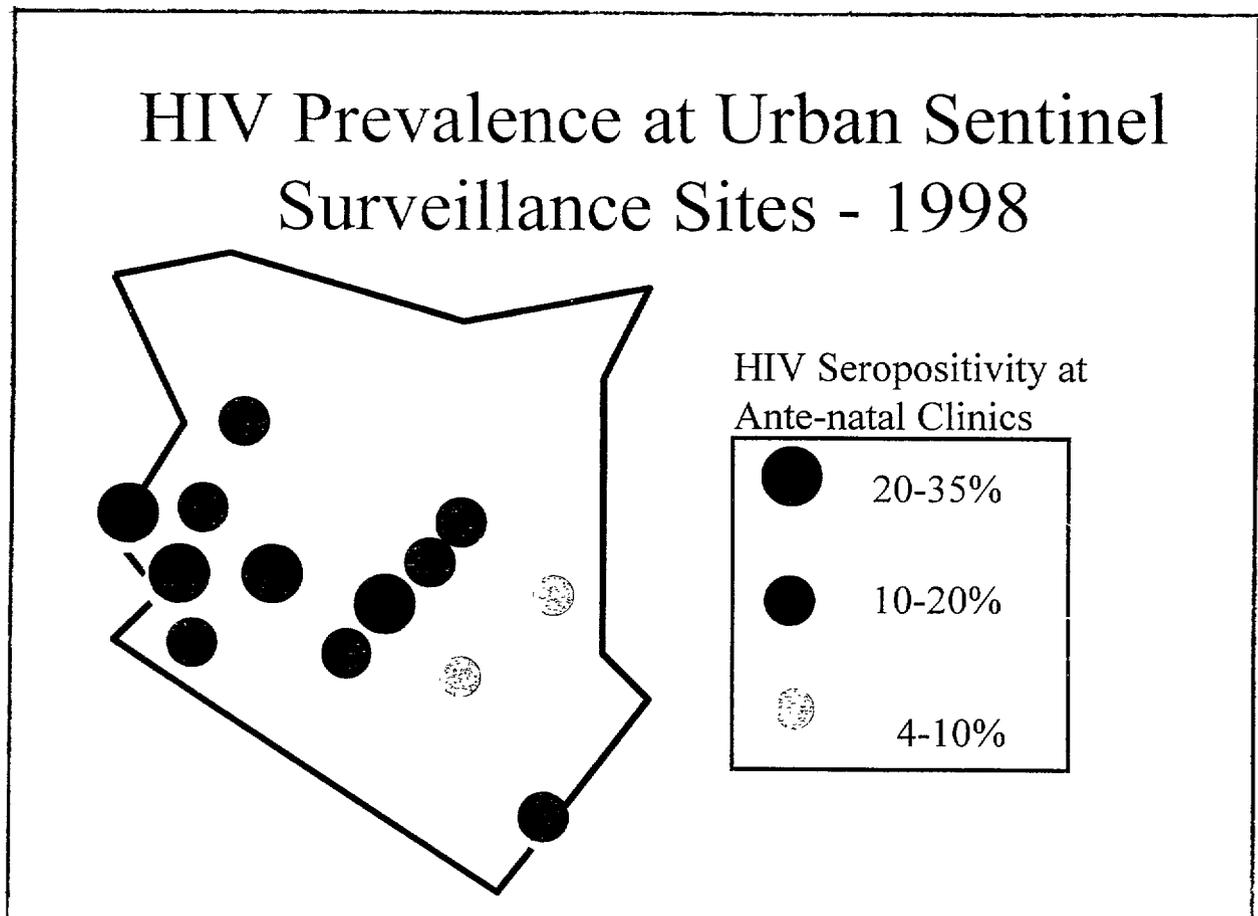
- To estimate the prevalence and distribution of HIV infection in specific populations in specific geographic areas.
- To monitor trends in HIV infection.

- To provide information for evaluating intervention programmes against HIV/AIDS

The sentinel surveillance system therefore provides the basis for estimating the extent of HIV infection. The sentinel surveillance system operates in 13 urban sites and 11 peri-urban/rural sites around the country. These sites are all ante-natal clinics, where 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 and STDs Control Programme.

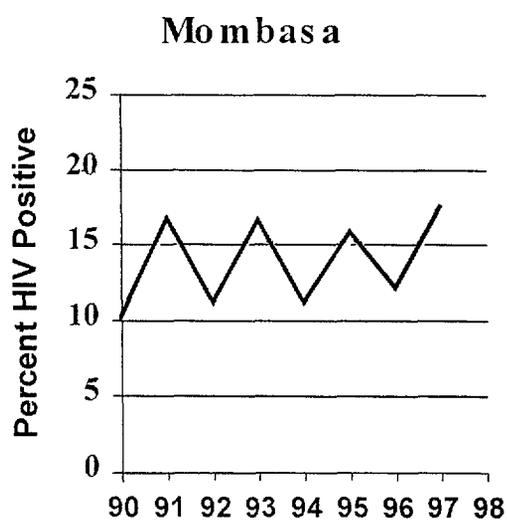
The results for 1998 show that there are several places in Kenya — Busia, Kisumu, Nakuru, Thika, Meru, Chulaimbo, Karurumo — where the proportion of pregnant women who are infected with HIV is greater than 20 percent. In several other sites — Kakamega, Kisii, Kitale, Mombasa, Maragua, Nairobi, Nyeri — 10-20 percent of pregnant women are infected. In other sites — Garissa, Mosoriot, Kaplong, Njabini and Motomo — infection rates are 3-9 percent. Some 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 many parts of the country.

Using the sentinel surveillance data and adjusting it to be representative of the total population, NASCOP has estimated that in 1998 there were 1.9 million people in Kenya infected with HIV including 100,000 children.

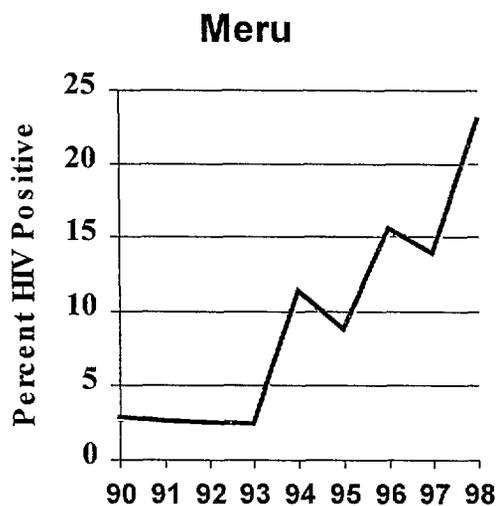


Trends in HIV infection are shown for two sentinel surveillance sites. Mombasa and Meru — for the last eight years. These graphs show the percentage of pregnant women visiting the clinic who are infected with HIV. Mombasa is representative of an area that has had stable infection levels for some time. A stable infection level means that the number of new infections each year equals the number of people dying each year from AIDS (provided no major population movements occur). Meru is an example of an area that has experienced rapid increases in the number of people 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 one or two years.

## Trends in HIV Prevalence in ANC Patients at Selected Clinics



High and stable prevalence



Rapid increase from 1993

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 trends of HIV infection in some parts of urban and rural Kenya.

### Percentage of pregnant women testing HIV positive by sentinel site

URBAN SITES				
Sentinel Site	1990	1993	1996	1998
Busia	17	22	28	29*
Garissa	5	4	5	8*
Kakamega	5	9	10	16
Kisii	2	2	16	16*
Kisumu	19	20	27	29
Kitale	3	7	2	18
Kitui	1	7	4	10
Meru	3	2	15	23
Mombasa	10	16	12	17*
Nairobi**	6	16	16	16*
Nakuru	10	22	27	26
Nyeri	3	3	9	17
Thika	2	27	13	34

\* 1997 data, \*\* data for Nairobi from University of Nairobi study clinics [Jackson, 1999]

PERI-URBAN [p/u] and RURAL [r] SITES				
Sentinel sites	District	1994	1995	1997
Chulaimbo [r]	Kisumu	49	22	27*
Kaplong [r]	Bomet	--	4*	6
Karurumo [r]	Embu	2	10	27
Maragua [p/u]	Muranga	7	13	11
Mbale [p/u]	Vihiga	12	11	16
Mosoriot [r]	Uasin Gishu	2	12	9
Motomo [r]	Kitui	0	5	6*
Njambini	Nyeri	--	--	4
Tiwi [p/u]	Kwale	12	24	--

\* 1996 data

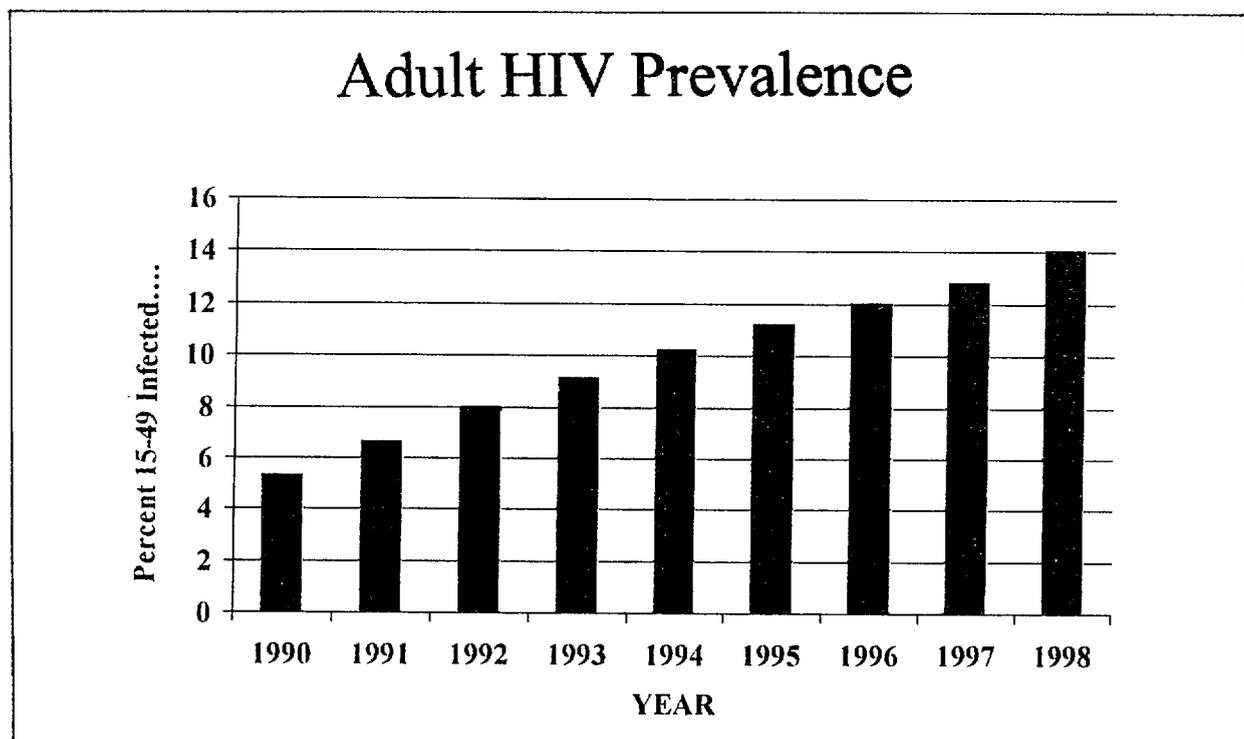
## Current Estimates of HIV Prevalence

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 between the ages of 15 and 49 who are infected with HIV. Although HIV prevalence was very low in Kenya during the early 1980s, it has been increasing since then. The National AIDS and STDs Control Programme estimates that by 1998, adult HIV prevalence had increased to about 13.9 percent' [NAS COP, 1999]

In urban areas prevalence is estimated to be 17-18 percent. That means that there are about 430,000 HIV-infected adults in urban areas.

HIV prevalence in rural areas is increasing rapidly. In 1998 it was between 12-13 percent. This implies that there are about 1.4 million HIV-infected adults living in rural areas.

Although prevalence is higher in urban areas, the absolute or total number of people infected is larger in rural areas since 80% of the population lives in rural areas.



<sup>1</sup> This estimate is different from previous estimates prepared by NASCOP because the definition of adult prevalence has been changed to agree with the UNAIDS definition of infections among adults 15-49. Previously NASCOP reported infections among all adults over the age of 15. Also, new information from surveillance sites in Kenya and elsewhere in Africa has led to changes in the methodology of estimating national prevalence from sentinel sites. Using the previous definition and methodology adult prevalence increased from 9 percent in 1997 to 10 percent in 1998. The previous method therefore underestimates the HIV prevalence among the sexually active population.

## **Transmission Mechanisms**

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

### **Heterosexual contact**

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 in either partner of a sexually transmitted disease (STDs), like syphilis or gonorrhoea, 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 need to focus on reducing transmission through sexual contact.

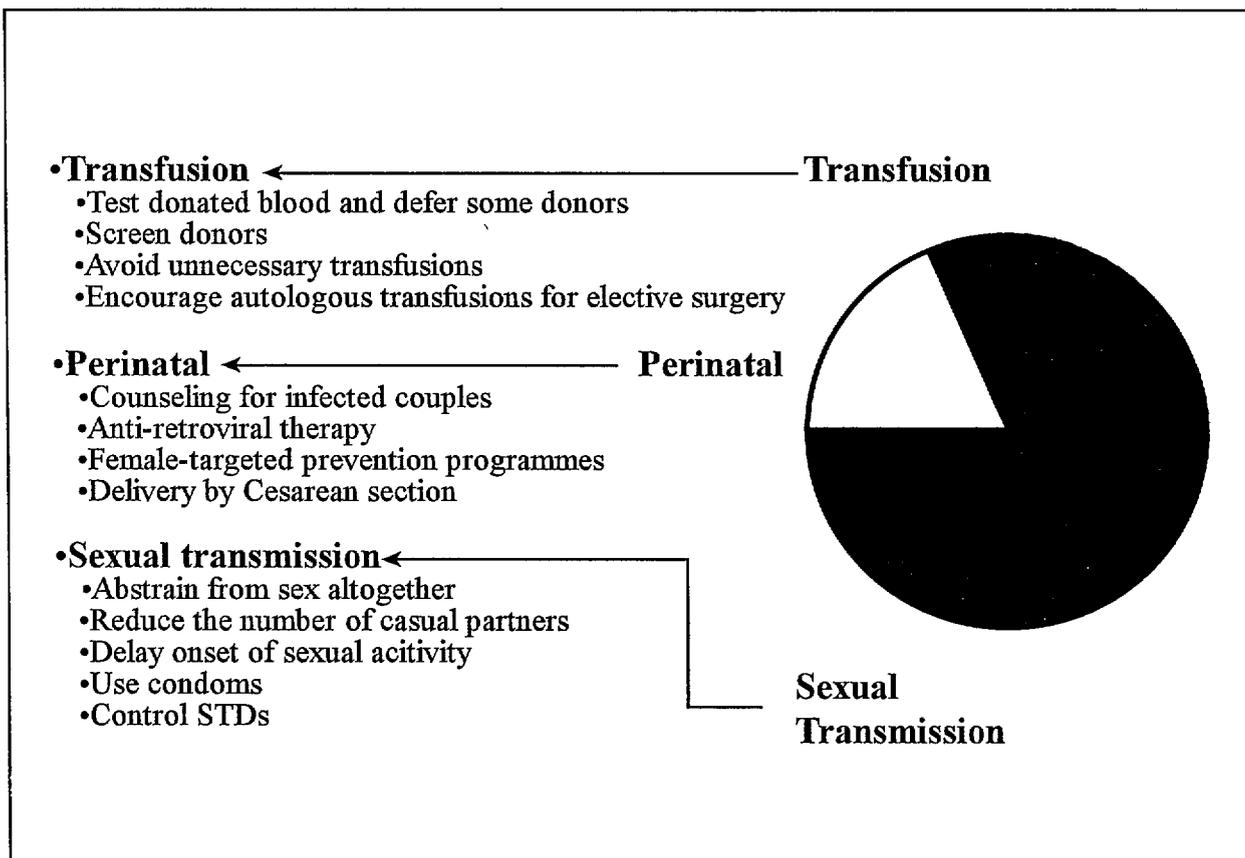
### **Perinatal transmission**

Many children are infected perinatally, that is, they receive the infection from their mothers during pregnancy, at the time of birth or through breastfeeding. About 30-40 percent of babies born to infected mothers will themselves be infected. The rest will not be infected, but are at risk of becoming orphans when their parents die from AIDS. About 106,000 children under the age of 5 are infected today.

### **Blood transfusion**

Transfusion with infected blood will almost always transmit HIV. However, in Kenya close to 100% of the blood is screened for HIV before transfusion. As a result, this mode of transmission is not significant.

# HIV Transmission Mechanisms and Interventions

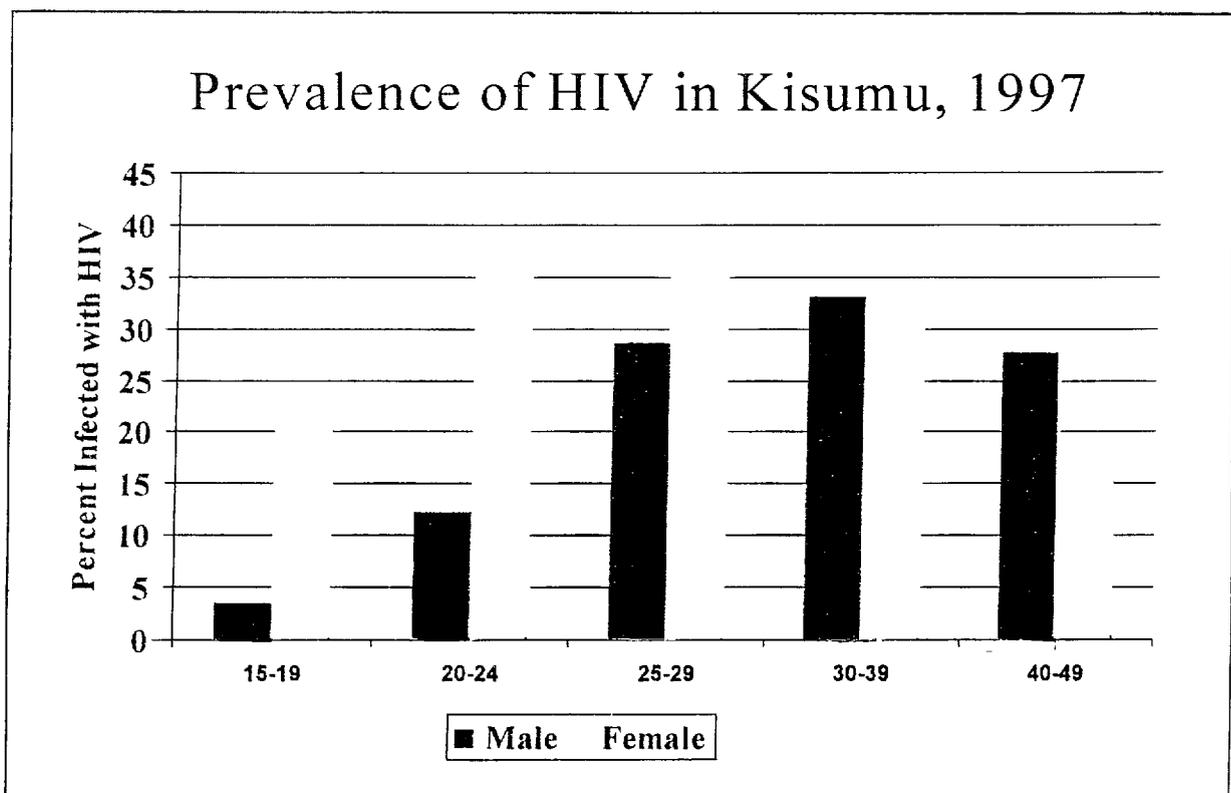


## Age and Sex Distribution of HIV Infection

Since most new infections are transmitted by heterosexual contact, people are at risk of catching the infection as soon as they become sexually active. The chart below shows the results of a study in Kisumu (Kahindo et al. 1997), which illustrates the proportion of the population that is infected with HIV by age and sex. The pattern of infection is similar everywhere in Kenya. Infection levels are extremely high for girls and young women. The highest infection levels for women are in the 20-24 age group, while for men the highest infection levels are found in the 30-39 age group. The same study found that 18 percent of women in Kisumu were infected within two years of becoming sexually active.

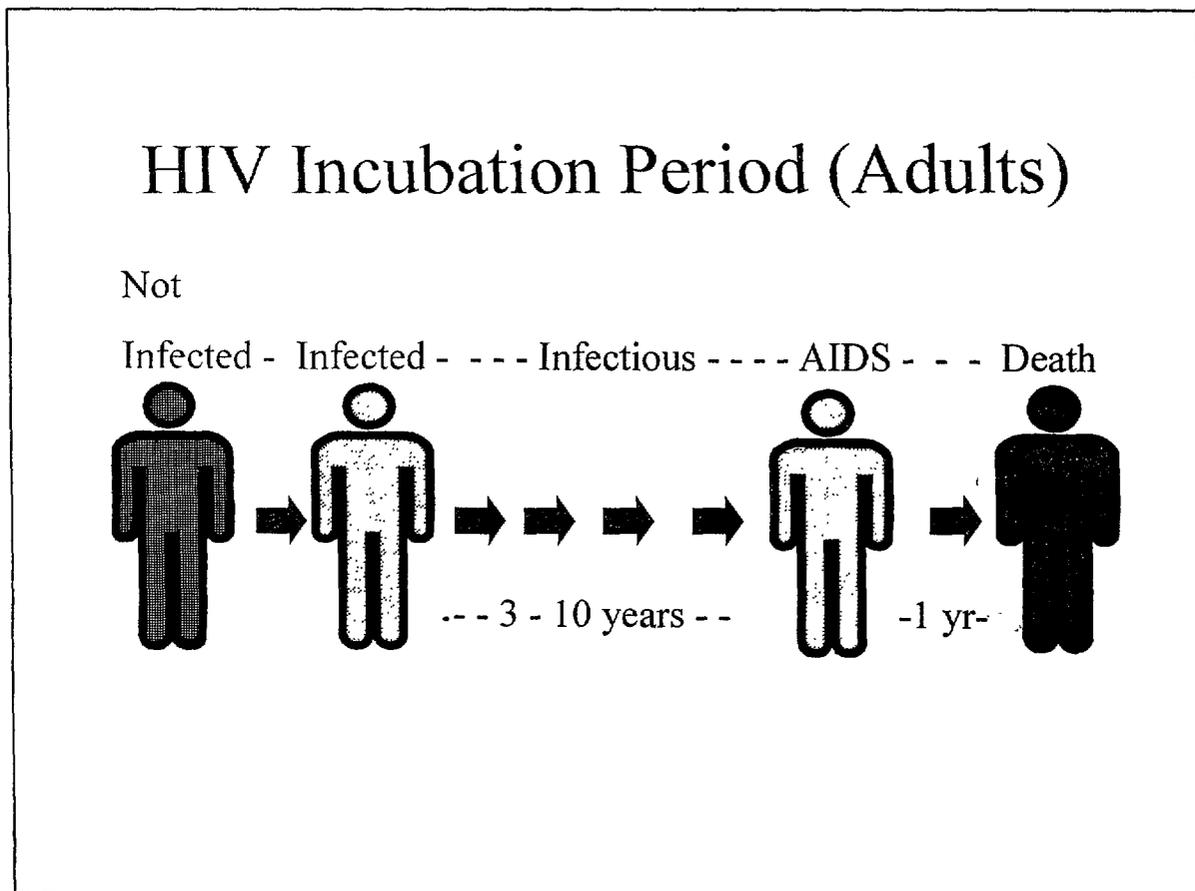
A growing body of research suggests that high proportions of Kenya's teenagers are sexually active, and their sexual behaviours put many of them at risk of HIV infection. The Kenya Demographic and Health Survey (KDHS, 1998) reports that the median age at first intercourse is about 17 for women and men. Median age at first marriage is 19 for women and 25 for men. Thus, there is a significant period of sexual activity before marriage that exposes young people to the risk of HIV infection.

Not all young people have sex because they want to. In a nation-wide study of 12-24 year-old women, one young woman in four said she lost her virginity because she had been forced to have intercourse. In Nyanza, a quarter of secondary school boys and half of the girls described their first sexual experience as unpleasant or worse. Unwilling sex with an infected partner carries a high risk of infection, especially for girls, since if force is used abrasions and cuts are more likely and the virus can more easily find its way into the bloodstream. What's more, condom use is unlikely in such situations.

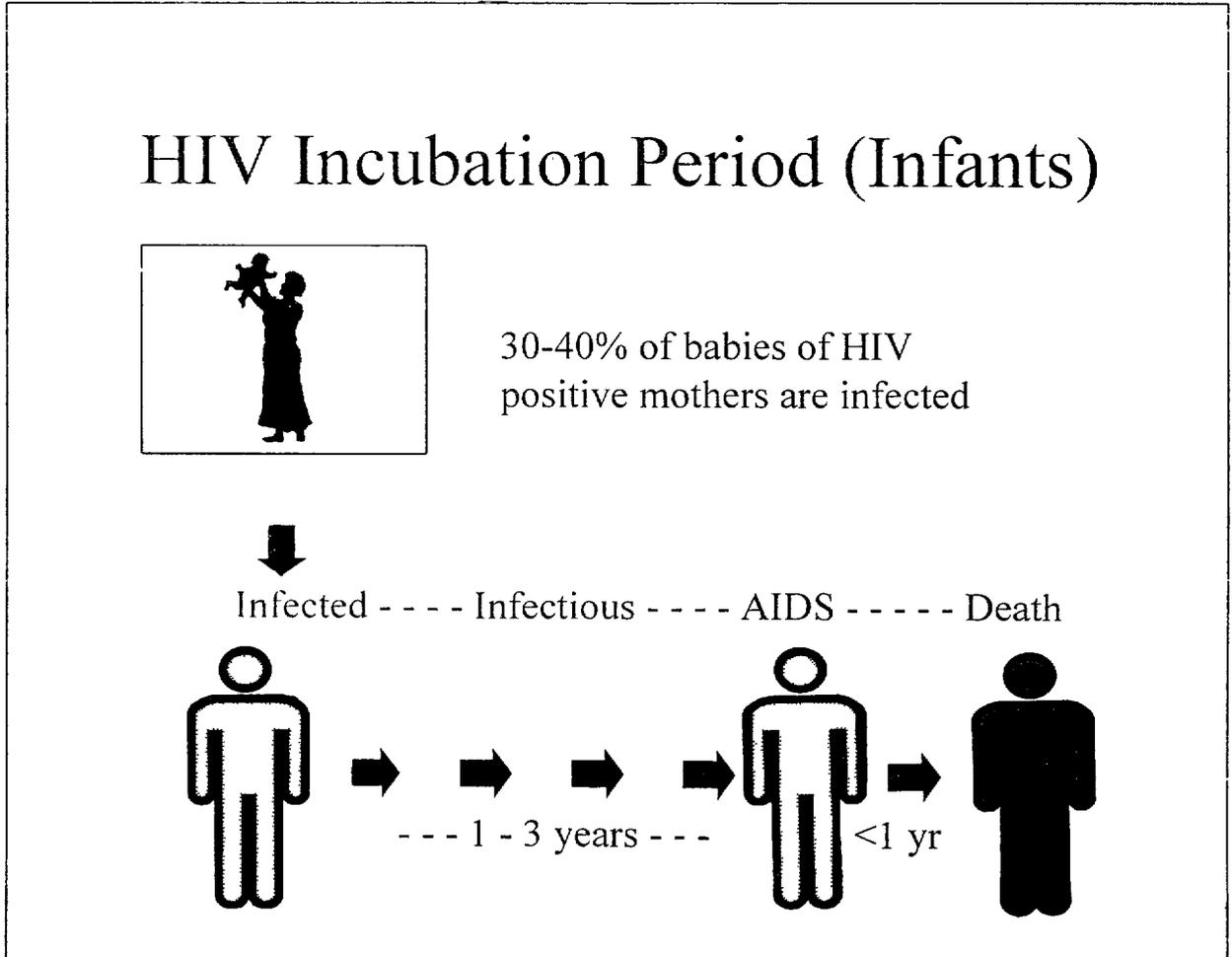


## Incubation Period

A person does not develop AIDS as soon as he or she becomes infected with HIV. The interval between infection with HIV to onset of the disease, AIDS is between 3 and 10 years. During this incubation 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.



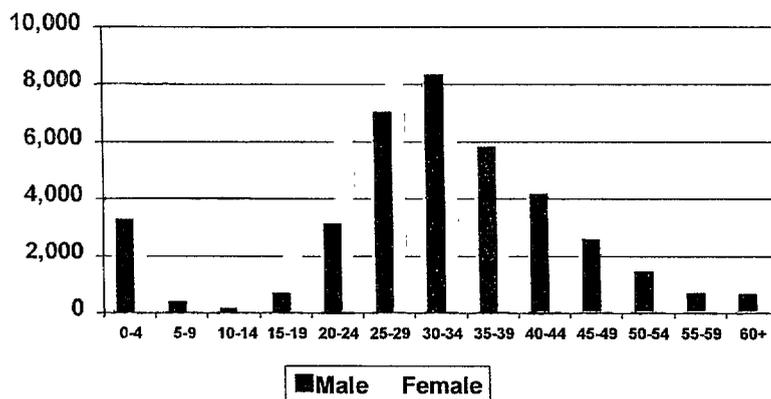
For children the incubation period is much shorter because their immune systems are not fully developed. Most children who are infected at birth develop AIDS and die within five years



### Age and Sex Distribution of Reported AIDS Cases

The chart below shows the distribution of reported AIDS cases by age and sex since 1986. 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.

## Age and Sex Distribution of Reported AIDS Cases (1986-1998)



Several interesting facts are illustrated by this bar chart.

- More than 75 percent of AIDS, and therefore of the resulting AIDS deaths occur to adults between the ages of 20 and 45. Since this is the most economically productive part of the population, these deaths constitute a serious economic burden. This is also the age when investments in education are just beginning to pay off. These deaths also have severe consequences for children since most people in this age group are raising young children.
- Male and female cases are about equal. This is because HIV is predominantly transmitted through heterosexual contact.
- The peak ages for AIDS cases are 25-29 for females and 30-34 for males.
- Young women in the age groups 15-19 and 20-24 are more than twice as likely to have AIDS as males in the same age group.
- About 10 percent of reported AIDS cases occur in children under five years of age. Most of these cases are due to mother-to-child transmission.
- The absence of many AIDS cases in the 5-14 year old age group indicates that infection is not spread by mosquitoes or casual contact such as shaking hands.

## Frequently Asked Questions

Since April 1993 over 600 presentations based on this booklet have been given to audiences in Kenya. More than 15,000 people have participated in these presentations and asked many questions. Some questions have been asked more often than others. The most frequently asked questions are listed below, along with brief responses.

### ***1. How and where did AIDS originate?***

No one knows how AIDS originated or where. It may be that HIV has been around for a long time, infecting only a few people, and only recently started to spread so quickly and became so deadly. The fact is that AIDS is here and it matters little where it originated. Some research on this issue continues, but most scientific efforts are concentrating on finding ways to prevent and treat the disease.

### ***2. Why is Africa, of all the regions in the world, the most hard hit?***

The World Health Organization estimates that 70 percent of all AIDS cases have occurred in Africa. A large number of cases have also occurred in the United States and Europe. HIV is now increasing rapidly in Asia. It is expected that within a few years there will be more HIV infections in Asia than anywhere else in the world. Africa certainly has a higher proportion of its population infected than any other region of the world. This may be due to poverty, the high prevalence of other sexually transmitted diseases, and cultural practices and beliefs.

### ***3. Why is HIV worse in western Kenya?***

Infection levels were higher in western Kenya because the epidemic started earlier there. Other factors may also have contributed, such as a higher density of population, more movement of people due to trading and migration routes, non-practice of male circumcision, and cultural beliefs and practices such as widow inheritance. HIV is still spreading rapidly in Kenya, so that many areas that had low infection levels in the past are now experiencing levels similar to western Kenya.

### ***4. Are scientists succeeding in getting a cure for AIDS?***

Scientists have learned much about HIV and AIDS in the years since the epidemic started. They are pursuing approaches to find vaccines to prevent HIV transmission and drugs that can prevent HIV infection from developing into AIDS. Recently, new therapies combining three different drugs have proven successful in preventing or slowing the progress from HIV infection to AIDS. However, these drugs are extremely expensive. They are not a cure and, therefore, must be taken for a long time. The long-term consequences of taking these drugs are not known. Several vaccines are under development, but the process of developing and testing drugs and vaccines is a long one. No one expects an effective vaccine to be available within the next ten years. Therefore, efforts to prevent the spread of HIV through education are the main weapon against the spread of HIV.

**5. *Is there more than one type of HIV? Does the virus mutate?***

There are different strains of HIV. The largest difference is between HIV-1, which is found in Kenya and most parts of the world, and HIV-2, which is found primarily in western Africa. HIV-2 does not transmit as readily as HIV-1 but still leads to eventual death. There are various strains of HIV-1 as well. Originally sub-type B was predominant in America and Europe, type E was in Thailand and Australia and types A, C and D were in Africa and India. Now, however, most strains can be found almost everywhere. Scientist have not found any differences between the subtypes in terms of ease of transmission or time from infection to death.

**6. *You have said that the most important mechanisms for transmitting the virus are heterosexual intercourse, perinatal transmission and blood transfusions. How important are other means of transmitting the virus, such as circumcision, homosexuality, sharing shaving instruments, dental instruments, mosquitoes, kissing, etc.?***

HIV can be transmitted by any means that involves contact of blood from an infected person with the blood of an uninfected person. Therefore, it can be transmitted through unsafe practices such as using circumcision knives, shaving or dental instruments without proper sterilization. However, there are very few confirmed cases of transmission through these mechanisms. Although low levels of HIV have been found in saliva there is no evidence that HIV has ever been transmitted through kissing. Although mosquitoes may transmit small amounts of blood from one person to the next, the amount of blood is very small and insects do not normally travel from one person to another immediately after ingesting blood. There is no evidence of HIV transmission through mosquitoes, even in areas where there are large numbers of HIV-infected people and large numbers of mosquitoes.

**7. *Why do some people (e.g. some prostitutes/commercial sex workers) escape HIV infection despite constant exposure and lack of protection?***

Scientists do not know why some people seem to remain free of infection even though they are apparently exposed repeatedly to HIV. This issue is being studied intensively in hopes that it will lead to advances in HIV prevention or cure. However, it appears that only a small portion of the population has this immunity and there is no way of knowing who is immune and who is not. Therefore, all people should take precautions to protect themselves.

**8. *Are condoms really safe if used properly? Can HIV pass through the pores of the condom?***

Condoms are not 100% effective. The only 100% effective method of avoiding HIV infection is abstinence. Condoms do, however, substantially reduce the risk of HIV and other sexually transmitted infections. If condoms are used correctly they provide reliable protection. The highest risk for condom users is when condoms are used inconsistently or improperly. Condoms have a thickness of 0.03 to 0.09 mm. This thickness rules out the possibility of holes. Condoms are also tested extensively to make sure that they meet standards set by the World Health Organization.

**9. *Why do some HIV-positive mothers transmit the virus to their new born children while others do not?***

Scientists do not know exactly why some mothers transmit the virus to their babies and others do not. Many factors may be involved, such as the type of delivery, the amount of blood involved, the nutritional status of the mother, the stage of the disease in the mother and whether the mother breastfeeds the baby. Research is continuing to try to understand this transmission mechanism so that prevention approaches can be developed. *Recent research has shown that the risk of transmission of HIV from mother to child can be reduced by 50-70 percent if the mother and child are given a drug called Azidovudine (AZT) and avoid breastfeeding.*

**10. *Why can't the government test everybody for HIV infection?***

There are several reasons why it is not sensible to test everyone for HIV infection. Firstly, the cost would be very large, several times as much as what the government currently spends for all health services. Secondly, it would be unethical to test people for HIV infection without asking their permission or providing them with counseling to help them cope with a positive test or understand how to remain infection free if they are currently not infected. There are not enough trained counselors or funds to mount such a massive effort.

However, the government encourages people who wish to know their HIV status, especially before they get married or before getting pregnant to go to the nearest hospital for assistance. Many hospitals have reliable HIV testing facilities and trained counselors. It is advisable for pregnant women to establish their HIV status so that, if they are infected, they can be discouraged from breastfeeding their children.

***11. Why not quarantine those who are infected with HIV?***

There are several reasons why quarantine is not an effective measure for the control of HIV infection. First, most people who are infected do not know it, so it would be impossible to quarantine everyone who is infected. Second, there are an estimated 1.9 million infected people in Kenya today. How could so many people be quarantined? Third, there are other ways to prevent HIV transmission that do not require quarantine (partners remaining faithful to each other, use of condoms, treatment of sexually transmitted diseases). Finally, establishing a policy of quarantine would cause people to hide their HIV status. People would not want to be tested and, if they knew they were infected, they would not want to tell anyone. Most people would act as if they were not infected, to avoid quarantine. This behaviour would contribute to a worsening epidemic. Respecting the human rights of infected individuals is important and is essential to implementing effective HIV control programmes.

***12. Despite education campaigns and increased condom use, HIV is still increasing. Why aren't these programmes effective?***

The AIDS prevention programmes that have been implemented have had an effect in reducing the severity of the epidemic. Many people have changed their behaviour to stick with one faithful partner. Many others have adopted condom use, others are seeking treatment for sexually transmitted diseases. One study estimated that increased condom use alone has saved hundred of thousands of people from HIV infection in Kenya. [Stover and Baltazar. 1998] So these programs have had an effect. Unfortunately, they have not been so widespread or effective to prevent all new infections. In fact, the number of infected people is still increasing. Only a much expanded prevention programme, with participation from all sectors (government, NGOs, private sector, religious groups, churches, professional organizations, community groups) will be successful in reducing the number of infected people in the future.

## **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 in Kenya increase above the 1998 level of about 14 percent? If it does, how high might it go in the absence of expanded AIDS control programmes and significant behavioral changes: 15 percent, 17 percent, 20 percent?

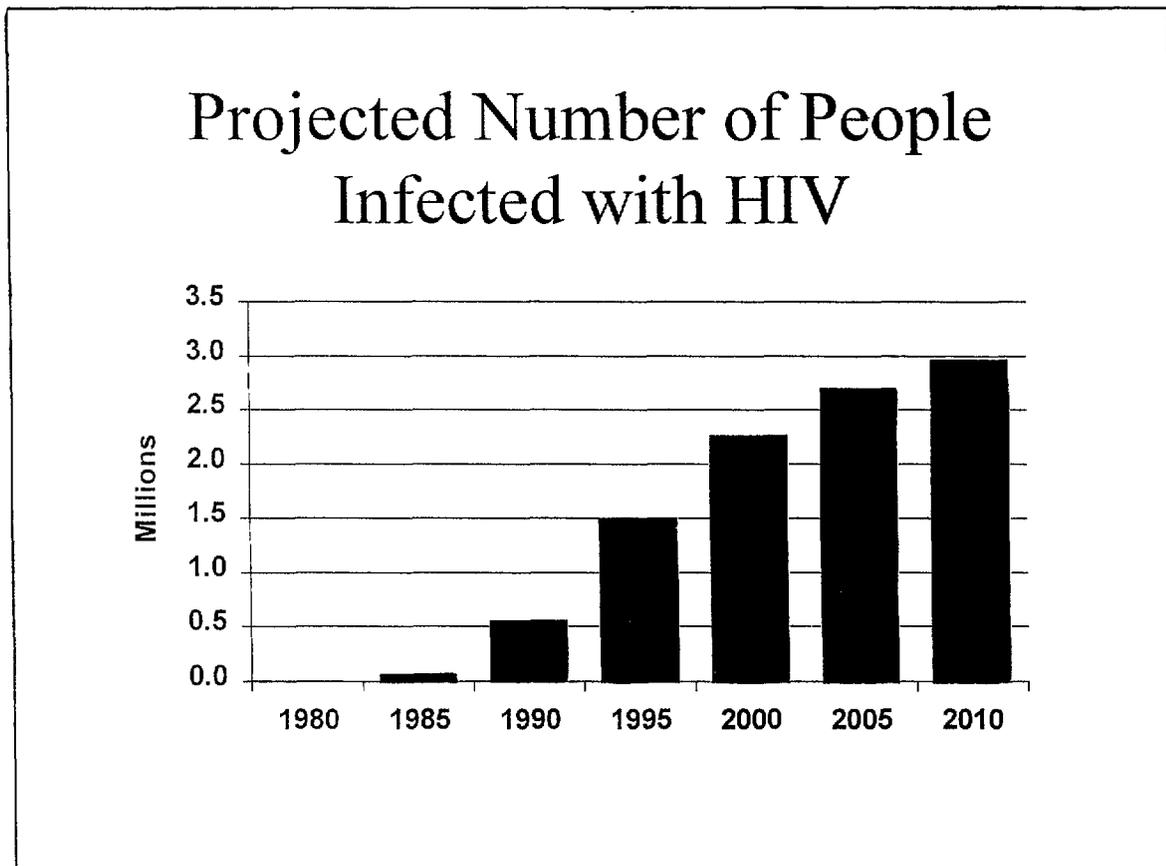
Since prevalence is still increasing in some areas of Kenya and there is not yet any evidence of a decline in prevalence anywhere, it is likely that prevalence will continue to increase, at least for the next few years. Although the national prevalence in 1998 was estimated at 14 percent, it was 18 percent 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. 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.

The trend in prevalence from 1990 to 1998 suggests that prevalence in all of Kenya will increase from about 14 percent of the adult population in 1998 to about 15 percent by the year 2005 and then stabilize at that level.

## Number of Future HIV Infections and AIDS Cases

If HIV prevalence does increase to 15 percent by the year 2005, then the number of infected people in the population would increase to 2.2 million people by 2000 and to 3.0 million by 2005. The number of new AIDS cases each year resulting from these infections would increase to 240,000 by 2000.

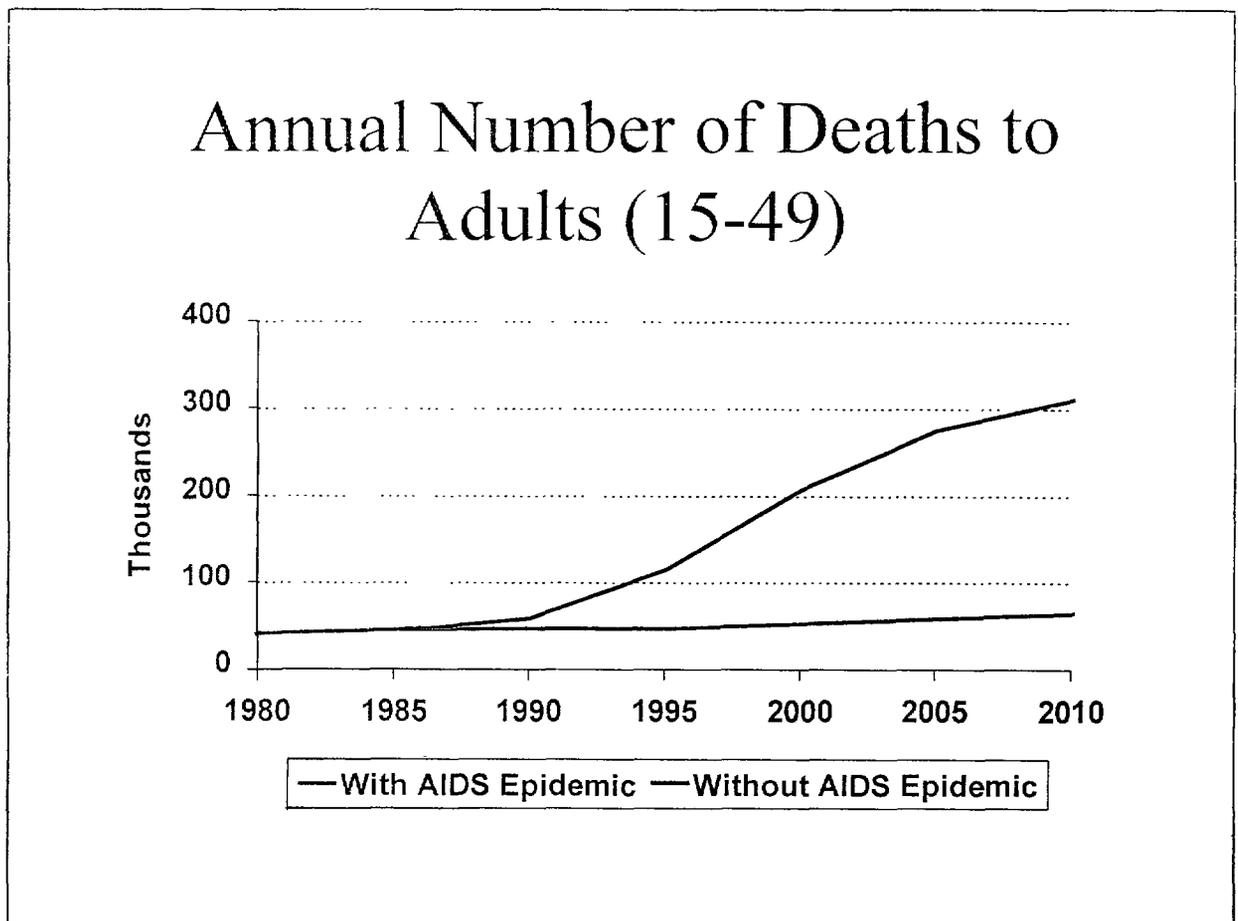
The cumulative number of AIDS deaths would increase from over 700,000 today to 2.7 million by 2005.



## 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 adults (ages 15 to 49) would increase slowly (because of the growing population) from about 49,000 today to 58,000 by 2005. However, AIDS will dramatically increase that number, more than quadrupling it to 208,000 a year (over 560 deaths daily) by 2000 and increasing to 270,000 (about 740 deaths per day) 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.

One dramatic impact of AIDS deaths is the decline in life expectancy. The Central Bureau of Statistics estimates that without AIDS, life expectancy at birth would currently be about 65 years. However, due to the large number of AIDS deaths, it is actually only about 50 years and may decline to as low as 42 years by 2010. Thus a full 15 years of life expectancy have already been lost due to AIDS.



### **III. The Social and Economic Impacts of AIDS**

AIDS orphans

Population size and growth

Costs of health care

Childhood deaths

HIV and tuberculosis

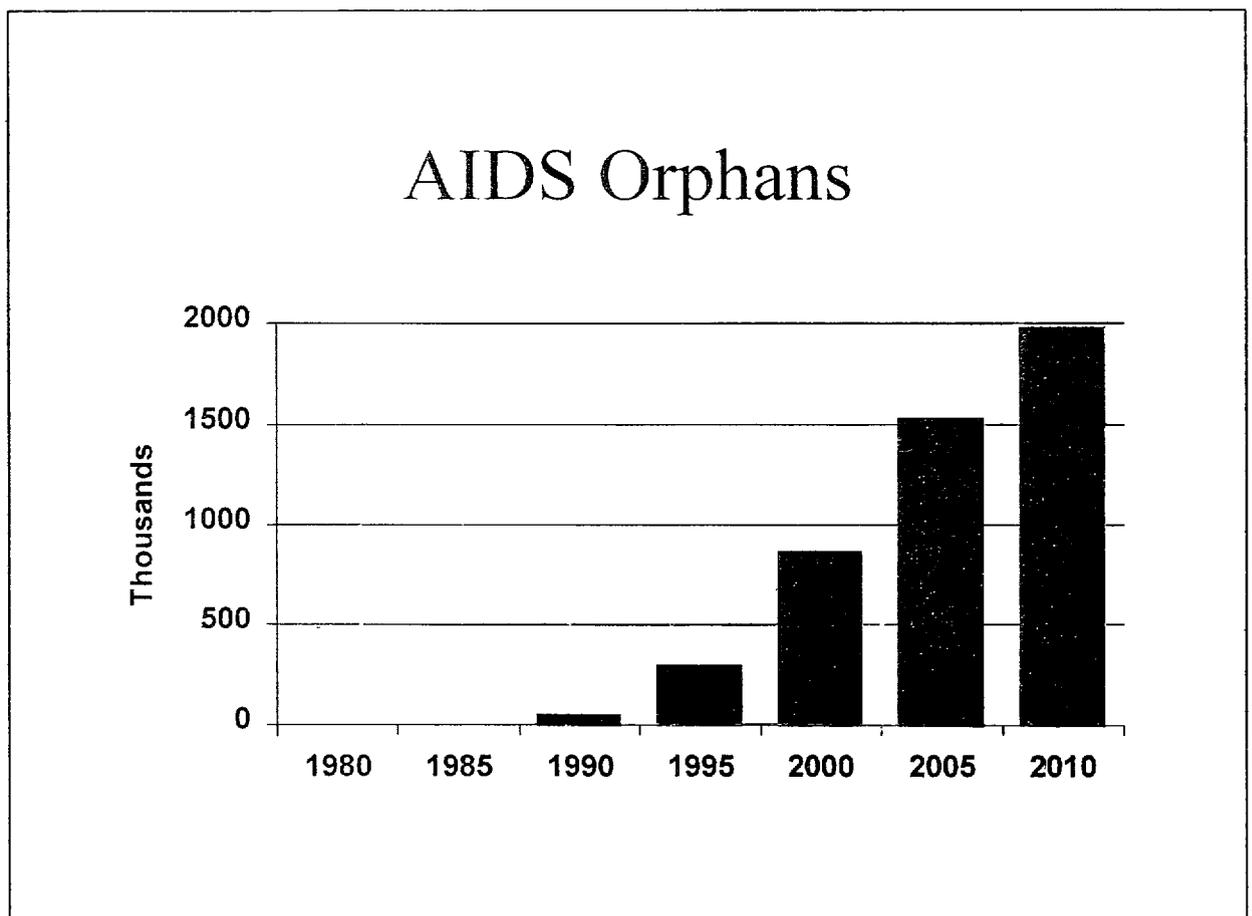
The economic impacts of AIDS

## 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 the mother to AIDS. With this definition, the number of AIDS orphans would increase to 860,000 by 2000 and to 1.5 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 that will try to care for these orphans. Many grandparents are left to care for young children. Some families are headed by children as young as 10-12 years old.
- At the community and national level there is an increased burden on society to provide services for these children, including orphanages, health care and school fees. Many children go without adequate health care and schooling, increasing the burden on society in future years. There may also be an increase in the number of urban street children.



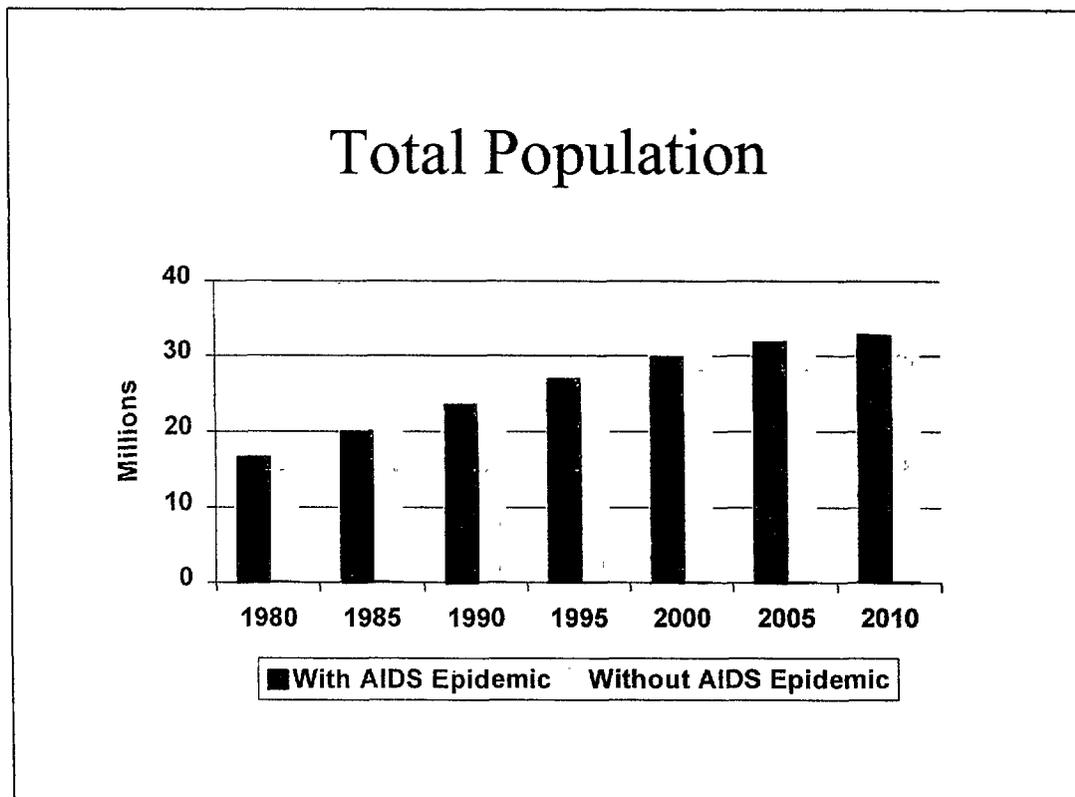
## Population Size and Growth

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 4.7 during 1995-98 to 3.9 by 2005. It also assumes that mortality from all causes other than AIDS continues to decline so that life expectancy would increase from about 64 years today to 67 by 2010 if there were no AIDS deaths.

**With no AIDS**, the population would increase from about 27 million in 1995 to 31 million by 2000 and to 35 million by 2005. By 2005 the population would be growing at 2.1 percent per year.

**With AIDS causing increased deaths**, the total population of Kenya would be 1.7 million smaller by 2000 and 3.6 million smaller by 2005. Thus, the combined impact of AIDS deaths and fewer births because of a smaller reproductive age population would result in 3.6 million fewer people by 2005. However, by 2005 the population would still be growing at 1.0 percent per year.

AIDS will have a significant impact on population size, but the population will still grow significantly by 2005. The growth rate of the population will be less because of AIDS, but it will still be 1.0 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

Today almost two million people in Kenya are infected with HIV. Therefore, it is important to consider the kinds of care and treatment that are available and appropriate for people with an HIV infection or AIDS. As HIV infection progresses in an individual it produces a variety of increasingly severe problems. The first symptoms may be common complaints such as headaches and diarrhoea. Later opportunistic infections such as tuberculosis may appear. Eventually the immune system is weakened to the point where the person dies, often from one or more opportunistic infections. There are three classes of treatment that are available today: palliative care, prevention and treatment of opportunistic infections and anti-retroviral therapy.

Palliative care refers to the relief of symptoms that may be associated with HIV infection. These include diarrhoea, skin rash, cough, fever, headache, pain, nausea and shortness of breath. People with an HIV infection may suffer from several of these problems at different times during the course of their illness. These symptoms can be treated with relatively inexpensive drugs, if the drugs are available.

### Annual Cost of HIV/AIDS Treatment in Sub-Saharan Africa

Type of Treatment	Approximate Cost (US\$ per patient per year)
Palliative care	\$20
Opportunistic infections	
-inexpensive	\$30
-expensive	\$200
Anti-retroviral therapy	\$10,000-20,000

Opportunistic infections are those that take advantage of the weakened immune system of people with HIV. These infections are usually rare or much less serious in people with healthy immune systems. Some of these infections can be treated with relatively inexpensive drugs. These infections include tuberculosis, pneumonia, thrush and toxoplasmosis. Treatment of these infections can extend the life of an infected individual by a few years.

More expensive drugs are required to treat other opportunistic infections, such as cryptococcosis and herpes simplex virus. These infections are not only more expensive to treat but they appear during the later stages of HIV/AIDS.

Anti-retroviral drugs have proven effective in the treatment of HIV infection. They have made a dramatic difference in the course of the disease and improved quality of life of people with HIV. The main handicap is the high cost of treatment. The costs of these treatments are prohibitive except for the very rich. The drugs themselves cost about US \$10,000 - \$20,000 per year for each patient, apart from the other medical costs associated with the treatment.

A 1992 study [Forsythe, et al] estimated the cost of hospital care for an AIDS patient at Kshs. 27,200. The *Sessional Paper No. 4 of 1997 on AIDS in Kenya* estimates the direct cost of treating a new AIDS patient at Kshs 34,680 while indirect costs (lost wages) amounts to Kshs 538,560. This brings the estimated total cost of AIDS (direct and indirect) to over Kshs 573,240.

per patient. The direct cost of AIDS comprises cost of drugs, laboratory tests, radiology and hospital overhead costs while indirect cost encompasses the average productive life-years lost.

Nalo and Aoko (1993) estimated that, by the year 2000, expenditure on AIDS would equal the entire 1993/94 recurrent budget of the Ministry of Health. The analysis further noted that in 1991, the total cost of AIDS to the country ranged between 2-4 percent of GDP but this would increase to 15 percent by the year 2000. The rising cost of AIDS is extremely worrying for a low income country such as Kenya having per capita income of only US\$ 280

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 occupied by AIDS patients. Ngugi (1995) estimated bed occupancy rates for HIV/AIDS-related opportunistic diseases at adult wards in major urban hospitals including Kenyatta National Hospital at 30 percent, while district hospitals had bed utilization ranging between 10-30 percent. However, the study noted that significant differences exist with Kisumu and Busia districts recording bed occupancy rates by HIV/AIDS-related illnesses as high as 70 percent. Such a demand for beds for AIDS patients greatly constraints hospital facilities, undermining the normal operations. As the epidemic grows, so will the hospital bed requirements. By the year 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.

## Impact of AIDS on Education

Kenya's education system is already under threat from HIV/AIDS scourge. According to a study by UNESCO (1995) the most immediate and visible impact of HIV/AIDS on the education system can already be seen and felt. Most of the children infected at birth have not lived to enroll in school; some of the children enrolled have dropped out of school in order to earn money for their families and for the care of ill relatives; teachers have fallen ill and have died.

Generally the education system will be affected as it struggles to respond to and cope with the pressures of HIV/AIDS on educational demand.

## Childhood Deaths

AIDS also affects child survival. About 30-40 percent of babies born to infected mothers will also be infected with HIV. Approximately 25% of HIV infected children survive beyond their fifth birthday and are increasingly contributing to the numbers of children with chronic illness (Boerma).

AIDS may already be 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.

HIV infected children may die from AIDS or from lack of care because their mothers are unwell or they are overwhelmed with the burden of caring for other ill members of the families. Several studies in Africa have shown that HIV uninfected children of HIV sero-positive women have a much higher mortality than children of uninfected women living in the same environment (Boerma).

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

- Infant mortality rate is the number of children who die before their first birthday per 1000 live births. In 1993-1998 period, the infant mortality rate in Kenya was 74 per 1000 live births compared to 67.7 in the previous four years period. The increase in infant mortality rate is attributable to AIDS.  
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.
- Child mortality rate is the number of children who die between their first and fifth birthday per 1000 live births. The child mortality has also increased from the previous estimate of 33.5 per 1000 live births to the current rate of 40.8 per 1000 live births.

- Under five mortality rate is the number of children who die before reaching their fifth birthday per 1000 live births. The current rate is 112 per 1000 live births, an increase from the previous estimate of 98.9 per 1000 live births (KDHS, 1998)  
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 120-125

## **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 HIV weakens the immune system, 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 40,000 to 60,000 new TB cases each year

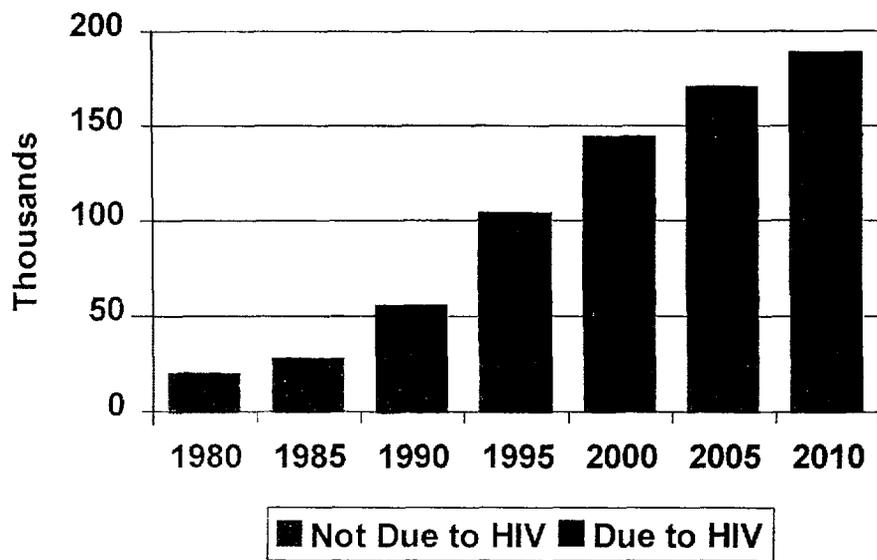
With AIDS, a number of new cases will develop. If we assume that among people with both HIV and latent TB infections, 8 percent develop TB each year, then the additional number of TB cases due to HIV infection would be about 120,000 by 2005. Even this is likely to be an under-estimate since these new cases may transmit the disease to others.

In a recent study in Kenyatta National Hospital, the proportion of TB cases among all patients admitted doubled from eight to 16 percent between 1988/89 and 1997. In HIV-infected patients, the proportion that also had active TB infection rose from 18 to 27 percent over the same period.

The consequences of a sharp rise in TB go beyond simple health concerns. The hospital study showed that TB was the most costly disease to treat for the health service. So rising TB infections will inevitably drain resources from other essential health and welfare services if quality services are to be maintained. A breakdown in TB treatment services that leaves patients half-treated may lead to the faster development of drug-resistant strains of the disease.

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 control of TB is very expensive and puts considerable strain on the health budget.

# New Adult Cases of Tuberculosis



## The Economic Impacts of AIDS

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AIDS will create severe economic impacts in Kenya. It causes a reduction in the size and experience of the labour force, increases health care expenditure, raises the costs of labor and reduces savings and investment. It is different from most other diseases because it strikes people in the most productive age groups and is essentially 100 percent fatal. The economic effects of AIDS will be felt first by individuals and their families, then ripple outwards to firms and businesses and the macro-economy.

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.

When someone in a family becomes sick with AIDS, it is usually the women who care for the sick person. Young girls may have to stay home from school to help the mother with the other children. The family may exhaust its savings to pay for drugs and funeral expenses. In some cases they may even be forced to sell land. The result is that families become poorer, children's education may suffer and the standard of living of the entire family declines [Okeyo, 1992].

### Impact of AIDS on Firms

The economic impact of HIV/AIDS on companies is manifested by reduced labour productivity through AIDS related deaths, absenteeism, and loss of skilled work force. Other effects include increased expenditures on staff recruitment and training, funeral expenses, medical costs and increased employees' benefits. These costs could be enormous to a firm depending on the HIV prevalence among the employees.

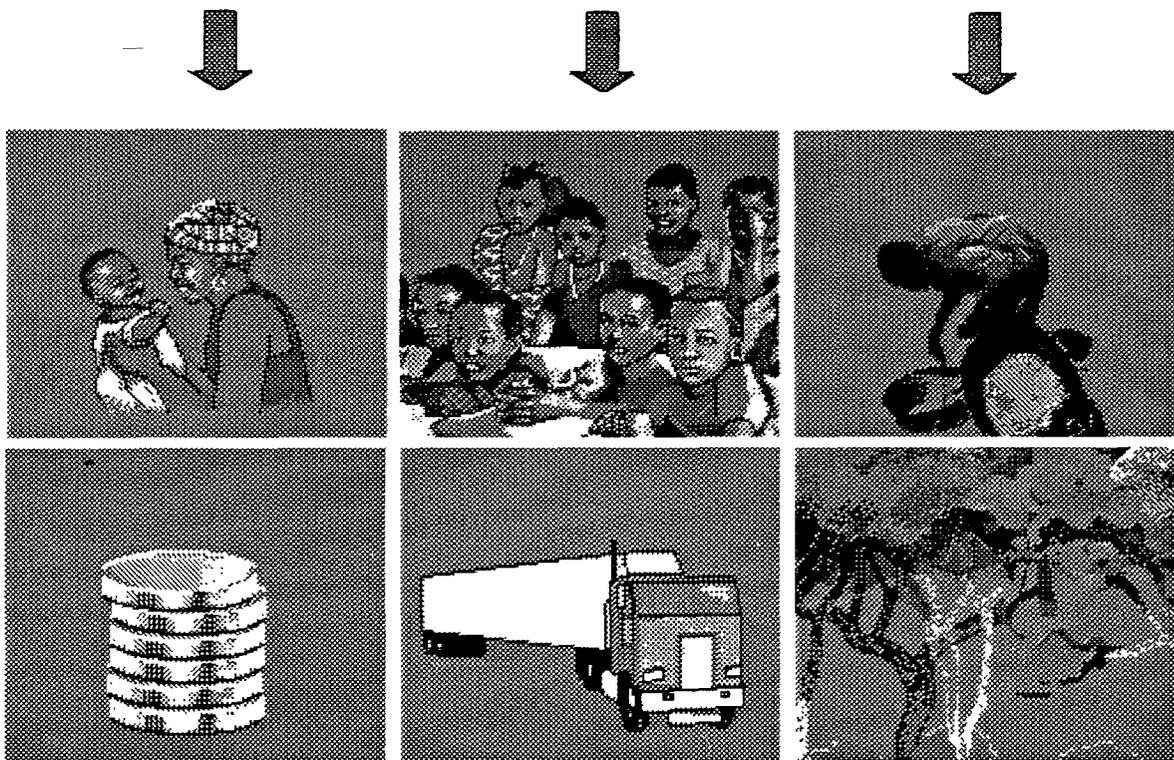
According to a World Bank Strategy (1995) report: *AIDS Prevention and Mitigation in Sub-Saharan Africa*, a Kenyan company spends about US\$ 45 per employee per year for HIV/AIDS related costs or 3 percent of company profits. It is projected that this cost will increase to US\$120 per employee per year, equivalent to 8 percent of company profits, by the year 2000. The report further notes that in 1992, an average company in Kenya incurred mean annual costs associated with AIDS of approximately US\$ 140,000. This cost was expected to rise to US\$ 403,000 by the year 2005.

## Impact of AIDS on Commercial Agriculture

Agriculture is the predominant economic activity in Kenya. The sector accounts for approximately 30 percent of the GDP and 70 percent of the export earnings. About 80 percent of all Kenyans live in the rural areas of which 90 percent make out their livelihood from agriculture. The agriculture sector also employs about 50 percent of the Kenyan labour force. The sector is therefore extremely important to Kenya's economy.

It has been shown that AIDS is likely to have adverse effects on agriculture, including loss of skilled and unskilled labour supply, decline in labour productivity and loss of remittance income due to AIDS related death of income earners. A study on the impact of HIV/AIDS in five commercial agro-estates in three Kenyan provinces: Nyanza, Rift Valley and Eastern, reveals that the cumulative cases of AIDS in the agro-estates accounts for as high as 30 percent of the workforce in Nyanza, 12 percent in the Rift Valley and 3 percent in Eastern province.

## HIV/AIDS Epidemic Affects All Sectors...



## **Impact of HIV/AIDS on Smallholder Farmers**

Commercial and/or estate farming in Kenya interacts with smallholder farming in several ways

- Smallholder farming is a major source of labour for agro-estates;
- Migrants working in agro-estates send remittances to rural areas and thereby contribute to the subsistence economy of smallholder farmers;
- Smallholder agriculture produces goods and services (e.g. food crops) which are essential needs for agro-estate workers;
- Smallholder agriculture forms a bulk of the market of most of the products produced by some of the agro-estates; and
- In some cases, survival of agro-estates depends on external producers (the so-called out-growers) who provide the bulk of raw materials for processing.

In view of the complex interaction described above, it seems obvious that whatever happens in one of the sectors will have an effect on the other. In a study by Rugalema, et al (1997) covering two farming systems: (a) semi-subsistence sugarcane out-growers who supply sugar cane to sugar companies in Nyanza Province and (b) semi-subsistence vegetable growers (an irrigation scheme) in Eastern province, it was clear that morbidity and mortality in the households had led to decrease of acreage, loss of income, increased dependency ratio and general increase in food insecurity. Similar effects have been observed in other countries with similar social, economic, and agro-ecological environments.

Of relevance to the sugar companies is that illness and death of out-growers mean a decrease in supply of sugarcane to the sugar factory. The impact is significant, given that for the two sugar agro-estates surveyed in Nyanza Province the nuclear estates (company farm under cane) produces only 10 percent of the cane processed in the factories, while out-growers, the majority of whom are small holder farmers, produce 90 percent of cane.

### **Macroeconomic Impact of AIDS**

Besides sectoral effects, AIDS can negatively affect the macro-economy in a number of ways. This occurs when key macro economic variables are destabilised as a result of AIDS. Some of the macro-effects are: reduction in savings and investment as health expenditure on AIDS escalate, decline in labour productivity as a result of morbidity leading to HIV absenteeism, and AIDS mortality culminating in loss of experienced workers.

Simulation results by Nalo and Aoko (1996) on the macroeconomic impact of HIV/AIDS in Kenya reveal that the impact of AIDS could be substantial given that 80 percent of HIV infection occurs in the economically active age group, that is, 15-49 years. With high mortality and morbidity of the most productive labour force, AIDS would lower economic performance. The

authors projected that GDP would be 14.5 percent lower in the year 2005 than without AIDS while per capita income would drop by 10 percent. The study also predicts a 15 percent drop in savings by 2005. The simulation also predicted a fall in labour productivity occasioned by the replacement of experienced workers with an average age of 34 years by relatively young workers with average age of 25 years. These developments are detrimental to the Kenyan economy, which is currently in a recession, with low economic growth, low savings and investment, and low foreign direct investments. The challenge posed by AIDS is real and requires deliberate efforts if the effects are to be contained.

The macroeconomic effect of HIV/AIDS also manifests itself through increased medical expenses, absenteeism, a decline in labour productivity, and the costs of mortality and funeral costs. These costs have been illustrated through surveys that attach some specific values to each of the mentioned items.

- **Medical expenses.** Employer-paid medical costs in the agro-estate surveyed rose from a modest Kshs. 300,000 in the 1980s to Kshs. 8.1 million in 1997. Employee-paid costs also rose from a mere Kshs. 1.5 million in 1989 to Kshs. 11.3 million in 1997. In the absence of HIV/AIDS most of these resources could have been saved or invested in productive ventures. Therefore, AIDS affects savings of both individuals and organizations which cumulatively reduces the general level of saving and investments in the country.
- **Absenteeism.** Absenteeism is a cost in the sense that absent employees continue to be paid for the job they did not perform. Records of labour time lost due to morbidity kept by a company in Nyanza Province showed that between 1995 and 1997, the company lost a total of 8,007 labour days due to illness of its employees of which a significant portion was attributed to HIV related illnesses (Rugalema, 1997). Another Nyanza based company reported having lost a total of 660 labour days between 1995 and 1997 due to sick-offs among employees affected by HIV and AIDS.

The indirect effect of absenteeism is that it results into extra work for other *healthy employees* who have to stand-in for sick colleagues. In some of the companies, healthy employees were increasingly working for extra hours or overtime to compensate time lost by their absent (sick) colleagues. In so doing, not only did companies pay more in terms of overtime but workers interviewed pointed out that they were overworked and exhausted. According to the engineering manager of one of the companies, working longer hours had produced stress among employees and was responsible for a decline of both quantity and quality of the final product (sugar). Since healthy employees began to work longer hours, around 1993, recovery ratio (raw cane : sugar) had declined by almost 50 percent, that is, from about 8:1 in 1993 to 12:1 in 1997. Another company surveyed reported a 67 percent decline in recovery ratio during the same period.

- **Declining labour productivity.** In a labour intensive industry such as agriculture, and in particular sugarcane growing, labour productivity is the most important determinant of output and profitability. Illness compromises labour productivity because a sick person is unable to

work. Even in circumstances where he can still work, his performance is lowered by physical and psychological factors. Thus, the costs of illness do not end by paying an employee who is not working but it also includes other costs related to delays in the production process, loss of quality and quantity of final product. Workers interviewed pointed out that when a worker had a sick family member (wife or child), it was unlikely that he could be as productive as expected of him because his presence at work was more physical than mental and hence poor performance.

- **Costs of mortality.** In the companies heavily affected by AIDS, death is either the leading or one of the leading causes of employees' exit from the company. Illness is the second most important cause of employees' exit. Prior to 1990s when deaths were very few, records in two of the surveyed companies in Nyanza (where death rate is currently very high) showed that in the 1980s, the companies lost an average of 2-5 employees per year. The most important reasons for employees exit then were old age retirement, resignation, termination, dismissal, illness and death in that order. Today, the order has evidently changed as illness and death has become the leading causes of exit. Could increased illness and death be due to diseases other than those not related to compromised immunity? In general it was argued that, save for AIDS related illnesses, communities living on agro-estates had not experienced epidemics of such constancy that would account for prolonged morbidity and mortality among adults. It can be concluded, therefore, that AIDS is responsible for the observed morbidity and mortality currently experienced in the Province.

## **IV. Interventions to slow the spread of AIDS**

Knowledge of AIDS and risk of becoming infected

Preventing the transmission of HIV

Treatment and Vaccines

Signs of Success

National Policy

The National AIDS and STDs Control Programme of Kenya

What needs to be done

## **Knowledge of AIDS and Risk of Becoming Infected**

Information about personal knowledge of AIDS and risk behaviours in Kenya was collected in a 1998 national survey on fertility, family planning and health; the Kenya Demographic and Health Survey, 1998 (National Council for Population and Development, 1999) The survey interviewed 7,881 women between the ages of 15 and 49 and 3,407 men between the ages of 15 and 54. The results illustrate the level of knowledge and awareness of AIDS in the general population and the extent of risky behaviours.

**Knowledge of AIDS.** 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) and knows that the AIDS virus is transmitted through sexual intercourse

**Sexual behaviour.** Risky sexual behaviour was reported by a significant number of men and women. Sixteen percent of married men reported having extramarital sexual partners compared only 2% married women. Among those who are single, 60 percent of men and 40 percent of women reported that they were sexually active, with half reporting more than one sexual partner in the last year.

**Knowledge of ways to avoid AIDS.** About 40 percent of respondents correctly identified at least two methods of protecting themselves from becoming infected (abstain from sex, use condoms, avoid multiple partners, stay faithful to one partner)

**Perception of risk.** One-third of women felt that they were at moderate or great risk of becoming infected, primarily because they thought that their partner had other sex partners. About 23% of men felt that they were at moderate or great risk of becoming infected, mostly because they reported that they had many sex partners.

**Behaviour change.** About 90 percent of men and 80 percent of women reported that they had changed their behaviour in some way to avoid AIDS. Most said that they limited themselves to one sex partner. Eighteen percent of men said that they had reduced the number of sex partners and 16 percent of women said that they had asked their spouse to remain faithful.

**Knowledge of some one who has died of AIDS.** The majority of respondents (71 percent) said that they personally knew someone who has AIDS or has died of AIDS

**Testing for HIV.** About 14 percent of women and 17 percent of men reported that they had been tested for HIV. Two-thirds of those who have not been tested reported that they would like to be tested.

## **Preventing the Transmission of HIV**

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

**Interventions to limit transmission through heterosexual contact.** The major mode of transmission is through heterosexual contact and it is especially in this area that interventions have to be intensified. Interventions include promoting abstinence and faithfulness; promoting reductions in the number of sexual partners; encouraging delays in the onset of sexual activity among adolescents; promoting the correct use and consistent availability of condoms; strengthening programmes for STD control; and encouraging voluntary counselling and testing.

***Promoting abstinence before marriage and faithfulness to one partner.*** One set of interventions focuses on encouraging people to abstain from sex before marriage and remain faithful to a single partner. Abstinence and faithfulness could be promoted through a combination of mass media, counselling and education programmes. Delays in the onset of sexual activity among adolescents can have a significant impact on the spread of HIV. Information, education and communication (IEC) and other programmes that address adolescents and the needs of young people are particularly needed. A reduction in HIV incidence (the annual rate of new infections) among today's young people would not only avoid much suffering but it would also be a critical step in controlling the spread of the virus in the country.

Reducing the overall number of sexual partners, but especially limiting the number of concurrent partners, can also have an effect. Given the extremely high rates of HIV infection among commercial sex workers, a reduction in the number of men who have unprotected sexual contact with prostitutes and bar girls can be important in bringing the epidemic under control. Overall, these strategies could make an important contribution to reducing the spread of HIV, although they would not be, by themselves, a complete solution.

***Promoting the use and availability of condoms.*** A second intervention is to promote condom use through mass media, counselling and education and to increase the availability of condoms through expanded public distribution, social marketing programmes, and programmes in the workplace. Special initiatives to promote condom use among high-risk populations (such as commercial sex workers and long-distance truck drivers) have proven effective in some cases.

***Controlling other sexually transmitted diseases.*** Another intervention focuses on controlling the spread of sexually transmitted diseases such as syphilis, gonorrhoea and chancroid. A recent study in Mwanza, Tanzania, for example, found that an improved STD prevention and treatment programme was associated with a reduction of 42 percent in the number of new HIV infections. Services to detect and control STDs can be critically important for managing the HIV/AIDS epidemic.

***Preventing infection in young people.*** Levels of HIV infection are alarmingly high among young people, particularly young women. Special efforts are required to protect the youth. It is very difficult to change any behaviour, and especially sexual behaviour, once it has become a habit.

Around the world, successful prevention programmes among young people are ones that equip adolescents with the knowledge, skills and attitudes that will keep them safe from infection BEFORE they become sexually active

The government has recognised the vulnerability of youth. In the *Sessional Paper on AIDS in Kenya*, the government has committed to protect them from HIV infection by equipping young people with adequate knowledge and skills. Further, the government has stated that, as a matter of policy, it will integrate AIDS education programmes into existing school curricula

Such education does appear to help young people reduce their risk of HIV infection. A family life education programme in Youth Training Service colleges has resulted in more responsible behaviour on the part of people exposed to the programme compared to students from colleges with no family life education. More young people chose to be counselled and tested for HIV, more protect themselves or their partners against unwanted pregnancy and more adopt behaviours that protect them against HIV infection. College medical records show that where 20 percent of students in Youth Training Service colleges suffered from STDs in 1990, the proportion dropped by more than half by 1995, after family life education was instituted. In colleges with no special programmes, a nearly constant 16 percent of students were infected with STDs over the five year period.

Counselling by churches can also play an important role. A high proportion of young churchgoers are sexually active, and in 1996, 97.7 percent of young churchgoers surveyed asked for more information and guidance on sex and AIDS. A programme sponsored by church authorities to increase the leadership role of the church in this field produced remarkable results. In areas where the programme actively promoted more discussion and counselling on responsible relationships, only one young person in 10 reported that they had had sex with more than one person in the previous six months. Among church-going youth in areas where there was no active increase in counselling, three times as many young people said they had had sex with several partners over the previous six months.

**Mother-to-child transmission** A mother who is infected with HIV may transmit it to her newborn child 30-40 percent of the time. Around 100,000 children are living with HIV in Kenya, and many more have already died of AIDS. The majority of these children acquired the infection from their mothers at or around the time of birth and between a third and half were probably infected through breast milk. Various approaches can be used to reduce the number of children who are infected. Among them are

- **Preventing HIV infection in women.** The best way to prevent mother-to-child transmission of HIV is to prevent the woman from becoming infected.
- **Reducing transmission during childbirth.** Delivery by Caesarean section before onset of labour has been shown to reduce the risks of transmitting HIV infection during delivery by as much as 40 percent. Caesarian section after the onset of labour does not reduce mother to child transmission of HIV. HIV infected women are vulnerable to serious post-operative complications like sepsis (Sempini). Therefore this intervention has limited use in resource poor settings.
- **Reducing transmission through breastfeeding.** One-third of mother-to-child transmission occurs through breastfeeding. The *Sessional Paper on AIDS in Kenya* states that women who

are infected with HIV should be discouraged from breastfeeding if safe alternatives are available. There are several difficulties in promoting alternatives to breastfeeding. Breastmilk protects the infant against a range of other diseases and it is convenient and free. Bottle-feeding can cause diarrhoea and other problems if formula is not prepared properly. Infant formula can also be expensive. Promotion of locally available feeding might be a safer alternative.

- **Reducing the number of pregnancies** Women who are HIV-positive may wish to avoid childbearing so that they do not infect their new-born babies or leave behind orphaned children when they die. Counselling and testing needs to be available for couples to help them understand the HIV test and make informed choices.
- **Anti-retroviral therapy** Different regimes of anti-retroviral drugs have been shown to reduce mother to child transmission of HIV by 50-70% in non breast fed infants (Connor, Shaffer). Preliminary data from similar studies among breast feeding babies has shown a reduction in transmission of about 38% among babies who are still breast feeding at 4-6 months of life (Wiktor, Dabis, Jackson). The drugs that are currently being evaluated include AZT (Zidovudine), AZT-3TC combination and Nevirapine.

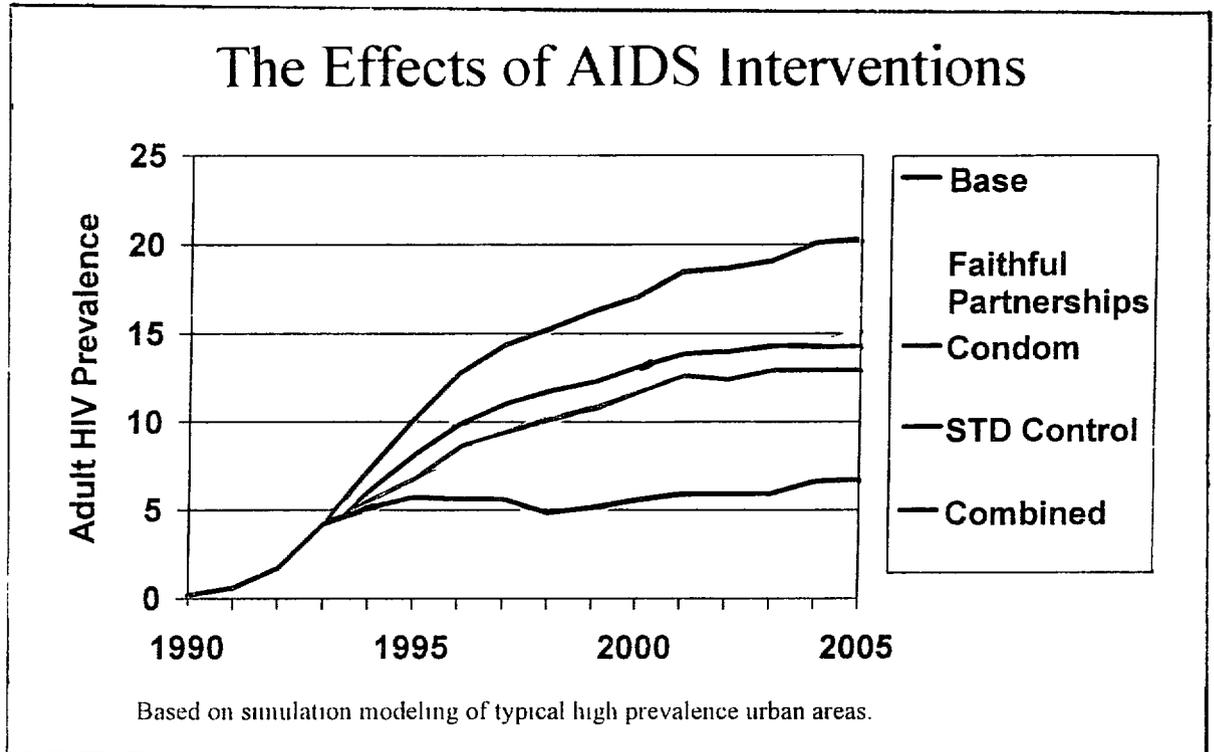
**Safe blood supply.** To avoid infection through blood transfusion the blood supply needs to be made as safe as possible. This means screening blood through laboratory tests and screening potential blood donors through interviews in order to reject as donors those that have a high probability of being infected. Unnecessary blood transfusions should be discouraged and autologous transfusions for planned surgery should be encouraged. The *Sessional Paper on AIDS in Kenya* establishes a policy of improving blood transfusion services through improved procedures and quality control to ensure a safe supply of blood for necessary transfusions.

**Combined interventions.** Each of the intervention packages described above can make an important contribution to controlling the spread of HIV. Alone, none is likely to solve the problem completely: some people will respond to or be affected by one type of intervention while others will respond to or be affected by another. Computer simulations suggest that a much larger effect can be achieved by implementing all the interventions together in a broad attack on the epidemic.

The following information is not specific to Kenya, but is based on simulation modelling. It shows the expected impact of interventions in an illustrative African city. In the absence of interventions – the base projection or the top line on the graph – the HIV adult prevalence rate continues to rise over time. An effective blood screening programme – represented by the second line from the top – reduces prevalence only modestly. However, an effective STD control programme brings expected prevalence down by about 12 percent, and condom promotion and partner reduction interventions reduce HIV prevalence even more. Most importantly, when all four interventions are implemented simultaneously, the projected prevalence is nearly 55 percent less in 2005 than it would have been in the absence of interventions.

The fundamental message is a hopeful one. The simulation modelling suggests that with a concerted effort on a number of fronts, a country can turn the rising prevalence curve downwards and start to bring the HIV/AIDS epidemic under control.

Overall, there are several important lessons to be learned concerning interventions.



- Pilot tests have shown that interventions can be successful in significantly reducing the spread of HIV
- Applying interventions on a large scale is costly and success is difficult to measure. Nonetheless, there is now evidence from Uganda and Thailand that significant reductions in HIV incidence and prevalence can occur at a national level. Both countries recognised the seriousness of the epidemic early and implemented strong national programmes to reduce the spread of HIV and to provide support for people with AIDS and their families
- It is important to intervene as early as possible with a comprehensive mix of proven and effective interventions to reach the largest possible number of people and have the maximum impact.
- The most effective interventions are those that focus on population groups that have the most sexual partners. This is true at all stages of the epidemic.
- Prevention through behaviour change, condom promotion and STD treatment is many times more cost-effective than either providing hospital treatment for AIDS patients or trying to prevent the spread of the virus with anti-retroviral therapy

## Treatment and Vaccines

**Treatments.** Highly active anti-retroviral therapy (HAART) has received much international publicity in recent years. HAART uses combinations of drugs and can inhibit the spread of HIV within a person's body. For some HIV-infected persons, HAART has been an effective way to prevent the onset of AIDS and prolong life. However, several considerations need to be taken into account when considering HAART in the context of developing countries such as Kenya. Most importantly;-

- Many HIV-infected persons cannot tolerate the side effects of the drugs and for them the combination therapy treatments are not helpful. Only about half of prospective users can tolerate the therapy
- The drugs have to be taken under the strictest conditions, including time of day and with meals or on an empty stomach. Even small variations from the prescribed pattern can render the treatment ineffective. Patients also need constant access to sophisticated medical laboratories to track viral counts in the body
- Most importantly, the costs of these treatments are prohibitively high, around \$8,000 per patient per year in an actual developing country setting and even more in the industrialised countries.<sup>1</sup>

The new combination drugs are important in that for the first time a medical treatment has proven effective against HIV. This creates hope for the future. But for the moment, even in the most developed countries, this is a highly expensive experiment with an unknown outcome affecting a minority of HIV-infected individuals.

It is possible to treat, for a long time, many of the opportunistic infections that develop because of the weakened immune system. These treatments can improve the quality of life and delay the death of a person with AIDS.

As the numbers of people living with HIV/AIDS has increased, a need for evaluating simple therapeutic interventions has become apparent. There is preliminary data from African studies that prophylaxis with Septrin significantly decreases the frequency of bacterial infections and hospital admission for immunosuppressed individuals. Likewise 6 months prophylaxis with Isoniazid among HIV infected patients who are PPD positive significantly reduces the incidence of tuberculosis in this population of patients. There is a need to integrate these and other research findings in the ongoing care of HIV infected individuals.

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<sup>1</sup> World Bank. *Confronting AIDS: Public Priorities in a Global Epidemic*. (New York: Oxford University Press, 1997), pp. 174 – 178.

**Vaccines development.** For many HIV/AIDS researchers and policymakers, the real hope is for a widely available vaccine that can prevent HIV infection in the first place. Research on vaccines continues in many laboratories around the world, with more than two dozen experimental HIV vaccines currently being tested.

In Kenya the University of Nairobi established a partnership with the Oxford University and the International AIDS Vaccine Initiative of New York, USA, in November 1998 to develop a preventive vaccine against AIDS for Kenya and East Africa using innovative DNA-MVA technology. The goal of the partnership is to develop a safe, effective, preventive AIDS vaccine that will be accessible and affordable in developing countries.

**Scientific Strategy:** The planned vaccination strategy will use an initial DNA immunization, followed by a booster vaccination which modifies the vaccine. The candidate vaccine will be based on the subtype of HIV most prevalent in East Africa, known as "Subtype A." The candidate vaccine is not based on inactive or live attenuated HIV virus, and cannot cause AIDS. The vaccine is based on small extracts of the virus, which it is hoped will teach the body to recognize and kill HIV should vaccinated people come into contact with the virus.

**Partners:** The three partners in the Oxford-Nairobi-IAVI Partnership are Oxford University's Human Immunology Unit, based in Oxford, U.K.; University of Nairobi's Department of Medical Microbiology, based in Nairobi, Kenya; and IAVI, the International AIDS Vaccine Initiative, an international non-profit organization based in New York, USA. IAVI is funding the project.

**Timing:** The candidate vaccine, which has undergone extensive testing for safety and efficacy in animals, will initially be tested for safety in human volunteers in a Phase I trial in Oxford, U.K., in 1999. The Partnership's aim, once all regulatory and ethical approvals are obtained, is to initiate a Phase I trial in volunteers in Nairobi in mid-2000. Only then, if warranted, will Phase II and Phase III efficacy trials begin in Kenya.

**Consultations:** Recognizing that effective communication among all parties is vital to the success of AIDS vaccine development, the Partnership intends to conduct ongoing consultations with stakeholders, including: government and regulatory officials, the medical and legal professions, religious leaders, the press, the AIDS community, NGOs, multi and bi-lateral organizations, and the general public.

**Ethical considerations:** The vaccine development effort will conform to international as well as Kenyan standards of medical ethical principles, which include such fundamental concepts as respect for individuals, to do no harm, and to ensure social justice. In Kenya, the proposal will be submitted to the Office of the President for review and approval by Kenyatta National Hospital/University of Nairobi Ethical Review Committee, the National AIDS Control Program Clinical Research Review Team and the National Council for Science and Research. The Institutional Review Board at Oxford University will also review the proposal.

**Informed Consent:** Only individuals with legal capacity to provide informed consent and who understand the pros and cons of the research will be enrolled as volunteers. Participants will be free to withdraw from the study without prejudice at any time.

**The Need for an AIDS Vaccine:** While traditional preventive measures have shown some success in slowing the spread of the virus, a vaccine represents the best hope for controlling, and ultimately ending, the HIV/AIDS pandemic. In Kenya, whose population totals 26 million, at least 1.5 million people are infected with the virus, and more than 256,000 have already died.

**Why was Kenya selected?** In mid-1998, the International AIDS Vaccine Initiative (IAVI), whose goal is to accelerate the development of safe, effective and affordable AIDS vaccines for use throughout the world, sought research proposals from the world's leading vaccine researchers. The Oxford-Nairobi group's proposal was deemed "one of the most promising approaches in the world" by IAVI's Scientific advisory Committee, and resulted in the creation of the first IAVI-funded Vaccine Development Partnership. The second IAVI partnership is between Alpha Vax in the U.S. and the University of Cape Town, S.A., and IAVI is currently identifying new groups for funding.

**What other countries have been sites of vaccine research:** The global HIV epidemic, which infects 16,000 people a day, demands a global effort. Kenya has contributed immensely to documenting the epidemic and developing preventive interventions, but is only now embarking on vaccine research. Vaccine trials have already been conducted in the U.S., France, Belgium, Switzerland, Austria, the United Kingdom, Thailand, China, Brazil and Uganda, and planning for trials is underway in South Africa, Zambia, Nigeria, Trinidad and Tobago, and India.

**Will this vaccine be affordable in Kenya should it be shown to work?** The International AIDS Vaccine Initiative, which is sponsoring the Oxford-Nairobi effort, has negotiated agreements with its partners to ensure that vaccines will be readily available in developing countries at reasonable prices. IAVI is also working closely with the World Bank, UNAIDS and other donors to create an AIDS Vaccine Purchase Fund that would purchase and distribute safe and effective AIDS vaccines in developing countries.

**When will an AIDS vaccine be ready?** The world community has embraced the goal of developing a safe and effective AIDS vaccine by the year 2007. This will require both scientific breakthroughs and sustained financial and political support at all levels of society. *It is essential that everybody continues to adhere to the documented preventive measures that are known to stop the spread of HIV.*

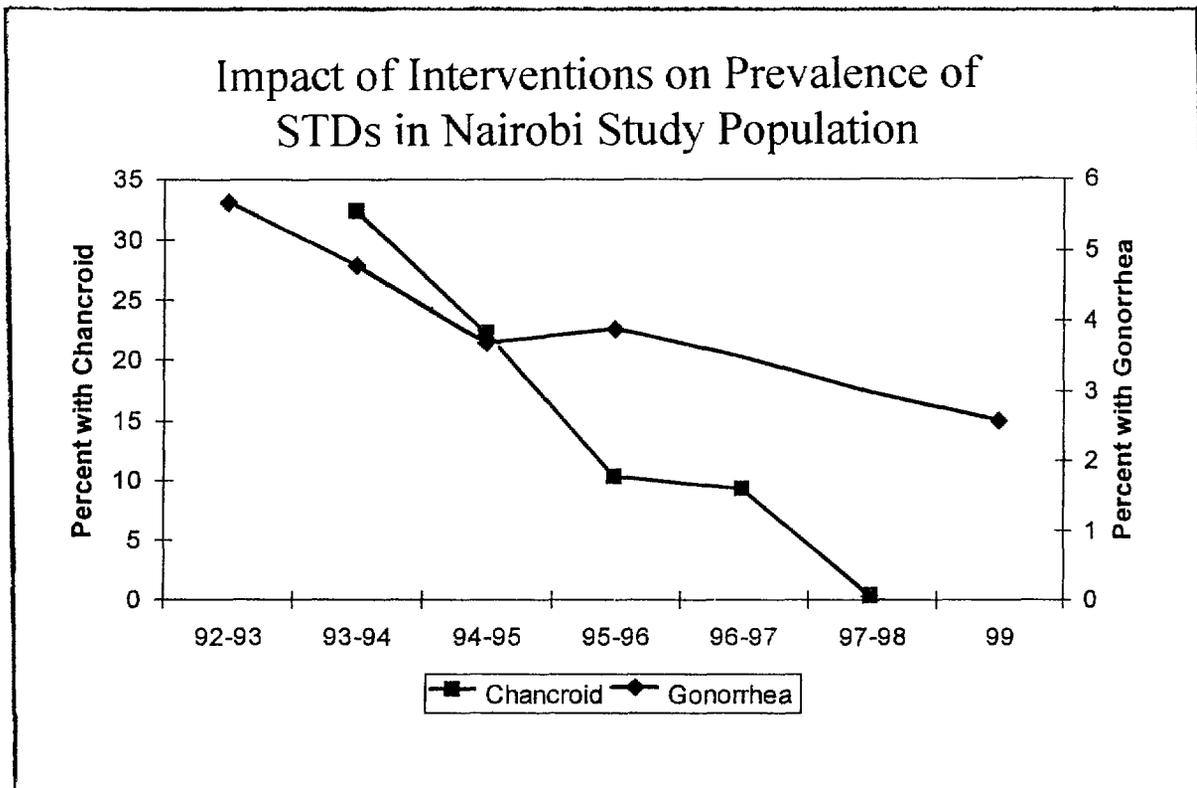
## Signs of Success

Much has been done in Kenya in the last 15 years to fight the AIDS epidemic. Through the *Sessional Paper on AIDS in Kenya* the government has established a clear policy framework. The National AIDS and STD Control Programme has organized the government response including disseminating information about the epidemic, coordinating research, ensuring safe medical practices, and implementing intervention and treatment programs. A large number of non-governmental organisations (NGOs) provide prevention, counseling and care services. Organisations from all parts of society are participating, including church and community groups.

and the commercial sector. Political, commercial and community leaders are beginning to speak out about AIDS and encourage people to protect themselves.

In spite of these activities, HIV prevalence is continuing to rise in Kenya. However, that does not mean that these efforts are having no effect. Without these efforts the epidemic would be far worse than it is today. In addition, there are signs that programs are having an important effect in reducing the risk of HIV transmission.

- **Condom use.** The number of condoms distributed by the government has increased from 18 million in 1991 to over 70 million in 1998. Sales of condoms through the social marketing program have increased to over 10 million per year. The 1998 KDHS reports that over 40 percent of men report using a condom the last time they had sex with someone other than their spouse. It is clear that more and more people are recognizing the risk of unprotected sex and are taking steps to protect themselves and their partners.
- **STD treatment.** A number of programs have been implemented around the country to improve the treatment of sexually transmitted diseases. The Ministry of Health reports that over 50,000 cases of STDs are being treated each month. This is a significant increase from just a few years ago when supplies of drugs to treat STDs were scarce.
- **Targeted intervention programs.** Two comprehensive intervention programs in Nairobi have shown that the treatment of STDs, promotion of condoms and peer counseling can have an important effect. Interventions with commercial sex workers in one area of Nairobi led to a reduction in the annual incidence of new HIV infections among the sex workers from 45 percent in the late 1980s to 10 percent in the 1990s. Large declines in the prevalence of STDs have also occurred.
- **Community-based programs.** A community-based intervention in Nairobi and Nakuru included peer group education, condom promotion and improved STDs treatment. From 1993 to 1998 there have been significant declines in the prevalence of chancroid and gonorrhoea and a decline in HIV prevalence among the young women.



Signs of success have also been seen in other countries, particularly Thailand and Uganda, where programs have apparently been successful in reducing the prevalence of HIV infection. Recent trends in Uganda are a sign of hope for other countries with high levels of HIV infection. Reports from sentinel surveillance sites and other sources in Uganda indicate that there may actually be a downward trend in HIV prevalence. Of particular note, the evidence indicates that HIV incidence (annual new infections) and prevalence rates among 15-19 year olds in that country have levelled off in rural areas and are declining in urban areas. Survey results from the early 1990s and mid-1990s in Uganda suggests that behaviour has been changing within this age group, most notably by a later onset of sexual activity among teens and a decline in the proportion of adolescents with multiple sex partners. There has also been greater use of condoms in high-risk sexual encounters by members of this age group.

The reasons for the behavioural changes in Uganda are unclear. Some data indicate that people are likely to change their behaviour if a close friend or relative dies from the disease. This suggests rising mortality as a grim catalyst for changing sexual practices. More positively, Ugandan leaders have given strong support to AIDS control efforts, and knowledge about AIDS, its risks and consequences, and means of prevention have been widely diffused throughout the country. Whatever the reasons for the changing behaviour, it is encouraging to witness, at last, a downward trend in HIV prevalence in an African country seriously affected by the AIDS epidemic.

## National Policy

In order to meet the challenge of the HIV/AIDS epidemic, the Government of Kenya recognized the need to establish clear policy guidelines and effective organizational structures. As a result, it began in 1996 to develop a national HIV/AIDS policy. Nine technical sub-committees were established to organize expert information and draft sections of the policy. The recommendations of these committees were presented in meetings held throughout the country to solicit suggestions from all parts of society and gain consensus on the most appropriate policies.

This work resulted in a draft national policy that was submitted to Parliament. It was approved on September 24, 1997 as Sessional Paper No. 4 of 1997 on "AIDS in Kenya". The approval of the Sessional Paper signals the clear intention of the Government to support effective programs to control the spread of AIDS, to protect the human rights of those with HIV and AIDS and to provide care for those infected and affected by HIV/AIDS.

The goal of the Sessional Paper on AIDS is "to provide a policy framework within which AIDS prevention and control efforts will be undertaken for the next 15 years and beyond." The specific objectives are

- a) Give direction on how to handle controversial issues while taking into account prevailing circumstances and the social-cultural environment
- b) Enable the government to play its leadership role in AIDS prevention and control activities. Challenges posed by AIDS call for a multi-sectoral approach thus bringing a diversity of actors together. Their roles will be harmonized within the framework of the Sessional Paper on AIDS
- c) Recommend an appropriate institutional framework for effective management and co-ordination of HIV/AIDS programme activities

The Sessional Paper recognizes that responding effectively to the AIDS crisis will require "a strong political commitment at the highest level, implementation of a multi-sectoral prevention and control strategy with priority focus on young people, mobilisation of resources for financing HIV prevention, care and support, and establishment of National AIDS Council to provide leadership at the highest level possible."

The Sessional Paper reviews the challenges posed by the AIDS epidemic and describes the strategies and interventions that the government has adopted. It also presents a policy framework for AIDS prevention and care. Some of the key aspects of this framework are

- **Participation.** All sectors of society are invited to join the effort against AIDS. This specifically includes the private sector, NGOs, donor agencies, communities, provincial and district administration officials, religious communities, educational institutions and parents.
- **Socio-cultural issues.** Efforts must be made that promote socio-cultural norms, values and beliefs that will help to reduce the risk of HIV transmission. Consensus between the religious

teachings on sexuality and the social and cultural practices must be harmonized through education, advocacy, counseling, persuasion and the enforcement of both customary and written law.

- **Legal and ethical challenges.** Discrimination against individuals with HIV or AIDS violates their human rights and hampers prevention efforts by discouraging people from learning about their HIV status. A key element of the Sessional Paper is the guarantee that the human rights of all Kenyans will be respected. Among the provisions are:
  - **Human rights.** All forms of discrimination against people with AIDS should be outlawed.
  - **Testing for HIV.** HIV testing for individuals should be voluntary.
  - **Confidentiality.** Ethical codes regarding confidentiality of AIDS status should be enforced.
  - **Employer-employee rights.** The employer does not have the right to know the HIV status of an employee without the consent of the employee.
  - **Research.** A legal body with a clearly defined mandate will be established to co-ordinate HIV/AIDS/STD research.
  - **Children.** Children infected and affected by HIV/AIDS will be protected from exploitation and discrimination using existing laws.
  - **Insurance.** The Government will work closely with insurance companies to establish guidelines pertaining to policies and benefits for people affected or infected with HIV. The guidelines will ensure that compensation is available to all those who were not infected prior to the issuance of their insurance policy.
  - **Counseling.** Codes for counseling will be developed that will take into account the need for voluntary testing and confidentiality.
  - **Drugs.** Clear legal provisions will regulate drug trials and provide sanctions against those peddling, cutting up for sale and advertising substances which have no proven curative value against HIV.
  - **Criminal sanctions.** Criminal sanctions will be upheld against all those who deliberately infect others.
- **Women and men.** HIV infects everyone. Men may be influenced into high risk behaviour by cultural norms concerning labour migration, alcohol use, plural marriages and other aspects of social behavior. Women are especially vulnerable to HIV infection due to a variety of social and biological factors. The Government will work with community agencies to provide support for activities that reduce the risk of HIV infection, such as basic education on human sexuality, HIV and STDs; activities for youth that may delay the onset of sexual activity; harmonising the age of consent, marriage and maturity to 18 years; encouraging voluntary testing; empowering women on matters pertaining to access to information and economic and social recognition.
- **Children.** In order to protect children the Government will develop clear guidelines on breastfeeding, vaccination, treatment of pregnant women who are HIV positive, and case and support for HIV orphans. These guidelines will be based on the latest national and international research results.

- **Youth and young adults.** A large percentage of new HIV infections occur among youth. To protect young people against HIV and STD infections, the Government will provide direction in designing culturally, morally and scientifically acceptable AIDS education programs for youth in and out of school and advocate for the protection of youth against anti-social behaviors that put them at risk.

Since AIDS affects all part of society, it is important to have a multi-sectoral strategy to confront the epidemic. Therefore, the Sessional Paper on AIDS calls for the establishment of a *National AIDS Council* (NAC). The NAC will play a major role in organizing the response to the AIDS epidemic. Specifically, it will

- Develop and articulate policies and strategies
- Take the lead in advocacy and public relations for the AIDS control programme
- Mobilize resources for AIDS control and provide funding to implementing agencies
- Co-ordinate and supervise the implementation of a multi-sectoral programme
- Mobilize government agencies, NGOs, research bodies and universities to participate in AIDS control
- Collaborate with local and international agencies that work in AIDS control

The Sessional Paper on AIDS establishes the basis for an effective, multi-sectoral response to the AIDS epidemic. The challenge now is to translate these guidelines into successful plans, programmes and actions

## The National AIDS and STDs 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 and STDs Control Programme (NAS COP) was created within the Ministry of Health to be the major implementing organization of the Government's programme. Also in 1987 APS developed a Medium Term Plan (MTP I) for the period 1987-1991. That plan focused 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 MTP II has not been fully implemented due to a number of constraints, it does represent an attempt to design a comprehensive intervention programme for Kenya.

A five year strategic plan (1999-2003) which defines priority areas for interventions taking into consideration the Ministry of Health's comparative advantage and strength within a multisectoral environment was officially launched in August 1999.

This plan builds on the multi sectorial approach which was initiated in MTP II and draws its strength from the Sessional Paper No.4 of 1997 on AIDS in Kenya.

As a guiding principle in developing the plan, NASCOP Management Unit in conjunction with the major stakeholders involved in the fight against HIV/AIDS in Kenya, evolved the following Mission Statement:

**To Provide a Policy and Strategic Framework  
For Mobilising and Co-ordinating Resources  
To Prevent HIV/AIDS Transmission and  
Provide Care and Support  
To the Infected and Affected People  
In Kenya**

The purpose of the plan is to provide a framework and serve as an effective tool for resource mobilisation and co-ordination, as well as to guide the implementation of activities at the district level. In addition, the Plan underscores the need for the Ministry of Health through NASCOP, to provide strategic leadership in all matters pertaining to STDs/HIV/AIDS management in Kenya.

Seven key strategies which are principally the same as defined in the past two strategic plans (MTP-I and II) were formulated.

These are:

**1. Reduction in HIV Prevalence through Promotion of behaviour Change and Advocacy**

- Advocacy and social mobilisation
- Community participation and partnership
- Capacity building
- Service delivery-linked health promotion
- Condom programming.

**2. Blood Safety**

- Development and implementation of a National blood policy to govern transfusion practices
- Establishment and strengthening of National, Provincial and district blood transfusion centres
- To establish blood donor education and recruitment programmes
- Develop mechanisms of monitoring rational use of blood
- Develop mechanisms for quality control on HIV/STD/AIDS screening.

**3. Continuum of Care and Support**

- Strengthen clinical management and nursing care of opportunistic infections, including tuberculosis
- Provide social support
- Prevention of the spread of opportunistic and HIV infection through appropriate infection control guidelines and measures.

**4. Treatment and Control of Sexually Transmitted Diseases (STDs)**

- Syndromic Management of STDs
- Establishment of aetiological surveillance of STDs
- Provide Syphilis screening at all ante-natal clinics
- Mobilization and capacity building of private practitioners in STD management

**5. Epidemiology and Research**

- Capacity building
- Reliable behavioural and epidemiological surveillance
- Prioritisation research needs and research co-ordination

**6. Prevention of Mother to Child Transmission of HIV**

- Prevent vertical transmission through screening, Family Planning and Health Education
- Empower Women to negotiate for safer sex with their partners
- Conduct Research on factors influencing Mother to Child Transmission of HIV

## **7. Mitigation of the Socio-Economic Impact of HIV/AIDS**

- Advocacy
- Community Mobilisation and participation
- Monitoring the Impact of AIDS at Community level and other sectors
- Mitigation programmes on the Social Economic Impact research
- Strengthening household and Community coping Capacity.

In addition to the above strategies, others are:

- Strengthening programme management and co-ordination
- Resource mobilisation
- Ensure programme sustainability
- Strengthen monitoring and evaluation activities.

Issues pertaining to feasibility, cost, capacity to implement the appropriate strategies that would produce the maximum change were taken into consideration while developing the above strategies.

### **MANAGEMENT AND CO-ORDINATION OF THE MULTISECTORAL AIDS CONTROL PROGRAMME**

The successful implementation of the National Programme requires comprehensive and effective management and co-ordination arrangements to be in place.

In this respect, there are a number of complex issues that have to be taken into account, principle among which are:

- HIV/AIDS is a multi-sectoral issue, requiring a multi-sectoral response. The range of stakeholders is therefore diverse
- The National Programme has to be implemented at district level and below
- Substantial funding is required to support the Programme, which is necessarily accessed from a variety of sources
- It is beyond the capacity of the Ministry of Health to implement the Programme using entirely its own staff. A wide range of implementing partners and collaborators is therefore required.

## **The National AIDS Council**

The Sessional Paper Number 4 on *AIDS in Kenya*, makes provision for the establishment of a National AIDS Council. This will be a high level, multi-sectoral body that will be charged with the responsibility for developing, and monitoring the progress of, a comprehensive National policy in response to the AIDS epidemic.

Although the National AIDS Council has yet to be established, it is expected that this will happen before the end of 1999. The establishment of the NAC is unlikely to affect the implementation structure at district level. However, in formulating sector specific programmes, it is possible that the NAC will bring about the involvement of more implementing partners than at present. In summary, the role of NASCOP at the National level will be mainly, policy formulation, development of guidelines and standards, resource mobilisation and allocation, establishing linkages with relevant departments and sectors such as National Public Health Laboratories and providing strategic direction to the districts

### **Sources of Funds for NASCOP**

HIV/AIDS/STDS Control activities in Kenya are supported by a number of agencies. These are:

- i. Ministry of Health through the STI project.
- ii. Donors (through the Government and private sector, NGOS, CBOs)
- iii. NGOs (some major NGOs e.g. AMREF, support HIV/AIDS Control activities from locally mobilised resources in partnership with the private sector)
- iv. Religious organisations
- v. The Private Sector
- vi. Other Government Ministries and departments
- vii. Communities (through community action and direct out of pocket payment to assist the affected and the infected).

### **Risks:**

Given the current level of funding programme activities the implementation of many of these activities is likely to be disrupted by lack of funds for continuity unless concerted efforts are put in place to reverse the situation. The main risk is that in the past four years the World Bank financed STI project has been the main source of funding for NASCOP programmes. This project comes to a close early 2001. The Kenya Government has approached the World Bank for further assistance through the Health Services Development Project. NASCOP is heavily dependent on international donors to an extent that the National programme stalled in 1995 when the World Health Organisation assistance ended.

Sustainability of programme financing will be discussed within the broader context of National AIDS Council to be established before the end of 1999.

Options to address this problem include starting immediate negotiations with the Donor community arguing for increased funds, involving the private sector, NGOs and CBOs. Others are reallocating Government funds from non priority areas towards public education on HIV/AIDS control among others, using some of the 25% of cost-sharing funds meant for PHC towards HIV/AIDS activities, lobbying with the Ministry of Finance to increase the allocation for HIV/AIDS activities. Also explore the possibility of involving private health insurance industry, National Hospital Insurance Fund, the Bamako Initiative, using Capitation fees from the National Social Security Fund (NSSF), using funds for the “Safety Net” within the framework of the Government poverty eradication initiative and use of pre-paid community based insurance among others.

The National AIDS Council will have the mandate to mobilize resources to support the implementation of the strategic plan. The estimated budget for this 5 years strategic plan is Kshs.2.3 billion.

## 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 all leaders. Experience from development programmes around the world has shown that with a difficult problem such 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 including government, NGOs, private sector organizations, religious organizations, unions, professional societies, etc.
- Establishment of an effective national coordinating body with strong leadership and the backing of the Office of the President, international donor agencies, NGOs and all Kenyans. This is necessary in order to effectively coordinate a multi-sectoral approach to AIDS prevention.
- Strengthening of STDs treatment at all levels as a strategy for HIV prevention.
- Introduction of AIDS education into school curricula in order to inform young people about how to stop AIDS.
- Substantially increased funding from the government, local communities, private sector organizations, and organizational donors.

## V. Sources

Anzala O, The Oxford-Nairobi-IAVI AIDS Vaccine Development Partnership, University of Nairobi, Department of Medical Microbiology.

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.

Boerma JT, Nun AJ, Whitworth JAG. Mortality Impact of AIDS epidemic: evidence from community based studies in less developed countries. *AIDS* 1998; 12 (suppl. 1):S3-S14.

Connor EM, Sperling RS, Gelber R, et al Reduction of maternal-infant transmission of Human Immunodeficiency Virus type 1 with zidovudine treatment. *New England Journal of Medicine* 1994; 331: 1173-80.

Forsythe, Steven, Bill Rau, Elizabeth Gold, Janet Hayman and Neen Alrutz (editors). *AIDS: Socioeconomic Impact and Policy Implications in Kenya*. AIDSCAP, Arlington, VA. Family Health International, 1996

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.

GPA. "Effective prevention could halve new HIV infections" *Global AIDSnews*, Global Program on AIDS, 1993: 3

Harries, A.D. "Tuberculosis and Human Immunodeficiency Virus Infection in Developing Countries." *Lancet* 335 (1990):387-390.

Jackson, Denis J., Elizabeth N. Ngugi, Francis A. Plummer, Patrick Kirui, Cecilia Kariuki, Jeckoniah O. Ndinya-Achola, Job J. Bwayo and Stephen Moses. "Stable antenatal HIV-1 seroprevalence with high population mobility and marked seroprevalence variation among sentinel sites within Nairobi, Kenya" *AIDS* 1999, 13:583-589

Kahindo M et al. Multi centre study on factors determining the differential spread of HIV in African towns: Kisumu site, 1997.

Ministry of Planning. "Chapter 12. HIV/AIDS and Development". *National Development Plan 1994-1996*, Nairobi, 1993.

NASCOP *Estimating National HIV Prevalence in Kenya from Sentinel Surveillance Data*, June 1999

- National AIDS and STDs Control Programme of Kenya. AIDS Case Reporting System and Sentinel Surveillance System, various reports, 1993-98
- National AIDS/STDs 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 (NCPD), Central Bureau of Statistics (CBS) (Office of the Vice President and Ministry of Planning and National Development (Kenya), and Macro International Inc. (MI). 1999, Kenya *Demographic and Health Survey, 1993*. Nairobi, 1994 Calverton, Maryland: NCPD, CBS, and MI
- National Council for Population and Development (NCPD), Central Bureau of Statistics (CBS), Office of the Vice President and Ministry of Planning and National Development (Kenya), and Macro International Inc (MI). 1999, Kenya *Demographic and Health Survey 1998* Calverton., Maryland NCPD, CBS, and MI
- 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.
- Okeyo, T M *Widow Inheritance and socio-economic impact of AIDS on Luo women in Kenya, 1993*, (dissertation).
- Shaffer N, Chuchoowong R, Mock PA et al Short course zidovudine for peri-natal HIV-1 transmission in Bangkok, Thailand: a randomized controlled trial, *Lancet*, 1999; 353 773-80
- 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
- Stover, J and G.M. Baltazar "Incidence of HIV Infection in Kenya: Estimates Derived from Sentinel Surveillance" 2nd National Conference on HIV/AIDS and STDs in Kenya Nairobi, October 1998
- Stover, J. and P.O. Way. "Impact of interventions on reducing the spread of HIV in Africa. computer simulation applications" *African Journal of Medical Practice* 1995, 2(4): 110-120
- UNICEF *Children and Women in Kenya: A Situation Analysis* UNICEF and the Government of Kenya, August 1992.
- US Bureau of the Census. Center for International Research. *Recent HIV Seroprevalence Levels by Country: November 1992* Washington, DC, 1992.

World Bank. *Confronting AIDS: PUBLIC Priorities in a Global Epidemic* (New York: Oxford University Press, 1997) pp 174-178.

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## NATIONAL HIV PREVALENCE TRENDS (1990 – 1998)

YEAR	NATIONAL HIV PREV.	NO. OF ADULT HIV +VE	URBAN ADULT HIV PREV.	NO. OF URBAN ADULT HIV +VE	RURAL ADULT HIV PREV.	RURAL ADULT HIV +VE	HIV +VE CHILDREN	TOTAL HIV +VE POPULATION.
1990	4.8%	485,762	8.8%	144,422	4.1%	341,340	28,179	513,941
1991	6.1%	636,625	10.5%	180,618	5.3%	456,006	36,930	673,555
1992	7.4%	798,119	12.0%	216,941	6.5%	581,178	46,298	844,417
1993	8.7%	965,910	13.4%	252,721	7.7%	713,190	56,032	1,021,942
1994	9.9%	1,136,066	14.5%	287,615	8.9%	848,451	65,902	1,201,968
1995	11.0%	1,305,056	15.5%	321,490	10.0%	983,566	75,705	1,380,761
1996	11.9%	1,469,832	16.3%	354,333	11.0%	1,115,500	85,264	1,555,096
1997	12.8%	1,627,975	16.9%	366,198	11.9%	1,241,777	94,438	1,722,412
1998	13.9%	1,838,002	18.1%	432,756	13.0%	1,405,246	106,621	1,944,623

Source: NASCOP, 1999