

HIV/AIDS in **GHANA**



Background

Projections

Impacts

Interventions

**Ministry of Health
National AIDS/STD Control Programme**

March 1999

**HIV/AIDS in Ghana:
Background, Projections, Impacts
and Interventions**

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National AIDS/STD Control Programme**

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
AIM	AIDS Impact Model
ANC	Antenatal Care
AZT	Zidovudine
GDHS	Ghana Demographic and Health Survey
HAART	Highly Active Anti-Retroviral Therapy
HIV	Human Immunodeficiency Virus
IEC	Information, Education and Communication
MCT	Mother-to-Child Transmission
MOH	Ministry of Health
MTP-I	First Medium Term Plan
NACP	National AIDS/STD Control Programme
NGO	Non-Governmental Organization
PLWHA	People Living with HIV/AIDS
STD	Sexually Transmitted Disease
STP	Short Term Plan
TB	Tuberculosis
UNAIDS	Joint United Nations Programme on AIDS

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FOREWORD

I am pleased to introduce to you *HIV/AIDS in Ghana: Background, Projections, Impacts and Interventions*. This document is a product of the Ministry of Health, National AIDS/STD Control Programme. It uses readable language and colourful graphics to present a complex issue, and I encourage as many people as possible to read it. The book provides very useful information on the status of the epidemic, its consequences, and interventions to slow the spread of the virus. At the same time, the book is not a final statement on the epidemic and the National AIDS/STD Control Programme encourages and welcomes comments from people who read it so that future editions can be improved.

The HIV/AIDS epidemic is a very serious problem in Ghana. Already in 1998, about 380,000 Ghanaians were infected with HIV, the virus that causes AIDS. This included 356,000 adults and 24,000 children. In addition, more than 90,000 Ghanaians have died from AIDS since the beginning of the epidemic in the early 1980s.

On the one hand, the picture is grim. Hundreds of thousands of our fellow citizens are already infected with a deadly virus that is almost certain to result in their deaths in the near future. And more and more persons are becoming infected every day. What is especially worrisome is that the evidence suggests that the epidemic is still expanding throughout the country and that the proportion of HIV-infected persons is rising. The HIV/AIDS epidemic can only undermine our efforts to achieve *Ghana – Vision 2020*.

But on the other hand, there is much that we can do to change the course of the HIV/AIDS epidemic in Ghana. The virus is not spread in the air or water or by insects; rather, it is transmitted by certain kinds of human behaviour. More than 95 percent of our adults aged 15 to 49 years old – 19 out of every 20 – are not infected, and all of these uninfected men and women can take positive and active steps to protect themselves from HIV. Recent reports from Uganda show that it is possible for an African country to make important strides in changing the behaviour of individuals and the path of the epidemic.

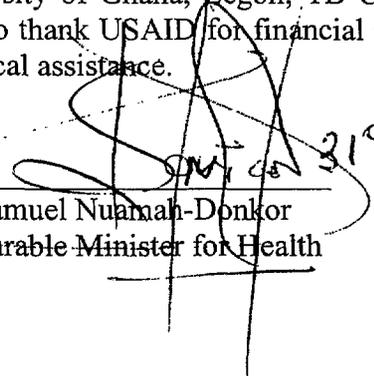
People living with HIV/AIDS also have an important role to play in limiting the spread of HIV. They can help prevent further infections and can improve the quality of their own lives through positive behavioural change. People who have HIV but who are not yet ill can live full and productive lives. People living with HIV/AIDS should not be stigmatised or discriminated against; rather they deserve our compassion, care, and support.

Ultimately, then, the epidemic can be best understood by asking ourselves, as individuals, certain questions. Am I or am I not infected? If I am, what can I do to change my life practices and reduce the chances of infecting others? If I am not, what life should I lead to avoid getting infected? How can I help those who are infected lead humane lives and prevent the spread of infection?

I also wish to call upon all leaders in all sectors to do their part to limit the spread of HIV. If our leaders – political, religious, business, non-governmental, community,

district and all others – individually and collectively do their part, I am convinced that we can change the course of this epidemic and limit its impact on the development effort in Ghana.

I wish to thank representatives from the following organisations and others for contributing to the development of this document: Disease Control Unit, MOH; Eastern Region Ministry of Health; Family Health International; Ghana Social Marketing Foundation; Ghana Statistical Services; Health Education Unit, MOH; Korle-Bu Teaching Hospital; Maternal and Child Health/Family Planning, MOH; National Population Council; Noguchi Memorial Medical Research Institute; Population Impact Project, University of Ghana, Legon; Public Health Division, MOH; Public Health Reference Laboratory, MOH; School of Public Health, University of Ghana, Legon; TB Control Programme, MOH; and UNAIDS. I also wish to thank USAID for financial and technical support, and the POLICY Project for technical assistance.


Mr. Samuel Nuamah-Donkor
Honourable Minister for Health

INTRODUCTION

The HIV/AIDS epidemic has become a serious health and development problem in many countries around the world. The Joint United Nations Programme on AIDS (UNAIDS) estimates the number of HIV infections worldwide at about 33.4 million by the end of 1998, of which 22.5 million were found in sub-Saharan Africa. Another 13.9 million persons have already died from the disease since the beginning of the epidemic, mostly in Africa. And about 590,000 infants now become infected each year, about 90 percent of whom are African children.

The virus that causes AIDS has already infected and is infecting many Ghanaians. Between four and five percent of the entire adult population of the country is HIV infected. Most of these people do not even know they carry the virus. In 1998, about 356,000 adults and 24,000 children were already infected. Now, in 1999, about 210 persons become newly infected every day. Between the beginning of the epidemic in the mid-1980s and the end of 1998, more than 114,000 persons may have already developed AIDS, although not all of these have been officially recorded. No cure is available for AIDS, and the disease is becoming one of the most serious development issues in the country.

Despite this situation, much can be done to alter the course of the HIV/AIDS epidemic in Ghana. HIV is not spread by casual contact or by mosquitoes or in the air or water. HIV is spread by certain types of human behaviour; therefore, it can be controlled by changes in those behaviours. What is needed is continued involvement from all sectors of Ghanaian society to promote interventions to reduce high-risk sexual behaviours, treat and control other sexually transmitted diseases, maintain a safe blood supply, ensure safe use of needles, and mitigate the problems of those already infected with HIV or otherwise affected by the epidemic. More than 95 percent of the adult population aged 15 to 49 remains free of the infection and all of these people have the opportunity to protect themselves from the disease.

This briefing book is intended to provide information about the HIV/AIDS epidemic in Ghana. This material is also available as a slide show or interactive computer presentation. The information is provided in four sections:

Background:	What we know about HIV/AIDS in Ghana today
Projections:	The number of people who might develop AIDS in the future
Impacts:	The social and economic impacts of AIDS
Interventions:	What needs to be done to prevent the spread of HIV/AIDS

Requests for presentations of this material or copies of this briefing book should be directed to the National AIDS/STD Control Programme. The address is located on the last page.

I. BACKGROUND

What is HIV/AIDS?

Transmission Mechanisms

Incubation Period

The HIV/AIDS Pyramid

Sentinel Surveillance System

Current Estimates of HIV Prevalence

Age-Sex Distribution of Reported AIDS Cases

BACKGROUND

What is HIV/AIDS?

Human Immunodeficiency Virus (HIV) is the virus that causes Acquired Immune Deficiency Syndrome (AIDS). HIV destroys the biological ability of the human body to fight off opportunistic infections such as tuberculosis. A person can be infected with HIV for a long time without showing any symptoms of the disease. Nonetheless, during that period before a person develops symptoms, he or she can transmit the infection through sexual contact to other people. An infected woman can also transmit the disease to her infant during pregnancy or delivery or while breastfeeding. HIV can also be spread by transfusions of contaminated blood and by sharing needles used for injections and drug use. AIDS itself is defined in terms of how much deterioration of the immune system has taken place as seen by the presence of opportunistic infections. Virtually all infected persons die from the disease.

By the end of December 1998, 29,550 AIDS cases had been reported to the Ministry of Health since the beginning of the epidemic in Ghana. However, there is much more to the epidemic than the number of reported cases. We know that most AIDS cases are not reported. This can happen for several reasons:

- Some people never seek hospital care for AIDS or have poor access to health service units.
- Some physicians or nurses may not want to record a diagnosis of AIDS because of the stigma attached to the disease.
- Recording and reporting of AIDS cases is inadequate at all levels.
- People with AIDS do not die from the virus but from the opportunistic infections (such as tuberculosis) that invade the body with the breakdown of the immune system; consequently, many persons die from these invasive infections before they are ever diagnosed as having AIDS.
- Private laboratories do not report all their figures and are not required to do so.

The true number of cumulative AIDS cases in Ghana is not known, but, according to the projection model used in this study, the total was more than 114,000 by the end of 1998.

AIDS stands for Acquired Immune Deficiency Syndrome. It is a disease caused by the Human Immunodeficiency Virus or HIV. It acts by weakening the immune system, making the body susceptible to and unable to recover from other diseases.

Transmission Mechanisms

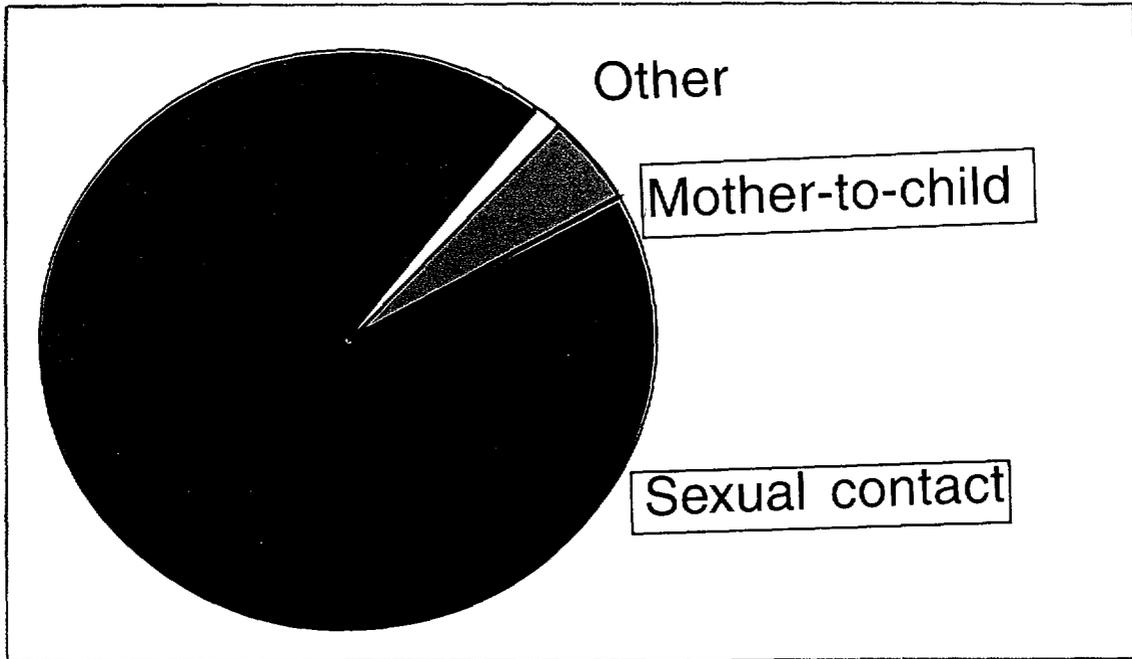
In Ghana, as in the rest of Africa, two transmission mechanisms account for most new HIV infections in the country: heterosexual contact and mother-to-child (MTC) transmission. Besides sexual contact and MTC transfer, HIV can also be transmitted through contaminated blood, for example, through transfusions or the sharing of needles or blades that have been in contact with the blood of an HIV-infected person.

- *Heterosexual Contact.* The majority of infections are transmitted through heterosexual contact. Although the probability of transmitting HIV during intercourse can be quite low, a number of factors increase the risk of infection dramatically. One is the presence in either partner during unprotected sex of a sexually transmitted disease (STD), such as syphilis or gonorrhoea. These diseases form ulcers and sores that facilitate the transfer of the virus. A 1996 study by the Ministry of Health, Health Research Unit estimated that pharmacists in Accra were treating between 50,000 and 90,000 STD cases each year. A study of commercial sex workers in Accra and Tema indicated that 3 out of 4 were infected with an STD. A second contributing factor is a large number of sexual partners.

A significant number of Ghanaian adults do suffer from STDs, and many have multiple sexual partners but do not use condoms to protect themselves. As a result, most new HIV infections are due to heterosexual contact. While homosexual contact can be an efficient mode of HIV transmission, it is important to stress the overwhelmingly dominant role of heterosexual contact in spreading the virus in Ghana. Programmes designed to slow the spread of HIV will need to focus on reducing transmission through unprotected sexual contact. In the longer term, strategies will also have to address the underlying social and economic factors contributing to the spread of the disease.

- *Mother-to-Child Transmission.* Many children are infected through mother-to-child transmission. They receive the infection from their mothers during pregnancy, at the time of birth or through breastmilk. About 30-40 percent of infants born to infected mothers will themselves be infected. The other 60-70 percent will not become infected, but are at risk of becoming orphans.

HIV Transmission Mechanisms



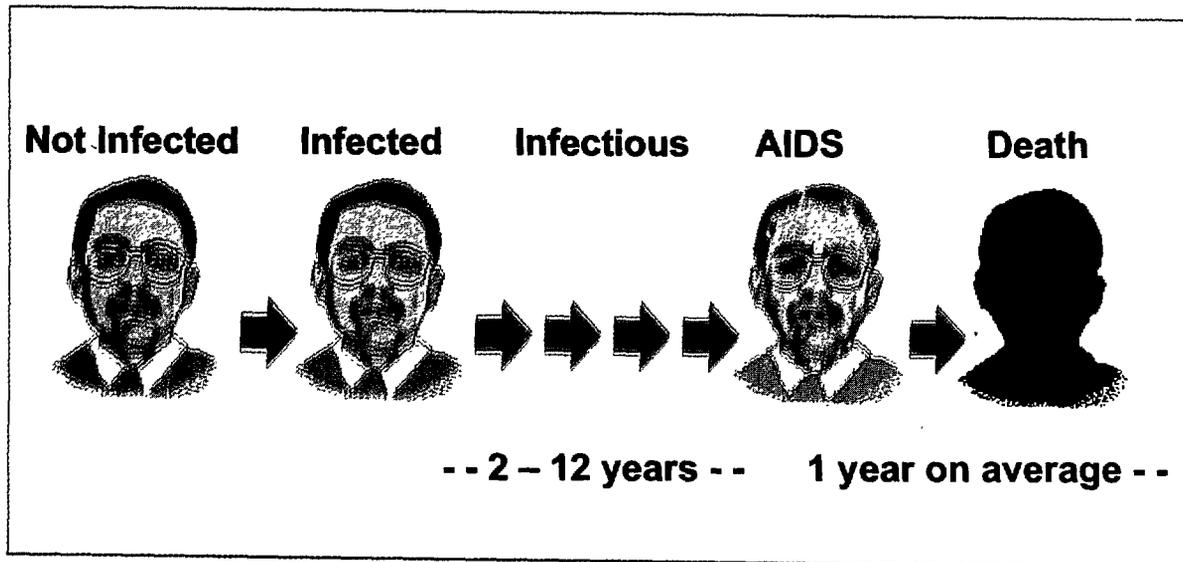
From the pie chart, it is clear that other modes of transmission contribute much less to the spread of the disease in Ghana. Nonetheless, it is still important to guard against contaminated blood and reused needles and blades that might transfer the virus. It is also especially important to stop some traditional practices, such as female circumcision, that involve cutting and the potential exposure of the blood to HIV.

Equally important is how HIV is not transmitted. The virus is not transmitted by mosquitoes or by casual contact such as shaking hands or kissing or by sharing bowls or utensils. HIV-infected persons need not be shunned or avoided.

Incubation Period

After transmission of HIV, a person does not develop AIDS immediately. There is often a lengthy period from infection with HIV to development of the disease AIDS that may last from two to 12 years or even longer. Some people may survive longer than 12 years with an HIV infection while others may develop AIDS within two or three years and die soon thereafter. The average time from infection with HIV to development of the disease AIDS is about eight years. That is, on average, a person does not develop AIDS until eight years after becoming infected. For most of this period, the person may not have any symptoms and, therefore, may not even 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 knowing it. People with full AIDS, of course, remain infectious.

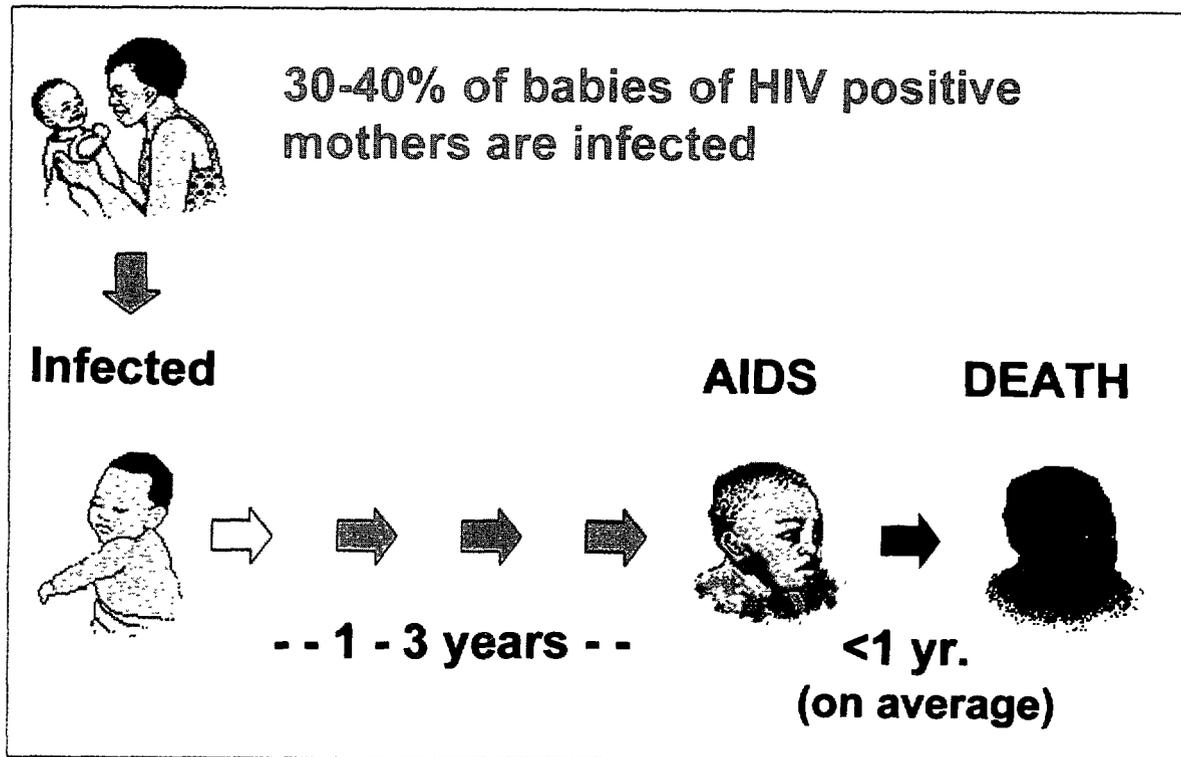
HIV Incubation Period (Adults)



No one is quite sure why some infected individuals develop AIDS at a slower or faster pace than others. Countries where the overall health of the population is poor may have shorter incubation periods, on average, than countries with better health conditions.

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

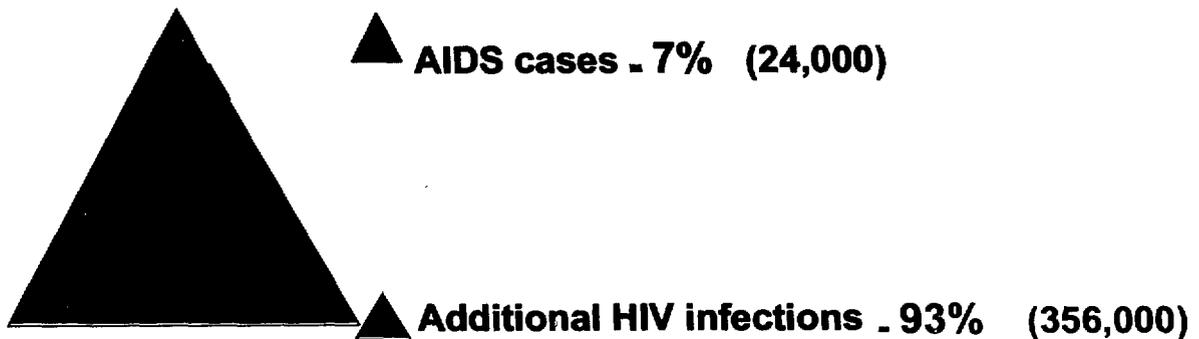
HIV Incubation Period (Infants)



The HIV/AIDS Pyramid

Because of the long and variable incubation period and because most people die quickly after they develop the full disease, actual AIDS cases are only the tip of the iceberg. Many more people are infected with HIV, but have not yet developed AIDS. By the end of 1998, an estimated 380,000 persons were infected with HIV in Ghana. This included about 24,000 children.

However, only about 7 percent of all infected persons had actually progressed from HIV to AIDS. Most did not know they were infected, and many had no symptoms at all. However, almost all will develop AIDS and die within the next 15 years or so. There is no available cure for AIDS. (See section IV on treatments and vaccines.)



▲ *Actual AIDS cases are only the tip of the iceberg. Many more people are infected with HIV but have not yet developed AIDS.*

Sentinel Surveillance System

If most people do not know they are infected, how do public health officials monitor trends? In Ghana, the Ministry of Health operates a sentinel surveillance system that provides data for estimating the extent of HIV infection. Each of the ten regions has designated two hospitals or health centres to be sentinel surveillance sites. At these selected sites, health workers take blood samples from pregnant women visiting for the first time. These blood samples from antenatal care (ANC) patients are then tested anonymously (without reference to the name of the women to protect her right to privacy) for HIV infection and the results are used to understand the status of the epidemic.

UNAIDS recommends that the best measure to understand the extent of HIV in a population is HIV prevalence among 15 to 49 year olds, or the percentage of persons aged 15 to 49 who are infected with the virus. A debate continues to take place over whether the sentinel surveillance results are a reliable proxy for adult prevalence or whether they tend to underestimate prevalence among all 15 to 49 year olds. UNAIDS now has a technical working group looking at this question. In this study, the assumption is used that the sentinel surveillance data is a reasonable estimate of prevalence among all 15 to 49 year olds. In reality, HIV prevalence in this age group could be even higher than indicated by the sentinel surveillance system.

In addition to ANC clients, two of the sites, one in Kumasi and one in Accra, collect blood samples from sexually transmitted disease patients for testing. Because HIV prevalence is so high among STD patients, these groups are not a good indicator of what is happening in the general population. This information, however, is useful in seeing what is happening among high-risk populations.

Current Estimates of HIV Prevalence

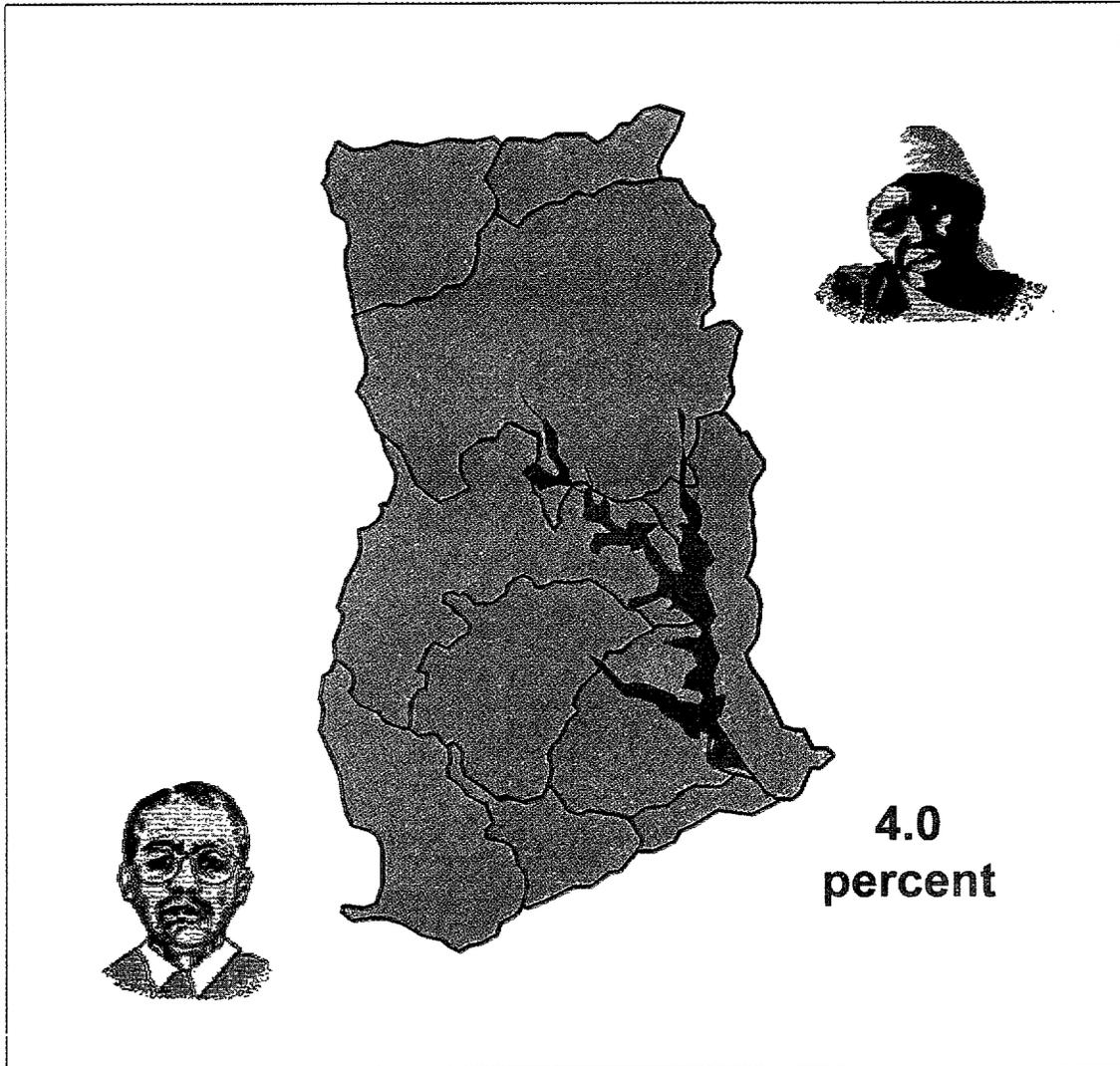
Medical staff diagnosed the first AIDS cases in the country in 1986. Once started, the HIV/AIDS epidemic seems to have spread slowly but steadily. About 4.0 percent of the population in the 15 to 49 age group is now thought to be infected with HIV, and prevalence may still be rising.

Three points are especially important in considering the HIV/AIDS epidemic in Ghana.

- HIV/AIDS is extremely serious in Ghana. The analysis suggests that about 380,000 persons were already infected in 1998, and more and more Ghanaians are becoming infected every day. Virtually all of these people will die from AIDS.
- The data do not suggest that the epidemic has stabilised. For example, the Ministry of Health sponsored sentinel surveillance at all sites each year between 1994 and 1998. Analysis of this data indicates that HIV prevalence in the 15 to 49 year old age group in Ghana rose from 2.7 percent in 1994 to 4.0 percent in 1998 and is probably still increasing.
- HIV has spread more slowly in Ghana than in many other African countries. For example, in several southern African countries, HIV prevalence among 15 to 49 year olds is now estimated at more than 20 percent. No one is quite sure why the epidemic has spread more slowly in Ghana and some other West African countries. At the same time, many eastern and southern African countries had prevalence rates in the late 1980s similar to those currently found in Ghana, but the situation worsened rapidly. This suggests that an unchecked epidemic could result in much higher prevalence levels in Ghana.

In sum, while HIV/AIDS has taken its own course in Ghana, the epidemic is so serious that it will have a profound impact on the social and economic development of the country well into the future.

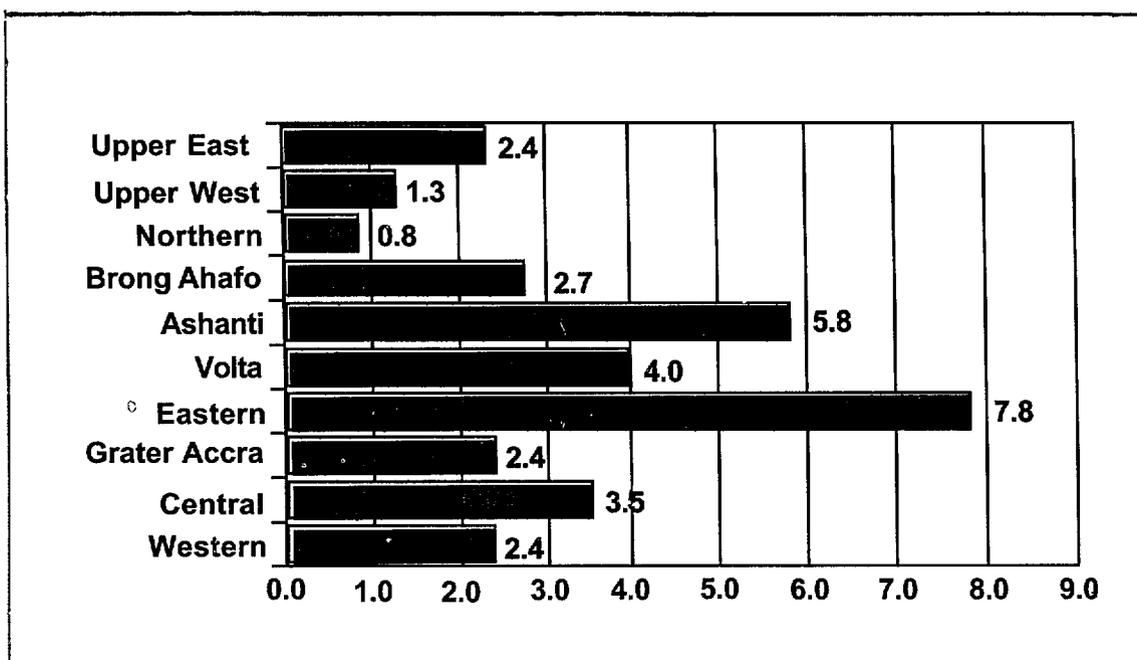
HIV Prevalence, Ages 15 to 49, 1998



Source: Sentinel surveillance data by region may be found in Disease Control Unit, Ministry of Health. *HIV/STD Sentinel Surveillance, 1998*.

While the sentinel data indicate that HIV infection exists in all parts of the country, there are important regional differences. The bar chart indicates adult HIV prevalence by region. Eastern Region has consistently reported the highest levels of HIV infection, followed by Ashanti and Western Regions. Prevalence in Greater Accra is surprisingly low; in most African countries, some of the highest prevalence rates are usually found in the capital city and major urban centre. In Ghana, Greater Accra actually has one of the lowest rates in the country. Otherwise, the lowest rates are found in the northern regions of the country.*

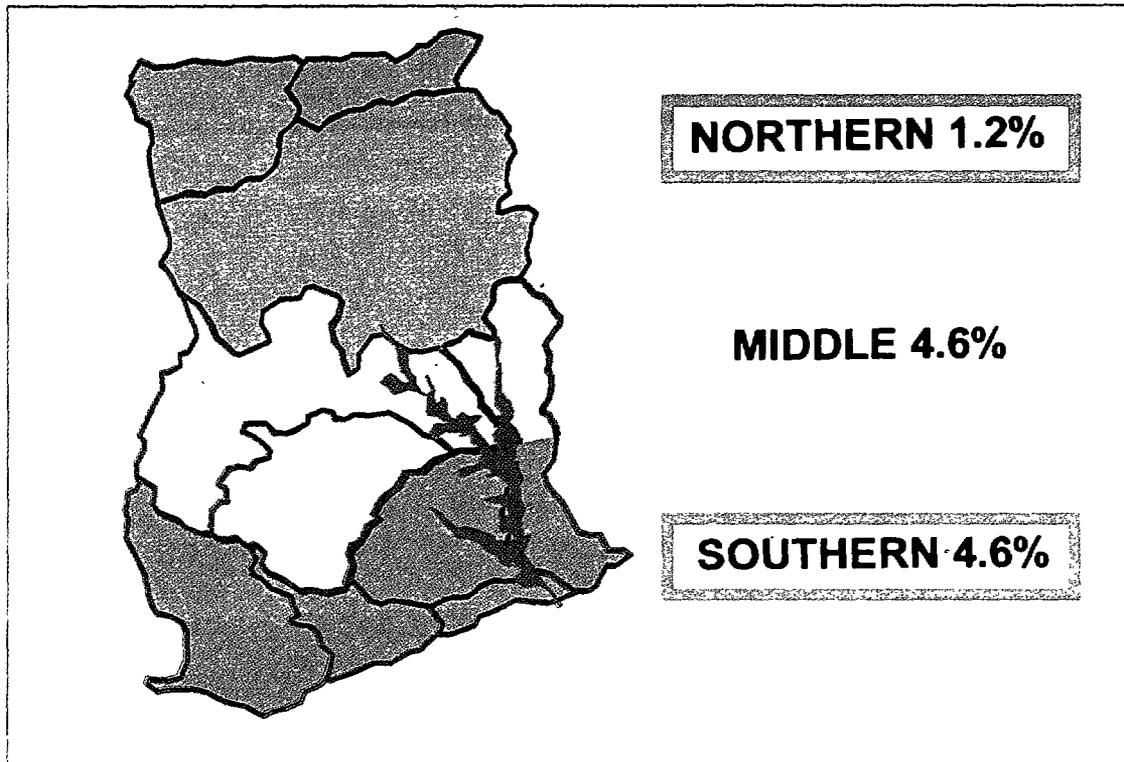
HIV Prevalence, Ages 15-49, by Region 1998



* Sentinel surveillance data for Northern Region is not available for 1998. The number given is an average of sentinel surveillance data for 1996 and 1997.

A good way to summarise regional differences is to look at prevalence in the three geographic regions of the country. Prevalence in the 15 to 49 year old age group is estimated to be 4.6 percent in the southern geographical region and the same in the middle geographical region. However, HIV prevalence was a significantly lower 1.2 percent in the northern region in 1998. The overall national figure, then, can disguise important regional differences.

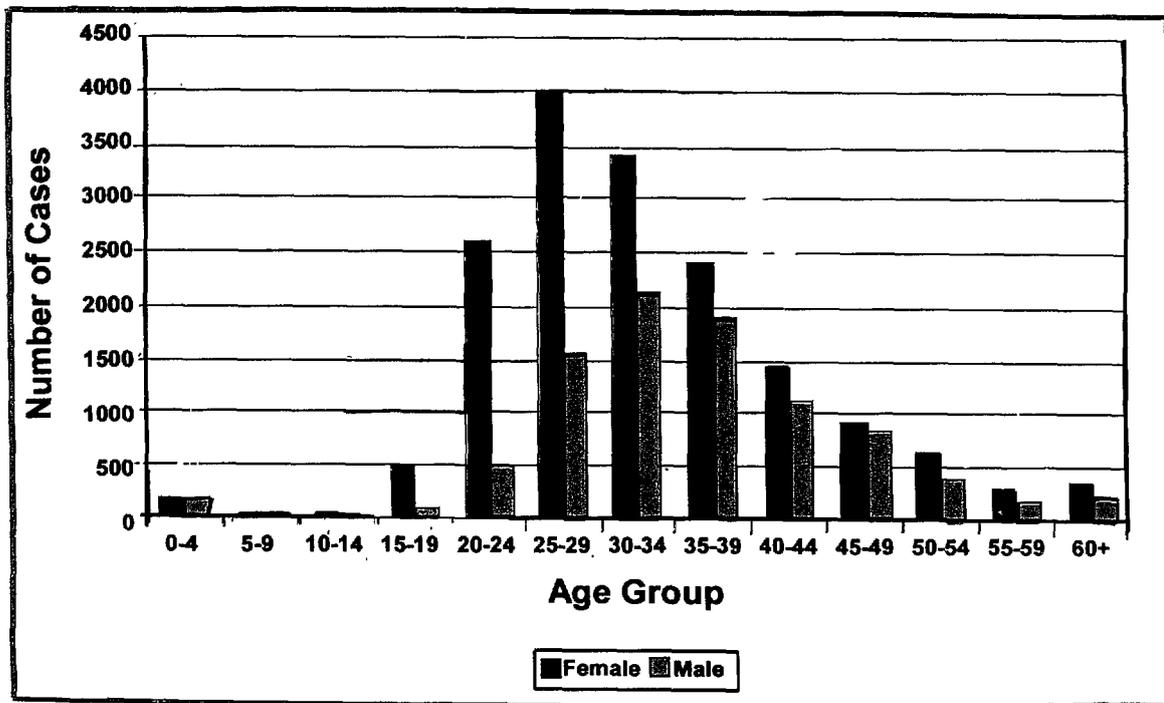
HIV Prevalence, Ages 15 to 49, by Geographical Region, 1998



Age-Sex Distribution of Reported AIDS Cases

The following chart shows the cumulative number of reported AIDS cases through 1998. Reported cases represent only a small proportion of all AIDS cases; nonetheless, they can provide useful information about the nature of the HIV/AIDS epidemic in Ghana. The blue bars represent AIDS cases among males for each age group; the red bars represent AIDS cases among females.

Age-Sex Distribution of Reported AIDS Cases through 1998



Source: Disease Control Unit, Ministry of Health

The bar chart illustrates several interesting facts.

- More than 90 percent of AIDS cases are found among persons between the ages of 15 and 49. Since this is the most economically productive part of the population, illnesses and deaths in this age group constitute an important economic burden. Many productive years and much investment in education and training will be lost. These deaths also have important family consequences since most people in this age group are raising young children.
- Persons aged 50 and over account for a relatively small proportion of AIDS cases; nonetheless, it is important to remember that HIV infection can be found in all adult age groups.
- To date, about two-thirds of the reported AIDS cases have been females. One reason for this pattern in Ghana appears to be that commercial sex workers returning from other countries accounted for a significant proportion of infections during the early stages of the epidemic. In either case, because the virus is usually

transmitted by heterosexual contact, the differences in rates of infection between men and women tend to be reduced over time.

- The peak ages for AIDS cases are 25-34 for females and 30-39 for males.
- The number of reported AIDS cases for females in the 15-24 age group is much higher than for males in the same age group. This is due to earlier sexual activity by young females and the fact that they often have older partners.
- The low number of cases in the 5-14 year old age group indicates that HIV infection is not transmitted by mosquitoes or casual contact.
- Children between the ages of 5-14 may be a special “Window of Hope”. If these children can be taught to protect themselves from HIV infection before they become sexually active, they can remain free of HIV for their entire lives. But action must be taken now, because rates of new infection are quite high once young people reach the 15-19 age group.

II. PROJECTIONS

Projected HIV Prevalence

Number of HIV Infections and AIDS Cases

Annual Deaths among Persons Aged 15 to 49

Cumulative AIDS Deaths

Projected HIV Prevalence

To project the number of new infections in the future, it is necessary to make an assumption about future levels of adult prevalence in the country. Does the evidence show that the epidemic has stabilised, that prevalence is no longer rising? Or does the evidence suggest that the epidemic is still spreading in the country? And, if prevalence is still on the rise, how high might it go?

The evidence indicates that HIV prevalence is still on the rise in Ghana. Analysis based on the sentinel surveillance data shows HIV prevalence in the 15 to 49 year old age group in Ghana rising from 2.7 percent in 1994 to 4.0 percent in 1998, representing an increase of nearly 50 percent in just four years. Although changes may be small or non-existent from year to year, the overall trend of rising prevalence clearly shows an epidemic that is still worsening in Ghana.

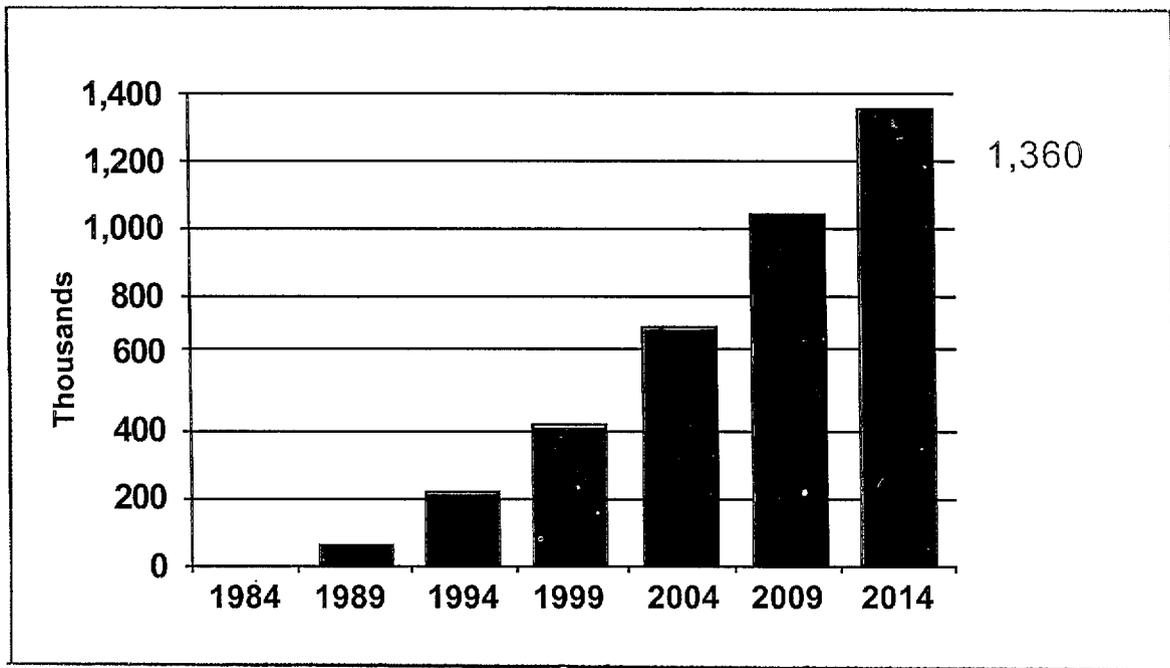
Experience in other parts of Africa suggests that HIV prevalence in Ghana could rise even higher than at present. For example, as shown on the map, HIV prevalence in many other African countries is much higher than in Ghana. Higher prevalence in other countries may be due to an earlier start of the epidemic in those countries, to different behaviour patterns, to the presence of a different strain of HIV in the early stages of the epidemic, or to a combination of all these factors.

How high HIV prevalence in Ghana might rise is, of course, an unknown. For purposes of this study, HIV prevalence for 15 to 49 year olds is extrapolated from the historic trend and is assumed to increase from 4.0 percent in 1998 to 6.4 percent in 2004, 8.2 percent in 2009, and 9.5 percent in 2014. It is certainly possible that prevalence might rise more quickly and reach an even higher level. Of course, the universal goal is to establish effective programmes and achieve behaviour changes that result in stabilisation and an eventual downturn in the level of prevalence.

Number of Projected HIV Infections and AIDS Cases

If HIV prevalence for 15 to 49 year olds does continue to increase to about 6.4 percent by 2004 and to 9.5 percent by 2014, then the number of infected people in the population would increase from 430,000 in 1999 to 720,000 in 2004. The number of HIV infected persons would then continue to rise to more than a million in 2009 and to 1.36 million in 2014. In 2004 alone, more than 110,000 persons will become newly infected in Ghana – 300 new infections every single day of the year. In 2009, nearly 140,000 persons would become infected, or 380 every day.

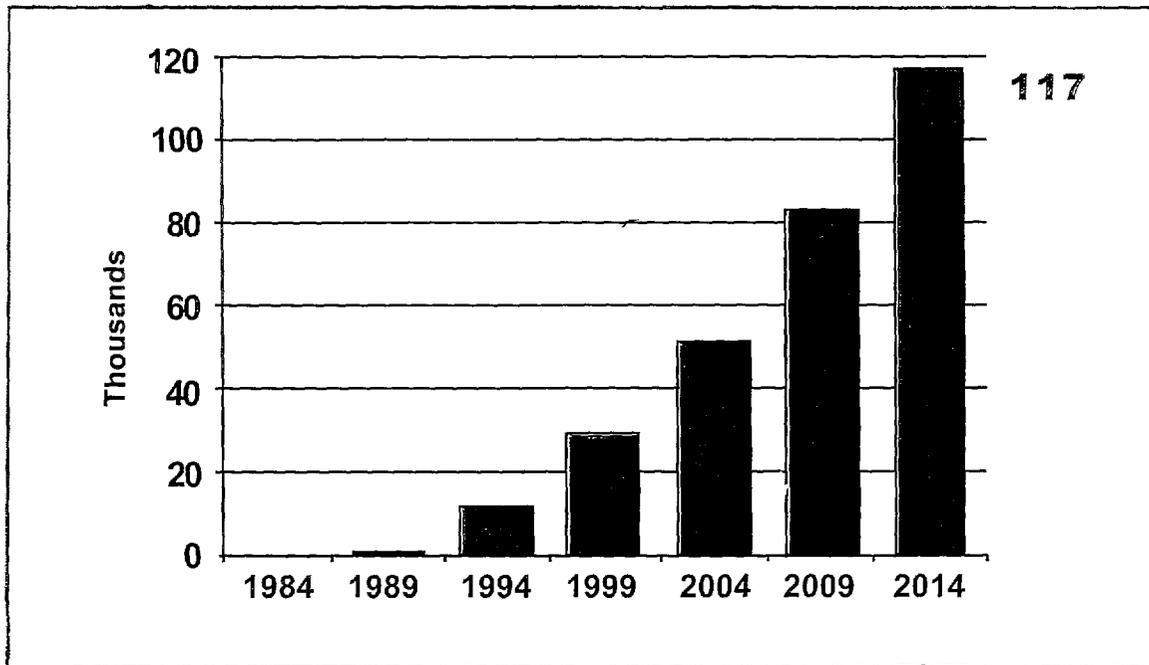
Number of Projected HIV Infections



Source: The projections on pages 23 – 37 have been prepared using the AIDS Impact Model.

The number of new AIDS cases developing each year among those persons living with HIV infection would rise from 31,000 in 1999 to 51,000 in 2004 and 117,000 in 2014. Between 1999 and 2004, for example, about 115 persons will develop AIDS each and every day in Ghana.

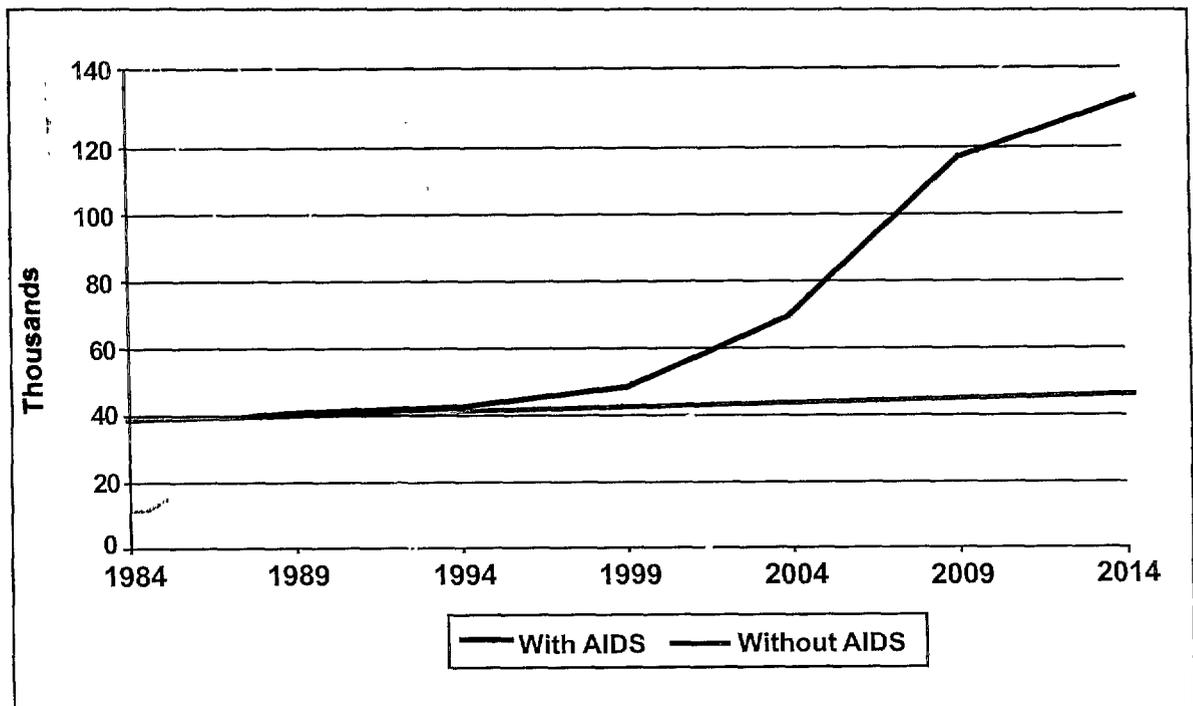
Number of New AIDS Cases Each Year



Annual Deaths Among Persons Aged 15 to 49

The epidemic will increase the death rate at almost all ages. Moreover, the impact will be especially severe among adults in the prime working ages. Without AIDS, and assuming a gradual decline in death rates from other causes, the annual number of deaths among adults aged 15-49 would change very little after 1999. However, AIDS will significantly increase the number, with deaths in this age group reaching 48,500 per year by 1999, 118,900 per year by 2009 and 131,500 per annum by 2014. By 2009, more than 200 persons per day in the 15 to 49 age group would die from AIDS. This rapid increase in deaths in the productive age group could have serious consequences for the economic and social development of the country.

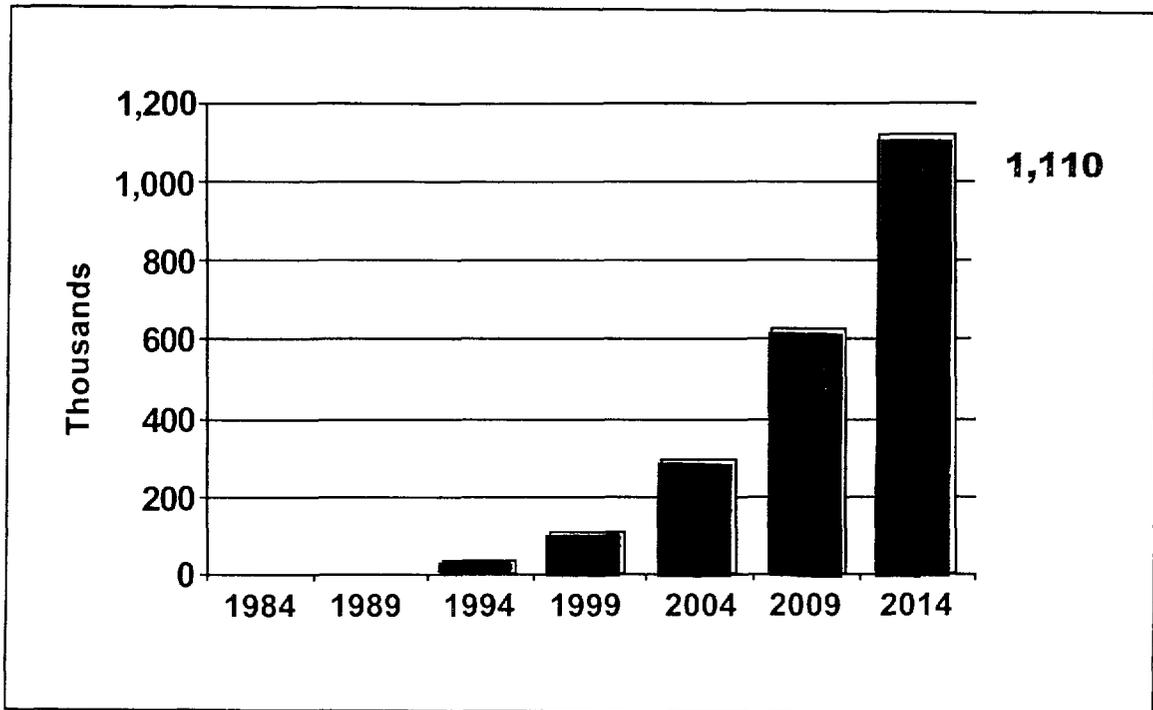
Annual Number of Deaths among Adults Aged 15 to 49



Cumulative AIDS Deaths

Based on projections of AIDS cases, the cumulative death toll would be high. By 1999, the cumulative number of AIDS deaths from the beginning of the epidemic is estimated at about 114,000. Over the ensuing 15 years, 1999 – 2014, an additional 1 million persons in Ghana are likely to die from the disease, which would result in a cumulative total of more than 1.1 million deaths by 2014.

Cumulative AIDS Deaths



III. THE SOCIAL AND ECONOMIC IMPACTS OF AIDS

Orphans as a Result of AIDS

Mortality

Population Size and Growth

Health Care

HIV and Tuberculosis

Women

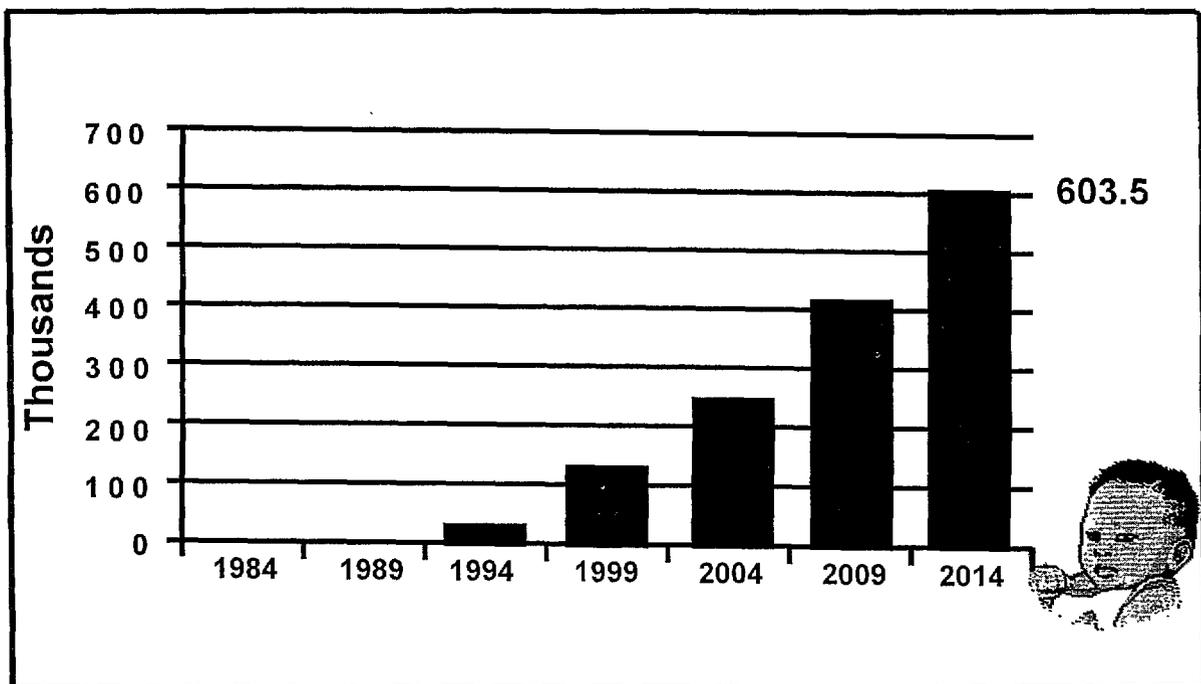
Sectoral Impacts

THE SOCIAL AND ECONOMIC IMPACTS OF AIDS

Orphans as a Result of AIDS

One serious consequence of AIDS deaths to men and women in their prime childrearing ages is an increase in the number of orphans. A maternal orphan is a child under age 15 whose mother has died from AIDS; a paternal orphan is a child under age 15 whose father has died from the disease; a double orphan is a child under age 15 whose parents have both died from AIDS. In reality, given the primacy of heterosexual transmission in spreading the virus, many children will lose both parents. The number of maternal and double orphans would rise quickly from 126,000 in 1999 to 252,000 in 2004 and to more than 603,000 in 2014.

Maternal and Double Orphans as a Result of AIDS



There will be a tremendous strain on social systems to cope with such a large number of orphans and provide them with needed care and supervision. At the family level, there will be increased burden and stress for the extended family. This surge in the number of orphans is especially difficult in a major urban centre where traditional family structures are not as strong as in the countryside.



Many grandparents will be left to care for young children. Other families are already headed by adolescents and the number of these households is increasing. There will be an increased burden to provide services for these children, including orphanages, health care, and school fees. Many orphans will never receive adequate health care and schooling, increasing the burden on society in future years. The number of street children will rise, and child labour will become more common as orphans look for ways to survive.

Mortality

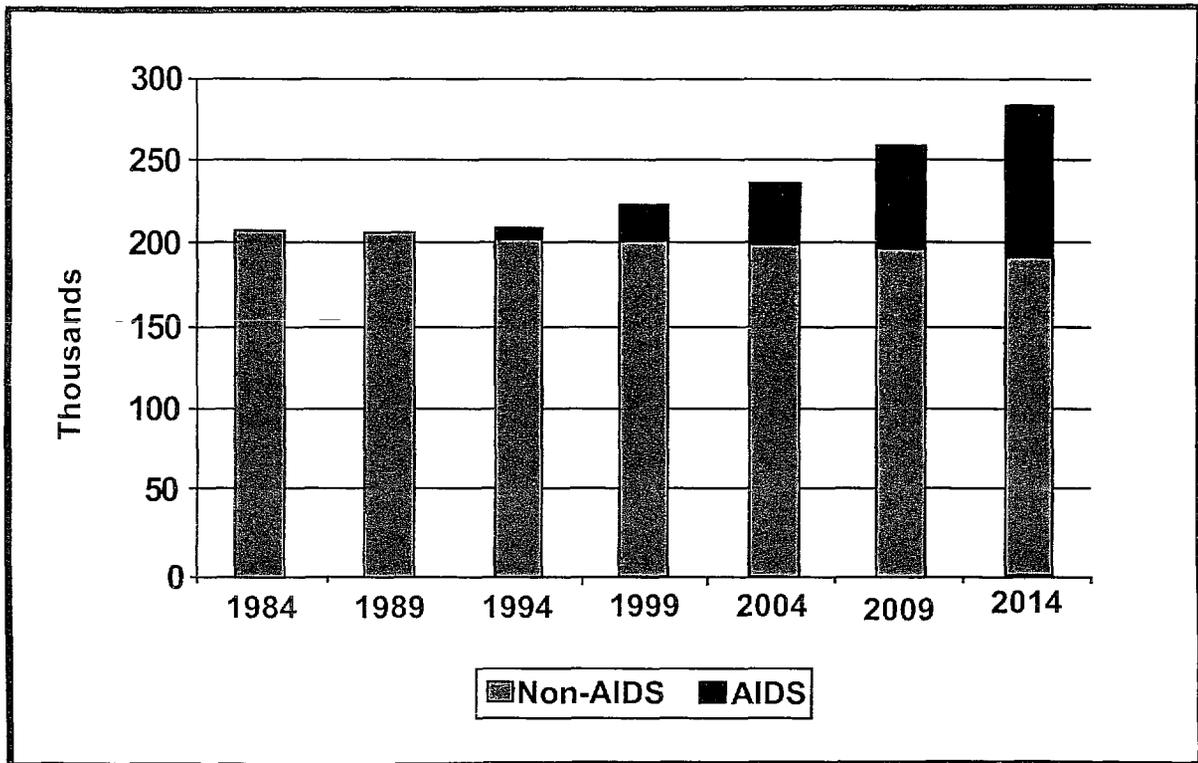
Ghana faces many serious health problems, all of which have to be addressed from the limited resources available for health. Why, then, should HIV/AIDS command more attention from health policymakers and planners than other competing health problems? Yet, in the end, HIV/AIDS is not just one more health challenge among many; rather, it is a killer disease of increasing seriousness that will have a significant impact on the country.

Part of the problem in recognising the special character of HIV/AIDS is that the epidemic is often hidden. Recall that there is a lengthy incubation period, on average about eight years, between the time a person becomes HIV-infected to development of the disease AIDS. Most persons in Ghana who are infected with HIV don't even know it. Second, no one dies from AIDS directly; rather, infected persons succumb to the opportunistic infections, such as tuberculosis, that invade the body with the breakdown of the immune system. Consequently, many AIDS deaths are never identified as such.

The worst mortality from AIDS lies in the near future, not the past. In 1994, for example, AIDS accounted for about 3.5 percent (7,000 out of 211,000) of all deaths in Ghana. In that situation, AIDS did not stand out as a particularly lethal epidemic. By 2004, however, AIDS will account for 18 percent of deaths – nearing one of every five in the country. And by 2014, AIDS will be responsible for 35 percent of deaths – more than one of every three in the country. In that year, 99,000 out of 285,000 deaths would be directly attributable to AIDS. No other single cause will come close to being responsible for so much mortality among Ghanaians.

Expected gains in overall life expectancy would never take place. Under the projection assumptions, life expectancy will remain near present levels through 2014 because of the HIV/AIDS epidemic, rather than continuing to rise over time.

Deaths from AIDS and Other Causes

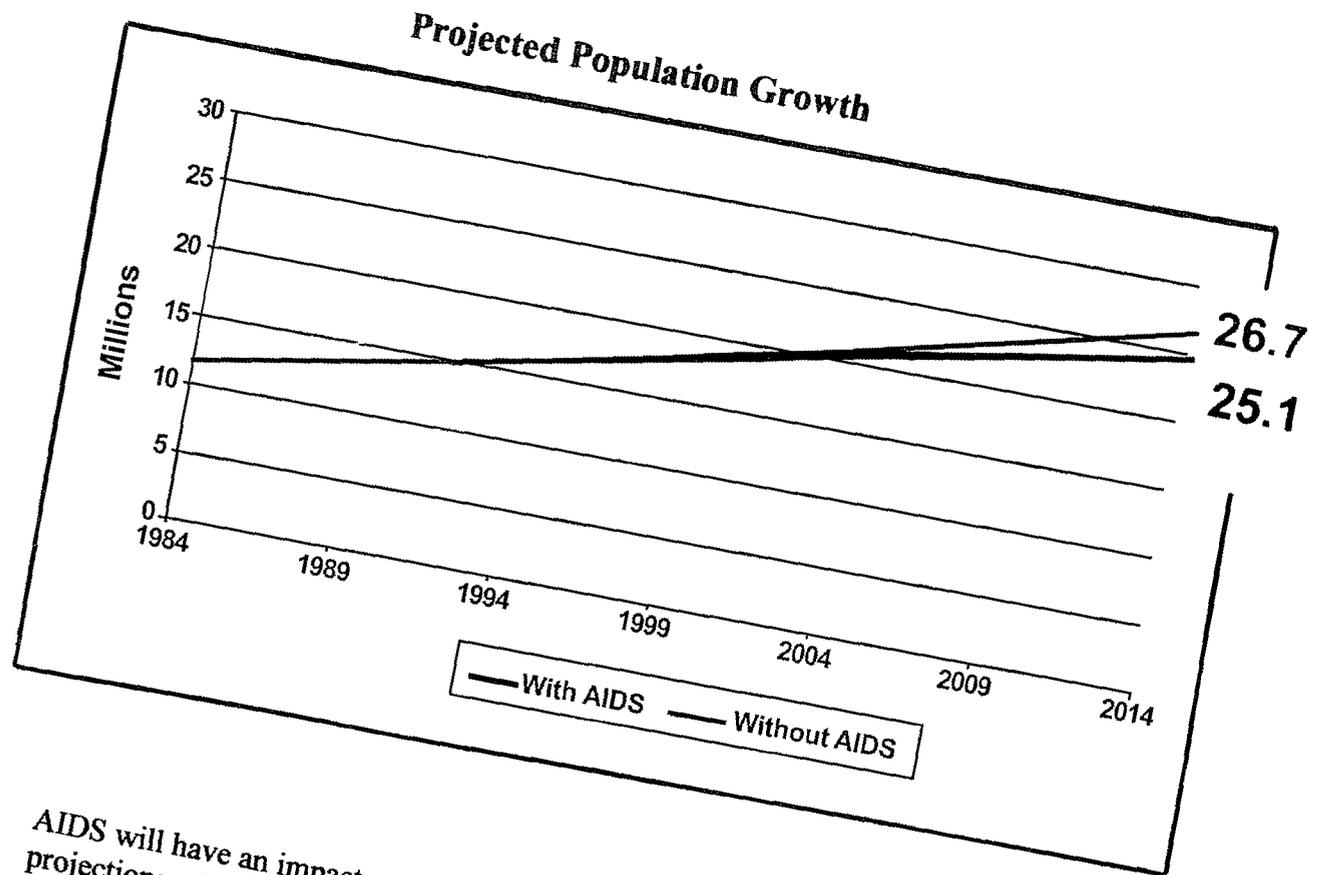


Population Size and Growth

What will be the impact of rising mortality from AIDS on the future growth of the Ghanaian population? According to the projection model used in this analysis, the population in 1998 was probably growing by about 2.5 percent per year. At that rate, the population would double in about 28 years. The growth rate is consistent with the fertility level found in the Ghana Demographic and Health Survey (GDHS).

In Ghana, the fertility rate, the average number of children per woman, fell from 6.4 children per woman as reported in the 1988 DHS to 5.5 children per woman at the time of the 1993 DHS. Both the following projections assume a further, gradual decline in the fertility rate to about 4.0 children per woman by 2010. The first projection, however, assumes no AIDS epidemic, while the second projection assumes an AIDS epidemic as described above.

With no AIDS, the population would grow to 21.1 million persons in 2004 and to 26.7 million persons in 2014. At that time, the population would still be growing by 2.1 percent per year. With AIDS causing increased deaths, the population would grow to 20.6 million persons in 2004 and to 25.1 million in 2014, or about 1.6 million fewer persons that would be the case without an epidemic. The population would be increasing by about 1.7 percent per year at that time.



AIDS will have an impact on population size; by 2014, under the assumptions in these projections, there would be 1.6 million fewer persons in the population with an epidemic than would be the case in the absence of HIV/AIDS. Nonetheless, in both cases, the population continues to grow rapidly over the projection period. High birth rates will continue to be a more important factor in determining the future size and growth of the Ghanaian population than will mortality from AIDS.

Health Care

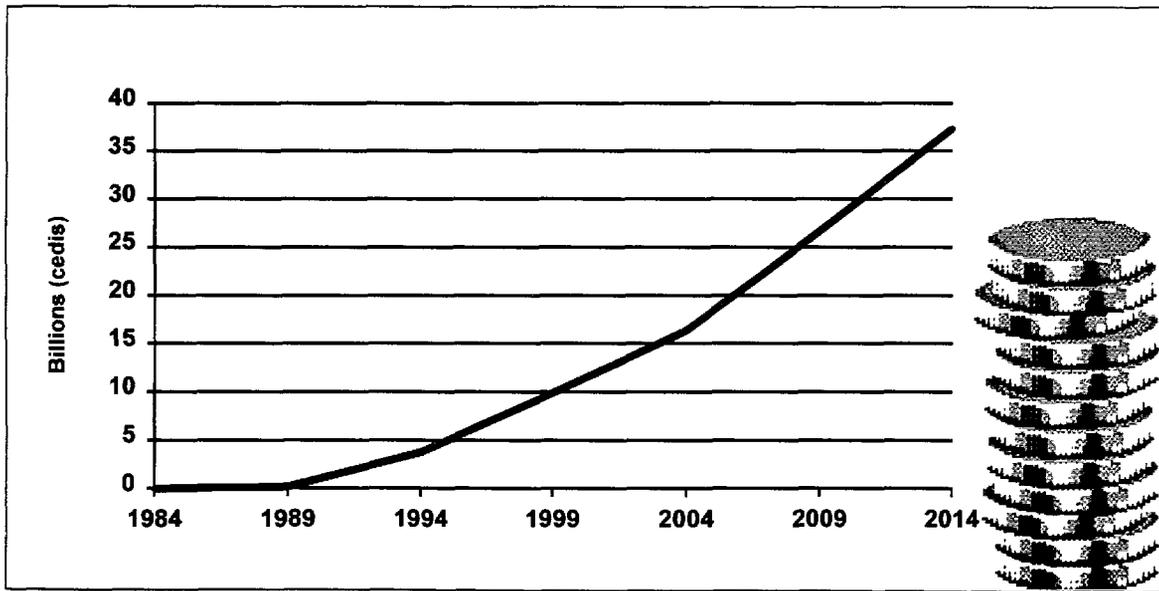
The treatment of the opportunistic infections resulting from AIDS is expensive and will place considerable strains on the delivery of health services in Ghana. For example, the demand on health services as a result of AIDS can be seen by looking at health care expenditures.

Recent estimates in Ghana indicated that the annual cost to treat an AIDS patient ranges between C190,000 and C545,000.* This does not include costs to screen patients for HIV infection nor does it include exceptionally expensive treatments such as anti-retrovirals. An average cost of C400,000 to treat an AIDS patient may be used to illustrate the issue. Assuming that 80 percent of AIDS patients receive health care, expenditures to treat this disease would rise from about C3.8 billion in 1994 to C26.7 billion in 2009 and to C37.4 billion in 2014. (These costs are given in constant values which means that they do not take inflation into account.)

The increasing need for funds to expend on AIDS care threatens to divert spending from other important health care needs, or to leave many AIDS patients with inadequate care. If funding is diverted from other health needs, then mortality and sickness not related to HIV is likely to increase as well, adding to the overall impact of the epidemic.

* See, for example, JSA Consultants Ltd. "A Study of Workplace Response to the HIV/AIDS Epidemic in Ghana," (Draft). Ministry of Employment and Social Welfare, 1999.

Annual AIDS Care Expenditures

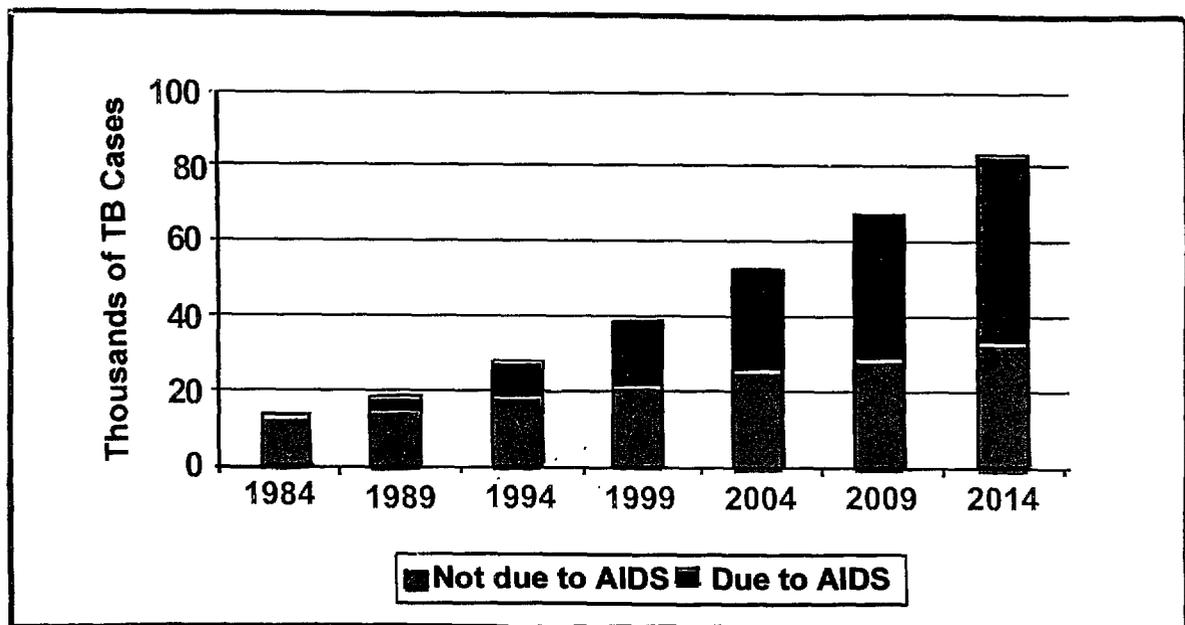


HIV and Tuberculosis

Of particular note, HIV is largely responsible for the rapid rise in tuberculosis (TB) cases in recent years. The arrival of HIV/AIDS has caused a secondary TB epidemic in many African countries. As many as two-thirds of TB patients may be HIV positive. HIV infection weakens the immune system of otherwise healthy adults. Many, perhaps half, of all adults in Ghana carry a latent TB infection, which is suppressed by a healthy immune system. When the immune system is weakened by HIV, it can no longer control the TB infection and overt TB disease can develop.*

The results from the projection model used in this study can be used as an example. For example, in 1989 about 2,500 of 18,000 new TB cases could be attributed to AIDS. By 1999, however, 16,000 of a projected 37,100 new TB cases would be AIDS-related, and, by 2009, 39,000 of a projected 67,300 – about 57 percent of all new cases – would be attributable to the AIDS epidemic. These are almost certainly underestimates, because these new TB cases will transmit the disease to others. Also, the emergence of drug-resistant strains of TB in Africa is contributing to an ever-worsening epidemic.

HIV and Tuberculosis



* See, for example, A.D. Harries. "Tuberculosis and Human Immunodeficiency Virus Infection in Developing Countries." *Lancet* (1990), pp. 387 – 390.

The impact of HIV infection on tuberculosis is an especially serious problem because TB is contagious through casual contact. HIV increases the risk of tuberculosis for the entire population. Treatment of TB is very expensive and puts considerable strain on the health budget. AIDS patients who have TB tend to stay in the hospital longer than other AIDS patients. Because of inadequate treatment of some cases of TB among both HIV-infected and uninfected people, drug-resistant strains of TB are appearing, making it yet more difficult to prevent transmission and expensive to treat the disease.

Women

AIDS can have a very serious impact on the lives of women when it strikes a family member. In many cases, women do not have a secure occupation that can provide a steady and adequate income. Thus, if the husband dies, the surviving wife and children can be particularly vulnerable. Some women may be exploited or may have to resort to selling sex to provide cash income.

A woman may also have reduced ability to be a provider for the family if she needs to spend a significant portion of her time caring for family members who are sick with AIDS. It may reduce the time she has for productive work as well as affect the amount of time she can spend caring for children. Since other tasks, such as food preparation, must still be done, many women have to work even harder than normal to cope with AIDS in the family.

Research indicates women are two to four times more vulnerable to HIV infection than men during unprotected intercourse because of the larger surface areas exposed to contact. Similarly, women are more vulnerable to other sexually transmitted diseases, the presence of which greatly enhances the risk of HIV infection. STDs that bring on recognisable symptoms in men are often asymptomatic in women and, therefore, remain untreated. Women are also especially vulnerable to AIDS because they may have limited ability to protect themselves from HIV infection. A woman may be at risk of getting HIV even though she is faithful to her husband, because her husband has outside sexual partners. She may have little or no control over her husband's actions and no ability to protect herself by having her husband use condoms.

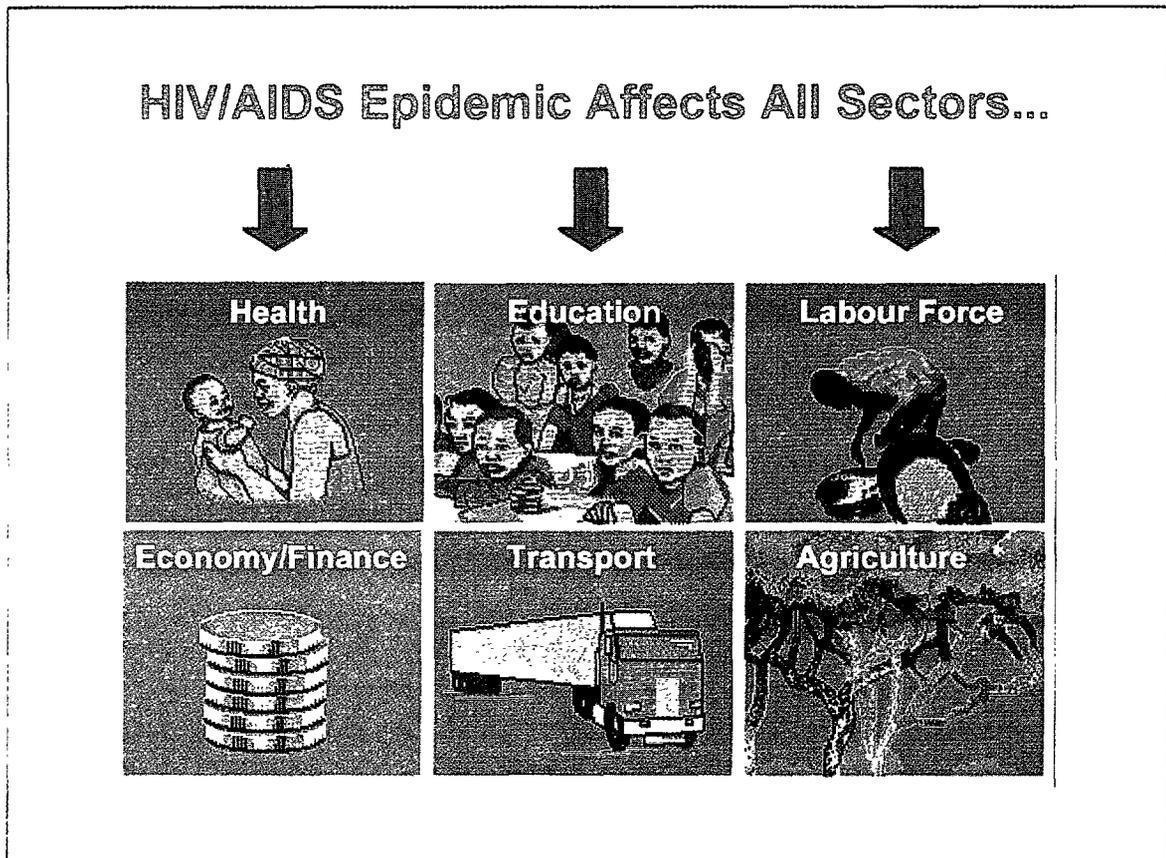
❁ Women can be especially vulnerable to the HIV/AIDS epidemic

- ❖ Economic vulnerability is greater if the husband dies
- ❖ Burden of care in AIDS-affected household falls on women and girl children
- ❖ Subordinate position to men can make it difficult to protect selves against HIV



Sectoral Impacts

What makes AIDS so important to national development is that it affects the development effort in virtually all sectors. In education, for example, AIDS among teachers may result in increasing absenteeism and disruption in the schools. Training costs for teachers could rise to replace those lost to the epidemic. Because an AIDS death to an adult results in the loss of household labour and/or income, children are often required to leave school and remain at home or go to work to compensate for losses and to avoid school fees. Girls, in particular, may have to give up their educational opportunities. Orphans often lose the necessary financial, material, and emotional support that they need for successful schooling.



The loss of people in the most productive years of their lives will certainly affect overall economic output. Some sectors, particularly those that require trained and skilled workers, will be harder struck than others. The productivity of an enterprise will be affected even before an employee dies, due to lost workdays because of sickness. The number of workdays lost to illness for a person with HIV/AIDS can range from as few as 30 to as many as 240 days in a year. Even healthy workers may need more time off from work to attend funerals of relatives and co-workers. AIDS can also have a significant impact on health care costs for firms that provide health care for their employees.

IV. INTERVENTIONS TO CONTROL THE SPREAD OF AIDS

Interventions

The National Programme and Draft Policy

The Role of Leaders

Strategic Planning and Priorities in Ghana

INTERVENTIONS TO CONTROL THE SPREAD OF AIDS

The HIV/AIDS epidemic is already serious enough that it is going to result in the deaths of hundreds of thousands of Ghanaians in the near future. Nonetheless, much can be done to lessen the impact of the disease and eventually bring the epidemic under control, so that HIV prevalence never reaches the levels found in many other African countries.

Interventions

Different interventions can be adopted to address the transmission mechanisms of HIV. Collectively, they can slow the spread of AIDS.

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 in the country. 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.

Interventions to limit transmission through heterosexual contact

-
- ... Promoting abstinence and faithfulness
- ... Reducing the overall number of sexual partners
- ... Delaying the onset of sexual activity among adolescents
- ... Promoting the use and availability of condoms, including female condoms
- ... Controlling other sexually transmitted diseases
- ... 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.

Reducing the number of sexual partners, especially 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 countries.

Controlling other sexually transmitted diseases. Another intervention focuses on controlling the spread of STDs 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.

Mother-to-Child Transmission. A mother who is infected with HIV has a 30 to 40 percent chance of transmitting the virus to her newborn child. Various approaches can be used to reduce the number of children who are infected.

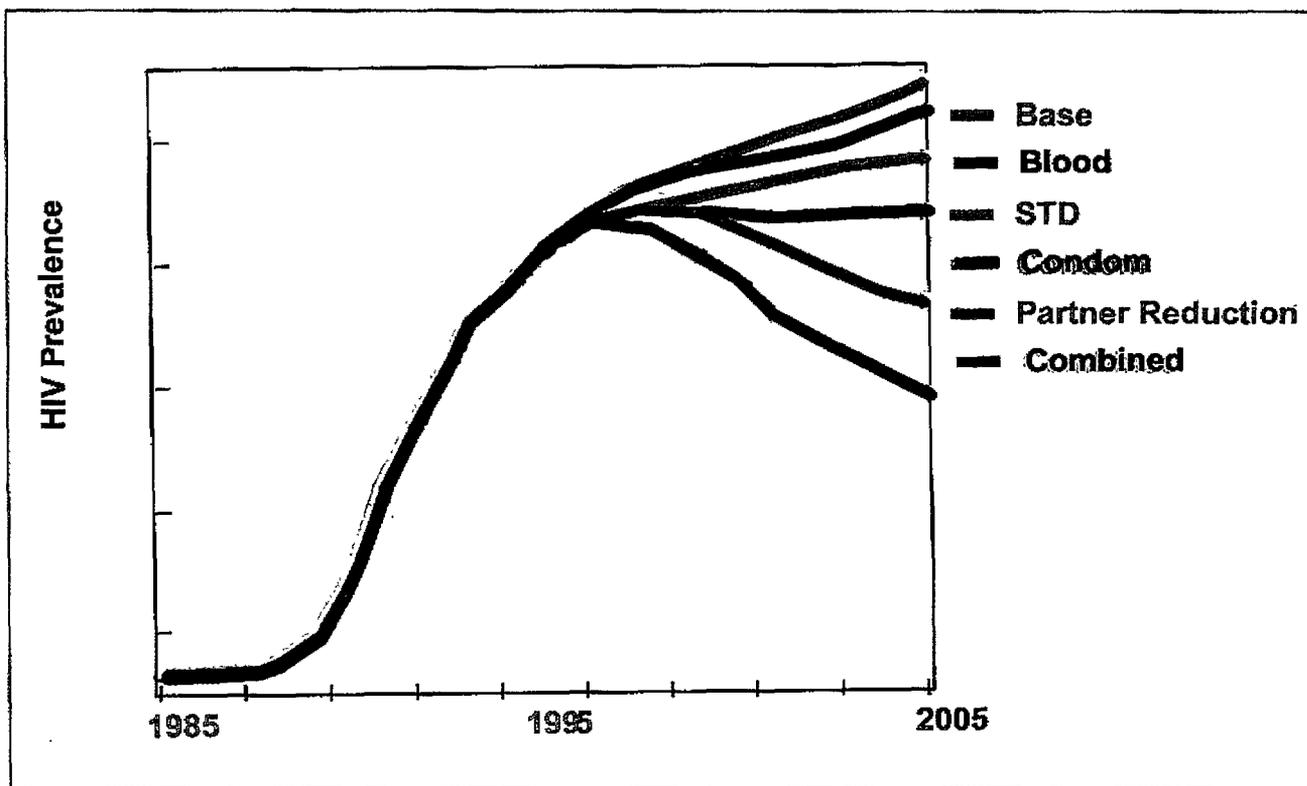
- Providing voluntary counselling and testing and access to family planning services. To reduce mother-to-child transmission, it is important that young women know whether they are infected. If they are HIV-positive, they may wish to use family planning to avoid pregnancies. Voluntary counselling and testing needs to be available for couples where one or both of the partners is infected to help them understand the HIV test and the choices facing them. Voluntary counselling and testing must also be made available to those about to marry.
- Reducing transmission during breastfeeding. About one-third of mother-to-child transmission occurs through breastfeeding. Curtailing breastfeeding could reduce transmission of HIV but would also eliminate the significant health benefits that children get from breastfeeding. Perhaps in some cases mothers could be counselled on alternative ways to feed the child.
- Using anti-retroviral therapy. Mother-to-child transmission can be reduced through the use of zidovudine (AZT). New research shows that AZT treatment for the mother in the period just before and during childbirth can reduce transmission rates by 50 percent. However, such treatments may cost \$80 (C186,400) per patient or more. A national programme would be difficult and expensive to implement and would require testing and counselling for all pregnant women.

Blood Transfusion. Health officials need to continue efforts to avoid infection through blood transfusion by keeping the blood supply as safe as possible. This means screening blood through laboratory tests and screening potential blood donors through interviews to reject as donors those who have a high probability of infection.

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 Ghana, 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

Effects of Interventions



Source: Bernstein et al. (1998).

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 downward 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.

Signs of Change in Uganda

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 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 have levelled off in rural areas and are declining in urban areas. Survey results from the early 1990s and mid-1990s 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 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, President Museveni and other 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.

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 Ghana. Most importantly:

- Many HIV-infected persons cannot tolerate the side effects of the drugs and for them the combination therapy treatments are useless. 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.
- Perhaps most importantly, the costs of these treatments are prohibitively high, around \$8,000 (about C18,400,000) per patient per year in an actual developing country setting and even more in the industrialised countries.* (By contrast, in Ghana, the government spent about U.S.\$9 (C21,000) per person in 1997 for all health services.)

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. In developing countries, the first experimental programmes are just beginning.

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.

* World Bank. *Confronting AIDS: Public Priorities in a Global Epidemic*. New York: Oxford University Press, 1997, pp. 174 – 178.

Vaccines. 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. Most scientists believe that vaccines are not likely to be ready for mass use for at least the next five to 10 years, if then. Even if vaccines do eventually become available, there will be problems in producing large quantities and delivering the vaccine to large numbers of people.

**Neither drugs nor vaccines
are likely to be available to
help reduce the spread of
HIV by sexual contact in
Ghana in the next several
years**

In brief, it does not appear that either drugs or vaccines will contribute much to reducing the spread of HIV by sexual contact in Ghana in the next several years.

The National Programme and Draft Policy

The Government of Ghana responded quickly to the emerging HIV/AIDS epidemic in the 1980s. The government established the National AIDS/STD Control Programme (NACP) in 1987 to coordinate the national response to the epidemic. NACP led in the development of a Short Term Plan (STP) for the prevention and control of HIV/AIDS that ran during 1987 and 1988. Subsequently, NACP developed the first Medium Term Plan (MTP-1) that guided HIV/AIDS prevention and control efforts over the 1989 – 1993 period.

The Ministry of Health was primarily responsible for implementing the early programmes, as was typical in African countries. However, over time, other public sector ministries, the private sector, non-governmental organizations (NGOs) and people living with HIV/AIDS (PLWHA) became more involved in programme implementation. A recent review of the national response to the HIV/AIDS epidemic stressed the importance of expanding a multi-sectoral approach to the epidemic.

In 1997, NACP led the drafting of a Policy Document on HIV/AIDS. The purpose of the policy is to create a favourable environment for all HIV/AIDS control and prevention programmes, and to mitigate the social and personal consequences of HIV infection on those persons living with the virus and on those persons who have already developed AIDS. The national policy is still in draft form and has not yet been formally adopted.

The objectives of the draft policy are to

- reduce the impact of morbidity and mortality as a result of HIV/AIDS in the general population;
- ensure that the basic human rights of persons infected with HIV and persons with AIDS are protected and upheld;
- ensure that HIV infected persons and persons with AIDS are provided with adequate medical and social care, including counselling;
- ensure that access to social and economic opportunities remain open to HIV infected persons and persons with AIDS;
- ensure that adequate attention is paid to groups such as women who have been found to be vulnerable to HIV;
- ensure that there is a consistent programme of information and education about HIV/AIDS among the general population, especially among youth, and that this increased knowledge is translated into an increase in attitudinal and behavioural change;
- decrease vulnerability to infection, reduce stigmatization and discrimination, and minimize the socio-economic impact of the epidemic.

The draft policy emphasises information and education leading to behavioural change, especially among youth, and the widespread availability and promotion of condoms as keys to limiting the spread of the virus.

The Role of Leaders

Political, health, and other leaders will be directly involved in HIV/AIDS programme implementation. But political, governmental, non-governmental, religious, business, education, and other regional leaders who are not directly involved in the implementation of HIV/AIDS prevention programmes must contribute as well. If the leaders of Ghana all do their share, this epidemic can be turned around. This section will look at and illustrate what individual leaders can do now.

What must a political leader do now to help control the spread of HIV in Ghana?

Share or “diffuse” knowledge about HIV/AIDS among constituents, especially information about transmission, fatal consequences and ways to prevent infection

Engage in policy dialogue to ensure that the epidemic remains high on the national agenda

Participate in national and district strategic planning

Support and ensure resources for the HIV/AIDS programmes of sectoral ministries and NGOs and promote a multi-sectoral response to the epidemic

Use influence of position to oppose discrimination against HIV-infected persons

In his/her political capacity, support appropriate intervention measures

What can leaders do to help stem the spread of HIV in Ghana? Some illustrations follow but the list could be many times longer depending on the role of the leader or the organisation. Evidence from Uganda and elsewhere suggests that the spread, or “diffusion,” throughout the population of information about the epidemic – its extent, the nature of the disease, how HIV is spread, the fatal consequences and how individuals can protect themselves and their loved ones – is key to achieving widespread changes in high-risk behaviour. District and national leaders have numerous opportunities to share information, such as found in this document, with their constituencies. This is a practical and critically important process to which all well-informed leaders can immediately and realistically contribute.

Political leaders can also contribute to a policy dialogue on the HIV/AIDS epidemic that keeps the issue high on the national agenda. One of the factors that seems to be helping turn the tide in Uganda is that President Museveni and other leaders have spoken out early and often about the HIV/AIDS epidemic and given open and strong support to intervention programmes. This gives both visibility and credibility to HIV/AIDS intervention programmes and helps develop a consensus about the most effective and acceptable prevention and mitigation strategies. HIV/AIDS statements

should be included in speeches at all realistic opportunities. Leaders can contribute to the formulation of HIV/AIDS national and district strategic plans and can support implementation and funding efforts.

One of the most common problems in addressing the HIV/AIDS epidemic is that persons have often avoided learning about or admitting to being infected with HIV because of the stigma attached to the disease and because of fear of discrimination. However, avoidance limits diffusion of knowledge about HIV in the general population and it increases the risk of transmission to loved ones and others. Political and other leaders can help by publicly acknowledging the need to care for and support persons living with AIDS and HIV infection and working against discrimination.

AIDS is much more than just a health problem; rather, it affects all aspects of society and all components of the development effort. It is therefore important that all government sectors, NGOs, private sector organisations, religious institutions, unions, professional societies, and others make their contributions.

What, for example, could a religious/NGO/community leader do now to help control the spread of HIV in Ghana?

Integrate messages and information about prevention, care, and support into ongoing activities, such as youth and adult education

Identify and serve as an advocate for vulnerable groups, for example, young women and orphaned children subject to sexual exploitation or abuse

Develop IEC messages and programmes that stress the importance of family and moral values in stopping the spread of HIV, for example, remaining faithful to one partner or encouraging delays in the onset of adolescent sexual activity

Participate in care and support programmes for HIV-infected people

Participate in strategic planning activities at district level

In their administrative, legislative, and leadership roles, leaders in different areas can take measures to support appropriate intervention measures.

Strategic Planning and Priorities in Ghana

In April 1998, a team of national and international representatives reviewed the national response to the HIV/AIDS epidemic to date in Ghana. Rising prevalence levels suggest the need for an expanded response and this team suggested some key elements for an effective strategic programme.

- An expanded multi-sectoral approach is a necessity. To be effective, the national response must involve many different government ministries and departments at all levels, NGOs, the private sector, and people living with HIV/AIDS.
- Government has a key role to play, in part through its own activities and in part through its ability to mobilise other sectors of Ghanaian society. Central to the government role is the formulation of appropriate policies and laws, which establish a framework and a set of key principles for public and private action. These laws and policies should also ensure that all those affected by the epidemic are protected from discrimination and stigmatisation.
- Communities need to be fundamentally involved in the design and implementation of programmes. Community participation at all levels is essential for effective HIV/AIDS prevention, control, and care.
- An efficient surveillance and evaluation programme is an absolute necessity to guide and target programmes and to make the most efficient use of scarce resources. Biomedical and behavioural research is also needed to help determine which programmes work and which do not.
- Improvement in STD treatment and prevention is now recognised to be one of the most effective ways to reduce HIV transmission. However, curable STDs often go undetected, untreated, or inadequately treated. Improved STD diagnosis and service provision will have to be an essential part of an expanded HIV/AIDS programme. This issue receives minimal attention in the draft policy.
- Providing support services for HIV-infected individuals and for those otherwise affected by the epidemic – orphans, for example – is an integral component of a comprehensive approach. Strengthening care and support services will become ever more challenging as the number of HIV-infected persons, the number of AIDS cases and the number of AIDS deaths continue to rise.
- The HIV/AIDS epidemic is undermining social and economic development in Ghana, although improved information is needed for a better understanding of the current and future impacts. Conversely, a vigorous development effort is also needed to combat HIV/AIDS, especially insofar as it helps reduce gender inequalities and minimises the economic motivations for high-risk sexual behaviour.

Some Key Components of a Strategic Programme

- ⇒ Expanded multi-sectoral approach
- ⇒ Supportive policies and laws
- ⇒ Greater community participation
- ⇒ Effective surveillance, evaluation, and research
- ⇒ Improved STD diagnosis and treatment
- ⇒ Increased support services for HIV-infected and affected
- ⇒ Continued social and economic development

HIV/AIDS is an epidemic of the utmost seriousness that is going to claim the lives of hundreds of thousands of Ghanaians in the foreseeable future. Yet more than 95 percent of the adult population remains uninfected, and each uninfected woman and man can take active measures against transmission of the virus. Reports from Uganda indicate that there can be widespread changes in behaviour and that HIV prevalence and HIV incidence can be reduced. The government, NGOs, the private sector, communities, churches, and others all have a critical role to play in seeing that this happens and that people living with HIV and AIDS are treated with compassion, support, and care.

V. TECHNICAL NOTE

Ghana is fortunate to have sentinel surveillance data from nearly all sites for 1994, 1995, 1996, 1997 and 1998. The Ministry of Health, Disease Control Unit is responsible for the sentinel system, and much of the information in this briefing book is based on conclusions drawn from the sentinel data. The study also uses data from the Ghana Demographic and Health Surveys, as well as information from demographic analyses and population projections prepared by the Ghana Statistical Service. Also, numerous professionals from both Ghanaian and international organisations reviewed and commented on draft versions of this document.

UNAIDS recommends that the best measure to understand the extent of HIV in a population is HIV prevalence among 15 to 49 year olds, or the percentage of persons aged 15 to 49 who are infected with the virus. A debate continues to take place over whether the sentinel surveillance results are a reliable proxy for adult prevalence or whether they tend to underestimate prevalence among all 15 to 49 year olds. UNAIDS now has a technical working group looking at this question.

There are a very limited number of studies in which sentinel surveillance results can be compared to the findings from population-based surveys and the evidence is mixed. An initial draft of this document worked on the assumption that sentinel surveillance tends to underestimate overall adult prevalence. This has been a widely held view, although some experts are now of the position that sentinel surveillance results are a reasonably good indicator of HIV prevalence among all 15 to 49 year olds. To be conservative in its estimates, this version of *HIV/AIDS in Ghana* works on the assumption that the sentinel surveillance results are a usable proxy of overall prevalence in the 15 to 49 year old age group.

Unless otherwise indicated, the projections in this book are the output of an application of a microcomputer projection programme for HIV/AIDS known as the AIDS Impact Model or AIM. AIM, in turn, is one component of the SPECTRUM System of Policy Models, a series of reproductive health policy models developed by The Futures Group International in collaboration with Research Triangle Institute and The Centre for Population and Development Activities.

For purposes of this study, HIV prevalence for 15 to 49 year olds is extrapolated from the historical trend and is assumed to increase from 4.6 percent in 1997 to 5.7 percent in 2000, 6.9 percent in 2004, 8 percent in 2008 and 9.2 percent in 2012. Judging by what has happened elsewhere in Africa, it is certainly possible that prevalence might rise more quickly and increase even further. With effective interventions, it is also possible that prevalence could peak at a lower level.

The simulation model results given on page 45 for alternative interventions come from Bernstein et al. (1998). The projections incorporate the following assumptions for the different interventions.

Intervention:

Blood screening	100 percent blood screening
Condom promotion	Effective condom use in 70 percent of commercial sex contacts and 13 percent of casual contacts
STD control	Effective STD treatment for 40 percent of STD episodes among commercial sex workers and men; 10 percent effective treatment among other women
Partner reduction	50 percent reduction in proportion of men engaging in commercial sex; 25 percent reduction in proportion of men engaging in sex with short-term casual partners
Combined	All four interventions implemented simultaneously

Further inquiries on the technical content of this document can be submitted to the National AIDS/STD Control Programme. The address is on the last page.

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