

The AIDS Pandemic in the 21st Century
The Demographic Impact in Developing Countries

By

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The AIDS pandemic in the 21st century continues to have its greatest impact in the developing world.

The overwhelming majority of people with HIV, 95 percent of the global total, live in the developing world. The Joint United Nations Programme on HIV/AIDS (UNAIDS) expects that this proportion will continue to rise in countries where poverty, poor health systems and limited resources for prevention and care fuel the spread of the virus.¹

An estimated 71 percent of the global total of HIV-positive people, 24.5 million out of 34.3 million, live in sub-Saharan Africa. Sub-Saharan Africa contains only 11 percent of the global population. Over eight percent (8.6%) of all adults in sub-Saharan Africa are HIV positive compared to 0.6 percent of Americans. Since the beginning of the epidemic, 14.8 million Africans have died from AIDS; 2.2 million AIDS deaths occurred in 1999.

Southern and eastern Africa have been the most severely affected regions. Seven countries now have an estimated² adult HIV prevalence of 20 percent or greater: Botswana, Lesotho, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe. In these countries, all in southern Africa, at least one adult in five is living with HIV. An additional 9 countries have adult HIV prevalence levels higher than 10 percent.

In comparison, HIV prevalence levels in Asia are relatively low. Adult HIV prevalence exceeds 1 percent in only three countries: Burma, Cambodia, and Thailand. In other countries, the prevalence rate is much lower.

In Latin America and the Caribbean, the HIV/AIDS epidemics vary from those that are concentrated among IV drug users and men who have sex with men to epidemics that seem to be mostly driven by heterosexual transmission. These include The Bahamas, Haiti, and Guyana, the countries with the highest adult HIV prevalence rates in the region.

In sub-Saharan Africa, more women than men are HIV positive.

At the end of 1999, UNAIDS estimated that 55 percent of all HIV infections in sub-Saharan Africa were among women. Peak HIV prevalence among women occurs at a younger age than among men. Among women, HIV prevalence tends to peak around 25 years of age. Peak HIV prevalence among men occurs 10 to 15 years later and generally at lower levels.

Several studies³ comparing data from antenatal clinic with community based studies have shown that HIV prevalence among antenatal clinic (ANC) women still gives a reasonable overall estimate of HIV prevalence in the general adult population. ANC prevalence tends to underestimate the prevalence among women but overestimates HIV prevalence among men.

Mortality patterns are driven by HIV prevalence patterns.

Median survival with HIV/AIDS is estimated to be around 10 years. In South Africa, by 2020, mortality for adults ages 20 to 45 will be much higher than it would have been without AIDS. Mortality for women will peak during the ages of 30-34, earlier than the peak seen for men during the ages of 40-44.

¹AIDS epidemic update: December 1999, UNAIDS December 1999.

²Report on the Global HIV/AIDS Epidemic, June 2000, UNAIDS.

³Fylkenes, Musonda, Sichone, *et al*, 1999.

At the beginning of the 21st century the growth rate in Zimbabwe has been reduced to nearly zero due to AIDS mortality.⁴

Other countries with sharply reduced growth rates include several other southern African countries: Botswana, Malawi, Namibia, South Africa, Swaziland, and Zambia.

The negative population growth seen in Guyana in 2000, is the impact of AIDS mortality compounded by out-migration. The underlying growth rate for Guyana is 0.1. With AIDS, the growth rate for Guyana is -0.1.

In Asia, AIDS mortality results in slightly lower growth rates in Burma, Cambodia and Thailand.

By the year 2003, Botswana, South Africa and Zimbabwe will be experiencing negative population growth.

This negative population growth is due to high levels of HIV prevalence in these countries coupled with relatively low fertility. Population growth rates in these countries by 2003 will be -0.1 to -0.3. Without AIDS the growth rates would have been between 1.1 to 2.3. By 2010, the growth rate for these countries will be around -1 percent. Without AIDS, growth rates in 2010 would have been between 1.0 and 2.0 in these countries. In 2010, other countries in southern Africa will be experiencing a growth rate of nearly 0 including Lesotho, Malawi, Mozambique, Namibia, and Swaziland.

This is the first time the Census Bureau is estimating negative population growth due to AIDS for any country. Previously, HIV/AIDS experts never expected HIV prevalence rates to reach such high levels, nationally, in any country. By the end of 1999, adult HIV prevalence had reached an estimated 36 percent in Botswana, 20 percent in South Africa, and 25 percent in Zimbabwe.⁵

In Latin America and the Caribbean, The Bahamas and Guyana will be experiencing the greatest impact on their growth rates. Growth rates will be reduced from 1 percent to 0.4 percent.

In Asia, growth rates will be slightly reduced for Burma, Thailand, and Cambodia.

AIDS mortality will produce population pyramids that have never been seen before.

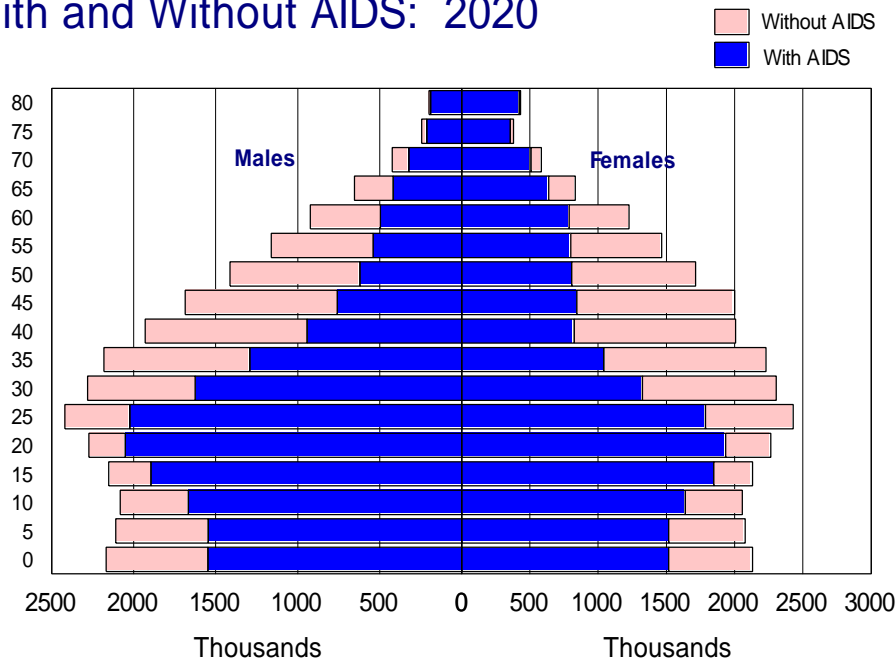
Particularly in those countries with projected negative population growth, Botswana, South Africa and Zimbabwe, population pyramids will have a new shape the population chimney. (See figure below). The implications of this new population structure are not clear. By 2020, between the ages of 15 and 44, there are more men than women in each of the 5-year-age cohorts which may push men to seek partners in younger and younger age cohorts. This factor in turn may increase HIV infection rates among younger women. Current evidence⁶ indicates that older men are infecting younger women, who then go on to infect their partners, particularly through marriage. This vicious cycle could result in even higher HIV infection levels.

⁴Refer to appendix tables for country specific indicators.

⁵Report on the Global HIV/AIDS Epidemic, June 2000", UNAIDS

⁶Multicentre Study on Factors Determining the Differential Spread of HIV in 4 African Towns. Buve, A., R. Musonda, M. Carael, *et al.* XI International Conference on AIDS and STDs in Africa, Lusaka, Zambia, Late Breaker Session, 1999.

Population of South Africa, With and Without AIDS: 2020



US Census Bureau, World Population Profile 2000

In countries with moderate epidemics, AIDS mortality will have less of an effect on the population structure.

For example, in Uganda, the greatest relative differences in future population size by cohort are evident in the youngest age groups and in those 30 to 50 years of age. However, the population pyramid still continues to maintain its traditional shape.

AIDS mortality is resulting in falling life expectancies.

Already, life expectancies have fallen in many countries in sub-Saharan Africa from levels they would have been without AIDS. In Botswana, life expectancy is now 39 instead of 71. In Zimbabwe, life expectancy is 38 instead of 70. In fact, six countries in sub-Saharan Africa: Botswana, Malawi, Mozambique, Rwanda, Zambia, and Zimbabwe have life expectancies below 40 years of age. They would have been 50 years or greater without AIDS.

In Latin America and the Caribbean, the impact on life expectancy is not as great as in sub-Saharan Africa because of lower HIV prevalence levels. However, they are still lower than they would have been without AIDS. In The Bahamas, life expectancy is now 71 instead of 80. And in Haiti, life expectancy is now 49 instead of 57.

In Asia, Thailand, Cambodia, and Burma have lost three years of life expectancy.

In ten years time, 2010, many countries in southern Africa will see life expectancies falling to near 30 years of age, levels not seen since the beginning of the 20th century.

In a region that would have expected life expectancies to reach 70 years of age by 2010, many will see life expectancies falling to around 30:

- Botswana-29
- Namibia-33
- Swaziland-30
- Zimbabwe-33
-

Many other countries will see life expectancies falling to 30-40 years of age instead of 50-60 years.

AIDS mortality will continue to result in falling life expectancies in Latin America, the Caribbean and Asia. In Latin America and the Caribbean, life expectancy will be 14-15 years lower in The Bahamas and Guyana than they would have been without AIDS. In Asia, life expectancies will be two years lower in Thailand and 4 years lower in Cambodia and Burma.

The most direct impact of AIDS is to increase the number of deaths in populations affected.

Crude death rates, the number of people dying per 1,000 population, have already been affected by AIDS.

In Africa, HIV epidemics have had their greatest impact in eastern and the southern regions. Adult HIV prevalence is 20 percent or higher in 7 countries and an additional 9 countries have HIV prevalence rates between 10 and 20 percent. In many of these countries, reports indicate the presence of the HIV virus since the early 1980s.

As a result of these long-term high levels of HIV infection, estimated crude death rates including AIDS mortality are greater by 50 to 500 percent in eastern and southern Africa over what they would have been without AIDS. For example, in Kenya with an adult HIV prevalence of 14 percent at the end of 1999, crude death rates are estimated to be twice as high, 14.1, than they would have been without AIDS, 6.5. In South Africa, with an estimated 20 percent adult HIV prevalence level, crude death rates are also twice as high, 14.7, than they would have been without AIDS. 7.4.

In Asia and Latin America the estimated crude death rates are also higher than they would have been without AIDS.

In many sub-Saharan African countries, crude death rates will be even higher in 2010 than in 2000, even though mortality due to non-AIDS causes will continue to decline.

In Botswana, crude death rates will increase from 22.8 in 2000 to 36.0 in 2010. In South Africa, crude death rates will increase from 14.7 to 30.3 and in Zimbabwe from 22.4 to 31.6. In all three of these countries, crude death rates would have been 5 to 7 without AIDS.

In Latin America and the Caribbean, The Bahamas and Guyana will see a doubling of crude death rates with AIDS over what they would have been without AIDS.

In Asia, crude death rates will be slightly higher with AIDS than they would have been without AIDS. In Thailand crude death rates with AIDS will be 7.8 compared to 6.9 without AIDS. In Cambodia, crude death rates will be 9.5 with AIDS versus 7.7 without AIDS.

In some sub-Saharan African countries, infant mortality rates are now higher than they were in 1990.⁷

AIDS mortality has reversed the declines that had been occurring during the 1980s and early 1990s. Over 30 percent of all children born to HIV infected mothers in sub-Saharan Africa will be HIV positive either through the birth process or due to breast-feeding. The relative impact of AIDS on infant mortality will depend on both the levels of HIV prevalence in the population and the infant mortality rate from other causes. In 1990⁸ infant mortality in Zimbabwe was 54; in 2000 it is 62. In Kenya, infant mortality in 1990 was 67, in 2000 it is 69. Without AIDS infant mortality in Zimbabwe would have been 30 and in Kenya it would have been 55.

In countries with less severe epidemics, such as in western and central Africa, infant mortality rates are higher than they would have been without AIDS. The increase ranges from 3 percent in Benin to 12 percent in Côte d'Ivoire and 15 percent in Rwanda.

In those countries most affected by AIDS in Latin America, the Caribbean and Asia, infant mortality rates are also higher than they would have been without AIDS. In Latin America and the Caribbean, infant mortality rates are 2 to 6 percent higher. And in Asia, infant mortality is 1 to 3 percent higher in Thailand, Burma and Cambodia.

In four countries of sub-Saharan Africa, more infants will die from AIDS in 2010 than from all other causes.

In Botswana and Zimbabwe, twice as many infants will die from AIDS than from all other causes. South Africa and Namibia are the other two countries where more infants will die from AIDS than from all other causes. Although overall infant mortality rates are projected to decline between 2000 and 2010, infant mortality due to AIDS is projected to increase.

The only projected decline in AIDS mortality among infants is for Uganda and Thailand.

In 26 sub-Sahara African countries, child mortality rates have increased over what they would have been without AIDS.

The impact on child mortality is highest among those countries who had significantly reduced child mortality due to other causes and where HIV prevalence is high. Many HIV infected children survive their first birthdays, only to die before the age of 5. In Zimbabwe, 70 percent of all deaths among children less than 5 are due to AIDS. In South Africa that percentage is 45.

In The Bahamas, 60 percent of deaths among children less than 5 are due to AIDS.

In Burma, Cambodia and Thailand, 1 percent of deaths among children are due to AIDS.

Based on current trends, child mortality rates in 2010 will continue to be much higher with AIDS than they would have been without AIDS.

In Zimbabwe and Botswana, where child mortality rates may have been below 30 without AIDS, over 150 children per 1000 will die. Of that total, 80 percent will be due to AIDS. In many of the countries in southern Africa, over 50 percent of childhood deaths will be due to AIDS. In Malawi and Mozambique, where child mortality rates due to other causes is already high, AIDS mortality will increase those rates by 30 percent.

⁷U.S. Census Bureau, International Data Base and unpublished tables.

⁸Figures for 1990 also include AIDS mortality.

In The Bahamas and Guyana, over 50 percent of childhood deaths will be due to AIDS.

In Asia, child mortality rates will be around 10 percent higher with AIDS mortality in Burma, Cambodia and Thailand, than they would have been without AIDS.

Populations in most sub-Saharan African countries will continue to increase, despite the high levels of mortality. The exceptions are Botswana, South Africa and Zimbabwe.

Although AIDS mortality has resulted in lower growth rates, fertility is still high and population growth is still positive. Populations will continue to increase. The exceptions are Botswana, South Africa and Zimbabwe. These populations will take a long time to rebound from the current levels of HIV prevalence and AIDS mortality even if current AIDS control programs result in lowering future HIV incidence and prevalence.

At the beginning of the 21st Century, AIDS is the number one cause of death in Africa and 4th globally.⁹

Emerging just 20 years ago, few would have predicted the current state of the epidemic, particularly in sub-Saharan Africa. That 25 percent of adults would be living with HIV/AIDS in any country was unthinkable. Yet, this is the current situation in 4 countries. In seven sub-Saharan African countries, at least 1 out of 5 adults is living with HIV/AIDS and in an additional 9 sub-Saharan African countries, 1 out of 10 adults is HIV positive.¹⁰

Many individuals have difficulty grasping the results of these high prevalence levels. The resulting AIDS mortality is difficult to comprehend. Yet given these current rates, many more millions of individuals will die due to AIDS over the next decade than have over the past 2 decades. In many of the southern African countries, they are only beginning to see the impacts of these high levels of HIV prevalence.

There have been success stories: Thailand, Senegal, and Uganda. In Thailand and Uganda, concerted efforts at all levels of civil society have turned around increasing HIV prevalence rates. In Senegal, programs put into place early in the epidemic have kept HIV prevalence rates low. These successes can be repeated. However, the current burden of disease, death, and orphanhood, will be a significant problem in many countries of sub-Saharan Africa for the near future.

⁹The World Health Report 1999, Making a Difference. World Health Organization, 1999.

¹⁰Report on the Global HIV/AIDS epidemic. UNAIDS/WHO June 2000