

THE AIDS PANDEMIC IN THE 21ST CENTURY



*This section of **Global Population Profile: 2002** provides an update on one of the key international health and demographic events of our time, and a source of some of the uncertainty associated with demographic change in the coming decades — the worldwide HIV/AIDS pandemic.*

This section of the report assesses the impact of AIDS on mortality, population growth, and

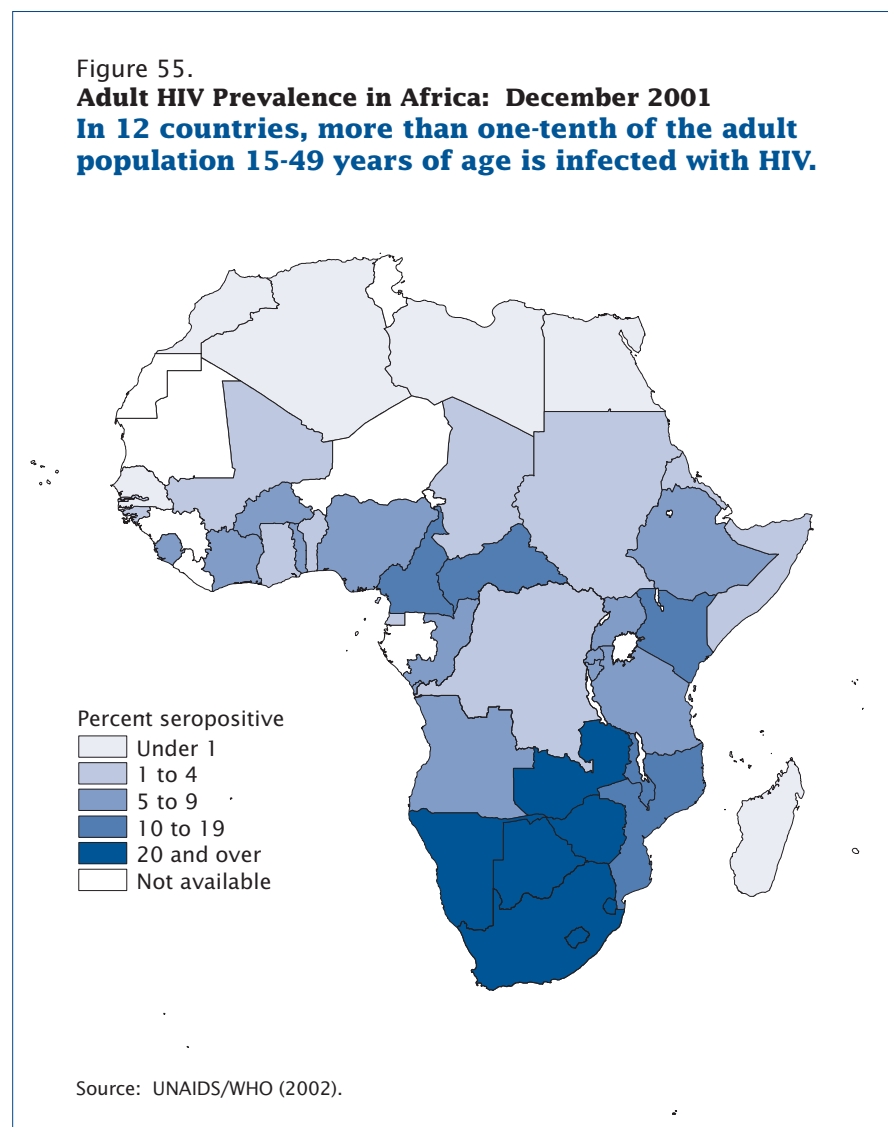
population structure in those parts of the world most seriously affected. It reviews the current status of the HIV/AIDS epidemics in Africa, Asia, and Latin America and describes the alternative demographic futures facing affected countries represented by the experience of a number of Sub-Saharan African countries.

The AIDS pandemic in the 21st century continues to have devastating impacts on populations, particularly in the developing world. Since the beginning of the epidemic two decades ago, more than 20 million people have died of AIDS. Twice that many — 40 million — are now living with HIV. Barring some major breakthrough, most of these people are expected to die during the next 10 years or so. In 2001, the Joint United Nations Programme on AIDS (UNAIDS) estimated that 5 million people were newly infected with HIV.

The AIDS Pandemic in the 21st Century Continues to Have Its Greatest Impact in the Developing World

Over 90 percent of people infected with the Human Immunodeficiency Virus (HIV), which causes AIDS, 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” (UNAIDS, 1999).

Over 70 percent of the global total of HIV-positive people, 28.5 million out of 40 million, live in Sub-Saharan Africa, even though this region contains only 11 percent of the global population. Nine percent of all adults in Sub-Saharan Africa are HIV positive, compared to 0.6 percent of adults in the United States. Since the beginning of the epidemic, over 15 million Africans have died from AIDS; 2.2 million AIDS deaths occurred there in 2001.



Southern and eastern Africa have been the most severely affected regions. According to the latest UNAIDS/WHO figures, seven countries have an estimated adult (ages 15-49) HIV prevalence of 20 percent or greater: Botswana, Lesotho, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe

(UNAIDS/WHO, 2002). In these countries, all in southern Africa, at least one adult in five is living with HIV. An additional five countries, Cameroon, Central African Republic, Kenya, Malawi, and Mozambique, have adult HIV prevalence levels higher than 10 percent (Figure 55).

The HIV/AIDS epidemics in southern Africa started later but they have been explosive, such as in Botswana, where HIV prevalence among pregnant women⁸ in Francistown increased from 7 percent in 1991 to 44 percent in 2000.

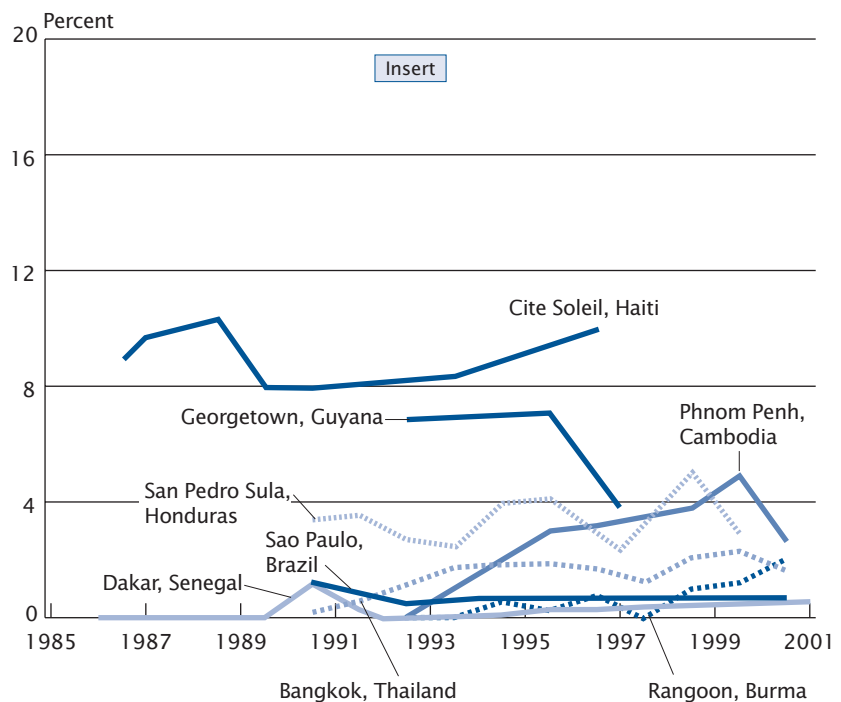
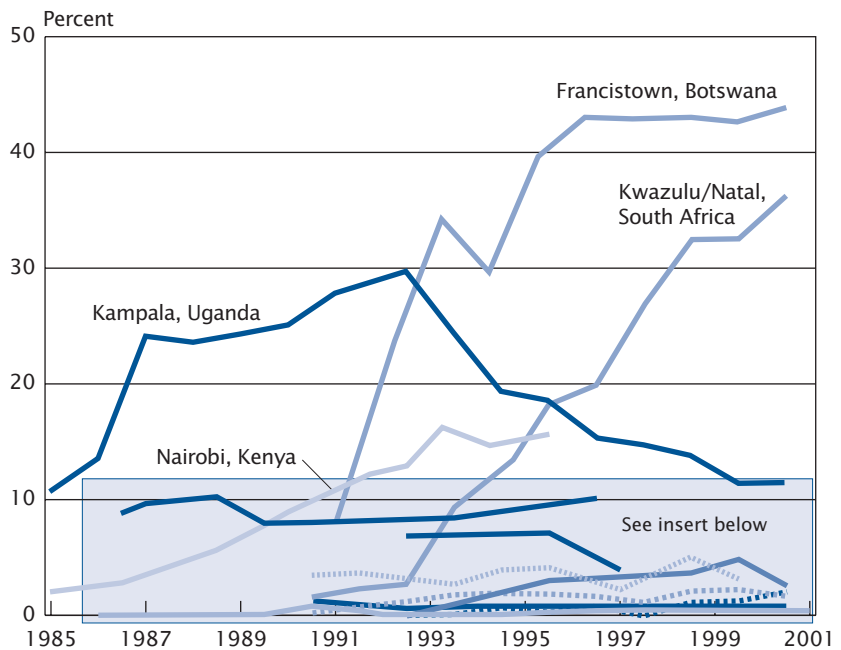
The two success stories in Sub-Saharan Africa continue to be Uganda and Senegal. HIV prevalence among pregnant women in Uganda continues to decline in most sentinel surveillance sites. In Kampala, HIV prevalence declined from its peak of 30 percent in 1993 to 11 percent in 2000. In Dakar, AIDS control programs have managed to keep HIV prevalence at very low levels (Figure 56).

In comparison, HIV prevalence levels among pregnant women in Asia are relatively low. HIV prevalence exceeds 1 percent in only three countries: Burma, Cambodia, and Thailand. However, even these epidemics differ. In Thailand, another success story, and Cambodia, HIV prevalence is declining in some areas and stabilizing at low levels in other areas. In Burma, HIV prevalence rates fluctuated at low levels into the mid-1990s and show a slight increase since then.

In Latin America and the Caribbean, the HIV/AIDS epidemics vary from those that are concentrated among injecting drug users (Argentina and Uruguay) and men who have sex with men (Peru and Mexico) to epidemics that seem to be driven by heterosexual transmission. The last include those in the Bahamas, Haiti, Honduras, and Guyana, the countries with the highest HIV prevalence levels

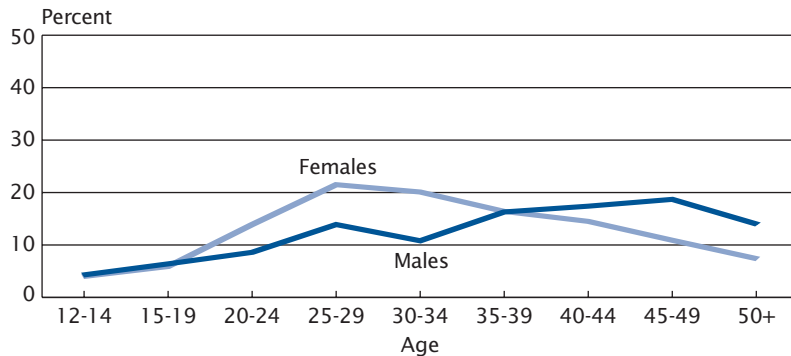
⁸ In this report, "pregnant women" refers to those pregnant women attending antenatal clinics.

Figure 56.
HIV Seroprevalence for Pregnant Women in Selected Urban Areas of Africa, Asia, and Latin America: 1985-2001
HIV/AIDS epidemics in urban areas vary widely from region to region with African countries typically showing higher urban HIV prevalence than countries in Asia and Latin America.



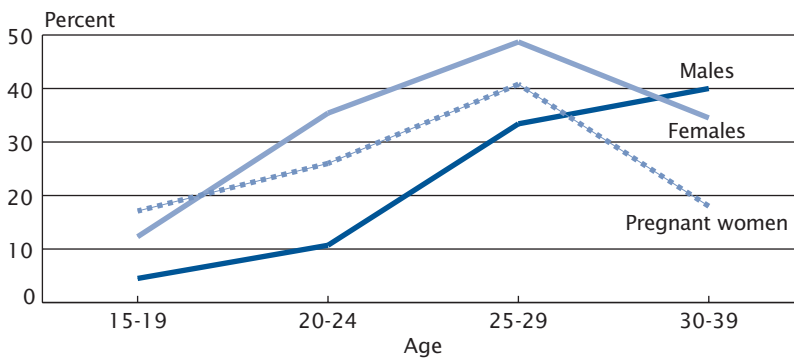
Source: U.S. Census Bureau, International Programs Center, HIV/AIDS Surveillance Data Base (2002 release).

Figure 57.
HIV Seroprevalence by Age and Sex in Rwanda: 1997
In Sub-Saharan Africa, HIV prevalence tends to be much higher among young females than among males of their same age.



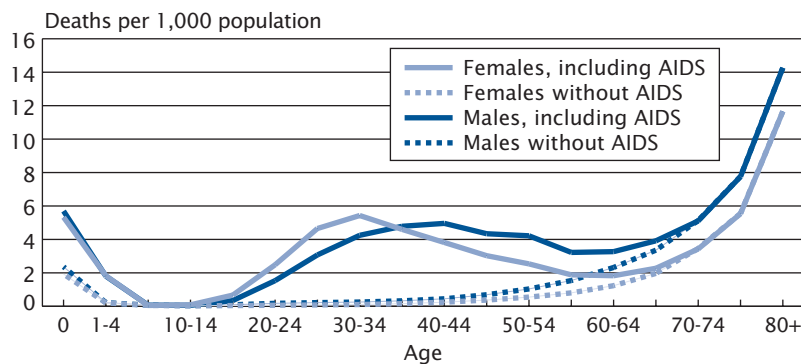
Source: Rwanda, Ministry of Health (1998).

Figure 58.
HIV Seroprevalence for Pregnant Women and the General Population in Zambia: 1995-1996
Seroprevalence levels for pregnant women are a useful proxy for the combined adult population of males and females.



Source: Fylkesnes et al. (1998)

Figure 59.
Death Rates With and Without AIDS by Age and Sex in South Africa: 2020
AIDS mortality increases death rates in those ages where mortality due to all other causes is very low.



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

among pregnant women in the region. In Brazil, already strong HIV prevention programs were augmented in recent years by advances in provision of antiretrovirals to all those HIV positive, thereby lessening the effects of AIDS mortality on the population.

In Sub-Saharan Africa, More Women Than Men Are HIV Positive

At the end of 2001, UNAIDS estimated that 58 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: around age 25 compared to age 35-40. As Figures 57 and 58 show for Rwanda and Zambia, younger women tend to have higher levels of HIV infection than men of their same age.

Several studies have shown that HIV prevalence among pregnant women attending antenatal clinics provides a reasonable overall estimate of HIV prevalence in the general adult population, although it underestimates the rate among all women while overestimating it among men. This is shown for Zambia in Figure 58.

Mortality Patterns Are Driven by HIV Prevalence Patterns

Median survival time with HIV/AIDS is estimated to be around 10 years. In South Africa, by 2020, death rates for adults at ages 20-45 are likely to be much higher than they would have been without AIDS. Among those under age 60, mortality for women is projected to peak during the ages of 30-34, earlier than the peak projected for men: 40-44 years (Figure 59).

At the Beginning of the 21st Century, the Population Growth Rate in Botswana Is Now Negative Due to AIDS Mortality⁹

Other countries with sharply reduced growth rates include several additional African countries: Lesotho, Malawi, Namibia, South Africa, Swaziland, Zambia, and Zimbabwe (Figure 60).

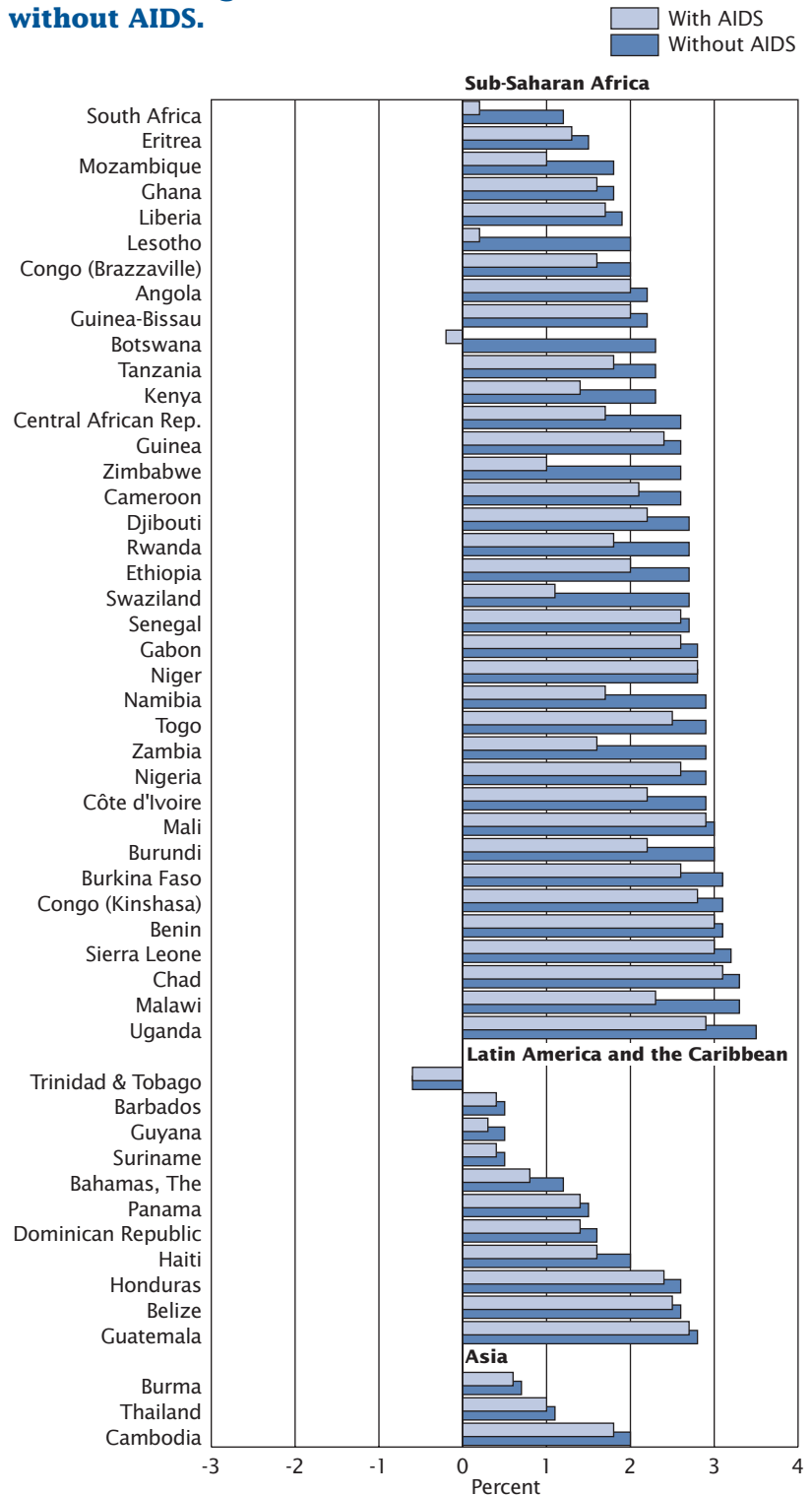
The negative population growth seen in Trinidad and Tobago in 2002 reflects the impact of out-migration and AIDS mortality. The underlying non-AIDS growth rate for Trinidad and Tobago is nearly -0.6 percent.

In Asia, AIDS mortality has slightly lowered population growth rates in Burma, Cambodia, and Thailand.

In Figures 60 through 71, two series of data are shown for each of the 51 seriously affected countries where AIDS is having an impact on demographic indicators. The first series, "With AIDS," shows what has happened and what is projected to happen in each country because of AIDS mortality and its demographic consequences. In this work, fertility is assumed to be unaffected by HIV/AIDS, though numbers of births decrease as a result of mortality-induced reductions in women of reproductive age. Second, a hypothetical "Without AIDS" series shows what the Census Bureau's modeling work indicates would have happened if a country had not been affected by the HIV/AIDS epidemic. This modeling takes into account not only lower death rates but also associated changes to a country's age-sex structure and, indirectly, the combined effects of lower mortality and changing population composition on demographic indicators.

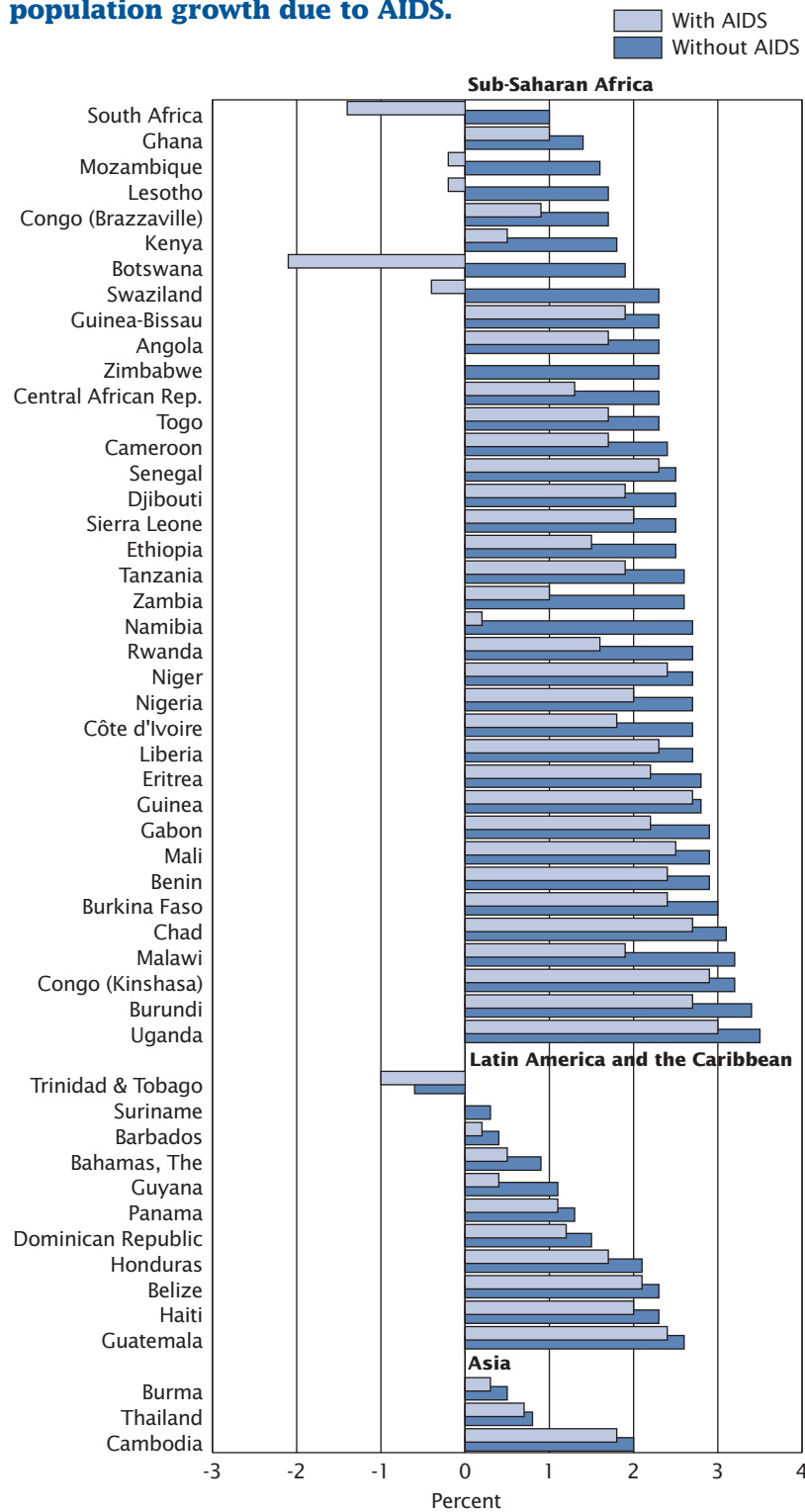
⁹ Refer to Tables 5 and 6 for country-specific indicators.

Figure 60.
Population Growth Rates With and Without AIDS for Selected Countries: 2002
Botswana is now experiencing negative population growth. In South Africa, growth is now less than half what it might have been in 2002 without AIDS.



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Figure 61.
Population Growth Rates With and Without AIDS for Selected Countries: 2010
By 2010, Botswana, Mozambique, Lesotho, Swaziland, and South Africa, are all expected to experience negative population growth due to AIDS.



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

By the Year 2010, Five Countries Are Projected to Show Negative Population Growth Because of AIDS Mortality

The growth rate for Botswana is projected to be suppressed and by 2010 it will be -2 percent. In South Africa it is projected to be -1.4 percent and in Swaziland -0.4 percent. This negative population growth is due to the high levels of HIV prevalence in these countries and relatively low fertility. Previously, most HIV/AIDS experts never expected HIV prevalence rates to reach such high levels for any country. By the end of 2001, adult HIV prevalence had reached an estimated 39 percent in Botswana, 20 percent in South Africa, and 33 percent in Swaziland (UNAIDS/WHO, 2002). By 2010, Zimbabwe and Namibia are projected to experience a growth rate of close to zero. Without AIDS, these countries would have had a growth rate of 2 percent or greater (Figure 61).

In Latin America and the Caribbean, the Bahamas and Guyana are projected to see the greatest relative impact, with growth rates reduced from 1 percent to 0.5 percent. Trinidad and Tobago's already negative population growth, due to out-migration, is projected to decline further due to AIDS mortality.

In Asia, growth rates are projected to be slightly lower in Burma, Thailand, and Cambodia due to HIV/AIDS.

Table 5.
Demographic Characteristics With and Without AIDS: 2002

Country	Growth rate			Life expectancy at birth			Crude death rate			Infant mortality rate			Under-5 mortality rate			Total fertility rate
	With AIDS	Without AIDS	Net de-crease	With AIDS	Without AIDS	Net de-crease	With AIDS	Without AIDS	Net in-crease	With AIDS	Without AIDS	Net in-crease	With AIDS	Without AIDS	Net in-crease	
Angola	2.0	2.2	0.2	37.1	38.9	1.8	25.8	24.3	1.5	195.2	191.6	3.6	287.4	281.8	5.6	6.4
Benin	3.0	3.1	0.1	51.3	53.8	2.5	13.6	12.4	1.2	87.7	84.4	3.3	149.6	143.8	5.9	6.1
Botswana	-0.2	2.3	2.5	33.9	72.4	38.5	28.6	4.8	23.8	64.8	20.0	44.8	107.1	30.6	76.5	3.4
Burkina Faso	2.6	3.1	0.5	44.7	52.3	7.6	18.8	14.7	4.1	100.9	93.5	7.5	199.8	187.9	11.8	6.4
Burundi	2.2	3.0	0.8	43.0	57.6	14.6	18.0	10.4	7.6	72.7	59.1	13.6	133.8	111.5	22.3	6.1
Cameroon	2.1	2.6	0.5	48.1	58.8	10.6	15.3	10.0	5.3	71.1	61.7	9.4	124.1	108.4	15.7	4.7
Central African Republic	1.7	2.6	0.9	42.1	57.5	15.4	19.5	10.8	8.7	94.5	78.6	15.9	144.7	118.2	26.5	4.8
Chad	3.1	3.3	0.1	48.7	51.4	2.7	16.4	15.0	1.4	96.7	93.5	3.3	171.1	165.4	5.8	6.5
Congo (Brazzaville)	1.6	2.0	0.4	50.5	58.1	7.6	14.0	10.1	3.9	96.8	88.8	8.0	148.2	134.1	14.1	3.8
Congo (Kinshasa)	2.8	3.1	0.3	48.7	55.2	6.5	15.1	11.9	3.2	98.5	92.4	6.0	142.5	132.4	10.1	6.8
Côte d'Ivoire	2.2	2.9	0.8	42.8	55.6	12.7	18.4	11.2	7.1	99.6	86.9	12.6	152.6	131.6	20.9	5.6
Djibouti	2.2	2.7	0.5	43.1	51.6	8.5	19.5	14.4	5.1	108.4	99.6	8.8	175.3	161.0	14.3	5.6
Eritrea	1.3	1.5	0.2	53.6	56.6	3.0	13.1	11.7	1.4	77.1	73.5	3.5	130.2	123.7	6.5	5.8
Ethiopia	2.0	2.7	0.7	41.6	53.1	11.5	20.0	13.1	6.9	104.3	92.1	12.2	169.9	150.0	20.0	5.7
Gabon	2.6	2.8	0.3	57.7	63.7	6.0	10.9	8.4	2.5	55.8	50.2	5.6	82.8	72.6	10.2	4.9
Ghana	1.6	1.8	0.3	56.8	62.4	5.7	10.4	7.9	2.5	53.8	49.2	4.7	92.9	84.4	8.5	3.5
Guinea	2.4	2.6	0.1	49.4	51.4	2.0	15.9	14.8	1.1	94.8	92.8	2.0	168.8	165.3	3.5	5.9
Guinea-Bissau	2.0	2.2	0.2	47.0	49.8	2.9	16.7	15.0	1.7	111.9	108.4	3.4	180.3	174.6	5.7	5.1
Kenya	1.4	2.3	1.0	45.5	65.6	20.1	15.7	6.2	9.5	64.1	46.9	17.2	95.0	65.7	29.2	3.6
Lesotho	0.2	2.0	1.7	37.1	64.4	27.3	24.4	8.2	16.3	87.2	59.1	28.2	127.7	80.6	47.1	3.6
Liberia	1.7	1.9	0.2	48.3	51.8	3.5	17.9	16.0	1.8	133.9	130.1	3.8	203.2	196.8	6.4	6.3
Malawi	2.3	3.3	1.0	38.5	56.3	17.8	22.3	12.0	10.3	106.1	87.2	18.9	184.7	155.0	29.7	6.2
Mali	2.9	3.0	0.1	45.6	47.4	1.9	19.3	18.3	1.0	120.4	119.5	0.9	218.1	215.4	2.7	6.7
Mozambique	1.0	1.8	0.8	32.1	40.0	7.9	29.3	21.9	7.4	199.7	186.1	13.6	304.1	280.9	23.1	5.0
Namibia	1.7	2.9	1.1	45.0	65.8	20.9	17.6	7.0	10.6	67.3	42.0	25.3	104.1	59.2	44.9	4.8
Nigeria	2.6	2.9	0.3	51.5	57.8	6.3	13.6	10.5	3.1	72.2	65.8	6.5	136.2	124.9	11.4	5.5
Niger	2.8	2.8	0.1	42.2	43.5	1.3	21.9	21.1	0.8	124.6	122.7	1.9	269.8	267.1	2.7	7.0
Rwanda	1.8	2.7	0.8	39.5	51.5	12.1	21.6	14.0	7.6	103.6	90.4	13.2	185.9	164.9	21.0	5.7
Senegal	2.6	2.7	0.1	56.2	59.0	2.9	11.0	9.8	1.2	58.6	56.2	2.4	110.7	106.4	4.4	5.0
Sierra Leone	3.0	3.2	0.2	43.0	46.0	3.0	20.7	18.8	1.9	148.5	144.3	4.2	225.6	218.9	6.8	5.9
South Africa	0.2	1.2	1.0	48.8	66.3	17.5	16.6	7.3	9.3	59.5	38.9	20.6	97.3	61.4	35.9	2.3
Swaziland	1.1	2.7	1.6	41.4	72.6	31.1	19.3	4.1	15.2	66.5	34.2	32.3	103.5	48.1	55.4	4.0
Tanzania	1.8	2.3	0.6	44.7	54.3	9.6	17.3	12.1	5.3	105.3	96.0	9.3	156.5	140.9	15.6	5.3
Togo	2.5	2.9	0.4	53.8	62.6	8.9	11.4	7.7	3.7	69.8	62.6	7.2	119.1	106.6	12.5	5.1
Uganda	2.9	3.5	0.6	44.5	56.0	11.5	17.3	11.6	5.7	89.7	79.2	10.5	145.2	127.9	17.3	6.8
Zambia	1.6	2.9	1.3	35.3	55.4	20.1	24.3	11.5	12.8	100.2	76.5	23.7	170.8	132.7	38.1	5.4
Zimbabwe	1.0	2.6	1.6	40.2	69.0	28.8	20.8	5.4	15.4	65.9	34.7	31.2	100.7	47.2	53.4	3.7
Bahamas, The	0.8	1.2	0.3	65.8	74.0	8.2	8.6	5.2	3.4	26.7	21.4	5.4	35.8	26.3	9.5	2.3
Barbados	0.4	0.5	0.1	72.0	74.5	2.5	9.0	7.9	1.1	12.8	10.9	1.9	15.6	12.2	3.4	1.6
Belize	2.5	2.6	0.1	67.3	71.3	4.1	6.1	4.7	1.4	27.8	25.0	2.8	36.0	30.8	5.2	4.0
Dominican Republic	1.4	1.6	0.2	68.3	74.2	5.9	6.7	4.5	2.2	35.1	31.3	3.8	45.3	38.2	7.1	2.9
Guatemala	2.7	2.8	0.1	65.3	67.8	2.5	6.8	5.9	0.9	39.0	36.9	2.0	51.2	47.5	3.7	4.7
Guyana	0.3	0.5	0.2	63.7	69.0	5.3	8.9	6.6	2.3	37.9	33.3	4.6	52.3	43.8	8.5	2.1
Haiti	1.6	2.0	0.4	51.4	58.7	7.2	13.5	10.3	3.3	77.7	71.5	6.2	117.1	106.6	10.5	5.0
Honduras	2.4	2.6	0.2	67.1	71.5	4.4	6.3	4.8	1.5	30.3	26.8	3.5	41.4	34.9	6.5	4.2
Panama	1.4	1.5	0.1	72.5	76.1	3.6	6.1	4.9	1.3	21.9	19.6	2.3	27.9	23.7	4.1	2.6
Suriname	0.4	0.5	0.1	69.3	71.9	2.6	6.7	5.7	1.0	25.4	23.4	2.0	32.3	28.8	3.5	2.4
Trinidad and Tobago	-0.6	-0.6	0.1	69.9	71.7	1.8	8.4	7.7	0.7	25.3	23.6	1.7	30.0	27.1	2.9	1.8
Burma	0.6	0.7	0.2	55.6	58.5	3.0	12.2	10.6	1.6	72.0	69.5	2.4	101.0	96.4	4.6	2.2
Cambodia	1.8	2.0	0.2	57.4	61.9	4.5	9.4	7.5	1.9	78.3	74.5	3.8	103.0	96.0	7.0	3.6
Thailand	1.0	1.1	0.1	71.1	72.7	1.6	6.8	6.1	0.7	22.5	22.2	0.3	30.0	28.8	1.2	1.9

Note: Growth rate, life expectancy at birth (e_0), crude death rate, infant mortality, and under-5 mortality (${}_5q_0$) are for both sexes combined.

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

Table 6.
Demographic Characteristics With and Without AIDS: 2010

Country	Growth rate			Life expectancy at birth			Crude death rate			Infant mortality rate			Under-5 mortality rate			Total fertility rate
	With AIDS	Without AIDS	Net de-crease	With AIDS	Without AIDS	Net de-crease	With AIDS	Without AIDS	Net in-crease	With AIDS	Without AIDS	Net in-crease	With AIDS	Without AIDS	Net in-crease	
Angola	1.7	2.3	0.6	35.0	41.3	6.2	26.8	21.6	5.2	183.6	174.7	8.9	268.9	255.2	13.7	5.9
Benin	2.4	2.9	0.5	47.9	57.0	9.0	14.8	10.2	4.6	80.1	71.3	8.7	132.2	117.5	14.7	5.4
Botswana	-2.1	1.9	4.0	26.7	74.4	47.7	42.8	4.2	38.6	74.6	15.8	58.8	122.9	22.8	100.1	2.7
Burkina Faso	2.4	3.0	0.7	43.6	55.4	11.9	18.6	12.2	6.4	92.1	80.7	11.4	173.9	156.0	18.0	5.9
Burundi	2.7	3.4	0.7	44.6	60.7	16.2	16.7	8.5	8.1	63.3	49.4	13.9	111.4	88.3	23.1	5.3
Cameroon	1.7	2.4	0.7	47.9	61.9	14.0	15.5	8.5	7.0	62.7	51.4	11.3	105.5	86.5	19.0	4.1
Central African Republic	1.3	2.3	1.0	41.0	60.6	19.6	20.2	9.2	11.0	83.9	65.2	18.7	127.1	95.6	31.5	4.1
Chad	2.7	3.1	0.5	46.2	54.6	8.4	16.8	12.5	4.3	88.6	80.8	7.8	151.6	138.6	13.0	6.0
Congo (Brazzaville)	0.9	1.7	0.8	47.0	61.2	14.3	16.5	8.5	8.0	85.7	72.8	12.9	128.8	107.1	21.7	3.0
Congo (Kinshasa)	2.9	3.2	0.3	50.5	58.4	7.9	13.4	9.8	3.6	83.2	76.7	6.6	118.9	107.8	11.2	6.1
Côte d'Ivoire	1.8	2.7	0.9	41.7	58.7	17.0	19.0	9.4	9.6	88.4	72.5	16.0	133.7	107.1	26.6	4.8
Djibouti	1.9	2.5	0.6	43.4	54.8	11.4	19.1	12.6	6.5	95.9	85.3	10.6	152.0	134.6	17.4	5.0
Eritrea	2.2	2.8	0.6	48.9	59.8	10.8	15.0	9.8	5.2	70.9	61.7	9.1	115.9	100.3	15.6	5.2
Ethiopia	1.5	2.5	1.0	40.1	56.3	16.3	20.7	10.9	9.8	94.9	77.9	16.9	150.8	123.3	27.5	4.8
Gabon	2.2	2.9	0.6	52.9	66.5	13.6	12.9	7.0	5.9	50.5	39.7	10.8	74.4	55.5	18.9	4.6
Ghana	1.0	1.4	0.5	55.6	65.4	9.8	11.5	7.0	4.5	47.6	40.2	7.4	78.6	65.7	12.9	2.5
Guinea	2.7	2.8	0.2	51.3	54.6	3.2	14.3	12.7	1.6	83.1	80.1	2.9	143.6	138.5	5.1	5.6
Guinea-Bissau	1.9	2.3	0.3	47.3	52.9	5.6	16.2	13.0	3.2	99.4	93.8	5.6	157.0	147.6	9.3	4.6
Kenya	0.5	1.8	1.3	43.7	68.3	24.7	18.3	5.4	12.9	58.0	37.2	20.9	86.3	50.6	35.7	2.6
Lesotho	-0.2	1.7	1.9	36.5	67.2	30.6	26.0	7.1	18.8	78.1	46.7	31.5	115.9	62.3	53.7	3.0
Liberia	2.3	2.7	0.5	46.3	55.0	8.7	17.9	13.5	4.4	120.5	112.7	7.8	180.7	167.8	12.9	5.7
Malawi	1.9	3.2	1.3	36.9	59.4	22.6	23.1	9.9	13.2	97.9	73.2	24.7	165.1	125.2	39.9	5.7
Mali	2.5	2.9	0.4	44.3	50.5	6.2	18.8	15.3	3.4	110.1	105.1	5.0	193.6	184.8	8.8	6.1
Mozambique	-0.2	1.6	1.8	27.1	42.5	15.4	36.2	19.4	16.9	194.1	169.2	25.0	292.8	253.5	39.3	4.3
Namibia	0.2	2.7	2.4	33.8	68.5	34.8	28.1	5.7	22.4	73.4	32.8	40.6	113.9	44.8	69.1	4.3
Nigeria	2.0	2.7	0.7	47.3	60.9	13.6	15.7	8.7	7.0	65.8	54.6	11.2	117.3	98.3	19.0	4.8
Niger	2.4	2.7	0.3	41.4	46.3	4.9	21.0	17.9	3.1	117.1	110.9	6.2	244.8	235.0	9.8	6.3
Rwanda	1.6	2.7	1.0	38.7	54.7	16.0	22.3	12.0	10.3	94.5	78.1	16.4	164.4	138.0	26.4	5.2
Senegal	2.3	2.5	0.2	58.2	62.1	3.9	9.8	8.2	1.6	50.4	47.1	3.3	90.3	84.5	5.8	4.3
Sierra Leone	2.0	2.5	0.5	41.9	48.9	7.1	20.5	16.1	4.4	135.2	127.2	8.0	203.3	190.5	12.9	5.3
South Africa	-1.4	1.0	2.4	36.5	68.4	31.9	30.1	7.2	22.9	65.1	31.5	33.7	104.3	47.3	57.0	2.0
Swaziland	-0.4	2.3	2.6	33.0	74.6	41.6	28.8	3.8	25.1	70.8	25.6	45.3	111.7	34.6	77.1	3.2
Tanzania	1.9	2.6	0.7	44.6	57.5	12.9	17.1	10.0	7.1	92.3	80.1	12.2	135.5	115.3	20.3	4.6
Togo	1.7	2.3	0.7	50.7	65.5	14.8	12.9	6.3	6.6	61.8	50.6	11.2	101.2	82.0	19.2	3.8
Uganda	3.0	3.5	0.5	46.8	59.2	12.3	15.2	9.5	5.7	76.6	66.5	10.1	121.1	104.1	17.0	6.1
Zambia	1.0	2.6	1.5	34.4	58.6	24.3	25.4	9.5	15.9	92.3	64.7	27.6	153.4	108.3	45.2	4.5
Zimbabwe	0.0	2.3	2.3	34.6	71.4	36.9	27.4	4.8	22.6	69.0	27.0	42.0	107.6	35.8	71.9	3.3
Bahamas, The	0.5	0.9	0.4	65.8	75.8	10.0	9.4	5.4	4.0	22.7	16.3	6.4	30.8	19.7	11.1	2.1
Barbados	0.2	0.4	0.2	71.2	76.3	5.1	9.5	7.4	2.1	11.9	8.7	3.2	15.6	9.7	5.9	1.7
Belize	2.1	2.3	0.2	68.3	73.5	5.2	5.9	4.1	1.8	22.7	19.0	3.7	29.4	23.0	6.4	3.3
Dominican Republic	1.2	1.5	0.3	66.7	76.0	9.3	8.1	4.6	3.5	28.6	22.9	5.8	37.7	27.5	10.2	2.7
Guatemala	2.4	2.6	0.2	65.9	70.3	4.5	6.6	5.0	1.6	31.4	28.2	3.2	41.4	35.6	5.8	4.2
Guyana	0.4	1.1	0.7	57.1	71.4	14.3	13.6	6.4	7.1	35.8	25.7	10.1	50.7	32.9	17.7	2.0
Haiti	2.0	2.3	0.4	53.3	61.7	8.5	12.3	8.6	3.8	64.8	58.2	6.6	95.7	84.4	11.3	4.1
Honduras	1.7	2.1	0.4	62.2	73.6	11.4	8.4	4.3	4.1	28.0	20.7	7.4	39.3	26.2	13.1	3.4
Panama	1.1	1.3	0.2	72.1	77.6	5.5	6.9	5.0	2.0	18.5	15.2	3.4	24.2	18.1	6.1	2.3
Suriname	0.0	0.3	0.2	69.1	74.0	4.9	7.8	5.8	2.0	20.9	17.8	3.2	27.3	21.5	5.8	2.2
Trinidad and Tobago	-1.0	-0.6	0.4	64.5	73.8	9.3	12.5	8.5	4.0	25.2	17.9	7.3	34.6	20.5	14.1	1.7
Burma	0.3	0.5	0.2	57.7	61.6	3.9	12.0	9.8	2.2	59.7	56.4	3.3	82.5	76.6	5.8	1.9
Cambodia	1.8	2.0	0.2	60.6	64.9	4.2	8.5	6.7	1.8	61.9	58.5	3.4	80.2	74.3	6.0	3.1
Thailand	0.7	0.8	0.1	73.0	74.7	1.6	7.3	6.5	0.7	17.4	17.2	0.2	22.5	21.7	0.8	1.8

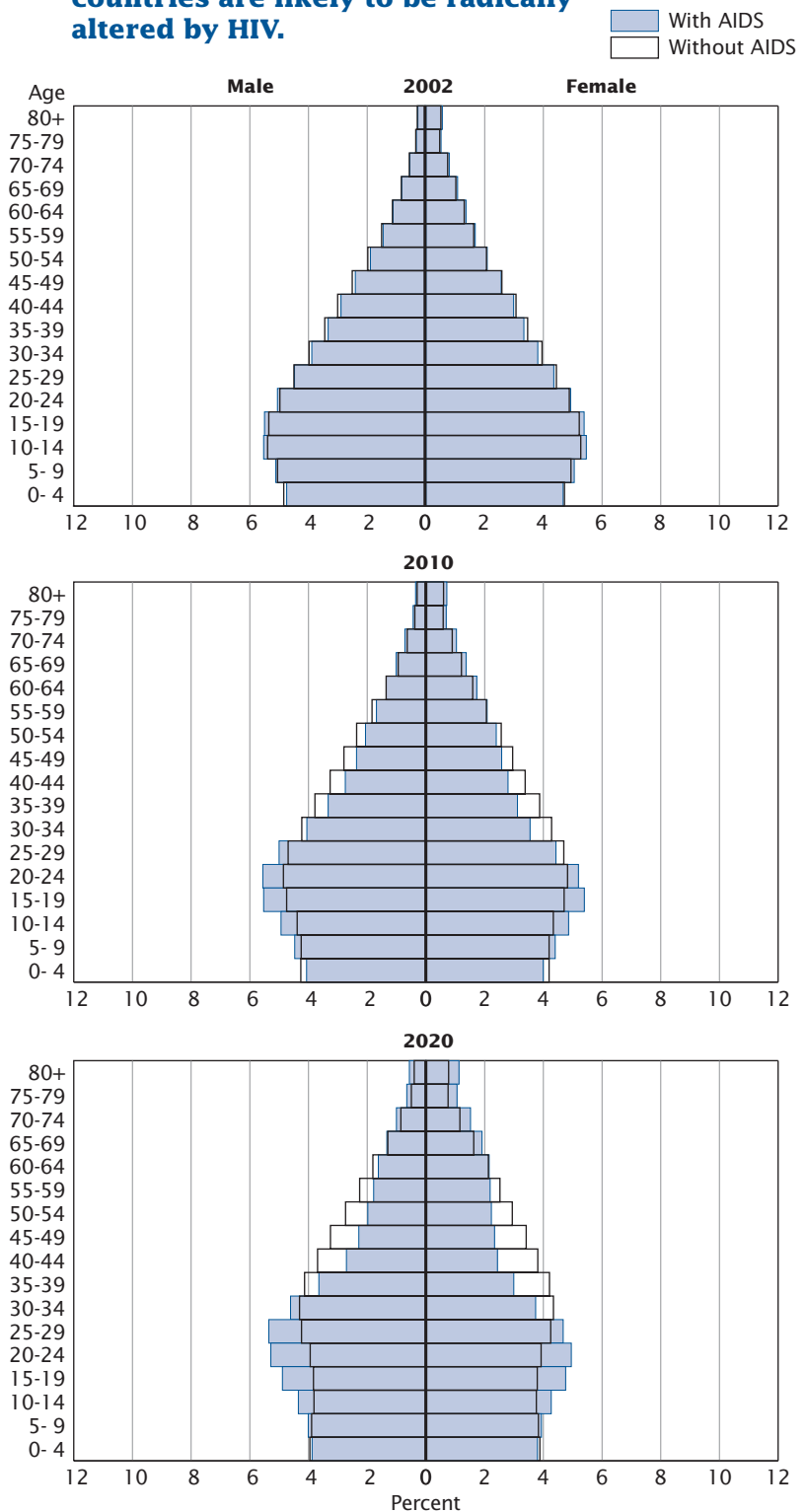
Note: Growth rate, life expectancy at birth (e_0), crude death rate, infant mortality, and under-5 mortality (${}_5q_0$) are for both sexes combined.

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

AIDS Mortality Is Likely to Produce Population Pyramids That Have Never Been Seen Before

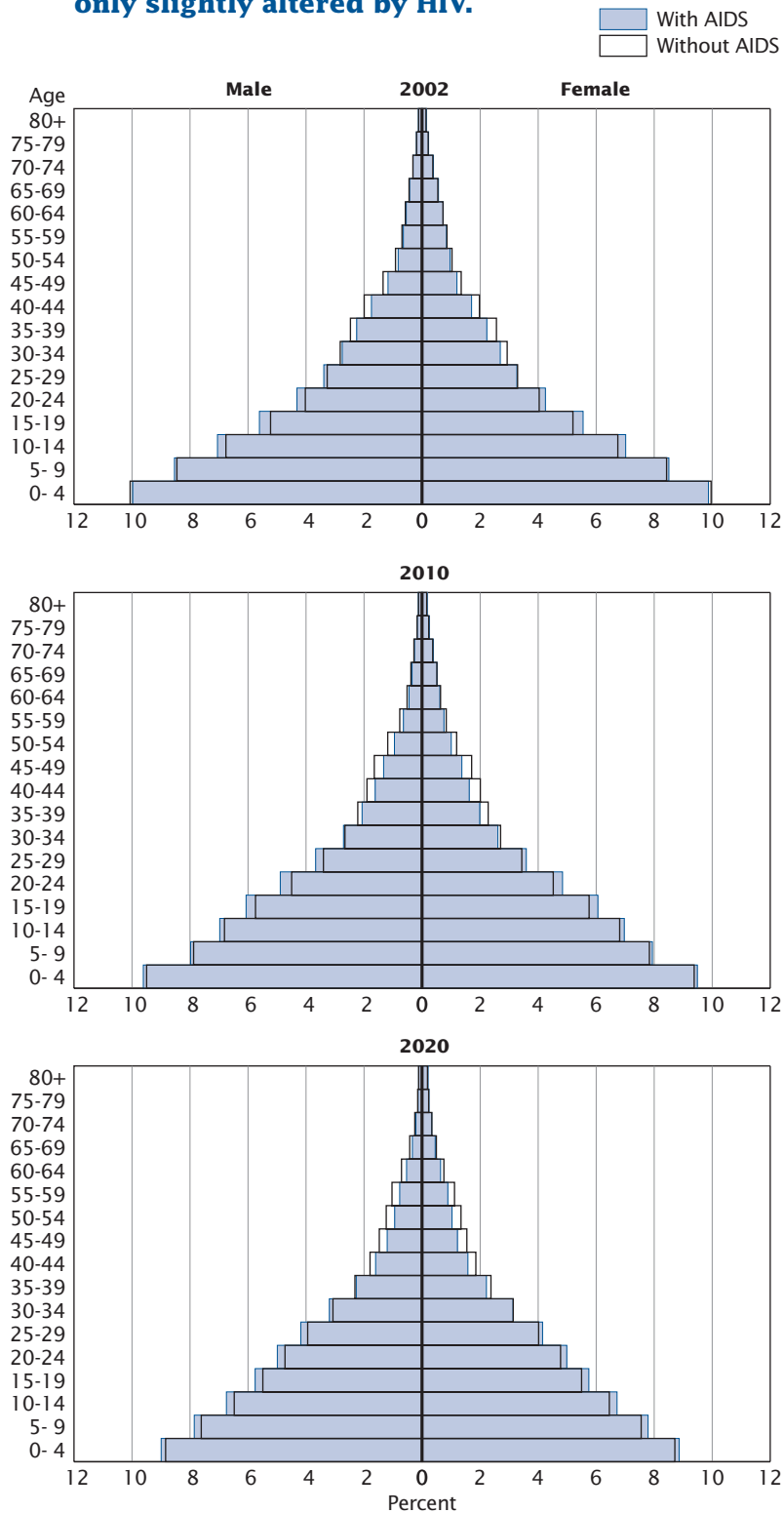
In countries with projected negative population growth—Botswana, Lesotho, Mozambique, South Africa, and Swaziland—population pyramids will have a new shape, “the population chimney.” The implications of this new population structure are not clear. By 2020, men between the ages of 15 and 44 are likely to outnumber women in each of the 5-year age cohorts. This may influence men to seek sexual relationships with younger and younger women. This factor in turn may increase HIV infection rates among younger women. Current evidence (Glynn et al., 2001) indicates that, indeed, older men are infecting younger women. As these women marry, their partners are then at increased risk of HIV infection. This vicious cycle could result in even higher HIV infection levels (Figure 62).

Figure 62. **Population by Age and Sex With and Without AIDS for South Africa: 2002, 2010, and 2020**
Population structures of badly affected countries are likely to be radically altered by HIV.



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Figure 63.
**Population by Age and Sex With and Without AIDS
 for Uganda: 2002, 2010, and 2020**
**The population structure of Uganda is probably
 only slightly altered by HIV.**



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

In Countries With Moderate Epidemics, AIDS Mortality Is Likely to Have Less 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 among people 30-50 years of age in 2002 and 2010. However, the population pyramid maintains its traditional shape in 2020 (Figure 63).

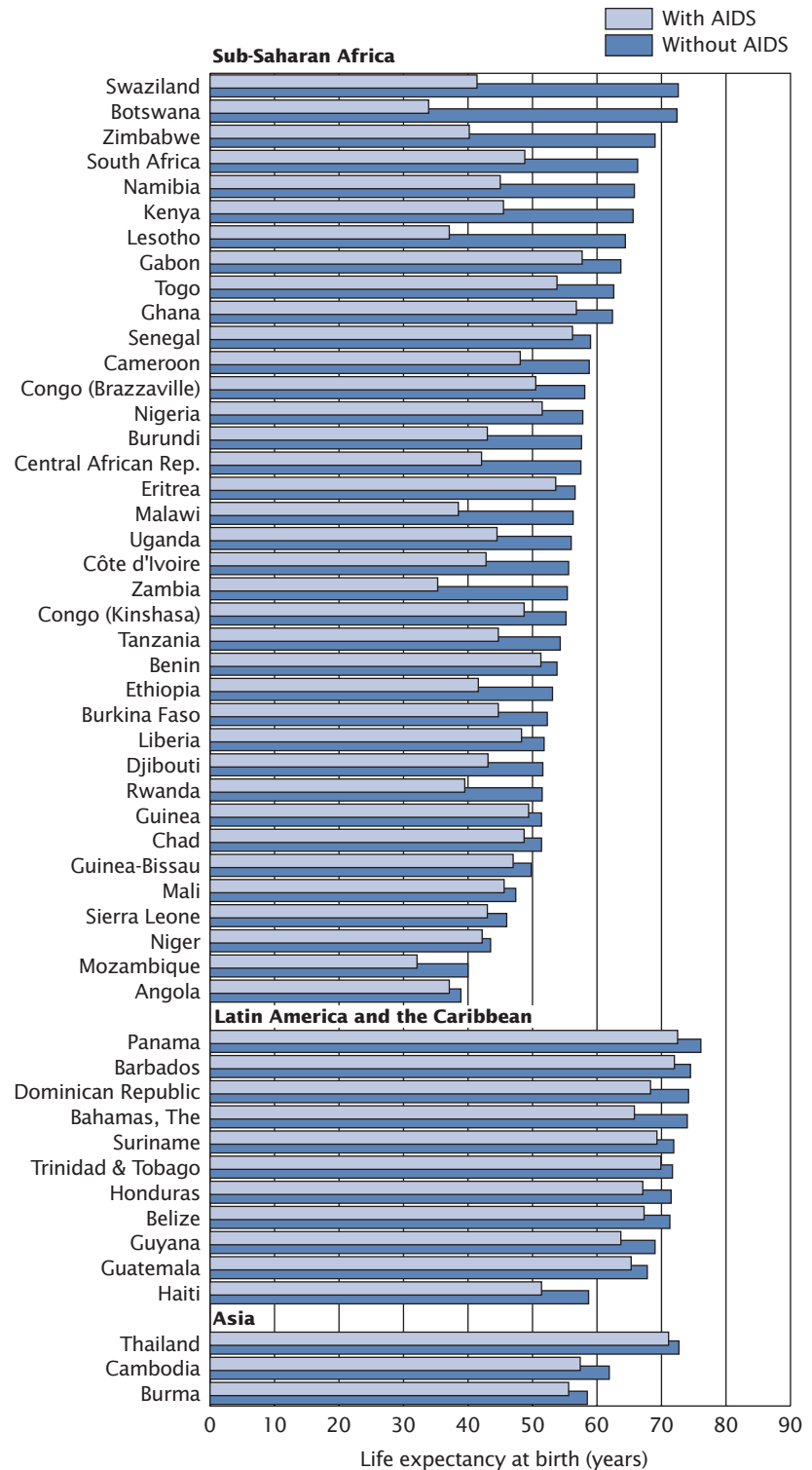
AIDS Mortality Is Causing Falling Life Expectancies at Birth

Already, life expectancies in Sub-Saharan Africa have fallen dramatically from levels they likely would have reached without AIDS. In Botswana, life expectancy is now 34 years instead of 72. In Zimbabwe, life expectancy is 40 years instead of 69. In fact, seven countries in Sub-Saharan Africa (Angola, Botswana, Lesotho, Malawi, Mozambique, Rwanda, and Zambia) have life expectancies below 40 years. Each of the countries, except for Angola and Mozambique, would have had an estimated life expectancy of 50 years or more without AIDS (Figure 64).

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, life expectancy is still lower than it would have been without AIDS. In the Bahamas, life expectancy is now 66 years instead of 74; in Haiti, it is 51 instead of 59.

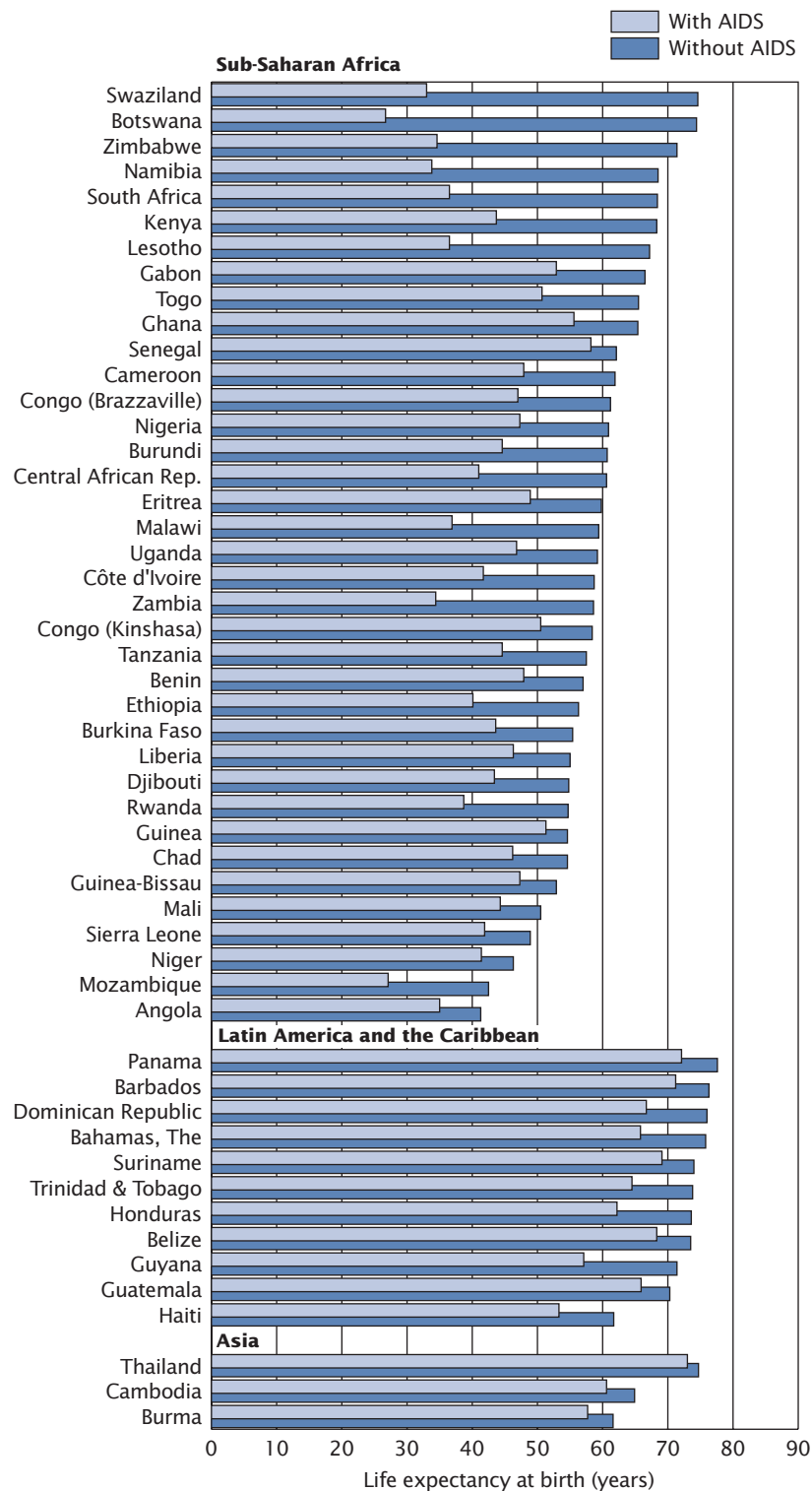
Thailand, Cambodia, and Burma have lost 2 to 5 years of life expectancy.

Figure 64.
Life Expectancy at Birth With and Without AIDS for Selected Countries: 2002
In Botswana, nearly 40 years of life expectancy have been lost due to AIDS.



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Figure 65.
Life Expectancy at Birth With and Without AIDS for Selected Countries: 2010
By 2010, Botswana and Swaziland are likely to see life expectancy reduced by over 40 years.



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

In Less Than 10 Years, Some Countries Are Projected to See Life Expectancies Fall to Near 30 Years of Age, Levels Not Seen Since the Beginning of the 20th Century

Among countries in Southern Africa that would have approached or exceeded life expectancies of 70 years of age by 2010 in the absence of AIDS, several are likely to see life expectancies fall to around 30:

- Botswana—27 years
- Namibia—34 years
- Swaziland—33 years

Other countries are likely to see life expectancies fall to 30-40 years instead of 50-60 years (Figure 65).

By 2010, AIDS mortality is projected to continue to result in lower life expectancies in Latin America, the Caribbean, and Asia. Life expectancies are projected to be 10-14 years lower in Honduras, the Bahamas, and Guyana than they would have been without AIDS. They are likely to be 2 years lower in Thailand and 4 years lower in Cambodia and Burma.

The Most Direct Impact of AIDS Is the Increase in the Number of Deaths in Affected Populations

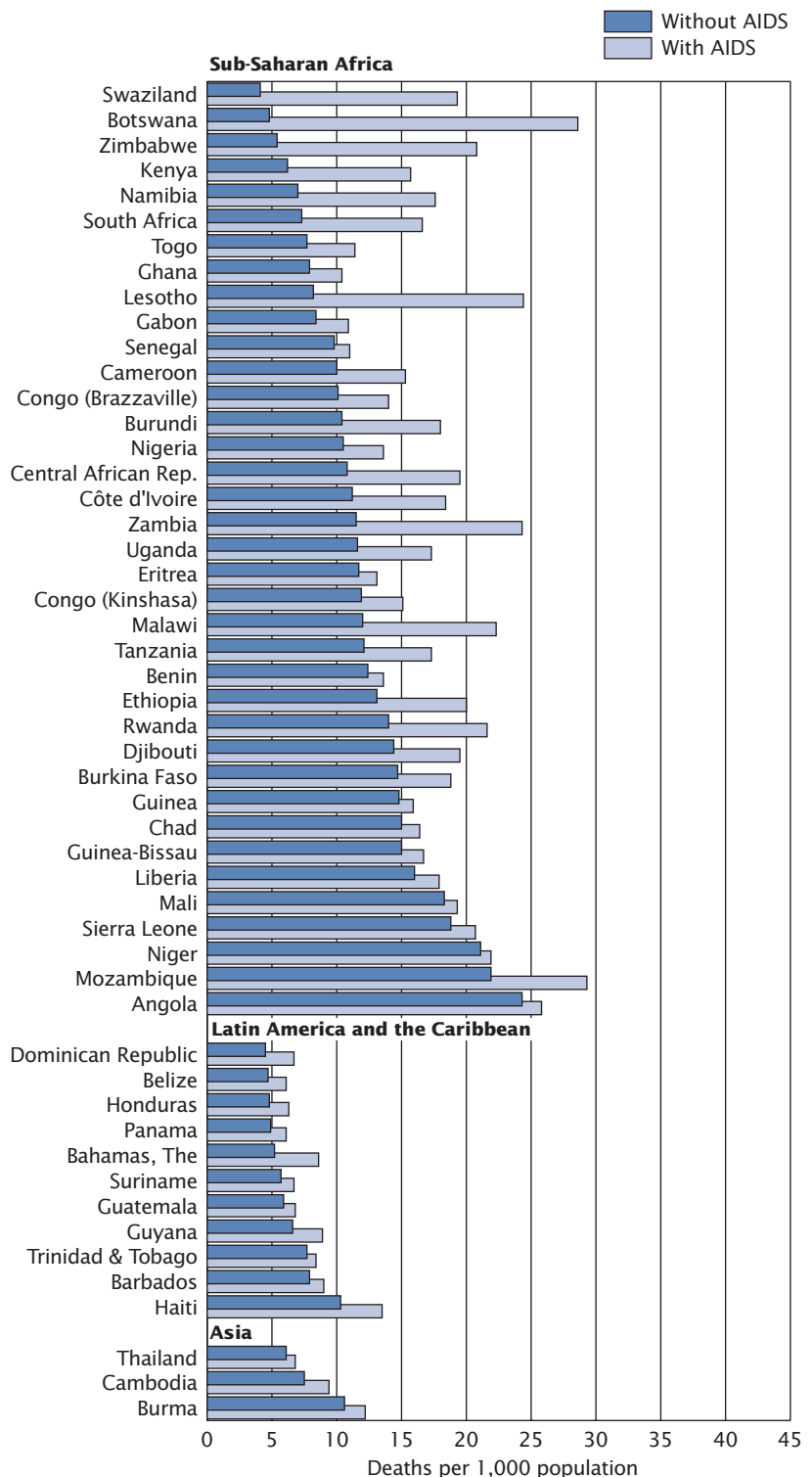
Crude death rates, the number of people dying per 1,000 population, have already been affected by AIDS.

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

As a result of these high levels of HIV infection over several years, estimated crude death rates including AIDS mortality are greater by 50 percent 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 15 percent at the end of 2001, the crude death rate in 2002 was estimated to be more than two and a half times as high (16 deaths per 1,000 population) as it would have been without AIDS (6 deaths per 1,000 population). In South Africa, with an estimated 20 percent adult HIV prevalence at the end of 2001, the crude death rate in 2002 was also over twice as high as it would have been without AIDS (17 deaths per 1,000 population compared with 7, as shown in Figure 66).

In Asia and Latin America, estimated crude death rates in 2002 were also higher than they would have been without AIDS, especially in Haiti and the Bahamas.

Figure 66. **Crude Death Rates With and Without AIDS for Selected Countries: 2002**
Crude death rates are four times as high in Zimbabwe as they would have been without AIDS.

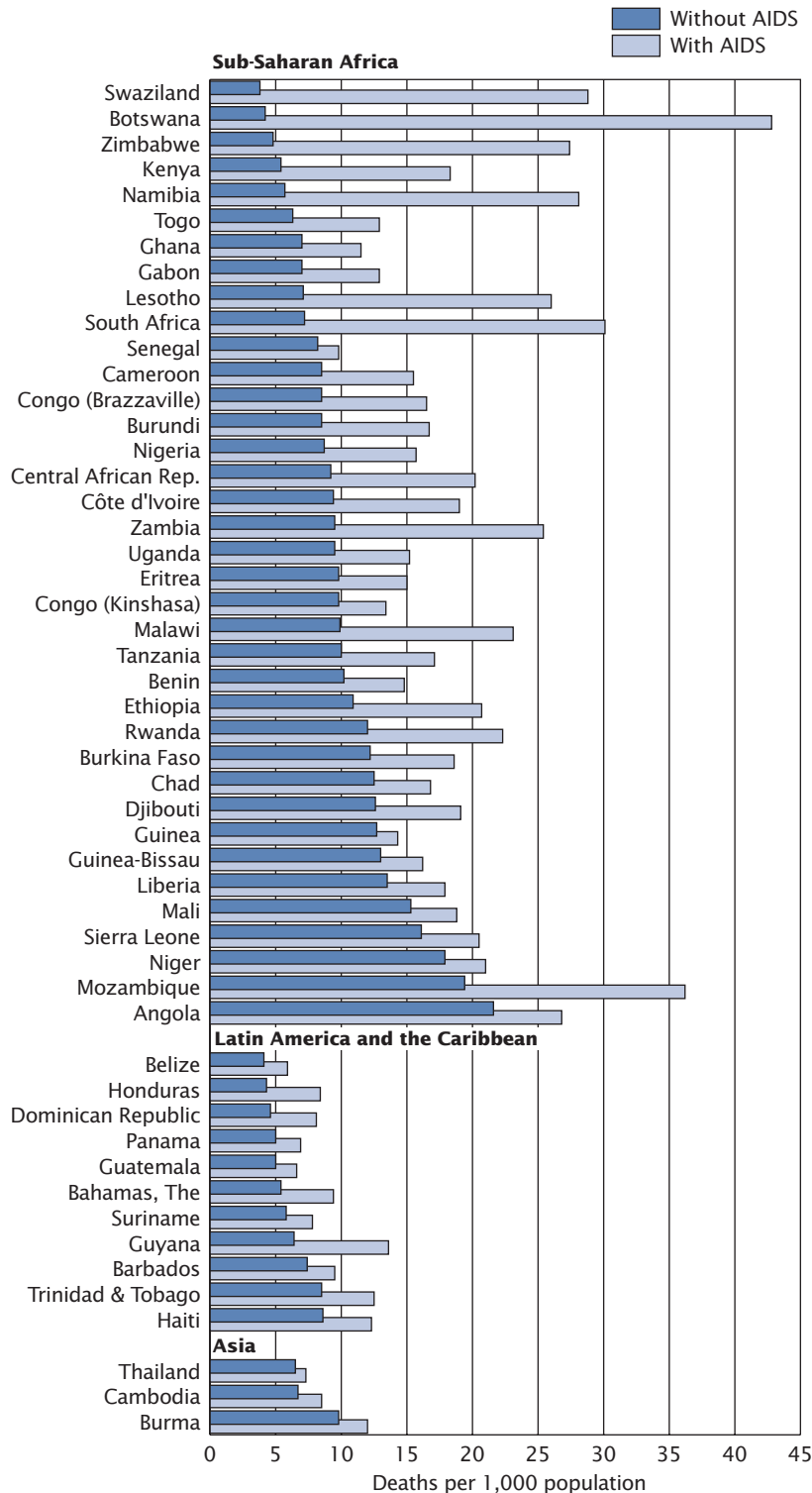


Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Figure 67.

Crude Death Rates With and Without AIDS for Selected Countries: 2010

By 2010, crude death rates are projected to be ten times as high in Botswana and seven times as high in Swaziland as they would have been without AIDS.



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

In Many Sub-Saharan African Countries, Crude Death Rates Are Projected To Be Higher in 2010 Than in 2002, Even Though Mortality Due to Non-AIDS Causes Is Likely to Decline

In Botswana, the crude death rate is likely to increase from 29 deaths per 1,000 population in 2002 to 43 in 2010 (Tables 1 and 2). In South Africa, the crude death rate is likely to increase from 17 deaths per 1,000 population to 30; in Zimbabwe, from just under 21 to over 27. In the absence of the AIDS pandemic, crude death rates in 2010 for these three countries that are now projected to range from 27 deaths per 1,000 population to 43 would have ranged, instead, from 4 to 7 (Figure 67).

In Latin America and the Caribbean, Honduras and Guyana are likely to see crude death rates in 2010 twice as high as they would have been without AIDS.

In Asia, crude death rates in 2010 are projected to be somewhat higher with AIDS than they would have been without AIDS. In Thailand, the crude death rate with AIDS is likely to be just over 7 deaths per 1,000 population, or about 12 percent higher than the level without AIDS. In Cambodia, the crude death rate is expected to be between 8 and 9 deaths per 1,000 population, a level 26 percent higher than the projected level without AIDS.

In Some Sub-Saharan African Countries, Infant Mortality Rates Are Now Higher Than They Were in 1990¹⁰

AIDS mortality has reversed the declines in infant mortality rates that occurred during the 1980s and early 1990s. Over 30 percent of all children born to HIV-infected mothers in Sub-Saharan Africa are likely to be HIV positive, either through the birth process or due to breastfeeding. The relative impact of AIDS on infant mortality is likely to depend on both the levels of HIV prevalence in the population and the infant mortality rate from other causes. In 1990,¹¹ the infant mortality rate in Zimbabwe was 52 infant deaths per 1,000 live births; in 2002 it is 66. In South Africa, the infant mortality rate in 1990 was 51 infant deaths per 1,000; in 2002 it is 60. Without AIDS, infant mortality in Zimbabwe and South Africa would likely have been 35 infant deaths per 1,000 and 39, respectively (Figure 68).

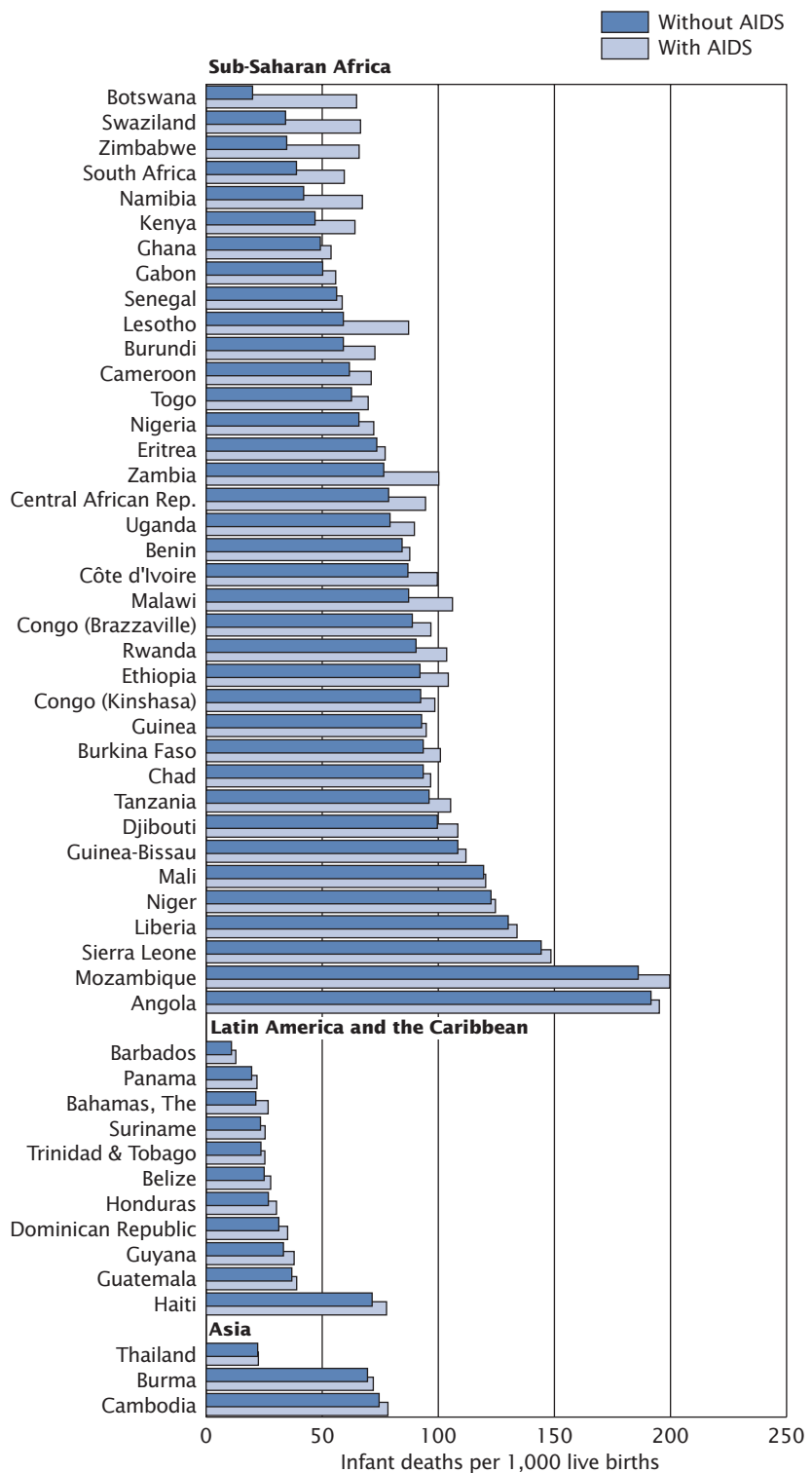
In western and central Africa, where epidemics are generally less severe, infant mortality rates are still higher than they would have been without AIDS. The increase ranges from less than 1 percent in Mali to about 13 percent in Côte d'Ivoire and Rwanda.

In 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 percent to 6 percent higher. In Asia, infant mortality is less than 1 percent higher in Thailand and 4 percent higher in Cambodia.

¹⁰ U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

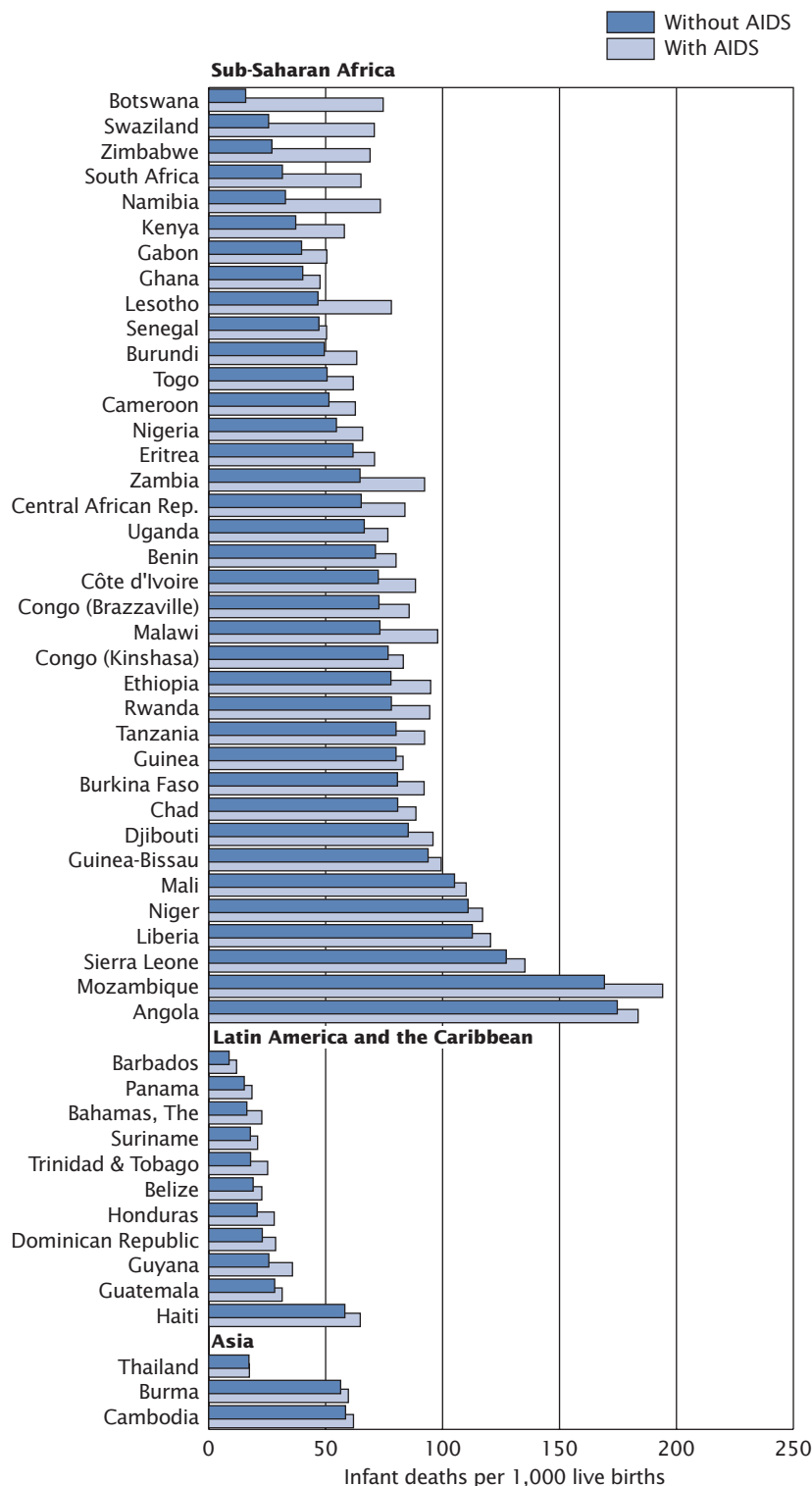
¹¹ Figures for 1990 also include AIDS mortality.

Figure 68.
Infant Mortality With and Without AIDS for Selected Countries: 2002
AIDS doubles infant mortality in some Sub-Saharan African Countries.



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Figure 69.
Infant Mortality With and Without AIDS for Selected Countries: 2010
By 2010, nearly 60 infants out of every 1,000 live births are expected to die in Botswana from AIDS.



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

In Five Countries of Sub-Saharan Africa, More Infants Are Likely to Die From AIDS in 2010 Than From All Other Causes

In Botswana, Swaziland, and Zimbabwe, twice as many infants are likely to die from AIDS in 2010 as from all other causes; in South Africa and Namibia, more infants are likely to die from AIDS than from all other causes. In 46 of the 51 countries examined, overall infant mortality rates are projected to decline between 2002 and 2010. However, in 43 of these 46 countries, infant mortality due to AIDS is projected to increase over the same period, offsetting the greater drop that would otherwise have been achieved. Moreover, in the five countries with projected overall increases, the entire change can be attributed to increases in AIDS mortality among infants. Without the effect of AIDS, infant mortality would have been projected to decline in these countries (Figures 68 and 69).

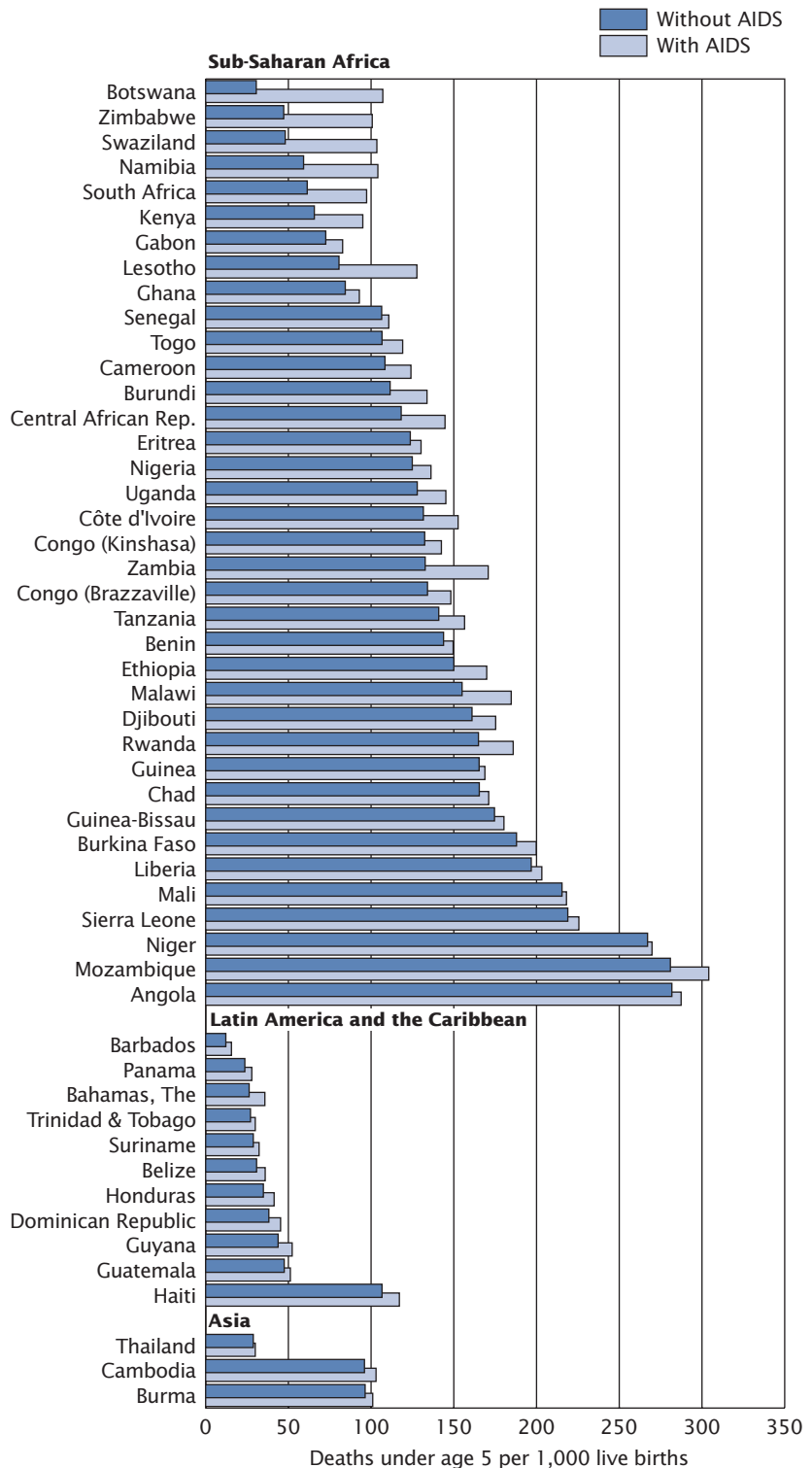
In 37 Sub-Saharan African Countries, Under-5 Mortality Rates in 2002 Were Higher Than They Would Have Been Without AIDS

The impact of HIV/AIDS on under-5 mortality is highest among countries that had substantially reduced under-5 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 Botswana, more than 70 percent of under-5 mortality is due to AIDS. In Zimbabwe and Swaziland, over half of all deaths among children under 5 are due to AIDS (Table 1 and Figure 70).

The impact of HIV/AIDS in Latin America and the Caribbean has been generally less severe than in Sub-Saharan Africa. For the 11 seriously-affected countries in this region (shown in Table 1), AIDS contributed between 3 child deaths per 1,000 births and 11 per 1,000 in 2002. AIDS accounted for 7 percent to 27 percent of under-5 deaths occurring in these countries.

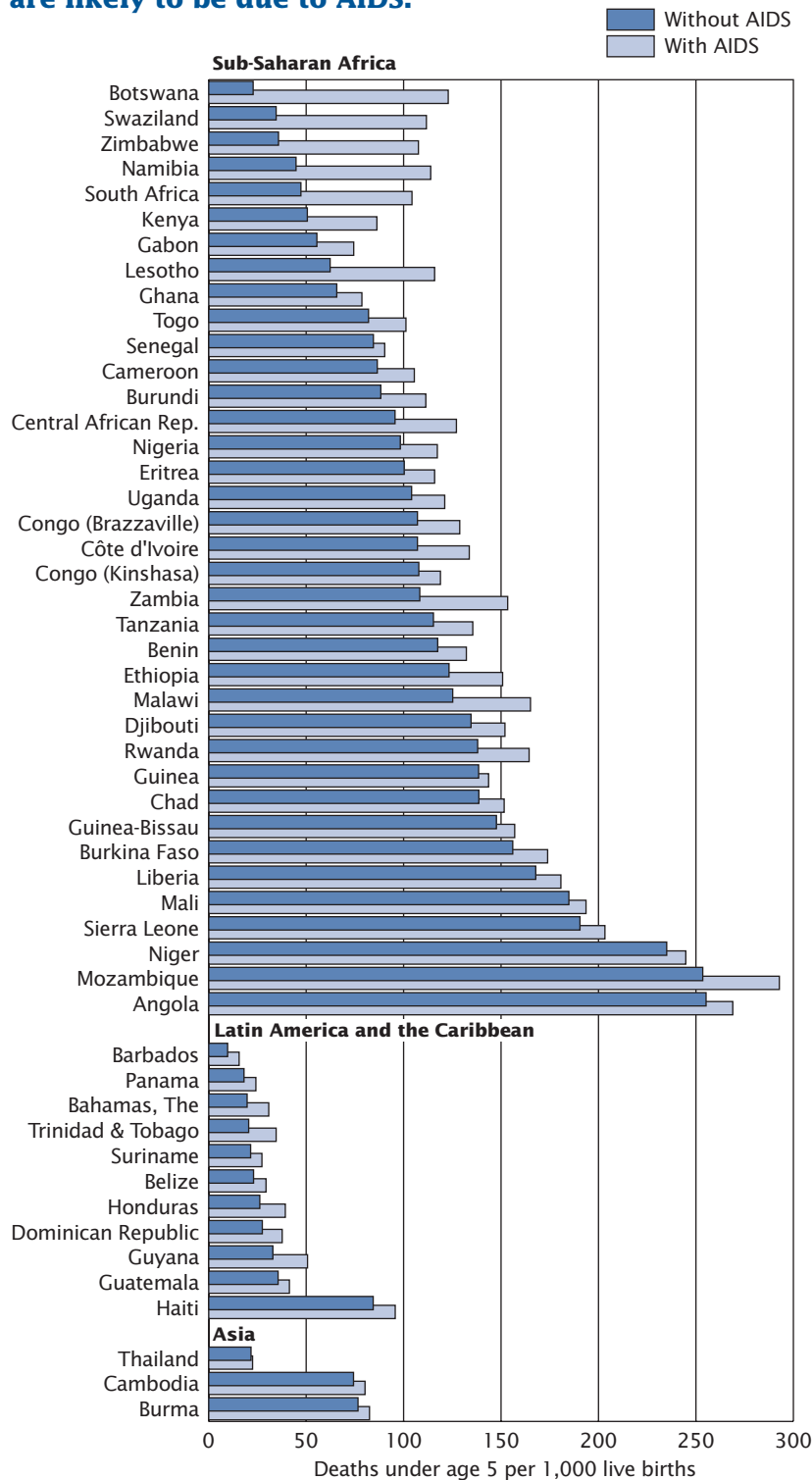
For Burma, Cambodia, and Thailand, AIDS accounted for 4 percent to 7 percent of under-5 deaths in 2002.

Figure 70.
The Under-5 Mortality Rate With and Without AIDS for Selected Countries: 2002
AIDS deaths among children under 5 years of age are resulting in higher mortality rates.



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Figure 71.
**The Under-5 Mortality Rate With and Without AIDS
 for Selected Countries: 2010**
**Over 80 percent of deaths among children
 under 5 years of age in Botswana in 2010
 are likely to be due to AIDS.**



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

**In the Absence of
 Prevention of Mother-to-Child
 Transmission, Under-5
 Mortality Rates in 2010 Are
 Projected to Be Much Higher
 With AIDS Than They Would
 Have Been Without AIDS**

In Botswana, where under-5 mortality rates in 2010 may have been below 30 deaths per 1,000 live births without AIDS, over 120 children per 1,000 live births born are likely to die before their fifth birthday in 2010. Of that total, over 80 percent are likely to be due to AIDS. In many of the countries in southern Africa, over 50 percent of under-5 deaths are likely to be due to AIDS. In Malawi and Zambia, where under-5 mortality rates due to other causes are already high, AIDS mortality is likely to increase those rates by 30 percent or more (Figure 71).

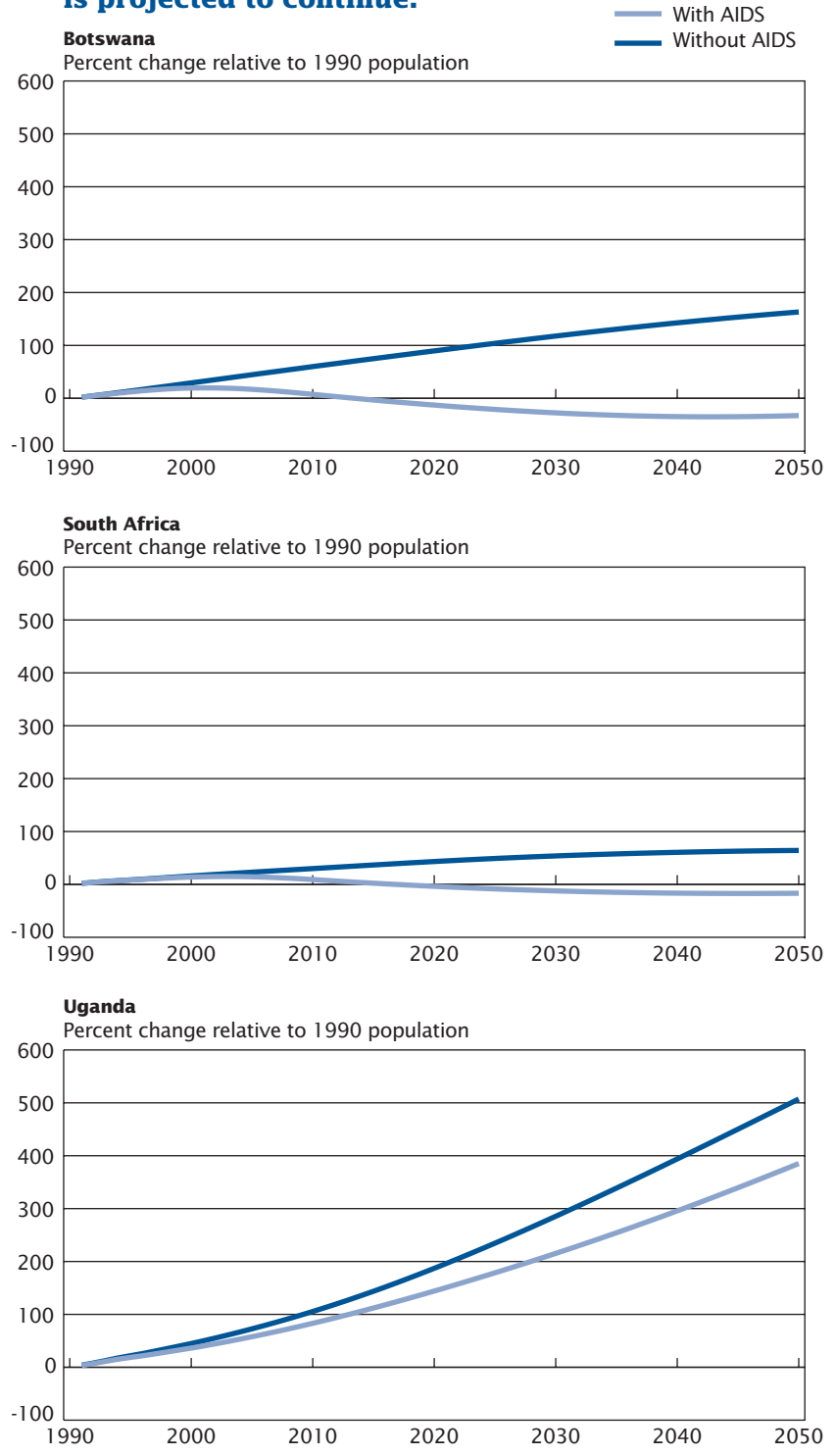
In Trinidad and Tobago, 40 percent of under-5 deaths are likely to be due to AIDS. In a number of other countries in Latin America and the Caribbean, one-third of under-5 deaths are likely to be due to AIDS.

In Burma, Cambodia, and Thailand, under-5 mortality rates are likely to be 1 percent to 6 percent higher with AIDS mortality than they would have been without AIDS.

Populations in Most Sub-Saharan African Countries Are Projected to Increase, in Spite of the High Levels of Mortality. The Exceptions Are Botswana, Lesotho, Mozambique, South Africa, and Swaziland

Although AIDS mortality has resulted in lower growth rates, fertility is still high and population growth is still positive in most countries affected by AIDS. Such is the case for Uganda. However, the population in the most severely affected countries, such as Botswana and South Africa, is projected to decline over time, in that the population, by 2050, is likely to be lower than it was in 1990, even if current AIDS control programs result in lowering future HIV incidence and prevalence (Figure 72).

Figure 72.
Change in Population of Selected African Countries With and Without AIDS: 1990-2050
The populations of Botswana and South Africa are projected to decline over the next few decades whereas in Uganda, population growth is projected to continue.



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

At the Beginning of the 21st Century, AIDS Is the Number One Cause of Death in Africa and Is Number Four Globally¹²

Just 20 years ago when AIDS first appeared, few would have predicted the current state of the pandemic, particularly in Sub-Saharan Africa. That over 30 percent of adults would be living with HIV/AIDS in any country was unthinkable. Yet, this is the current situation in four countries. In seven Sub-Saharan African countries, at least one out of five adults is living with HIV/AIDS and in an

additional five Sub-Saharan African countries, one out of ten adults is HIV positive (UNAIDS/WHO, 2002).

Many individuals and governments have difficulty grasping the reality of these high prevalence levels, and the resulting AIDS mortality is difficult to comprehend. The magnitude of the current epidemic in HIV infection and the low likelihood of an effective vaccine or even widespread availability of therapeutic medication strongly suggest that many more millions of individuals are likely to die of AIDS over the next decade than have over the past two decades. Many of the southern African countries are only beginning to see the

impact of these high levels of HIV prevalence.

Thailand, Senegal, and Uganda are notable success stories. 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 but doing so would take time. Hence, the current burden of disease, death, and orphanhood is likely to be a problem in many countries of Sub-Saharan Africa for the foreseeable future.

¹² See WHO (1999).

