

EXPERT REPORT IB(A)

THE AIDS EPIDEMIC IN SOUTH AFRICA

Iris Boutros¹

28 August 2003

Referred to as “the greatest threat to global health since the Black Death of the 14th century²”, the AIDS pandemic enters its third decade, primarily afflicting Africa. Sub-Saharan Africa continues to bear a disproportionate share of the global burden with 70 percent of people living with HIV/AIDS, 70 percent of new infections, and 77 percent of deaths in 2002.³ The next most affected region of the world is South and South East Asia with 14 percent of people living with HIV/AIDS and 14, 2 percent of the deaths.

According to UNAIDS estimates, the single nation of South Africa is the next most afflicted ‘region’ of the world, with 12 percent of the world’s people living with HIV/AIDS (5 million) and 11,6 percent of the deaths (360,000) in 2002. In 2002, more deaths due to HIV/AIDS occurred in South Africa than in all other remaining regions⁴ of the world combined. No single country has ever before experienced an epidemic of this magnitude. (Table 1 reports regional HIV/AIDS statistics including South Africa. Table 2 compares South Africa with Global HIV/AIDS statistics.)

In the absence of massively expanded prevention, treatment and care efforts, the AIDS death toll in South Africa is expected to continue to rise before peaking around the end of the decade from 40 percent of deaths in 2002⁵ to 65, 7 percent of deaths in 2010. This represents an increase of cumulative AIDS deaths from 688,000 in 2002⁶ to an estimated 5 to 7 million in 2010⁷, remaining as the leading cause of mortality throughout the decade. (Table 3 reports 2002 Annual and Cumulative AIDS deaths by province. Table 4 represents projected changes in percentage of Deaths Due to AIDS.)

The loss of life will fall disproportionately upon young, African women. In all adult age groups, there are more women than men living with HIV/AIDS. The greatest gender imbalance is among youth, aged 15-24 years, where there were approximately four infected young women for every infected young man, with prevalence rates of 21, 6 % and 5, 8 % respectively.⁸ Africans have approximately two times the HIV prevalence

¹ Phd Candidate, Harvard School of Public Health

² In June of 2001 the HIV/AIDS pandemic was described by Secretary-General Kofi Annan at the United Nations General Assembly Special Session on AIDS.

³ UNAIDS. AIDS epidemic update 39-41 (2002).

⁴ Excluding sub-Saharan Africa and South and South East Asia.

⁵ Rob Dorrington et al., *HIV/AIDS Profile in the Provinces of South Africa*, (2002) THE CENTRE FOR ACTUARIAL RESEARCH, MEDICAL RESEARCH COUNCIL, & THE ACTUARIAL SOCIETY OF SOUTH AFRICA 6.

⁶ Rob Dorrington et al., *HIV/AIDS Profile in the Provinces of South Africa*, (2002) THE CENTRE FOR ACTUARIAL RESEARCH, MEDICAL RESEARCH COUNCIL, & THE ACTUARIAL SOCIETY OF SOUTH AFRICA 6.

⁷ Rob Dorrington et al., *The Impact of HIV/AIDS on Adult Mortality in South Africa*, (2001) MEDICAL RESEARCH COUNCIL 6.

⁸ Rob Dorrington et al., *HIV/AIDS Profile in the Provinces of South Africa*, (2002) THE CENTRE FOR ACTUARIAL RESEARCH, MEDICAL RESEARCH COUNCIL, & THE ACTUARIAL SOCIETY OF SOUTH AFRICA 4.

rates of Whites and Coloureds and eight times that of Indians/Asians.⁹ (Table 5 reports HIV prevalence by age group and province. Table 6 reports HIV prevalence by racial classification and age group.)

MORTALITY

Improvements in life expectancy and child-survival rates achieved over previous decades are steadily being wiped out. Life expectancy in South Africa has fallen by 15 years since 1990.¹⁰ Projections by the Medical Research Council predict an additional loss of up to 16 years in life expectancy in the next ten years.¹¹

By the year 2000, AIDS had become the biggest single cause of death in South Africa.¹² By July of 2002, AIDS deaths totalled 688,000 in South Africa, 34 percent in KwaZulu-Natal and 20 percent in Gauteng.¹³ Overall, South Africa has been experiencing a steady increase in adult mortality since the 1990s. These cases represent infections that took place 4 to 8 years earlier.

According to a report by the Medical Research Council (“MRC Report”), the mortality of young, adult women has increased rapidly in the last few years with the mortality rate in the 25-29 in 1999/2000 being 3.54 times that in 1985.¹⁴ The MRC Report concludes that, “it is therefore reasonable to interpret the rise in the mortality of young and middle-aged adults in South Africa since the late 1980’s as being largely, if not entirely, a consequence of HIV/AIDS.”¹⁵

Despite the stabilising of HIV prevalence, the death rate during the following years continues to rise up to 2010, as those who were infected in the 1990s fall and die. While the number of deaths has grown by 73 percent over this period, the population as a whole only grew by about 37 percent.¹⁶ Population growth rate will fall significantly. The projected population of 49 million by 2010 shows barely any growth because of the

⁹ Mandela Report.

¹⁰ World Development Reports from 1990 to 2001.

¹¹ Rob Dorrington et al., *The Impact of HIV/AIDS on Adult Mortality in South Africa*, (2001) MEDICAL RESEARCH COUNCIL 24.

¹² Rob Dorrington et al., *HIV/AIDS Profile in the Provinces of South Africa*, (2002) THE CENTRE FOR ACTUARIAL RESEARCH, MEDICAL RESEARCH COUNCIL, & THE ACTUARIAL SOCIETY OF SOUTH AFRICA 1

¹³ Dorrington, pg. 6

¹⁴ Rob Dorrington et al., *The Impact of HIV/AIDS on Adult Mortality in South Africa*, (2001) MEDICAL RESEARCH COUNCIL 5.

¹⁵ Rob Dorrington et al., *The Impact of HIV/AIDS on Adult Mortality in South Africa*, (2001) MEDICAL RESEARCH COUNCIL 29.

¹⁶ Rob Dorrington et al., *The Impact of HIV/AIDS on Adult Mortality in South Africa*, (2001) MEDICAL RESEARCH COUNCIL 18.

massive increase in deaths.¹⁷ By 2010, cumulative number of aids deaths is expected to exceed 6 million with the number of aids sick at 1 million.¹⁸

STATE OF THE EPIDEMIC

Nationally, the epidemic can be considered to be entering the mature phase...the total number of people infected with HIV is reaching its peak, which is the natural course of the epidemic. This is because the number of new infections has slowed down and because people who are infected are dying¹⁹

Incidence, the number of people who are newly infected, peaked in about 1998 and has begun to decrease. However, the number of people dying from AIDS each year has only now started to increase. Without interventions to reduce mortality, it will peak in about 2010.²⁰ (Table 7 reports incidence by ages and province.)

As all of the tables reflect, provincial epidemics are far from uniform.

Understanding how each epidemic is different, what the driving forces are and how the epidemic fits the basic epidemiological curve is important when considering the management and mitigation strategies for current and future impacts of the epidemic.²¹

HIV/AIDS is a long wave event compared to other epidemics. The true death toll cannot be estimated until the full wave form of the epidemic has been seen. It may be as long as 20 years before we can say that the world epidemic has peaked and/or begun to decline. If we take into account the social and economic impacts of the epidemic, in particular HIV/AIDS related poverty, it is clear that this will get very much worse over the coming years and decades unless there is some concerted effort to address it.²²

HIV, indeed any disease, will move through a susceptible population infecting some, missing others. Epidemics ... start slowly and gradually. If

¹⁷ Rob Dorrington et al., *The Impact of HIV/AIDS on Adult Mortality in South Africa*, (2001) MEDICAL RESEARCH COUNCIL 21.

¹⁸ Rob Dorrington et al., *The Impact of HIV/AIDS on Adult Mortality in South Africa*, (2001) MEDICAL RESEARCH COUNCIL 21.

¹⁹ Rob Dorrington et al., *HIV/AIDS Profile in the Provinces of South Africa*, (2002) THE CENTRE FOR ACTUARIAL RESEARCH, MEDICAL RESEARCH COUNCIL, & THE ACTUARIAL SOCIETY OF SOUTH AFRICA 2

²⁰ Rob Dorrington et al., *HIV/AIDS Profile in the Provinces of South Africa*, (2002) THE CENTRE FOR ACTUARIAL RESEARCH, MEDICAL RESEARCH COUNCIL, & THE ACTUARIAL SOCIETY OF SOUTH AFRICA 2

²¹ Tony Barnett & Alan Whiteside, *AIDS in the Twenty-first Century*, *Disease and Globalization* 47 (2002).

²² Tony Barnett & Alan Whiteside, *AIDS in the Twenty-first Century*, *Disease and Globalization* 47 (2002).

a critical mass of infected people is reached then the growth of new infections accelerated thereafter. The epidemic then spreads through the population until those who are susceptible and exposed have been infected.²³

In the final phase of the epidemic ...people are either getting better or deaths outnumber new cases so the total number alive and infected passes its peak and begins to decline. With most diseases the curve will decline rapidly. HIV and AIDS are different...With others diseases, infections are followed by illness with in few days or weeks. In the case of HIV the infection curve precedes the AIDS curve by between five to eight years. This reflects the long incubation period. This is why HIV/AIDS is such a lethal epidemic.²⁴

The infection moves through a population giving little sign of its presence. Only until later, after a substantial number of susceptible have been infected – that AIDS deaths begin to rise. Additionally, people do not leave the infected pool by getting better as there is no cure. They only die or remain in the pool to infect others.²⁵

South African has reached a particular stage in the HIV/AIDS epidemic. Information from various sources clearly indicate the fact that the HIV epidemic is stabilising with a significant reduction of its pace in younger age groups. These data however, also show the need to strengthen our current approach with regard to treatment, care and support in the face of increasing mortality due to HIV/AIDS, over and above both the other elements of the comprehensive strategy and government's integrated programmes to alleviate poverty.²⁶

HIV AND YOUNG WOMEN

Recent declines in infection among young people have not been enjoyed equally by both sexes. In general, about twice as many young women as men are infected in sub-Saharan Africa. In South Africa, about twice as many young women as men are infected HIV.

With the downward trend of many African economies increasing the ranks of people in poverty, relationships with men (casual or formalized through marriage) can serve as vital opportunities for financial and social security, or for satisfying material aspirations. Generally, older men are

²³ Tony Barnett & Alan Whiteside, *AIDS in the Twenty-first Century, Disease and Globalization* 47 (2002).

²⁴ Tony Barnett & Alan Whiteside, *AIDS in the Twenty-first Century, Disease and Globalization* 47 (2002).

²⁵ Tony Barnett & Alan Whiteside, *AIDS in the Twenty-first Century, Disease and Globalization* 47 (2002).

²⁶ Joint Health and Treasury Task Team *Summary Report of the Joint Health and Treasury Task Team Charged with Examining Treatment Options to Supplement Comprehensive Care for HIV/AIDS in the Public Sector* 26 (August 1, 2003).

more likely to be able to offer such security. But, in areas where HIV/AIDS is widespread, they are more likely to have become infected with HIV. The combination of dependence and subordination can make it difficult for girls and women to demand safer sex (even from their husbands) or to end relationships that carry the threat of infection.

Studies have shown that young women tend to marry men several years older, and that their risk of infection increases as a husband is three to more years older than they are....In countries with generalized epidemics in Africa, up to 80% of women aged 15-24 have been shown to lack sufficient knowledge about HIV/AIDS. This, combined with the fact that young women and girls are more biologically prone to infection (the cervix being susceptible to lesions), helps explain the large differences in HIV prevalence between girls and boys aged 15-19.²⁷

In other words, difference in prevalence rates observed between men and women can be accounted for by both biological and social reasons. Biologically, women's reproductive systems make it easier for them to be infected with HIV, men are more effective at transmitting HIV, mostly because their semen is more infectious than vaginal fluids due to cellular content. The HIV virus needs live cells in order to be transmitted. Additionally, women are more likely to have undetected sexually transmitted infections which facilitate infection by increasing the likelihood. Demonstrated social factors for higher prevalence rates in women and men include different attitudes toward multiple partners, male control over barrier methods, and the economic situation of most women that make them dependent on men.

In South Africa, a Human Science Research Council study on HIV confirms the findings of smaller studies regarding the pattern of age and sex distribution of HIV infection, demonstrating that prevalence levels rise more quickly in women and then decrease with age, whereas male prevalence levels peak at an older age. Among women aged 15 to 24, 8 percent had partners between 11 and 25 years older (compared to 2 percent of men); 22, 4 percent of these women have partners 6 to 10 years older (compared to 3, 6 percent of men). Additionally, analysis of the HSRC data demonstrated that being a female between the ages of 25 and 49 increases the likelihood of a person being HIV positive.

POVERTY AND HIV

Although HIV/AIDS hits all those affected hard, it hits those who are already poor and marginalized hardest. Within countries, poor communities, and poor people bear the brunt of the burden. The absolute poor have little or no access to social services, including health care. Reduced income, when one or more adults in a family are infected, leads to reductions in food consumption and other basic necessities.

²⁷ UNAIDS *AIDS Epidemic Update* 19 (2002).

HIV/AIDS pushes households deeper into poverty. The loss of wage earners causes consumption of any savings to cover health care costs. Repeatedly survey research demonstrates that healthcare costs make up a disproportionate share of the total expenditure of lower income households. In South Africa, per capita expenditure on medicines and health are generally lower in lower incomes provinces with higher proportions of the total population.

Unfortunately, little empirical data exists that directly measures poverty, health expenditure, and HIV prevalence rates within households. The HSRC queried respondents on perceptions of income status qualitatively by categories. The economic head of household was asked to self-identify as a household that 1) Not enough money for basics, 2) Enough for basics, short for others, 3) Enough for most important things, or 4) Some money for extras. The study reports a negative correlation between HIV status and socioeconomic status among all race groups except for Africans. Meaning that in all race groups except Africans, as perceived income increased, verifiable household HIV prevalence decreased. Within African households, there does not seem to be a recognizable trend.

The report concludes that the relationship between perceived socioeconomic status and HIV infection rates indicates that all strata are at risk, not only the poor, although lower socioeconomic appears to be related to higher likelihood of HIV infection. Additionally, those non-poor Africans have similar levels of risk as poor Africans.

TABLE 1: Regional HIV/AIDS Statistics

| Region | Adults and Children living with HIV/AIDS | Adults and Children newly infected with HIV | Adult prevalence rate ²⁸ | Estimated Number of Adult and Child Deaths Due to HIV/AIDS |
|----------------------------------|--|---|-------------------------------------|--|
| Sub-Saharan Africa | 29,4 million | 3,5 million | 8,8 % | 2,400,000 |
| South & South East Asia | 6,0 million | 700,000 | 0,6 % | 440,000 |
| SOUTH AFRICA²⁹ | 5,0 million | N/A | 20,1 % | 360,000 |
| Latin America | 1,5 million | 150,000 | 0,6 % | 60,000 |
| East Asia & Pacific | 1,2 million | 270,000 | 0,1 % | 45,000 |
| Eastern Europe & Central Asia | 1,2 million | 250,000 | 0,6 % | 25,000 |
| North America | 980,000 | 45,000 | 0,6 % | 15,000 |
| Western Europe | 570,000 | 30,000 | 0,3 % | 8,000 |
| Caribbean | 440,000 | 60,000 | 2,4 % | 42,000 |
| North Africa & Middle East | 55,000 | 83,000 | 0,3 % | 37,000 |
| Australia & New Zealand | 15,000 | 500 | 0,1 % | <100 |
| TOTAL | 42 million | 5 million | 1,2 % | 3,100,000 |

Source: UNAIDS, AIDS Epidemic Update, 2002 pages 38-41; UNAIDS Epidemiological Fact Sheets on HIV/AIDS and Sexually Transmitted Infections, South Africa, 2002 Update, pg. 2.

²⁸ The proportion of adults (15 to 49 year of age) living with HIV/AIDS in 2002.

²⁹ South Africa estimates are from UNAIDS Epidemiological Fact Sheets on HIV/AIDS and Sexually Transmitted Infections, 2002 Update. These estimates are for end of year 2001.

TABLE 2: Estimated Number of Adults and Children Living With HIV/AIDS

| | South Africa | Global | South Africa as a % of the World |
|----------------------------|--------------|------------|----------------------------------|
| Adults and Children | 5,000,000 | 42,000,000 | 12 % |
| Adults, Ages 15-49 | 4,700,000 | 38,600,000 | 12 % |
| Children | 250,000 | 3,200,000 | 8 % |
| Women | 2,700,000 | 19,200,000 | 14 % |

Source: UNAIDS Epi Fact Sheet; UNAIDS Update

TABLE 3: 2002 Annual and Cumulative Number of Deaths Due to AIDS by Province

| | Eastern Cape | Free State | Gauteng | KwaZulu-Natal | Limpopo | Mpumalanga | Northern Cape | North West | Western Cape | South Africa |
|-------------------------------|--------------|------------|---------|---------------|---------|------------|---------------|------------|--------------|--------------|
| AID DEATHS | | | | | | | | | | |
| Non-AIDS deaths, 2002 | 64,875 | 25,320 | 72,936 | 76,993 | 41,008 | 23,996 | 8,681 | 32,227 | 39,004 | 396,538 |
| AIDS deaths, 2002 | 27,125 | 19,173 | 56,414 | 82,373 | 21,306 | 24,483 | 2,397 | 22,127 | 5,904 | 262,337 |
| Cumulative AIDS deaths | 67,715 | 49,766 | 139,249 | 231,265 | 55,190 | 71,424 | 5,465 | 56,407 | 14,166 | 688,493 |

Source: Rob Dorrington et al., *HIV/AIDS Profile in the Provinces of South Africa*, (2002) THE CENTRE FOR ACTUARIAL RESEARCH, MEDICAL RESEARCH COUNCIL, & THE ACTUARIAL SOCIETY OF SOUTH AFRICA 6.

TABLE 4: Percentage of Deaths Due to AIDS

| | |
|------------------------|------|
| 2000 | 26,4 |
| 2005, no change | 55,8 |
| 2005, change | 54,7 |
| 2010, no change | 65,7 |
| 2010, change | 63,7 |
| 2015, no change | 63,2 |
| 2015, change | 57,6 |

Source: ASSA 2000 Model

TABLE 5: HIV Prevalence Rates by Ages and Province

| | Eastern Cape | Free State | Gauteng | KwaZulu-Natal | Limpopo | Mpumalanga | Northern Cape | North West | Western Cape | South Africa |
|--------------------------------|--------------|------------|---------|---------------|---------|------------|---------------|------------|--------------|--------------|
| HIV PREVALENCE | | | | | | | | | | |
| Total Population | 11,3 | 16,7 | 16,0 | 18,4 | 11,0 | 16,5 | 7,9 | 15,1 | 4,2 | 14,2 |
| Adults (18-64) | 20,5 | 26,5 | 23,8 | 31,4 | 20,9 | 28,1 | 12,9 | 24,8 | 6,7 | 23,4 |
| Adult Men (18-64) | 19,0 | 27,4 | 25,6 | 31,6 | 20,2 | 28,0 | 12,4 | 25,7 | 5,8 | 23,3 |
| Adult Women (18-64) | 21,9 | 25,5 | 21,9 | 31,3 | 21,5 | 28,2 | 13,4 | 23,9 | 7,6 | 23,5 |
| Child-bearing Age Women | 23,8 | 28,3 | 25,0 | 34,5 | 22,7 | 30,2 | 14,8 | 26,3 | 8,4 | 25,9 |
| Youth (15-24) | 12,5 | 15,6 | 13,0 | 19,7 | 12,1 | 15,9 | 6,7 | 14,4 | 3,3 | 13,7 |
| Male Youth (15-24) | 4,9 | 6,7 | 5,9 | 9,1 | 5,3 | 7,0 | 2,7 | 6,4 | 1,1 | 5,8 |
| Female Youth (15-24) | 20,1 | 24,1 | 19,8 | 30,2 | 19,4 | 25,0 | 10,6 | 22,2 | 5,5 | 21,6 |
| Antenatal Clinics | 26,5 | 32,6 | 29,8 | 38,7 | 22,3 | 33,1 | 17,2 | 27,2 | 11,4 | 29,0 |

Source: Rob Dorrington et al., *HIV/AIDS Profile in the Provinces of South Africa*, (2002) THE CENTRE FOR ACTUARIAL RESEARCH, MEDICAL RESEARCH COUNCIL, & THE ACTUARIAL SOCIETY OF SOUTH AFRICA 5.

TABLE 6: HIV Prevalence by Racial Classification and Age

| | African | Coloured | Indian/Asian | White | South Africa |
|---|---------|----------|--------------|-------|--------------|
| HIV | | | | | |
| Percent of population^a | 78,0 | 8,6 | 2,5 | 10,9 | 100 |
| HIV Prevalence in 2002^b | | | | | |
| Overall | 12,9 | 6,1 | 1,6 | 6,2 | 11,4 |
| Adult, Age 15-49 | 18,4 | 6,6 | 1,8 | 6,2 | 15,6 |
| Age >25 | 18,8 | 6,7 | 2,3 | 5,7 | 11,4 |

Source: a: StatSA; b: HSRC 2002

TABLE 7: HIV Incidence Rates by Ages and Province

| | Eastern Cape | Free State | Gauteng | KwaZulu-Natal | Limpopo | Mpumalanga | Northern Cape | North West | Western Cape | South Africa |
|-----------------------------------|--------------|------------|---------|---------------|---------|------------|---------------|------------|--------------|--------------|
| HIV INCIDENCE | | | | | | | | | | |
| Total Population | 2,1 | 2,3 | 2,1 | 2,3 | 1,9 | 2,3 | 1,3 | 2,1 | 0,7 | 2,1 |
| Adults (18-64) | 3,4 | 3,4 | 2,9 | 3,3 | 3,1 | 3,5 | 2,0 | 3,2 | 1,1 | 3,1 |
| Adult Men (18-64) | 1,5 | 1,7 | 1,5 | 1,6 | 1,5 | 1,7 | 0,9 | 1,6 | 0,4 | 1,5 |
| Adult Women (18-64) | 3,2 | 2,9 | 2,4 | 2,5 | 2,6 | 2,9 | 2,0 | 2,6 | 1,4 | 2,7 |
| Perinatal (of births) | 5,5 | 6,5 | 5,6 | 8,3 | 5,2 | 6,9 | 3,4 | 5,9 | 1,5 | 6,0 |
| Mother's Milk (of infants) | 3,5 | 4,1 | 3,5 | 5,4 | 3,2 | 4,4 | 2,1 | 3,7 | 1,0 | 3,8 |

Source: Rob Dorrington et al., *HIV/AIDS Profile in the Provinces of South Africa*, (2002) THE CENTRE FOR ACTUARIAL RESEARCH, MEDICAL RESEARCH COUNCIL, & THE ACTUARIAL SOCIETY OF SOUTH AFRICA 5.

TABLE 8: Qualitative Assessment of HIV Infection and Consumption

| | African | Coloured | Indian/Asian | White | South Africa |
|--|---------|----------|--------------|-------|--------------|
| HIV & INCOME | | | | | |
| Not enough money for basics | 14,5 | 7,6 | 1,9 | 6,2 | 13,9 |
| Enough for basics, short for others | 16,1 | 4,4 | 3,7 | 6,4 | 14,0 |
| Enough for most important things | 9,4 | 7,8 | 0,5 | 3,7 | 6,5 |
| Some money for extras | 10,3 | 2,7 | 0,0 | 4,6 | 5,0 |

Source: HSRC 2002