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AIDS IN SOUTH AFRICA



Overview

- In sub-Saharan Africa, more than 11,000 additional people become HIV+ each and every day. In South Africa alone, 4.2 million people are already HIV+¹ and at least 1,600 people a day are newly infected.²
- UNAIDS reports that half of all HIV+ people in the 9 southern African countries hardest hit by the pandemic live in South Africa.
- The number of reported AIDS cases in South Africa has risen 33% since the end of 1997.³
- By 2010, 25% of South Africa's adult population is expected be HIV+⁴; AIDS deaths will peak about 5 years later at 256 AIDS deaths per 100 normal deaths.⁵
- According to the Actuarial Society of South Africa (ASSA), the country's total population by 2015 will be 23% lower than it would have been without AIDS.⁶
- UNAIDS reports that during the last 8 years, HIV prevalence in South African prenatal clinics has increased more than 21-fold, and that the 1998 national prevalence rate among pregnant women was 23%.
- By 2008, 1.6 million South African children will have been orphaned by AIDS.⁷
- A new UNAIDS Report estimates that in South Africa, AIDS is set to claim the lives of around half of all 15 year olds.⁸

Development

- In the next few years, AIDS will reduce life expectancy in South Africa by a third, from 68 to 45 years⁹. By 2010, infant mortality is expected increase by 40%.¹⁰
- AIDS as a security issue. Recent reports confirm that 40% of the South African military is already HIV positive. US military officials have raised this as a serious stability concern.¹¹
- A South African anti-crime institute has linked the growing number of children orphaned by AIDS to future increases in crime and civil unrest. Without appropriate intervention, many of the almost 2 million children projected to be orphaned by AIDS in South Africa will raise themselves on the streets, often turning to crime, drugs, commercial sex, and gangs for survival. This not only effects social stability but also dramatically increases their risk of HIV.¹²

¹ New UNAIDS Report.

² Africa Facts 2, ONAP.

³ USAID Country Profile.

⁴ UCB.

⁵ Ing Barings, South African Research, Economic Impact... April 2000, Page 1.

⁶ Ing Barings, Page 6

⁷ UCB.

⁸ UNAIDS Press Release, 6/27/00

⁹ Africa Facts 2, ONAP.

¹⁰ UCB.

¹¹ Africa Facts 2, ONAP.

¹² Africa Facts, ONAP.

Economic Impact

- The economically active population (25 -50 years old) will be the worst affected, with infections rates expected to reach 26% in just a few years. South Africa's unskilled and semi-skilled workforce will be most heavily impacted, though skilled and professional workers follow close behind.¹³
- Between 2000-2015, The South African labor force is expected to average 10% lower due to AIDS.¹⁴
- In a country already battling a skills shortage, AIDS will only exacerbate the problem by decreasing the work force, lower labor productivity, lower labor income, and increase demand for health services both in the private sector and in government supports.¹⁵
- By 2010, the demand for health services could be over 11% higher than it would have been without AIDS.¹⁶ The cost of treating one AIDS case already exceeds the GNP per capita by more than \$1,000. In KwaZulu/Natal, the entire provincial health budget is spent on AIDS-related illnesses.¹⁷
- A recent report predicts that South Africa's Real GDP will be .4% lower by 2006 than it would have been without AIDS. As the country generates 45% of sub-Saharan Africa's total GDP, the lower growth and higher risk profile for South Africa will not bode well for financial markets and may deter foreign investors.¹⁸
- At a meeting with African trade and finance ministers, Professor Jeffrey Sachs, director of the Harvard Institute for International Development, stated that, "a frontal attack on AIDS in Africa may now be the single most important strategy for economic development."¹⁹

Response

- After a slow start, in 1994 South Africa became the first sub-Saharan country to develop and gain Cabinet approval for a comprehensive HIV/AIDS policy.²⁰
- Though the failure of past actions continue to challenge the South African government in their ability to respond successfully, renewed leadership has and will continue to help break the silence surrounding AIDS. Both Archbishop Desmond Tutu and Nelson Mandela have spoken out publicly on HIV/AIDS issues including condom use and safe sex.
- The private sector has begun to respond. Since 1993, the South African power company Eskom, has guaranteed full ill-health and pension benefits to employees with AIDS and their families. It also provides clinical services, counseling and therapy, supports educational programs, both in the workplace and in the public arena, and is engaged in funding vaccine research.
- USAID, UNAIDS (still working on donor involvement info...)

¹³ Ing Barings, Page1.

¹⁴ Ing Barings, Page 10.

¹⁵ Ing Barings, Page 1.

¹⁶ Ing Barings, Page 15.

¹⁷ USAID Key Talking Points.

¹⁸ Ing Barings, Page 2.

¹⁹ Africa Facts 2, ONAP.

²⁰ UCB.

SOUTH AFRICA

06/01/00

Socio-Economic Data

Total population (thousands), 1997	43,336	UNPOP
% of population urbanized, 1996	51	UNPOP
Annual population growth rate, 1980-1995	2.3	UNPOP
Infant mortality rate (per 1,000 live births), 1996	50	UNICEF/UNPOP
Maternal mortality rate (per 100,000 births), 1990	230	WHO/UNICEF
Life expectancy, 1996	65	UNPOP
Adult literacy rate, 1995	M 82, F 82	UNESCO
Per capita GNP (US\$), 1995	3,160	World Bank

Status of the Epidemic

Prevalence – Year	Trend
16.7 – 1998	Rapid growth with all age groups in surveillance sites showing between 15 and 65 percent growth between 1997 and 1998. Highest growth rate was in the under 20 age group.

National Response

National AIDS Programme

- The HIV/AIDS and STD Directorate is located within the Ministry of Health which is the lead ministry in the response to the epidemic;
- An Inter-Ministerial Committee on AIDS was established in 1998 to provide political direction and policy guidance to the national AIDS programme;

National Strategic Planning

- The development of the national strategic plan occurred during the months of July- November 1999;
- The plan, still in draft form, is a five-year plan;
- The priority areas include prevention, human rights, care and support, research monitoring and evaluation, youth and policy implementation.

Political Commitment

- The President launched the Partnership against AIDS in 1998 to broaden and formalise the participation by all sectors in the response to the epidemic;
- The President also launched the South African National AIDS Council on 1 December 1999. It is a multisectoral body that will oversee the national response to the epidemic and the implementation of the Strategic Plan.
- The current Minister of Health initiated the development of the strategic plan;

Country Brief

- It was in response to the statement by the newly elected President calling all South Africans to action in the fight against AIDS. He challenged all sectors of society to be actively involved in the response to HIV/AIDS.

Multisectoral Involvement

- Initial efforts in the South African response to HIV/AIDS were implemented mainly by non-governmental organizations and the Ministry of Health;
- There has been gradual involvement by other government departments and civil society;
- Participants in the recent national strategic planning process included representatives from faith based organisations, people living with HIV/AIDS, non-governmental organizations, human rights organisations, academic institutions, the civil military alliance, the media, organised labour, organised sports, business, insurance companies, women's organisations, youth organisations, international donors, medical and health professionals, medical and health consulting organisations, political parties and other relevant government departments;
- The Response Analysis calls for all provincial authorities to designate co-ordinators responsible for STD/HIV/AIDS at the province and district levels.

UN Theme Group on HIV/AIDS

Chair:

UNICEF Representative

Members:

UNICEF, UNESCO, World Bank

UNDP, WHO, UNFPA.

Participants: ILO, UNHCR, UNIC, IOM and UNAIDS/ICT

Support from UN System Agencies for HIV/AIDS activities in 1998-1999

<i>Organization</i>	<i>Amount US\$</i>
WHO	80 000
UNDP	200 000
UNFPA	10 000
UNESCO	5 000
UNAIDS	683 450
Total	978 450

South Africa

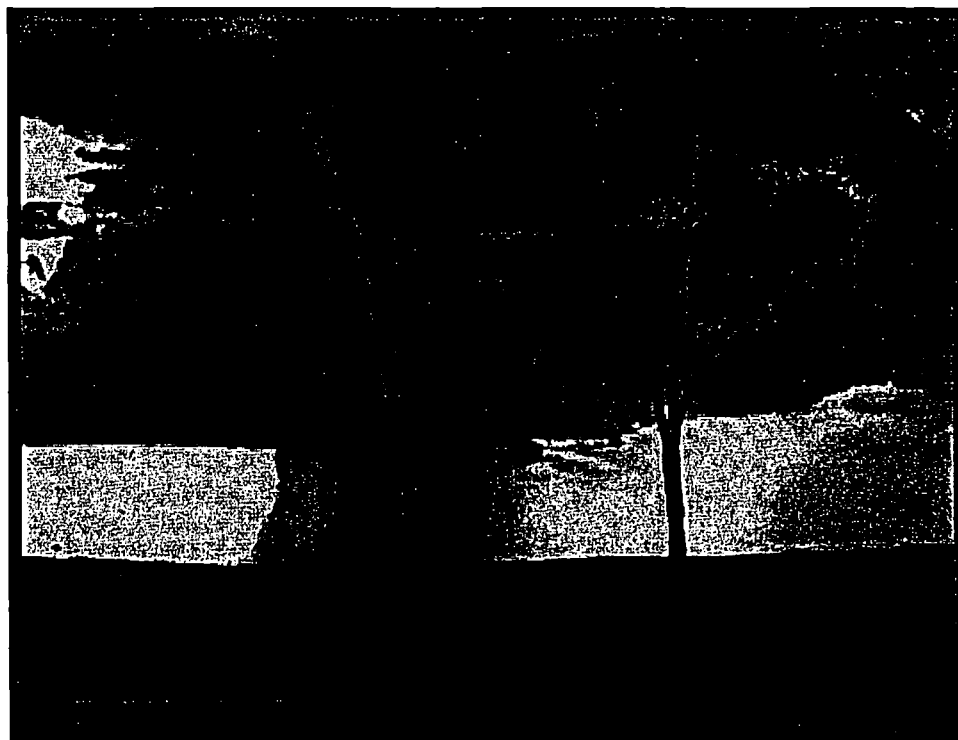
ING  BARINGS

SOUTH AFRICAN RESEARCH

Economic Impact of AIDS in South Africa

A dark cloud on the horizon

APRIL 2000



GLOBAL RESEARCH

- **South Africa is faced with a worsening AIDS epidemic, which will have a profound impact on the country's economic outlook.** We forecast HIV infection rates to peak at almost 17% by 2006 for the population as a whole. AIDS-related deaths will peak about five years later at 256 AIDS deaths per 100 normal deaths.
- **The economically active population will be worst affected, with infection rates forecast to reach 26%.** The lion's share of the infections and deaths will be borne by the unskilled and semi-skilled part of the workforce, with infection rates likely to top the 30% mark. Nevertheless, the skilled and highly skilled will also be profoundly affected, with infections forecast to reach 23% and 13% respectively. South Africa is already battling with a skills shortage, which will be further exacerbated by the AIDS epidemic, raising remuneration and replacements costs for companies.
- **The epidemic impacts on the economy in various ways.** It leads to a smaller labour force, lower labour productivity, cost pressures for companies, lower labour income, and increased demand for health services from the private and the public sectors.
- **In our non-alarmist scenario, we believe GDP trend growth is forecast to be on average 0.3-0.4 percentage points pa lower than in a no-AIDS baseline.** CPI inflation will pick up due to cost pressures on companies that are passed on. This will exert some upward pressure on interest rates. Capacity utilisation and investment holds up fairly well, as the lower labour supply and productivity encourage a switch towards technology away from labour and narrow the gap between potential and actual output.
- **The costs of the AIDS epidemic are likely to cause a domestic savings squeeze – and this could potentially set off a vicious spiral.** Domestic savings as a percentage of GDP are expected to be on average 2 percentage points lower than in a no-AIDS scenario. In order to support investment demand in the economy, South Africa would need to attract foreign savings to plug the gap. Should foreign inflows not materialise, a savings-investment crunch will ensue, pushing interest rates markedly higher and further slowing GDP growth than is expressed in our AIDS baseline case.
- **The lower growth and higher risk profile for South Africa will not bode well for financial markets and may well deter foreign investors.** We look at relative risk exposure of sectors in terms of two factors – firstly, their reliance on a workforce that has a high infection risk and, secondly, their reliance on skilled workers, the replacement cost of whom is much higher than of the unskilled. Aggregating those two factors, we find that transport & storage and catering & accommodation are the sectors most exposed to the AIDS risk, while machinery, communication and metals fare relatively better. An important finding is, however, that service industries, such as finance and business services (including IT), rank in the middle field, as their reliance on skilled personnel makes them more vulnerable to a rising remuneration bill.

Figure 1

**% POINT DIFFERENCE IN GROWTH RATES BETWEEN THE AIDS
AND NO-AIDS SCENARIOS**

	2001F	2002F	2003F	2004F	2005F	2006-10F	2011-15F
Real GDP	-0.3	-0.2	-0.2	-0.2	-0.3	-0.4	-0.3
Employment*	-1.5	-2.1	-2.8	-3.7	-4.7	-8.3	-14.1
Unemployment	-0.3	-0.3	-0.4	-0.5	-0.6	-0.9	-1.2
Real household disposable income*	-1.3	-1.7	-2.1	-2.4	-2.8	-4.4	-5.8
Real PCE	-0.3	-0.4	-0.3	-0.4	-0.5	-0.8	-0.8
Real govt consumption	0.1	0.1	0.1	0.1	0.1	-0.1	-0.2
Real GDFI	-0.1	0.1	0.2	0.2	0.1	-0.1	0.0
Real inventory investment (Rm. difference)	-130	-698	-935	-852	-1,116	-4,014	-4,676
Real exports	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Real imports	0.4	-0.2	0.2	0.0	-0.1	-0.3	-0.5
Current account balance/GDP**	-1.0	-1.2	-1.4	-1.7	-1.7	-2.4	-2.4
Trade weighted nominal exchange rate*	-0.7	-1.3	-1.4	-1.8	-2.1	-3.0	-3.9
Budget deficit/GDP**	-0.3	-0.3	-0.4	-0.5	-0.6	-0.8	-0.9
CPI inflation rate	0.7	0.2	0.4	0.3	0.4	0.4	-0.1
Prime lending rate**	0.0	0.0	0.0	0.1	0.2	0.3	0.6

Difference between YoY growth rate of AIDS and no-AIDS scenarios
** Real % difference between AIDS and no-AIDS scenarios, not YoY growth rate differences*
*** % point difference*

Source: WEFA

The uncertainty over the impact of the AIDS epidemic on the South African economy causes some discomfort with regard to the country's investment risk profile in the future. In order to shed some light on the effects of the AIDS issue, we have attempted to model some of the possible channels through which the epidemic impacts on the economy. We approached the problem in two steps,

Our goal was to model the possible macroeconomic effects of AIDS

- Firstly, we modelled the demographic changes that are likely to occur, using the Actuarial Society's (ASSA) demographic model, and produced infection and mortality profiles by skills levels and for selected sectors. The results were discussed in our first report 'The Demographic Impact of AIDS on the South African Economy', dated 17 December 1999.
- Secondly, we conducted long-term economic forecasts to take into account the AIDS effect. Clearly, the demographic projections, which we updated for this second part of the study, formed the backbone to the analysis. In addition, we formulated assumptions on costs to consumers, companies and government. The results are presented in this report.

As little work had actually been carried out before with regard to econometric modelling of the epidemic, the research took several months. The further we went in our endeavours, the more gaps we discovered in the existing data on the demographic profile of the disease, government policy and estimated expenditure, changing household consumption and expenditure patterns and the costs arising for companies. It is therefore important to emphasise the imperfect nature of the information.

However, our work was greatly helped by informal cooperation with AIDS experts and other modellers. We were able to host a workshop in January that included the World Bank, the Department of Finance and the Bureau for Economic Research (BER) in Stellenbosch to discuss the modelling approach and the validity of the assumptions. A follow-up workshop was held at the BER in early March, which also included, among others, Professor Dorrington, who is responsible for the ASSA demographic model, and Metropolitan Life. We benefited greatly from the discussion and would like to thank all participants for their comments and inputs. Over the coming months, we will probably see different angles to the economic analysis of AIDS explored by other participants, which should add further to the debate on the impact of AIDS.

Most importantly, we would like to thank WEFA for helping us model the long-term demographic trends and the macroeconomic outlook.

RECENT INTERNATIONAL TRENDS

According to the UNAIDS December 1999 figures, some 33.6m people worldwide are currently living with HIV – 32.4m adults and 1.2m children. Some 70% of the global total of HIV infected live in sub-Saharan Africa. Life expectancy at birth in southern Africa, which was 59 years in the early 1990s, is set to drop to just below 45 years between 2005 and 2010.

Figure 2

REGIONAL HIV/AIDS STATISTICS AND FEATURES, DECEMBER 1999

Region	Epidemic started	Adults and children living with HIV/AIDS	Adults and children newly infected with HIV in 1999	Adult prevalence rate ¹ (%)	Women as a % of HIV+ adults	Main modes of transmission ² for adults living with HIV/AIDS
Sub-Saharan Africa	Late 1970s-early 1980s	23,300,000	3,800,000	8.00	55	Hetero
North Africa & Middle East	Late 1980s	220,000	19,000	0.13	20	IDU, Hetero
South & South East Asia	Late 1980s	6,000,000	1,300,000	0.69	30	Hetero
East Asia & Pacific	Late 1980s	530,000	120,000	0.07	15	IDU, Hetero, MSM
Latin America	Late 1970s-early 1980s	1,300,000	150,000	0.57	20	MSM, IDU, Hetero
Caribbean	Late 1970s-early 1980s	360,000	57,000	1.96	35	Hetero, MSM
Eastern Europe & Central Asia	Early 1990s	360,000	95,000	0.14	20	IDU, MSM
Western Europe	Late 1970s-early 1980s	520,000	30,000	0.25	20	MSM, IDU
North America	Late 1970s-early 1980s	920,000	44,000	0.56	20	MSM, IDU, Hetero
Australia & New Zealand	Late 1970s-early 1980s	12,000	500	0.10	10	MSM, IDU
Total		33,600,000	5,600,000	1.10	46	

¹ The proportion of adults (15-49 years of age) living with HIV/AIDS in 1999, using 1998 population numbers.

² MSM (sexual transmission among men who sleep with men), IDU (transmission through injecting drug use), Hetero (heterosexual transmission).

Source: WHO

Following the publication of our 17 December 1999 report 'The Demographic Impact of AIDS on the South African Economy', the Actuarial Society of South Africa (ASSA) on whose model our forecasts were built, updated some of its assumptions flowing into the model. We have amended our forecasts to reflect these latest revisions.

THE ACTUARIAL SOCIETY OF SOUTH AFRICA (ASSA) NATIONAL AIDS MODEL

The Actuarial Society of South Africa (ASSA 600, Dorrington, 1998) model was developed to forecast the South African population and the impact of AIDS on its various segments. This version of the ASSA model is currently set up to reflect the entire population in South Africa, which is divided into three distinct age groupings: young (0-13 years old), old (60 years and older) and adult. On reaching their 14th birthday, individuals are allocated into the various other risk groups according to the assumed proportions of the population as a whole. It is assumed that none of the perinatal infections will survive to age 14. The adult group is divided into four subgroups, differentiated by their level of exposure to the risk of a heterosexual epidemic.

- PRO – Individuals whose level of sexual activity is such that their HIV prevalence is similar to that of sex workers and their clients
- STD – Individuals whose level of sexual activity is such that their HIV prevalence is similar to that of people being treated for sexually transmitted diseases at STD clinics
- RSK – Individuals with a lower level of sexual activity but who are still at risk from HIV
- NOT – Individuals who are not at risk of HIV infections

A pattern of contact is assumed both within and between risk groups. Instead of modelling the various factors involved during a single sexual encounter, the model uses an average 'force of infection' to determine the spread of HIV. The force of infection is a combination of 'number of sexual partners', 'number of new contacts' and 'ease of infection'. The age and sex of the specific force of infection is then derived by incorporating the relevant sexual activity index for age and sex. Although the sexual activity curve is arbitrarily chosen, it is chosen such that the shape of new HIV infections matches known data.

Figure 3 shows the further assumptions that feed into the model.

Figure 3 ASSA AMENDED ASSUMPTIONS

Risk group	Description of risk group	% population	Relative fertility* (%)	Probability of HIV+ infection per year
PRO	Sex workers and clients	1	40	0.85
STD	Treated for sexually transmitted diseases	20	70	0.47
RSK	Normal HIV risk	40	100	0.09
NOT	No HIV risk	39	117	0.00
General		Value		
Infant AIDS mortality (%)		30		
Median term to death of HIV+ (14+ yrs)		10		
Proportion of perinatal infection (%)		25		
Proportion of infected via breast-feeding (%)		10		
Proportion of male births (%)		51		
Relative male to female infectivity		2:1		
Imported infectivity (male PROs)		300		
Imported infectivity (female PROs)		450		

* To RSK group

Source: Dorrington, ASSA 600, A User's Guide

We start our analysis at the most aggregated level, ie, at the level of the total population, and present our results of a baseline AIDS-inclusive population forecast and a no-AIDS population forecast. The no-AIDS scenario is recreated by adding back to the current (AIDS-inclusive) population forecasts the AIDS deaths while adjusting for their fertility and mortality. The ASSA model is operated from a 1985 base year in 15-year cycles, and it should be noted that in our baseline case, we have not changed any of the ASSA assumptions in the second cycle that runs from 2000 to 2015. We assumed that sexual behaviour such as that implied by Figure 3 does not change and that no medical advances are made during as well as between the cycles.

GENERAL POPULATION FORECASTS

The modelling results are shown in Figure 4. It can be seen that for 2000 the ASSA model suggests that without AIDS the population would be 1.1% higher than under the current AIDS-inclusive scenario. This differential is forecast to rise to 23% by 2015.

Total population will be 23% lower by 2015 than in a no-AIDS case

In the no-AIDS scenario, population growth rates are expected to come down from well over 2% pa to 1.5% by 2015. By contrast, ASSA's recent population projections including AIDS indicate that the growth rate has come down more rapidly since the early 1990s. By 2004, the growth rate is forecast to drop to below 1% and to reach 0% by 2011.

Given the new assumptions on infection rates, propagation, fertility and mortality, HIV+ infection rates are forecast to peak at 16.7% in 2006 and taper off thereafter. The number of AIDS deaths is expected to rise rapidly and should peak with a four to five-year lag in 2010 with 1.8 AIDS deaths per 100 people and 256 AIDS deaths per 100 normal deaths. As shown in our previous report, apart from the 0-9 age group, which reflects the high rate of infant deaths associated with mother-to-child transmissions, AIDS deaths are mainly concentrated in the 25-50 age groups. That means that the labour force is disproportionately more affected than the overall population. The repercussions of this for the economy will be discussed later in the report.

Infection rates are forecast to peak at almost 17%

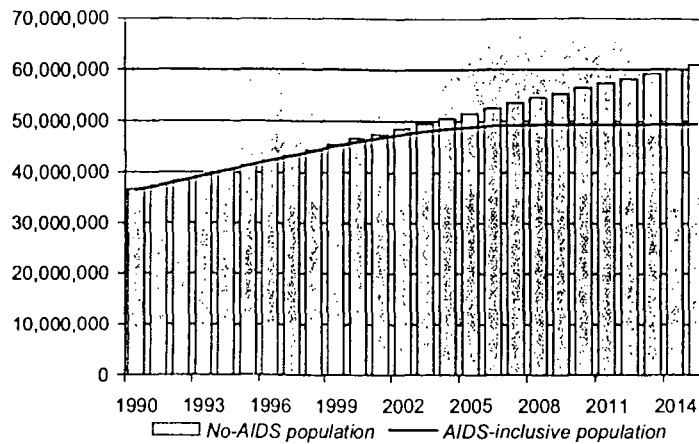
Figure 4 POPULATION FORECASTS OF NO-AIDS AND THE AIDS-INCLUSIVE SCENARIOS

	AIDS-inclusive scenario	Growth (%)	No-AIDS scenario	Growth (%)	No-AIDS/AIDS (%)	HIV+	AIDS deaths	AIDS deaths per 100 normal deaths
1999	45,100,513		45,414,112		0.7	11.58	0.42	57.6
2000	45,951,123	1.89	46,447,874	2.28	1.1	12.99	0.56	76.7
2001	46,725,267	1.68	47,478,275	2.22	1.6	14.17	0.71	99.2
2002	47,407,203	1.46	48,503,417	2.16	2.3	15.12	0.89	124.6
2003	47,984,178	1.22	49,521,688	2.10	3.2	15.83	1.07	151.7
2004	48,448,709	0.97	50,531,745	2.04	4.3	16.31	1.26	178.7
2005	48,800,591	0.73	51,532,490	1.98	5.6	16.58	1.43	203.5
2006	49,047,777	0.51	52,523,054	1.92	7.1	16.67	1.57	224.3
2007	49,205,482	0.32	53,502,785	1.87	8.7	16.62	1.67	239.9
2008	49,293,678	0.18	54,471,262	1.81	10.5	16.45	1.74	249.9
2009	49,333,750	0.08	55,428,279	1.76	12.4	16.22	1.78	254.8
2010	49,345,370	0.02	56,373,740	1.71	14.2	15.96	1.78	255.5
2011	49,344,408	0.00	57,307,533	1.66	16.1	15.70	1.77	253.4
2012	49,342,079	0.00	58,229,435	1.61	18.0	15.46	1.74	249.3
2013	49,345,084	0.01	59,139,066	1.56	19.8	15.25	1.71	244.4
2014	49,356,321	0.02	60,035,874	1.52	21.6	15.09	1.67	239.2
2015	49,375,762	0.04	60,919,128	1.47	23.4	14.97	1.64	234.2

Source: ASSA

Figure 5

POPULATION FORECASTS FOR AIDS AND NO-AIDS SCENARIOS



EFFECTS ON THE LABOUR FORCE BY SKILLS AND SECTORS

The infection rate among the economically active population peaks at about 25.5% by 2006, well above the 16.7% peak for the total population. As in our last report, we translated the overall infection rate among the economically active into infection rates by skills group. We combined the age, ethnic and gender profiles from the ASSA forecast with provincial information from J Slawski (*AIDS where are we*, 1998 unpublished report for ASSA) and overlaid this information on employment data by skills categories and economic activity from the 1996 population census. When examining the infection rates by skills groups, we find that the HIV+ rate of semi- and unskilled labour is over three times as high as that of the highly skilled. A similar observation can be made with regard to the number of AIDS deaths by skill category. Nevertheless, while the semi and unskilled portion of the labour force is disproportionately affected by the AIDS epidemic, it is important to realise that infection rates among the highly skilled will be substantial as well, exacerbating South Africa's skills shortage. Among the highly skilled, the infection rate is forecast to peak at 13.1% in 2005, compared with 22.8% for the skilled and 32.8% for the semi- and unskilled. Annual AIDS-related deaths among the highly skilled are forecast to peak at 1.2 per 100 workers, while deaths among the semi-and unskilled grouping are expected to peak at 3.4 per 100 workers.

The labour force will be worst affected

Figure 6 PROJECTED AIDS DEATHS PER 100 WORKERS BY SKILLS

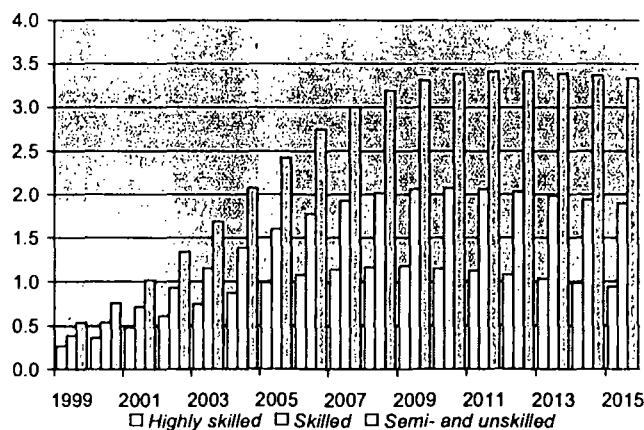
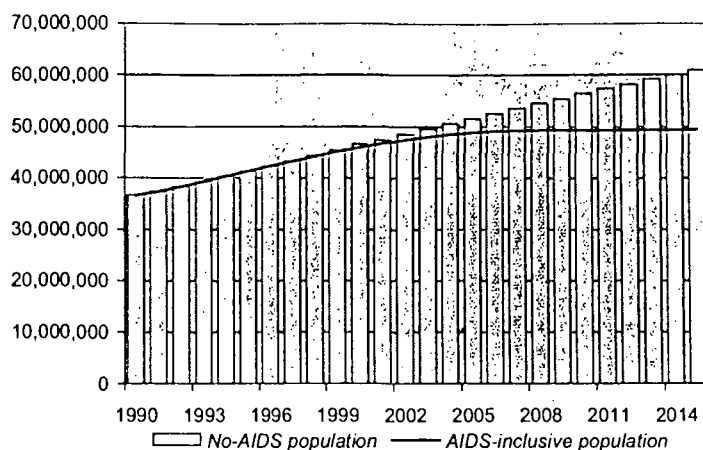


Figure 5

POPULATION FORECASTS FOR AIDS AND
NO-AIDS SCENARIOS

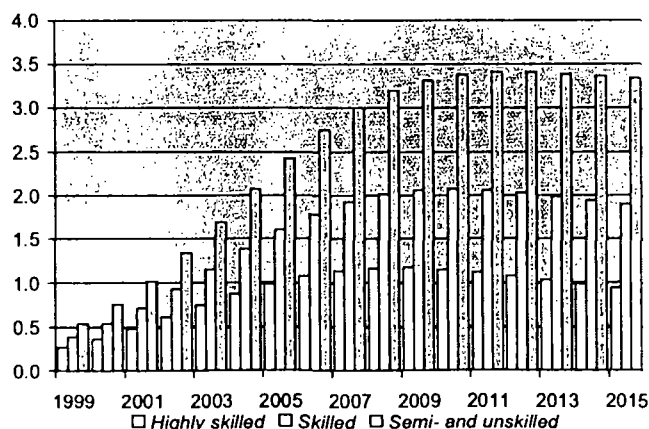
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EFFECTS ON THE LABOUR FORCE BY SKILLS AND SECTORS

The infection rate among the economically active population peaks at about 25.5% by 2006, well above the 16.7% peak for the total population. As in our last report, we translated the overall infection rate among the economically active into infection rates by skills group. We combined the age, ethnic and gender profiles from the ASSA forecast with provincial information from J Slawski (*AIDS where are we*, 1998 unpublished report for ASSA) and overlaid this information on employment data by skills categories and economic activity from the 1996 population census. When examining the infection rates by skills groups, we find that the HIV+ rate of semi- and unskilled labour is over three times as high as that of the highly skilled. A similar observation can be made with regard to the number of AIDS deaths by skill category. Nevertheless, while the semi and unskilled portion of the labour force is disproportionately affected by the AIDS epidemic, it is important to realise that infection rates among the highly skilled will be substantial as well, exacerbating South Africa's skills shortage. Among the highly skilled, the infection rate is forecast to peak at 13.1% in 2005, compared with 22.8% for the skilled and 32.8% for the semi- and unskilled. Annual AIDS-related deaths among the highly skilled are forecast to peak at 1.2 per 100 workers, while deaths among the semi-and unskilled grouping are expected to peak at 3.4 per 100 workers.

*The labour force
will be worst
affected*

Figure 6 PROJECTED AIDS DEATHS PER 100 WORKERS BY SKILLS



Source: ASSA

Figure 7

HIV+ INDIVIDUALS PER 100 WORKERS BY SKILLS LEVEL

	Highly skilled	Skilled	Ratio skilled/ highly skilled	Semi- and unskilled	Ratio semi- and unskilled/ highly skilled
1999	10.2	15.5	1.5	19.9	2.0
2000	11.2	17.5	1.6	22.7	2.0
2001	12.0	19.1	1.6	25.2	2.1
2002	12.6	20.5	1.6	27.4	2.2
2003	12.9	21.5	1.7	29.2	2.3
2004	13.1	22.2	1.7	30.6	2.3
2005	13.0	22.6	1.7	31.6	2.4
2006	12.8	22.8	1.8	32.3	2.5
2007	12.5	22.7	1.8	32.7	2.6
2008	12.1	22.5	1.9	32.8	2.7
2009	11.7	22.1	1.9	32.8	2.8
2010	11.2	21.7	1.9	32.7	2.9
2011	10.8	21.3	2.0	32.5	3.0
2012	10.4	21.0	2.0	32.4	3.1
2013	10.0	20.6	2.1	32.4	3.2
2014	9.6	20.4	2.1	32.4	3.4
2015	9.3	20.2	2.2	32.6	3.5

Source: WEFA

Figure 8

AIDS DEATHS PER 100 WORKERS BY SKILL LEVEL

	Highly skilled	Skilled	Ratio skilled/ highly skilled	Semi- and unskilled	Ratio semi- and unskilled/ highly skilled
1999	0.3	0.4	1.4	0.5	2.0
2000	0.4	0.5	1.4	0.8	2.0
2001	0.5	0.7	1.5	1.0	2.1
2002	0.6	0.9	1.5	1.3	2.2
2003	0.7	1.2	1.5	1.7	2.3
2004	0.9	1.4	1.6	2.1	2.4
2005	1.0	1.6	1.6	2.4	2.4
2006	1.1	1.8	1.6	2.7	2.5
2007	1.1	1.9	1.7	3.0	2.6
2008	1.2	2.0	1.7	3.2	2.7
2009	1.2	2.1	1.8	3.3	2.8
2010	1.2	2.1	1.8	3.4	2.9
2011	1.1	2.1	1.8	3.4	3.0
2012	1.1	2.0	1.9	3.4	3.1
2013	1.0	2.0	1.9	3.4	3.3
2014	1.0	1.9	2.0	3.4	3.4
2015	1.0	1.9	2.0	3.3	3.5

Source: WEFA

Following on from the demographic analysis, we have attempted to model the possible effect of HIV/AIDS on South Africa's longer term economic prospects. For that purpose, we have formulated assumptions based on the information that is currently publicly available. However, one cannot emphasise enough the deficiencies and gaps in the publicly available data. With this in mind, our analysis tries to identify the main channels through which the epidemic will affect the macroeconomy and highlight the sensitivity of the forecast outcomes to the input assumptions on the patterns of the epidemic. To our knowledge, this macro-modelling exercise has not been performed so far, and we hope that in addition to highlighting potential investment implications, we will add to the public debate on the impact of AIDS more generally. We believe that we have drawn a realistic scenario in our assumptions and have refrained from being unduly alarmist.

As the AIDS epidemic is unfolding, it will place severe costs on the economy. The channels we will be examining are the following:

We have identified seven key impact channels

1. A lower labour force
2. Lower labour productivity through absenteeism and illness
3. Cost pressures for companies through higher benefit payments and replacement costs
4. Lower labour income, as employees bear some of the AIDS-related costs
5. Lower population translating into lower expenditure
6. Increased private sector demand for health services
7. Higher government expenditure on health services.

Rising expenditure on healthcare will not only put pressure on the fiscus, but also on households and companies. Overall household demand will be dampened and reprioritised and household savings squeezed. Absenteeism, productivity losses and higher costs for training skilled personnel will place an additional burden on companies. Some of the higher costs will be passed on to the consumer via higher prices, but some will be absorbed in the companies operating surplus and may well come out of corporate savings. Not surprisingly, our analysis concludes that GDP will be lower under the AIDS scenario than the no-AIDS scenario. Price pressure will pick up and with it pressure on interest rates.

LABOUR SUPPLY AND PRODUCTIVITY

The impact of AIDS will be reflected on the labour supply and productivity. The demographic analysis has shown that the infection rates among the South African workforce are higher than for the population as a whole. We can thus expect the labour force to be disproportionately affected by the epidemic. Here we are trying to model the effect of AIDS-related deaths across the various skills groups on overall labour supply. Any change to the overall labour supply in the economy will affect potential output (which is determined by labour and capital supply as well as technology). With unemployment in excess of 30%, South Africa is currently faced with a surplus labour situation. So, in theory, employees who die of AIDS-related causes can be easily replaced by the available pool of unemployed. However, while South Africa has a large pool of unskilled labour available, it already faces a labour shortage at the skilled and highly skilled level. At the higher skills levels, the replacement of employees who have died is more difficult. Since the withdrawal of one unit of highly skilled labour is expected to have a more negative impact on potential output we propose to make an adjustment to the labour supply numbers that accounts for the importance of skill. Assuming that the average wage is a reasonable proxy for skills, we weigh the units of labour by their wage rate relative to the economy-wide average so as to arrive at a weighted aggregate labour supply.

Labour supply is adversely affected by AIDS deaths ...

Figure 9 THE RATIO OF THE AVERAGE WAGE RATE OF SKILL CLASS TO THE ECONOMY-WIDE AVERAGE WAGE RATE		
Highly skilled	Skilled	Semi & unskilled
1.91	1.07	0.65
Source: WEFA's 1997 Social Accounting Matrix		

Figure 9 suggests that highly skilled labour earns on average 1.91x more than the economy-wide average, while semi & unskilled only receives 65%. This set of assumptions generates the following impact on labour supply.

... with the loss of skilled employees weighing more

In the last column of Figure 10 it can be seen that in an AIDS scenario, the labour force is an average 10% lower than in a no-AIDS scenario between 2000-15. Values for the weighted labour supply under the AIDS scenario are shown in column 7. These will feed into the implicit production function of the macroeconometric model to determine forecasts for potential output. Moreover, we add the effect of productivity losses to the forecasts of efficiency units of labour rather than modelling productivity separately.

Figure 10 LABOUR FORCE IN AN AIDS AND NO-AIDS SCENARIO								
	1 Highly with AIDS	2 Highly no AIDS	3 Skilled with AIDS	4 Skilled no AIDS	5 Semi & with AIDS	6 Unskilled no AIDS	7 Weighted total with AIDS	8 % difference compared to no-AIDS
2000	2,074,168	2,097,928	3,788,658	3,849,153	11,506,362	11,767,110	17,433,588	-1.6
2001	2,128,591	2,162,204	3,825,218	3,910,797	11,749,814	12,126,135	17,797,313	-2.2
2002	2,182,074	2,228,396	3,859,059	3,976,996	11,954,146	12,480,647	18,127,131	-3.0
2003	2,236,712	2,298,858	3,892,986	4,051,212	12,121,566	12,835,745	18,430,872	-3.9
2004	2,298,042	2,379,208	3,935,103	4,141,758	12,239,118	13,178,368	18,709,092	-5.0
2005	2,363,127	2,466,329	3,978,194	4,240,955	12,319,603	13,518,091	18,963,523	-6.2
2006	2,431,209	2,559,053	4,019,316	4,344,820	12,367,142	13,853,083	19,192,964	-7.5
2007	2,499,390	2,653,904	4,053,264	4,446,679	12,391,904	14,185,945	19,397,491	-8.9
2008	2,571,530	2,754,126	4,087,465	4,552,384	12,402,051	14,516,853	19,594,459	-10.2
2009	2,650,577	2,862,134	4,125,581	4,664,243	12,396,076	14,837,195	19,787,090	-11.5
2010	2,736,277	2,977,240	4,167,731	4,781,276	12,373,991	15,141,414	19,973,804	-12.8
2011	2,827,235	3,097,726	4,212,106	4,900,840	12,340,512	15,430,427	20,155,152	-14.0
2012	2,921,752	3,221,665	4,257,213	5,020,869	12,307,125	15,713,640	20,338,954	-15.1
2013	3,018,388	3,347,484	4,301,252	5,139,218	12,276,051	15,992,473	20,524,060	-16.2
2014	3,115,985	3,473,962	4,343,401	5,254,915	12,249,849	16,269,587	20,711,151	-17.2
2015	3,214,624	3,601,201	4,384,128	5,368,471	12,221,538	16,538,634	20,893,995	-18.1
Source: ASSA 600, version: November 1999 and 1996 Population census, WEFA								

Labour supply will also be affected by the anticipated decline in labour productivity due to absenteeism especially once the patient is suffering from full-blown AIDS. We assume that full-blown AIDS spans the last two years of the HIV+ term.

Absenteeism drags down productivity

The proportion of a working year that is lost for a full-blown AIDS patient can range between 0-2 years, according to JT Cuddington (*Modelling the Macroeconomic Effects of AIDS, with an Application to Tanzania*; The World Bank Economic Review, vol.7, no.2). The reason for a proportion higher than 1 is that, in Cuddington's words, 'the loss may be not only in the AIDS victim's labour but also in the labour of others. For example, if a person who gets AIDS stops working immediately and that person's spouse must also stop working to provide full-time care, then the value could be 2'. However, these assumptions are drawn from experience in sub-Saharan Africa excluding South Africa in the early 1990s, where the medical care system may have been less sophisticated than is currently the case in South Africa. It thus seems reasonable to adopt a value lower than 1, such as 0.33, for our purposes. In other words, for every person with full-blown AIDS, four months of person-year equivalent labour supply will be lost. This set of assumptions generates the impact on labour supply (again weighted by skill) shown in Figure 11. The combined effect of the decline in labour supply due to AIDS deaths weighted by skills groups and to productivity losses is fed through to the production function in the WEFA macro model in order to forecast potential output.

Figure 11 LOSS OF LABOUR SUPPLY RESULTING FROM IMPACT OF AIDS ON LABOUR PRODUCTIVITY

	Full blown AIDS highly skilled	Full blown AIDS skilled	Full blown AIDS semi & unskilled	Weighted decline in labour units	AIDS scenario % difference compared to no-AIDS*
2000	13,554	35,941	165,218	57,454	-0.3
2001	17,648	47,058	218,064	75,542	-0.4
2002	22,192	59,509	277,030	95,727	-0.5
2003	26,946	72,652	337,980	116,723	-0.6
2004	31,558	85,495	395,818	136,845	-0.7
2005	35,669	97,007	445,668	154,433	-0.8
2006	38,998	106,352	484,044	168,250	-0.8
2007	41,421	113,169	509,528	177,779	-0.8
2008	43,002	117,604	522,721	183,245	-0.8
2009	43,886	120,048	525,758	185,343	-0.8
2010	44,228	120,949	521,468	184,950	-0.8
2011	44,182	120,760	512,806	182,968	-0.8
2012	43,889	119,890	502,165	180,154	-0.8
2013	43,468	118,688	491,279	177,086	-0.7
2014	43,037	117,480	481,248	174,196	-0.7
2015	42,605	116,273	471,217	171,306	-0.7

* % difference in levels between AIDS and no-AIDS scenario, and not YoY growth rate differences

Source: WEFA

REMUNERATION COST INCREASES

It is expected that employers will need to adjust their contribution to pension, life and medical benefits upwards on account of the AIDS epidemic. In addition there may be indirect cost increases to account for, such as recruitment, additional sickness and compassionate leave, as well as costs of ensuring occupational health and safety standards, loss of turnover and profits due to the impact of AIDS on clients. We calculate the overall change in costs to the employer stemming from higher benefit contributions and other indirect costs according to the economy-wide relative importance of wages as a production input for 45 sectors in the South African economy.

Companies face higher direct and indirect costs ...

As a starting point, we propose to consider work done by the Metropolitan Employee Benefits unit on the cost of AIDS to companies. Metropolitan noted that 'the cost of an average set of benefits is expected to double for many schemes by 2005 and triple by 2010'. Where employers have full responsibility for the provision of benefits, Metropolitan projects that this could add around 15% to the remuneration costs of an average manufacturing company by 2005 and about 30% by 2010. Indirect costs, Metropolitan estimates, could add a further 10% and 15% respectively. We assume that employers are responsible for carrying two-thirds of the wage cost increases while, employees carry one third.

1. Higher wage cost passed on to consumer via PPI

It is conceivable that employers will not be able to pass on the full wage cost increase to customers in the form of higher prices. If we take Metropolitan's assumption for 2005 as a starting point and assume that the proportion of wage cost increases that can be passed on is 50% across all economic activities in South Africa (not just manufacturing), then the initial wage cost increase is 12.5% for that year. A doubling of the 2005 benefits bill, as suggested by Metropolitan, would result in a 22.5% wage bill increase by 2010. We propose to apply linear interpolation between 2000 and 2005 and between 2005 and 2010 and we keep the increase beyond 2010 constant.

... which will feed through to higher prices ...

Moreover, we exclude unskilled labour from the wage cost calculations as it is less likely that this skill category is covered by these benefits and few indirect costs will be incurred. We estimate the cost impact across sectors with an input-output model and then weigh them according to aggregate sectoral intermediate sales to arrive at an approximation for the change in PPI. This latter PPI forecast will feed into the macroeconometric model.

The results of our cost simulation and the estimates effect on PPI are shown in Figure 12.

Figure 12		DIRECT IMPACT OF AIDS ON WAGE COSTS (%)			
	Average Increase in wage bill** (1999 prices)	Initial Increase in wage bill***	Employer passing on to customer†	Direct Impact on the economy- wide firm costs	Direct & Indirect impact on PPI*
2000		7.1	2.4	0.3	0.7
2001		10.7	3.6	0.5	1.1
2002		14.3	4.8	0.7	1.4
2003		17.9	6.0	0.8	1.8
2004		21.4	7.1	1.0	2.1
2005	25.0	25.0	8.3	1.2	2.5
2006		29.0	9.7	1.4	2.9
2007		33.0	11.0	1.6	3.3
2008		37.0	12.3	1.8	3.7
2009		41.0	13.7	1.9	4.1
2010	45.0	45.0	15.0	2.1	4.5
2011		45.0	15.0	2.1	4.5
2012		45.0	15.0	2.1	4.5
2013		45.0	15.0	2.1	4.5
2014		45.0	15.0	2.1	4.5
2015		45.0	15.0	2.1	4.5

* % difference in index levels between Aids and no-Aids scenario, and not YoY growth rate differences
 ** Metropolitan projection
 *** Skilled and highly skilled only due to AIDs
 † 50% of two thirds of the increase in the wage bill of skilled and highly skilled labour
 Source: WEFA

2. Higher wage cost financed from operating surplus

Since we assume that companies will only be able to pass on 50% of the wage cost increases to its customers, the remaining 50% can be assumed to be absorbed by the firm in the form of lower operating surpluses. The impact on gross operating surpluses is weighted by cost exposure across sectors, as in the previous section, and feeds directly into our macroeconomic framework as a reduction of overall gross operating surplus. The results are shown in Figure 13.

... or be absorbed by operating surpluses

Figure 13 DIRECT IMPACT OF AIDS ON OPERATING SURPLUS (%)				
	Average increase in wage bill (1999 prices)**	Initial increase in wage bill***	Employer absorbing internally†	Direct Impact on economy-wide gross operating surplus *
2000		7.1	2.4	-1.5
2001		10.7	3.6	-2.3
2002		14.3	4.8	-3.1
2003		17.9	6.0	-3.8
2004		21.4	7.1	-4.6
2005	25.0	25.0	8.3	-5.4
2006		29.0	9.7	-6.2
2007		33.0	11.0	-7.1
2008		37.0	12.3	-7.9
2009		41.0	13.7	-8.8
2010	45.0	45.0	15.0	-9.7
2011		45.0	15.0	-9.7
2012		45.0	15.0	-9.7
2013		45.0	15.0	-9.7
2014		45.0	15.0	-9.7
2015		45.0	15.0	-9.7

* Real % difference in levels between AIDs and no-AIDS scenario, and not YoY growth rate differences
** Metropolitan projection
*** Skilled and highly skilled only due to AIDs
† 50% of two thirds of the increase in the wage bill of skilled and highly skilled labour
Source: WEFA

DEMAND CHANGES AMONG HOUSEHOLDS

The AIDS epidemic affects household demand through three distinct channels:

1. lower wage income especially among the skilled and highly skilled who absorb some of the higher healthcare and other benefit schemes;
2. lower overall population numbers which affect the distribution of household income and thus demand;
3. the higher need for healthcare, which diverts fund away from other expenditure categories.

We model each of these effects separately and then aggregate the results.

1. AIDS costs absorbed by employee via lower wage income

We argued above that two thirds of the higher wage bill due to costs related to HIV/AIDS will be borne by the employer who either passes it on through higher prices or absorbs it from the operating surplus. The remaining third of the higher costs may well be borne by the employee (skilled and highly skilled) and translate into lower labour income for these skills groups across sectors. Column 1 in Figure 14 shows the drop in wage income for the skilled and highly skilled, who benefit from health and pension schemes, which could be expected to be as much as 15% by 2010. If translated into a change in wage income for the economy as a whole, the effect is obviously less dramatic. Nevertheless, wage income is still expected to be almost 6% lower than in the no-AIDS scenario by 2010.

Wage income is expected to fall ...

Figure 18

DIRECT IMPACT OF AIDS ON GOVERNMENT CURRENT EXPENDITURE

	Full blown AIDS total population (1)	Full blown AIDS highly skilled & skilled (2)	Full blown AIDS for which govt responsible (1-2)	Government health expenditure at R3,750 per patient per year (Rm)
2000	447,550	49,494	398,056	1,493
2001	569,686	64,706	504,980	1,894
2002	702,310	81,702	620,608	2,327
2003	837,075	99,598	737,477	2,766
2004	963,768	117,053	846,715	3,175
2005	1,072,597	132,676	939,921	3,525
2006	1,156,543	145,350	1,011,193	3,792
2007	1,212,802	154,589	1,058,212	3,968
2008	1,242,806	160,605	1,082,201	4,058
2009	1,251,038	163,934	1,087,104	4,077
2010	1,243,376	165,177	1,078,199	4,043
2011	1,225,693	164,941	1,060,751	3,978
2012	1,202,978	163,779	1,039,199	3,897
2013	1,179,002	162,156	1,016,846	3,813
2014	1,156,343	160,517	995,825	3,734
2015	1,133,683	158,878	974,805	3,656

Source: WEFA

There are several ways in which this expenditure can be financed.

- Expenditure switching within the health department or by sacrificing other current expenditure.
- Expenditure switching by forfeiting public sector capital expenditure.
- Higher budget deficit.

The first two options are difficult to model at the macro level. Unless a significant channel can be established that handles the long-term macroeconomic effect of lower current expenditure on, say, housing and education to off-set the higher expenditure on health on macro level productivity, the net macro effect is relatively small as it involves compositional changes. Similarly, forfeiting public sector capital expenditure has a long-term productivity effect, but this requires an independent modelling exercise that is based on a wide range of macroeconomic assumptions. At this stage the most practical approach is to ignore macro effects of expenditure switching and to focus on higher budget deficits as our baseline scenario. The higher health spending by the government is thus used as an assumption in the macro-modelling, which will then have economy-wide demand and crowding-out effects.

SUMMARY OF ASSUMPTIONS

The assumptions discussed above can be summarised in Figure 19 and are fed into the WEFA long term macroeconomic model.

Figure 19 SUMMARY OF MACROECONOMIC AIDS ASSUMPTIONS										
	%ch in demand for residential* (%)	%ch in demand for durables* (%)	%ch in demand for semi-durables* (%)	%ch in demand for non-durables* (%)	%ch in demand for services* (%)	%ch in savings* (%)	%ch in labour supply* (%)	%ch in PPI* (%)	%ch in GOS* # (%)	Abs ch in govt curr exp (Rm)
2000	-1.1	-1.3	-1.2	-0.9	0.6	-1.3	-1.8	0.7	-1.5	1,493
2001	-1.6	-2.0	-1.9	-1.3	1.0	-2.0	-2.5	1.1	-2.2	1,894
2002	-2.1	-2.6	-2.5	-1.8	1.2	-2.7	-3.4	1.4	-2.9	2,327
2003	-2.7	-3.3	-3.2	-2.4	1.5	-3.3	-4.6	1.8	-3.7	2,766
2004	-3.3	-3.9	-3.8	-3.0	1.9	-3.9	-6.1	2.1	-4.4	3,175
2005	-4.1	-4.6	-4.6	-3.8	2.3	-4.5	-7.7	2.5	-5.1	3,525
2006	-5.0	-5.3	-5.4	-4.6	2.7	-5.1	-9.6	2.9	-6.0	3,792
2007	-5.9	-6.1	-6.3	-5.6	3.1	-5.7	-11.6	3.3	-6.8	3,968
2008	-6.8	-6.8	-7.2	-6.5	3.5	-6.4	-13.7	3.7	-7.6	4,058
200	-7.5	-8.0	-8.9	-7.3	3.6	-7.9	-15.6	4.1	-8.4	4,077
2010	-8.1	-8.3	-8.9	-7.8	4.4	-7.8	-17.6	4.5	-9.2	4,043
2011	-8.3	-8.2	-9.0	-8.1	4.6	-7.5	-19.5	4.5	-9.2	3,978
2012	-8.5	-8.1	-9.1	-8.4	4.8	-7.3	-21.4	4.5	-9.2	3,897
2013	-8.7	-8.0	-9.1	-8.7	5.0	-7.0	-23.2	4.5	-9.2	3,813
2014	-8.9	-7.9	-9.2	-9.0	5.3	-6.7	-25.0	4.5	-9.2	3,734
2015	-9.1	-7.8	-9.3	-9.3	5.5	-6.5	-26.7	4.5	-9.2	3,656

* Real % difference in levels between AIDS and no-AIDS scenario, and not YoY growth rate differences
Gross operating surplus
Source: WEFA

In summary, compared with a no-AIDS scenario, an AIDS scenario will be characterised by a lower population and labour supply. This will have a negative effect on demand, although unemployment may also decline. The initial effect of lower demand in our assumptions is reflected in the lower expenditure on all categories other than services, which incorporates higher health spending.

THE METHODOLOGY AND THE MODEL USED

The net impact of the often counterbalancing effects of the AIDS epidemic were explored with WEFA's annual macroeconomic modelling framework.

Our first step was to create a no-AIDS reference scenario, which is characterised by higher population and a higher labour force. We used the ASSA model's demographic forecasts for population and labour force (see first sections of the report) and to add estimated AIDS deaths back into the population and labour force numbers and adjust for fertility and mortality changes.

The model itself was designed primarily for the purposes of long-term (up to 20 year) forecasts of the South African economy. A forecast of the level of economic activity as measured by gross domestic product (GDP) is driven by two basic components: the first is the rate of use of existing resources and technologies. This component is the focus of short-run macroeconomic fluctuations. Such projections primarily involve forecasting changes in the level of aggregate demand and the subsequent split between output changes and price changes given the current economic environment. The second component is the rate of expansion of the country's resource and technology base of the economy, which is the focus of long-run economic growth (aggregate supply) analysis.

WEFA's long-term macromodel is a blend of these two approaches. In the first few years of the outlook period, the results are dominated by aggregate demand projections, since both the resource and technology bases are relatively constant. The second part of the long-term forecast, which comprises the period 2002 to 2015, is dominated by supply factors such as population growth, labour force participation and productivity growth. Fiscal policy, monetary policy, regional trade and the projected degree of international economic integration are also incorporated into the long-term forecast.

There are two basic types of long-term scenarios: trend and cycle. The WEFA long-term forecast is a trend forecast. The principal characteristic of a trend scenario is the absence of any business cycle. It is not our belief that business cycles will never occur. Rather, the perspective is that business cycle turning points, far into the future, are virtually impossible to predict accurately. Historically, cycles have often been generated by random events, such as oil shocks, wars and natural disasters.

A trend scenario assumes that the real economy grows at historical averages in relation to population growth and other factors, as indicated previously. A trend forecast does not represent the economy as growing at a 'full employment' path, but rather as growing with a certain amount of slack. In a sense, the trend forecast represents the average growth of the economy over the business cycles. The advantage of a trend forecast is that it reflects supply factors. The reason a trend forecast is used in business planning is that it allows a business to comprehend how the evolution of the economy will affect it without the noise of the business cycle obscuring the fundamentals of growth.

The broad structure of the model may be described as that of a full supply-demand econometric model which is derived from economic theory on the one hand and will have the flexibility to incorporate short-run adjustments and technological constraints on the other. These supply elements consist of a measure of potential output which, in conjunction with the expenditure-determined total output, provides a measure of economy-wide capacity utilisation. The latter then serves as a variable supply constraint in the determination of imports, investment, prices and wages.

The model was estimated with Ordinary Least Squares (except for some equations where Cochrane-Orcutt adjustments were used), using annual data. The period of estimation varied between 1960 to 1998 depending on data availability and other concerns. The model consists of 90 equations, of which 23 are behavioural equations and 67 technical relations and identities. Some 49 variables are treated as assumptions.

The model consists of the following sectors:

1. The demand side

- private consumption expenditure
- investment (fixed and inventory)
- imports, exports and the balance of payments
- government sector

2. The supply side.

3. Employment, potential output and capacity utilisation.

4. Prices and wages.

5. Monetary sector.

RESULTS OF THE MACRO-MODELLING

With the assumptions and the modelling framework in place we can now turn our attention to the results. The results are summarised by means of deviations from the no-AIDS baseline.

Figure 20 THE IMPACT OF AIDS ON GDP AND COMPONENTS OF CONSUMPTION EXPENDITURE

	Real GDP*	Growth	Real household disposable inc*	Growth	Real % consumption expenditure*	Growth
	(%)	(% point diff)**	(%)	(% point diff)**	(%)	(% point diff)**
2000	0.7		-1.0		-0.6	
2001	-1.0	-0.3	-1.3	-0.4	-0.8	-0.3
2002	-1.2	-0.2	-1.7	-0.5	-1.2	-0.4
2003	-1.4	-0.2	-2.1	-0.4	-1.5	-0.3
2004	-1.6	-0.2	-2.4	-0.4	-1.9	-0.4
2005	-1.9	-0.3	-2.8	-0.4	-2.4	-0.5
2006-2010	-3.1	-0.4	-4.4	-0.6	-4.7	-0.8
2011-2015	-4.7	-0.3	-5.8	-0.2	-8.4	-0.8

* Real % difference between AIDS and no-AIDS scenarios, not YoY growth rate differences
 ** Difference between the YoY rates in the AIDS and no-AIDS scenario

Source: WEFA

Given the assumptions that we have outlined above, AIDS is expected to have a negative impact on GDP. In 2006-2010, constant price GDP in the AIDS scenario will be an annual average 3.1% lower than in the no-AIDS baseline; in 2011-15, it is expected to be 4.7% lower on an annual average basis. In constant 1995 terms, GDP would be R12.5bn below its no-AIDS level by 2005 and R41bn by 2015. GDP growth rates are expected to be 0.4 percentage points lower in 2006-10 and 0.3 percentage points in 2011-15. This is mainly the result of the lower household income assumption, which translates into lower disposable incomes and lower consumption expenditure, as can be seen in the remaining columns of Figure 20. In constant 1995 rand terms, this would also mean that real disposable income would be R20bn lower by 2005 and R40bn lower by 2015 than in the no-AIDS scenario. The higher anticipated demand for health services is insufficient to pull consumption growth back into the positive category – but at least it helps to dampen the negative effect. It is important to note that, on average over the period, the decline in consumption expenditure is less than the decline in disposable income, so that household savings will be declining in the AIDS scenario.

GDP and growth will be lower due to lower consumption ...

Capacity utilisation is helped by the lower labour supply and labour productivity. This reduces the gap between potential and actual output and induces firms to invest more in capital. As a result, total fixed investment in constant rand terms and its YoY real growth relative to the no-AIDS baseline is only marginally affected, as the drop in demand for residential buildings that we assume following the income and expenditure analysis is counterbalanced by the switching of some firms to more capital intensive production methods. In fact, as can be seen in Figure 21, column 5, GDFI can even be expected to increase as a percentage of GDP.

... while investment holds up fairly well

Figure 21 THE IMPACT OF AIDS ON SELECTED INVESTMENT DEMAND COMPONENTS OF GDP

	Real fixed inv: residential* (%)	Growth (% point diff)**	GDP* (%)	Growth (% point diff)**	GDP/GDP (% point diff)**	Capacity utilisation (% point diff)**	Inventories (diff in levels) (Rm)
2000	-1.1		-1.3		-0.2	-0.1	-2,245
2001	-1.5	-0.4	-1.4	-0.1	-0.1	-0.2	-130
2002	-2.2	-0.7	-1.3	0.1	-0.1	-0.1	-698
2003	-2.6	-0.4	-1.1	0.2	0.0	-0.1	-935
2004	-3.3	-0.7	-1.0	0.2	0.0	0.0	-852
2005	-4.1	-0.8	-0.9	0.1	0.1	0.1	-1,116
2006-2010	-6.6	-0.9	-1.2	-0.1	0.3	0.0	-4,014
2011-2015	-8.7	-0.2	-1.1	0.0	0.7	0.0	-4,676

* Real % difference between AIDS and no-AIDS scenario, not YoY growth rate differences
 ** Difference between the YoY rates in the AIDS and no-AIDS scenario

Source: WEFA

The decline in the demand for labour, is expected to be faster than the slowdown in GDP. However, with the supply of labour falling even more, the unemployment rate is set to decline marginally in the AIDS scenario.

Government current expenditure in constant rand prices as well as in terms of YoY growth is expected to drop less than GDP because of the additional expenditure on health and related services which is set to rise with more AIDS patients. However, government current revenue will decline with economic activity. Consequently, AIDS will create pressure on the budget deficit on two fronts: higher health expenditure and lower revenues which is not counterbalanced sufficiently by expenditure declines linked to lower economic activity. We have here assumed a flexible budget deficit. If we were to assume stringent fiscal discipline in line with the medium-term budget framework, government expenditure would have to decline more or less in line with government revenue, which will cause GDP to decline even more than is forecast in our baseline case. This, in turn, would cause government revenue to decline further, dragging down GDP with it – a process that can be referred to as the pro-cyclical effects of fiscal discipline. The flexible budget deficit, which we assume in our baseline case, prevents this downward spiral, at the expense of a higher public sector borrowing requirement (about 1% higher as a percentage of GDP than the no-AIDS scenario) and lower government savings (see Figure 22).

The fiscal deficit deteriorates not only due to higher expenditure but also lower revenue

Figure 22 THE IMPACT OF AIDS ON GOVERNMENT FINANCES

	Government consump expen* (%)	Growth (% point diff)**	Government revenue* (%)	Growth (% point diff)**	Public sector deficit/GDP (% point diff)**
2000	-1.3		-0.7		-0.2
2001	-1.2	0.1	-0.8	-0.2	-0.3
2002	-1.2	0.1	-0.9	-0.3	-0.3
2003	-1.1	0.1	-1.2	-0.2	-0.4
2004	-1.0	0.1	-1.4	-0.2	-0.5
2005	-1.0	0.1	-1.6	-0.2	-0.6
2006-2010	-1.1	-0.1	-2.6	-0.4	-0.8
2011-2015	-2.0	-0.2	-4.1	-0.2	-0.9

* Real % difference between AIDS and no-AIDS scenario, not YoY growth rate differences
 ** Difference between the YoY rates in the AIDS and no-AIDS scenario

Source: WEFA

As described above, the AIDS epidemic will result in lower disposable incomes that are not matched fully by lower consumption expenditure. This will have a negative effect on household savings, as presented in the table below. Public sector savings will also be adversely affected by the higher public sector borrowing requirement. Furthermore, corporate savings will suffer as some of the higher wage bill faced by employers will be financed out of the operating surplus and savings. Total domestic savings as a percentage of GDP is thus forecast to be on average about 2 percentage points lower than in a no-AIDS scenario. This means that South Africa's savings rate is unlikely to top the 20% of GDP level required to accelerate trend growth. This highlights an important potential problem area for the South African economy: as domestic savings are already low and presenting a real capital constraint to the economy, any further deterioration in the formation of savings will lower the country's investment potential.

*Domestic savings
will suffer across the
board ...*

In our analysis, some of the decline in savings (in constant rand terms) will be matched by lower real investment. The switching of companies away from labour towards more capital-intensive means of production will be more than compensated by a reduction in demand for residential buildings, leaving overall investment lower. Nevertheless, the remainder of the fall in savings will have to be made up by foreign savings – most likely in the form of foreign loans and a widening current account deficit. If foreign funding is unavailable, however, to plug the savings-investment gap, the higher investment demand will translate into heightened upward pressure on interest rates, further slowing the economy.

*... and will need to
be made up by
foreign savings -*

Figure 23 THE IMPACT OF AIDS ON COMPONENTS OF DOMESTIC SAVINGS						
	Private* (%)	Public* (%)	Corporate* (%)	Total domestic savings* (% point diff)**	GDS/GDP (%)	Total savings = Investment (%)
2000	-7.4	-5.8	-27.8	-10.4	-1.4	-3.7
2001	-16.1	-9.2	-17.7	-10.4	-1.5	-1.4
2002	-33.3	-11.1	-3.7	-7.7	-1.1	-1.7
2003	-31.7	-13.7	-4.6	-9.9	-1.3	-1.7
2004	-32.4	-16.5	-2.7	-11.1	-1.5	-1.5
2005	-30.6	-19.1	-1.7	-12.2	-1.7	-1.5
2006-2010	-32.9	-23.2	-2.9	-14.8	-2.1	-2.3
2011-2015	-23.6	-22.7	-7.1	-15.0	-2.2	-1.9

* Real % difference between AIDS and no-AIDS scenario, not YoY growth rate differences
 ** Difference between the YoY rates in the AIDS and no-AIDS scenario
 Source: WEFA

Following on from the need for foreign savings in the form of foreign currency loans, resultant higher net factor payments will lead to a widening current account deficit. This is despite an expected improvement in the trade balance. With lower domestic activity, producers are diverted to international markets, while imports will decline on account of lower domestic demand. On average over our forecast horizon, the current-account deficit as percentage of GDP would be about 2 percentage points higher than in a no-AIDS case. This would push the overall current-account deficit closer to 3% of GDP – a less comfortable deficit level than the present 1-1.5%.

*... which will lead to
a higher current-
account deficit*

Figure 24 THE IMPACT OF AIDS ON SELECTED TRADE AND THE CURRENT ACCOUNT

	Exports*	Growth	Imports*	Growth	Current account/ GDP
	(%)	(% point diff)**	(%)	(% point diff)**	(% point diff)**
2000	0.1		-0.4		-1.4
2001	0.2	0.1	0.0	0.4	-1.0
2002	0.2	0.1	-0.1	-0.2	-1.2
2003	0.3	0.1	0.1	0.2	-1.4
2004	0.4	0.1	0.1	0.0	-1.7
2005	0.4	0.1	0.0	-0.1	-1.7
2006-2010	0.6	0.1	-1.1	-0.3	-2.4
2011-2015	0.8	0.0	-3.1	-0.5	-2.4

* Real % difference between AIDS and no-AIDS scenario, not YoY growth rate differences

** Difference between the YoY rates in the AIDS and no-AIDS scenario

Source: WEFA

The upward pressures on the PPI are largely responsible for an anticipated increase in the overall CPI inflation rate by an annual average 0.4 percentage points in 2006-2010 compared to the no-AIDS baseline. The overall effect on the CPI has been muted by the slowdown in domestic demand. Nevertheless, given the policy focus on inflation targeting, the higher CPI will translate into some upward pressure on interest rates. We would expect the prime lending rate to be less than 0.5 percentage points higher per year. But this slightly higher interest rate outlook is also one of the reasons why investment is slowing.

A higher CPI will put some pressure on interest rates and the exchange rate

The higher CPI profile will also have some negative repercussions for the nominal exchange rate. If we assume the real effective exchange rate constant throughout the period of observation, we would expect the nominal trade weighted rand exchange rate to depreciate pretty much in line with inflation differentials.

Figure 25 THE IMPACT OF AIDS ON SELECTED FINANCIAL VARIABLES AND EMPLOYMENT

	CPI*	Inflation rate	Prime Interest rate	Trade weighted nominal exchange rate*	Employment*	Unemployment rate
	(%)	(% point diff)**	(% point diff)**	(%)	(%)	(% point diff)**
2000	0.4		-0.2	-0.4	-1.1	-0.2
2001	0.7	0.7	0.0	-0.7	-1.5	-0.3
2002	1.3	0.2	0.0	-1.3	-2.1	-0.3
2003	1.4	0.4	0.0	-1.4	-2.8	-0.4
2004	1.9	0.3	0.1	-1.8	-3.7	-0.5
2005	2.2	0.4	0.2	-2.1	-4.7	-0.6
2006-2010	3.2	0.4	0.3	-3.0	-8.3	-0.9
2011-2015	4.3	-0.1	0.6	-3.9	-14.1	-1.2

* Real % difference between AIDS and no-AIDS scenario, not YoY growth rate differences

** Difference between the YoY rates in the AIDS and no-AIDS scenario

Source: WEFA

SECTORAL RISK EXPOSURE

Given the absence of any requirement of disclosure, very little actual information is available dealing with company or sectoral infection profiles and response strategies. From our analysis, however, we can identify two key areas of risk to sectors due to AIDS:

1. An exposure of sectors to infection risk
2. An exposure of sectors to higher skills groups and thus higher costs associated with AIDS

We propose to combine the two issues into a sector risk ranking. First, we calculated sectoral infection rates and ranked these. Secondly, we compiled the percentage of the total wage bill of highly skilled and skilled workers, and ranked those. We applied a weighting of the ranks of 60% for the exposure to infections and 40% for the exposure to remuneration for the higher skilled. The final ranking gives us a sectoral rating that reflects the relative risk exposure to the AIDS epidemic.

We compiled a sectoral risk ranking

SECTORAL INFECTION RATES

From our demographic modelling, we were able to overlay our forecasts of population and age groups as well as skill levels on sectoral data from the population census to arrive at infection rates and AIDS death variables for selected sectors in the South African economy. It is important to bear in mind that the calculation of sectoral infection and death rates is a very mechanical process and should be viewed as a framework for assessing relative rather than absolute sectoral risk exposure to the AIDS epidemic.

Infection risk is one factor

No special assumptions have been made to adjust the risk profile of any population group, skill group or sector. For example, mineworkers have not been assigned a higher HIV+ infection rate because they may or may not be more exposed to the 'PRO' group as noted in Figure 3. Similarly, no special assumptions have been made in respect of transport or health workers.

Figure 26 HIV+ PER 100 WORKERS				
	2000	2005	2010	2015
Agriculture, forestry and fishing	17.3	23.2	23.2	21.8
Mining	24.1	29.3	26.4	24.4
Consumer manufacturing	17.3	23.0	22.9	21.3
Forestry products	15.2	20.2	19.8	18.6
Chemicals	16.6	21.6	20.7	19.3
Metals	15.0	19.9	19.3	17.8
Machinery	15.9	21.2	20.8	19.5
Construction	18.2	23.9	23.4	22.1
Retail	16.2	21.3	20.7	19.3
Catering and accommodation	17.9	23.0	22.2	20.8
Transport and storage	18.5	23.5	22.0	20.2
Communication	12.1	16.5	16.3	15.3
Finance and insurance	8.9	12.4	12.5	11.7
Business services	11.9	15.6	15.1	14.3
Health	14.9	20.0	19.0	16.6
General government	17.2	24.5	26.0	26.1

Source: WEFA

Figure 27

AIDS DEATHS PER 100 WORKERS

	2000	2005	2010	2015
Agriculture, forestry and fishing	0.6	1.7	2.4	2.2
Mining	0.8	2.5	3.0	2.7
Consumer manufacturing	0.6	1.8	2.5	2.4
Forestry products	0.5	1.6	2.1	2.0
Chemicals	0.6	1.8	2.4	2.2
Metals	0.5	1.6	2.1	2.0
Machinery	0.5	1.6	2.1	1.9
Construction	0.5	1.7	2.2	2.1
Retail	0.6	1.8	2.3	2.1
Catering and accommodation	0.6	2.0	2.5	2.3
Transport and storage	0.4	1.3	1.7	1.7
Communication	0.3	0.9	1.2	1.2
Finance and insurance	0.4	1.1	1.5	1.4
Business services	0.6	1.9	2.5	2.2
Health	0.4	1.3	1.7	1.6
General government	0.4	1.0	1.4	1.4

Source: WEFA

Figure 28

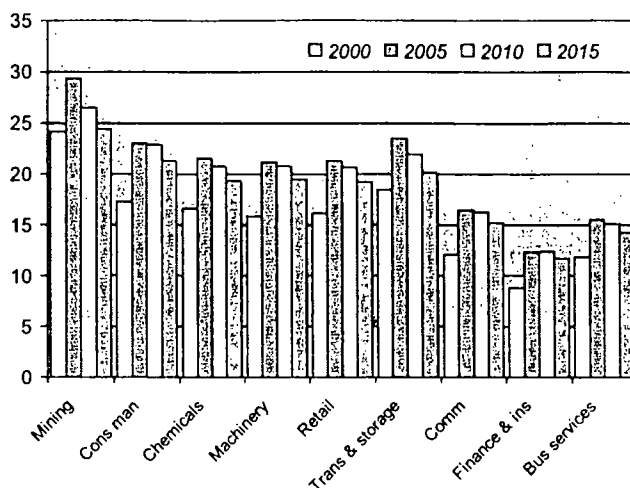
AIDS DEATHS PER 100 NORMAL DEATHS

	2000	2005	2010	2015
Agriculture, forestry and fishing	103.9	342.4	489.0	503.9
Mining	174.7	560.3	741.2	759.2
Consumer manufacturing	164.9	545.2	804.3	867.2
Forestry products	125.5	415.5	596.0	636.6
Chemicals	130.6	432.9	605.9	632.5
Metals	123.5	417.6	612.2	658.4
Machinery	116.6	389.2	542.3	563.6
Construction	142.7	470.5	662.7	694.6
Retail	188.9	605.6	836.2	876.4
Catering and accommodation	128.5	424.4	584.8	601.9
Transport and storage	117.4	403.5	598.8	652.6
Communication	93.8	322.8	484.0	528.4
Finance and insurance	99.4	324.4	454.3	479.6
Business services	162.8	557.5	784.6	788.8
Health	96.1	323.5	457.5	471.9
General government	74.3	191.0	239.1	229.1

Source: WEFA

Figure 29

HIV+ PER 100 WORKERS FOR SELECTED SECTORS AND YEARS



Source: WEFA

The figures above highlight the risk exposure of the mining sector, where infections peak at above 29% and deaths at 3 out of 100 workers. The reason is that mine workers are mainly black, male and generally fall into those age groups that are relatively more at risk. The possibility that mine workers are more in contact with high risk groups such as PRO is not accounted for at this stage. As a result, the actual infection rates in the mining sector are likely to be even higher.

The mining sector is followed closely by the general government sector, where infections peak at over 26%. Agriculture, manufacturing, machinery, construction, retail, catering and accommodation and transport and storage are all expected to record infection rate peaks above 20%. However, even sectors such as finance and insurance or business services, which draw on a high proportion of skilled and highly skilled employees, are still expected to face infection rates in excess of 10%. The ranking of sectors by infection rate is given below.

Figure 30

HIV+ PER 100 WORKERS

	2000	Rank
Finance and insurance	8.9	1
Business services	11.9	2
Communication	12.1	3
Health	14.9	4
Metals	15.0	5
Forestry products	15.2	6
Machinery	15.9	7
Retail	16.2	8
Chemicals	16.6	9
General government	17.2	10
Consumer manufacturing	17.3	11
Agriculture, forestry and fishing	17.3	12
Catering and accommodation	17.9	13
Construction	18.2	14
Transport and storage	18.5	15
Mining	24.1	16

Source: WEFA

SECTORAL REMUNERATION COSTS

If we look at the composition of sectoral wage bills, we find, not surprisingly, that service industries, such as finance and business services, are the most skills-intensive, while mining and manufacturing feature at the opposite end of the spectrum.

Potential wage costs are another consideration

Figure 31 % OF SKILLED & HIGHLY SKILLED OF WAGE BILL		
	1997	Rank
Agriculture, forestry and fishing	15.2	1
Mining	34.5	2
Construction	36.5	3
Consumer manufacturing	42.9	4
Metals	50.7	5
Machinery	56.2	6
Chemicals	65.7	7
Forestry products	65.8	8
Transport and storage	78.1	9
Retail	81.7	10
Communication	85.9	11
Catering and accommodation	88.8	12
General government	91.1	13
Health	97.2	14
Business services	98.2	15
Finance and insurance	98.8	16

Source: WEFA; OHS 1995, Population Census 1996

COMPOSITE SECTOR RISK RANKING

If we combine the two rankings with a 60:40 weighting, we find that the transport and storage industry, as well as the catering and accommodation sector, are most exposed to the AIDS risk. Not only are these sectors' infection rates high, they are also more reliant on a skilled workforce than mining or agriculture, say, whose infection rates are also very high. Finance and insurance and business services, which face the lowest infection risk, feature in the middle field in the composite ranking, as their high dependence on skills is likely to lead to higher remuneration costs in the form of rising benefit and retraining payments. While this ranking should provide a useful reference framework for relative sector risk exposure, it is important to emphasise that no sector can afford to be complacent in light of the AIDS epidemic. The effect will be felt across all sectors – just to varying degrees.

Transport, catering and accommodation are most exposed to AIDS risk

SUMMARY AND CONCLUSION

The AIDS epidemic is expected to lead to a stagnation in population growth within the next 10 years. Infection rates are expected to peak at almost 17% for the population as a whole and at a massive 26% for the economically active population. That means South Africa's workforce is disproportionately affected by the epidemic. With an official unemployment rate in excess of 30%, South Africa faces a labour surplus situation, which should mean that every person dying from AIDS-related illnesses should be replaced without much problem, leaving the production process and total income intact. However, the reality is not quite as straightforward. Most of the unemployed are unskilled or only semi-skilled. While most of the infections and deaths occur in this segment of the workforce, skilled and highly skilled groups are expected to be notably affected as well, with infection rates peaking at well above 20% and 10% respectively. The epidemic will thus exacerbate the existing skills shortage within the economy.

The AIDS epidemic will exacerbate South Africa's skills shortage

The cost of the epidemic will be borne by companies, households and government:

- The costs to companies will be significant, as higher health and other insurance benefits as well as higher training and replacement costs will add to the remuneration bill. Some of these higher costs will be passed on to consumers in the form of higher PPI inflation. But given the limited pricing power of companies, some of the higher costs will be absorbed by operating profits and come out of company savings.
- Household incomes will also be affected by higher health and insurance costs which are likely to result in lower take-home pay. This is in addition to the effect of a lower number of people in employment. The net effect is negative for disposable income, consumption demand and savings.
- Government will have to finance the health costs not covered by the private medical insurances. Unless current expenditure is switched from other categories to health spending or capital spending is cut, the higher health spending will add to the fiscal deficit, the public sector borrowing requirement and exacerbate government dissavings.

The net effect of the AIDS epidemic will be negative for growth. In our analysis, where we employed very conservative assumptions about costs to companies and government as well as the drop in household income, we found that the average annual trend rate of GDP growth over the next 15 years is likely to be 0.3-0.4 percentage points below the rate in a no-AIDS scenario.

The net effect will be negative for growth

There are some vicious cycles at work when analysing the economic effects of the AIDS epidemic: The most important is related to the savings constraint. The costs of the disease will almost certainly drain household, corporate and government savings. This will exacerbate the country's savings-investment constraint. Even if companies decided to invest further in technology and reduce their dependence on labour, the reduction in their operating profits as well as savings will leave them with much less room to manoeuvre.

One possibility is to draw in foreign savings to plug the savings-investment gap. However, a heightened perception of country risk associated with the AIDS epidemic is unlikely to encourage the inflow of foreign capital. The majority of capital inflows would thus have to be in the form of foreign loans. These would not only push up the country's foreign debt exposure, but also lead to a notable widening in the current-account deficit due to associated higher outflows of net factor payments. In the absence of foreign savings, the domestic savings-investment imbalance would force interest rates notably higher, further slowing economic growth and reining back investment demand.

The savings constraint will worsen ...

Another possibility is for the government to stick to its tight fiscal deficit targets and reduce expenditure in line with the lower revenue generated due to lower economic activity.

However, this in itself would set off a vicious spiral, as lower expenditure would exacerbate the fall in domestic demand and GDP, leading to even lower revenue generation, forcing the government to spend even less, etc.

The savings-investment imbalance could thus exacerbate the outlook for the South African economy under the AIDS scenario.

Even in our baseline case, the likely worsening of the country's growth, inflation and interest rate outlook will adversely affect the country's investment profile and hamper equity and bond market performance. Investors will start to look more carefully at sectoral exposure to the AIDS risk. As a result, we will probably face mounting claims for a disclosure of company infection profiles and coping strategies. While this area is clearly very sensitive, any improvement in information provision would advance the quality of analysis of the epidemic and thus help policy formulation and implementation.

... dampening the outlook for the markets

In the absence of reliable data and information, we propose to look at risk exposure of sectors in terms of two factors – firstly, their reliance on a workforce that has a high infection risk and, secondly, their reliance on skilled workers, the replacement of whom in case of illness and death is much higher than of the unskilled. If we aggregate those two factors, we find that transport and storage and catering and accommodation are the most exposed to the AIDS risk, while machinery, communication and metals fare relatively better. An important finding is, however, that service industries, such as finance and business services, rank in the middle field, as their reliance on skilled personnel makes them more vulnerable to a rising remuneration bill. Overall, no company can ignore the potential impact of the AIDS epidemic. Company management does have choices that will influence the future impact of the epidemic – as does government.

Sector risk assessments will become important

So far, no clear strategies have been forthcoming from either; but they are urgently needed in order to mitigate the destructive effect of the epidemic on all parts of the economy and society.

- The government needs to formulate a clear AIDS strategy that will allow domestic institutions and international development agencies to channel funds into the fight of the epidemic in South Africa. An explicit strategy would also ideally provide the public with more up-to-date and complete data on the spreading of the epidemic and allow better prognosis and response strategy from the private sector. Information creates a better understanding of the epidemic. In the absence of it, foreign investors, in particular, will remain deterred by the uncertainty surrounding the effects of the disease on the economy.
- The government should also move faster to dismantle structural obstacles to foreign investment in order to avoid a worsening of the savings-investment constraints.
- The government also has choices regarding the provision of AIDS drugs, especially to pregnant mothers in order to reduce the risk of mother-to-child transmission.
- At public as well as private sector level, the focus needs to be on education, increased access to condoms and the treatment of sexually transmitted diseases.

But most importantly, a clear AIDS strategy from the government is needed

Given the abundance of policy choices and the limited availability of data, modelling the effect of AIDS on the macroeconomy remains a moving target. However, we believe that, given the limitations of data availability, we have modelled a realistic scenario. Furthermore, we have established a framework of analysis that allows us to incorporate changes to the demographic outlook, government policy, household expenditure patterns as well as company responses in the future.

INTRODUCTION

This perspective does not set out to offer a complete analysis of equity investment over the period analysed for the economic impact of HIV/AIDS in the accompanying report. Rather, it hopes to remind readers of where the various equity sectors lie in terms of size and earnings momentum and, most importantly, to sensitize readers to the external and internal impacts which HIV/AIDS can be expected to bring about on the profit and valuation drivers.

To this end, we have taken the outputs from the AIDS analysis regarding sectoral impacts, and used these as inputs to make subjective calls on the internal and external impacts. This required adjustment for the sectors' operating positioning and their relative market positioning: this not only takes into account the high or low infection strata of the SA market itself, but also to what extent a company might have exposure to low-HIV foreign markets.

The top-down nature of both the HIV/AIDS analysis and this equity perspective hopefully flag sectors and companies which require further micro-analysis.

SA MACRO ENVIRONMENT

Equities appear on the surface to offer a good value proposition now, with SA in an economic upswing. Real GDP growth, which bottomed at 0.6% in 1998, is now accelerating through 1.2% in 1999 to 3.3% for 2000. Consumption is in the vanguard, with real retail sales growth set to rise to 5% in 2000 from 1% in 1999, and the broader real PCE growth to rise to 3.5% (from 0.7%). The upswing will see a strong increase in growth of imports (to +6% from -7%), but the economy is sufficiently robust to afford this, with the current account deficit rising to R11bn (1.2% of GDP) in 2000, but then stabilising at around 1% of GDP thanks to improving terms of trade. The vigorous growth in the economy is unlikely to translate into inflationary pressure as capacity utilisation and industry pricing pressure are low – we anticipate core inflation at around 6% next year. In spite of this, interest rates are unlikely to come down from current levels as formal, tight inflation targets have been introduced.

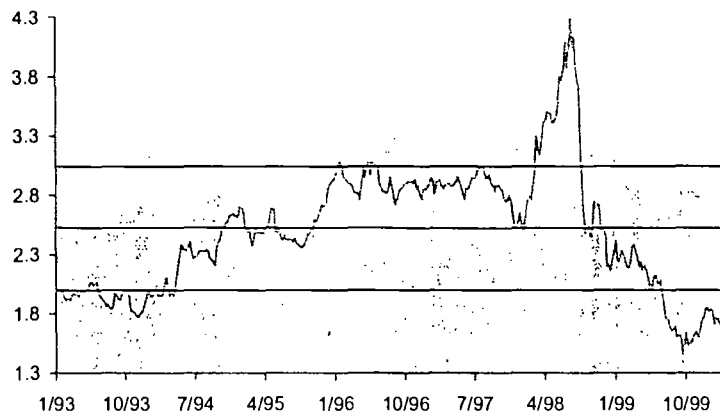
This is the one- to two-year view, however, and the broad investment negative for SA of the HIV/AIDS pandemic leads to a far less bullish investment view over a 5-15 year timeframe. We believe that AIDS will almost neutralise the birth-rate-driven population increase of 2% which would otherwise prevail in SA, and have a corresponding dampening effect on the economy – especially on the sectors exposed to domestic consumption. Many SA businesses also trade in the adjoining sub-Saharan region of Africa and this region carries some two thirds of the world's HIV infected people. The recent past has seen high margin add-ons to SA companies in the retail, beverage and food sectors and this sweetener to earnings faces clear pressure from HIV.

SA EQUITY MARKET LEVELS

In the SA framework (ie, relative to the SA interest market), the JSE looks 'cheap' again after its recent pullback, with the FINDI index at a yield relative of 1.64x, and with stronger near-term economic and corporate earnings backdrops.

Figure 33

YIELD RELATIVE – 3 MONTH NCD TO JSE FINDI



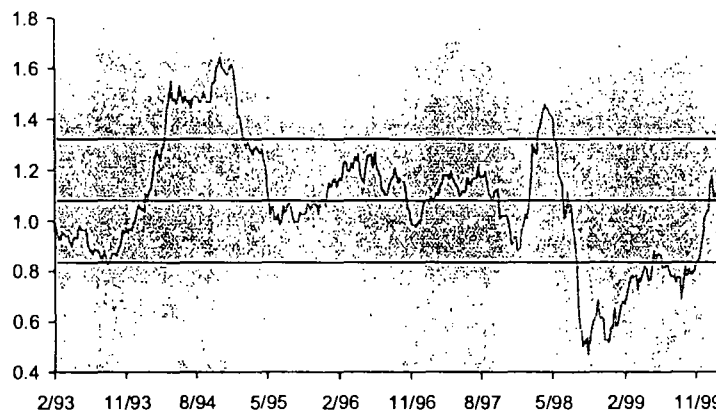
Mean = 2.43. Std Dev = 0.53

Source: I-Net

From a US perspective, however, we note a totally different picture relative to US treasuries, Figure 34.

Figure 34

YIELD RELATIVE – US 10YR BONDS TO JSE FINDI



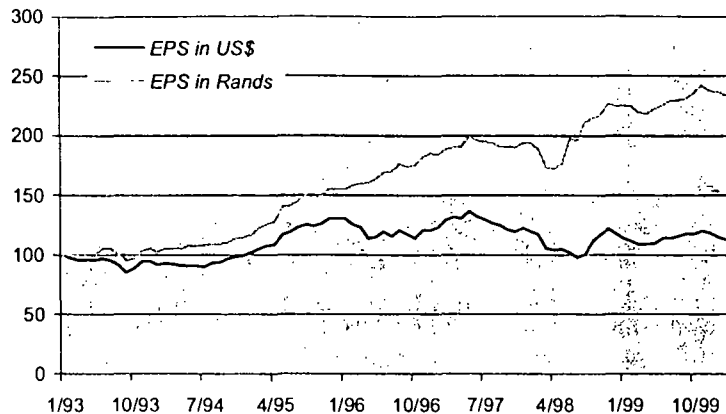
Mean = 1.07. Std Dev = 0.25

Source: I-Net

Here we see a yield relative of 1.0x – but equities should cost more because of the growth. Establishing the growth (in US\$ terms), which our equities have actually delivered (the black line in Figure 35), shows a very modest increase – up only 12% in the eight years plotted.

Figure 35

EARNINGS GROWTH



Source: I-Net

Figure 35 clearly shows the dull dollar growth, with the R/\$ cracks in 1996, and 1997/98 lowering the end growth and adding volatility – both reasons not to overpay for the JSE's equity performance. The negative impact on the economy from AIDS reinforces the cautious stance.

SECTOR DYNAMICS UNDER THE AIDS SCENARIO

SA's equity market has a high commodity weighting, with a third of the market capitalisation being resource-based companies. In the nature of commodity businesses (ie, price takers) many of the relevant share prices have been at historically high levels in 1999/2000, anticipating strong demand for these resources from the (consensus forecast) global economic upswing. The market is now trying to establish the duration rather than the fact of the world growth upcycle, before these stocks revisit their highs. Labour use in these businesses is intensive, but predominantly un- and semi-skilled. The capital intensity of mineshafts, refining plants, and process plants is obviously not itself vulnerable to AIDS, and the high availability of unskilled labour in the region also shields these businesses. From a demand perspective, these export-driven businesses have a further shield from the domestic economic impact of AIDS in the form of demand from HIV-remote economies.

The larger proportion of the SA equity market is the FINDI (or Financial and Industrial) universe, however. Internal performance is more important for these companies which are less exposed to external price determination, so our key investment screens are volume growth, pricing power (ie, segment leadership), and cost control. Achieved together, these three would certainly flag out-performance. Our categorisation of the FINDI sub-sectors according to their longer term potential is shown below. We have also shown the expected impact of (or vulnerability to) HIV/AIDS in terms of internal company risk and external customer or market risk. High impact indicates a negative view on the investment case for that sector.

Figure 36 KEY INVESTMENT SCREENS					
Sun-sector	Volume growth	Pricing power	Cost control	HIV/A impact - Internal	Relative HIV/AIDS impact - customers
Banks	Medium	High	High	Medium	High
Insurance	Medium	Medium	High	Medium	Medium
Fin. Services	Low (med nearterm)	Low	Low	Medium	Low
Food/Pckg.	Low	Low	Medium	Medium	High
Beverage	Low	High	High	Medium	Medium
Hotel&Leisure	High	Low	Medium	High	Medium
Retail	Medium	Low	Medium	High	High
Tobacco	High	High	High	Medium	Low
Transport	Medium	Medium	High	High	Medium
Services	High	Medium	Medium	Medium	Medium
Info Tech	High	High	Medium	Low	Low
Telecom	High	High	High	Low	High

Source: ING Barings

The bottom-up earnings growth, which we forecast by FINDI sector for the next two years, is set out in Figure 37, together with expected longer term growth. The magnitude of sectoral AIDS impact, which we believe should be brought into investment thinking is shown in the last column.

Figure 37 SECTORAL PERFORMANCE FORECASTS AND AIDS RISK SCREEN				
Sector	Market cap (Rm)	%CAGR in EPS (now - 2 yrs out)	% CAGR in EPS (long term)	HIV/AIDS impact on long term rating
Banks	183,971	23.7	18	High
Insurance	116,034	22.7	19	Medium
Fin services	36,400	26.1	17	Medium
Ind resources	44,180	18.3	12	Low
Food/pckg	38,435	16.2	13	High
Bev/hotel leisure	50,363	9.5	13	High
Retail	44,519	20.7	13	High
Divers ind	148,811	15.4	16	Medium
Info tech	95,925	38.6	30	Low
Telecom	42,073	32.0	25	Medium
Mining resources	346,876	19.7	14	Low

Source: ING Barings

Stuart Thompson

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LONDON

ING Barings Limited
60 London Wall,
London EC2M 5TQ, UK
Tel: 44 20 7767 1000
Fax: 44 20 7767 7777
Tlx: 8956217 ingb g
Regulated by The Securities and
Futures Authority Limited.
Member of the London Stock Exchange.
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Company Number 3021508

HONG KONG

ING Baring Securities (Hong Kong) Limited
39/F One International Finance Centre,
1 Harbour View Street, Central,
Hong Kong
Tel: 852 2848 8488
Fax: 852 2868 5192
Tlx: 89271 BFES HX
Member of the Stock Exchange of
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NEW YORK

ING Barings LLC
55 East 52nd Street,
New York, NY 10055, USA
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Fax: 1 212 409 1020
Tlx: 424871 BSI UI
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CARACAS	<i>Venezuela</i> Tel: 58 2263 8233 Fax: 58 2263 2266	MOSCOW	<i>Russia</i> Tel: 7095 755 5400 Fax: 7095 755 5499	SOFIA	<i>Bulgaria</i> Tel: 359 2 980 8466 Fax: 359 2 981 5323
FRANKFURT	<i>Germany</i> Tel: 49 69 7190 4146 Fax: 49 69 7190 4161	MUMBAI	<i>India</i> Tel: 91 22 282 6566 Fax: 91 22 204 6134	TAIPEI	<i>Taiwan</i> Tel: 886 2 2734 7500 Fax: 886 2 8772 1500
GENEVA	<i>Switzerland</i> Tel: 41 22 818 77 77 Fax: 41 22 818 76 76	OSAKA	<i>Japan</i> Tel: 816 208 6400 Fax: 816 208 6421	TOKYO	<i>Japan</i> Tel: 813 5210 1500 Fax: 813 5210 1555
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6

Divider Title: _____

The Health and Wealth of Nations

David E. Bloom* and David Canning

The positive correlation between health and income per capita is one of the best-known relations in international development (see figure). This correlation is commonly thought to reflect a causal link running from income to health. Higher income gives greater command over many of the goods and services that promote health, such as better nutrition and access to safe water, sanitation, and good quality health services.

Recently, however, another intriguing possibility has emerged: that the health-income correlation is partly explained by a causal link running the other way—from health to income. Several mechanisms, falling into four main categories, could account for this relation:

Productivity. Healthier populations tend to have higher labor productivity, because their workers are physically more energetic and mentally more robust. They suffer fewer lost workdays from illness or the need to care for other family members who have fallen ill.

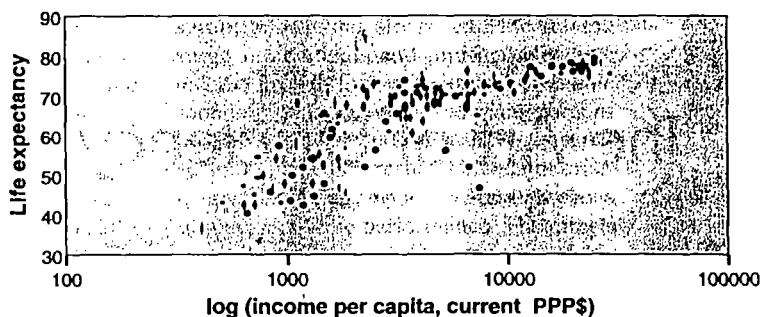
Education. Healthier people who live longer have stronger incentives to invest in developing their skills, because they expect to reap the benefits of such investments over longer periods. Increased schooling promotes greater productivity and, in turn, higher income. Good health also promotes school attendance and enhances cognitive function.

Investment in physical capital. Improvements in longevity create a greater need for people to save for their retirement. Insofar as increased savings lead to increased investment, workers will have access to more capital and their incomes will rise. In addition, a healthy and educated workforce acts as a strong magnet for foreign investment.

David Bloom is professor of economics and demography at Harvard University's School of Public Health. David Canning is professor of economics at the Queen's University of Belfast.

To whom correspondence should be addressed. E-mail: dbloom@hsph.harvard.edu

"Demographic dividend." The transition from high to low rates of mortality and fertility has been dramatic and rapid in many developing countries in recent decades. Mortality declines concentrated among infants and children typically initiate the transition and trigger subsequent declines in fertility. An initial surge in the numbers of young dependents gradually gives way to an increase in the proportion of the population that is of working age (1). As this happens, income per capita can rise dramatically, provided the broader policy environment permits the new



Life expectancy and income in purchasing power parity (PPP) dollars, 1997. [Source: World Bank (14)]

workers to be absorbed into productive employment (2).

All these mechanisms offer plausible ways in which health improvements can lead to income growth. However, examining the data allows evaluation of how important these mechanisms are. Recent economic analysis indicates that health status (as measured by life expectancy) is a significant predictor of subsequent economic growth (3). This effect is above and beyond other influences on economic growth, emerges consistently across studies, and is strikingly large (4).

Suppose we compare two countries that are identical in all respects, except one has a 5-year advantage in life expectancy. On the basis of studies in several countries, real income per capita in the healthier country will grow 0.3 to 0.5% per year faster than in its less healthy counterpart. This represents a sizable boost to growth, given that, from 1965 to 1990, countries experienced an average per capita income growth of only 2% per year. Moreover, a

gain of 5 years in life expectancy is well within the reach of most developing countries—since 1950, for example, life expectancy worldwide has increased by about 20 years.

As these health improvements fortify the economy, they also alleviate poverty. Economic growth is an exceedingly powerful way to reduce poverty among the 1.3 billion people living on less than US\$1 per day. Available evidence indicates that increases in average income translate—percentage point for percentage point—into increases in the income of the poor. In addition, health improvements are disproportionately beneficial for the poor, as they depend on their labor power more than any other segment of the population.

Just as the direct effects of life expectancy on economic growth are important, so too are the indirect effects of improvements in health status that operate via demographic change. In East Asia, for example, the working-age population grew several times faster than the dependent population between 1965 and 1990. The whole process seems to have been triggered by declining child and infant mortality, itself prompted by the development of antibiotics and antimicrobials (such as penicillin, sulfa drugs, streptomycin, bacitracin, chloroquine, and tetracycline, all of which were discovered and introduced in the 1920s, 1930s, and 1940s), the use of DDT (which became available in 1943), and classic public health improvements related to safe water and sanitation (5, 6). Health improvements can therefore be seen to be one of the major pillars upon which East Asia's phenomenal economic achievements were based, with the demographic dividend accounting for perhaps one-third of its "economic miracle" (5, 7).

By contrast, poor health can slow the demographic transition and inhibit growth. In Sub-Saharan Africa, for example, a seemingly intractable disease burden induces many families to dissipate their resources among large numbers of children, creating a high-fertility, high-mortality poverty trap that impedes economic growth (8).

Patterns of energy use also mediate the interactions between health, demography, and income. The rural poor rely heavily on wood, dung, and other biomass. The resulting smoke and particulates are detrimental to human health and can diminish people's productivity. Across countries,

there is a strong association between demographic and health indicators and the use of biomass in traditional ways. Infant and child mortality rates are elevated, and life expectancy is diminished, particularly for women who undergo higher exposure to smoke while cooking. Fertility rates are also high, partly to ensure enough children for firewood collection (9). Slow income growth is the end result.

Mutual Reinforcement

Traditionally, economists have treated health like any other consumer good and have assumed that the direction of causality was from income to health. We now have good reasons and strong evidence for believing that health improvements also stimulate economic development. These two views are, of course, compatible. The development process is inherently dynamic—with health improvements promoting economic growth, which in turn promotes better health. This “virtuous spiral” can transform an impoverished, disease-prone country into one that offers its people a much higher quality of life. Compelling examples of such a transformation can be found in East Asia and Ireland, and in the economic history of several wealthy industrial countries (10).

Health improvements and economic growth can be mutually reinforcing in another way. As rising incomes cause fertility to decline, there are consequent benefits to the health of mothers and children, via longer breast-feeding, less stress on women's reproductive systems, more opportunities for them to work outside the home, and increased resources for each child's upbringing. In turn, declines in fertility promote economic growth by allowing more of society's resources to be devoted to urgently needed investments in physical capital, infrastructure, and educational quality.

Regrettably, the mutual reinforcement between health and income can also operate in reverse. Declines in health status in some parts of the world are having staggering impacts on economic well-being. The AIDS epidemic in Africa is perhaps the most prominent example. About 8% of African adults are now HIV positive, with 66% of Sub-Saharan Africans not expected to reach age 60 (11).

The economic burden imposed by HIV/AIDS is enormous. The required costs of detecting and treating the infection and its clinical manifestations are well in excess of per capita public expenditures on health care in Sub-Saharan Africa. With more than 80% of global AIDS mortality occurring among people of working age, the income and output losses associated

with the epidemic are daunting. A number of economic studies conclude that the AIDS epidemic is slowing the pace of economic growth and depleting the wherewithal to deal with other diseases—such as diarrhea, hepatitis, malaria, and tuberculosis—that are also ravaging health in many countries (12).

Russia provides another example. Its transition to a market economy, which began in the early 1990s, coincides closely with a precipitous fall in life expectancy, accounting for 1.4 to 1.6 million premature deaths during 1990–95, including disproportionately large numbers of working-age men. There are many reasons to believe that Russia's economic and political instability and plummeting incomes are to blame for this health crisis, which left the life expectancy of Russian males in the mid-1990s below the average for developing countries.

Among the factors that link falling incomes to the worsening of Russians' health are a further deterioration of the already poor Russian diet, increased alcohol consumption, mental stress, and the related surge in accidents and injuries. Negative income growth took a major toll on public spending on health care, and many parts of the Russian medical system have descended into chaos as a result. The health crisis is now having an impact on Russia's catastrophic economic performance. The effects are currently modest, but are indisputably negative and likely to worsen as the vicious spiral picks up momentum (13).

Health-Led Development

Conventional wisdom holds that income growth results in improved health, but that is only part of the health-income story. The remainder concerns the role of health as an instrument of self-sustaining economic growth and human progress. Poor health is more than just a consequence of low income; it is also one of its fundamental causes. To be sure, health and demography are not the only influences on economic growth, but they certainly appear to be among the most potent.

This contrasts with the standard view that health improvements reduce income per worker because a low death rate increases population growth, thereby lowering the capital-to-labor ratio and reducing labor productivity. A revolution in economic thinking has taken place over the past few decades, putting human capital, particularly educated workers, on a par with physical capital as an input into production. We would argue that increased health is another aspect of human capital that also enters into production. In addition, long life expectancy may be the fun-

damental force that creates the demand for education and encourages the domestic saving that is a key determinant of economic growth.

This perspective offers an exciting new possibility in international development: investing in health to help stimulate development. A focus on health cannot be the sole approach to improving living standards, nor may it even be the best. However, the evidence for viewing health as one of the more effective arrows in the development quiver is surely growing stronger.

References and Notes

1. Eventually, this process will lead to large cohorts of retired people. Although one might surmise that this will act as a drag on economic growth, the data indicate otherwise. Presumably, this is because many elderly people work (or enable others to work by minding their children), some of them continue to save, and many continue to impart their accumulated knowledge to others. Nevertheless, the demographic dividend is not permanent. Eventually, the large cohorts pass on, and their effect on the age distribution diminishes. Demographic change thus creates a window of opportunity for economic growth, but not one that remains perpetually open (5).
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15. The authors appreciate comments provided by an anonymous reviewer and by participants at a May 1999 workshop cosponsored by the U.K. Department for International Development and the World Health Organization.

Something to be done: treating HIV/AIDS¹

David E. Bloom and River Path Associates

**UNDER EMBARGO
UNTIL 6/23/00**
for the Science

[David Bloom is professor of economics and demography at Harvard University's School of Public Health. River Path Associates is a UK-based knowledge consultancy.]

Abstract

Due largely to disparities in access to drug treatment and care, AIDS morbidity and mortality have fallen in the developed world but continue to rise among developing countries. Achieving more equitable access to AIDS drugs is hindered by high drug prices, technical complexities related to the provision of health care, and conflict among stakeholders. Recognition that health is vital to the prospects of the emerging global society must be combined with new mechanisms to help all stakeholders work together cooperatively. Tiered drugs pricing should be coupled with investment in health services. An independent Global Task Force, able to act as an "active think tank", could build consensus about the way forward.

For richer or poorer

Although prevention remains the first line of defense against HIV/AIDS, caring for the millions of people now living with AIDS is an essential element of our reaction to the epidemic. AIDS is increasingly a disease of the poor² and, currently, as Ugandan AIDS doctor Peter Mugenyi has noted: "The medicines are where the problem is not, and the problem is where the medicines are not."³

Effective care programs have many features, but at their heart are interventions that make a significant impact on the quality and length of people's lives.⁴ The US Food and Drug Administration now lists over 40 approved therapies that slow or disrupt viral replication, or treat opportunistic infections,⁵ and, as a result of these, the number of AIDS deaths has fallen dramatically across Europe and the USA. In the USA, for example, deaths fell from 49,895 in 1995 to 17,171 in 1998.

While educated and relatively wealthy patients have been successful in marshalling the medical and social support necessary to mount an active and ongoing defense against the disease, the situation is much bleaker for the majority of those infected with HIV.

Poor levels of education, economic development and health not only encourage the disease's spread, they also inhibit effective care. First, medical interventions are expensive, with highly active antiretroviral therapy (HAART) costing up to \$20,000 per person per year. Second, health systems are inadequate, with as few as 10 percent of the population of the developing world having consistent access to healthcare and even highly developed health systems failing to deliver benefits to disadvantaged populations. Third, those with compromised immunity are weakened by poor nutrition and lack of safe water. Fourth, the disease burden in developing countries is disproportionately high, heightening the dangers from a disease that attacks the immune system. TB and AIDS interact especially powerfully and have been dubbed the "dual epidemic". Fifth, the social structures that are the bulwarks of any care program are being overwhelmed by the severity of the epidemic.

This paper explores the major obstacles impeding a more effective response to the problem of AIDS care: the technical complexities that offer no easy "win-win" solutions; and the friction between major stakeholders that have made this a controversial and often explosive

subject. We call for a global response to a problem that is inextricably linked to globalization and warn that a failure to act now will not only be catastrophic for entire regions, but will further erode confidence in the capabilities of our emerging global society.⁶

Technical complexities

Ensuring access to more effective AIDS care is complex and has four distinct facets: affordability, finance, delivery, and rational selection.

The affordability of treatment has attracted much recent attention. Globally, anti-retrovirals are only used by 1 percent of those with HIV, while drugs for treating opportunistic infections are also poorly distributed. Through patents, pharmaceutical companies receive monopolies on new drugs, offering them the chance to earn a return on their investment in R&D, both for the patented drug and for other unsuccessful research. Critics identify pricing differentials between countries as evidence of unfairly exploiting a monopoly. Pfizer's Fluconazole is \$11.90 in USA and \$13 in South Africa. In Thailand, where local companies compete with Pfizer, the price is 69 cents.⁷ The unwillingness of pharmaceutical companies to reveal their investment and pricing policies leaves them poorly placed to refute charges of profiteering, and increasingly vulnerable to activist pressure.

Expensive and complex treatments burden well-funded health services and there is evidence of informal rationing of treatment even in developed countries.⁸ Financing in developing countries is currently extremely limited, despite growing evidence of the importance of health to development within the modern global economy.⁹ South Africa, for example, spends \$279 million on all drugs, compared to a defense expenditure of \$4.19 billion.¹⁰ Namibia spends a paltry \$42,000 on its AIDS program and receives \$126,000 from EU and \$36,000 from UNAIDS.¹¹

Even when drugs are cheap or free, problems remain. Delivery systems are inadequate or non-existent across much of the world, as shown by the failure to make progress against TB, despite the widespread availability of effective remedies. Similarly, major drug donations have not been immediately successful, with bitter arguments about responsibility for distribution and treatment protocols. Yet there's unmet demand: the People's Health Organisation (India), for example, describes the new drugs as "promising heaven, but giving bankruptcy". The organization recommends HAART to patients on the basis of wealth, rather than disease-stage, with patients advised to take the full combination, a reduced combination, or avoid anti-retrovirals, depending on income. As World Bank President James Wolfensohn argues, high prices offer governments little incentive to build health infrastructure.¹²

AIDS is one of several serious diseases facing developing countries, and decisions on the allocation of limited funds remain controversial. Is it better to spend on nutrition or care, education for prevention or STD treatment – when all these will have an impact on the AIDS epidemic? Further, the future consequences of interventions must be addressed. Plentiful access to cheap TB drugs in Russia fuelled drug resistant TB, an enormously expensive problem. Stepping up AIDS care requires selecting treatment interventions appropriate to delivery. It is quite conceivable that more virulent and even less treatable forms of HIV will emerge as the result of the inability to sustain complex courses of medication, itself often a result of the expense of treatment.

Conflict and confrontation

Beyond the technicalities of widening access to treatment lie a series of political conflicts that continue to make it difficult to secure change. Access to drugs and treatments was fiercely contested throughout 1999, with acrimony among key stakeholders. The US government, for example, threatened sanctions against South Africa in support of the pharmaceutical's legal action against the South African Medicines Act. This would have allowed compulsory licensing of AIDS drugs, where drugs are made locally and the

intellectual property holder compensated at a rate set by the state, and parallel importing (cheaper drugs imported from other markets). Activists, however, mounted a vigorous campaign against the action. In 1999, for example, "307 public health experts and concerned persons" wrote to Al Gore, accusing the US of protecting the pharmaceutical industry against global competition, ignoring the biggest public health crisis in recent history, and leaving people without access to pharmaceutical drugs to die.¹³

In 2000, a more constructive approach emerged. In January, the US completed a policy u-turn, by instigating an unprecedented UN Security Council debate that recognized AIDS as a threat to world security¹⁴. On May 10, President Clinton followed through with an executive order, intended to ensure that, within the scope of the TRIPS agreement, HIV/AIDS-related drugs and medical technologies become more accessible and affordable in sub-Saharan Africa.¹⁵ The next day, UNAIDS announced that 5 major drugs companies had agreed to ensure rational, affordable, safe, effective drugs for HIV/AIDS related illnesses, stressing the need for a new commitment to tackling AIDS from national governments and the global community, and significant investment in building efficient, reliable and secure distribution systems. The French government, meanwhile, continues to press for an international fund for therapeutic solidarity, which would use public and private resources to promote access to AIDS drugs.

Reaction to these initiatives has not been wholly positive. Medecins Sans Frontieres described the industry offer as minor, "much like an elephant giving birth to a mouse."¹⁶ Dr Nothemba Simelela, head of the South African HIV/AIDS directorate, was also suspicious: "There is little trust between pharmaceutical companies and this government, but obviously we will not kick them in the teeth if they are offering real assistance."¹⁷ Alan Holmer, Pharmaceutical Research and Manufacturers of America President, described the executive order as setting "an undesirable and inappropriate precedent [and] a discriminatory approach to intellectual property laws."¹⁸ Debrewerk Zewdie, World Bank AIDS coordinator noted that "even if the drugs were free, we would still have a horrendous problem getting this [offer] to work", and believes the drug companies may have opened a Pandora's box.¹⁹

Tackling complexity

Continued progress, therefore, relies on steering a path through technical complexity while drawing stakeholders into more productive partnerships.

A major step on the affordability of treatments has been taken by the acceptance of tiered pricing for AIDS drugs. Consolidation, however, requires four steps. First, future R&D into HIV/AIDS remains an over-riding priority. Activists must forgo using price reductions in developing countries in their arguments for lower prices in developed markets and pharmaceutical companies must receive limited protection against parallel importing.²⁰ Second, pharmaceuticals companies should acknowledge through their actions that AIDS is a global emergency and there is natural public interest in both developed and developing market prices. Greater public oversight of the industry is required, via access to information and "trust – but verify" mechanisms to scrutinize commercially sensitive information on profit levels and R&D expenditure.

Third, separate action is needed to address under-investment in research into diseases that affect the poor.²¹ Tax incentives, schemes to guarantee markets, and direct public investment should all be considered, while the public and non-profit sectors should explore ways of receiving a greater share of the ongoing returns on their 54 percent investment in healthcare R&D.²² Finally, the debate on price needs to extend beyond pharmaceutical manufacturers, with developing country governments addressing import tariffs, taxes and distribution margins, which the pharmacy industry claims account for two thirds of African drug prices.²³

As treatment prices fall, a strong case for increased investment in care arises. Donor countries, philanthropic foundations and multilateral organizations should match greater investment from developing countries. Much of this money should be dedicated to delivery systems, along the lines suggested by Hans Binswanger elsewhere in this issue.²⁴ It is possible to scale up existing, successful, HIV programs.

Finally, rational selection of interventions needs consideration within a much broader context than cost effectiveness, which calculates return on a limited and short-sighted basis. Globalization will be fatally undermined if it continues to act as a vehicle for greater inequality. Life expectancies are falling in a growing number of countries, reversing key development gains of the 20th century. Tackling AIDS – on all fronts – is a political imperative. Better health is a powerful tool for social inclusion, and at the heart of any vision of a fairer world.

Bringing stakeholders together

The signs that stakeholders are prepared to work more constructively together are encouraging, but more is needed. Further investment is required in techniques to extend trust across stakeholders (itself a valuable form of international social capital).²⁵ Although peace has broken out publicly, tensions are still running high in private. External, unbiased mediators will help to in focus minds on solutions –George Mitchell in the Irish peace process or Desmond Tutu in the South African Truth and Reconciliation Commission are good models. We also suggest exploring creative approaches to problem solving, like scenario planning, which has been successfully used to engage antagonistic stakeholders in Colombia, South Africa and Japan.²⁶ As the French government has argued, traditional conferences, with a succession of speeches and sterile debate, must be avoided at all cost.

Second, we believe that broader and deeper partnerships should be developed, with parties committed to more open, transparent and inclusive ways. Too many negotiations occur behind closed doors, inevitably raising suspicions among excluded parties. Those with AIDS need a stronger voice, and the wider business community must get involved. Pharmaceutical companies hold only part of the answer. Businesses have the scale, finance, channels, and motivation to significantly influence the course of the epidemic.²⁷ Finally, it is essential that developing countries display ownership of the problem, with UNAIDS – relocated in Africa – acting as a facilitator for initiatives such as “regional pharmacies”, where buying power and expertise are pooled transnationally to change market dynamics.

Third, we suggest a new, inclusive forum, with a global profile, to act as an ‘active think tank’ and develop a consensus on ways forward. This ‘Global Task Force’, on access to AIDS care, should have a wide remit, a budget to call witnesses and operate a secretariat, and a guarantee that world leaders will pay serious attention to its findings. Members would have a high profile and experience in the issues, but would act as individuals, rather than as representatives of the constituencies from which they were drawn.²⁸ The task force should be unequivocally free of ties to all existing stakeholders and aim to inform and catalyze (rather than duplicate) their efforts.

The Global Task Force would act decisively and quickly, reporting on the role of intellectual property in health, within the context of rapid changes in the concept of intellectual property in the knowledge economy, and outlining a clear framework for invoking World Trade Organization exemptions that allow for compulsory licensing and parallel imports. It would also provide an independent forum to explore pricing levels, discussed above, and set bold but achievable targets for improving access to treatment. It would explore incentives, delivery and management issues, including care tailored for the poor and marginalized, where treatments are chosen to transcend, as far as possible, the limitations of delivery systems.²⁹ Finally, it would work to build global support for new investment in AIDS

treatment. After all, the public *will* support spending more money – but only if convinced that something can indeed be done.³⁰

¹ The opinions expressed herein are our own, but the authors are grateful to the following individuals for helpful discussions, materials, or comments on an earlier draft of this piece: Ronald Bayer, Barry Bloom, Thomas Bombelles, Tim Brown, Julia Cleves, Susan Crowley, Kevin Frost, Sherry Glied, W. Scott Gordon, Steven Janovec, Jeffrey Laurence, Michel Lavalloy, Guy Macdonald, Ajay Mahal, Michael Reich, and Jane Silver.

² 95 percent of HIV-positive people live in developing countries. Furthermore, our analysis shows a correlation of 0.49 across 51 countries with the requisite data between the absolute poverty rate in 1990 (the percentage of population living on less than 1 dollar per day) and the adult HIV prevalence in 1997.

³ Mark Schoofs, "AIDS: The Agony of Africa" *Village Voice*, 29 December 1999

⁴ "AIDS Care Framework" *The Enhancing Care Initiative*

<http://www.eci.harvard.edu/research/framework/index.html>

⁵ For a complete list see *Approved Drugs for HIV/AIDS or AIDS-Related Conditions*, U.S. Food and Drugs Administration, 6 July 1999 (<http://www.fda.gov/oashi/aids/status.html>) and *Antiretroviral HIV Drugs Approved by FDA for HIV Treatment*, 2 March 2000 (<http://www.fda.gov/oashi/aids/virals.html>)

⁶ See also: David E Bloom and River Path Associates, "Social Capitalism and Human Diversity" *The Creative Society of the 21st Century* OECD, Paris, forthcoming.

⁷ Fluconazole is used to treat cryptococcal meningitis, which affects roughly 9 percent of people with AIDS and is otherwise fatal. Responding to criticism, Pfizer has now offered to develop a joint program with the South African Ministry of Health to deliver the drug "free of charge through appropriate medical specialists." Comments from letter from Pfizer to Mark Heywood of the Treatment Action Campaign, *Wall Street Journal*, 3 April 2000

⁸ José Zuniga, "Examining the Necessity to Ration Healthcare Resources for HIV/AIDS and Other Life-Threatening Illnesses", *International Association of Physicians in AIDS Care Journal* 4:4 (1998)

⁹ D. E. Bloom and D. Canning, "The Health and Wealth of Nations," *Science*, February 18, 2000.

¹⁰ "AIDS Hearings Turn Acrimonious", *Business Day* (Johannesburg), May 10, 2000.

<http://www.africanews.org/health>

¹¹ Figures drawn from "Anti-AIDS Drugs 'Out of Question' for Nam", *The Namibian* (Windhoek), May 11, 2000. <http://www.africanews.org/health>

¹² *Wall Street Journal*, 11 May 2000

¹³ *Open letter to Vice President Al Gore*, open letter from James Love, Director, Consumer Project on technology, and 306 other signatories, August 1 1999

¹⁴ For an overview of this u-turn see Barton Gellman, "A Conflict of Health and Profit," *Washington Post*, May 21, 2000.

¹⁵ Text: Presidential Order on AIDS Drugs, 10 May 2000, <http://usinfo.state.gov/products/pdq/wfarchive.htm>

¹⁶ "MSF Reaction to UNAIDS proposal" Medecins Sans Frontieres Press Release, May 11 2000

<http://www.msf.org/un/reports/2000/05/pr-unids/>

¹⁷ South Africa: Skepticism Greeted AIDS Treatment Plan", *Business Day* (Johannesburg), May 15, 2000, www.africanews.org/health/stories/20000515/20000515_feat1.html

¹⁸ PhRMA News Release, 10 May 2000, <http://www.phrma.org/news/5-10-00a.html>

¹⁹ David Pilling, "Cheap drugs expose Africa's woes", *Financial Times*, May 18 2000

²⁰ There is already resistance to in the USA to cheaper prices abroad. See Jeffrey Laurence, "South Africa on the eve of the XIIIth International AIDS Conference" *The AIDS Reader*, in press (June 2000)

²¹ Only about 1 percent of new medicines commercialized over the last 25 years, for example, were designed to treat tropical diseases. B. Pecoul, P. Chirac, P. Trouiller, J. Pinel "Access to Essential Drugs in Poor Countries: A Lost Battle?", *JAMA*, 281:4, January 1999, pp. 361-367

²² Ad Hoc Committee on Health Research Relating to Future Intervention Options. *Investing in Health Research and Development*. Geneva: World Health Organization, 1996. See also: "Helping the world's poorest", Jeffrey Sachs, *The Economist*, 14 August 99

²³ AIDS in Africa, Testimony before the United States Committee on Foreign Relations Subcommittee on African Affairs, Dr Harvey E Bale Jr, Director-General, IFPMA

²⁴ Science to provide reference for this

²⁵ For an overview, see Michael R. Reich, "Public-private partnerships for public health", *Nature Medicine* 6 pp. 3 – 7, June 2000

²⁶ See, for example, the work of the Global Business Network in this area:

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²⁷ See D. E. Bloom, A. Rosenfield, and River Path Associates, *A Moment In Time: AIDS and Business* (American Foundation for AIDS Research [amfAR], November 30, 1999). (www.riverpath.com/library.html) and D. E. Bloom, L. Reddy Bloom, and River Path Associates, "Business, AIDS and Africa" *The Africa Competitiveness Review*, World Economic Forum, Oxford University Press (in press)

²⁸ This approach has been used successfully in many contentious situations, for example in the Low Page Commission which set the UK minimum wage in 1998, with a minimum of controversy.

²⁹ See Jeffrey Laurence, "South Africa on the eve of the XIIIth International AIDS Conference" *The AIDS Reader*, in press (June 2000)

³⁰ River Path Associates, *You Made Africa Boring: Towards a new vision for development*, 1998.
www.riverpath.com/library.html



THE ECONOMIC IMPACT OF AIDS IN AFRICA

**Prepared by The Futures Group International
For**

**USAID Global Bureau, Office of Health and Nutrition
Division of HIV/AIDS**

And

USAID Bureau for Africa, Office of Sustainable Development

March 15, 1999

¹The Economic Impact of AIDS

AIDS has the potential to create severe economic impacts in many African countries. It causes a reduction in the size and experience of the labor force, increases health care expenditure, raises the costs of labor and reduces savings and investment. It is different from most other diseases because it strikes people in the most productive age groups and is essentially 100 percent fatal. The effects will vary according to the severity of the AIDS epidemic and the structure of the national economies. The two major economic effects are a reduction in the labor supply and increased costs:

Labor Supply

- The loss of young adults in their most productive years will affect overall economic output
- When AIDS is more prevalent among the economic elite, then the impact is much larger than the absolute number of AIDS deaths indicates

Costs

- The direct costs of AIDS include expenditures for medical care, drugs, and funeral expenses
- Indirect costs include lost time due to illness, recruitment and training costs to replace workers, and care of orphans
- If costs are financed out of savings, then the reduction in investment could lead to a significant reduction in economic growth

A World Bank study of the economic impacts of AIDS in Africa concluded that the macroeconomic impacts of AIDS could be significant.¹ Yet there is still time to mitigate the economic impact of AIDS; over half of Africa's population live in countries where the epidemic is "concentrated," that is, where HIV infection is concentrated in groups with risky behavior and is not yet widespread in the general population.²

The economic effects of AIDS will be felt first by individuals and their families, then ripple outwards to firms and businesses and the macro-economy. This paper will consider each of these levels in turn and provide examples from various African countries to illustrate these impacts.

Economic Impact of AIDS on Households

The household impacts begin as soon as a member of the household starts to suffer from HIV-related illnesses:

- Loss of income of the patient (who is frequently the main breadwinner)
- Household expenditures for medical expenses may increase substantially

¹ This paper was prepared by Dr. John Stover, The Futures Group International for USAID. March 15, 1999

countries have shown that AIDS will have adverse effects on agriculture, including loss of labor supply and remittance income. The loss of a few workers at the crucial periods of planting and harvesting can significantly reduce the size of the harvest. In countries where food security has been a continuous issue because of drought, any declines in household production can have serious consequences. Additionally, a loss of agricultural labor is likely to cause farmers to switch to less-labor-intensive crops. In many cases this may mean switching from export crops to food crops.⁷ Thus, AIDS could affect the production of cash crops and, as a result, effect foreign exchange earnings.

- A study done by the **Zimbabwe Farmers Union (ZFU)** showed that the death of a breadwinner due to AIDS will cut the production of maize in small scale farming and communal areas by 61 percent. Similar results were obtained for other crops (see table at right). The fall in output results from losses of labor and remittances and the need to spend scarce resources on medical expenses.

Reduction in Production Due to AIDS Deaths in Zimbabwe

Crops	Reduction in Output
Maize	61%
Cotton	47%
Vegetables	49%
Groundnuts	37%
Cattle Owned	29%

- In **Ethiopia**, the male head of the household is responsible for special tasks, such as oxen cultivation, harvesting, threshing and farm management. One study found that the effect of an AIDS death varied by region: it would have the most severe effect on harvesting teff in Nazareth, on digging holes for transplanting enset plants in Atat, on ploughing millet fields in Baherdar, and on picking coffee in Yirgalem. Women are generally responsible for other tasks: leveling, weeding, harvesting minor crops, transporting produce, and household duties. The death of the wife to AIDS can make it difficult for other household members to carry out these tasks, in addition to caring for children. The death of a family member because of AIDS also leads to a reduction in savings and investment. The stock of food grain can be depleted to provide food for mourners and the other expenses were met most often by selling livestock. Such loss of productive assets only makes it harder to survive in the future.⁸
- In **Kagabiro village, Tanzania**, when a household contained an AIDS patient, the household labor supply was severely affected: on average, 29% of household labor was spent on AIDS-related matters, including care of the patient and funeral duties. If two people were devoted to nursing duties, as occurred in 66% of the cases, the total labor loss was 43%, on average.⁹

- In **Malawi**, 10% of GDP comes from estate agriculture. A recent study evaluated the costs of HIV/AIDS on a tea estate there (see table at right). The study found that the costs are determined by the levels of both

Cost of HIV/AIDS on a Tea Estate in Malawi

Description	Total Cost (£)	Related to HIV (%)	Cost of HIV (£)
Provision of medical services	22,275	25	5,569
Funeral costs	928	75	696
Death in service benefits	4,691	100	4,691
Absence	14,875	25	3,719
Total	42,769		14,675

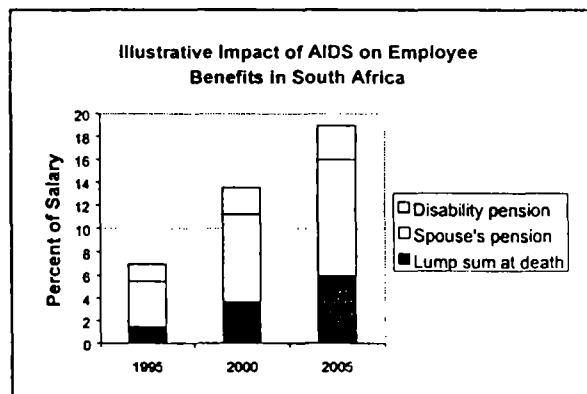
AIDS in 1996. The total costs of AIDS to the company in 1996 were estimated at Z\$39 million, equal to about 20 percent of the company's profits. More than half of this amount resulted from increased health care costs. By 2005 the cost of AIDS to the company could reach Z\$108 million. There may be indirect costs as well. The report speculates that HIV/AIDS will worsen employee morale and create greater labor-management tensions and cause a labor shortage among skilled positions.¹³

Various studies have also examined the total annual cost of AIDS to different companies, as well as the annual cost of AIDS per employee.¹⁴ These studies found that the annual cost of AIDS per employee varied from US\$17 to US\$300, as shown in the table below:

Company Name	Total Annual Cost of AIDS	Annual Cost of AIDS per Employee
Botswana Diamond Valuing	US\$ 125,941	US\$ 237
Botswana Meat Commission	US\$ 370,200	US\$ 268
Cote d'Ivoire food processing firm	US\$ 33,207	US\$ 120
Cote d'Ivoire textile firm	US\$ 32,667	US\$ 29
Cote d'Ivoire packaging firm	US\$ 10,398	US\$ 125
Kenyan automobile firm	US\$ 21,312	US\$ 17
Kenyan transport firm	US\$ 61,132	US\$ 28
Muhoroni Sugar, Kenya	US\$ 58,303	US\$ 49
Kenyan lumber firm	US\$ 40,630	US\$ 25
Uganda Railway Corporation	US\$ 77,000	US\$ 300

Increased labor costs can reduce the profits necessary for expansion. This impact on profits can be considerable:

- The Indeni Petroleum Refinery in **Zambia** spent US\$26,400 on AIDS-related costs in 1994, more than its declared profits of US\$25,514 in that year.¹⁵
- A study in **South Africa** examined the expected impact of AIDS on employee benefits, and thus on corporate profits. It found that at current levels of benefits per employee, the total costs of benefits would rise from 7 percent of salaries in 1995 to 19 percent by 2005. Since these additional costs will have to be paid at the same time that productivity is declining, due to AIDS, the net impact on profits could be significant.¹⁶



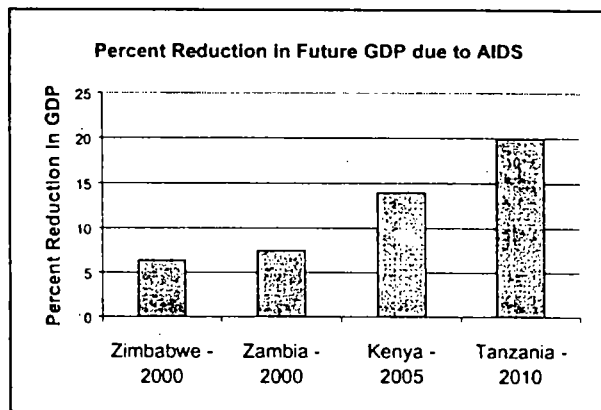
Finally, other costs associated with AIDS that firms face include:

- The **Uganda** Railway Corporation has been hard hit by AIDS among its employees, experiencing a labor turnover rate of 15 percent per year in recent years.¹⁷

replace if they die. Governments face the dilemma of improving transport as an essential element of national development while protecting the health of the workers and their families.

- **Mining.** The mining sector is a key source of foreign exchange for many countries. Most mining is conducted at sites far from population centers forcing workers to live apart from their families for extended periods of time. They often resort to commercial sex. Many become infected with HIV and spread that infection to their spouses and communities when they return home. Highly trained mining engineers can be very difficult to replace. As a result, a severe AIDS epidemic can seriously threaten mine production.
- **Education.** Countries invest huge sums of money in the education of their children. When an educated person dies prematurely due to AIDS, much of that investment is wasted. AIDS directly affects the education sector in at least three ways: the supply of experienced teachers is reduced by AIDS-related illness and death; children are kept out of school if they are needed at home to care for sick family members or to work in the fields; and children drop out of school if their families can not afford school fees due to reduced household income as a result of an AIDS death. Another problem is that teenage children are especially susceptible to HIV infection. Therefore, the education system also faces a special challenge to educate students about AIDS and equip them to protect themselves.
- **Water.** Developing water resources in arid areas and controlling excess water during rainy periods requires highly skilled water engineers and constant maintenance of wells, dams, embankments, etc. The loss of even a small number of highly trained engineers can place entire water systems and significant investment at risk. These engineers may be especially susceptible to HIV because of the need to spend many nights away from their families.
- **Civil servants and the military.** Senior civil servants and members of the military represent a large investment in training. Yet some of the highest HIV prevalence rates are found in these two groups. Senior civil servants have the income and mobility that can facilitate having multiple sexual partners. In a recent study in Malawi, the national Department of Human Resources and Management Development discovered that the annual adult death rate among health personnel was six times the expected death rate, predominately due to AIDS. The same pattern holds for many other government workers as well. Military men and women are often young, sexually active adults who live away from their families. AIDS deaths to the most experienced members of these groups have the potential to disrupt the smooth functioning of government and military units, threatening stability and security.

- A World Bank study examined the macroeconomic impact of AIDS in 30 sub-Saharan African countries.²² This study concluded that the net effect is likely to be a reduction of the annual growth rate of GDP of 0.8 to 1.4 percentage points per year and a 0.3 percentage point reduction in the annual growth rate of GDP per capita.
- A simulation model of the economy of **Cameroon** concluded that the annual growth rate of GDP could have been reduced by as much as 2 percentage points during the 1987-1991 period because of AIDS.²³
- A study of the macroeconomic impacts of AIDS in **Zambia** found that by 2000 the GDP would be 5 to 10 percent lower because of AIDS than it would be if there were no AIDS affecting the population. The authors concluded, "...without unprecedented infusions of free foreign aid to mitigate the effects of AIDS, the economy of Zambia will suffer considerable damage."²⁴
- An assessment of the macroeconomic impacts of AIDS in **Tanzania** by the Government of Tanzania, the World Bank and the World Health Organization in 1991 found that total GDP will be 15 to 25 percent smaller in 2010 because of the impact of AIDS.²⁵
- A study of the impact of AIDS on the economy of **Kenya** projected that GDP will be 14 percent lower in 2005 than it would have been without AIDS. GDP per capita will be 10 percent less in 2005.²⁶



What Can Be Done?

AIDS has the potential to cause severe deterioration in the economic conditions of many countries. However, this is not inevitable. There is much that can be done now to keep the epidemic from getting worse and to mitigate the negative effects. Among the responses that are necessary are:

- **Prevent new infections.** The most effective response will be to support programs to reduce the number of new infections in the future. After more than a decade of research and pilot programs, we now know how to prevent most new infections. An effective national response should include information, education and communications; voluntary counseling and testing; condom promotion and availability; expanded and improved services to prevent and treat sexually transmitted diseases; and efforts to protect human rights and reduce stigma and discrimination. Governments, NGOs and the commercial sector, working together in a multi-sectoral

to individuals and community organizations involved in the AIDS programs that their efforts are appreciated and valued. Finally, it ensures that the program will receive an appropriate share of national and international donor resources to fund important programs.

Perhaps the most important role for the government in the fight against AIDS is to ensure an open and supportive environment for effective programs. Governments need to make AIDS a national priority, not a problem to be avoided. By stimulating and supporting a broad multi-sectoral approach that includes all segments of society, governments can create the conditions in which prevention, care and mitigation programs can succeed and protect the country's future development prospects.

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¹⁵ Southern African Economist, 1997. "AIDS toll on regional economies," April 15-May 15, 1997.

¹⁶ Southern African Economist, 1997. "AIDS toll on regional economies," April 15-May 15, 1997.

¹⁷ Ainsworth, Martha, "The Impact of HIV/AIDS on African Development", presented at the African Development Bank HIV/AIDS and Development in Africa Symposium, May 11, 1993.

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The Economic Impact of AIDS

**Paper prepared by the POLICY Project
of The Futures Group International
for the
Agency for International Development**

March 16, 1999



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- When AIDS is more prevalent among the economic elite, the impact is much greater than the absolute number of AIDS deaths indicates

Costs

- The direct costs of AIDS include expenditures for medical care, drugs, and funeral expenses
- Indirect costs include lost time due to illness, recruitment and training costs to replace workers, and care of orphans
- If costs are financed out of savings, then the reduction in investment could lead to a significant reduction in economic growth

A World Bank study of the economic impacts of AIDS in Africa concluded that the macroeconomic impacts of AIDS could be significant.¹ Yet there is still time to mitigate the economic impact of AIDS; over half of Africa's population live in countries where the epidemic is "concentrated," that is, where HIV infection is concentrated in groups with risky behavior and is not yet widespread in the general population.²

The economic effects of AIDS will be felt first by individuals and their families, then ripple outwards to firms and businesses and the macro-economy. This paper will consider each of these levels in turn and provide examples from various African countries to illustrate these impacts.

Economic Impact of AIDS on Households

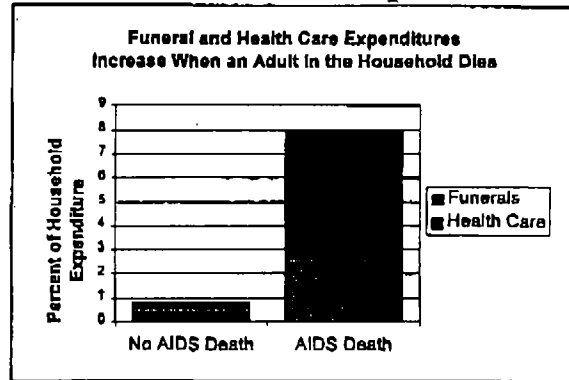
The household impacts begin as soon as a member of the household starts to suffer from HIV-related illnesses:

- Loss of income of the patient (who is frequently the main breadwinner)
- Household expenditures for medical expenses may increase substantially
- Other members of the household, usually daughters and wives, may miss school or work less in order to care for the sick person
- Death results in: a permanent loss of income, from less labor on the farm or from lower remittances; funeral and mourning costs; and the removal of

children from school in order to save on educational expenses and increase household labor, resulting in a severe loss of future earning potential.

Studies in Tanzania, Cote d'Ivoire, Uganda, and Ethiopia have documented the tremendous burden of loss of income, large health care expenditures, and consumption of savings to pay for funeral and mourning costs:

- In **Tanzania**, a study of adult mortality found that 8 percent of total household expenditure went to medical care and funerals in households that had an adult death in the preceding 12 months. In households with no adult death the figure was only 0.8 percent. In addition to increased expenditures, many households experienced a reduction in remittances if the adult member worked outside the home. In partial compensation for these financial setbacks, many households were forced to remove children from school in order to reduce education-related expenditures and have the children help with household chores.³



- In **Cote d'Ivoire**, households with an HIV/AIDS patient spent twice as much on medical expenses as other households. Furthermore, 80 percent of the expenditures went to the AIDS patient, rather than to other household members who are ill. When the person with AIDS died or moved away, average total household consumption fell by as much as 44 percent during the following year.⁴
- In **Uganda**, the economic impact of AIDS-related deaths was stronger than other types of death, as households lost much of their savings in order to pay health care and funeral expenditures. Asset ownership declined when an AIDS death occurred, but remained stable when an adult died from other causes.⁵
- In **Ethiopia**, a study of 25 AIDS-afflicted rural families found that the average cost of treatment, funeral and mourning expenses amounted to several times the average annual household income.⁶

Economic Impact of AIDS on Agriculture

Agriculture is the largest sector in most African economies accounting for a large portion of production and a majority of employment. Studies done in Tanzania and other countries have shown that AIDS will have adverse effects on agriculture, including loss of labor supply and remittance income. The loss of a few workers at the crucial periods of planting and harvesting can significantly reduce the size of the harvest. In countries where food security has been a continuous issue because of drought, any declines in

household production can have serious consequences. Additionally, a loss of agricultural labor is likely to cause farmers to switch to less-labor-intensive crops. In many cases this may mean switching from export crops to food crops.⁷ Thus, AIDS could affect the production of cash crops and, as a result, effect foreign exchange earnings.

- A study done by the **Zimbabwe Farmers Union (ZFU)** showed that the death of a breadwinner due to AIDS will cut the production of maize in small scale farming and communal areas by 61 percent. Similar results were obtained for other crops (see table at right). The fall in output results from losses of labor and remittances and the need to spend scarce resources on medical expenses.

Reduction in Production Due to AIDS Deaths in Zimbabwe	
Crops	Reduction in Output
Maize	61%
Cotton	47%
Vegetables	49%
Groundnuts	37%
Cattle Owned	29%

- In **Ethiopia**, the male head of the household is responsible for special tasks, such as oxen cultivation, harvesting, threshing and farm management. One study found that the effect of an AIDS death varied by region: it would have the most severe effect on harvesting teff in Nazareth, on digging holes for transplanting enset plants in Atat, on ploughing millet fields in Baherdar, and on picking coffee in Yirgalem. Women are generally responsible for other tasks: leveling, weeding, harvesting minor crops, transporting produce, and household duties. The death of the wife to AIDS can make it difficult for other household members to carry out these tasks, in addition to caring for children. The death of a family member because of AIDS also leads to a reduction in savings and investment. The stock of food grain can be depleted to provide food for mourners and the other expenses were met most often by selling livestock. Such loss of productive assets only makes it harder to survive in the future.⁸
- In **Kagabiro village, Tanzania**, when a household contained an AIDS patient, the household labor supply was severely affected: on average, 29% of household labor was spent on AIDS-related matters, including care of the patient and funeral duties. If two people were devoted to nursing duties, as occurred in 66% of the cases, the total labor loss was 43%, on average.⁹

- In **Malawi**, 10% of GDP comes from estate agriculture. A recent study evaluated the costs of HIV/AIDS on a tea estate there (see table at right). The study found that the costs are determined by the levels of both employee benefits and of skilled labor necessary for production. It predicted that, in the longer term, the negative impact on the supply

Cost of HIV/AIDS on a Tea Estate in Malawi			
Description	Total Cost (£)	Related to HIV (%)	Cost of HIV (£)
Provision of medical services	22,275	25	5,569
Funeral costs	928	75	696
Death in service	4,691	100	4,691
benefits			
Absence	14,875	25	3,719
Total	42,769		14,675

of skilled labor will be the strongest effect of HIV/AIDS.¹⁰ It will become increasingly difficult to recruit skilled people, even at the national level.

- Data collected in **Uganda** indicate that agricultural tasks were frequently disrupted when women needed to care for household members ill with AIDS-related conditions.¹¹

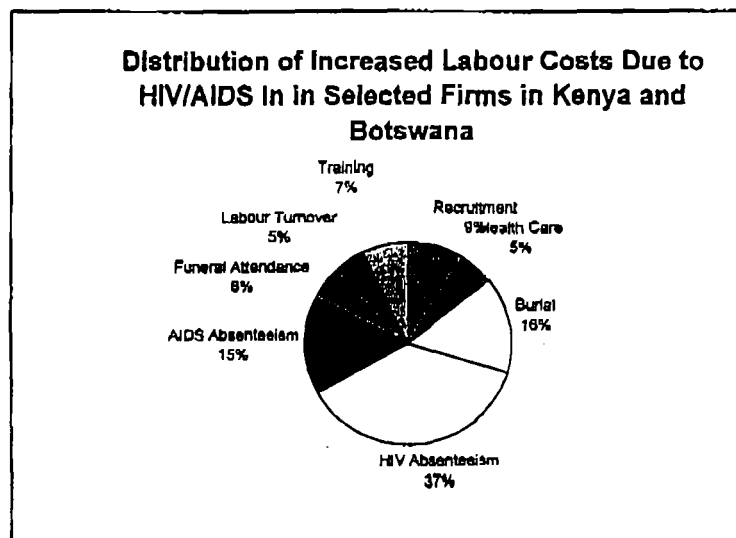
Economic Impact of AIDS on Firms

AIDS may have a significant impact on some firms. AIDS-related illnesses and deaths to employees affect a firm by both increasing expenditures and reducing revenues. Expenditures are increased for health care costs, burial fees and training and recruitment of replacement employees. Revenues may be decreased because of absenteeism due to illness or attendance at funerals and time spent on training. Labor turnover can lead to a less experienced labor force that is less productive.

Factors Leading to Increased Expenditure	Factors Leading to Decreased Revenue
Health care costs	Absenteeism due to illness
Burial fees	Time off to attend funerals
Training and recruitment	Time spent on training
	Labor turnover
	Reduced worker productivity

The actual distribution of these costs has been calculated as part of various USAID-funded AIDSCAP studies of the private sector impact of AIDS:

- One study examining several firms in **Botswana** and **Kenya** showed that the most significant factors in increased labor costs were absenteeism due to HIV or AIDS and increased burial costs as shown in the figure to the right.¹²



- Another study in **Zimbabwe** found that the major expense was health care costs. The transport company in this study has a large staff of 11,500 workers. Since the company offers significant health benefits to its employees, the cost of AIDS is even higher than for other companies that do not provide such benefits. The study estimated that there are currently more than 3,400 workers who are infected with HIV and 64 who died from AIDS in 1996. The total costs of AIDS to the company in 1996 were estimated at Z\$39 million, equal to about 20 percent of the company's profits. More than half of

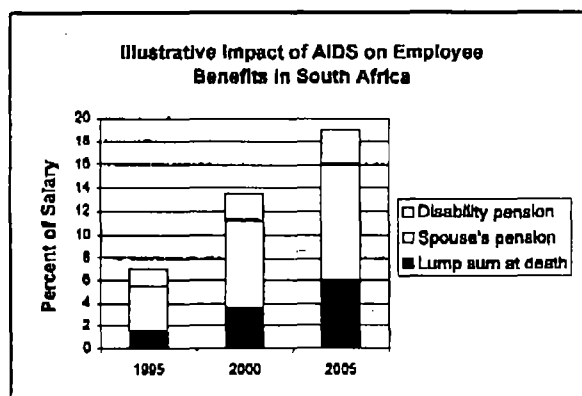
this amount resulted from increased health care costs. By 2005 the cost of AIDS to the company could reach Z\$108 million. There may be indirect costs as well. The report speculates that HIV/AIDS will worsen employee morale and create greater labor-management tensions and cause a labor shortage among skilled positions.¹³

Various studies have also examined the total annual cost of AIDS to different companies, as well as the annual cost of AIDS per employee.¹⁴ These studies found that the annual cost of AIDS per employee varied from US\$17 to US\$300, as shown in the table below:

Company Name	Total Annual Cost of AIDS	Annual Cost of AIDS per Employee
Botswana Diamond Valuing	US\$ 125,941	US\$ 237
Botswana Meat Commission	US\$ 370,200	US\$ 268
Cote d'Ivoire food processing firm	US\$ 33,207	US\$ 120
Cote d'Ivoire textile firm	US\$ 32,667	US\$ 29
Cote d'Ivoire packaging firm	US\$ 10,398	US\$ 125
Kenyan automobile firm	US\$ 21,312	US\$ 17
Kenyan transport firm	US\$ 61,132	US\$ 28
Muhoroni Sugar, Kenya	US\$ 58,303	US\$ 49
Kenyan lumber firm	US\$ 40,630	US\$ 25
Uganda Railway Corporation	US\$ 77,000	US\$ 300

Increased labor costs can reduce the profits necessary for expansion. This impact on profits can be considerable:

- The Indeni Petroleum Refinery in **Zambia** spent US\$26,400 on AIDS-related costs in 1994, more than its declared profits of US\$25,514 in that year.¹⁵
- A study in **South Africa** examined the expected impact of AIDS on employee benefits, and thus on corporate profits. It found that at current levels of benefits per employee, the total costs of benefits would rise from 7 percent of salaries in 1995 to 19 percent by 2005. Since these additional costs will have to be paid at the same time that productivity is declining, due to AIDS, the net impact on profits could be significant.¹⁶



Finally, other costs associated with AIDS that firms face include:

- The **Uganda Railway Corporation** has been hard hit by AIDS among its employees, experiencing a labor turnover rate of 15 percent per year in recent years.¹⁷

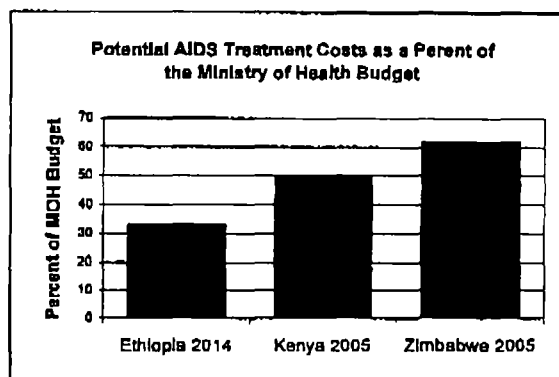
- Medical aid companies in **Zimbabwe** have estimated that meeting all the claims of just one percent of HIV-infected members could result in a 31 percent increase in insurance rates. Most of this increase would have to be paid by employers.¹⁸

For some smaller firms the loss of one or more key employees could be catastrophic, leading to the collapse of the firm. In others, the impact may be small. Firms in some key sectors, such as transportation and mining, are likely to suffer larger impacts than firms in other sectors. In poorly managed situations the HIV-related costs to companies can be high. However, with proactive management these costs can be mitigated through effective prevention and management strategies.

Impacts on Other Economic Sectors

AIDS will also have significant effects in other key sectors. Among them are health, transport, mining, education and water.

- **Health.** AIDS will affect the health sector for two reasons: (1) it will increase the number of people seeking services and (2) health care for AIDS patients is more expensive than for most other conditions. The number of AIDS patients seeking care is already overwhelming health care systems. In many hospitals in Africa, half of hospital beds are now occupied by AIDS patients. AIDS is also an



expensive disease. The graph shows projected expenditure on AIDS as a percentage of public health spending for three African countries.¹⁹ On average, treating an AIDS patient for one year is about as expensive as educating ten primary school students for one year. Governments will face trade-offs along at least three dimensions: treating AIDS versus preventing HIV infection; treating AIDS versus treating other illnesses; and spending for health versus spending for other objectives. Maintaining a healthy population is an important goal in its own right and is crucial to the development of a productive workforce essential for economic development.

- **Transport.** The transport sector is especially vulnerable to AIDS and important to AIDS prevention. Building and maintaining transport infrastructure often involves sending teams of men away from their families for extended periods of time, increasing the likelihood of multiple sexual partners. The people who operate transport services (truck drivers, train crews, sailors) spend many days and nights away from their families. A survey of bus and truck drivers in Cameroon found that they spent an average of 14 days away from home on each trip and that 68 percent had sex during the most recent trip and 25 percent had sex every night they were away.²⁰ Most transport managers are highly trained professionals who are hard to

replace if they die. Governments face the dilemma of improving transport as an essential element of national development while protecting the health of the workers and their families.

- **Mining.** The mining sector is a key source of foreign exchange for many countries. Most mining is conducted at sites far from population centers forcing workers to live apart from their families for extended periods of time. They often resort to commercial sex. Many become infected with HIV and spread that infection to their spouses and communities when they return home. Highly trained mining engineers can be very difficult to replace. As a result, a severe AIDS epidemic can seriously threaten mine production.
- **Education.** Countries invest huge sums of money in the education of their children. When an educated person dies prematurely due to AIDS, much of that investment is wasted. AIDS directly affects the education sector in at least three ways: the supply of experienced teachers is reduced by AIDS-related illness and death; children are kept out of school if they are needed at home to care for sick family members or to work in the fields; and children drop out of school if their families can not afford school fees due to reduced household income as a result of an AIDS death. Another problem is that teenage children are especially susceptible to HIV infection. Therefore, the education system also faces a special challenge to educate students about AIDS and equip them to protect themselves.
- **Water.** Developing water resources in arid areas and controlling excess water during rainy periods requires highly skilled water engineers and constant maintenance of wells, dams, embankments, etc. The loss of even a small number of highly trained engineers can place entire water systems and significant investment at risk. These engineers may be especially susceptible to HIV because of the need to spend many nights away from their families.
- **Civil servants and the military.** Senior civil servants and members of the military represent a large investment in training. Yet some of the highest HIV prevalence rates are found in these two groups. Senior civil servants have the income and mobility that can facilitate having multiple sexual partners. Military men and women are often young, sexually active adults who live away from their families. AIDS deaths to the most experienced members of these groups have the potential to disrupt the smooth functioning of government and military units, threatening stability and security.

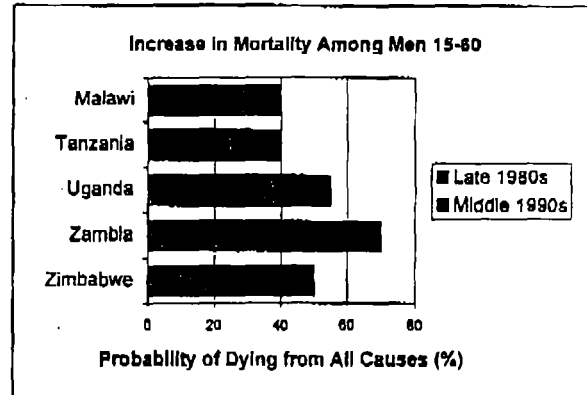
Macroeconomic Impact of AIDS

The macroeconomic impact of AIDS is difficult to assess. Most studies have found that estimates of the macroeconomic impacts are sensitive to assumptions about how AIDS affects savings and investment rates and whether AIDS affects the best-educated employees more than others. Few studies have been able to incorporate the impacts at the

household and firm level in macroeconomic projections. Some studies have found that the impacts may be small, especially if there is a plentiful supply of excess labor and worker benefits are small. Other studies have found significant macroeconomic impacts. The magnitude of the impact depends partly on the structure of the economy. Economies based on extractive industries or export agriculture are likely to be most severely affected. Studies in Tanzania, Cameroon, Zambia, Swaziland, Kenya and other sub-Saharan African countries have found that the rate of economic growth could be reduced by as much as 25 percent over a 20-year period.

There are several mechanisms by which AIDS affects macroeconomic performance.

- AIDS deaths lead directly to a reduction in the number of workers available. These deaths occur to workers in their most productive years. As younger, less experienced workers replace these experienced workers, worker productivity is reduced. The graph to the right illustrates the magnitude of the problem in five African countries.²¹ It shows the increase in mortality among men of working age from the late 1980s to the mid-1990s. Most, if not all, of this increase is due to AIDS.

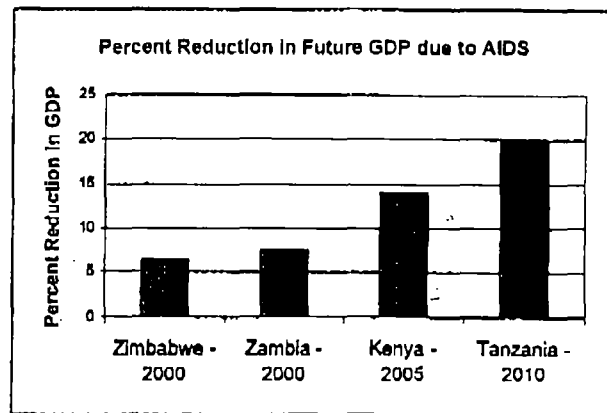


- A shortage of workers leads to higher wages, which leads to higher domestic production costs. Higher production costs lead to a loss of international competitiveness which can cause foreign exchange shortages.
- Lower government revenues and reduced private savings (because of greater health care expenditures and a loss of worker income) can cause a significant drop in savings and capital accumulation. This leads to slower employment creation in the formal sector, which is particularly capital intensive.
- Reduced worker productivity and investment leads to fewer jobs in the formal sector. As a result some workers will be pushed from high paying jobs in the formal sector to lower paying jobs in the informal sector.

Several studies have found that these effects could be large in some African countries.

- A World Bank study examined the macroeconomic impact of AIDS in 30 sub-Saharan African countries.²² This study concluded that the net effect is likely to be a reduction of the annual growth rate of GDP of 0.8 to 1.4 percentage points per year and a 0.3 percentage point reduction in the annual growth rate of GDP per capita.

- A simulation model of the economy of **Cameroon** concluded that the annual growth rate of GDP could have been reduced by as much as 2 percentage points during the 1987-1991 period because of AIDS.²³



- A study of the macroeconomic impacts of AIDS in **Zambia** found that by 2000 the GDP would be 5 to 10 percent lower because of AIDS than it would be if there were no AIDS affecting the population. The authors concluded, "...without unprecedented infusions of free foreign aid to mitigate the effects of AIDS, the economy of Zambia will suffer considerable damage."²⁴
- An assessment of the macroeconomic impacts of AIDS in **Tanzania** by the Government of Tanzania, the World Bank and the World Health Organization in 1991 found that total GDP will be 15 to 25 percent smaller in 2010 because of the impact of AIDS.²⁵
- A study of the impact of AIDS on the economy of **Kenya** projected that GDP will be 14 percent lower in 2005 than it would have been without AIDS. GDP per capita will be 10 percent less in 2005.²⁶

What Can Be Done?

AIDS has the potential to cause severe deterioration in the economic conditions of many countries. However, this is not inevitable. There is much that can be done now to keep the epidemic from getting worse and to mitigate the negative effects. Among the responses that are necessary are:

- **Prevent new infections.** The most effective response will be to support programs to reduce the number of new infections in the future. After more than a decade of research and pilot programs, we now know how to prevent most new infections. An effective national response should include information, education and communications; voluntary counseling and testing; condom promotion and availability; expanded and improved services to prevent and treat sexually transmitted diseases; and efforts to protect human rights and reduce stigma and discrimination. Governments, NGOs and the commercial sector, working together in a multi-sectoral effort can make a difference. Workplace-based programs can prevent new infections among experienced workers.
- **Design major development projects appropriately.** Some major development activities may inadvertently facilitate the spread of HIV. Major construction projects

often require large numbers of male workers to live apart from their families for extended periods of time, leading to increased opportunities for commercial sex. A World Bank-funded pipeline construction project in Cameroon was redesigned to avoid this problem by creating special villages where workers could live with their families. Special prevention programs can be put in place from the very beginning in projects such as mines or new ports where commercial sex might be expected to flourish.

- **Programs to address specific problems.** Special programs can mitigate the impact of AIDS by addressing some of the most severe problems. Reduced school fees can help children from poor families and AIDS orphans stay in school longer and avoid deterioration in the education level of the workforce. Tax benefits or other incentives for training can encourage firms to maintain worker productivity in spite of the loss of experienced workers.

- **Mitigate the effects of AIDS on poverty.** The impacts of AIDS on households can be reduced to some extent by publicly funded programs to address the most severe problems. Such programs have included home care for people with HIV/AIDS, support for the basic needs of the households coping with AIDS, foster care for AIDS orphans, food programs for children and support for educational expenses. Such programs can help families and particularly children survive some of the consequences of an adult AIDS death that occur when families are poor or become poor as a result of the costs of AIDS. The costs of these programs can vary widely.²⁷

Annual Costs of Programmes to Mitigate the Household Impacts of AIDS, Kagera, Tanzania, 1992

Type of Programme	Annual Cost (US\$)
Home care for people with AIDS	\$227 per patient
Orphanage care	\$1,063 per child
Foster care	\$185 per child
Feeding post	\$69 per child
Basic needs support	\$47 per household
Educational support	\$13 per child

A strong political commitment to the fight against AIDS is crucial. Countries that have shown the most success, such as Uganda, Thailand and Senegal, all have strong support from the top political leaders. This support is critical for several reasons. First, it sets the stage for an open approach to AIDS that helps to reduce the stigma and discrimination that often hamper prevention efforts. Second, it facilitates a multi-sectoral approach by making it clear that the fight against AIDS is a national priority. Clearly, AIDS is more than a health problem. It is a development issue that needs to be addressed through the active involvement of all sectors. Third, political support signals to individuals and community organizations involved in the AIDS programs that their efforts are appreciated and valued. Finally, it ensures that the program will receive an appropriate share of national and international donor resources to fund important programs.

Perhaps the most important role for the government in the fight against AIDS is to ensure an open and supportive environment for effective programs. Governments need to make AIDS a national priority, not a problem to be avoided. By stimulating and supporting a broad multi-sectoral approach that includes all segments of society, governments can create the conditions in which prevention, care and mitigation programs can succeed and protect the country's future development prospects.

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Converging Agendas: AIDS and Business (*)

David E. Bloom
Professor of Economics and Demography
School of Public Health
Harvard University

We now know a tremendous amount about the scale and dynamics of the HIV and AIDS epidemics, but their daunting size can make it seem difficult to act. Globally, 2,600,000 deaths are expected this year alone, which means that 1 in every 20 people who died in the world in 1999 died of AIDS. We're expecting about 5.6 million new infections this year – adding to the over 33 million people already living with HIV. As Desmond Tutu said at this forum last year, the numbers are numbing.

Today, then, I hope we can focus on action.

First I'm going to talk about the AIDS agenda and how this growing epidemic strikes productive adults hardest – the very people on whom the future of countries depends. I'm going to look at what needs to be done, not just in rich countries, but also in the developing economies – home to 95% of people living with HIV in the world – who bear the brunt of this ferocious disease. Then I'm going to turn to the business agenda, to the relationship between the AIDS epidemic and our chief engines of economic activity.

Two decades into the epidemic, the global campaign against AIDS continues to be led by national governments and some very vigorous and innovative not-for-profit organizations. But I think it's now time to mobilize the business community, and that's the heart of what we're talking about today. First, because it's a fact that AIDS threatens the bottom line of business by undermining its work force and customer base. Second, business has core skills that can be used to great effect in the fight against AIDS. And third, for businesses keeping an eye on the future of the world economy, the fight against AIDS offers a real global opportunity to sharpen their message, improve their image, and extend their effectiveness.

* This article represents the text of David Bloom's keynote speech at the amfAR-sponsored symposium: *The Global Economics of HIV/AIDS: Defining Social and Business Costs*. The symposium was held on November 30, 1999 at The United Nations in connection with World AIDS Day 1999. The speech complements a white paper, entitled *A Moment in Time: AIDS and Business*, which was prepared as background for the symposium by David E. Bloom, Allan Rosenfield, and River Path Associates. The text of this paper also appears in this issue of *AIDS Patient Care and STDs*.

With this in mind, I'd like to sketch out the start of an agenda for action, which I hope will be discussed and developed during our time together this morning. I hope new partnerships between business, the public sector and civil society will emerge from this process, so that the global campaign against AIDS can rest on three pillars, as business learns, in the words of filmmaker, Spike Lee, to do the right thing.

In the past two decades, there have been many dozens of studies on the impacts of AIDS. Taken together, they clearly demonstrate that AIDS has a huge impact, not just in human terms but also in economic terms, and for three main reasons. First, there are lots of AIDS cases. Second, because the lion's share – 80-90% of all AIDS-related illness and mortality – occurs among people in their 20s, 30s, and 40s, which are the years when people are most productive and save for later in their lives. And finally, because the opportunistic infections that accompany AIDS (and I'm speaking about tuberculosis, pneumonia, meningitis, herpes, and so on) are so very expensive to treat.

The sheer size of the AIDS epidemic makes it very tempting to conclude that there is, as the writer Samuel Beckett put it, nothing to be done. But highly effective action is possible, as the not-for-profit sector has often shown. Dynamic new organizations have grabbed attention, developed effective channels of influence, distributed condoms, and educated their communities, often – usually – on shoestring budgets.

In some countries, necessity has truly been the mother of invention. Uganda and Thailand are justly praised for comprehensive approaches to fighting AIDS, and they show how infections can be averted. The first effective action in the wealthy industrial countries was in many gay communities, where information was staggeringly effective, moving even faster than the disease, and leaving rich countries with AIDS epidemics that, while still appalling, are much milder than most experts once predicted. Education for prevention is, of course, at the forefront of the battle against AIDS. Changing people's behavior so they practice safe sex, or have sex with fewer partners, is the most important intervention. Successful education efforts need to be driven by an understanding of its audience. Top down approaches to this kind of communication have little impact. Education efforts need to be research-driven and emphasize participation.

Work is also needed to combat the problem of stigma-- of the kind faced by one HIV-positive South African woman, who wanted her story told, but was frightened to give her name. She lost her job because of her HIV status, so she started her own cleaning company, calling it Positive Cleaners. The income she's earned has changed her life, allowing her to feed and educate her children, and still have the money to spend on her own health. This woman's health and wealth are inextricably linked and what's true for her is also true at the level of national economies.

Health improvements provide a boost to national income, which, in turn, provides a further boost to a nation's health. This very simple and seemingly obvious idea actually reflects a

very important change in development thinking. International development economists have traditionally seen health improvements as purely a consequence of income growth. But now our views have evolved, and we recognize that health is not just a consequence, but also a trigger for the whole process of social and economic development. Healthier people are more productive workers; they have more incentives to invest in education and training; and they save more. All of these are fundamental drivers of improvements in well-being. Health feeds wealth, and wealth feeds health. It's a virtuous spiral, which has substantial power with respect to its impact on a country's economic performance. But it's not all good news, because if you can have a virtuous upward spiral, it stands to reason that you can have a vicious downward spiral also.

In sub-Saharan Africa, life expectancies are back down to 1950s levels, due to the AIDS epidemic. That's decades of development progress that has been eroded. Over half of the region's population is not expected to reach age 60, and that's a condition that's certain to further impede the region's economic growth. In Russia, the same mechanism is operating, but with a different entry point. Social and economic reversals are depressing health – and letting AIDS right in the door. Russia's transition to a market economy in the 1990s has coincided with one of the most precipitous declines in health status in recorded history, with 1.5 million Russians, disproportionately prime aged men, having died prematurely in just the first half of this decade. We recently learned from Peter Piot and UNAIDS that economic decline seems to be triggering an AIDS epidemic in Russia as injecting drug use rockets among the unemployed. Now the spiral is turning. The cost of ill health will lead to further economic decline as productivity and resources are drained from the Russian economy.

Here's Professor Brian Williams, who heads up an HIV prevention project in the world's biggest gold mining complex at Carletonville in South African. His project is handing out half a million condoms a month – so he's very much in the trenches with respect to the epidemic, and has some strong words that I think we would all do well to take on board:

We're in danger in this country of losing the flower of our youth. In Carletonville our statistics show that at age 15, the infection rate is pretty close to zero. By 25 years of age, 60% of the girls in Carletonville are infected and are going to die. What AIDS is going to do is it's going to infect people between the ages of 20 and 40, it's going to kill young people, people who are educated, people who we are training, people we are relying on to rebuild our country after the devastation of apartheid. Current estimates show that about 5 million South Africans are infected and are going to die. We're in danger of losing an entire generation of young people. We have to make sure that the next generation doesn't get infected, and doesn't die in the same way.

Let me now switch gears from the AIDS agenda to the business agenda. Our research seems to be uncovering a remarkably broad consensus in the field that business, in

particular, could be doing much, much more. So why should business get involved in the campaign against HIV and AIDS? Well, first and foremost, because it's in their interests. The disease hits productive adults hardest, the employees and the customers that business relies on for success. Study after study, mostly African-based because that's where the epidemic has progressed the furthest, shows companies becoming less profitable as their labor productivity falls and their production costs rise. The effects on customers are a little less easy to measure, but not much more difficult to intuit. For as Mechai Viravaidya, AIDS pioneer in Thailand, once put it: "dead customers don't buy."

Even companies not directly affected will eventually feel the impact of this virus. In a global economy, none of us are insulated – as the aptly named Asian contagion that we witnessed during the financial crisis that began in Thailand in June 1997 clearly showed. The African AIDS crisis previews what potentially awaits the businesses and other economies that are more significant in the global economy like India, Brazil, China, and Russia. What we don't know, of course, is how much stronger the world economy would be today if AIDS in Africa was not such a drag on its performance and promise.

AIDS is hitting business right where it hurts, on the bottom line. But business can hit back, because it has enormous power at its disposal to take on AIDS and to make a crucial difference. An infusion of core business skills would massively strengthen the fight against AIDS. Innovation, creativity, effective distribution skills, energetic communication, and the drive to achieve results – and to achieve them fast.

Let's return for a moment to education, the perennial workhorse of any campaign against the disease. Information campaigns rely crucially on an understanding of the audience. It's business that has most successfully exploited the research techniques, which offer effective behavioral segmenting, using them to market products to audiences with skill, verve, and determination. It's business that knows how to move people from awareness to action. Take condoms; putting them in young people's pockets and then getting them out again at the right moment is very tough work, as some of us surely remember. But so, too, is selling sneakers or new technology to fickle audiences. Yet there are examples when the two come together. The ads, for example, of the Kenneth Cole company – who consistently work to be identified with HIV/AIDS and other causes – are both to their credit and direct benefit.

It's not all stick – there's also plenty of carrot. Action on AIDS offers multinational businesses the chance to help build a stronger image of what they – and their valuable brands – can mean in the modern world. It does this in three main ways. First, at the broadest level, companies improve their reputation by showing that they can play a role on the world stage. Many businesses are now economically more important than countries. By showing that they can positively influence world events, they'll be in a better position to get things done to influence the agenda in ways that benefit their core business. The William and Melinda Gates Foundation will soon be the biggest in the world, a spectacular example of truly enlightened self interest. Bill Gates has, without doubt, done the right thing, but

he's also translated this into greater respect for his empire and immediate access to every political leader in the world, which is valuable for him and for the Microsoft brand.

Second, and more specific to companies with serious interest in developing countries, action on AIDS allows them to protect and develop a mandate to operate. Shell Oil is just one example of a company that, because of a complacent stance towards injustice in Nigeria, faced enormous and costly hostility from consumers in both the north and the south. Shell is now spending millions of dollars on its human rights advertisements to try and mend the damage.

Finally, many businesses are now assessing the value of their business in quite different ways. Ford Motor Company has even hinted that it might pull out of making cars to concentrate on designing and marketing the Ford brand. Meanwhile, a Coca-Cola executive famously said that the company could survive the confiscation of every single one of its assets, as long as it was able to keep the rights to its famous logo. For some companies and for some brands, the fight against AIDS offers powerful and relevant brand associations. When Levi-Strauss advertises its blue jeans with a condom in the pocket, it's associating its product with enjoyable and safe sex. AIDS represents a new story about globalization; it's a story that's especially compelling for a generation of young people. Because there's no one in the world under 30, black or white, rich or poor, who remembers a time when AIDS wasn't an unwelcome intrusion in their sex lives. AIDS is the universal story of a generation; it unites the world's young people in a single shared experience.

For the past 20 years, government and non-government organizations (NGOs) have shouldered the burden of the fight against AIDS. They've done a very respectable job, but essentially have been a stool with just two legs. To cope with the epidemic of the future, that stool needs a new leg – and the third leg is business. It's business operating in partnership with government and NGOs who must continue to do what they're good at. It's business taking on a larger role that plays to its comparative advantage, which involves bringing speed, power, and substantial resources to the campaign. Effective partnerships, as we all know, are based on mutual respect, common goals, and complementary skills. These conditions are increasingly present, with a new willingness now for public and private sectors to work together, a result borne out in a recent Price Waterhouse Coopers survey that shows greater understanding emerging between businesses and NGOs.

To end, it's worth remembering something we sometimes overlook as we go about our own personal business. The business community has, in effect, and in barely a century, utterly transformed the planet. From flying to e-mail, fashion to entertainment, banking to tourism, there's almost no area where business energy has not brought remarkable benefits. HIV and AIDS represent a huge problem, but business thrives on challenges and uncertainty. It's also used to acting decisively and quickly, and the global campaign for HIV prevention and AIDS care needs its help, right here and right now.

AIDS IN THE THIRD WORLD



A global disaster

PIETERMARITZBURG, HARARE, KAMPALA

The AIDS virus has infected 47m people, and shows no signs of slowing. It cannot be cured. Can it be curbed?

IN RICH countries AIDS is no longer a death sentence. Expensive drugs keep HIV-positive patients alive and healthy, perhaps indefinitely. Loud public-awareness campaigns keep the number of infected Americans, Japanese and West Europeans to relatively low levels. The sense of crisis is past.

In developing countries, by contrast, the disease is spreading like nerve gas in a gentle breeze. The poor cannot afford to spend \$10,000 a year on wonder-pills. Millions of Africans are dying. In the longer term, even greater numbers of Asians are at risk. For many poor countries, there is no greater or more immediate threat to public health and economic growth. Yet few political leaders treat it as a priority.

Since HIV was first identified in the 1970s, over 47m people have been infected, of whom 14m have died. Last year saw the biggest annual death toll yet: 2.5m. The disease now ranks fourth among the world's big killers, after respiratory infections,

diarrhoeal disorders and tuberculosis. It now claims many more lives each year than malaria, a growing menace, and is still nowhere near its peak. If India, China and other Asian countries do not take it seriously, the number of infections could reach "a new order of magnitude", says Peter Piot, head of the UN's AIDS programme.

The human immuno-deficiency virus (HIV), which causes acquired immune deficiency syndrome (AIDS), is thought to have crossed from chimpanzees to humans in the late 1940s or early 1950s in Congo. It took several years for the virus to break out of Congo's dense and sparsely populated jungles but, once it did, it marched with rebel armies through the continent's numerous war zones, rode with truckers from one rest-stop brothel to the next, and eventually flew, perhaps with an air steward, to America, where it was discovered in the early 1980s. As American homosexuals and drug injectors started to wake up to the dangers of bath-houses and needle-sharing,

AIDS was already devastating Africa.

So far, the worst-hit areas are east and southern Africa. In Botswana, Namibia, Swaziland and Zimbabwe, between a fifth and a quarter of people aged 15-49 are afflicted with HIV or AIDS. In Botswana, children born early in the next decade will have a life expectancy of 40; without AIDS, it would have been nearer 70. Of the 25 monitoring sites in Zimbabwe where pregnant women are tested for HIV, only two in 1997 showed prevalence below 10%. At the remaining 23 sites, 20-50% of women were infected. About a third of these women will pass the virus on to their babies.

The region's giant, South Africa, was largely protected by its isolation from the rest of the world during the apartheid years. Now it is host to one in ten of the world's new infections—more than any other country. In the country's most populous province, KwaZulu-Natal, perhaps a third of sexually active adults are HIV-positive.

Asia is the next disaster-in-waiting. Already, 7m Asians are infected. India's 930m people look increasingly vulnerable. The Indian countryside, which most people imagined relatively AIDS-free, turns out not to be. A recent study in Tamil Nadu found over 2% of rural people to be HIV-positive: 500,000 people in one of India's smallest states. Since 10% had other sexually transmitted diseases (STDs), the avenue for further infections is clearly open. A survey of female STD patients in Poona, in Maharashtra, found that over 90% had never had sex with anyone but their husband; and yet 13.6% had HIV. China is not far behind.

No one knows what AIDS will do to poor countries' economies, for nowhere has the epidemic run its course. An optimistic assessment, by Alan Whiteside of the University of Natal, suggests that the effect of AIDS on measurable GDP will be slight. Even at high prevalence, Mr Whiteside thinks it will slow growth by no more than 0.6% a year. This is because so many people in poor countries do not contribute much to the formal economy. To put it even more crudely, where there is a huge oversupply of unskilled labour, the dead can easily be replaced. Some people argue that those who survive the epidemic will benefit from a tighter job market. After the Black Death killed a third of the population of medieval Europe, labour scarcity forced landowners to pay their workers better.

Other researchers are more pessimistic. AIDS takes longer to kill than did the plague, so the cost of caring for the sick will be more crippling. Modern governments, unlike medieval ones, tax the healthy to

help look after the ailing, so the burden will fall on everyone. And AIDS, because it is sexually transmitted, tends to hit the most energetic and productive members of society. A recent study in Namibia estimated that AIDS cost the country almost 8% of GNP in 1996. Another analysis predicts that Kenya's GDP will be 14.5% smaller in 2005 than it would have been without AIDS, and that income per person will be 10% lower.

The cost of the disease

In general, the more advanced the economy, the worse it will be affected by a large number of AIDS deaths. South Africa, with its advanced industries, already suffers a shortage of skilled manpower, and cannot afford to lose more. In better-off developing countries, people have more savings to fall

ous, AIDS could break budgets and hobble the provision of services. In South Africa, an estimated 15% of civil servants are HIV-positive, but government departments have made little effort to plan for the coming surge in sickness. Education, too, will suffer. In Botswana, 2-5% of teachers die each year from AIDS. Many more take extended sick leave.

At a macro level, the impact of AIDS is felt gradually. But at a household level, the blow is sudden and catastrophic. When a breadwinner develops AIDS, his (or her) family is impoverished twice over: his income vanishes, and his relations must devote time and money to nursing him. Daughters are often forced to drop out of school to help. Worse, HIV tends not to strike just one member of a family. Husbands give it to wives; mothers to babies. This correspondent's driver in Kampala lost his mother, his father, two brothers and their wives to AIDS. His story is not rare.

Obstacles to prevention

The best hope for halting the epidemic is a cheap vaccine. Efforts are under way, but a vaccine for a virus that mutates as rapidly as HIV will be hugely difficult and expensive to invent. For poor countries, the only practical course is to concentrate on prevention. But this, too, will be hard, for a plethora of reasons.

- Sex is fun... Many feel that condoms make it less so. Zimbabweans ask: "Would you eat a sweet with its wrapper on?"

- ... and discussion of it often taboo. In Kenya, Christian and Islamic groups have publicly burned anti-AIDS leaflets and condoms, as a protest against what they see as the encouragement of promiscuity. A study in Thailand found that infected women were only a fifth as likely to have discussed sex openly with their partners as were uninfected women.

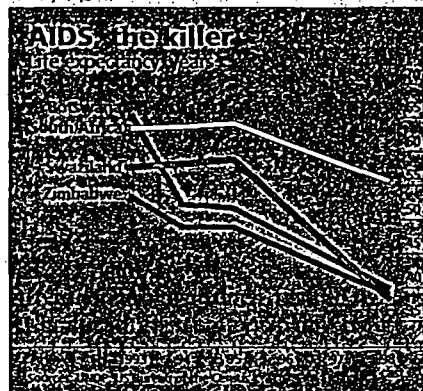
- Myths abound. Some young African women believe that without regular infusions of sperm, they will not grow up to be beautiful. Ugandan men use this myth to seduce schoolgirls. In much of southern Africa, HIV-infected men believe that they can rid themselves of the virus by passing it on to a virgin.

- Poverty. Those who cannot afford television find other ways of passing the evening. People cannot afford antibiotics, so the untreated sores from STDs provide easy openings for HIV.

- Migrant labour. Since wages are much higher in South Africa than in the surrounding region, outsiders flock in to find work. Migrant miners (including South Africans forced to live far from their homes) spend most of the year in single-sex dormitories surrounded by prostitutes. Living with a one-in-40 chance of being killed by a rockfall, they are inured to risk. When they go home, they often infect their wives.

- War. Refugees, whether from genocide in Rwanda or state persecution in Myanmar, spread HIV as they flee. Soldiers, with their regular pay and disdain for risk, are more likely than civilians to contract HIV from prostitutes. When they go to war, they infect others. In Africa the problem is dire. In Congo, where no fewer than seven armies are embroiled, the government has accused Ugandan troops (which are helping the Congolese rebels) of deliberately spreading AIDS. Unlikely, but with estimated HIV prevalence in the seven armies ranging from 50% for the Angolans to an incredible 80% for the Zimbabweans, the effect is much the same.

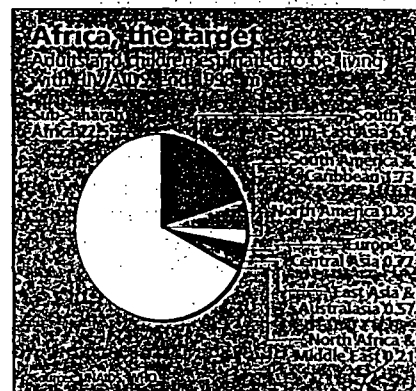
- Sexism. In most poor countries, it is hard for a woman to ask her partner to use a condom. Wives who insist risk being beaten



back on when they need to pay medical bills. Where people have health and life insurance, those industries will be hit by bigger claims. Insurers protect themselves by charging more or refusing policies to HIV-positive customers. In Zimbabwe, life-insurance premiums quadrupled in two years because of AIDS. Higher premiums force more people to seek treatment in public hospitals: in South Africa, HIV and AIDS could account for between 35% and 84% of public-health expenditure by 2005, according to one projection.

Little research has been done into the effects of AIDS on private business, but the anecdotal evidence is scary. In some countries, firms have had to limit the number of days employees may take off to attend funerals. Zambia is suffering power shortages because so many engineers have died. Farmers in Zimbabwe are finding it hard to irrigate their fields because the brass fittings on their water pipes are stolen for coffin handles. In South Africa, where employers above a certain size are obliged to offer generous benefits and paid sick leave, companies will find many of their staff, as they sicken, becoming more expensive and less productive. Yet few firms are trying to raise awareness of AIDS among their workers, or considering how they will cope.

In the public sector, where pensions and health benefits are often more gener-



up. Rape is common, especially where wars rage. Forced sex is a particularly effective means of HIV transmission, because of the extra blood.

- Drinking. Asia and Africa make many excellent beers. They are also home to a lot of people for whom alcohol is the quickest escape from the stresses of acute poverty. Drunken lovers are less likely to remember to use condoms.

How to fight the virus

Pessimists look at that list and despair. But three success stories show that the hurdles to prevention are not impossibly high.

First, Thailand. One secret of Thailand's success has been timely, accurate information-gathering. HIV was first detected in Thailand in the mid-1980s, among male homosexuals. The health ministry immediately began to monitor other high-risk groups, particularly the country's many heroin addicts and prostitutes. In the first half of 1988, HIV prevalence among drug injectors tested at one Bangkok hospital leapt from 1% to 30%. Shortly afterwards, infections soared among prostitutes.

The response was swift. A survey of Thai sexual behaviour was conducted. The results, which showed men indulging in a phenomenal amount of unprotected commercial sex, were publicised. Thais were warned that a major epidemic would strike

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if their habits did not change. A "100% condom use" campaign persuaded prostitutes to insist on protection 90% of the time with non-regular customers.

By the mid-1990s, the government was spending \$80m a year on AIDS education and palliative care. In 1990-93, the proportion of adult men reporting non-marital sex was halved, from 28% to 15%; for women, it fell from 1.7% to 0.4%. Brothel visits slumped. Only 10% of men reported seeing a prostitute in 1993, down from 22% in 1990. Among army conscripts in northern Thailand, a group both highly sexed and well-monitored, the proportion admitting to paying for sex fell from 57% in 1991 to 24% in 1995. The proportion claiming to have used condoms at their last commercial entanglement rose from 61% in 1991 to 93% in 1995.

People lie about sex, so reported good behaviour does not necessarily mean actual good behaviour. But tumbling infections suggest that not everyone was fibbing. The number of sexually transmitted diseases reported from government clinics fell from over 400,000 in 1986 to under 50,000 in 1995. Among northern conscripts, HIV prevalence fell by half between 1993 and 1995, from over 7% to under 3.5%.

Most striking was the government's success in persuading people that they were at risk long before they started to see acquaintances die from AIDS. There was no attempt to play down the spread of HIV to avoid scaring off tourists, as happened in Kenya. Thais were repeatedly warned of the dangers, told how to avoid them, and left to make their own choices. Most decided that a long life was preferable to a fast one.

Second, Uganda. Thailand shows what is possible in a well-educated, fairly prosperous country. Uganda shows that there is hope even for countries that are poor and

barely literate. President Yoweri Museveni recognised the threat shortly after becoming president in 1986, and deluged the country with anti-AIDS warnings.

The key to Uganda's success is twofold. First, Mr Museveni made every government department take the problem seriously, and implement its own plan to fight the virus. Accurate surveys of sexual behaviour were done for only \$20,000-30,000 each. Second, he recognised that his government could do only a limited amount, so he gave free rein to scores of non-governmental organisations (NGOs), usually foreign-financed, to do whatever it took to educate people about risky sex.

The Straight Talk Foundation, for example, goes beyond simple warnings about AIDS and deals with the confusing complexities of sex. Its staff run role-playing exercises in Uganda's schools to teach adolescents how to deal with romantic situations. Its newsletter, distributed free, covers everything from nocturnal emissions to what to do if raped. Visiting AIDS workers from South Africa and Zimbabwe asked the foundation's director, Catharine Watson, how she won government permission to hand out such explicit material, and were astonished to hear that she had not felt the need to ask.

The climate of free debate has led Ugandans to delay their sexual activity, to have fewer partners, and to use more condoms. Between 1991 and 1996, HIV prevalence among women in urban ante-natal clinics fell by half, from roughly 30% to 15%.

Third, Senegal. If Uganda shows how a poor country can reverse the track of an epidemic, Senegal shows how to stop it from taking off in the first place. This West African country was fortunate to be several thousand miles from HIV's origin. In the mid-1980s, when other parts of Africa were already blighted, Senegal was still relatively AIDS-free. In concert with non-governmental organisations and the press and broadcasters, the government set up a national AIDS-control programme to keep it that way.

In Senegal's brothels, which had been regulated since the early 1970s, condom use was firmly encouraged. The country's blood supply was screened early and effectively. Vigorous education resulted in 95% of Senegalese adults knowing how to avoid the virus. Condom sales soared from 800,000 in 1988 to 7m in 1997. Senegalese levels of infection have remained stable and low for a decade—at around 1.2% among pregnant women.

Contrast these three with South Africa. On December 1st, World AIDS Day, President Nelson Mandela told the people of KwaZulu-Natal that HIV would devastate their communities if not checked. The speech was remarkable not for its quality—Mr Mandela is always able to move audiences—but for its rarity. Unlike Mr Museveni, South Africa's leader seldom uses his authority to encourage safer sex. It is a tragic omission. Whereas the potholed streets of Kampala are lined with signs promoting fidelity and condoms, this correspondent has, in eight months in South Africa, seen only two anti-AIDS posters, both in the UN's AIDS office in Pretoria.

How to dither and die

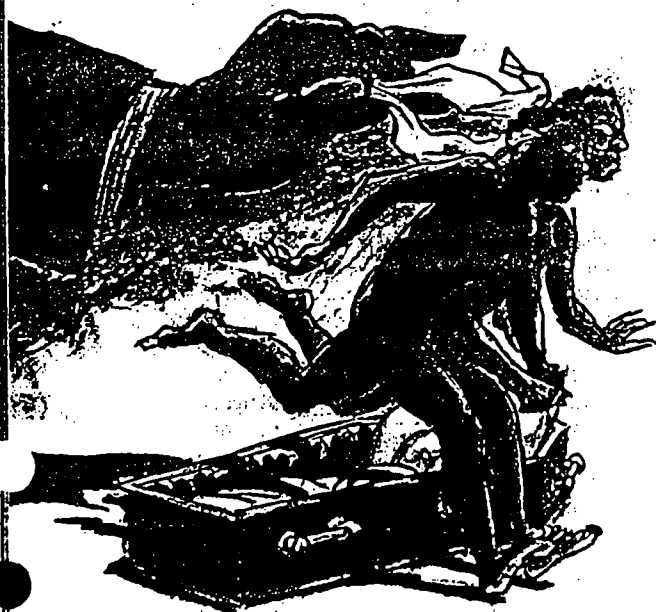
South Africa has resources and skills on a scale that Uganda can only marvel at. It even has an excellent AIDS prevention plan, accepted by the new cabinet in 1994. But the plan was never implemented. The government likes to consult every conceivable "stakeholder", so new plans are eternally drafted and redrafted. Local authorities cannot act without orders from the central government. NGOs, many of them dependent on the powers-that-be for their finance, waste months making sure that enough of their senior management posts are filled with blacks to satisfy the ruling African National Congress. And they have minimal freedom to experiment.

"There's an idea that if you disagree with the government, you are betraying the liberation struggle," says Mary Crewe, head of the Greater Johannesburg AIDS project. As a result, soldiers in the South African army are so ignorant that they snip the tips off their free condoms, and HIV has spread through South Africa as fast, according to Dr Neil McKerrow of Grey's Hospital in Pietermaritzburg, as if no preventive measures at all had been taken.

Such bungling is not unique to South Africa. Most governments have been slow to recognise the threat from AIDS. From Bulawayo to Beijing, apathy and embarrassment have hamstrung preventive efforts.

In anarchic countries, such as Congo and Angola, there have been almost no preventive efforts. Many people believe that the cause—a bid to restrain one of the most basic human instincts—is hopeless. As a Zimbabwean novelist, Chenjerai Hove, puts it with disturbing fatalism: "Since our women dress to kill, we are all going to die." But if the sexual drive is basic, so is the desire to live. If governments in poor countries wake up to the need to persuade their citizens that unprotected sex is Russian roulette, Mr Hove could be proved wrong.

This article is indebted to a number of UNAIDS reports, including AIDS epidemic update (December 1998), AIDS in Africa (November 1998), and "A measure of success in Uganda" (May 1998).



Position Paper
HIV/AIDS in Southern Africa
 Prepared by Professor Alan Whiteside
 Health Economics and HIV/AIDS Research Division
 University of Natal South Africa
 20 November 1998.

Background.

Southern Africa is currently experiencing the worst HIV epidemic in the world. HIV prevalence has risen to levels that seemed impossible a few years ago. Even more worrying is that the spread is far more uniform between rural and urban areas than was the case in Uganda and other East African countries. A quick review of the data from the region shows how serious the situation is. This is shown in Table 1, compiled from UNAIDS sources and the United Nations Human Development Reports. The first column shows the estimated national adult HIV prevalence, the second the number of people living with HIV and AIDS.

Table 1. HIV Prevalence, Infections, Orphans and Life Expectancy in SADC

Country	1. Est. adult prevalence	2. No. of adults & children living with HIV/AIDS	3. Est.no. of orphans	Life Expectancy		HDI Ranking	
				4. 1993	5. 1995	6. 1996	7. 1998
Angola	2.12	110 000	16 000	46.8	47.4	165	156
Botswana	25.10	190 000	25 000	65.2	51.7	71	97
D R Congo	4.35	950 000	310 000	52	52.4	141	143
Lesotho	8.35	85 000	8 500	60.8	58.1	130	134
Malawi	14.92	710 000	270 000	45.5	41	157	161
Mauritius	0.08	No data	No data	70.4	70.9	54	61
Moçambique	14.17	1 200 000	150 000	46.4	46.3	167	166
Namibia	19.94	150 000	7 300	59.1	55.8	116	107
Seychelles	-	-	-	-	64.1	60	56
South Africa	12.91	2 900 000	180 000	63.2	72.0	100	89
Swaziland	18.50	840 000	7 200	57.8	58.8	110	115
Tanzania	9.42	1 400 000	520 000	52.1	50.6	144	150
Zambia	19.07	770 000	360 000	48.6	42.7	136	146
Zimbabwe	25.84	1 500 000	360 000	53.4	48.9	124	130

Source: UNAIDS and WHO, **Epidemiological Fact Sheets on HIV/AIDS and sexually transmitted diseases**, Geneva 1998 and available at www.UNAIDS.org

The consequence of HIV infection is that people will fall ill and die. The impact is most easily seen in terms of increased orphaning and decreased life expectancy. While an infected women has about a 30% chance of infecting her child with HIV, a child born to an infected mother has virtually a 100% chance of being orphaned. The number of living orphans is shown in the third column. There are a number of models of the impact of AIDS on life expectancy. Two have been published: the first in the annual Human Development Report produced by the United Nations Development Programme; the second by the US Bureau of the Census.¹

The UNDP figures are shown in columns four and five of Table 1. It was only in the 1997 Human Development Report that AIDS mortality was considered as having an impact on life expectancy. The table shows 1993 life expectancy figures (in the 1996 report) and 1995 figures (from the 1998

¹ United Nations Development Programme, **Human Development Report 1996 and 1998**, Oxford University Press, New York 1996 & 1998. United States Bureau of the Census, **World Population Profile 1998**, Population Division International Programme Centre, Washington DC, 1998.

report). These figures have added significance, as life expectancy provides one third of the weighting for the calculation of the Human Development Index. As can be seen from the table (columns 6 and 7) the effect of the epidemic is to push down countries down the index.

It should be noted that the calculations by the US Bureau of the Census provide a rather bleaker picture for some of the SADC countries, and this is shown in Tables 2 and 3.

Table 2. Demographic Indicators for 1998 with and without AIDS

Country	Life Expectancy		Child Mortality Rate	
	With AIDS	Without AIDS	With AIDS	Without AIDS
Botswana	40.1	61.5	121.1	57.4
Democratic Republic of Congo	49.3	54.4	152.7	139.3
Lesotho	54	62	120.2	98.3
Malawi	36.6	51.1	231.6	190.3
Namibia	41.5	65.3	125.5	62.1
South Africa	55.7	65.4	95.5	69.7
Swaziland	38.5	58.1	168.1	114.4
Tanzania	46.4	55.2	160.1	137.8
Zambia	37.1	56.2	181.2	125.7
Zimbabwe	39.2	64.9	123.4	50.5

Source: United States Bureau of the Census, *World Population Profile 1998*, Population Division International Programme Centre, Washington DC, 1998.

Table 3. Demographic Indicators for 2010 with and without AIDS

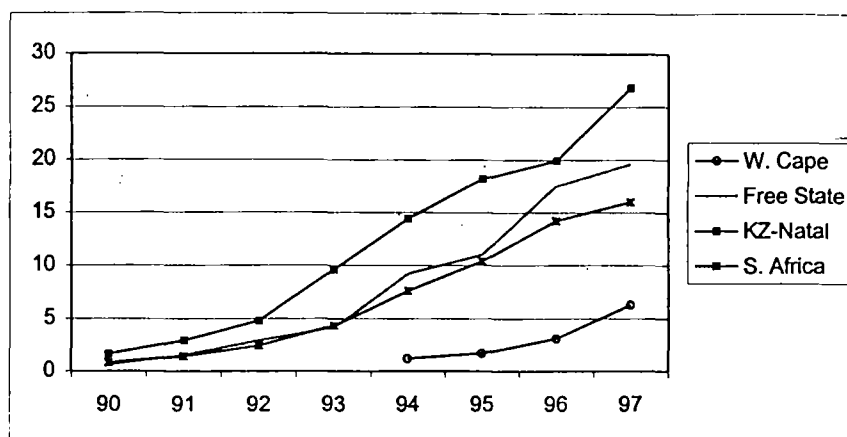
Country	Life Expectancy		Child Mortality Rate	
	With AIDS	Without AIDS	With AIDS	Without AIDS
Botswana	37.8	66.3	119.5	38.3
Democratic Republic of Congo	51.9	59.8	116.2	97.3
Lesotho	44.7	65.9	121.9	70.7
Malawi	34.8	56.8	202.6	136
Namibia	38.9	70.1	118.8	37.5
South Africa	48	68.2	99.5	48.5
Swaziland	37.1	63.2	152.2	77.5
Tanzania	46.1	60.7	131.3	95.8
Zambia	37.8	60.1	160.7	96.9
Zimbabwe	38.8	69.5	115.6	31.8

Source: United States Bureau of the Census, *World Population Profile 1998*, Population Division International Programme Centre, Washington DC, 1998.

The data above are for nations. The situation is not uniform across countries. For example in South Africa the situation varies from province to province. The worst affected is KwaZulu-Natal, where the 1997 survey of ante-natal clinic attenders found an HIV prevalence rate of 26.9%. By contrast in the Western Cape it is 6.3 per cent. The variation in prevalence by province in South Africa is illustrated in Figure 1. The region is also where the highest HIV prevalence in a "low-risk" group

has ever been recorded. According to UNAIDS, in Beitbridge in Zimbabwe “HIV prevalence in pregnant women shot up from 32% in 1995 to 59% in 1996”.²

Figure 1 HIV-positivity in women attending antenatal clinics in South Africa, by selected province overall (%)



Because the HIV rates have risen so rapidly, it is likely that the AIDS cases will show a similar rapid increase. The current situation is that in much of the region impact is restricted to the health care system, where 50 to 70 per cent of medical beds are occupied by people with HIV-related disease. In the medium-term there will be a range of demographic, economic, social, and security implications. The extent and magnitude of these is not yet clear, but it is a source of considerable concern for researchers and activists. Unfortunately these concerns do not appear to be shared by the majority of the governments, politicians, planners and policy-makers in the region.

The Response

The donor community is increasingly worried about the AIDS epidemic, and this is illustrated by the recent decision by UNAIDS and the WHO to launch a “Southern Africa Initiative on HIV/AIDS”. SADC has recognised the importance of the HIV/AIDS epidemic to the region for some time. In part the impetus for SADC actions came from the joint EU/SADC Regional Conference on HIV/AIDS held in Lilongwe, Malawi in December 1996. The conference resulted in two key outcomes, a statement on regional responses to HIV/AIDS, a SADC Plan of Action, and two publications “Conference on HIV/AIDS: Proceedings and Background Papers” and “Conference on HIV/AIDS: Proposal for Regional Actions”.

The SADC Plan of Action recognises that AIDS is not just a health issue and it requires co-ordinated social and economic policies. As well as identifying areas for regional support for national action, and interventions with added value if dealt with regionally, the plan has some specific proposals for action. These include the areas of employment; mining; education; tourism; medical drugs; and the treatment of people with HIV/AIDS; and the collection of data and exchange of information in the region.

At the SADC member states meeting in Mauritius in September 1998, HIV/AIDS was recognised as one of the Biennial Priorities for the Region. The meeting set 10 priorities and, as with the SADC Plan of Action, these recognise the need for a multi-sectoral response. SADC also has made further progress in that a Health Sector Co-ordinating Unit has been established in the Department of

² UNAIDS and WHO, Report on the global HIV/AIDS epidemic, June 1998, Geneva 1998.

Health in South Africa and the Director and Deputy Director took up their posts at the beginning of October 1998. The plans for this sector were adopted by the Council of Ministers and HIV/AIDS is one of the five priority areas for the sector. However it is likely that progress will be slow, as the staff in South Africa are junior and inexperienced. Furthermore SADC has to reflect the views of its member states, and unfortunately the reality is that in some countries AIDS is still not seen as a problem.

USAID and the SADC AIDS Crisis – one response.

USAID has been involved in the region for many years. As with most donors, it saw the ending of apartheid in South Africa as the chance for a new beginning for Southern Africa. It is now recognised that AIDS may well negate this opportunity and indeed could turn back the development clock. USAID is involved in one activity in the region that has the potential to assist in addressing the epidemic. The Project Award No. AOT-G-00-97-00375-00. Title: Operationalising HIV and AIDS, provides for a number of activities to be carried out by the Health Economics and HIV/AIDS Research Division of the University of Natal in Durban. It builds on work already carried out here with support from the European Commission of the European Union and USAID. In particular a toolkit was prepared for incorporating AIDS issues into the development activities of the European Union. This was published in French and English and is available on the World Bank AIDS Economics website as well as in hard copy form.

The activities under the contract are:

- Prepare new and update existing Sectoral AIDS Briefs. These were prepared under contract to the Global Programme on AIDS in 1995 and were published by The Academy for Educational Development with support from USAID in both French and English. Existing AIDS briefs include commercial agriculture; subsistence agriculture, education, health, manufacturing, mining, tourism, and the military. New briefs will include transport, financial sector, fishing, construction, small scale enterprises, entertainment and sport.
- Prepare AIDS briefs for professionals. The following briefs are in production: architects, relief workers, lawyers, town and regional planners, politicians, the media, social workers and NGOs.
- A Toolkit for Governments. This will set out activities to be carried out by the various ministries in government.
- A Toolkit for USAID. This will look at USAID activities and policy and make suggestions as to how AIDS can be incorporated into them.
- Training. The contract provides for training. Originally this was to be for government and other African officials. As this comes at the end of the project (which is scheduled to finish in September 1999) it could be adapted to fit USAID regional needs as well, both in Africa and Washington.

Clinton Presidential Records Digital Records Marker

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7

Divider Title: _____

LIFE Initiative – Global AIDS Funding

Appropriations Bill	FY 2000 Global AIDS Funding	FY 2001 Global AIDS Funding Request	Senate	House
Ag	\$10m	\$10m	\$10m	\$10m
DOD	\$0m	\$10m	\$10m	\$10m
Foreign Ops	\$190m	\$244m	\$225m	\$202m
Labor – HHS	\$35m	\$71m • \$61m CDC • \$10m DOL	\$45m • \$35m CDC • \$10m DOL	\$61m CDC • \$61m CDC • \$0m DOL
Total	\$235m	\$335m	\$290m (- \$45m)	\$283 (-53m)

Leadership and Investment in Fighting an Epidemic FY 2000
by Country/Region and Program Area

(dollar allocations are preliminary and will change based on country assessments and input)

Country	98 POP. (000s)	HIV Prev %	HIV Incid	Primary Prevention (\$m)						Home Care & Rx (\$m)			Surveil (\$m)	Total (\$m)
				VCT	BC/SR	MTCT	Blood SI	STD	Subtot	OI/TB/STD	HBC&Rx	Subtot		
Botswana	1,448	25.1	26,000	0.5	0.25	0.5		0.5	1.75	1.0	0.5	1.5	0.5	
Cote d'Ivoire	15,446	10.1	75,000	0.5	0.25	0.5	0.25	0.5	2	1.0	0.5	1.5	0.5	
Ethiopia	58,390	9.3	400,000	0.5					0.5			0	0.5	
Kenya	28,337	11.6	400,000	0.5	0.25	0.5	0.25	0.5	2	1.0	0.5	1.5	1.0	
Malawi	9,840	14.9	90,000	0.5					0.5			0	0.5	
Mozambique	18,641	14.2	300,000						0			0	1.0	
Nigeria	110,532	4.1	300,000						0			0	0.5	
Rwanda	7,956	12.8	55,000						0			0	0.5	
Senegal	9,723	1.8	2,800						0			0	0.5	
South Africa	42,835	12.9	550,000	0.5	0.25	0.5	0.25	0.5	2	1.0	0.5	1.5	1.0	
Tanzania	30,609	9.4	150,000						0			0	1.0	
Uganda	22,167	9.0	34,900	0.5	0.25	0.5	0.25	0.5	2	1.0	0.5	1.5	1.0	
Zambia	9,461	19.1	68,300	0.5					0.5			0	1.0	
Zimbabwe	11,044	25.8	200,000	0.5					0.5			0	1.0	
India	983,377	0.8	550,000										0.5	
Regional									0			0	1.0	
HdQtrs				0.25	0.25	0.25	0.25	0.25	1.25	1.0	0.5	1.5	1.0	
Total				4.75	1.5	2.75	1.25	2.75	13.0	6.0	3	9.0	13.0	

al n)	FTEs	Country
0.8	2	Botswana
0.0	2	Cote d'Ivoire
0.0	1	Ethiopia
0.5	2	Kenya
0.0	1	Malawi
0.0	1	Mozambique
0.5	1	Nigeria
0.5	1	Rwanda
0.5	1	Senegal
4.5	2	South Africa
0.0	1	Tanzania
0.5	2	Uganda
1.5	1	Zambia
1.5	1	Zimbabwe
0.5	1	India
0.0	1	Regional
0.8	7	HdQtrs
5.0	28	Total

DRAFT FY 1996-2000 HIV/AIDS Funding (In \$000)

Country Operating Unit	FY 1996 TOTAL	FY 1999 Core	FY 1999 AIDS Orphans Supp	FY 99 TOTAL	FY 2000 Core	FY 2000 LIFE Initiative	FY 2000 Total	DCOF * (CHS Account)	FY 2000 AIDS Children Supp. **	FY 2000 TOTAL	Title II Food Aid (BMR)
ANGOLA	0	0		0	1,000		1,000	500		1,500	
BENIN	1,500	1,200		1,200	1,025	0	1,025			1,025	
CONGO	1,000	1,914		1,914	1,500	0	1,500			1,500	
ERITREA	500	217		217	500	0	500			500	
ETHIOPIA	5,125	5,540		5,540	5,000	1,700	6,700	400		7,100	
GHANA	3,700	4,000		4,000	4,000	-	4,000			4,000	
GUINEA	1,300	1,200		1,200	1,725	-	1,725			1,725	
KENYA	3,200	3,300	1,150	4,450	3,200	2,500	5,700	500		6,200	
LIBERIA	0	0		0	-						
MADAGASCAR	500	500		500	800	0	800			800	
MALAWI	2,600	2,600	85	2,685	2,200	2,800	5,000	500		5,900	
MALI	2,400	2,220		2,220	2,500	-	2,500			2,500	
MOZAMBIQUE	3,200	2,820		2,820	3,000	2,100	5,100			5,100	
NAMIBIA	0	0		0	1,000		1,000			1,000	
NIGERIA	1,900	2,000	815	2,815	3,300	3,450	6,750			6,750	
RWANDA	500	2,000	1,000	3,000	1,500	2,000	3,500			3,500	
SENEGAL	100	2,774		2,774	1,700	2,000	3,700			3,700	
SOMALIA	0	0		0	-	-	0				
SOUTH AFRICA	2,000	1,500	1,450	2,950	900	4,800	5,700	750		6,450	
TANZANIA	3,600	4,000		4,000	3,500	2,500	6,000			6,000	
UGANDA	4,900	6,010	1,000	7,010	4,400	2,500	6,900		2,200	9,100	
ZAMBIA	2,700	3,250	1,000	4,250	3,500	3,500	7,000	1,000		8,000	
ZIMBABWE	1,950	1,550	300	1,850	2,000	3,000	5,000			5,000	
RC&A	0	0		0	-	-	0				
REDSOE	360	250		250	200	1,000	1,200			1,200	
REDSOWCA	3,465	3,405	200	3,605	5,700	1,700	7,400			7,400	
AFR/SD	2,500	3,000		3,000	1,850	1,450	3,300			3,300	
Southern Africa	0	750		750	500	1,000	1,500			1,500	
SAHEL	100	0		0	100	-	100			100	
UNAIDS	2,000	0		0							
TOTAL AFR	51,100	56,000	7,000	63,000	56,600	38,000	94,600	3,650	2,200	100,450	-
India (LIFE)						3,000					
G/PHN (LIFE)***						4,000					
Sri Lanka (DCOF AIDS Orphans)								350			
GRAND TOTAL - LIFE						45,000					10,000
GRAND TOTAL - DCOF AIDS Orphans								4,000			
GRAND TOTAL - AIDS Children Supplemental (Recoveries)									6,000		
USAID Global Bureau Attribution for Africa	15,950			18,000						17,375	
(USAID Africa TOTAL)****	[67,050]			[81,000]						[118,825]**	
USAID Agency HIV Total	[121,000]			[135,000]						[200,000]	

* = DCOF for AIDS orphans

*** = About 50% of the G/PHN LIFE amount is attributable to Africa

Revised 01/03/00 Alex Ross, AFR/SD

** = \$3.8 m still to be allocated

**** = Total of AFR and G/PHN attribution for Africa (including \$2 m of \$4 m of G/PHN LIFE); \$10 m in food aid not included yet; \$3.8 m in recoveries not included yet (potential total for 2000 is thus \$133,625,000)

over 200. X15

USAID HIV/AIDS FUNDING

FY 1985 - FY 2001

All Accounts (\$ millions)

Account	FY 1985 Actual	FY 1986 Actual	FY 1987 Actual	FY 1988 Actual	FY 1989 Actual	FY 1990 Actual	FY 1991 Actual	FY 1992 Actual	FY 1993 Actual	FY 1994 Actual	FY 1995 Actual	FY 1996 Actual
DA/DFA Div. ast.	-	1,141	5,000	34,685	47,122	48,503	78,449	95,720	124,343	112,268	117,586	117,805
ESF <cc. support funds/pov oriented funds, Egypt & Israel	-	-	-	-	-	-	-	-	146	504	2,472	-
SEED > Eastern European programs	-	-	-	-	-	-	-	-	-	18	193	-
ESA freed. support Oct	-	-	-	-	-	-	-	-	-	21	403	-
Total	-	1,141	5,000	34,685	47,122	48,503	78,449	95,720	124,489	112,811	120,654	117,805

Changed names

Account	FY 1997 OYB	FY 1998 OYB	FY 1999 OYB	FY 2000 OYB	FY 2001 Request
ESD Child sup.	117,500	121,000	135,000	175,000	244,000
ESF dist. fund.	898	2,400	4,190	4,000	-
SEED	700	-	-	-	-
ESA	2,027	2,242	2,916	1,000	-
PL 480 - food program	-	-	-	10,000	10,000
Other	-	-	-	10,000	-
Total	121,125	125,642	142,106	200,000	254,000

Side. funds
supp. for children

260
displaced children &
orphaned food

dev. fund for Africa until '95

**CDC Global AIDS Activity
FY2000 Expenditure Projections**

Country	Primary Prevention Total	Home Based Care And Treatment	Capacity and Infrastructure	Total by Country
Botswana	\$ 2.1	\$ 0.5	\$ 0.9	\$ 3.5
Cote d'Ivoire	\$ 1.3	\$ 0.7	\$ 1.6	\$ 3.7
Ethiopia	\$ 0.6	\$ 0.3	\$ 0.4	\$ 1.3
Kenya	\$ 1.7	\$ 0.7	\$ 1.4	\$ 3.8
Malawi	\$ 0.2	\$ 0.1	\$ 0.2	\$ 0.5
Mozambique	\$ 0.4	\$ 0.2	\$ 0.7	\$ 1.3
Nigeria	\$ 0.3		\$ 0.7	\$ 0.9
Rwanda	\$ 0.3	\$ 0.2	\$ 1.4	\$ 1.8
Senegal			\$ 1.5	\$ 1.5
South Africa	\$ 1.7	\$ 0.2	\$ 0.9	\$ 2.9
Tanzania	\$ 0.5		\$ 0.7	\$ 1.2
Uganda	\$ 0.6	\$ 1.2	\$ 2.4	\$ 4.2
Zambia	\$ 0.6	\$ 0.4	\$ 1.3	\$ 2.2
Zimbabwe	\$ 0.7	\$ 0.3	\$ 1.2	\$ 2.3
India	\$ 0.2	\$ 0.3	\$ 0.3	\$ 0.8
Regional				
HdQtrs	\$ 1.7	\$ 0.7	\$ 0.8	\$ 3.2
Total	\$ 12.9	\$ 6.0	\$ 16.2	\$ 35.0

LEADERSHIP AND INVESTMENT IN FIGHTING AN EPIDEMIC (*LIFE*)



SUMMARY OF THE DHHS RESPONSE

Introduction

Many countries in Africa and India are experiencing explosive HIV epidemics that are taking an enormous toll in human life and having a profound economic and social impact. AIDS has particularly devastated Sub-Saharan Africa where it is estimated that 32 million adults and 1.2 million children are currently living with HIV/AIDS. In India, an estimated 3 to 5 million individuals are living with HIV infection. Approximately four million individuals become infected with HIV each year in Sub-Saharan Africa and 6 million individuals are infected globally. The AIDS death toll is rapidly rising, with an estimated 6,800 deaths occurring each day in the region. The epidemic is wiping out gains in life expectancy. By the year 2010, demographers project that life expectancy will fall from 66 to 33 years in Zambia and from 70 to 40 years in Zimbabwe. By 2005, 61 of every 1000 infants born in South Africa are expected to die before the age of one year.

Since the beginning of the HIV epidemic, the U.S. Department of Health and Human Services (HHS) has collaborated with countries in Africa and Asia to increase our understanding of HIV and to evaluate interventions that can be effective. Agencies such as the Centers for Disease Control and Prevention (CDC) and the National Institutes for Health (NIH) have been leaders in documenting the nature and spread of the epidemic. Other agencies such as the Health Resources and Services Administration (HRSA), the Administration on Children and Families (ACF), as well as several other DHHS agencies and offices have unique expertise in a number of specific HIV interventions that might be tailored to fill some of the international needs.

HHS has international field station structures and sites in a number of African and Asian countries. These CDC and NIH sites provide opportunities for assistance to countries, as well as for prevention research. CDC field stations are in Cote d'Ivoire, Botswana, Kenya, Thailand and Vietnam with additional presence in Uganda, South Africa, and Malawi. NIH funded HIV-NET sites are present in Uganda, South Africa, Malawi, Zambia, and Zimbabwe. CDC and NIH have relationships in most of the African countries. The United States and developing countries can mutually benefit from lessons learned in applying efforts to contain the massive HIV epidemic in Africa and Asia.

The Life Initiative

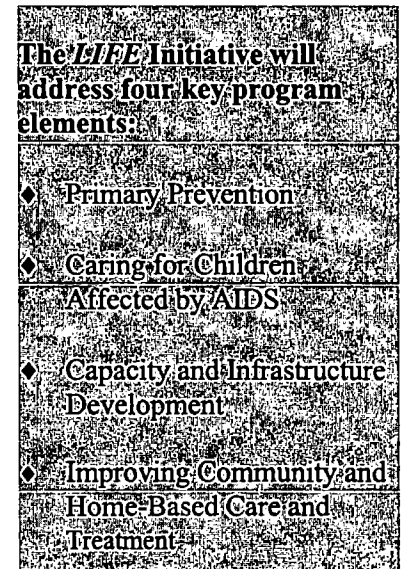
On July 19, 1999, Vice President Gore announced a new Administration initiative to address the global AIDS pandemic. A central feature of the *LIFE* initiative is a \$100 million increase in US support to prevent the further spread of HIV and to care for those affected by this devastating disease. Of this total, \$35 million will be programmed through DHHS, a significant increase in DHHS resources to fighting AIDS internationally.

This Initiative will involve an unprecedented collaboration between three U.S. Agencies: the United States Agency for International Development (USAID), the Department of Health and Human Services (DHHS), and the Department of Defense (DOD) and builds upon existing programs with other national and international agencies. The *LIFE* Initiative will increase available resources, improve and enhance prevention and care efforts, and expand the quality, diversity and number of

both U.S. Government and local country partners who can effectively respond to the pandemic over the next three to five years.

The *LIFE* Initiative focuses on 15 target countries¹ (14 in sub-Saharan Africa and India). These countries have the most severe AIDS epidemics, the highest number of new infections, the potential for greatest impact, and have existing USG programs on which to build. Under the *LIFE* Initiative, DHHS will emphasize the following three of the four LIFE program elements. These activities also enhance and complement current DHHS international activities. Based on the mix of existing activities, not all elements are required in all target countries.

- **Primary Prevention (\$13M):** HHS will assist in implementing comprehensive primary prevention activities by providing technical assistance and training for the following six activities: (1) Voluntary Counseling and Testing; (2) Social Marketing; (3) Behavior Change; (4) Mother-to-Child HIV transmission; (5) STD Management; and (6) Blood Safety.
- **Capacity and Infrastructure Development (\$13M):** HHS will assist countries in building capacity and infrastructure by strengthening existing surveillance systems and developing new initiatives to accurately monitor the epidemic. This infrastructure will provide accurate and timely information for planning and targeting enhanced delivery of HIV/AIDS prevention and care interventions and measuring their impact.
- **Improving Community and Home-Based Care and Treatment (\$ 9M):** HHS will provide assistance in developing and instituting model home and community based care programs in targeted countries. This will include developing training materials and guidelines for home- and community-based treatment of sexually transmitted diseases (STD) and other AIDS associated infections; promotion of short course directly observed treatment (DOTS) for TB, developing indicators for accurately measuring the impact of services on morbidity and mortality.



What Do We Hope to Achieve:

We already possess models of success. In Uganda, HIV prevalence has been reduced by 50% in young urban women, aged 15 to 24, by promoting a delay in the onset of sexual activity and the adoption of safer sexual practices. In Senegal, HIV prevalence has been kept below 2%. The Uganda and Senegal models prove that the battle can be won, and challenge us to bring comparable success to additional countries.

Monitoring systems will measure the combination of enhanced existing programs and the additional “new” activities that are supported through the Initiative. Over the next three years, DHHS, in collaboration with the other USG implementation partners, will meet the following performance targets:

- ◆ 10% decrease in HIV incidence in 15-24 year olds
- ◆ 10% decrease in perinatal infections
- ◆ 10% decrease in reported STD prevalence by men/women
- ◆ 50% of district/provincial governments will be able to implement care and support activities
- ◆ The establishment of surveillance systems in all target countries

¹ The country list will be finalized after further dialogue with specific governments and key stakeholders.

LEADERSHIP AND INVESTMENT IN FIGHTING AN EPIDEMIC (LIFE)



SUMMARY OF THE USAID RESPONSE

Introduction

The Agency for International Development's (USAID) response to the HIV/AIDS epidemic began in 1986, with the Agency contributing over \$1.2 billion to the effort during these last 13 years. Of this total, USAID has programmed over \$650 million in sub-Saharan Africa. Since the early 1990's, USAID has been the leading donor to both UNAIDS and to HIV/AIDS prevention and control in the developing world.

However, since 1993 the USAID budget has remained at approximately \$120 million per year. During this time the number of annual HIV infections has risen 300% to 6 million per year. The epidemic is rapidly spreading within the Southern regions of Africa and into Asia and the newly independent states of the former Soviet Union. USAID now provides technical assistance and support to programs in 47 developing countries, 22 of which are in sub-Saharan Africa. These country programs are designed to decrease HIV transmission and reduce the impact of AIDS on families and societies, but they continue to be underfunded relative to the enormous need. USAID resources, combined with other international donors and contributions from national host country governments, are only able to reach 10% to 20% of the "at-risk" population in sub-Saharan Africa.

The *LIFE* Initiative

On July 9, 1999, Vice President Gore announced a new Administration initiative to address the global AIDS pandemic. A central feature of the *LIFE* initiative is a \$100 million increase in US support to prevent the further spread of HIV and to care for those affected by this devastating disease. Of this total, \$55 million will be programmed through USAID, nearly doubling the resources available for USAID programs in sub-Saharan Africa.

The *LIFE* Initiative focuses on 15 target countries¹ (14 in sub-Saharan Africa and India). These countries have the most severe AIDS epidemics, the highest number of new infections, the potential for greatest impact, and have existing USAID programs on which to build. Under the *LIFE* Initiative, USAID will emphasize the following four program elements. Based on the mix of existing activities, not all elements are required in all target countries.

- **Primary Prevention:** USAID will program \$25 million in 13 of the 15 target countries to reverse the trend of rising HIV infection rates. This prevention component will support voluntary counseling and testing, condom marketing, behavior change programs, mother to child transmission reduction, STD treatment, and blood safety.

¹ The country list will be finalized after further dialogue with specific governments and key stakeholders.

- **Improving Community and Home Based Care and Treatment:** USAID will allocate \$14 million in 7 of the 15 target countries to provide a continuum from in-patient to community outpatient treatment, combined with psychosocial support services which utilize a wide range of community workers, including traditional healers.
- **Caring for Children Affected by AIDS:** USAID will devote \$10 million in 12 of the 15 target countries to assist children affected by AIDS and their families. Nutritional support through Title II, Food for Peace, programs will supplement existing efforts to strengthen the capacity of families and caring for AIDS orphans.
- **Capacity and Infrastructure Development:** With a budget of \$ 6 million, USAID will work in 10 of the 15 target countries to increase host country capacity to implement effective interventions, focusing on government, private sector, NGOs, and research institution capabilities. Key activities will increase the use of accurate HIV surveillance data to target HIV/AIDS prevention and care interventions and to measure the impact of these interventions, and will expand capabilities for the delivery of care and services.

Building on established relationships between its Missions and host country partners, USAID will take the lead responsibility to facilitate an unprecedented coordinated international US response at the country level. Other participating US government agencies are the Department of Health and Human Services (DHHS) and the Department of Defense (DoD). In addition, USAID will provide secretariat support to the Coordinating Task Force, which will be organized under the auspices of the White House Office for National AIDS Policy (ONAP).

What Do We Hope to Achieve:

We already possess models of success. In Uganda, HIV prevalence has been reduced by 50% in young urban women, aged 15 to 24, by promoting a delay in the onset of sexual activity and the adoption of safer sexual practices. In Senegal, HIV prevalence has been kept below 2%. The Uganda and Senegal models prove that the battle can be won, and challenge us to bring comparable success to additional countries.

Monitoring systems will measure the combination of enhanced existing programs and the additional "new" activities that are supported through the Initiative. Over the next three years, the Agency will meet the following performance targets:

- ◆ 10% decrease in HIV incidence in 15-24 year olds
- ◆ 10% decrease in perinatal infections
- ◆ 10% decrease in reported STD prevalence by men/women
- ◆ 50% of households caring for children affected by AIDS will receive assistance from an institution or group outside the family
- ◆ 50% of district/provincial governments will be able to implement care and support activities
- ◆ The establishment of surveillance systems in all target countries.



LEADERSHIP AND INVESTMENT IN FIGHTING AN EPIDEMIC (*LIFE*)

A Global AIDS Initiative

SUMMARY

On July 19, 1999, the Administration announced a new Initiative to address the global AIDS pandemic. This Initiative is supported by an amendment to the Fiscal Year 2000 budget proposal signed by the President and submitted to Congress for its consideration. A central feature of this *LIFE* Initiative is a \$100 million increase in US support for sub-Saharan African countries and India, which are working to prevent the further spread of HIV and to care for those affected by this devastating disease. This additional funding is a critical step by the United States Government in recognizing the impact that AIDS continues to have on individuals, families, communities and nations responding to the imperative to do more. It is our hope that other nations and institutions will match this action.

This plan contains a framework of interventions, grounded in a series of goals and objectives consistent with those established for the international community in collaboration with the Joint United Nations Programme on AIDS (UNAIDS). Specific activities and outcomes will be delineated through dialogue with those African nations that partner with the United States, as well as with the multinational and community-based non-governmental organizations that support the front line fight against AIDS.

The Initiative builds on the existing investment by the US in HIV/AIDS programs in Africa and India and involves an unprecedented collaboration between the United States Agency for International Development (USAID), the Department of Health and Human Services (HHS), and the Department of Defense (DoD). USAID will have lead responsibility in the facilitation of coordinated action. The Initiative is a significant turning point in the United States Government fight against AIDS and will contribute over the next 3 to 5 years to broad global targets that seek to reduce the transmission of HIV by 25% and provide basic care and support services to at least 30% of infected persons.

The Initiative focuses on sub-Saharan Africa and India, which will be complemented by regional activities in western and southern Africa. The countries targeted represent those with the most severe epidemic, the highest number of new infections, where the potential for impact is greatest, and where USG agencies are already active.

The Initiative will contribute to the achievement of the goal's articulated by UNAIDS and to the partnerships necessary to that achievement. Yet curtailing this epidemic will require a significantly enhanced response by the global community and cannot be viewed as just the responsibility of the US government. Therefore, US partners involved in the *LIFE* Initiative will collaborate with UNAIDS and other international and local agencies both to leverage additional resources from host countries, multilateral institutions, and the private sector and to maximize coordination.

***LIFE* INITIATIVE'S GUIDING PRINCIPLES**

US agencies will apply the following principles to the design and implementation of *LIFE*:

- ✓ Country ownership of the activities is essential.
- ✓ Initiative funding must complement existing HIV/AIDS programs and activities conducted abroad.
- ✓ Leverage of, and coordination with other donors and organizations is critical.
- ✓ The number of collaborating USG agencies and other partners in the fight against AIDS must be increased.
- ✓ Support for indigenous expertise and institutions in implementing program elements must be emphasized.
- ✓ Information sharing must be two-way so as to enhance opportunities to learn about new models that will assist US-based HIV programs as well as to share US experiences abroad.

PROGRAM ELEMENTS

The Initiative addresses program elements critical to fighting the AIDS pandemic. Although the Initiative will not support all elements in every country, its funding must be coordinated and integrated within an overall comprehensive response. Country programs will be tailored to their needs and existing efforts underway.

Primary Prevention: A key component of the initiative is prevention to slow—and hopefully reverse—the trend of rising HIV rates in partner countries. The goal of primary prevention is to reduce the incidence of new HIV infections. Ninety percent of new infections in the developing world are known to derive from either sexual transmission (80%) or mother to child transmission (10%), and another 5% from contaminated blood transfusions and infected needles. The prevention component of this initiative seeks to reduce these means of transmission through a package of activities involving civilian and military populations. These include voluntary counseling and HIV testing, mother to child transmission prevention, STD treatment, social marketing of barrier methods, behavior change interventions, and blood safety.

Improving Community and Home Based Care and Treatment: Currently in Sub-Saharan Africa and India, care and treatment for HIV infected persons and support to their families is minimal. Less than 5% of persons know their HIV status and health care providers lack the resources to diagnose and treat HIV and the associated opportunistic infections, let alone to use of the latest “state of the art” antiviral treatment regimens. Ideally, there should be a continuum between in-patient and community outpatient treatment, combined with psychosocial support services utilizing a wide range of community workers, including traditional healers. Much can be done to improve the quality and duration of life for persons living with HIV/AIDS and their families in developing countries while the infrastructure and capacity necessary for more advanced treatments is established. For instance, while the leading killer of AIDS patients in the developing world is TB, through use of directly observed therapy regimens (DOTS), TB can be cured in HIV infected persons. The initiative will support basic medical, social, and home and community based care to greatly expand the availability of these services.

Caring for Children Affected by AIDS: By the year 2000, there will be close to 24 million children who will have lost one or both parents in 19 of the African countries where HIV/AIDS is found in epidemic proportions. By the end of the next decade, this number will increase to over 40 million. Despite the magnitude of this crisis, services for children orphaned by AIDS are extremely limited in most countries. This initiative will enable USAID to assist children affected by AIDS and for their families, primarily through the use of Title II, Food for Peace programs. These efforts will supplement existing efforts to strengthen the capacities of families and communities in the geographic areas where HIV/AIDS has made them especially vulnerable.

Capacity and Infrastructure Development: To make a difference in this epidemic, political commitment and leadership are essential, as is the capacity to implement effective interventions. Key activities to support governments, the private sector, NGOs, and research institutions are to (1) provide professional training and technical assistance and support; (2) increase the use of accurate HIV surveillance data to inform decisions on targeting of HIV/AIDS prevention and care interventions, (3) measure the impact of these interventions, and (4) build new capabilities for the delivery of treatment and support services.

Managing and Monitoring the *LIFE* Initiative: A coordinating task force will be convened under the auspices of the White House Office of National AIDS Policy, with secretariat support provided by USAID. Multiple partners will be engaged in a collaborative effort to develop joint management and monitoring plans, achieve consensus on performance measures, and identify areas for cooperative efforts and for complementary programs.

ANNEX – TABLE OF INVESTMENTS

Program Element	Investment
Primary Prevention	
1) Program Delivery and Other Activities	USAID: \$25M
2) Technical Assistance and Training	HHS: \$13M
3) Prevention activities for African military and uniformed services	DoD: \$10M
	Subtotal: \$48M
Improving Community and Home Based Care and Treatment	
1) Program Delivery	USAID: \$14M
2) Technical Assistance and Training	HHS: \$9M
	Subtotal: \$23M
Caring for Children Affected by AIDS	USAID: \$10M
Capacity & Infrastructure Development	
1) Increasing political commitment and strengthening AIDS programs	USAID: \$6M
2) Surveillance	HHS: \$13M
	Subtotal: \$19M

WORLDWIDE HIV/AIDS GOALS

UNAIDS, in cooperation with USAID and other bilateral and multi-lateral partners, has laid out a series of international goals for the next five years as described below. These goals represent the result of the total worldwide contribution of resources and effort. The Administration seeks to further these goals through *LIFE* Initiative.

- ✓ The incidence of HIV infection will be reduced by 25% among 15-24 year olds by 2005. (Currently 2 million young adults are infected each year in sub-Saharan Africa.)
- ✓ At least 75% of HIV infected persons will have access to basic care and support services at the home and community levels, including drugs for common opportunistic infections (Tb, pneumonia, and diarrhea). (Currently, less than 1% of HIV infected persons have such access.)
- ✓ Orphans will have access to education and food on an equal basis with their non-orphaned peers.
- ✓ By 2002, domestic and external resources available for HIV/AIDS efforts in Africa will have doubled to \$300 million per year. (Currently, approximately \$150 million per year is spent on HIV/AIDS prevention in sub-Saharan Africa.)
- ✓ By 2005, 50% of HIV infected pregnant women will have access to interventions to reduce mother-to-child HIV transmission. (Currently, less than 1% of HIV infected pregnant women have access to such services in sub-Saharan Africa.)

LEADERSHIP AND INVESTMENT IN FIGHTING AN EPIDEMIC (LIFE)

Proposed Operating Plan

Introduction

On July 9, 1999, Vice President Gore announced a new Administration initiative to address the global AIDS pandemic. A central feature of the *LIFE* initiative is a \$100 million increase in US support for sub-Saharan countries working to prevent the further spread of HIV and to care for those impacted by this devastating disease. While not enough to address all needs, this additional funding is an absolutely critical step by the United States Government in recognizing the impact that AIDS continues to have on individuals, families, communities and nations.

This proposed operating plan outlines the intended programming of this additional funding, which is supported by an amendment to the Fiscal Year 2000 budget proposal signed by the President and submitted to Congress for its consideration on July 19, 1999. It contains an outline of specific activities, grounded in a series of goals and objectives consistent with those already established for the international community by the Joint United Nations Programme on AIDS (UNAIDS). Specific activities and outcomes will be added after dialogue with those African nations that partner with the United States, as well as with the multinational and community-based non-governmental organizations that continue to support the front line fight against AIDS.

The Initiative builds on the existing investment by the US in HIV/AIDS efforts in Africa and India and involves an unprecedented collaboration between the United States Agency for International Development (USAID), the Department of Health and Human Services, and the Department of Defense (DoD). The *LIFE* Initiative is a significant turning point in the United States Government fight against AIDS and will significantly contribute to broader global targets over the next 3 to 5 years.

Curtailing this epidemic is not just the responsibility of the U.S. Government. The Initiative partners will collaborate with UNAIDS and other international and local agencies to leverage additional individual country, multilateral, bilateral, and private

LIFE INITIATIVE'S GUIDING PRINCIPLES

US agencies will apply the following principles to the design and implementation of *LIFE*:

- ✓ Country ownership of the activities is essential. USG agencies will actively seek the approval and full cooperation and collaboration of host countries in implementing activities.
- ✓ GAI funding and activities are in addition to existing USG HIV/AIDS programs and activities conducted abroad. The net total of GAI new and expansion of existing activities will yield expected results in the target countries and programs.
- ✓ The GAI strives to increase the number of collaborating USG agencies and other partners in the fight against AIDS.
- ✓ Scaling up HIV interventions will require that agencies apply new approaches, guided by country needs.
- ✓ Active coordination of GAI activities among federal agencies is required at the country and US levels.
- ✓ The GAI set of activities will be coordinated with other donors and will seek to leverage other donors' efforts and resources.
- ✓ USG partners will conduct joint assessments with country stakeholders and donors of the respective national AIDS situation, current programmatic efforts, and will jointly design, implement and evaluate activities.
- ✓ Support for African/Indian expertise and institutions in implementing program elements are emphasized.
- ✓ The GAI offers opportunities to learn about new models that will assist US-based HIV programs, as well as to share US experiences abroad.

resources. At the present time, the UNAIDS has estimated that resource needs for *prevention alone* for sub-Saharan Africa total in excess of \$600 million per year. *LIFE* will contribute to this goal and seeks to promote the global partnership necessary for a fully successful level of effort.

UNAIDS GOALS

UNAIDS, in cooperation with its bilateral and multi-lateral partners, has laid out a series of international goals for the next five years as described below. These goals represent the result of the total worldwide contribution of resources and effort. The Administration seeks to further these goals through *LIFE* Initiative.

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- ✓ Orphans will have access to education and food on an equal basis with their non-orphaned peers.
- ✓ By 2002, domestic and external resources available for HIV/AIDS efforts in Africa will have doubled to \$300 million per year. (Currently, approximately \$150 million per year is spent on HIV/AIDS prevention in sub-Saharan Africa.)
- ✓ By 2005, 50% of HIV infected pregnant women will have access to interventions to reduce mother-to-child HIV transmission. (Currently, less than 1% of HIV infected pregnant women have access to such services in sub-Saharan Africa.)

Geographic Focus

LIFE focuses on 15 target countries (14 in sub-Saharan Africa and India) as well as on regional activities in western and southern Africa. In each of these countries, there will be collaborative support from more than one federal agency. Countries were selected based on the magnitude of the epidemic, history of political commitment to fighting the epidemic, anticipated receptivity to US assistance, and presence of existing US implementation mechanisms. Additional criteria are presented below.

LIFE Countries*	USAID	DHHS	DoD
Botswana	X	X	X
Cote d'Ivoire	X	X	
Ethiopia	X	X	X
India	X	X	
Kenya	X	X	X
Malawi	X	X	X
Mozambique	X	X	
Nigeria	X		X
Regional Programs	X	X	
Rwanda	X	X	
Senegal	X		X
South Africa	X	X	X
Tanzania	X	X	
Uganda	X	X	X
Zambia	X	X	
Zimbabwe	X	X	X

**preliminary list – subject to change*

TABLE 1—COUNTRY SELECTION CRITERIA

Criteria used to identify the above countries include the following:

- ✓ The magnitude of the epidemic
- ✓ Country receptivity to assistance from US government
- ✓ Country political commitment to fighting the AIDS epidemic
- ✓ Potential for interventions and unique opportunities
- ✓ Potential for impact
- ✓ Potential for leveraging of other local and donor support
- ✓ Existing U.S. Government implementation mechanisms

Program Elements

LIFE addresses four key program elements critical to fighting the AIDS pandemic: primary prevention, caring for children affected by AIDS, capacity and infrastructure development, and improving community and home based care and treatment. Each of these elements must be coordinated and integrated within an overall comprehensive response. To facilitate this coordination, USAID missions will have the lead responsibility for facilitating inter-agency communication, ensuring adequate dialogue with host nation agencies and organizations, and establishing a joint country-specific implementation plan.

The design of the *LIFE* initiative will foster the expansion of current activities and provide support for evaluating and integrating more recently developed interventions (e.g. methods to reduce mother-to-child HIV transmission) that have not yet been incorporated into comprehensive programs. Not every country will have all program elements listed below. Country programs will be tailored to the needs and interests of the country and existing efforts underway.

Program Element	Investment
Primary Prevention 1) Program Delivery and Other Activities 2) Technical Assistance and Training 3) Prevention activities for African military and uniformed services	USAID: \$25M HHS: \$13M DoD: \$10M Subtotal: \$48M
Caring for Children Affected by AIDS	USAID: \$10M
Capacity & Infrastructure Development 1) Increasing political commitment and strengthening AIDS programs 2) Surveillance	USAID: \$6M HHS: \$13M Subtotal: \$19M
Improving Community and Home Based Care and Treatment 1) Program Delivery 2) Technical Assistance and Training	USAID: \$14M HHS: \$9M Subtotal: \$23M

Primary Prevention

The Global AIDS initiative focuses primarily on prevention (\$48 million of \$100 million) to slow—and hopefully reverse—the trend of rising HIV infection rates in developing countries. The goal of primary prevention is to reduce the incidence of new HIV infections. Ninety percent of new infections in the developing world derive from either sexual transmission (80%) or mother to child transmission (10%), and another 5% from contaminated blood transfusions and infected needles.

Therefore, the primary prevention component of this initiative seeks to reduce these means of transmission through the following activities (differentiation is made between civilian and military prevention efforts, reflecting the mutually supportive yet distinct role of the Department of Defense within this initiative):

Primary Prevention - Civilian

The program element of primary prevention has been broken down into four distinct, mutually supportive activities.

Performance Measures for Primary Prevention

Within three years, monitoring systems will measure the combination of enhanced existing programs and the additional "new" activities that are supported through the initiative. The following performance measures and targets are expected:

- ✓ decrease in reported non-regular sex partners over the first year
- ✓ increase in reported barrier method use with non-regular/regular sex partners
- ✓ decrease in reported STD prevalence for men/women
- ✓ decrease in HIV incidence rate in 15-24 year olds
- ✓ decrease in perinatal infections

1) Voluntary Counseling and Testing

The purpose of voluntary counseling and testing is to identify persons already infected with HIV. In addition, the counseling sessions (both before and after the actual HIV test) offer an important opportunity for one-on-one prevention education.

Therefore, this initiative will allow USAID to assist 11 countries and the southern Africa region to develop and implement locally appropriate voluntary counseling and HIV testing services. DHHS will support this work by providing critical technical assistance to ensure the quality and accuracy of HIV testing, identifying methods to target high risk groups with VCT services, and assisting USAID with developing linkages between VCT and health and social services.

2) Social Marketing

The utilization of barrier methods (primarily male and female condoms) has proven to be an essential element of HIV and STD prevention. Providing accurate information on the importance of barrier method protection and reducing societal resistance to its use is an essential prevention activity.

Therefore, this initiative will allow USAID to assist 5 countries in increasing their social marketing efforts to improve access to barrier methods.

3) Behavior Change

In addition to broad community messages used to support the social marketing of barrier protection, more individualized interventions are needed to effect actual changes in behavior. Social marketing creates a more receptive attitude to the behavior change interventions, which build on that receptivity and promote individual acceptance and use of barrier protection. In addition, efforts to reduce the stigma of HIV will be employed (using faith communities and other organizations of influence) in order to reduce resistance to getting tested, informing partners and family if infected, and seeking help in obtaining HIV-related care services.

Therefore, this initiative will allow USAID to establish new or enhanced behavior change activities in 15 countries and one regional area. The goal of each will be to expand behavior change interventions, with specific targeting of youth and adult males.

4) Mother-to-Child HIV transmission

At least ten percent of new HIV infections are a result of transmission of HIV from mother to child either during pregnancy or birth, or subsequently through breastfeeding. New treatments offer tremendous promise in greatly reducing the likelihood of mother-to-child transmission. However, significant barriers to their utilization remain, including low percentages of HIV-positive mothers who get tested before birth, lack of training of health care providers in the use of the treatments, and cultural acceptance of preventative medicine.

Therefore, this initiative will support USAID to assist 6 countries in implementing programs to design and implement successful interventions to prevent mother-to-child transmission of HIV. At these sites, USAID will provide support for screening of pregnant women, and training of maternal health providers. DHHS will also support this activity by identifying barriers that exist for accessing these services and by monitoring the outcomes of these interventions on both infants and mothers.

5) STD Management

The successful prevention and treatment of sexually transmitted diseases (STDs) are important strategies for reducing the incidence of HIV infections. Because STDs result from many of the same behaviors that lead to HIV infection, efforts to prevent STDs are critical to stopping HIV infections as well. In addition, untreated STDs significantly increase the likelihood of infection by HIV upon exposure; therefore, identifying those with STDs and getting them into treatment is also effective in reducing HIV infection rates.

Therefore, this initiative will support USAID in 12 countries to implement new or expand existing STD prevention, diagnostic and treatment services.

6) Blood Safety

HIV infection through the use of contaminated blood or blood products is a significant problem in many poorer countries. However, implementation of modest screening, testing, training, and quality control programs can dramatically reduce this risk.

Therefore, this initiative will support USAID in 4 countries to implement programs to improve blood collection from volunteer donors, increase the quality of HIV testing of blood and ensure more appropriate use of blood transfusions.

Primary Prevention - Military

The sub-Saharan region has been marred by decades of political strife that has resulted in numerous armed conflicts. Many nations in the region maintain large military forces, and frequently deploy them outside their own borders. Military personnel often become unwitting vectors of HIV from one part of Africa to another. Therefore, efforts to increase awareness of individual HIV status and implementation of effective HIV prevention and education programs among military personnel are essential.

The program element of primary prevention for military personnel has been broken down into three specific areas: assessment, education of indigenous military personnel, and education of UN peacekeeping forces stationed in the region.

1) Assessment

Experience with AIDS prevention in the U.S. military provides a model for effective intervention in African military populations. It has been demonstrated that assessment of knowledge, attitudes, and behaviors, coupled with serial prevalence or incidence measurements, can be done while maintaining confidentiality and with a high level of voluntary participation. The U.S. military population is exposed to multiple HIV subtypes while on deployment, in response rapid diagnosis of HIV subtypes have already been developed. There are a number of factors contributing to HIV risk. These include travel away from home base, alcohol use, and economic means to use commercial sex workers. Assessment of these components of HIV risk in African military populations will develop the regional profile to design and guide prevention activities.

2) Regional specific military-based education.

Based on findings of the assessments described above and through work with UNAIDS, regional scientists, and African militaries, military-based education will be directed to four specific African regions: East, South, West, and West-Central, respectively. The approach will proceed by stages:

- ✓ assessment of HIV prevalence and risk behaviors
- ✓ development of a regional prevention plan
- ✓ implementation through training and development of infrastructure
- ✓ evaluation of the effect of prevention
- ✓ refinement and incorporation into the military culture for enduring impact

DoD will build on its unique tri-service military education programs developed to prevent alcohol abuse and STDs, as well as the region-specific HIV prevention work by NGOs and USAID. Anonymous serosurveys with risk behavior data collection will begin as soon as feasible. Current educational modules created by the Naval Research Unit in San Diego (NHRC) and Johns Hopkins University (JHU) will be culturally adapted to the targeted areas in Africa. In addition, locally developed or adapted interventions identified by USAID or DHHS may also be utilized.

The initial round of serosurveys and risk behavior assessment will take a minimum of six months. A "train the trainer" approach that has been very successful within the U.S. Air Force will be used. This training can occur simultaneously within the different regions and will be completed within three months. All of these programs will be coordinated with similar USAID activities (for example, education concerning condoms, counseling, and testing of general populations).

In addition to assessment of HIV seroprevalence, selected serum samples will be utilized for determinations of HIV type, group, and subtype. Because the distribution of HIV in different regions and populations group is incompletely known, this will provide essential information characterizing the epidemic in African militaries.

This project is expected to contribute to long-term and sustained HIV prevention in Africa. The impact of HIV-1 subtype on clinical progression, transmission, and eventual vaccine efficacy is largely unknown. Assessment of HIV-1 subtypes in African military populations, with opportunity for follow-up, will permit an evaluation of these factors in many different settings, ranging from a virtually single-subtype epidemic in Southern Africa to a highly complex mixture of subtypes and recombinants in West Central Africa. Prevention activities can be focussed, not only on individuals at high risk, but also on regions and populations where the particular subtypes or mixtures of subtypes present the greatest challenge to prevention.

3) Enhanced military education of African UN Peace-Keeper forces

African military personnel deployed far from their home base for long periods in conjunction with UN peacekeeping activities may experience a different HIV risk profile than soldiers remaining at home. In conjunction with the ongoing UN peace-keeping project to combat HIV/AIDS, COL Peter Leenijes coordinated with the Ford Foundation, the Civil Military Alliance, and the U.S. Military HIV Research Program to develop a special intervention program targeted to the African military UN peace-keepers. The program was patterned on one currently being piloted through the South African Army field units. The current project involves five specific curriculum modules:

- ✓ Defining HIV and its impact in the military
- ✓ HIV Prevention
- ✓ Substance Abuse, HIV, STDs
- ✓ Risk Assessment and Prevention Strategies
- ✓ Course Summary

Nearly 25 million children have lost one or both parents to AIDS. By the end of the next decade, at least 40 million children will have been orphaned by AIDS and most of these from the sub-Saharan region of Africa. Despite the magnitude of this crisis, services in developing countries for children orphaned by AIDS are extremely limited or non-existent.

Therefore, this initiative will support USAID in 8 countries to take primary responsible for activities to assist children affected by AIDS and for their families, primarily through the use of Title II "Food for Peace" Programs. In addition, the impact of using Title II resources will be evaluated and the needs of very young children will be assessed.

Performance Measures for Caring for Children Affected by AIDS

- ✓ increase in high prevalence areas of the percentage of households with increased access to food
- ✓ increased assistance to children affected by AIDS from community based organizations

USAID DEVELOPING ADDITIONAL LANGUAGE FOR THIS SECTION

Within the focus countries, it is critical that political commitment is increased and host country capacity to implement effective interventions is strengthened, focusing on government, private sector, NGOs and research institution capabilities. Key activities are to increase the use of accurate HIV surveillance data to inform decisions on targeting of HIV/AIDS prevention and care interventions, to measure the impact of these interventions, and to support new capabilities for the delivery of care and services.

Increasing Political Commitment

USAID will take the lead in 5 countries and the regional program to implement activities to increase national political commitment towards HIV/AIDS efforts. There will be extensive use of surveillance data in this dialogue, derived from DHHS supported efforts.

AIDS Program Strengthening

In 9 countries and 1 regional program, there will be expanded training and support for local NGOs and of government personnel for HIV/AIDS program and service delivery.

Surveillance

In all 15 countries and regional programs, DHHS will provide technical assistance and support to improve surveillance programs for HIV, TB and STDs. In addition, new surveillance tools will also be tested and adapted for local application. USAID will also provide funding for activities that will ensure close collaboration with key international partners, such as UNAIDS, WHO and other multilateral and bilateral donors.

Performance Measures for Capacity and Infrastructure Development

The following performance measures and targets are expected:

- ✓ increased number of HIV/AIDS/STD/TB information and service delivery points which meet minimum quality standards
- ✓ surveillance plans and survey designs in all focus countries
- ✓ lab capacity for surveillance strengthened
- ✓ training of surveillance managers and key staff in country in at least 8 of the 12 countries.

Currently in Sub-Saharan Africa and India, care and treatment for HIV infected persons and support to their families is minimal. Less than 5% of persons know their HIV status and health care providers do not have ready access to diagnose and treat HIV and the associated opportunistic infections, let alone use of the latest "state of the art" antiviral treatment regimens. Ideally, there should be a continuum between in-patient and community outpatient treatment, combined with psychosocial support services utilizing a wide range of community workers, including traditional healers.

Even in the absence of antiretroviral drugs, there is much that can be done to improve the quality and duration of *LIFE* for persons living with HIV/AIDS and their families within the developing country setting. For instance, while the leading killer of AIDS patients in the developing world is TB, through use of directly observed therapy regimens (DOTS), TB can be cured in HIV infected persons, increasing the both the quality and duration of a person's *LIFE*.

Care and Treatment

The Initiative seeks to provide medical and social services to HIV infected individuals, including preventive therapy, and early diagnosis and effective treatment of AIDS-related diseases. 10 countries will implement locally appropriate programs to link people living with HIV or AIDS to prevention, care and support services. These individuals will be identified through enhanced voluntary counseling and testing services (described above), to which they will be closely linked.

Pilot sites would be established to assess methods to improve TB and respiratory disease care in HIV infected persons and to evaluate the applicability of U.S.-based early intervention care and treatment models in a developing world setting.

Home and Community Based Care and Support

Through this initiative, 11 countries will receive assistance in instituting home and community based care model programs. In addition, indicators for accurately measuring the impact of care services will be developed. USAID will provide support for health provider training, establishing home and community care models, and increasing the involvement of traditional healers. DHHS will focus on developing treatment guidelines, creating training and curriculum materials, increasing the use of DOTS, and linking psychosocial support services with improved biomedical interventions.

Performance Measures for Community and Home Based Care and Treatment

The following performance measures and targets are expected:

- ✓ Increase in the percentage of local governments implementing care and support activities
- ✓ Increase in the number of primary health facilities providing quality prevention and treatment (i.e. according to national guidelines) for opportunistic infections
- ✓ Increase in the number of households caring for persons living with HIV/AIDS that receive help in delivering that care from an institution or group outside the family

To establish an active link between the initiative's partners (US Agencies, UNAIDS, World Bank, EU, donors, etc.), a joint management and monitoring *LIFE* Initiative Task Force will be established. This Task Force will be composed of designated focus point persons from each of the relevant Federal agencies. The Task Force will be convened under the auspices of ONAP, with secretariat support provided by USAID. Additional members will be included as necessary (e.g. UNAIDS representative). The Task Force will meet on a monthly basis over the next year, because of the wide range of issues that must be resolved in a timely way. After one year, meeting schedules can be reviewed.

It is essential that the activities funded through the *LIFE* initiative build on existing resources and programs in order to achieve the maximal coverage and impact. It should be recognized that it is difficult to measure performance, which is attributable to discrete funding sources. Instead, monitoring systems will measure the impact of consolidated programs that have been established in each country.

Next Steps

Country Level

The ultimate success of this initiative will depend on the scale, scope and quality of services delivered in target countries, particularly at the community level. To achieve this, there must be extensive dialogue and collaboration at country level with government, private sector, non-governmental organizations, the faith community and community groups, especially including persons living with HIV/AIDS and their care-givers. Some of the focus countries already have established coordination mechanisms, which will be utilized wherever possible.

However, joint country planning teams will also be formed over the next three to six months, in order to work with USAID Missions, HHS and other USG agencies, Host Country Governments, etc, to finalize one to two year work plans, which will include more discrete performance measures. It is also necessary to further examine what other bilateral and multilateral donor are planning and to collaborate with local government, non-governmental organizations, persons living with HIV/AIDS, etc. to ensure that the program responds to priorities and existing gaps.

Global/Regional Level

At global and regional level, multiple partners must be engaged in a collaborative effort to leverage new resources, identify areas for cooperative efforts and areas for complementary programs, and achieve consensus on measurements of performance. A series of "Partnership" meetings will occur over the next three to six months to assure the success of this initiative. Examples of these "Partnership Meetings" are presented below.

Examples of Partnership Mtgs.	Purpose
Washington-based African Diplomatic Corps	To initiate dialogue for individual countries, which would lead to, improved collaborative efforts and mobilization of increased host country resources and commitment.
U.S. AIDS Advocacy Groups	To increase awareness and garner support for the focus and activities of the Initiative.
U.S.-based Faith Groups	To identify U.S. and international faith networks that will ultimately create networks and support for prevention, counseling, psychosocial support and care interventions in sub-Saharan Africa.
U.S. NGOs and CBOs	To provide support and collaborate with other African NGOs
U.S. and International Communities of Persons Living with HIV/AIDS (NAPWA, GNP +, etc)	To ensure that PLWHA needs and priorities are met and to establish processes so that host country PLWHA input is utilized optimally.
U.S. Teaching/Academic Institutions	To identify technical resources within the United States in order to expand the technical assistance resource platform which will be initiated in sub-Saharan Africa.
UNAIDS (including its seven co-sponsors)	To link with the UNAIDS International Partnership for Africa.
Bilateral Donors	To identify gaps and areas for complementary programming in individual countries
Multilateral Donors (EU, World Bank)	To integrate country plans with overall prevention and care activities.

DRAFT

U.S. Diplomatic Corps

To coordinate with U.S. diplomatic AIDS initiatives