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Estimating the National Cost of Treating People With HIV Disease: Patient, Payer, and Provider Data

Based
on 1996
data

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Objective: Existing estimates of the national cost of treating all people with HIV disease use data from a sample of people with HIV disease to extrapolate the cost of treating all people with HIV disease (patient-based approach). This study derives estimates using two novel approaches (i.e., payer-based and provider-based) and compares these with existing estimates.

Data Sources: These include the Health Insurance Association of American and the American Council of Life Insurance 1996 HIV survey, the 1996 State Inpatient Databases (SID) maintained by the Agency for Healthcare Research and Quality, and the IMS America Ltd. survey of independent and chain drugstores.

Principal Findings: The cost of treating all people with HIV disease in 1996 was between \$6.7 and \$7.8 billion U.S., and the average annual cost of treating a person with HIV disease was between \$20,000 and \$24,700 U.S.

Conclusions: Analysts should derive estimates of the cost of treating people with HIV disease using several different approaches.

Key Words: Treatment cost—HIV disease—Estimating.

The U.S. Centers for Disease Control and Prevention (CDC) estimate that between 650,000 and 900,000 people are infected with HIV in the United States and that 500,000 of these people are aware that they are infected (1,2). Most people with HIV disease depend on public sources to pay for needed services and those who are responsible for allocating funds thereby require accurate and timely information about the cost of treating people with HIV disease (3,4). Credible estimates of the cost of treating all people with HIV disease must be ascertained to aid federal, state, and local policy makers (5). However, estimating the costs of treating HIV disease is far from straightforward, and the rapid pace of change in the epidemiology and treatment of this disease make it imperative that estimates be based on timely data (4,6-9).

Some states report information to the CDC about individuals who have been diagnosed with HIV disease and all states report information about individuals diagnosed with AIDS (2,10,11). Information with personal identifiers is not released because of the importance of protecting the identity of people with this disease. In addition, U.S. federal law prohibits state Medicaid programs from disclosing the names of people living with HIV disease (2). Thus, no readily accessible list of people with HIV disease is available to researchers. Such a list, if available, could be used as a basis for estimating the national cost of treating people with HIV disease.

Several studies have estimated the cost of treating all people with HIV disease. Each of these studies extrapolated information about the care received by a sample of people with HIV disease to derive estimates of the cost of treating all people with HIV disease (referred to hereinafter as *patient-based estimates*). The most recent national estimate of the cost of treating people with HIV disease was calculated using data from the HIV Cost and Services Utilization Study (HCSUS) (12). The *payer-based approach* uses data about the flow of funds from

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payers to the providers of care, and the *provider-based approach* uses data about funds received by providers of care.

Ideally, estimates derived from the three approaches should be similar. In reality, however, this is not certain because each approach is based on a different set of assumptions. The accuracy of patient-based estimates depends on how well the sample represents the universe of patients with HIV disease who receive care. The accuracy of estimates based on the amount of money spent by payers depends on the precision of the methodology used by each payer to calculate the proportion of their payments attributable to people with HIV disease as well as the completeness of the list of payers (e.g., many employers self insured their employees and it is difficult to obtain data from such employers). Similarly, the accuracy of estimates based on the funds received by providers depends on the precision of the methodology used to derive estimates of the money received by these providers for treating people with HIV disease as well as on the completeness of the list of providers.

This paper derives novel estimates of the national cost of treating people with HIV disease using two approaches (payer-based and provider-based) by synthesizing disparate data sources and compares these estimates to existing estimates derived using a patient-based approach. Data from surveys of people with HIV disease from studies of federal and state expenditures for HIV disease, from consulting firms that collect data on drug costs, from the federal agency that maintains a data base composed of hospital discharge abstracts from numerous states across the nation, and from a survey of private insurers supported by the Health Insurance Association of American (HIAA) and the American Council of Life Insurance (ACLI) have been used in this study to derive estimates.

PATIENT-BASED ESTIMATES

All monetary amounts given in this paper are in U.S. dollars. The first estimate of the cost of treating people with HIV disease was derived by Scitovsky and Rice (13). These authors estimated that the cost of treating people with AIDS was \$630 million in 1985 and \$1.119 billion in 1986. Several years later, Hellinger derived estimates and forecasts of the national cost of treating people with HIV disease in the early 1990s (14,15). He gathered information from numerous sources but relied heavily on information about the cost of treatment provided by the state governments of New York and California. He also used information from the CDC on the number of people with AIDS.

HCSUS, the most recent patient-based study, used a three-stage national probability sample to select 4042 people with HIV disease from 145 providers in 28 metropolitan areas and 51 providers in 25 rural areas. Baseline interviews began January 1996 and lasted for 15 months. There were 2864 people interviewed (76% response rate), and respondents were asked questions about care provided during the preceding 6-month period. Attempts also were made to obtain medical and financial records from the care providers and information about drug prescriptions from pharmacies.

The HCSUS researchers estimated that about 335,000 people with HIV disease received care during the first 6 months of 1996, and that the average cost of treating a person with HIV disease during 1996 was \$20,000. Thus, they estimated that the cost of treating any person who received care during a 6-month period in 1996 was \$6.7 billion. It is unclear how much greater the cost of care in 1996 of treating all persons with HIV disease is than the cost of care in 1996 of treating just those persons who received some of their care during the first 6 months of 1996.

PAYER-BASED ESTIMATES

This approach examines the flow of funds from those who pay for the care received by people with HIV disease (e.g., Medicaid, a U.S. federal program to provide health care for the indigent; Medicare, a U.S. federal program administered through the states to provide health care primarily for old people; the Ryan White Comprehensive AIDS Resource Emergency (CARE) Act, passed by the U.S. Congress in 1990 to help jurisdictions provide needed services to people with HIV disease; and private health insurers). The major payer for care for people with HIV disease is the federal government, which contributes funds through Medicaid, Medicare, Ryan White CARE Act programs, and the Department of Veterans Affairs (VA) (3).

More than half of the people living with AIDS use health care services provided by Medicaid (5). The federal government provides matching funds to states for the treatment of Medicaid recipients, and most people with HIV qualify for Medicaid by meeting the disability and income criteria of the U.S. Supplemental Security Income program, which is part of the Social Security program providing minimum financial support and health care to the permanently disabled). The Ryan White program funnels funds to states and to metropolitan areas with large numbers of AIDS patients. It provides funds to eligible metropolitan areas for community-based services provided on an outpatient basis including medical, dental, and case management services,

and it provides grants to states to support various services including home- and community-based health care and drugs. Financial assistance for drugs is provided through the AIDS Drug Assistance Program (ADAP). Drug costs are consuming an ever-increasing portion of Ryan White funds. In fact, between 1995 and 1997, Ryan White funding for the ADAP more than tripled from \$105 million to \$359 million.

The VA is the largest provider of direct care to people with HIV disease and more than 12,000 eligible veterans with HIV disease were treated by the VA in 1996; the number of people with HIV disease obtaining services from the VA is expected to increase. (2,16) The VA supplies outpatient drug therapies, and eligible veterans who have private health insurance with limited coverage for outpatient drugs or are on Medicare, which does not cover outpatient drugs, are increasingly likely to seek care from the VA to obtain expensive outpatient drug therapies.

A study conducted by researchers at the Georgetown University Law Center by the Kaiser Family Foundation reports estimates of federal spending for the treatment of people with HIV disease (8). These estimates are for the fiscal year 1996 (October 1995–September 1996) and thus do not correspond exactly to estimates derived for calendar year 1996. It was estimated that federal funding for Medicaid attributable to people with HIV disease was equal to \$1.6 billion in fiscal year 1996, and that spending on the Medicare program was \$1.1 billion. The Ryan White CARE program received \$747 million in fiscal year 1996, and the VA spent \$300 million treating people with HIV disease.

In fiscal year 1996, state governments paid for 43% of the total Medicaid program costs (17). Thus, it is estimated here that state Medicaid funding for the treatment of people with HIV disease in 1996 was \$1.207 billion (federal Medicaid funding was \$1.6 billion so that total funding was \$2.8 billion = (\$1.6 billion/.57), and state Medicaid funding was \$1.2 billion = \$2.8 billion – \$1.6 billion).

The HIAA and the ACLI have conducted several surveys of the cost to private insurers of people with HIV disease (2). The HIAA/ACLI 1996 survey obtained responses from 128 health insurance companies and found that HIV-related claims accounted for 0.6% of claim dollars (Thomas Musco, HIAA, personal communication, May 1999). Combining this with the estimate that private health insurers spent \$337.3 billion in 1996 (18) implies that \$2.0 billion was spent by private health insurers for the care for people with HIV disease in 1996.

Summing the totals for each payer indicates that the cost of treating people with HIV disease in 1996

amounted to \$6.9 billion (i.e., \$2.8 billion from Medicaid, \$1.1 billion from Medicare, \$0.7 billion from Ryan White funds, \$0.3 billion for VA, and \$2.0 billion for private insurers). This underestimates the total cost to payers because the calculation does not include an estimate of the out-of-pocket payments of people with HIV disease. Data from earlier studies suggest that \$1,000 annually is a reasonable estimate of out-of-pocket expenditures for people with HIV disease in 1996. A study by the Philadelphia Commission on AIDS (19) indicated that out-of-pocket costs were \$234 per person in 1988, and analyses of data from the ACSUS indicate that out-of-pocket costs were \$869 per person in 1992. Thus, even if each of the 335,000 people estimated in HCSUS to have been treated for HIV disease had spent \$1,000 out-of-pocket for medical care, the total flow of funds from payers would increase by only \$300 million and would thus increase from \$6.9 billion to \$7.2 billion.

PROVIDER-BASED ESTIMATES

The provider-based approach examines funds received by those who furnish goods or services to people with HIV disease. The major advantage of this approach is that information is obtainable about the two categories of providers (hospitals and pharmaceutical firms) that receive the largest amount of money for providing goods and services to people with HIV disease. The major disadvantage of this approach is that information about the funds received by nursing homes, home health care agencies, hospices, and other providers of care to people with HIV disease is unavailable.

The present study estimates the value of hospital care provided to people with HIV disease using data from the 1996 State Inpatient Databases (SID). This data source is part of the Healthcare Cost and Utilization Project (HCUP), which is supported and maintained by the Agency for Healthcare Research and Quality (AHRQ). The SID contains data on inpatient stays from all community hospitals in 19 states. This study uses data from eight U.S. states (Colorado, Florida, Illinois, Iowa, Kansas, New York, South Carolina, and Washington) to estimate the value of hospital services provided to patients with HIV disease in 1996. These eight states were chosen because they included data on all variables needed in this study.

After October 1994, the International Classification of Diseases, 9th Revision, Clinical Modifications (ICD-9-CM) system included only one code (042) for HIV disease and AIDS (20). This study uses a conservative algorithm for identifying hospitalized patients with HIV disease. Only those patients with a primary or secondary diagnosis code (most states include up to six secondary

diagnoses) that includes 042 are identified as patients with HIV disease. Thus, patients who are infected with HIV but who are not identified as such are not included in this analysis.

Because geographic variations affect the cost of hospitalization for patients with HIV disease (4), this analysis estimates the total hospital charges attributable to people with HIV disease for four geographic regions of the United States (Northeast, South, Midwest, and West, which included the noncontiguous states of Alaska and Hawaii). These designations were obtained from U.S. Department of Commerce's State and Metropolitan Area Data Book, 1997-98 (21).

Estimates of the hospital charges attributable to patients with HIV disease were obtained by extrapolating the hospital charges for the states included in this study (New York in the Northeast; Florida and South Carolina in the South; Iowa, Kansas, and Illinois in the Midwest; and Washington State in the West) to each of the four regions based on the proportion of the number of people living with AIDS in the study states. Data on the number of people living with AIDS in each state were obtained from the CDC (10).

For example, CDC data indicate that of 62,983 people living with AIDS in the Northeast as of December 31, 1996, 34,878 of them resided in New York State (22). Moreover, data from the 1996 SID for New York State indicated that the total hospital charges attributable to patients with an HIV diagnosis were \$889 million. Thus, it was estimated that the total hospital charges attributable to patients with HIV disease in the Northeast in 1996 were \$1.605 billion $[(62,983/34,878) \times \$889 \text{ million}]$. Using the same methodology for the other three regions, the total cost of hospital services provided to all people with HIV disease in the United States was estimated to equal \$3.862 billion in 1996.

The sale of prescription drugs is analyzed by several private-sector information and consulting firms. The most widely cited source of information about the sale of prescription drugs in the United States is IMS America Ltd., and data from this source indicate that the sale of antiretroviral drugs in independent and chain drugstores in 1996 was \$535 million (23). This source also indicates that the sale of drugs through independent and chain drugstores in 1996 accounted for 48.46% of all drug sales in the United States. Other avenues of drug distribution include mail order (which is growing in importance each year), food stores, hospitals, clinics, staff-model health maintenance organizations (HMOs), and clinics. Using information about the relationship between the sale of drugs through drugstores and the sale of drugs through all avenues of distribution suggests that total

sales of antiretroviral drugs in 1996 was \$1.104 billion in 1996.

To obtain an estimate of the relationship between the total sales of antiretroviral drugs used by people with HIV disease and the total sales of all drugs used by people with HIV disease requires information about all drugs used by a specific population of people with HIV disease broken down by at least these two categories. Data were obtained on all drugs used by people with HIV disease covered by the Medicaid program in 1996 in the state of Maine in the northeastern United States. Roderick E. Prior, who is medical director of the Franklin Memorial Hospital, Farmington, Maine, and research associate, Maine Health Research Institute, University of Maine at Farmington provided us with data on all drugs used by people with HIV disease in Maine's Medicaid program in 1996 broken down by type into antiretrovirals, anti-infectives, antipain medications, and other types (May 24, 1999).

These data indicated that the cost of antiretroviral drugs used by people with HIV disease covered by Maine's Medicaid program in 1996 was \$1,009,863, and that the total cost of all drugs used by this group was \$2,380,302. Thus, the ratio of antiretroviral drug costs to all drug costs for this group of individuals with HIV disease is .424. Using this information indicates that the cost of all drugs used by people with HIV disease in 1996 was \$2.6 billion $(\$1.1 \text{ billion}/.424)$.

A study of the market for AIDS drugs in 1995 by the consulting firm Frost & Sullivan also provides information about the relationship between the ratio of the sales of antiretroviral drugs to the sales of all drugs used by people with HIV disease (24). This study revealed that more than half the money spent for drugs to treat people with HIV disease in 1995 paid for drugs to treat opportunistic infections. Although these data are for 1995, they are consistent with the 1996 data on people with HIV disease covered by Maine's Medicaid program.

Information provided in the HCSUS indicates that hospital and drug costs constituted 83% of all costs associated with treating people with HIV disease in 1996 (12). Using information about the cost of hospital care (\$3.9 billion) and drugs (\$2.6 billion) presented in this section suggests that the total cost of treating people with HIV disease was \$7.8 billion $(\$3.9 \text{ billion} - \$2.6 \text{ billion})/.83$.

DISCUSSION AND CONCLUSION

The estimate of \$6.7 billion derived using data from HCSUS was the lowest of three estimates of the cost of treating all people with HIV disease in 1996. This might

be expected because the HCSUS estimate does not include the cost of treating people who were treated during the second 6-month period of 1996 who did not use any services during the first half of the year (Table 1). However, estimates based on HCSUS data overestimate the cost of care to the extent that its sample is weighted toward providers who care for sicker patients. Primary care providers to people with HIV disease who care for asymptomatic patients and transfer these patients to specialists when they become symptomatic may be underrepresented in the HCSUS sampling frame.

The estimate obtained using data about the payers of care (\$7.2 billion) also underestimates the total cost of treatment because it excludes funds for care provided through publicly and privately financed clinical trials and funds for care provided by charities (Table 1). Data sources used to derive the payer-based approach also have limitations. For example, the Medicare and Medicaid payment data are limited in two important ways. First, the rates paid by Medicare and especially Medicaid are generally less than the amounts paid by private insurers. In some instances, the rates paid by public insurers are less than the cost of providing the care, and providers obtain funds from other sources (e.g., private donations, excess payments from other insurers, state and local government subsidies) to subsidize the care provided to publicly insured patients. Second, not all claims for services provided to people with HIV disease are identified because some claims for services provided to patients with HIV disease do not include diagnostic codes for HIV disease. This is especially true for outpatient services, for which reimbursement rates are based on the type and volume of services provided and not on the patient's diagnoses.

Data from the 1996 HIAA/ACLI survey of health insurers were used in the payer-based approach. Even so, this survey is not a random sample of insurers. Consequently, it is unclear how well the survey's respondents represent the population of all private health care insurers. Second, not all claims for services provided to privately insured patients with HIV disease are identified. Privacy is particularly important to employed people with HIV disease and it is likely that some health care providers are unaware of their privately insured patient's disease and that some providers simply choose not to include this information on their claims.

The estimate derived using the provider-based approach also is an underestimate and also has important limitations (Table 1). The \$7.8 billion estimate derived using this approach is an underestimate because some hospital patients with HIV disease are not identified in hospital records. In this study, only people with a primary or secondary code of 042 (the ICD9-CM code for HIV disease) on their discharge abstract were recognized as being infected with HIV. It is unclear, however, how many hospitalized patients in 1996 had discharge abstracts that did not include the 042 code but who were infected with HIV (25,26). The estimate of the amount of money received for pharmaceuticals was based on data from a survey of independent and chain drugstores conducted by IMS America Ltd. (23). However, IMS America Ltd. uses a convenience sample, and it is unclear whether it is representative of all independent and chain drugstores.

The cost of treating a person with HIV disease varies according to the stage of disease, and the cost is greatest during the latter stages of disease (4,12,27). Even so, it was not possible to provide separate estimates of the

TABLE 1. Estimating the national cost of treating HIV: patient, payer, and provider data

Approach	Data sources	Limitations
Patient-based	HIV Cost and Services Utilization Study (HCSUS)	Excludes those who were treated during the second 6-month period of 1996 who did not utilize any services during the first half of the year. Sample may be weighted toward providers who care for sicker patients.
Payer-based	Medicare and Medicaid claims Ryan White fund expenditures U.S. Veterans Administration expenditures Health Insurance Association of America (HIAA)/American Council of Life Insurance (ACLI) survey	Not all claims for persons with HIV disease are identified in Medicare, Medicaid, and HIAA/ACLI databases. HIAA/ACLI survey uses convenience sample. Funds for care provided through publicly and privately financed clinical trials and funds for care provided by charities are excluded.
Provider-based	State inpatient databases (DIS) IMS American Ltd. drugstore survey	Some hospital patients with HIV disease are not identified in DIS. IMS America Ltd. survey uses convenience sample.

national cost of treating people with HIV disease for different stages of HIV disease (e.g., asymptomatic, symptomatic, and AIDS) because some databases used in this study did not break down costs by disease stage. For example, cost information from the HIAA/ACLI survey of private health insurers and the IMS America Ltd. survey of independent and chain drugstores did not break down costs by disease stage.

The estimates presented in this study range between \$6.7 billion and \$7.8 billion, and they indicate the average cost of treating people with HIV disease is between \$20,000 and \$24,700 per year. The average cost figure is obtained using estimates of the total cost of HIV care of between \$6.7 billion and \$7.8 billion, and using estimates of the number of people with HIV disease who received treatment in 1996 derived by HCSUS (335,000) (12) and by Scott Levin & Associates (316,000). Scott-Levin & Associates is a consulting firm that provides information to clients about the market for a variety of goods and services. One of their activities involves an audit of general and family practitioners, internists, and infectious disease specialists who treat persons with HIV disease. Scott-Levin & Associates uses this audit to estimate the number of persons with HIV disease who receive treatment (28).

It is useful to compare estimates of the costs of treating all people with HIV disease using different approaches that employ diverse data sources because different approaches are based on different assumptions and each data source has its strengths and limitations. If estimates of the costs of care derived using differing approaches are similar, then analysts may place greater credibility on their results than if estimates vary significantly. If estimates vary significantly, then analysts must assess carefully the strengths and weaknesses of the underlying data sources and the reasonableness of the principal assumptions of each approach.

The estimates of the cost of treating HIV disease presented in this study are similar. Thus, analysts may be reasonably confident that the cost of treating people with HIV disease in 1996 was between \$6.7 and \$7.8 billion. We used information available to us and the quality of that information varies. In particular, one limitation of the data gleaned from proprietary reports on surveys of insurance companies and of independent and chain drugstores used in the present study is that, in general, they are difficult to obtain and do not contain sufficient methodologic detail to evaluate the scientific rigor of the analyses and estimates.

In using information about the cost of treating people with HIV disease, decision makers should give more credence to estimates supported by rigorous patient-

based studies that detail their data collection and editing procedures than to estimates supported by insurance databases and from medical record data bases (e.g., Medicare and Medicaid) which do not have clearly defined sampling methodologies or clearly defined cost-finding techniques. There is a need for better information about the cost of treating people with HIV disease. Most available data are derived from convenience samples that use poorly documented methodologies to estimate costs. Future studies should carefully describe the processes used to collect data and the techniques used to estimate costs, and there should be a conscientious attempt to obtain data from more representative samples of patients, payers, and providers.

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Position Paper
HIV/AIDS in Southern Africa
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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
Mozambique	14.17	1 200 000	150 000	46.4	46.3	167	166
Namibia	19.94	150 000	7 300	59.1	55.3	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 woman 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.

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

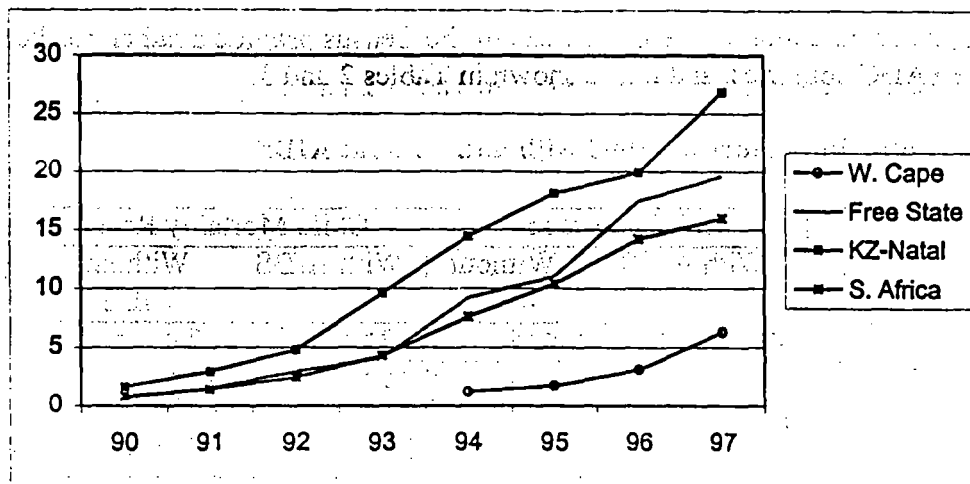
Country	Life Expectancy		Child Mortality Rate	
	With AIDS	Without AIDS	With AIDS	Without AIDS
Botswana	37.8	66.3	119.5	38.3
Democratic Republic of Congo	51.9	59.8	116.2	97.3
Lesotho	44.7	65.9	121.9	70.7
Malawi	34.8	56.8	202.6	136
Namibia	38.9	70.1	118.8	37.5
South Africa	48	68.2	99.5	48.5
Swaziland	37.1	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.

U.S.-Africa Ministerial Joint Communique

From March 15-18, 1999, the United States hosted the first-ever meeting of African and American Ministers to enhance the U.S.-Africa partnership in order to foster greater economic development, trade, investment, political reform, and mutual economic growth in the 21st century. The President, eight members of the Cabinet, and four agency heads met for the first time with the African delegations. Eighty-three Ministers from forty-six sub-Saharan African nations, representatives from four North African nations, and the heads of eight African regional organizations participated in this historic and successful meeting. African Ministers also met with members of the U.S. Congress.

In an effort to consolidate and build upon the significant progress achieved in Africa in recent years, Ministers and senior U.S. officials discussed concrete ways to accelerate Africa's integration into the global economy. African Ministers expressed strong support for the immediate passage by Congress of the African Growth and Opportunity Act and for continued implementation of the President's Partnership for Economic Growth and Opportunity.

U.S. and African Ministers engaged in an active exchange on a broad range of economic, political, and social issues. They shared the view that high indebtedness constitutes a serious constraint to sustainable development in many African countries. In response to African requests for more effective debt relief, President Clinton proposed a six-point expanded debt relief program for highly indebted poor countries, which was warmly welcomed by the African ministers.

African and American officials discussed trade finance, market access, and access to private investment capital for ventures in Africa. Initiatives to enhance trade and investment links and economic policy dialogue were discussed as well as efforts to improve transportation and communications infrastructure and cooperation in agribusiness and energy. Ministers also reaffirmed the importance of addressing environmental issues. They noted that early ratification by the U.S. Senate of the UN Convention to Combat Desertification will help to mobilize community and international efforts to better manage land and water resources.

African Ministers and their U.S. counterparts exchanged ideas on how to enhance Africa's ability to compete in the global market through the development of its greatest resource - its people. Emphasizing the need for accelerating reform and continued development assistance as well as trade and investment, participants examined ways to bolster human capacity through investment in education, skills training, gender equity, micro-enterprises and health, particularly the prevention of HIV/AIDS. All agreed that these steps will accelerate the ability of Africa to sustain socio-economic development and reduce poverty. They also recognized the crucial role of regional cooperation in the overall development process and in the integration of African states into the global economy.

Recognizing that sub-Saharan Africa is a vast and diverse region marked by serious problems as well as significant successes, Ministers examined ways to enhance U.S.-Africa cooperation to prevent and resolve conflicts. They also agreed on the importance of strengthening

democratic institutions and respect for worker and human rights, accelerating economic reform, and creating a positive climate for business through political and social reforms. Ministers noted that the Ministerial illuminated the breadth and depth of the U.S.-Africa partnership, and set it on a firm foundation for future mutual advancement in the 21st century. All recognized the need for continuing dialogue and agreed to work out the means of ensuring regular and timely follow-up.

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Secretary of State Madeleine K. Albright
Remarks at World AIDS Day 1998, The White House
Washington, D.C., December 1, 1998
As released by the Office of the Spokesman
U.S. Department of State

Mr. President, Brian Atwood, Amy Slemmer of Mothers' Voices Against AIDS, Carol Bellamy of UNICEF, Nafis Sadik of the UN Population Fund, distinguished colleagues, guests and friends. I am pleased to participate in this program but saddened by its necessity.

For today we observe World AIDS day for the eleventh time. And we can expect many more.

I look around this room and I see many valiant members of the global network that is fighting the causes and consequences of HIV/AIDS. That network is strong and deeply motivated; it is growing; it is active almost everywhere; but it is not yet winning the war against this disease of awful and shattering power.

Thirty-three million people are now infected with HIV. And up to forty million children will be orphaned by AIDS by the end of the next decade.

It is a deep human tragedy that 90 percent of AIDS orphans live in sub-saharan Africa. But this highly mobile disease has migrated to every corner of the earth.

So directly or indirectly, HIV/AIDS threatens us all -- whether as individuals, as family, friends and neighbors, or as members of the global community.

For we cannot build dynamic economies where one in five or even one in twenty adults is being struck down. We cannot create vibrant democratic institutions where communities are preoccupied with suffering and sorrow. We cannot count on stability where the ranks of military and political leadership are decimated. And we cannot expect a strong sense of social responsibility in the young where too many children have no parents.

All this is why fighting HIV/AIDS, and helping its victims, is a foreign policy imperative.

Soon, I will be releasing a report entitled the 1999 U.S. International Response to HIV/AIDS. This is an interagency effort to document the full range of U.S. resources engaged in the struggle against AIDS. We will use it to launch a diplomatic initiative designed to mobilize and energize others around the world -- both from the top down and the bottom up -- so that international organizations, governments and grassroots reinforce each other and pull in the same direction.

If we are to make progress, governments must understand what you and your overseas counterparts already understand. And that is that HIV/AIDS cannot be denied or ignored or patronized or put off until tomorrow.

This is an urgent, deadly, global threat. It cannot be appeased; it must be confronted.

And as Secretary of State, I will do all I can to see that this imperative is raised as a matter of international security, at the highest levels, at every opportunity, in every region, on every continent.

On this day of special dedication, let us vow to work together across all lines of profession, culture and national borders so that we may bring closer the day when nations and people

everywhere are aware of the dangers of this disease; all act to prevent its spread; all afflicted are helped and their human rights respected; and none rest until HIV/AIDS is conquered or controlled.

Thank you. And now I'd like to introduce the head of the agency whose employees have long been on the front lines of this fight, my good friend, the Administrator of the Agency for International Development, Brian Atwood.

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.

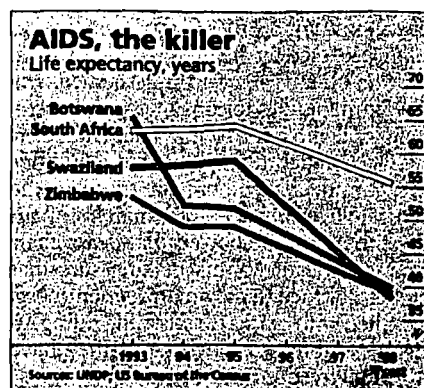
- Myths abound. Some young African women believe that without regular infusions of sperm, they will not grow up to be beautiful. Ugandan men use this myth to seduce schoolgirls. In much of southern Africa, HIV-infected men believe that they can rid themselves of the virus by passing it on to a virgin.

- 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.

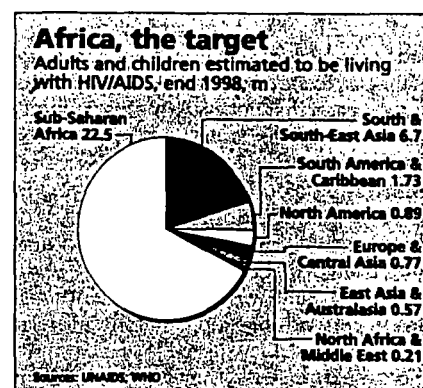
- Sexism. In most poor countries, it is hard for a woman to ask her partner to use a condom. Wives who insist risk being beaten



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

AIDS IN THE THIRD WORLD

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.

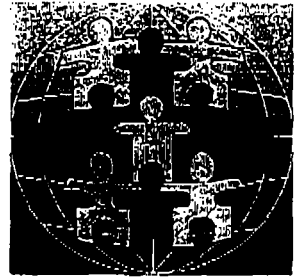
"There's an idea that if you disagree with the government, you are betraying the liberation struggle," says Mary Crewe, head of the Greater Johannesburg AIDS project. As a result, soldiers in the South African army are so ignorant that they snip the tips off their free condoms, and HIV has spread through 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.

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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).





The POLICY Project

The Economic Impact of AIDS in Rwanda

by
John Stover
Lori Bollinger

September 1999

The Futures Group International
in collaboration with:
Research Triangle Institute (RTI)
The Centre for Development and Population
Activities (CEDPA)

POLICY is a five-year project funded by the U.S. Agency for International Development under Contract No. CCP-C-00-95-00023-04, beginning September 1, 1995. The project is implemented by The Futures Group International in collaboration with Research Triangle Institute (RTI) and The Centre for Development and Population Activities (CEDPA).

AIDS has the potential to create severe economic impacts in many African countries. 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
- If AIDS is more prevalent among the economic elite, then the impact may be 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

LABOR FORCE STATISTICS		
	Economically Active Labor Force: 1989	
Sector	Aged 14 years & over	%
AGRICULTURE		
Agriculture, hunting, forestry and fishing	2,832,558	90.1
INDUSTRY		
Mining and quarrying industries	4,692	0.15
Manufacturing industries	45,088	1.4
SERVICES		
Electricity, gas and water	2,561	0.08
Construction	38,237	1.2
Trade, restaurants and hotels	80,026	2.5
Transport, storage and communications	7,332	0.23
Finance, insurance, real estate and business services	3,128	0.1
Community, social and personal services	12,021	0.4
Activities not adequately defined	9,413	0.3
TOTAL EMPLOYED	3,143,056	100.0

Rwanda's economy is heavily reliant on agriculture, with over 90% of the population employed in that sector, mostly at the subsistence level. The main food crops are plantains, sweet potatoes, cassava, and dry beans. The main export crop is coffee, which accounted for 75% of total export earnings in 1995. Although only 1.4% of the population is employed in manufacturing, this sector accounted for

15.2% of GDP in 1995, producing beverages and tobacco, food products, and basic consumer products. The country has suffered from ethnic tensions, its landlocked geographic position, and its vulnerability to droughts and a drop in world coffee prices.¹ 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 Rwanda 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.
- An early study examining the needs of HIV-positive women in Kigali found that very little support existed for them. Assistance was needed for housing and employment, and once AIDS developed, for childcare, food, and funeral services. Over two-thirds of the women did not expect their partners to take care of them when AIDS developed, and three-quarters of them did not expect help from their extended family. The authors predict that the childcare needs necessary once AIDS developed would not be met by the extended family.²
 - Refugee camps became an oasis for Rwandans in Tanzania and Zaire in 1994. Women in particular were found to be vulnerable to high risk behavior in these camps, as many became single heads of households, and had no one to turn to for advice.³

Economic Impact of AIDS on Agriculture

¹ Europa World Year Book 1998, Volume 2 (1998) Europa Publications Limited (1998).

² Keogh, P, C Almedal, S Allen, C Muhawenimana, J Tice, S Hulley (1989) "Evaluation of the social services needs of HIV+ women enrolled in a cohort study in Kigali, Rwanda," Int Conf AIDS; 5:822 (abstract no. T.E.O.3).

³ Wondergem, P, C Vogel, B Brady, (1995) "Rwandan refugee women – their life, health and sexuality." HIV Infect Women Conf P68 (abstract AIDS/95921973); and Mabasi, M, GL Wenbo, and N Nzila (1996) "Evaluation of HIV infection progression risk in area refugees at north-east region of Zaire." Int Conf AIDS; 11(1):381 (abstract no. Tu.C.2674).

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. Thus, AIDS could affect the production of cash crops as well as food crops.

- An early, prospective study for Rwanda classified the agricultural systems there into five different types, according to how vulnerable each is to labor supply interruptions. The most vulnerable system was found to be in the Volcanic Highlands, because seasonal demand for labor varied tremendously. Small nuclear families were also found to be more vulnerable than extended families in all of the systems. By the year 2000, it was anticipated that as many as 25% of households would be affected.⁴

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

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.

⁴ Gillespie, S (1989) Potential impact of AIDS on farming systems: a case-study from Rwanda. Land Use Policy 6:301-12.

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. 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.
- In 1990, the average hospitalization costs for an AIDS-related episode was US\$196. The average hospital stay for AIDS patients was twice that of non-AIDS patients, or 25 days compared to 12 days. On average, lifetime costs consisted of 1.66 hospitalizations and a total cost of US\$358. Total costs paid for AIDS patients in 1990 were US\$0.6 million, or 4.6% of the public sector health budget. It was anticipated that, in 1994, these costs would increase to consume 11.4% of the public sector health budget.⁵
- **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. 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.** AIDS affects the education sector in at least three ways: the supply of experienced teachers will be reduced by AIDS-related illness and death; children may be kept out of school if they are needed at home to care for sick family members or to

⁵ Shepard, DS, RN Bail, A Bucyendore. (1992) "Costs of AIDS Care in Rwanda," Inf Conf AIDS; 8(2):D471 (abstract no. PoD 5505).

work in the fields; and children may 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.
- **Military.** Military personnel are particularly vulnerable to HIV/AIDS as they spend most of their time away from their families. Many use commercial sex workers on a regular basis. When they return to their families, the virus is spread.
 - In Rwanda in 1994, it was estimated that as many as 65% of the soldiers in the military were HIV positive.⁶

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.

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.
- 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.

⁶ "Did HIV Contribute to the Breakdown of Society in Rwanda?" AIDS Analysis Africa, 1994.

- 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.
- The overall impact of AIDS on the macro-economy is small at first but increases significantly over time.

The incidence of HIV in Rwanda increases with income levels. In 1987, a study found that women whose partners had higher income levels and worked in higher-skilled occupations, were more likely to be HIV-positive than women whose partners were not as successful. Women whose partners were farmers had an HIV prevalence rate of 9 percent, while the rate for those whose partners were in the private sector of the government was over 30 percent. The impact on the macroeconomy will be more pronounced as the lack of skilled people becomes more and more prevalent.⁷

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.

⁷ IFPRI (1996) "Study Shows AIDS Slowing Economic Growth in Africa," <http://www.cgiar.org/IFPRI/pressrel/061796.htm>.

- **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.
- In 1994, the AIDS Control and Prevention Project worked with CARE International to establish an HIV prevention program in refugee camps, after genocidal civil war began in Rwanda. Refugees are particularly vulnerable to the spread of HIV, due to the difficult economic conditions in the camps. Over 1.5 million condoms were distributed in the first 12 months of the project.⁸
- A joint program between the Ministry of Social Affairs and Caritas Rwanda has placed children who have been orphaned or whose parents can no longer care for them. Although the first choice for placement is family members, sometimes foster families or group homes are provided. These efforts are financed by the program, with an annual cost of approximately US\$392 per child. These costs include payments to the caretakers and school fees for each child.⁹
- A program to train Rwandans to provide care at home was instituted by the Red Cross. Volunteers were trained by the Red Cross in simple nursing care skills, and then returned to the villages to visit and train families there. Interviews with 24 of the families six months later found the volunteers to be effective in transferring these skills, and in providing psychological support to the families.¹⁰
- **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.

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

⁸ Benjamin, JA. (1996) "AIDS Prevention for Refugees: The Case of Rwandans in Tanzania." AIDSCAP Electronic Library (Family Health International/The AIDS Control and Prevention Project, Durham, North Carolina).

⁹ UNICEF. 1994. "Action for Children Affected by AIDS: Programme profiles and lessons learned." Joint WHO/UNICEF document. New York, NY: December 1994.

¹⁰ Schietinger, H, C Almedal, BN Marianne, RK Jacqueline, BL Ravn. (1993) "Teaching Rwandan families to care for people with AIDS at home," Hosp Journal; 9(1):33-53.

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. Third, it 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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THE IMPACT OF HIV/AIDS ON BUSINESS IN SUB-SAHARAN AFRICA

Introduction

Six in every 10 adult men, 8 in every 10 adult women and over 9 of every 10 children living with HIV around the world live in sub-Saharan Africa. Overall, two in every three persons living with HIV in the world live in this region. The likelihood of an adult in sub-Saharan Africa to be infected with HIV is 10 times greater than for an adult in North America and 20 times greater than in Western Europe. Sub-Saharan Africa continues to bear the major brunt of this global pandemic, which in 2000 will have surpassed 60 million infections cumulatively worldwide. In 1999, HIV became the number one infectious disease killer in the world.

Such factors as growing economic disparity, social and cultural uprooting linked to intense migration, great insufficiencies in the coverage of HIV/AIDS prevention and care programs, and power gaps linked to gender, age and economic differences continue to fuel the spread of HIV epidemics across the sub-Saharan African continent.

Because it strikes adults during their most economically productive years, HIV/AIDS will have greater social and economic impacts than other diseases in sub-Saharan Africa. It extols costs, direct and indirect, on individuals who are HIV-positive, their families and the communities in which they live. According to the World Bank, the HIV/AIDS pandemic appears to be the major reason why per capita growth is slowing in ten sub-Saharan African countries. Poverty is expected to increase and development to falter because of the pandemic's effects on households, governments, businesses and national economies.

The average life expectancy of individuals in several sub-Saharan African countries is being reduced dramatically by HIV/AIDS. In Botswana, life expectancy projections show a decrease from 65 years in 1993 to 40 in 1998 due to HIV/AIDS, with the trend downward still to 37 by 2010. In South Africa, the projection shows a drop from 63 years in 1993 to 48 by 2010. In the case of newly democratic South Africa, the potential for this epidemic to undermine not only the economic and development gains but the social fabric and nation building should not be underestimated.

Impact on Markets

HIV/AIDS could reduce the absolute number of potential customers, making markets that are relatively saturated and which depend critically on population size the most vulnerable. While in some countries total population growth over the next decade might remain positive, growth will be markedly slower. In the countries hardest hit by HIV/AIDS, GDP growth rates could be reduced 0.6-1.4 percent per year.

The impact of the epidemic on specific markets will depend on the demographic profile (age, sex, geographic location) of consumers. Because of the demographics of HIV/AIDS, consumers in the 25-49 age group are likely to be affected, especially those in disadvantaged communities, which currently present the largest opportunities for market growth. In countries where demand for goods is far from saturated, many of the consumers who die or have their disposable income reduced by

HIV/AIDS will be replaced by new earners and consumers, but only if overall GDP and consumption expenditure remain unaffected by the pandemic.

In South Africa, labor market adjustments to HIV/AIDS, such as increasing capital intensity, or using less-skilled labor that is cheaper to replace, may exacerbate economic and political polarisation. Thus, market growth for goods and services targeted at upwardly mobile households may be more severely affected.

Costs to Companies

The major concerns to businesses in areas where HIV prevalence is high are the increased costs of production and decreased revenues, due to absenteeism, training and increased health care. Indeed, even five years ago some companies, such as the Uganda Railway Corporation, were reporting steep increases in absenteeism and turnover among workers. By the mid-1990s, the railway corporation had an annual employee turnover rate of 15 percent, with more than 10 percent of its workforce dead from AIDS-related illness. In Zambia, Barclays' Bank has been losing 36 of its 1,600 employees each year, ten times the death rate at most U.S. companies. In Kenya, 43 of the 50 employees who dies in 1998, or 80 percent, died from AIDS.

Projections for labor costs related to HIV/AIDS for companies in Kenya by 2005 range from an increase of 4 to 8 percent, depending upon the industry. However, one Kenyan transportation company was projected to lose nearly 15 percent of its annual profits by 2005 (AIDSCAP, 1996). Perhaps the most dramatic example is that in 1994, Indeni, Zambia's only oil refinery, paid \$26,400 in AIDS-related expenses, more than its profit of \$24,514.

While there is a significant range, the annual costs of HIV/AIDS to companies can be high, varying between \$49 and \$300 per employee, whether the company is a sugar company in Kenya, a food processing company in Côte d'Ivoire, a railway corporation in Uganda, or a meat commission in Botswana (see Table 1, below).

Table 1

Costs to companies

<i>Company name</i>	<i>Total annual cost of AIDS</i>	<i>Annual cost of AIDS/employee</i>
• Botswana Diamond Valuing	US\$ 125 941	US\$ 237
• Botswana Meat Commission	US\$ 370 200	US\$ 268
• Côte d'Ivoire food processing firm	US\$ 33 207	US\$ 120
• Côte d'Ivoire packaging firm	US\$ 10 398	US\$ 125
• Muhoroni Sugar, Kenya	US\$ 58 303	US\$ 49
• Uganda Rail way Corporation	US\$ 77 000	US\$ 300

Source: Boser & Bellinger, 1999



The most seriously affected businesses will be those in labor-intensive industries, such as transportation, and those depending on migrant workers, such as mining. One major transport company with 11,500 workers in Zimbabwe found that 3,400 of them were HIV-positive in 1996. Costs for the company related to HIV/AIDS were more than \$1 million, or 20 percent of its profits.

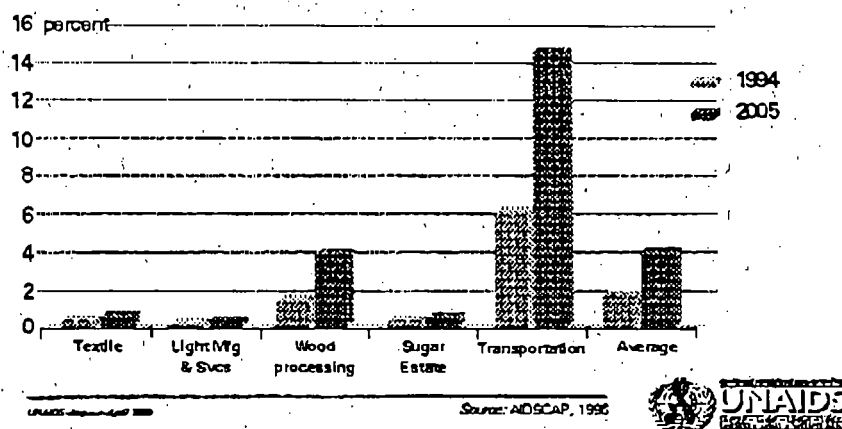
As the HIV/AIDS pandemic grows, few industries will be spared, including farming. It should be noted that companies offering health benefits packages, as opposed to companies offering no health provision, will suffer the greatest loss, unless they also provide a comprehensive HIV/AIDS prevention package as well.

In Zimbabwe, a study of the main concerns businesses expressed about the impact of HIV/AIDS found that 33 percent were most concerned with the loss of skilled labor, 24 percent with the loss of labor generally, an equal percentage with reduced future productivity, 13 percent with increased insurance and pension costs, and 12 percent with other associated economic costs. Their short-term concerns focused on the labor impacts, including recruitment, training and development and employee benefits; and, their long-term concerns focused on markets. An example from the insurance industry showed that in Zimbabwe, life insurance premiums quadrupled in two years because of HIV/AIDS.

The highest HIV/AIDS cost to companies is absenteeism. A study of a bus company in Zimbabwe demonstrated that the highest cost was from AIDS-related absenteeism, totalling 54 percent. This was followed by absenteeism due to HIV-related symptomatic illness, totalling 35 percent. Similar figures exist from a study of six companies in Kenya (AIDSCAP, 1996), showing (in Figure 1, below) that while AIDS absenteeism was less at 15 percent, 10 percent of costs was spent on recruitment and 12 percent on health care. Zambia's largest cement company, owned by Britain's Commonwealth Development Corporation, reported that absenteeism for funerals increased 15-fold between 1992 and 1995. As a result, the company has restricted employee absenteeism for funerals to only those for a spouse, parent or child.

Figure 1

AIDS costs as a percent of profits, Kenya



Agriculture is one of the most important sectors in sub-Saharan Africa when measured by the percentage of the population it supports. Even if agriculture only constitutes 20 percent of a country's total GNP, it can provide the survival base for as much as 80 percent of the population. In Malawi, where about 15 percent of the adult population is HIV-positive, child labor is becoming common and many orphans have left school. A study performed in 1996 for the Makandi Tea Estate

in Malawi showed a sixfold increase in mortality from 1991 to 1995—from 4 per thousand workers to 23 per thousand. The annual cost of HIV/AIDS was 6 percent of the company's operating profit.

Also in Malawi, about ten percent of the urban workforce is expected to die from AIDS within ten years. Frequently, when adults in urban areas fall ill, they return to their villages to be cared for by their family, thus adding stress on resources already scarce and increasing the likelihood of infecting a spouse or others in the rural community.

When an adult falls ill and dies in a rural area, especially in the case of a breadwinner, there is a significant reduction in a family's output. Households are forced to plant less labor-intensive crops, which in Zimbabwe, for example, has resulted in a 61 percent loss in the rural production of maize. Table 2 (see below) summarizes a study by the Zimbabwe Farmers Union, showing the impact of AIDS deaths on crop production in Zimbabwe, where communal and small farms are common.

Table 2

**Reduction in production
due to AIDS deaths in Zimbabwe**

<i>Crops</i>	<i>Reduction in output</i>
• Maize	61%
• Cotton	47%
• Vegetables	49%
• Groundnuts	37%
• Cattle owned	29%

Source: Boyer & Bollinger, 1999



Large numbers of professional workers are also being lost to HIV/AIDS. Since 1998, Zambia has suffered power shortages because so many engineers have died. At Zambia's Minbank Clinic, where the senior managers of the country's largest banks, mining and other industrial companies are treated, half of all the clinic visits are AIDS-related. Overall, the country's Central Health Board predicts that the national cost of treating AIDS patients will rise from \$1.7 million in 1990 to \$21 million by 2005.

Macro Level Impact

For Kenya, according to the World Bank's Human Development Index Report, the loss over ten years from 1995 to 2005 resulting from HIV/AIDS is projected to be 14.5 percent, showing that the overall consequences for the economy are bound to take effect and seriously set back the development progress of the country. In other countries in sub-Saharan Africa where a Human Development Report on HIV/AIDS has been published, the impact on the HDI (Human Development Index) has been measured in scenarios with and without HIV/AIDS. In Namibia the HDI is predicted to decrease by 10 percent from HIV/AIDS by 2006 (UNDP and UNAIDS, 1997), and in South Africa the HDI is predicted to decrease by 15 percent from HIV/AIDS in 2010 (UNDP and UNAIDS, 1998). The main indicators driving the HDI score are life expectancy and literacy rates, with the highest achievable score as 1.000.

Table 3
Human Development Index (HDI)

**South African HDI with and without HIV,
selected years**

	1995	2000	2005	2010
• With HIV (A)	0.606	0.556	0.528	0.517
• No HIV (B)	0.626	0.601	0.605	0.610
• Ratio (A/B)	0.970	0.920	0.870	0.850

Source: MYAIDS & Human Development South Africa, UNAIDS & UNDP
and Country Reports



Companies responding to HIV/AIDS

Namdeb, a major mining company based in Namibia, has experienced major declines in sexually transmitted infection (STI) rates and new HIV infections because of its information dissemination and peer education program, distribution of condoms to its workforce and surrounding communities, and nondiscrimination toward persons living with HIV/AIDS (PLWHA). The Namibian Chamber of Mines facilitated the replication of this program, and by 1998 most major mining companies in the country had started their own programs based on this model.

In South Africa, the USAID-funded AIDSCAP Project worked with the Lesedi mining community in 1996-97 in Free State, treating mine workers and their sex partners for STIs monthly. The prevalence of STIs, whose presence in individuals can increase the likelihood of HIV transmission tenfold, was decreased by 85 percent. In 1999 this project is being replicated by the USAID-funded IMPACT Project in the Carletonville mining community, near Johannesburg, where HIV prevalence was 44 percent in 1996, an increase of 500 percent since 1991.

Recognizing the important role the private sector can play in supporting HIV/AIDS prevention and care, several major multinationals working in Nigeria have funded the country's National AIDS and STD Control Program to carry out various prevention and care activities. For example, Chevron has supported training in STD management, and Glaxo-Wellcome has funded AIDS case management. Janssen Pharmaceuticals has supplied miconazole and ketoconazole to treat candida, a yeast infection and a common AIDS-related "opportunistic infection." With more than 1,500 new HIV infections daily in 1998, more than 5.5 million people infected with HIV and half a million children who have lost a parent to AIDS, Nigeria is only one of the countries in sub-Saharan Africa presenting a prime opportunity for greater involvement by the business sector in protecting commercial interests and the growth potential of future markets throughout this region.

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12 June 1999*

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Pages: 5, including this cover sheet.

From: David Stanton

Subject: Estimates of cost for HIV-AIDS programs in Sub-Saharan Africa.

COMMENTS: Attached are two documents. One estimating the cost of MTCT prevention in SSA and the other estimating the costs of HIV-AIDS prevention, care of children affected, voluntary counseling and testing, and care.

Feel free to call me if you need anything else.

David
(202) 712-5681

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RESPONDING TO THE GLOBAL AIDS PANDEMIC:

What is the level of resources needed?

ASSUMPTIONS:

1. This assessment only covers Sub Saharan Africa. Two thirds of the world's AIDS cases are currently in Sub-Saharan Africa. The costs of providing HIV/AIDS prevention and care services vary dramatically from country to country based on local labor productivity and costs and the local health infrastructure strength and coverage. Given this variability, it is best to separate the analysis by region.
2. This assessment uses the methods of Boerma and Bennett that assumes that a minimum package of prevention services consists of a combination of interventions with different target populations and different levels of coverage. For example, highly targeted interventions are assumed to reach 50% of their intended populations, while some generalized interventions are assumed to reach nearly 100% of their intended populations.
3. This assessment assumes that the care components (treatment and orphan services) will be made available to 30% of those in need. While this number may seem low, if implemented this would represent a substantial increase in the proportion of affected persons who receive assistance. For example, 10% or less of all HIV infected persons in Sub Saharan Africa have been tested. Current programs to assist families and communities caring for children reach an even smaller proportion of those in need.
4. This assessment does not include the cost of antiretroviral drugs. The costs of the treatment component of care services include the cost of treating opportunistic infections (including tuberculosis) and the costs of providing palliative care.
5. This assessment does not include estimates of institutional care for orphans. The costs of the orphans support component of care focuses on foster and community-based care.
6. Where high and low estimates of cost appear in the literature, the average cost is used.
7. The data are presented in year 2000 dollars, assuming an annual inflation rate of 5%.

TOTAL COST OF PREVENTION, CARE, ORPHANS:

Prevention	\$1.03 billion
VCT	\$0.470 billion
Treatment/care	\$1.28 billion
OVC	\$0.389 billion
TOTAL	\$3.17 billion

COST OF PREVENTION: \$1.03 BILLION

In an analysis commissioned by WHO/GPA, Broomberg et al conclude that the minimal cost of providing a basic package of prevention services, including behavior change communications, condom social marketing, STD services, and safe blood programs, in Africa would range between \$462 million - \$1.6 billion. Estimates of resource needs are based on the variability of the optimal allocation of funds. The low estimate assumes that countries allocate funds optimally, while the high estimate assumes that no attempt is made to allocate funds optimally. Given that many different circumstances govern resource allocation decisions, optimal allocation of resources does not always occur. Utilizing the data presented by Broomberg and more recent information on cost of interventions, Boerma and Bennett estimated the cost of providing a minimum package of prevention services to a hypothetical district in Africa. Using the Boerma approach in estimation for sub Saharan Africa, a minimum package of prevention services cost \$846 million, or \$1.03 billion in year 2000.

COST OF TESTING AND COUNSELING (VCT): \$470 million

The cost of testing and counseling varies with local labor costs, training costs and infrastructure costs. The fully loaded cost of lab tests plus counseling is \$18 in Zambia, a high prevalence country in Southern Africa (Source: Ndola District Health Department, Zambia). This estimate is also confirmed by Boerma and Bennett who estimate VCT costs to be between \$6 and \$16 using assumptions of inexpensive and expensive labor and infrastructure costs and DfID which uses an average cost of \$12. Using this latter figure providing VCT to 15% of all adults (15 - 49) in SSA would total \$470 million per year.

[261.4 million adults in SSA x \$12 x 15% = \$470 million]

COST OF TREATMENT/CARE:

\$1.28 billion for treatment of HIV related illness including TB

The World Bank estimates the *lifetime* cost of treatment for a person with AIDS in the developing world at \$300 to \$1000. DfID estimates that in 1996 dollars the combined costs of caring for persons with HIV infection and AIDS at \$194 per person with HIV/AIDS per year. This figure was adjusted for inflation and increased prevalence. The costs associated with VCT were also factored out (this cost is kept separate in this analysis). The adjusted cost of care per PLHA is \$194. (The similarity between the 1996 figure and the adjusted figure is coincidence.) Therefore, the estimated cost of care for 30% of the 22 million persons in SSA infected with HIV is 1.28 billion.

[22 million PLHA x 30% x \$194 = \$1.28 billion]

Caring for orphans and vulnerable children: \$ 389 MILLION

Estimating the annual costs of services to children affected by HIV/AIDS is difficult due to the rapid increase in children needing assistance and the variation of services offered to children orphaned by AIDS. First the total number of children needing assistance is growing rapidly. *Children on the Brink* estimates that the number of children orphaned by HIV/AIDS in SSA by 2000 will be nearly 25 million. In the next ten years (by 2010) the number of children orphaned is expected to reach 40 million. The second difficulty in

calculating costs is the lack of data and uniformity of types of assistance to children affected by HIV/AIDS.

The types of services offered to orphans and vulnerable children vary by where they receive services and the type of services they receive. Given the magnitude of the needs of children orphaned by AIDS, community based responses are the best option to provide services for these children. Institution-based care which may seem common in the developed world are not appropriate in the majority of circumstances in SSA. The types of services offered to orphans and vulnerable children have many different components and therefore the costs of these programs are highly variable. The World Bank estimates the annual cost of institutional care (orphanage) per child at over \$1000 while it estimates the annual cost of foster care at one tenth of that or about \$100 per child. In an analysis of community based care of children in Uganda, Williamson estimates the annual cost per child recipient at \$50.

Given the magnitude of the problem of children affected by AIDS, orphanage based care is not a realistic option. The average of estimated costs of foster and community-based care is used: \$50 per child per year. Providing assistance to 30% of all children affected at an average cost of \$50 per child would cost \$474 million.

[24.7 million x 30% x \$50 = \$370 million in 1999 dollars; 389 million in 2000 dollars]

COLLABORATION

USAID is working together with the UNAIDS, World Bank, and the London School of Hygiene to improve and refine these projections.

References:

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5. Boerma, T. Bennett, J.: Chapter 21 Costs of District AIDS Programs; in Financing and Sustainability
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Estimating Costs for Prevention of Mother to Child Transmission of HIV in Sub Saharan Africa

According to U.S. Bureau of Census estimates, 25 million women become pregnant each year in sub Saharan Africa. Approximately half of these women (12,500,000) have contact with the formal health care system and could in theory be screened for HIV infection and offered a package of interventions to prevent mother to child transmission of HIV. This package would likely consist of the antiretroviral drug Nevirapine and breast milk replacements.

Since not all of the facilities where antenatal care is delivered would be capable of offering this package it is assumed that about one half of pregnant women receiving antenatal care or 6,250,000, would be eligible for HIV testing and subsequent intervention. On average 6.5% of pregnant women in sub Saharan Africa are infected with HIV so that about 400,000 women could potentially benefit from the package. (HIV prevalence among pregnant women in sub-Saharan Africa ranges from less than one percent to fifty percent in high prevalence settings.)

To provide voluntary counseling and testing to 6,250,000 women annually would cost roughly \$75 million. To provide Nevirapine and breast milk substitutes to the 400,000 HIV infected women identified would cost roughly \$22 million. Therefore the total annual cost to provide MTCT services in sub Saharan Africa would reach nearly 100 million dollars. This does not include the additional costs of training, improvements to facilities, and additional personnel, which would likely add another \$10 to \$20 million.

This expenditure could be expected to prevent 97,500 infections at a cost of \$1,000 per infection (death) averted. The cost per death averted goes down as the prevalence of HIV among pregnant women goes up. As a result the cost per death averted exceeds \$5000 in low prevalence countries such as Madagascar, and is less than \$350 in high prevalence settings such as Botswana. The World Bank has estimated the cost per death averted for measles vaccination programs and tuberculosis treatment at about \$650 and \$100 respectively. Thus MTCT interventions in high prevalence countries are competitive with other prevention and treatment interventions.

Estimating the cost of providing Cotrimoxazole in SSA

Estimation of an annual cost of providing Cotrimoxazole to persons with HIV/AIDS in SSA need to consider the following:

1. Cotrimoxazole is recommended for persons with moderately advanced disease. Therefore not all persons with HIV infection necessarily need to take it. This may be about one third of persons with HIV in SSA. However since illness may be a reason to seek testing the number of tested persons meeting the criteria are probably higher. *50% is assumed.*
2. Not all persons with HIV infection in SSA are aware of their status. Best estimates are that 5 to 10% of persons living with HIV/AIDS know their status. *10% is assumed*
3. UNAIDS estimates an annual per person cost of \$8 to \$17. An average cost of \$12.50 *is assumed.*

Estimates of people living with HIV in SSA	22,000,000
Persons who know their HIV status (10%)	2,200,000
Persons likely to meet criteria for use of Cotrimoxazole prophylaxis (50%)	1,100,000
Annual cost of daily Cotrimoxazole at \$12.5 per person per year	\$13,750,000

Recommendation: The provision of Cotrimoxazole needs to be carried out in the context of a comprehensive testing, counseling and treatment program. Given the modest cost of this intervention relative to the costs of other program components this cost should be assumed to be part of the \$1.28 billion cost of treatment of AIDS related illnesses.



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COMMENTS: When I made the estimate the amount appears very modest. It makes most sense to assume this cost will be absorbed in the overall cost of providing care.

**Preliminary Estimates of the Cost of HIV/AIDS Prevention
For Sub-Saharan Africa**

Lilani Kumaranayake and Charlotte Watts

September 5, 1999

Prepared for UNAIDS

1. Purpose

The purpose of this note is to provide preliminary costs estimates of HIV/AIDS prevention strategies for Sub-Saharan Africa (SSA) and a number of sub-regions within SSA.

These cost figures reflect the estimated costs of improving the coverage of programme activities at a national scale. The following prevention strategies are costed:

1. Youth-focused interventions
2. Sex Worker interventions
3. Strengthening of public sector condom distribution
4. Condom social marketing, male condom only
5. Strengthening STI services
6. Voluntary counselling and testing (VCT)
7. Strengthening blood transfusion services
8. Interventions to reduce mother-to-child transmission (MTCT), including VCT
9. Mass media campaigns

2. General Approach to Estimation of Cost Figures

a. Background: Currently, there is very little information available on the relative cost and likely impact of each intervention in different settings, either individually or in combination. When compiling these costs there are two challenges: first, to obtain any available costs for these prevention strategies from the empirical literature and second, to scale-up these costs for national programmes.

Due to the low national coverage of many interventions, even when cost information is available, it is generally obtained at the individual facility or project level, operating on a small-scale (e.g. community or district).¹ For this reason, we adopt a model-based

¹ However, unit costs themselves change with the scale of activity. Economists hypothesize a "u-shaped" cost curve whereby for a certain scale of activity, unit costs decline as the level of activity or output increases (e.g. economies of scale), and then after a minimum point (the minimum efficient scale), unit costs are thought to rise, displaying diseconomies of scale. Thus projection of costs by using constant unit costs may be biased. For example, if one were to scale up the project and there were economies of scale, then unit costs would decline as the scale of activity increased, and total costs would go up by less than \$125. Conversely, if diseconomies of scale were present, a projection based on average costs would underestimate the costs of expanding the project.

There have been very few alternatives offered to the linear projection of unit costs. Rowley and Anderson (1994) use a pure modeling approach to project costs. They use a very generic specification of unit costs, based on factors such as the target population, and then make assumptions about the relative size of average costs between different types of programs. However, given the lack of reference to existing data and cost structures, this pure modeling approach may not be robust to different settings (Watts and Kumaranayake, 1999). Over (1986) uses a combination of data and knowledge about the project to consider costs of scaling-up a project. He establishes a minimum efficient scale of production for the program and then derives unit costs from this. However, this requires a working knowledge of

Preliminary Costs of HIV/AIDS Prevention for Sub-Saharan Africa -
Kumaranayake and Watts - September 5, 1999

approach to estimate the required scale of the prevention strategies and then to estimate the likely costs for these strategies, based on existing cost data. The development and use of this model used has been documented in Kumaranayake and Watts (1999), referred to as KW99.

b. Modelling Strategy:

The modelling strategy was developed by discussion with UNAIDS technical staff. There were a number of useful revisions suggested for KW99, however given time-constraints, we were unable to incorporate them, as this required substantial re-programming of the model.

This paper estimates the costs of undertaking each of the prevention strategies at both a regional and sub-regional level. At the sub-regional level the countries were grouped into four categories according to estimated programme strength for HIV/AIDS prevention activities. ('very low', 'low', 'medium' and 'strong'). The classification of countries is given in Table 1.

Estimates were then made of the current level of coverage in each of the 4 sub-regions, by type of intervention. Target levels of coverage for 2005 were set for each of the prevention strategies. These target levels were based on what was felt to be realistically possible to achieve in a five year time-period by UNAIDS technical staff. The existing and target levels of coverage are presented in Table 2.

The model was then used to estimate the additional costs of reaching these higher levels of coverage, taking into account the assumed levels of existing coverage.

3. Interpretation of Cost Figures

The figures presented are given in US \$2000. These costs give an idea of the magnitude of resources which need to be spent next year, if one hopes to reach the scale of the target coverage levels in 2005. **This cost is in addition to the current level of spending, which is used to support existing activities.** In general these costs are given for the level of direct service or project provision. There are a few issues to note:

a. Institutional and capacity constraints to scaling up: While in theory we should be able to scale the costs of projects for any level of activity or target group for each form of intervention, we have only attempted to cost what may be potentially feasible levels of implementation. Thus for example, we have only costed MTCT activities for those women having access to ante-natal and health services. The level of coverage then relates to this potentially feasible level of implementation. In general, we have not tried to cost levels of implementation that require wholesale changes in infrastructure. We do not provide cost estimates of the capacity development that is required to implement

each program in a country-specific context.

these scaled-up activities, with exception of the 'very low' group. It is assumed that among these countries additional investment is required to "jump-start" programme activities, and we have added a costing component for this.

b. Use of Annualised Costs: There is a differential timing in terms of when costs of certain inputs are incurred and when their benefits or use occur over the life-time of a programme intervention. For example, the purchase of capital items and start-up components (e.g. recruitment and training of staff, social mobilisation and IEC campaigns) will occur at the beginning of the intervention, but their use/benefit will be over the duration of the project. For other input categories, the purchase and use of the items will be reflected completely in the current year's costs. In order to obtain total costs, we need to add these two categories together in a consistent fashion. This is done by calculating the annual equivalent cost of those capital/start-up items, and then adding them to other costs. We thus use these 'annualised' costs as the basis of estimation.

In practice these annualised costs will then give you a good idea of the overall resource requirements for an intervention, over the life-time of the project. However, the actual budgetary requirements may be different depending on the extent of the capital and start-up activities which are required at the beginning of the intervention.

c. Impact not considered: This analysis does not look at effectiveness or the likely impact of different prevention strategies. The achievement of coverage targets is reliant on both resource availability as well as the implementation of effective programmes. Effectiveness will also depend on intangibles such as political commitment. Issues related to impact have not been considered in this note.

d. Requirements for priority-setting: While costs are important in examining resource requirements for different activities, prioritisation between different activities should also consider their likely and differentiated impact in various settings.. It is only when both costs and effectiveness are considered together, that we can compare alternatives in terms of their success in averting HIV infections. Given the absence of overall impact information, this analysis does not quantify the likely benefits achieved by the different interventions, and only serves as a guide for the determining resource requirements for each strategy.

e. Double-counting: As we have adopted an intervention-by-intervention approach to modelling costs, there is the danger of double-counting a particular activity found across different interventions. This is particularly important for the public sector condom distribution and condom social marketing interventions. Currently target levels are set at 70%, and so the combined cost estimates of these two strategies will substantially over-estimate the resources required to meet the potential demand for condoms. This double-counting can be eliminated if assumptions are made about the relative importance of achieving these programs.

4. The Resource Determination Model - KW99

This section briefly reviews the methodology used for the calculation of these figures. KW99 adopts a two-fold approach to generating cost estimates for scaling-up HIV/AIDS activities to a national level. First, available demographic, behavioural and epidemiological data are used to determine the size of the relevant target groups or population groups for which the prevention and care interventions are designed to reach. This is referred to as the potential target group (PTG). Second, facility or project-level cost data from the published and grey literature provide baseline unit costs, which are then used to scale-up and provide national estimates under various coverage scenarios, by strategy. Table 2 also provides a summary of the PTG for each intervention.

- The model estimates the costs for each strategy using context-specific estimates of the PTG by different strategies. The model only attempts to cost what may be potentially feasible levels of implementation, given current capacity development.
- The unit costs used in the calculations are drawn from a range of projects in Sub-Saharan Africa. These are used to consider the total costs for each strategy. The model estimates the costs of implementing the HIV prevention activities to a national level, considering different target levels of coverage in urban and rural areas.
- The model uses a unit-cost methodology to attribute costs to each strategy, and these unit cost-measures are specific to each PTG. This means that unit costs vary between intermediate and process measures². Thus the unit costs themselves are not sufficiently comparable between strategies to allow for direct comparison of relative costs. The cost measure to be used for comparison should be the total costs of each strategy.
- Given the uncertainties associated with the data, the model uses a range of cost data, to present low-medium-high cost scenarios for scaling up of national programme activities.
- Ideally, a regional or sub-regional figure would be based on a national estimate of the cost of providing each strategy on an individual country basis and then summing up these national figures, to obtain a regional number. However, data were only available for 26 countries. Estimates were done on a country-basis and then aggregated to the regional and sub-regional level. For countries with missing

² There are a range of possible outcomes associated with an intervention. Immediate or process outcomes measure the level of activities or outputs associated with the intervention. For example, this could be the number of condoms distributed or the number of peer educators trained. An intermediate outcome, reflects intermediate changes due to the intervention of the project, necessary before there is a health impact. Examples of intermediate outcomes are the number of people educated in peer sessions or the number of people successfully treated for an STI. Impact or final outcome measures include the number of HIV infections averted, and are in practice difficult to obtain outside the clinical trial environment. HIV infections averted are generally estimated by the use of modelling methods.

information, cost estimates were extrapolated from other countries in the sub-region. Projected total population in the year 2000 was used to weight these figures when calculating the regional and sub-regional aggregates. The sum of the total population of the countries listed in Table 1 was used as the basis of calculation.

- A widely-used approach to scaling up unit costs is to use a linear function to scale up. This is done by taking the unit cost associated with a program and then multiplying this by a factor reflecting activity at a larger scale (e.g. if the unit cost per person is \$5 for 100 people, the increase in expanding the program for another 25 people is \$125). For simplicity, we have adopted this approach.

5. Unit Cost Figures

KW99 compiled available costs for HIV prevention activities in sub-Saharan Africa. Based on available data, an annual unit cost was then calculated, based on the relevant unit cost measures for each activity. Hence the original studies presented figures for a variety of different years, we have converted them to constant US dollars for the year 2000 using the average annual inflation rate, as measured by the GDP deflator (World Bank, 1997b) for the period between 1985-1995³. We also use this rate to present US dollars in constant dollars for the year 2000.

For this preliminary assessment, we have assumed one cost-structure for the entire region of Sub-Saharan Africa, and do not differentiate by low and middle-income countries. At this time, there is insufficient cost data to be able to distinguish between low and middle-income accurately. While this is misleading at the individual country-level, given the small number of countries in the middle-income level, we estimate that this bias the estimates by a magnitude of 3-5% on a regional basis. The unit costs are presented in Table 3.

6. Data Limitations and Results

The model was estimated using a variety of data from published results. The sources are referred to in the appendix. There were some key limitations in generating the estimates:

- Paucity of general cost information on HIV prevention activities. It was not possible to distinguish between high and low income countries and some of the ranges for the cost estimates are extrapolations based on 1 or 2 existing studies.
- No real information about existing levels of coverage. While we know that existing coverage is low, there are no systematic estimates of the existing levels of coverage, and so it is difficult to know where to scale-up from.

The results are presented in Tables 4 and 5. Table 4 presents estimates by sub-region,

³ The GDP deflator for this period was 3.2% for the US over this period.

and Table 5 presents estimates for SSA.

The KW99 model was developed in anticipation that as data collection improves, the determination of resource requirements for HIV prevention can also become increasingly refined. The KW99 model is currently under a process of review, before being finalised. Thus there will some changes to estimated costs in the future. The numbers presented here are preliminary.

Table 1. Grouping of Countries by Existing Strength of HIV/AIDS Programme Activities

Estimated Programme Strength			
Very Low	Low	Medium	Strong
<i>Angola</i>	Benin	Botswana	Cote d'Ivoire
<i>Congo</i>	Burkina Faso	Burundi	Senegal
<i>Djibouti</i>	Burundi	Cameroon	Uganda
<i>Eritrea</i>	<i>Chad</i>	Central African Rep.	
Ethiopia	<i>Equatorial Guinea</i>	Kenya	
<i>Liberia</i>	<i>Gabon</i>	Lesotho	
Nigeria	Gambia	Malawi	
<i>Sierra Leone</i>	Ghana	Mozambique	
<i>Somalia</i>	Guinea	Tanzania	
<i>Zaire</i>	<i>Guinea Bissau</i>	<i>Namibia</i>	
	Madagascar	South Africa	
	Mali	<i>Swaziland</i>	
	Mauritius	Zambia	
	<i>Niger</i>	Zimbabwe	
	<i>Rwanda</i>		
	<i>Togo</i>		

Note: Figures for countries in italics extrapolated from other countries within same group

Table 2: Coverage assumptions used

Coverage assumptions										
Form of intervention	Potential target group	Measure of coverage	Very Low		Low		Medium		Strong	
			Baseline	Target	Baseline	Target	Baseline	Target	Baseline	Target
Youth focused interventions	Male and female youth enrolled in school. 6 – 11	Proportion 6 – 11 receiving HIV education	5%	50 %	5%	50%	10%	50%	20%	50%
In school youth	12 – 16	Proportion 12 – 16 receiving HIV education	20%	80%	20%	80%	30%	80%	50%	80%
Youth focused interventions	Males and females 12 – 16	Proportion 12 – 16 receiving HIV education	5%	50%	5%	50%	10%	50%	20%	50%
Out of school youth										
Sex worker interventions	4% urban women aged 15 – 49. Average 2 sex acts per week	Proportion total reached Proportion using condoms often	20% 10%	60% 70%	20% 10%	60% 70%	40% 20%	60% 70%	50% 30%	60% 70%
Strengthening public sector condom distribution	All sex acts with non-regular partners 20% sex acts in regular partners	Proportion using condoms often in non-regular partnerships Proportion using condoms in regular partnerships	10% 2%	70 % 2%	10% 1%	70% 2%	20% 2%	70% 2%	40% 2%	70% 2%
Condom social marketing	All sex acts with non-regular partners 20% sex acts in regular partners	Proportion using condoms often in non-regular partnerships Proportion using condoms in regular partnerships	10% 2%	70% 2%	10% 2%	70% 2%	20% 2%	70% 2%	40% 2%	70% 2%
Strengthening STI services	Men and women with curable STIs and access to health services	Among those with access to health services, proportion of curable STIs treated by health service	5%	30%	5%	30%	15%	30%	20%	40%
Voluntary counselling and testing	Current sexually active population	Proportion receiving VCT urban Proportion receiving VCT rural	1% 0 %	5% 5% (including MTCT testing)	1% 0%	5% 5% (including MTCT testing)	1% 0 %	5% 5% (including MTCT testing)	1% 1%	5% 5% (including MTCT testing)
Strengthening blood transfusion services	Blood for transfusion	Proportion units of blood for transfusions tested Urban Rural	 70% 70%	 100% 100%	 70% 70%	 100% 100%	 90% 75%	 100% 100%	 90% 90%	 100% 100%
Mother to child transmission	Pregnant women aged 15 – 49	Proportion pregnant women tested HIV Urban Rural	 0.5% 0%	 10% 5%	 0.5% 0%	 10% 5%	 0.5% 0%	 10% 5%	 0.5% 0%	 10% 5%
IEC / mass media	National campaigns for entire country	Number campaigns per year	2	6	2	6	2	6	2	6

Table 3 **UNIT COSTS US\$2000**

Strategy	Unit Cost US\$ 2000		
In-school youth interventions	Low	Medium	High
Cost per teacher trained primary school education	75	200	400
Cost per teacher trained secondary school education	121	241	495
Cost per person reached / peer education out of school youth	8	10.81	16.2
Interventions focused on sex workers and clients	Low	Medium	High
Cost per SW targeted urban	15.83	21.12	31.66
Cost per condom distributed urban	0.1	0.14	0.17
Increased public sector condom provision	Low	Medium	High
Cost per condom distributed urban public sector	0.1	0.34	0.5
Cost per condom distributed rural public sector	0.1	0.34	0.5
Strengthening condom logistics (cost per condom)	0.045	0.07	0.1
Condom social marketing	Low	Medium	High
Cost per condom distributed urban areas	0.21	0.29	0.40
Cost per condom distributed rural areas	0.25	0.40	0.65
Strengthening STI services	Low	Medium	High
Cost per STI case treated/visited	12.65	15	20
Cost per woman screened for syphilis	.91	2.00	2.80
Voluntary counselling and testing	Low	Medium	High
Cost per person counselled and tested	3.8	4.4	6.92
Strengthening blood transfusion services	Low	Medium	High
Cost per safe unit blood collected	5.34	18.22	30
Prevention MTCTHIV	Low	Medium	High
Cost per woman screened	3.8	4.4	6.92
Cost per woman testing HIV positive and receiving regimen	5	50	180
Cost per woman HIV positive provided formula-feed	50	55	60

Mass Media	Low	Medium	High
Cost per campaign	450,000	517,000	650,000
Start-up capacity development (very low group only)	Low	Medium	High
Cost per capita	.021	.026	.033.

TABLE 4: Low, medium and high cost estimates by sub-region

MILLIONS US\$ 2000

Low cost estimates	Programme strength			
	VERY LOW	LOW	MEDIUM	HIGH
Youth focused interventions	129.9	56.6	77.1	16.1
Interventions focused on sex worker interventions	20.9	8.5	14.3	2.3
Increased public sector condom provision	83.3	42.5	81.6	3.9
Condom social marketing	6.8	2.7	7.1	2.2
Strengthening STI services	64.2	23.7	33.1	8.2
Voluntary counselling and testing	21.7	8.9	15.2	3.5
Strengthening blood transfusion services	2.6	1.1	0.6	.15
MTCT	2.6	1.1	1.8	0.4
Mass media	5.5	23.1	24.4	5.8
Start-up capacity development	1.9	0	0	0
TOTAL (millions US\$ 2000)	339.4	168.2	255.2	42.6
Medium cost estimates	Programme strength			
	VERY LOW	LOW	MEDIUM	HIGH
Youth focused interventions	189.7	81.5	109.0	23.5
Interventions focused on sex workers and clients	32.9	13.4	36.7	3.7
Increased public sector condom provision	199.0	77.9	136.1	11.3
Condom social marketing	19.2	7.6	22.0	6.2
Strengthening STI services	97.2	36.1	63.2	11.8
Voluntary counselling and testing	39.6	16.2	27.2	6.4
Strengthening blood transfusion services	8.9	3.7	2.1	.5
MTCT	5.4	2.2	3.9	0.9
Mass media	5.8	24.4	34.3	6.2
Start-up capacity development	7.1	0	0	0
TOTAL (millions US\$ 2000)	604.6	262.9	434.5	70.7
High cost estimates	Programme strength			
	VERY LOW	LOW	MEDIUM	STRONG
Youth focused interventions	300.1	127.8	178.2	37.1
Interventions focused on sex workers and clients	44.9	18.2	49.5	5.0
Increased public sector condom provision	297.5	117.0	207.5	17.3
Condom social marketing	28.1	11.0	34.3	9.2
Strengthening STI services	129.5	48.2	84.2	15.8
Voluntary counselling and testing	165.8	68.0	114.0	26.9
Strengthening blood transfusion services	14.7	6.0	3.5	.8
MTCT	18.9	7.8	13.5	3.3
Mass media	7.2	30.6	43.2	7.8
Start-up capacity development	9.0	0	0	0
TOTAL (millions US\$ 2000)	1015.8	434.7	727.9	123.16

TABLE 5: Low, medium and high cost estimates for sub-Saharan Africa**BILLIONS US\$ 2000**

	LOW	MEDIUM	HIGH
Youth focused interventions	.28	.40	.64
Interventions focused on sex worker interventions	.05	.09	.18
Increased public sector condom provision	.21	.42	.64
Condom social marketing	.02	.05	.08
Strengthening STI services	.13	.21	.28
Voluntary counselling and testing	.05	.09	.37
Strengthening blood transfusion services	.004	.015	.025
MTCT	.006	.012	.043
Mass media	.059	.07	.09
Start-up capacity development (very low only)	.002	.007	.009
TOTAL (billions US\$ 2000)	.80	1.37	2.30

Note: Totals may differ slightly due to rounding.

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US CAMPAIGN TO CLOSE THE GLOBAL AIDS RESOURCE GAP:

I. Strategic Purpose: To significantly reduce worldwide HIV transmission; improve basic care and treatment for those infected and affected; and, reduce the associated impacts. Taking aggressive and concerted action to realize these goals is in the strategic interest of the United States and the public interest of all Americans.

II. Resources Required:

Financial resources (FY2000):

Sub-Saharan Africa alone: \$3 billion annually¹

For Asia, Eastern Europe/NIS, and Latin America: \$3 billion annually²

¹Of this amount, 20% of annual public sector costs should be leveraged from HIPC governments, 40% from mid-income countries; Target region: all of sub-Saharan Africa. Figures exclude US-based research efforts.

²Target region includes clusters of countries as described in section V below.

Annual Amount Required for Africa for HIV/AIDS Prevention and Care and Current Spending in FY2000

	Amount needed	World Spending ¹	Shortfall	USAID ²	Other USG (CDC)
Prevention	\$1.5 billion	\$425 million	\$1.075 billion	\$ 99 million	\$ 34 million
Care	\$1.5 billion	\$ 75 million	\$1.425 billion	\$ 35 million	\$ 0
Total	\$3.0 billion	\$500 million³	\$2.5 billion	\$134 million	\$34 million

¹Includes all donors, lending agencies and host country public sector. Does not include foundations or personal out-of-pocket expenditures.

²Included in World Spending total; USAID annual funding needs in section VIII. USAID worldwide HIV spending is \$200 million in FY2000.

³Of this amount, approximately \$415 million is funded through developed country grants and loans and \$85 million derives from host country governments, primarily for inpatient care costs.

Annual Amount Required for other Developing Regions (LAC, Asia, EE/NIS) and Current Spending in FY2000¹

	Amount needed	World Spending ²	Shortfall	USAID	Other USG
Prevention	\$2.0 billion	\$1 billion	\$1.0 billion	\$ 60 million	\$ 1 million
Care	\$1.0 billion	\$0.5 billion	\$0.5 billion	\$ 6 million	\$ 0
Total	\$3.0 billion	\$1.5 billion³	\$1.5 billion	\$ 66 million	\$1 million

¹Excludes China.

²Host country resources are more substantial in these regions. Thus the anticipated shortfalls are less and the need for developed country input is less.

³Of this amount, approximately \$500 million is funded through developed country grants and loans and \$1 billion derives from host country governments.

Human and institutional resources:

1. Additional US personnel devoted to HIV/AIDS internationally. Expansion of USG agencies involved. Increased utilization of US-based expertise (NGOs, universities)
2. Significant increase in African and other national human and institutional capacity devoted to HIV/AIDS.

III. Key Trends

- 4 million new infections in Africa; 6 million worldwide; 95% of infections in the developing world. 34 million total infected in Africa;
- In the past 20 years, 16.3 million deaths from HIV/AIDS (11.5m deaths in Africa). Death toll will double in 5 to 6 years, most of it occurring in sub-Saharan Africa;
- One-third of African countries (16) have adult (15-49) HIV prevalence rates above 10 percent. Of these, 7 countries have HIV prevalence rates above 20 percent;
- Negative population growth by 2010 in South Africa, Botswana, and Zimbabwe (-1.3, -1.3, and -0.9 respectively). Six more countries in sub-Saharan Africa will see their population growth rates approach zero because of HIV/AIDS. Mozambique's growth rate will slow to just 0.1% per year, a twenty-fold decline in population due to HIV/AIDS;
- By 2010, over 40 million children will have lost one or both parents to HIV/AIDS in Africa;
- Prevalence rates in African militaries can be as high as 40-60%, with highest rates in officer cadres; and,
- By 2000, cumulative worldwide direct and indirect costs of HIV/AIDS top \$500 billion. HIV/AIDS will account for over 50% of health spending in many African countries.

IV. Result Targets:

- Reduce the expected new HIV infections over the next five years in Africa from 20 million to 10 million, and in other regions from 10 million to 7 million.
- At least 30% of HIV infected persons have access to basic care and support services.
- At least 30% of AIDS orphans will have access to basic community support services.

V. Strategic Approach:

Twenty years of experience with this pandemic has allowed for the development and small scale implementation of AIDS strategies with documented success. These approaches include: a combination of prevention, care and treatment, capacity building, as well as political will, multisectoral involvement, donor coordination, financing, and monitoring and evaluation.

The primary focus is on sub-Saharan Africa, which has generalized HIV infection throughout the adult population. This focus will recognize migration patterns and the mosaic of epidemics in different sub-regions. In Asia, Eastern Europe, the newly independent states of the former Soviet Union, and Latin America, the epidemics are concentrated in specific vulnerable populations. Our action is focused on these subpopulations and will target clusters of countries with significant cross border migration: India-Bangladesh-Nepal; Thailand-Vietnam-Cambodia-Laos; Russia-Ukraine-NIS countries-Poland-Romania; Caribbean-Guyana-Brazil. For these countries and non-focus countries, an expanded and rigorous sentinel surveillance system will monitor the epidemic and identify trends and outbreaks of transmission.

- **Primary prevention:** Essential to controlling and stopping this global scourge. Enhanced and new activities to focus on targeted vulnerable populations (e.g., youth, women, military), as well as highly used transport corridors, better access to voluntary

testing and counseling (VCT), massive investments in mother-to-child prevention; reductions in stigma and discrimination.

- **Care and support for those infected and their families:** Focus on three points of access to infected persons: VCT, antenatal clinic attenders, and inpatients, especially those with active TB. Each of these points of access will provide the optimum way to identify HIV infected persons and to initiate care and support interventions. Each of these also will dramatically enhance our primary prevention agenda. Provide training for health workers and health care system infrastructure improvements to deliver care and support community based care programs (including food distribution). Special focus on drug procurement and distribution systems will enhance the availability and accessibility of these medications.
- **Programs addressing orphans and vulnerable children:** Provide support to community based programs assisting children and families at risk. Includes medical care, education, food, and income generation activities.
- **Capacity building:** Support building national analytical, planning and management capabilities to combat HIV/AIDS in Africa and elsewhere. Strengthen HIV/AIDS surveillance efforts, as well as national monitoring and evaluation efforts. Health system infrastructure development to assure safe and effective delivery of HIV/AIDS drugs and prevention services, including: training, clinics, basic drugs for opportunistic infections, expanded NGOs, PWA empowerment, and bicycles for community health workers.
- **Enhanced multisectoral response.** Engage multiple sectors: education, agriculture, military, economic growth, microenterprise, democracy and governance, commerce, and others to launch HIV/AIDS advocacy, education, prevention and/or care programs. Specific funding is required.

VI. Managing the Global Battle:

- US-based: restructure ONAP to manage the Federal Agency response;
- Using the PEACS apparatus, engage OECD and affected countries at the highest political level;
- The US LIFE Initiative and International Partnership Against AIDS in Africa (IPAA) Initiative can work together to focus on the hardest hit countries in Africa; and,
- Periodic NSC/ONAP convened IWG, along with executive committee to monitor US and worldwide progress;

VII. Key USG Actors:

USAID is the designated lead USG agency for field based action. Other key implementation agencies include DHHS, DOD, DOL, State, Treasury, USTR, and the intelligence community. All other USG agencies have important roles to play, e.g., DODCommerce.

VIII. Major Challenges that now confront us:

- Closing the Resources Gap:
 - In FY2000, as part of the "LIFE Initiative" (Leadership and Investment in Fighting an Epidemic), the President proposed and the Congress appropriated a \$100

million increase for the USG's global AIDS effort. For FY2001, the President has requested an additional \$100 million increase. This initiative has not only enabled the USG to more than double its global HIV prevention and AIDS care programs but to expand participation in this effort to include HHS, DOL, DOD, and Ag in the funding, and a host of other strategic players in the overall implementation of the USG's program.

- The USG will redouble its global AIDS spending in the next two years and will develop a plan for the accelerated assistance needed to do its share to help close the global gap for the next five years;
 - The USG will call on other countries to double their bilateral HIV/AIDS assistance over the next two years, and to develop a plan for the accelerated assistance needed to do its share to help close the global gap over the next five years.
- Limited Capacity:
 - In affected countries, governments, NGOs, communities, institutions, all need major capacity building efforts
 - USAID requires dedicated HIV/AIDS staff in each LIFE emphasis country to manage its programs and coordinate USG efforts.
 - Lack of Critical Tools: (such as AIDS prevention vaccines and microbicides.) Requires an intensive focused effort (NIH, IAVI, GAVI) involving a coordinated, multi-pronged approach to simultaneously testing promising vaccine and drug candidates. Currently \$1.9 billion is expended by the USG on AIDS research.

IX. Monitoring and Evaluation

The USG will use indicators firmly established under the LIFE Initiative and the International Partnership Against AIDS in Africa to monitor progress. A country profile database will be established providing country-based information on the epidemiology of the epidemic, scope of the country response, and indicators of progress. These profiles will be created through a collaborative effort led by the USG (USAID, CDC, Bureau of Census, NIA, DOD, etc) working with UNAIDS, WHO and selected other governments (e.g. U.K. and Sweden), and will use established indicators, and data aggregation and analysis systems. Profiles will be updated semi-annually and will facilitate regrouping/strategy revisions, etc. A semi-annual supplemental report will address data that relates to security issues.

X. Next Steps: (12 month plan)

- Discussion of HIV/AIDS at international fora: G-8, SADC, EU-US, UNAIDS PCB;
- Discussion of HIV/AIDS efforts and required assistance in upcoming President Mbeki visit and with other high level visits;
- UN special meeting of General Assembly; Millennium conference;
- Personal calls by POTUS/VP with specific leaders to galvanize worldwide attention and resource mobilization;
- Specific work with DOD, DOL, Treasury—US HIV/AIDS “strikeforce”. Coordination with USAID to provide background HIV/AIDS technical assistance on the issues;
- Increased communication and collaboration with USG advocacy and expert groups (e.g. NGOs, universities, etc);

- Identification of necessary studies (e.g. economic, intelligence, military, HIV surveillance) to be undertaken; and,
- Increased USG participation in country level IPAA actions.

ANNEX 1:

HIV/AIDS GLOBAL PANDEMIC FUTURE TRENDS

CONTINUED SPREAD OF HIV AROUND THE WORLD: Large increases in HIV infections are projected by the U.S. Bureau of the Census for sub-Saharan Africa. In South Africa, for example, adult prevalence is expected to increase from 22% to 38% within the decade. In the same time frame, Nigeria's adult prevalence will jump from 5.6% to 11% -- rise of nearly 50%.

One-third of African countries (16) have adult (15-49) HIV/AIDS prevalence rates above 10 percent. Of these, 7 countries have HIV prevalence rates above 20 percent. While HIV will continue to take a staggering toll on sub-Saharan Africa, other regions particularly parts of Asia and the former Soviet Union will experience a rapid growth in HIV infections. The National Intelligence Council in its report on the global infectious disease threat, estimates that by 2010 Asia could surpass Africa in the number of persons living with HIV infection. Already, India with 3.7 million persons infected is second only to South Africa with 4.2 million.

MORTALITY: In the last twenty years, 16.3 million people died from HIV/AIDS. At current rates, this death toll will double in 5 to 6 years with most of the deaths occurring in sub-Saharan Africa. For example, infant mortality in Zimbabwe is projected to triple from 22 to 66 deaths per 1,000 live births and child mortality will have risen five-fold from 29 to 153 deaths per 1,000 children under 5. By 2010, life expectancy in Zimbabwe will have fallen from 73 years to less than 33 years.

DECLINING POPULATION GROWTH: U.S. Bureau of Census projections show that by 2010, South Africa, Botswana, and Zimbabwe will experience negative population growth as a result of HIV/AIDS, with growth rates of -1.3, -1.3, and -0.9 respectively. Six more countries in sub-Saharan Africa will see their population growth rates approach zero because of HIV/AIDS. Mozambique's growth rate will slow to just 0.1% per year. Without the HIV/AIDS epidemic the 2010 growth rate would have been 2%. This represents a twenty-fold decline in population growth because of HIV/AIDS.

ORPHANS: In 34 of the most severely impacted developing countries over 40 million children will have lost their mother or both parents to HIV/AIDS within the next decade. Many of these children will be adolescents and young adults. Without adequate education and social integration, orphans will add significantly to crime rates, serve as child soldiers, and could threaten political stability.

IMPACTS ON ECONOMIES, POLITICAL AND SOCIAL STABILITY: Significant impacts of HIV/AIDS on multiple sectors are being seen. HIV prevalence rates in militaries of heavily affected countries can range from 10 to 60%, and is often double the civilian population rate. HIV/AIDS causes at least a 1% GDP rate decline in heavily affected countries, as well as large costs for firms. Millions of orphans translate into a significant pool of untrained adults further exacerbating social and political instability. In Zambia, 1300 teachers died (many from AIDS) last year, whereby only 700 were trained. Swaziland, using a national 30% HIV prevalence rate, estimates that it would require an 86% increase in the education budget (above current levels) just to maintain teacher levels of two years ago.



Alex Ross <aross@afr-sd.org>

05/17/2000 11:16:39 AM

Record Type: Record

To: See the distribution list at the bottom of this message

cc:

Subject: [Fwd: Re: Revised USG Battle Plan]

Ken and Laura,

Here is the revised version that incorporates some edits from Mike Iskowitz and for which we are comfortable with.

Regarding your question, Ken, on coverage. This is tough. When you look at the sheet that Paul had sent over with the breakout of the \$3 billion, you will see what it would purchase (for Africa) and some sense of coverage. It does not appear that we have one number to reflect what % of the African population the entire \$3 billion would cover.

Indeed, there is a great deal of difference between covering people with mass media messages vs. intense treatment. So here is a rough guide referring to the table you have:

Prevention (\$1.03 b)

Mass media would cover 100% of the African population (on the order of 620 million people in sub-Saharan Africa)

More intense behavior change targeted at 30% of those in need (e.g., truck drivers, CSW, etc). I cannot give you a denominator figure here.

CARE AND TREATMENT (\$1.3 billion)

If you divide \$1.3 b by \$194/yr/person, you end up with 6.7 million people (but that probably includes the various types of interventions).

[There are 22+ million people living with HIV/AIDS in Africa, presumably not all need care right away)

For an additional \$14 million, coverage for 1.1 million with cotrimoxazole.

TESTING AND COUNSELING (\$470 million)

15% of adults 15-49 in sub-Saharan Africa (or 261 million people) = 39.15 million people

CARE FOR VULNERABLE CHILDREN (\$390 million)

Coverage of 7.8 million children

MTCT (\$120 million)

We expect this would cover (VCT, drug, administration, breast feeding, and cost of case finding). Uses an overall prevalence rate for Africa

as a whole of 8%. There are 25.4 million pregnancies in Africa (assume 8% of women infected).

Rough coverage is 1.7-2 million people.

A sidenote, these budget numbers above total more than \$3 billion, yet what we are saying is that AT LEAST \$3 billion is needed.

Hope this helps

Alex

----- Original Message -----

Subject: Re: Revised USG Battle Plan

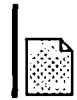
Date: Wed, 17 May 2000 09:14:24 -0400

From: Cheryl_S._Bauerle@opd.eop.gov

To: Alex Ross <aross@afr-sd.org>

here it is - thanks!

(See attached file: USG BATTLE PLAN.doc)



- USG BATTLE PLAN.doc

Message Sent To:

Kenneth W. Bernard/NSC/EOP
Laura L. Efros/OSTP/EOP
Paul Delay <pdelay@usaid.gov>
Sandra Thurman/OPD/EOP
David Stanton <dstanton@usaid.gov>

Debt-for-AIDS Swaps. A debt-for-AIDS program would require legislative authorization – which we do not have – and appropriations action from Congress, whether it has a budget impact or not. A debt-for-AIDS swap would involve three parties: the creditor, the debtor, and a third party. A creditor country (the US) initiates the debt swap by selling its claim (loan note) on a debtor country to a third party at a discount. The third party then sells this claim to the debtor country for a premium above its purchase price, usually in local currency. Please note that if a country is not servicing its debts, then there is no benefit to swapping out its debt: there is no cash flow (from debt service) to re-route to an AIDS alleviation program.

- Pros – Frees up budget resources for AIDS alleviation programs in recipient countries that are servicing their debt obligations to the USG.
- Cons – Requires a third party willing to finance the purchase of USG debt;
– May require separate appropriations (to cover budget costs) if there is no third party or if loans are purchased at prices less than their value;
– Requires sound macroeconomic framework conditionality, at the very least;
– Swapping of non-concessional debts is not supported by EXIM or USDA, which administer the majority of the non-concessional loan portfolio of the USG and have charters that conflict with the objectives of debt-for-development swaps;
– May have negative impact on country's monetary or fiscal policy if the swap is structured as a lump-sum repayment of debt balance (even though it is discounted).

Debt Reduction for Non-HIPCs. For FY 2000, we have appropriations to grant debt reduction under just two programs for countries that are not classified by the World Bank as "IDA-only": under section 572 of the 1989 foreign assistance appropriations act, for the cost of reducing loans to Sub-Saharan African countries or to relatively least developed countries that were made under the Foreign Assistance Act; and under section 411 of the PL-480 statute, for the cost of reducing loans to least developed countries made under PL-480. However, since these appropriations have been justified for debt reduction for HIPC countries, any other use of these funds should be notified to Congress. In general, debt reduction is not – as stipulated by Congress – considered foreign assistance.

- Pros – Frees up budget resources for social or other targeted programs in recipient countries that are servicing their debt obligations to the USG.
- Cons – Could undercut support in Congress for the HIPC program;
– May benefit other official creditors if done unilaterally, since resources freed up by debt reduction could be used to service debt to other creditors;
– Assumes recipient country services its debt to the USG:
 1. if it does, then the cost to reduce its debt will be high given its creditworthiness
 2. if it does not, then there is no benefit given lack of cash flow to re-route;
– May have negative impact on investor confidence in recipient economy, particularly the country's current and future access to capital markets;
– May encourage other countries to cease paying obligations to the USG in anticipation of receiving similar treatment from the USG.



Helen.Walsh@do.treas.gov
04/28/2000 02:42:17 PM

Record Type: Record

To: Kenneth W. Bernard/NSC/EOP
cc:
Subject: debt reduction for non-hipcs and debt for aids swaps -Forwarded

Date: 04/28/2000 02:08 pm (Friday)
From: Helen Walsh
To: kenb
Subject: debt reduction for non-hipcs and debt for aids swaps
-Forwarded

Date: 04/28/2000 01:10 pm (Friday)
From: Luyen Tran
Subject: debt reduction for non-hipcs and debt for aids swaps
To: walshh
Cc: loweryc, kaplanm, donovanst, barberf
MIME-version: 1.0
Content-type: multipart/mixed; boundary="Boundary_(ID_IKGE/8c7RUnmTqJGRVNylw)"

helen, as i mentioned on the phone, attached
has been cleared by francine barber and bill
scheurch. it can be distributed to the
working/deputies group.



- DEBT_F~3.DOC

AIDS and Debt Relief

At their Summit last June, G-7 leaders endorsed a new initiative spearheaded by the President to enable Heavily Indebted Poor Countries (HIPC) to receive deeper, broader and faster debt relief. Under the so-called Cologne Initiative, international financial institutions are developing a new framework for linking debt relief with poverty reduction. The goal is to boost resources for priority social expenditures, including health, child survival, AIDS prevention and education, as well as improve transparency in government budgeting and consultation with civil society in the development and implementation of economic programs. Together with earlier debt relief commitments, the Cologne Initiative provides for reduction of up to 70 percent of the total debts for these countries, decreasing the stock of debt from about \$127 billion today to as low as \$37 billion with the cancellation of official development assistance (ODA) debt by G-7 and other bilateral creditors. As part of the initiative, the President announced in September that the US would seek to write off all of the \$5.7 billion it is owed by as many as 36 heavily indebted poor countries. Last fall, Congress passed part of the funding and authority necessary for the United State's full participation in the initiative, and the President is seeking approval of the remainder this year.

Since most of the potentially eligible countries are located in Sub-Saharan Africa, the Cologne Initiative has the potential to make a major contribution to HIV/AIDS treatment and prevention in the region. Nevertheless, some have suggested that in light of the scale and urgency of the HIV/AIDS problem in Africa, additional debt relief initiatives for countries suffering from the pandemic should be considered. Among the additional efforts that could be explored are:

a) Provision of debt relief for countries that face an HIV/AIDS emergency but are not eligible for the Cologne Initiative.

Pros: Could free up additional resources for HIV/AIDS in countries such as Nigeria, Botswana and other countries not eligible for Cologne framework.

Cons: Could undercut Administration efforts to persuade Congress to support funding of the Cologne Initiative given additional budget costs. As a unilateral initiative, could result in implicit US taxpayer subsidy for debt repayments to other international creditors. Debt relief is a blunt instrument for combating HIV/AIDS relative to increased bilateral and multilateral assistance.

b) Creation of debt relief mechanisms targeted to the HIV/AIDS problem, for example through establishment of a "Debt-for-HIV/AIDS" debt swap program in which a reduction in foreign debt service obligations would be accompanied by a commitment to increase local currency public health expenditures on the treatment and prevention of HIV/AIDS.

Pros: Could free up additional domestic resources for the fight against HIV/AIDS in a targeted fashion and without appearing to weaken eligibility requirements for HIPC/Cologne Debt Initiative relief. Could provide a targeted means for recognizing, rewarding, and offsetting the costs of cooperation with the US policy in other areas (e.g., peacekeeping).

Cons: Debt swaps, in particular, would require new legislative authority. Would require a potentially complex structure in which a third party (NGO, foundation, quasi-governmental entity) would have to purchase US debt and possibly administer local currency public health expenditure arrangements. Opposed by USDA and Eximbank, which hold the majority of non-concessional USG loans.

c) Expanded U.S. Export-Import Bank financing of medicine, medical equipment, and medical services delivery in hard-hit countries.

Pros: Could increase availability of latest medicines, supplies, and personnel from private sector sources in Africa countries.

Cons: Unclear whether there would be significant interest in such non-concessional financing.

FAX MESSAGE



U.S. Agency for International Development
HIV-AIDS Division, Office of Health and Nutrition
Global Bureau
Mailing address:

G/PHN/HN/HIV-AIDS
3.07-075M, 3rd Flr, RRB
Washington, DC 20523-3700
U.S.A.

To: Ken Bernard
NSC

Phone:

FAX:

456 9390

cc:

From: Paul DeLay, M.D., D.T.M. & H.
Chief, HIV/AIDS Division

Phone: 202 712 0683

FAX: 202 216 3046

Pages: 12

Date: 6/1/00

Subject:

For internal USG use

Preliminary Estimates of the Cost of HIV/AIDS Prevention & Care
For Sub-Saharan Africa

The cost figures reflect the estimated costs of improving the coverage of programme activities at a national scale. The following prevention strategies are costed:

Prevention:

1. Youth-focused interventions
2. Sex Worker interventions
3. Strengthening of public sector condom distribution
4. Condom social marketing, male condom only
5. Strengthening STI services
6. Voluntary counselling and testing (VCT)
7. Workplace interventions
8. Strengthening blood transfusion services
9. Interventions to reduce mother-to-child transmission (MTCT), including VCT
10. Mass media campaigns
11. Start up capacity building (for weakest countries)

Care:

1. Palliative care
2. Clinical management of opportunistic infections
3. Home based care
4. Treatment for HIV infected infants
5. Support for orphans
6. Psychosocial support and counseling
7. ARV

The figures presented are given in US \$ (2000 value). These costs give an idea of the magnitude of resources which need to be spent next year, if one hopes to reach the scale of the target coverage levels in 2005.

Table 1. Grouping of Countries by Existing Strength of HIV/AIDS Programme Activities

Estimated Programme Strength			
Very Low	Low	Medium	Strong
<i>Angola</i>	Benin	Botswana	Cote d'Ivoire
<i>Congo</i>	Burkina Faso	Burundi	Senegal
<i>Djibouti</i>	Burundi	Cameroon	Uganda
<i>Eritrea</i>	<i>Chad</i>	Central African Rep.	
Ethiopia	<i>Equatorial Guinea</i>	Kenya	
<i>Liberia</i>	<i>Gabon</i>	Lesotho	
Nigeria	Gambia	Malawi	
<i>Sierra Leone</i>	Ghana	Mozambique	
<i>Somalia</i>	Guinea	Tanzania	
<i>Zaire</i>	<i>Guinea Bissau</i>	<i>Namibia</i>	
	Madagascar	South Africa	
	Mali	<i>Swaziland</i>	
	Mauritius	Zambia	
	<i>Niger</i>	Zimbabwe	
	<i>Rwanda</i>		
	<i>Togo</i>		

Note: Figures for countries in italics extrapolated from other countries within same group

Table 2: Baseline and target coverage assumptions for 2005

Coverage assumptions										
Form of intervention	Potential target group	Measure of coverage	Very Low		Low		Medium		Strong	
			Baseline	Target	Baseline	Target	Baseline	Target	Baseline	Target
Youth focused interventions	Male and female youth enrolled in school, 6 – 11	Proportion 6 – 11 receiving HIV education	5%	50 %	5%	50%	10%	50%	20%	50%
In school youth	12 – 16	Proportion 12 – 16 receiving HIV education	20%	80%	20%	80%	30%	80%	50%	80%
Youth focused interventions	Males and females 12 – 16	Proportion 12 – 16 receiving HIV education	5%	50%	5%	50%	10%	50%	20%	50%
Out of school youth										
Sex worker interventions	4% urban women aged 15 – 49. Average 2 sex acts per week	Proportion total reached Proportion using condoms often	20% 10%	60% 70%	20% 10%	60% 70%	40% 20%	60% 70%	50% 30%	60% 70%
Strengthening public sector condom distribution	All sex acts with non-regular partners 20% sex acts in regular partners	Proportion using condoms often in non-regular partnerships Proportion using condoms in regular partnerships	10% 2%	70 % 2%	10% 1%	70% 2%	20% 2%	70% 2%	40% 2%	70% 2%
Condom social marketing	All sex acts with non-regular partners 20% sex acts in regular partners	Proportion using condoms often in non-regular partnerships Proportion using condoms in regular partnerships	10% 2%	70% 2%	10% 2%	70% 2%	20% 2%	70% 2%	40% 2%	70% 2%
Strengthening STI services	Men and women with curable STIs and access to health services	Among those with access to health services, proportion of curable STIs treated by health service	5%	30%	5%	30%	15%	30%	20%	40%
Voluntary counselling and testing	Current sexually active population	Proportion receiving VCT urban Proportion receiving VCT rural	1% 0 %	5% 5% (including MTCT testing)	1% 0%	5% 5% (including MTCT testing)	1% 0 %	5% 5% (including MTCT testing)	1% 1%	5% 5% (including MTCT testing)
Strengthening blood transfusion services	Blood for transfusion	Proportion units of blood for transfusions tested Urban Rural	 70% 70%	 100% 100%	 70% 70%	 100% 100%	 90% 75%	 100% 100%	 90% 90%	 100% 100%
Mother to child transmission	Pregnant women aged 15 – 49	Proportion pregnant women tested HIV Urban Rural	 0.5% 0%	 10% 5%	 0.5% 0%	 10% 5%	 0.5% 0%	 10% 5%	 0.5% 0%	 10% 5%
IEC / mass media	National campaigns for entire country	Number campaigns per year	2	6	2	6	2	6	2	6

TABLE 3: Low and high cost estimates for sub-Saharan Africa**BILLIONS US\$ 2000**

	LOW	HIGH
PREVENTION		
Youth focused interventions	.228	.335
Interventions focused on sex worker interventions	.105	.199
Increased public sector condom provision	.013	.037
Condom social marketing	.076	.149
Strengthening STI services	.487	.554
Voluntary counselling and testing	.044	.160
Workplace interventions	.082	.100
Strengthening blood transfusion services	.003	.011
MTCT	.005	.014
Mass media	.099	.105
Start-up capacity development (very low only)	.003	.012
TOTAL PREVENTION (billions US\$ 2000)	1.120	1.664
CARE		
Palliative care	.035	.042
Clinical management of opportunistic infections	.174	.245
Home based care	.024	.076
Treatment for HIV infected infants	.014	.020
Support for orphans	.107	.177
Psychosocial support and counseling	.003	.005
ARV	.110	.350
TOTAL CARE	.467	.914
TOTAL PREVENTION AND CARE	1.587	2.578

Summary:

Total cost for sub-Saharan Africa: between 1.6 and 2.6 billion per year (in order to achieve targets by the year 2005). Prevention targets for the weakest countries are similar to what was achieved in countries like Thailand and Uganda, where the response had a major impact on the epidemic. ARV scaling up to similar levels as TB care (working on that, to get better figures).

Targets (examples):

Condom social marketing: Condom use with non regular partners about 70% (up from current levels between 10% and 40%)

ARV: coverage from 0.5% of those who need it up to about 5%.

Level and flow of international resources for the response to HIV/AIDS:

1998 Update

Introduction

During its sixth meeting in May 1998, the UNAIDS Programme Coordinating Board recommended that the UNAIDS Secretariat continue to monitor national and international resource flows to HIV/AIDS on a long-term basis. The Secretariat was advised to build on its experience with the UNAIDS Secretariat/Harvard School of Public Health study on 1996-1997 HIV/AIDS financing to establish sustainable monitoring processes.

Following this recommendation, in mid-1999, the UNAIDS Secretariat joined an ongoing collaboration between UNFPA and the Netherlands Interdisciplinary Demographic Institute (NIDI) to collect information on the official development assistance disbursed to HIV/AIDS by donor countries. In the aftermath of the International Conference on Population and Development, UNFPA and NIDI have been collecting on a yearly basis data on the national and international resource flows to population activities including HIV/AIDS. UNAIDS collaborated in the 1998 data collection. During this process, the UNAIDS Secretariat has collaborated closely with UNFPA, NIDI and the donor country members of the Development Assistance Committee (DAC) to improve existing HIV/AIDS data collection methodologies.

In addition to these efforts to collect information on donor country allocations to HIV/AIDS, the UNAIDS Secretariat is also collecting information on UNAIDS Cosponsor HIV/AIDS allocations as well as country-level resource flows. Data on the Cosponsor HIV/AIDS expenditure were collected during the preparations for the Unified Budget and Workplan, 2000-2001 (see the Unified Budget and Workplan, 2000-2001, Addendum 1). Efforts to further improve the quality of these data will be part of the joint United Nations planning and programming process. Finally, the Secretariat has made substantial progress in the development of a country database on the national responses to the epidemic including data on country-level resource flows to HIV/AIDS.

This paper presents the 1998 HIV/AIDS official development assistance collected from fourteen of the twenty-two DAC member countries. Almost 80% of the official development assistance disbursed by DAC member countries in 1998 came from these fourteen countries - Australia, Belgium, Canada, Denmark, Finland, Germany, Japan, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom and the United States. All available data suggest that they also provide at least 80% of the official development assistance disbursed for HIV/AIDS activities in 1998.¹

¹ All information on level and flow of official development assistance was taken from "Development Assistance Committee International Development Statistics." OECD website: <http://www.oecd.org/dac/him/dcd-rsd-e.htm>, 22 May 2000

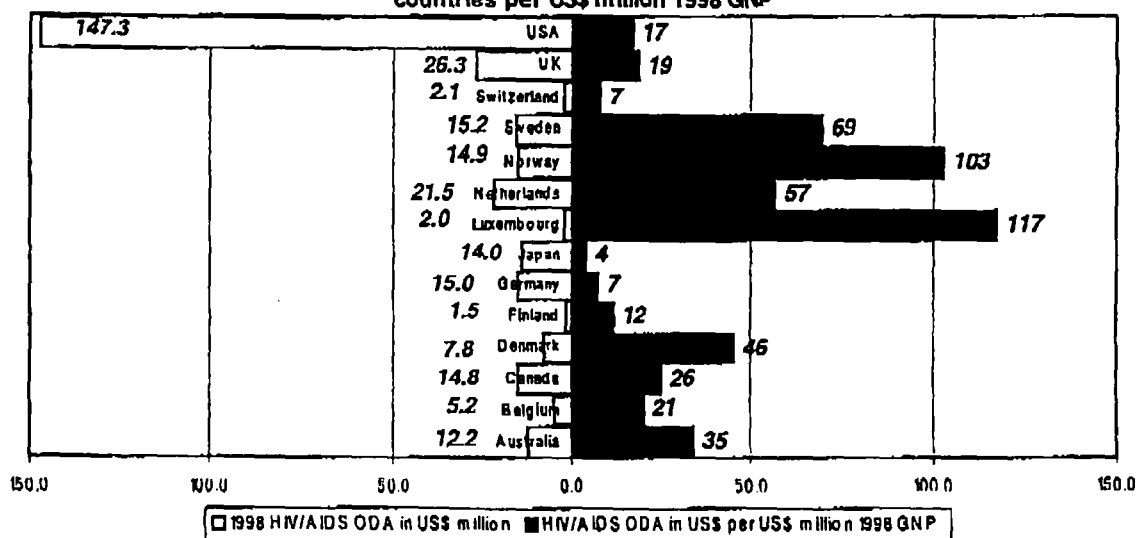
Australia, Belgium, Canada, Denmark, Finland, Germany, Japan, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom and the United States reported having disbursed almost US\$ 300 million for HIV/AIDS activities in developing countries and countries in transition in 1998 (Table 1).

Table 1. HIV/AIDS ODA Disbursements for Selected Donor Countries at Current Prices and Exchange Rates, 1998

Donor country	1998 HIV/AIDS ODA (US\$ million)	Percent of total 1998 HIV/AIDS ODA
Australia	12.2	4%
Belgium	5.2	2%
Canada	14.8	5%
Denmark	7.8	3%
Finland	1.5	<1%
Germany	15.0	5%
Japan	14.0	5%
Luxembourg	2.0	1%
Netherlands	21.5	7%
Norway	14.9	5%
Sweden	15.2	5%
Switzerland	2.1	1%
UK	26.3	9%
USA	147.3	49%
Total	300.0	100%

The United States was by far the largest donor of HIV/AIDS ODA, disbursing US\$ 147.3 million (49%). The United Kingdom and the Netherlands were the next largest donors disbursing US\$ 26.3 million (9%) and US\$ 21.5 million (7%) respectively. But when allocations are broken down as a proportion of gross national product (GNP) for each country, the picture is quite different.² Luxembourg and Norway disbursed the largest proportion of their country's GNP to HIV/AIDS activities in developing countries with US\$ 117 and US\$ 103 per US\$ million GNP respectively (Figure 1). The United States and the United Kingdom disbursed US\$ 17 and US\$ 19 per US\$ million GNP respectively.

Figure 1. HIV/AIDS ODA as reported by 14 donor countries:
Total amount obligated, 1998, in US\$ million and obligations reported by donor countries per US\$ million 1998 GNP



²Information on donor country GNP was taken from "Development Assistance Committee International Development Statistics." OECD website: <http://www.oecd.org/dac/html/dcdrsd-e.htm>, 22 May 2000

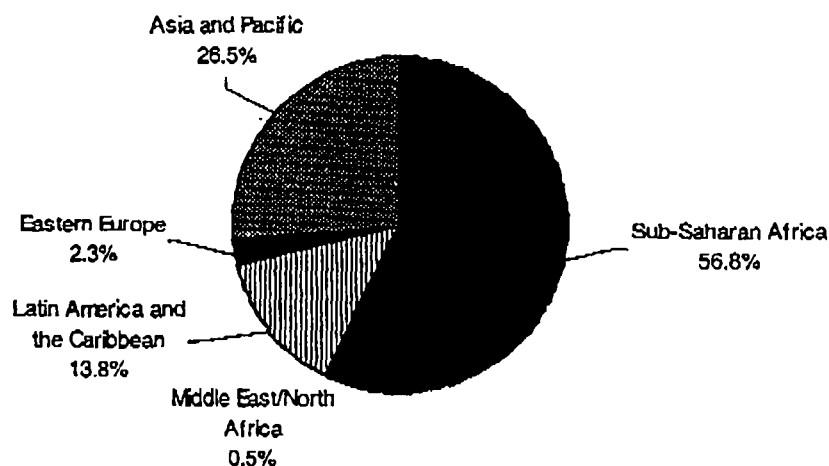
Another way to assess the level of HIV/AIDS ODA by individual donors is to consider HIV/AIDS ODA as a percentage of total ODA. In this case, Luxembourg, the United States and Australia disbursed the highest percentage of total ODA to HIV/AIDS activities with 1.8%, 1.7% and 1.3% respectively. On the other end of the scale, Japan, Switzerland and Germany disbursed 0.1%, 0.2% and 0.3% of total ODA to HIV/AIDS activities respectively. Overall, the US\$ 300 million allocated to HIV/AIDS by the fourteen DAC member countries in 1998 represent 0.7% of the US\$ 41 450 million that they disbursed in total ODA for that year.

Flow of 1998 official development assistance to HIV/AIDS

Of the US\$ 300 million in ODA that were allocated to HIV/AIDS in 1998, 20% was channeled through multilateral agencies. Of the funds channeled through the United Nations and its specialized agencies, almost all (95%) were core budget contributions or supplemental funding for general agency HIV/AIDS activities. Only 5% of the funds channeled through multilateral agencies were multi-bilateral - or channeled through multilateral agencies for projects in specific countries. The large majority of the 1998 HIV/AIDS ODA reported (80%) was transferred directly to recipient governments or channeled through non-governmental organizations and other private institutions.

An additional way to assess the flow of HIV/AIDS ODA is to review the regional distribution of these funds. Over one third (35%) of the US\$ 300 million reported was earmarked for "global or inter-regional activities." It is not possible to disaggregate these funds though a substantial proportion - including core contributions to the UNAIDS Secretariat - are eventually allocated to regions. Of the remaining 65% (US\$ 195 million), 56.8% was earmarked for activities in sub-Saharan Africa (Figure 2), 26.5% was allocated to activities in Asia/Pacific; 13.8% to activities in Latin America/Caribbean; 2.3% to activities in Eastern Europe; and 0.5% to activities in the Middle East/North Africa region.

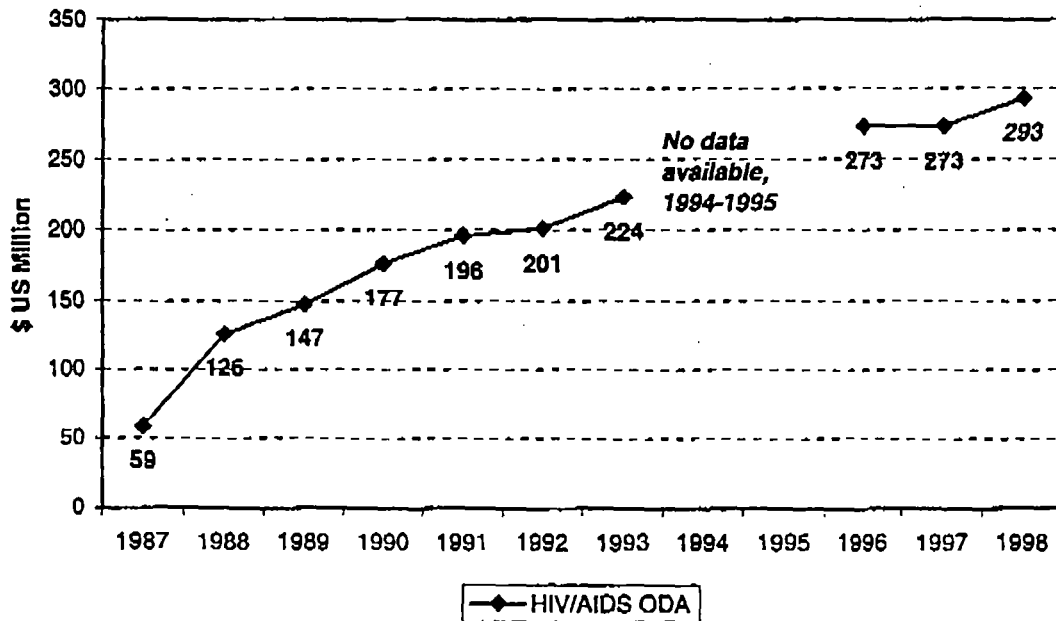
Figure 2. Distribution of regionally allocated HIV/AIDS ODA disbursements for selected donor countries, 1998



The 1998 data for the 10 donor countries for which data are available over time - Australia, Canada, Denmark, Germany, Japan, the Netherlands, Norway, Sweden, the United Kingdom and the United States - confirm most of the trends highlighted in the "Level and flow of national and international resources for the response to HIV/AIDS, 1996-1997."³

When inflation and changes in purchasing power parity are taken into account, the flow of HIV/AIDS ODA from these 10 countries increased each year from 1987 to 1996, remained stable between 1996 and 1997 and continued to increase between 1997 and 1998 (Figure 3).

Figure 3. Total HIV/AIDS ODA Disbursements by Selected Donor Countries at 1997 Prices and Exchange Rates, 1987-1998



Similarly, when trends in the flow of HIV/AIDS ODA are compared to the trends in overall ODA for these countries, the proportion of HIV/AIDS ODA within the total pot of ODA does increase slightly between 1987 and 1998 from 0.2% to 0.7%.

Finally, the trend in the decreasing flow of HIV/AIDS ODA through United Nations agencies is also confirmed with the 1998 data. This trend has been longstanding (since 1987), but reviewing only the last 3 years; donor countries decreased the HIV/AIDS ODA that they channeled through multilateral and multi-bilateral channels from 26% of all HIV/AIDS ODA in 1996 to 22% in 1997 to 20% in 1998.

³ Trend information also based on Mann J & Tarantola D, ed., *AIDS in the World II* (New York, Oxford: Oxford University Press, 1996) and Mann J, Tarantola T, eds., *AIDS in the World* (Cambridge, London: Harvard University Press, 1992)

Issues and next steps in the monitoring of donor country HIV/AIDS

- The UNAIDS Secretariat has made significant progress in establishing sustainable processes for the monitoring of donor country resource flows to HIV/AIDS on a long term and sustainable basis, but some key issues remain.
- Some major DAC members including France and the European Commission continue to have major difficulties in the reporting of their official development assistance allocated to HIV/AIDS.
- There continue to be differences in the ways that different donors define HIV/AIDS activities. This is particularly problematic the monitoring of HIV/AIDS components within integrated development projects or HIV/AIDS allocations within sector wide approaches and common basket funding schemes.
- Because of administrative differences among the DAC member countries, including differences in fiscal years, there is a significant delay in reporting. It is only possible to report on donor country HIV/AIDS expenditures almost 2 years late (i.e. reporting on 1998 data in mid 2000).
- Working closely with the DAC, UNFPA and the Netherlands Interdisciplinary Demographic Institute (NIDI), the UNAIDS Secretariat plans to convene a meeting of donor country representatives to agree on a common methodology for reporting on HIV/AIDS components within integrated development projects and HIV/AIDS allocations within sector wide approaches and common basket funding schemes.
- To supplement its monitoring of donor country HIV/AIDS obligations, the UNAIDS Secretariat is in the process of establishing a process to systematically monitor pledges and allocations to HIV/AIDS.

strategies to promote the sustainable access to drugs, such as the encouragement of local manufacturing and import practices consistent with national laws and international agreements acceded to. It further encouraged UNAIDS to actively support countries in the development, implementation and financing of care strategies that enhance the overall effectiveness and sustainability of national responses to HIV/AIDS such as clinical guidelines, drug administrative and control management, diagnostic infrastructure and follow-up mechanisms.

11. The PCB took note of a proposal to organize a meeting under UN auspices on access to care for HIV/AIDS. In this respect, the feasibility of such a meeting should be further analyzed in the appropriate UN fora.

12. The UNAIDS Secretariat should, in collaboration with Cosponsors and other international organizations, work with countries at their request, in regularly updating databases in order to provide member states with information on prices of HIV-related drugs.

Keenan, Josefine (Chris) (HEALTH)

From: WHSR
Sent: Thursday, April 13, 2000 12:04 PM
To: Babbitt, James F. (VP); Byrne, Catherine E. (AF); Cables; Dempsey, Nora B. (AF); Feldman, Daniel F. (MULTI); Mclean, Matthew K. (MULTI); Naplan, Steven J. (MULTI); Patten, Wendy L. (MULTI); Schwartz, Eric P. (MULTI); Smith, Gayle E. (AF); Vaccaro, Jonathan M. (Matt) (MULTI); Wilcox, Richard M. (MULTI)
Subject: NEW REPORT ON THE MACROECONOMIC IMPACT OF HIV/AIDS

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Distribution: SIT: BABBITT BYRNE NSC DEMPSEY FELDMAN MCLEAN NAPLAN PATTEN
SCHWARTZ
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USDOC FOR 4510/ITA/IEP/ANESA/OA/SMILLER

E.O. 12958: N/A
TAGS: ECON, SOCI, TBIO, SF
SUBJECT: NEW REPORT ON THE MACROECONOMIC IMPACT OF HIV/AIDS
REF: 99 PRETORIA 12722

SUMMARY

1. IN A RECENT REPORT, ING BARINGS ATTEMPTED TO FORECAST THE MACROECONOMIC EFFECTS OF HIV/AIDS IN SOUTH AFRICA. ITS REPORT CONCLUDES THAT THE EPIDEMIC WILL HAVE A PROFOUND IMPACT ON THE COUNTRY'S ECONOMY. THE INFECTION RATES FOR THE ECONOMICALLY ACTIVE POPULATION WILL REACH 26 PERCENT, CONCENTRATED MOSTLY IN THE UNSKILLED OR SEMI-SKILLED WORKFORCE, BUT ALSO SIGNIFICANTLY AFFECTING THE SKILLED WORKFORCE. AS A RESULT, THE STUDY CALCULATES THAT GDP WILL BE ON AVERAGE 0.3 TO 0.4 PERCENT LESS PER YEAR THAN IT WOULD BE WITHOUT AIDS. ACCORDING TO THE REPORT, THE COSTS OF AIDS ARE LIKELY TO INCREASE INFLATION AND DEPRESS DOMESTIC SAVINGS AS WELL AS EXACERBATING THE SKILLS SHORTAGE. END SUMMARY.

INTRODUCTION

2. ING BARINGS RECENTLY RELEASED ITS FORECAST OF THE MACROECONOMIC EFFECTS OF HIV/AIDS IN SOUTH AFRICA. THEY BEGAN BY MODELING THE DEMOGRAPHIC CHANGES LIKELY TO OCCUR AND THEN CONDUCTED LONG-TERM ECONOMIC FORECASTS TAKING THESE CHANGES INTO ACCOUNT. THE REPORT CAUTIONED THAT LITTLE PREVIOUS WORK HAS BEEN DONE ON ECONOMIC MODELING OF THE EPIDEMIC AND SERIOUS GAPS IN THE DATA EXIST.

THE DEMOGRAPHIC IMPACT

3. USING THE ACTUARIAL SOCIETY OF SOUTH AFRICA NATIONAL AIDS MODEL, ING BARINGS FORECAST THAT THE TOTAL POPULATION WILL BE 23 PERCENT LOWER BY 2015 THAN IT WOULD BE WITHOUT AIDS. IN MAKING THIS FORECAST, THE REPORT ASSUMES THAT SEXUAL BEHAVIOR DOES NOT SIGNIFICANTLY CHANGE AND THAT NO MEDICAL ADVANCES OCCUR.

4. OTHER FINDINGS INCLUDED:

--HIV INFECTION RATES WILL PEAK AT 16.7 PERCENT IN 2006 AND THEN START TO DECLINE.
--AIDS DEATHS WILL PEAK IN 2010 AT 1.8 AIDS DEATHS PER 100 PEOPLE AND 256 AIDS DEATHS PER 100 NORMAL DEATHS ANNUALLY.
--APART FROM THE 0-9 AGE GROUP, AIDS DEATHS ARE MAINLY CONCENTRATED IN THE 25-50 AGE GROUP.

5. WITH REGARD TO LABOR FORCE, THE STUDY FOUND:

--THE HIV INFECTION RATE AMONG ECONOMICALLY ACTIVE PERSONS WILL PEAK AT ABOUT 25.5 PERCENT BY 2006.
--THE HIV INFECTION RATE OF UNSKILLED OR SEMI-SKILLED LABOR WILL PEAK AT 32.8 PERCENT AFTER 2015.
--THE HIV INFECTION RATE OF SKILLED LABOR WILL PEAK AT 22.8 PERCENT IN 2006.
--THE HIV INFECTION RATE AMONG HIGHLY SKILLED LABOR WILL PEAK AT 13.1 PERCENT IN 2005.
--AIDS DEATHS OF HIGHLY SKILLED PEOPLE WILL PEAK AT 1.2 PER 100 WORKERS ANNUALLY.
--AIDS DEATHS OF SEMI AND UNSKILLED PEOPLE WILL PEAK 3.4 PER 100 WORKERS ANNUALLY.

MACROECONOMIC ASSUMPTIONS

6. THE REPORT IDENTIFIED KEY ECONOMIC COSTS OF THE HIV/AIDS CRISIS IN SOUTH AFRICA AND SETS FORTH BASIC ASSUMPTIONS ABOUT THEM. THE COSTS INCLUDE:

A) LOWER LABOR FORCE AND PRODUCTIVITY: THE REPORT DETERMINED THAT THE LABOR SUPPLY WILL BE ADVERSELY AFFECTED BY AIDS, WITH SKILLED LABOR COSTING THE ECONOMY MORE. THERE WILL ALSO BE LOWER LABOR PRODUCTIVITY BECAUSE OF ABSENTEEISM FROM ILLNESS OR COPING WITH FAMILY MEMBER'S ILLNESS.

B) COST PRESSURES: COMPANIES WILL BE AFFECTED BY BOTH DIRECT COSTS SUCH AS INCREASED CONTRIBUTIONS TO PENSION, LIFE AND MEDICAL BENEFITS, AND INDIRECT COSTS SUCH AS INCREASED SPENDING ON RECRUITMENT, LEAVE, AND THE NEGATIVE IMPACTS ON CLIENTS. THESE COSTS WILL FILTER THROUGH THE ECONOMY.

IMPACT ON WAGE COSTS

YEAR	INCREASE IN WAGE BILL	PASSED TO CONSUMER	IMPACT ON PPI
------	-----------------------	--------------------	---------------

2015	45 PERCENT	15.0 PERCENT	4.5 PERCENT
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(THE REPORT ASSUMES ONLY THE SKILLED AND HIGHLY SKILLED HAVE BENEFITS THAT WILL BE INCREASED)

C) DEMAND CHANGES: THE REPORT ASSUMES THAT THE HIGHER WAGE BILL WILL BE LARGELY ABSORBED BY THE EMPLOYER WHO WILL PASS IT ON THROUGH HIGHER PRICES OR ABSORB IT IN OPERATING COSTS.

THE REMAINING PORTION WILL BE ABSORBED BY THE LABOR FORCE (AGAIN, THE REPORT ONLY CONSIDERS THE SKILLED AND HIGHLY SKILLED SECTIONS OF THE FORCE FOR THIS PURPOSE). THIS IN TURN WILL TRANSLATE INTO A WAGE INCOME THAT IS ALMOST 6 UNCLAS SECTION 02 OF 03 PRETORIA 002860

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PERCENT LESS THAN WOULD HAVE BEEN EXPECTED WITHOUT AIDS BY 2010. INITIALLY, HOWEVER, THE REPORT NOTED THAT LOWER POPULATION FIGURES MIGHT ACTUALLY RAISE HOUSEHOLD INCOMES. COMBINING THE TWO, AND ADDING HIGHER DEMAND FOR HEALTH SERVICES, THE REPORT CONCLUDES THAT THE DECLINE IN HOUSEHOLD DEMAND WILL BE GREATEST FOR SEMI AND NON-DURABLE PRODUCTS.

NET CHANGE IN HOUSEHOLD DEMAND IN 2015
PERCENT CHANGE IN DEMAND FOR
RESIDENCES DURABLES SEMI DURABLES NON- SERVICES SAVINGS
-9.1 -7.8 -9.3 -9.3 5.5 -6.5

D) HIGHER GOVERNMENT EXPENDITURE ON HEALTH SERVICES: THE REPORT ASSUMES THAT THOSE PEOPLE WHO ARE NOT SKILLED OR HIGHLY SKILLED WILL HAVE THEIR MEDICAL CARE COVERED BY THE STATE. USING AN ESTIMATED CURRENT AVERAGE AMOUNT EXPENDED BY THE GOVERNMENT ON AIDS PATIENTS (R3,750), THE REPORT ESTIMATES THE GOVERNMENT WILL HAVE TO SPEND R3,656 MILLION ON AIDS PATIENTS IN 2015. THE REPORT ASSUMES NO CHANGE IN THE COST OR TYPE OF CARE THE GOVERNMENT CURRENTLY PROVIDES. THE REPORT THEN ASSUMES THE INCREASE EXPENDITURE WILL BE FINANCED BY THE BUDGET.

THE FORECAST

7. USING THE FIGURES AND ASSUMPTIONS ABOVE, THE REPORT CONCLUDES THAT:
--GDP AND GROWTH WILL BE LOWER DUE TO LOWER CONSUMPTION, BUT INVESTMENT WILL BE STABLE. GDP WILL DECLINE 0.3 TO 0.4 PERCENT A YEAR AS A RESULT OF AIDS, RESULTING IN A GDP THAT IS 4.7 PERCENT LESS AND GROWTH 0.8 PERCENT LESS THAN THEY WOULD BE WITHOUT AIDS IN 2011.
--THE UNEMPLOYMENT RATE WILL DECLINE marginally.
--THE FISCAL DEFICIT DETERIORATES DUE TO HIGHER EXPENDITURE AND LOWER REVENUE. THE REPORT ASSUMES THE BUDGET DEFICIT IS FLEXIBLE AND THUS THE SAG WILL AVOID FURTHER GOVERNMENT EXPENDITURE DECLINES CAUSING REVENUE TO DECLINE FURTHER AND DRAGGING GDP DOWN FURTHER. INSTEAD, THE REPORT ASSUMES THERE WILL BE MORE PUBLIC BORROWING AND LOWER GOVERNMENT SAVINGS.
--DOMESTIC SAVINGS WILL SUFFER AND WILL NEED TO BE MADE UP BY FOREIGN SAVINGS, WHICH WILL LEAD TO A HIGHER CURRENT ACCOUNT DEFICIT. THE STUDY CALCULATES TOTAL DOMESTIC SAVINGS WILL BE 15 PERCENT LESS IN 2011 THAN IT WOULD BE WITHOUT THE AIDS EPIDEMIC.
--THE CURRENT ACCOUNT DEFICIT WILL BE PUSHED CLOSE TO 3 PERCENT OF GDP.
--HIGHER CPI WILL PUT PRESSURE ON INTEREST RATES AND EXCHANGE RATES.

SECTOR RISK EXPOSURE

8. THE REPORT ALSO LOOKED BY SECTOR AT INFECTION RISK AS WELL AS POTENTIAL WAGE COSTS. MINING, GENERAL GOVERNMENT AND AGRICULTURE WERE FOUND TO HAVE THE HIGHEST INFECTION RISK, WITH THE INFECTION IN THESE POPULATIONS PEAKING AT 26 TO OVER

29 PERCENT. FINANCE AND INSURANCE AND BUSINESS SERVICES FACED THE GREATEST POTENTIAL WAGE COSTS. COMBINING THE TWO RISKS, THE STUDY FOUND THAT THE TRANSPORT AND STORAGE INDUSTRY AS WELL AS THE CATERING AND ACCOMMODATION SECTOR ARE THE MOST EXPOSED TO THE AIDS RISK.

CONCLUSION

9. THE STUDY CONCLUDES THAT THE NET EFFECT OF THE EPIDEMIC WILL BE NEGATIVE FOR GROWTH. IT CAUTIONS THAT THERE IS A POSSIBILITY OF A VICIOUS CYCLE IN WHICH COSTS OF DISEASE WILL DRAIN SAVINGS AND EXACERBATE THE ALREADY LOW SAVINGS RATE. THE ECONOMY WILL THEN REQUIRE MORE FOREIGN SAVINGS, BUT THE GROWING RISK PERCEPTION BECAUSE OF AIDS IS UNLIKELY TO LEAD TO FOREIGN CAPITAL INFLOWS. THUS, THE GOVERNMENT WILL HAVE TO TAKE OUT FOREIGN LOANS THAT WILL IN TURN LEAD TO HIGHER CURRENT ACCOUNT DEFICITS. THE DEFICITS WILL PUSH INTEREST RATES HIGHER THEREBY DEPRESSING ECONOMIC GROWTH FURTHER.

10. ALTHOUGH THE SOUTH AFRICAN UNEMPLOYMENT RATE IS OVER 25 PERCENT AND THUS PRACTICALLY MATCHES THE INFECTION RATES FOR THE ECONOMICALLY ACTIVE POPULATION, THE REPORT CAUTIONS THAT EVERY PERSON DYING OF AIDS CANNOT BE REPLACED BY THE UNEMPLOYED. MOST OF THE UNEMPLOYED ARE UNSKILLED OR SEMI-SKILLED LABORERS. EVEN THOUGH MOST OF THE AIDS DEATHS WILL OCCUR AMONG THIS SAME GROUP, SKILLED AND HIGHLY SKILLED PEOPLE WILL ALSO BE SIGNIFICANTLY AFFECTED. THE REPORT THEREFORE CONCLUDES THAT AIDS WILL "EXACERBATE THE EXISTING SKILLS SHORTAGE WITHIN THE ECONOMY."

11. THE REPORT CALLS ON THE GOVERNMENT TO:

- FORMULATE A CLEAR AIDS STRATEGY,
 - MOVE FASTER TO DISMANTLE STRUCTURAL OBSTACLES TO FOREIGN INVESTMENT,
 - CONSIDER CHOICES ON ANTI-AIDS DRUGS, ESPECIALLY REGARDING
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SUBJECT: NEW REPORT ON THE MACROECONOMIC IMPACT OF HIV/AIDS

TRANSMISSION, AND

- FOCUS ON EDUCATION, ACCESS TO CONDOMS AND TREATMENT OF STDs.

COMMENT

12. IN THE FIRST MAJOR STUDY TO LOOK AT THE ECONOMIC EFFECTS OF HIV/AIDS, ING BARINGS PAINTS A DEPRESSING PICTURE. THE AREAS WHERE THE SOUTH AFRICAN ECONOMY IS ARGUABLY THE WEAKEST--SKILLS AND SAVINGS--ARE LIKELY TO BE THE WORST HIT BY THE AIDS EPIDEMIC. IT MAKES APPROPRIATE SAG ACTION ALL THE MORE URGENT.

13. THE REPORT ALSO HIGHLIGHTS THE NEED FOR MORE AND BETTER STUDIES OF THE IMPACT OF HIV/AIDS. USAID IS FUNDING ONE SUCH STUDY WHICH SHOULD FURTHER HELP SAG POLICYMAKERS UNDERSTAND THE IMPLICATIONS OF THE DISEASE.
LEWIS



International Partnership Against HIV/AIDS in Africa (IPAA)

- Goal 1** → Reduce new HIV infections among the vulnerable population of youth (15-24 years) by 25% by 2005
- Goal 2** → Provide Access to 50% of HIV positive pregnant women to programmes to reduce transmission of HIV from mother to child
- Goal 3** → Ensure that all transfused blood is safe
- Goal 4** → Provide continuum of care to at least 50% of all persons living with HIV/AIDS
- Goal 5** → Establish a fully functioning surveillance system
- Goal 6** → Strengthen health systems necessary for the implementation of these interventions

Dear Ken,

Given that the tables we have been working with are a bit difficult to read, below follows a more recent update, with backup documents from UNAIDS and DFID that may also help.

US Additional USG appropriation of \$100 m in FY 00 and another \$100 m in FY 01 expected for a total USG commitment of \$335 m in 01 (includes \$10 m in food aid reprogramming by USAID). Of the \$235 FY 00 total budget, about \$168 m was for Africa. (FY 01 numbers not yet clear).

UK 22.7 million pounds (\$36.3 m) in new funds was announced by PM Blair in South Africa for HIV/AIDS. Of this amount, 14 million pounds was for IAVI, 1.2 million pounds for training UK Voluntary Service Overseas volunteers, and 7.5 million pounds for a southern Africa regional project (over 5 years, or 2.5 million pounds per year). This translates into a potential of 17.7 million pounds for one year or \$28.3 m in one year.

We have heard via UNAIDS that DFID is considering another 27-28 million pound initiative for Asia and HIV/AIDS. Not confirmed as yet.

Canada The attached communication indicates a net increase of \$10 CDN per year (about \$6.8 M USD) over a base of \$15 M CDN/year. The \$10 CDN is also for 5 years (e.g., \$50 m CDN)

Italy Announced a new \$20 m commitment to HIV/AIDS. I presume it will be obligated in one year.

Dutch Has already donated about \$1.5 m in new funds to the International Partnership Against AIDS in Africa (IPAA - via UNAIDS).

Norway Contributed \$3.6 m to UNAIDS for the IPAA in the 6 priority countries. Unofficially, \$5 million additionally may be forthcoming.

Portugal Contributed a new \$300,000 to UNAIDS.

Denmark Unofficially, they are considering a new \$3-4 m in new HIV/AIDS funds

France A possible new announcement, but nothing yet

Japan Forthcoming??

EU Unknown.

PRIVATE

Turner Foundation \$6.2 m for UN AIDS activities in Mozambique and Zimbabwe. Another \$15-16 m possible for an additional 4 African countries

Gates Foundation New award to the UNFPA US organization for AIDS work in 4 countries.

Draft: Alex Ross, USAID based on information from UNAIDS 4/16/00

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FROM:	Mead Over	FAX NO.:	(202)522-3230
Title:	Senior Economist	Telephone:	(202)473-3451
Dept/Div:		Dept./Div. No.:	
SUBJECT:	The Economic Impact of AIDS		

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Reinforce
note >

The Economic Impact of AIDS

AIDS has the potential to create severe economic impacts in many African countries. 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
- If AIDS is more prevalent among the economic elite, then the impact may be 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
- 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, Côte 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
- Funeral and Health Care Expenditures Increase When an Adult in the Household Dies

Category	Health Care (%)	Funerals (%)	Total (%)
No AIDS Death	0.8	0.2	1.0
AIDS Death	10	18	28
- In Côte 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 consumption fell by as much as 44 percent during the following year.⁴
 - In Uganda, the economic impact of HIV-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 the death of an HIV+ member occurred, but remained stable when the death was of an HIV- member.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 household income.⁶

graph does not reflect text

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 as well as food crops.

- 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,

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

the negative impact on the supply 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

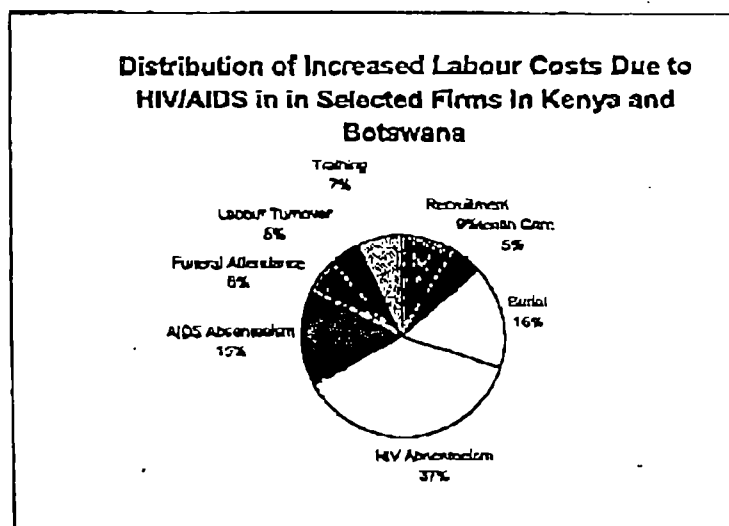
Economic Impact of AIDS on Firms

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

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

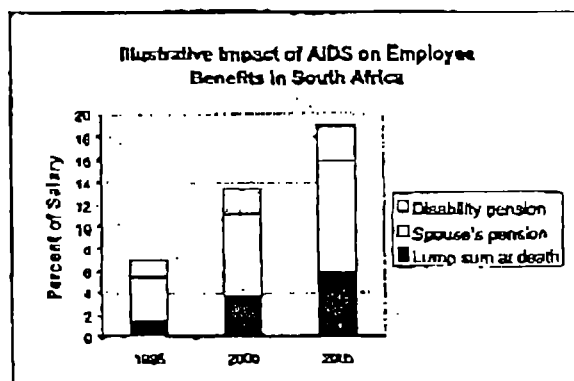
this amount resulted from increased health care costs. By 2005 the cost of AIDS to the company could reach Z\$108 million. There may be indirect costs as well. The report speculates that HIV/AIDS will worsen employee morale and create greater labor-management tensions and cause a labor shortage among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

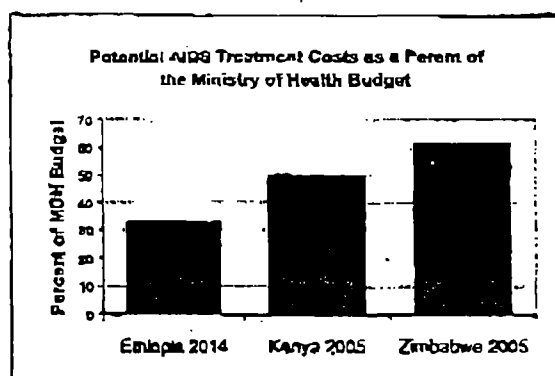
- Medical aid companies in Zimbabwe have estimated that meeting all the claims of just one percent of HIV-infected members could result in a 31 percent increase in insurance rates. Most of this increase would have to be paid by employers.¹⁸

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, *fort civil servants and the military.*

- **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



(have more access to cash)

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.** AIDS affects the education sector in at least three ways: the supply of experienced teachers will be reduced by AIDS-related illness and death; children may be kept out of school if they are needed at home to care for sick family members or to work in the fields; and children may 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.
Slave resources spent on education will be lost if kids die of AIDS. The more skilled, the greater the loss.
- **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.

Macroeconomic Impact of AIDS

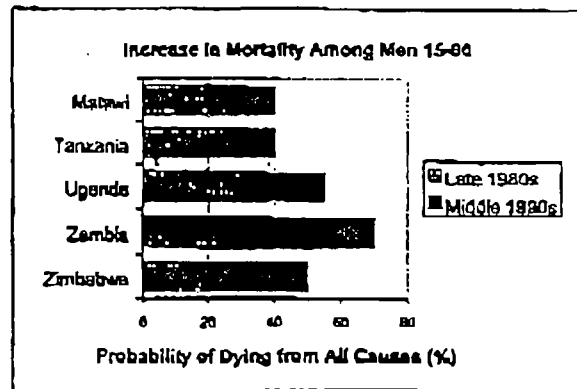
→ move up in the paper (earlier)

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. 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.

also, macroecon. impact depends on structure of the economy.

There are several mechanisms by which AIDS affects macroeconomic performance.

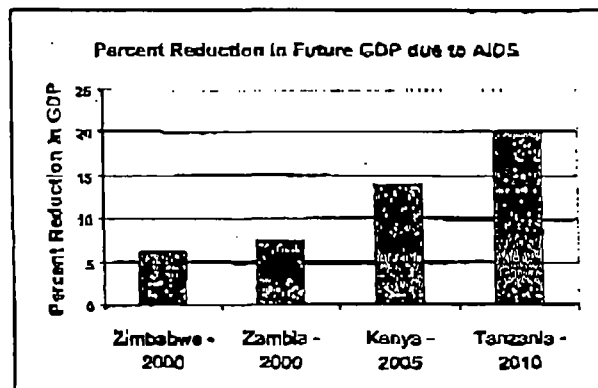
- AIDS deaths lead directly to a reduction in the number of workers available. These deaths occur to workers in their most productive years. As younger, less experienced workers replace these experienced workers, worker productivity is reduced. The graph to the right illustrates the magnitude of the 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.
- The overall impact of AIDS on the macro-economy is small at first but increases significantly over time.

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.



Very important

- 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
 - *Effects on savings in country.*
 - *Effects on private sector & investment.*
- 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:

- *Plan for AIDS in all development sectors.*
- **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. Third, it 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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BEYOND OUR MEANS?

The cost of treating HIV/AIDS in the developing world



PANOS

BEYOND OUR MEANS?

Please complete this questionnaire after reading the report "Beyond Our Means?" and return it to the number below. An e-mail version will be sent to you on application to aids@panoslondon.org.uk: put Send Questionnaire in the subject line.

About this report:

1. Overall, how easy to read was it? too easy ☐ just right ☐ difficult ☐
2. Overall, how useful was it? very useful ☐ useful ☐ not useful ☐
3. Which issues did you learn about most? (tick one or two only)
 - Care and treatment for HIV/AIDS ☐
 - Realities in the developing world ☐
 - Bridging the gap (the cost of providing antiretrovirals and improving health care) ☐
 - Who has the right? (intellectual property rights, compulsory licensing etc) ☐
 - Who pays? ☐
4. As far as you can judge, how accurate was the report?
 - very accurate ☐ some mistakes ☐ many mistakes ☐ don't know ☐
5. How many people do you think will read all or part of your copy?
 - one ☐ two to four ☐ five to ten ☐ more than ten ☐

About you / your organisation:

6. Are you / do you work for a(n)
 - doctor ☐ ministry of health ☐ other government ministry ☐ the media ☐
 - developing world AIDS service organisation (ASO) ☐ international ASO ☐
 - developing world other non-governmental organisation (NGO) ☐
 - international NGO ☐ bilateral / multilateral (eg UNAIDS, SIDA etc.) ☐
 - other (please specify)

.....

7. Do you / does your organisation provide counselling / care / treatment / help for people with HIV/AIDS yes ☐ no ☐

8. If yes, please describe what you offer

.....

Living with HIV/AIDS: (this information will be kept confidential)

9. Have you taken an antibody test? yes ☐ no ☐
10. If yes, did you test positive ☐ negative ☐

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PANOS

DAKAR KAMPALA KATHMANDU LONDON LUSAKA PARIS WASHINGTON DC

11. If you tested positive, are you taking or have you taken antiretroviral drugs?
no ☐ yes, regularly ☐ yes, occasionally ☐
12. If you regularly or occasionally take antiretroviral drugs, do you do so under medical supervision? no ☐ yes, regularly ☐ yes, occasionally ☐
13. If you have HIV but do not see a doctor regularly, is it because
there is no specialist in HIV/AIDS available ☐ you don't want to see a doctor ☐
you can't afford to see a doctor ☐ other
14. If you have HIV but are not taking antiretroviral drugs, is it because
you don't need them ☐ you can't afford them ☐ you don't want to ☐
other reason (please explain)
15. If you have HIV but can't afford antiretroviral drugs, how much do you earn in a year?
(give country & currency, eg Zambian kwacha)
16. For all respondents: Roughly how much per year is a typical combination therapy in
your country? (give country & currency) don't know ☐

What now?

17. Please put in order of priority (1 = most important) what should be done to ensure
widespread access for treatment for HIV/AIDS in your country.
..... access to antiretrovirals access to drugs for opportunistic infections
..... strengthening health service infrastructures free access to STI clinics
..... improved prevention programmes removal of HIV/AIDS-related stigma
..... other (please specify)
18. Does your country have a national AIDS drugs strategy? yes ☐ no ☐ don't know ☐
19. Please put in order of priority (1 = most important) the most appropriate mechanisms
for improving access to antiretroviral drugs in your country (see report for definitions)
..... preferential pricing compulsory licensing parallel importing
..... abolishing duties / taxes therapeutic value pricing
..... pooled procurement other (please specify)

PLEASE GIVE YOUR DETAILS HERE AND FAX / SEND TO ADDRESS BELOW

Name (optional)
Organisation
Address
City Country
Tel: Fax: E-mail

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World Economic and Financial Surveys

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WORLD ECONOMIC OUTLOOK

A Survey by the Staff of the International Monetary Fund

International Monetary Fund
Washington, D.C.
September 2000

Box 1.4 The Economic Impact of HIV/AIDS in Southern Africa

At the end of 1999, 33.6 million people were living with HIV/AIDS, of which some 25 million are in Africa. Within this, the highest rates of infection are in southern Africa. The Joint United Nations Program on HIV/AIDS (UNAIDS) estimates that about 36 percent of the adult population in Botswana, 25 percent in Zimbabwe and Swaziland, and 20 percent in South Africa and Zambia, are infected; this compares to a prevalence rate of 8.6 percent for sub-Saharan Africa and 1.1 percent for the world as a whole. By 2010, the U.S. Census Bureau predicts that life expectancy will fall from about 60 years to around 30 years for the worst affected countries, and that the rate of population growth will stagnate or turn negative for several countries in the subregion (see Table B1.4).¹ The social and economic implications will be far reaching and long-lasting, both through the huge toll in human lives and the dislocation of society that will result. In particular, the epidemic is affecting the social structure of local communities by disrupting existing social networks and traditional support mechanisms. It is also creating a generation of orphans—which could reach up to 10 percent of the population in some countries—who may grow up without the support and guidance of adults.

This box briefly discusses the potential macroeconomic implications of the HIV/AIDS pandemic, which will also be extremely serious. As discussed below, there will be substantial effects on a broad range of economic variables, including GDP growth, poverty and income inequality, labor supply, domestic saving, productivity, and human, physical, and social capital.² Since HIV/AIDS has a long incubation period, the impact of the disease will be gradual, and its full effects in most countries have yet to be felt.

Initially, the main impact will be felt in the public sector, as health care and other expenditures increase, revenue bases are eroded, and public sector workers are lost. Table B1.4 provides estimates of the demand in 1999 (based on local health standards) for HIV/AIDS-related health services in some of the affected countries; these are substantial, accounting for between 20 and 90 percent of health budgets. Even if only a proportion of HIV/AIDS patients are treated, the strains on the health sector as a whole will be severe, and will likely lead to increased rationing of treatment for both HIV and non-HIV related illnesses. It is important to note that these estimates do not include the cost of modern combination therapies. If the latter could be made available to even 10 percent of those infected with HIV at an annual cost of \$5,000 each, the total cost would range from 1.6 percent of GDP (South Africa) to 14.5 percent of GDP (Mozambique). This could only be financed with considerable outside assistance.

HIV/AIDS will have a number of other direct effects on the public sector. The early loss of qualified employees will result in a decline in productivity and the quality of public services, and countries will find it difficult to replace highly-trained public servants such as

¹ U.S. Bureau of Census, *World Population Profile 2000* (Washington: U.S. Bureau of Census, 2000).

² For further details see Markus Haacker, "The Economic Impact of HIV/AIDS in Southern Africa" (unpublished manuscript; Washington: International Monetary Fund, 2000).

THE ECONOMIC IMPACT OF HIV/AIDS IN SOUTHERN AFRICA

Table B1.4. The Economic Impact of AIDS in Southern Africa
(1999, unless otherwise noted)

	HIV Prevalence (percent of population, age 15-49)	Estimated AIDS Deaths	Demand for AIDS Health Services ¹ (percent of GDP)	Health Expenditure 1994-98 (percent of GDP)
Botswana	35.8	24,000	1.8	2.0
Lesotho	23.6	16,000	0.9	4.8
Malawi	16.0	70,000	0.8	...
Mozambique	13.2	98,000	0.6	1.0
Namibia	19.5	18,000	1.3	3.8
South Africa	19.9	250,000	0.7	3.0
Swaziland	25.3	7,100	0.9	2.3
Zambia	20.0	99,000	1.3	2.8
Zimbabwe	25.1	160,000	1.6	2.2

Sources: UNAIDS, *Report on the Global HIV/AIDS Epidemic* (Geneva: UNAIDS, 2000) and IMF staff estimates.

¹ Estimated cost of treating all AIDS patients at local standards. In practice, costs may be reduced by rationing.

doctors and teachers who fall victim to HIV/AIDS. In addition, the costs of absenteeism will be significant. In some countries, government employees may take up to one year of sick leave. This is likely to result mainly in a deterioration in the quality of public services, rather than an increase in personnel costs, as staff are not replaced speedily. The impact on public sector pension funds will also be substantial. While fewer government employees will reach retirement age, so pension expenditures will decline—by up to 3 percent of the public sector payroll in the worst affected countries—death-related benefits and pensions for surviving dependents may well rise to 5 percent of the government wage bill.³ Other social spending will also rise, most importantly for the growing number of orphans (in Botswana, for example, orphan allowances will exceed 1 percent of GDP by 2010). Over the longer term, there are also likely to be adverse effects on tax revenues, putting further pressure on the fiscal position.

As in the public sector, HIV/AIDS affects the private sector through lower productivity and costs related to labor turnover, a shrinking labor supply, and medical, pension, and death-related benefits. While there are few empirical studies of the impact of HIV/AIDS at the company level, those that are available suggest that AIDS-related absenteeism is very significant, in addition to the costs of training and recruitment and of medical and death-related benefits. Overall, AIDS-related costs corresponding to 50–100 percent of an infected employee's salary seem realistic. Costs tend to be higher in sectors where employees require extensive training and in companies offering generous pension schemes. For example, a study conducted by Metropolitan Life for the manufacturing sector in South Africa suggests that, owing to AIDS, the cost of death-related benefits across all employees will more than double between 1997 and 2007 (from 5.5 to 12 percent of total payroll).

³ Overall, pension funds report that between 30 percent and 70 percent of payouts have been related to HIV/AIDS.

The HIV/AIDS epidemic will have a large impact on the supply of labor and human capital. Current estimates suggest that some southern African countries will lose over one quarter of their skilled and educated population. These losses will result in a decline in productivity and in the effectiveness of public administration. Some evidence also suggests that children of AIDS victims may have to drop out of school, in order to care for sick relatives or because their families can no longer afford schooling. This will affect the supply of human capital in the longer run.

Investment and physical capital may also decrease because of HIV/AIDS, as domestic saving may fall and external saving may decline unless an increase in foreign aid offsets the likely decrease in foreign direct investment. Empirical evidence suggests that domestic saving will fall because of the epidemic.⁴ Public saving will likely suffer from an increase in the public deficit (as detailed above) and private non-household saving may suffer from a decrease of business profits (especially due to lower labor productivity). The impact on household saving is less clear, although on balance it may also decline because of the increase in the dependency ratio. Microeconomic studies indicate that households that care for an AIDS patient are dissaving, because of increased medical spending and decreased income when ill adult family members can no longer work. Precautionary saving may increase, however, in other households because of the increased risk of contracting AIDS-related diseases.

The implications of HIV/AIDS for GDP growth will clearly be substantial, both through the direct impact on labor supply, human capital, and saving, but also through a decline in total factor productivity. Recent studies suggest that annual GDP growth rates may drop by 1–2 percentage points, although the impact will not be uniform across countries and will depend, among other factors, on the health infrastructure, the stock of human and physical capital, and the composition of output.⁵ Calculations by IMF staff produce broadly similar results. This analysis suggests that GDP per capita in 2010 may be about 5 percent lower in the worst affected countries than it would be without the impact of HIV/AIDS, although this certainly underestimates the welfare cost because GDP per capita does not account fully for the human, social, and pecuniary costs of HIV/AIDS. Given the extent of the crisis faced by many of the countries—including the danger of macroeconomic instability as the fiscal position deteriorates, the potential disruption to established economic and social relationships, and the adverse impact on internal and external confidence—it is quite possible that the impact will in practice be significantly more severe.

Moreover, poverty and income inequality are likely to increase because of HIV/AIDS. The epidemic creates a vicious cycle by reducing economic growth which leads to increased poverty which, in turn, facilitates the rapid spread of HIV/AIDS as household food and health spending declines thereby reducing resistance to opportunistic infections. In

⁴ An econometric analysis of developing countries by the World Bank shows that the domestic saving rate is negatively correlated with the level of the HIV prevalence rate. See World Bank, "Economic Analysis of HIV/AIDS," Annex 5 in *Multisectoral HIV/AIDS Program* (Washington: World Bank, forthcoming, 2000).

⁵ See John T. Cuddington and John D. Hancock, "The Macroeconomic Impact of AIDS in Malawi," *Journal of African Economics*, Vol. 1, pp. 1–28 (May 1995); and Channing Arndt and Jeffrey D. Lewis, "The Macro Implications of HIV/AIDS in South Africa: A Preliminary Assessment," unpublished manuscript (Washington: World Bank, 2000).