Debate Central
HIV/AIDS Prevention Pro

HIV/AIDS Has Grown to Pandemic Proportions..........................................pg 2
Sub-Saharan Africa Is Most Severely Affected.................................pg 3
HIV/AIDS Is the Leading Cause of Death........................................pg 4-6
HIV/AIDS Will Become the World’s Top Infectious Killer...............pg 7
An HIV/AIDS Pandemic in Eurasia Would Lead to Catastrophe........pg 8-15
The Effects of an HIV/AIDS Pandemic Would Be Worse than Black Death..pg 16
Millions Have Been Orphaned by HIV/AIDS........................................pg 17-19
HIV/AIDS Devastates Economic Growth........................................pg 20-22
HIV/AIDS Threatens Political Stability........................................pg 23-29
Current Responses Are Failing................................................pg 30-31
The Global Community Needs to Work Towards Disease Control.......pg 32-34
The U.S. Needs to Undertake Aggressive Action...............................pg 35
More U.S. Leadership Is Needed................................................pg 36-38
Current U.S. Policies Are Inadequate..........................................pg 39-40
PEPFAR Has Failed.................................................................pg 41-43
Abstinence Focus Is Bad............................................................pg 44-46
More HIV/AIDS Prevention Is Needed........................................pg 47
Education Improves Health........................................................pg 48-58
HIV/AIDS Vaccine Will Enhance Security.....................................pg 59
HIV/AIDS Prevention is Successful.............................................pg 60


Since the first cases of acquired immunodeficiency syndrome (AIDS) were reported in 1981, infection with human immunodeficiency virus (HIV) has grown to pandemic proportions, resulting in an estimated 65 million infections and 25 million deaths (1,2). During 2005 alone, an estimated 2.8 million persons died from AIDS, 4.1 million were newly infected with HIV, and 38.6 million were living with HIV (2). HIV continues to disproportionately affect certain geographic regions (e.g., sub-Saharan Africa and the Caribbean) (Figure) and subpopulations (e.g., women in sub-Saharan Africa, men who have sex with men [MSM], injection-drug users [IDUs], and sex workers). Effective prevention and treatment of HIV infection with antiretroviral therapy (ART) are now available, even in countries with limited resources (2). Nonetheless, comprehensive programs are needed to reach all persons who require treatment and to prevent transmission of new infections.


Sub-Saharan Africa. Approximately 10% of the world population lives in sub-Saharan Africa, but the region is home to approximately 64% of the world population living with HIV (2). Transmission is primarily through heterosexual contact, and more women are HIV infected than men. Southern Africa is the epicenter of the AIDS epidemic; all countries in the region except Angola have an estimated adult (i.e., aged 15--49 years) HIV prevalence exceeding 10% (2). In Botswana, Lesotho, Swaziland, and Zimbabwe, the estimated adult HIV prevalence exceeds 20% (2). South Africa, with an HIV prevalence of 18.8% and 5.5 million persons living with HIV, has, along with India, the largest number of persons living with HIV in the world (2). Recently, declines in adult HIV prevalence have been observed in Kenya, Uganda, Zimbabwe, and urban areas of Burkina Faso. Although in these countries, HIV-related sexual risk behaviors and HIV incidence have decreased, AIDS death rates continue to rise. In sub-Saharan Africa, 17% of the estimated number of persons in need of ART received it in 2005 (3).
Africa is the Region Most Severely Affected by HIV/AIDS

Sub-Saharan Africa is more heavily affected by HIV and AIDS than any other region of the world. An estimated 24.5 million people were living with HIV at the end of 2005 and approximately 2.7 million additional people were infected with HIV during that year.1 In just the past year, the AIDS epidemic in Africa has claimed the lives of an estimated 2 million people in this region. More than twelve million children have been orphaned by AIDS.2

The extent of the AIDS crisis is only now becoming clear in many African countries, as increasing numbers of people with HIV are becoming ill. In the absence of massively expanded prevention, treatment and care efforts, it is expected that the AIDS death toll in sub-Saharan Africa will continue to rise. This means that impact of the AIDS epidemic on these societies will be felt most strongly in the course of the next ten years and beyond. Its social and economic consequences are already widely felt, not only in the health sector but also in education, industry, agriculture, transport, human resources and the economy in general.
In 2003, 2.3 million people in Sub-Saharan Africa died of AIDS. In the same year there were 3.1 million new HIV infections, bringing the total number of HIV infections to 25.4 million [UNAIDS 2004]. Although AIDS is a worldwide problem, Sub-Saharan Africa has been much more heavily affected than elsewhere. The prevalence rate for pregnant women (the most widely tested group) is 0.15 percent in the United States, and 10 to 15 percent in Sub-Saharan Africa.
AIDS is the Leading Cause of Death in Sub-Saharan Africa; 28.9 Million or More Africans Died of AIDS Between 1982 and 2005

Sub-Saharan Africa (“Africa” hereafter) has been more severely affected by AIDS than any other part of the world. In 2006, the United Nations reports, there were in the range of 24.7 million HIV-positive persons in the region, which has just over 11 percent of the world’s population but about 64 percent of the worldwide total of infected persons. The overall adult rate of infection in Africa in late 2005 was 6.1 percent, comparable with 1 percent worldwide. Nine southern African countries have infection rates about 10 percent. Ten African countries with the largest infected populations account for over 50 percent of infected adults worldwide. By the end of 2005, an estimated 28.9 million or more Africans had died of AIDS since 1982, including 2.1 million in 2006, which comprised about 72 percent of global AIDS death in 2006. AIDS has surpassed malaria as the leading cause of death in Africa, and it kills many times more Africans than war. In Africa, about 59 percent of infected adults are women.
HIV/AIDS Lowers Life Expectancy

Although life expectancy has improved by almost 20 years worldwide, the improvements are not consistent, as life expectancy has dropped in some developing countries -- especially those in sub-Saharan Africa -- primarily because of the impact of AIDS, according to the World Health Organization's annual report released on Thursday, the Boston Globe reports. According to the report, titled "World Health Report 2003 -- Shaping the Future," life expectancy has risen from 46.5 years in 1950-1955 to 65.2 years in 2002. However, life expectancy in countries in Southern Africa -- including Botswana, Lesotho, Swaziland and Zimbabwe -- has fallen by more than 20 years in the past 10 years, and "it soon could get much worse," the Globe reports. According to the report, Mozambique's life expectancy, which is currently 42, could drop to 27 by 2010 if HIV/AIDS "is not halted or reversed," according to the Globe (Donnelly, Boston Globe, 12/18). According to a WHO press release, AIDS-related complications kill 5,000 men and women and 1,000 children every day in the poorest African nations. In addition, only 5% of HIV/AIDS patients who need antiretroviral therapy in developing countries receive the treatments, creating a gap in care that WHO has called a "global health emergency" (WHO release, 12/18).
HIV/AIDS will become the world's top infectious killer

HIV/AIDS is a disease at once amazingly virulent and shockingly new. Only a generation ago, it lay undetected. Yet in the past two decades, by the reckoning of the Joint UN Programme on HIV/AIDS (UNAIDS), about 65 million people have contracted the illness, and perhaps 25 million of them have already died. The affliction is almost invariably lethal: scientists do not consider a cure to be even on the horizon. For now, it looks as if AIDS could end up as the coming century's top infectious killer.
A Eurasian HIV/AIDS Pandemic Would Lead to Catastrophe

At present, the HIV/AIDS pandemic, though global, is overwhelmingly concentrated in sub-Saharan Africa. Although this situation has exacted a terrible human cost, the rest of the world has been largely unaffected by Africa's tragedy. Things will be very different, however, in the next major area of HIV infection. Eurasia (which for the purposes of this essay is considered to be the territory encompassing the continent of Asia, plus Russia) will likely be home to the largest number of HIV victims in the decades ahead. Driven by the spread of the disease in the region's three largest countries -- China, India, and Russia -- the coming Eurasian pandemic threatens to derail the economic prospects of billions and alter the global military balance. And although the devastating costs of HIV/AIDS are clear, it is unclear that much will be done to head off the looming catastrophe.
An Eurasian HIV/AIDS Pandemic Would Be Devastating

The magnitude of infection. First, the absolute magnitude of the Eurasian HIV/AIDS epidemic over the coming quarter-century will match or exceed that of the entire worldwide HIV crisis up to now. For example, under the assumptions of even a mild epidemic, the cumulative total of new HIV cases in China, India, and Russia from 2000 to 2025 would be about 66 million, compared to UNAIDS estimates of about 65 million infected worldwide to date. The other scenarios predict even higher HIV totals: an intermediate epidemic would suggest nearly 200 million new HIV cases in the next 25 years, and a severe epidemic would lead to more than 250 million new cases (see Table 1).

The death toll. In each scenario, the cumulative death toll from AIDS over the next 25 years for Russia, China, and India vastly exceeds the total number of people killed by AIDS globally so far. UNAIDS estimates that AIDS -- from its onset to the present day -- has taken about 25 million lives. By contrast, a mild epidemic would project a cumulative total of about 43 million AIDS deaths for these three countries from 2000 to 2025. And the other projections look far worse. During an intermediate epidemic, for example, the hypothetical toll would be about 105 million, more than four times as many as have died to date (see Table 2).

On an annual basis, the numbers are equally astonishing. According to UNAIDS, the current annual aggregate death total from AIDS is about 3 million people per year. By comparison, the mild epidemic scenario suggests that Russia, India, and China would suffer a collective total of nearly 1.7 million deaths a year in 2010, and 2.3 million by 2015. In an intermediate-epidemic family of scenarios, deaths would top 3 million in 2010 and would approach 6 million in 2025.

New AIDS cases. In every scenario considered here, Russia, India, and China would each have to contend with massive numbers of new AIDS cases in the decade 2010-20. That result follows simply from the long incubation period between HIV infection and the onset of AIDS, and the large number of HIV carriers that each country is projected to accumulate between 2000 and 2015. The discussion also presumes that a cure for AIDS will not be found during this time frame.

The model's illustrative calculations, for example, suggest that China experienced "only" 30,000 new AIDS cases in 2000. By 2015, assuming just a mild epidemic, new AIDS cases in China erupt at a pace of nearly 100,000 per month. In India, the projected numbers are equally shocking. In 2000, according to these estimates, India was facing a significant burden of 100,000 new cases of AIDS a year. But even under a mild epidemic, the total would exceed one million a year in 2015, and would rise still higher for every year between 2015 and 2025 (see Table 3).

Population changes. The HIV/AIDS epidemics modeled here could significantly alter population dynamics in these Eurasian countries and might substantially reduce the future
size of certain economically important population cohorts. Under the milder epidemic, for instance, the aggregate populations of India, China, and Russia would be almost 90 million lower in 2025 than Census Bureau projections (the baseline) currently anticipate (see Table 4). Worse, the cohort often labeled the "economically active" population -- persons 15 to 64 years of age -- would be about 44 million fewer than currently projected (see Table 5). Under less optimistic scenarios, the demographic impact is correspondingly greater.

In these projections, Russia is hit especially hard demographically. This trend occurs not simply because the model posits somewhat higher HIV rates for Russia than for India or China but also because Russia's population is projected to decline over the coming quarter-century -- even in the absence of any worsening of its HIV crisis. Under the conditions of even a mild epidemic, however, that decline is projected to accelerate dramatically.

Reduced life expectancy. Finally, and in some ways most portentous, all of the scenarios point to either a stagnation or a reduction in national health levels as reflected by life expectancy at birth. This decline is an inescapable arithmetic consequence of the expected surge in mortality. In many ways, the future looks bleakest for Russia. For instance, under the severe epidemic scenario, Russian life expectancy would be a full decade lower a generation hence than it is today. The projections for China and India, although not as dramatic, are still deeply troubling (see Table 6).

This modeling exercise can be faulted in a number of respects -- modeling exercises always can. What these separate scenarios commonly highlight, however, is this: reasonable, historically grounded assumptions about the future course of HIV/AIDS suggest the real possibility, and perhaps even the likelihood, of an unprecedented cost in human lives for Russia, India, and China in the years just ahead.

THE ECONOMIC CONSEQUENCES OF THE DISEASE

Eurasia's HIV/AIDS epidemic will clearly have far-reaching economic ramifications in the coming decades. The number of dead, to begin with, threatens to be absolutely enormous. Furthermore, AIDS typically does not kill its victims immediately but subjects them to a prolonged period of gradually mounting debility and incapacity. This is a period, often extending for years, during which the victim's needs grow while his or her own ability to attend to them steadily diminishes. And AIDS does not kill randomly but instead tends to strike people in their prime reproductive ages -- years that coincide in most populations with the highest rates of labor productivity. Given this combination of factors, what sort of impact can we expect an HIV/AIDS epidemic to inflict on the economies of Russia, India, and China?

This question has received surprisingly little rigorous consideration. Two decades into the epidemic, the state of economic thinking about this complex set of interactions can still be described fairly as introductory and exploratory. The emerging economic literature on the subject has identified some of the potential macroeconomic repercussions of AIDS-
related illness and death. Population growth, labor supply, and savings rates all will be hurt -- indeed the more comprehensive the framework employed, the more negative the conclusions seem to be.

Even so, a number of important potential economic ramifications of an HIV/AIDS epidemic in a low-income setting have as yet received little consideration. Two in particular deserve mention here. First, by curtailing adult life spans, a widespread HIV epidemic seriously alters the calculus of investment in higher education and technical skills -- thereby undermining the local process of investment in human capital. Second, widespread HIV prevalence could affect international decisions about direct investment, technology transfer, and personnel allocation in places perceived to be of high health risk. These factors suggest that HIV breakout could have lasting economic consequences -- in effect, cutting afflicted countries off from globalization. The long-run economic impact of these effects could be even more significant than the constraints the epidemic could impose on local labor supplies or savings.

Precisely calculating the prospective economic cost of HIV/AIDS for a society would be a highly exacting task (it would essentially require figuring out how much less a population would earn due to HIV, how much more it would be obliged to devote to covering the needs of AIDS victims, and the present value of the differences in those two amounts). This exercise would require detailed data that are simply unavailable today for any country. There is, however, an extremely simple alternative approach to thinking about the possible economic implications of these HIV/AIDS epidemics, one that may promise a serviceable first approximation of the macroeconomic impact. We might call this the "health-based productivity" approach.

Modern economic development has seen an important and well-documented shift in patterns of global economic performance: a continuing move away from natural-resource-based wealth and toward wealth generated by human knowledge and skills. Put another way, "human capital" has become a predominant and increasingly important factor in overall economic potential. In modern times, this trend has made for a robust link between health and productivity at the national level. This association holds both across nations at any given point in time, and also within particular countries over time.

Naturally, these simple patterns do not capture the complexity of the health-productivity relationship, nor do they indicate causal directions. On the one hand, wealth is an instrument that helps people afford lifestyle patterns that lead to better health. On the other hand, improvements in health can boost productivity by extending potential work-life, enhancing physical capacity, and facilitating learning. Regardless of these complexities, for any country, at any point in time, life expectancy is a fairly good predictor of per capita economic output.

THE HEALTH OF NATIONS

What would these HIV/AIDS projections for Russia, India, and China imply for each country's economic performance if we relied solely on a simple health-based productivity
model? The answers can be computed by using World Bank data to estimate the recent (circa 1999) correspondence between national life expectancy and output per member of the "potential work force" (i.e., persons 15-64 years of age), and then combining these figures with the simulations of national life expectancy and potential work force size from the various HIV scenarios.

By this method, Russia's GNP per "person of working age" would be projected to rise by about 50 percent between 2000 and 2025 without HIV. Health-based productivity predictions, however, indicate that an HIV epidemic could radically reduce per capita productivity under any of the scenarios discussed earlier. Even with a mild epidemic, Russia's predicted output growth per working person would be less than half as great as under the "no HIV" baseline scenario. And if there was an intermediate epidemic, the predicted level of output would actually be lower in 2025 than it was in 2000.

For India, this method predicts about an 80 percent increase in GNP per working-age person over the next 25 years assuming the absence of AIDS. All of the HIV scenarios, however, would reduce that growth significantly. A milder epidemic, for example, would depress predicted growth by about two-fifths; under the intermediate epidemic scenario, output per working person would be no higher in 2025 than it is today.

China without AIDS would, by this method, experience a predicted increase in output per working-age person of more than 50 percent during the next 25 years. But even a mild epidemic would cut that growth by half -- or, to put it slightly differently, even an epidemic with a peak HIV prevalence rate of 1.5 percent would cut more than half a percentage point a year off China's long-term economic growth rate. Under an intermediate epidemic, output per working person would barely rise between 2000 and 2025. And under the most pessimistic of the scenarios, Chinese productivity over that same period would actually decline.

This method also permits the prediction of national levels of output, a set of figures that merits examination. In Russia, for instance, even though the model predicts a baseline increase of more than 50 percent in output per potential worker, national output would increase only by about 33 percent in the "no AIDS" case. This discrepancy results from the decline in the absolute number of Russians between the ages of 15 and 64. The HIV scenarios reduce Russia's future GNP not only by reducing predicted output per worker, but also by cutting the size of the 15-64 cohort. Thus, under conditions of a mild epidemic, Russia's national output would remain completely stagnant between 2000 and 2025. And under the intermediate epidemic scenario, Russia's GNP would be a shocking 40 percent lower in 2025 than it is today. Indeed, the model suggests that HIV/AIDS in Russia might, under a variety of scenarios, prevent the Russian economy from experiencing any growth in the years ahead.

For India, the model suggests that GNP absent HIV would be almost 170 percent higher in 2025 than in 2000 -- with growth driven both by a larger work force and by increasing worker productivity. Under the mild epidemic scenario, GNP would still rise substantially -- but by about a third less over that quarter-century than the "no AIDS"
baseline would have predicted. If there was an intermediate epidemic, predicted GNP in 2025 would be 40 percent lower than in the baseline scenario; national output would still grow, but growth would be cut by three-fourths over the next 25 years.

As for China, health-based predictions of economic output suggest relatively modest output growth of 80 percent between 2000 and 2025. The mild epidemic scenario would be predicted to cut that growth by more than a third; an intermediate epidemic, by much more. The more pessimistic scenarios would suggest even more dramatic economic repercussions for the Chinese economy.

Health-based predictions of future economic output are admittedly an overly simplistic measure for assessing the prospective performance of extraordinarily complex societies. Even so, health and wealth are closely connected in the modern world. To the extent that HIV/AIDS compromises national health prospects, it also compromises economic potential.

A GATHERING STORM

In the decades ahead, the likelihood of HIV breakout into the general population in Eurasia will depend on the extent to which local Eurasian populations can avoid replicating the risk factors that led to such a breakout in sub-Saharan Africa. Fortunately, Eurasia enjoys some ecological protections that sub-Saharan Africa lacks. Nutrition in India, China, and Russia is generally superior to that in sub-Saharan states, and the burden of endemic disease is also distinctly lower. With respect to behavioral risks, we know very much less about the situation in China, India, and Russia than we would like. Sexual transmission patterns, the prevalence of risky sexual practices, and the extent of other dangerous practices (such as iv drug use) will do much to determine the future trajectory of the HIV/AIDS epidemic in these three countries. Amazingly, neither local nor international health studies have examined in any sustained manner these potentially deadly risk factors.

Despite the limits of our knowledge, available information suggests that major HIV epidemics are already underway in China, India, and Russia, and that local social mores and behavioral practices are set to further spread the disease. The precise trajectory that HIV/AIDS will follow in these three countries cannot be foretold at this time. But as the hypothetical scenarios show, even fairly mild epidemics (by sub-Saharan standards) could have a tremendous impact on long-term health and mortality trends in all of these countries. Indeed, China, India, and Russia together could experience more HIV infections and AIDS deaths over the coming quarter-century than the entire planet has thus far.

From a purely ecological standpoint (that is, focusing on nutrition and endemic disease), India probably stands a greater risk today than either Russia or China for an HIV/AIDS breakout. Yet in the simulations, the country whose economic prospects seemed most threatened by the disease was Russia. Two factors largely account for this result: the country's poor health performance, entirely irrespective of HIV, and, relatedly, the
country's prospect for long-term population decline. In HIV/AIDS scenarios well within the realm of current informed expectations, Russia's economy 25 years hence might be no larger than it is today. In a world characterized by general economic growth, such a result would only increase Russia's marginalization both within the world economy and on the world stage.

But Russia's limited future economic prospects seem to be established already by a host of other factors that have nothing to do with HIV. From a geopolitical standpoint, then, the most pertinent question is whether the unfolding HIV/AIDS epidemics in China and India will be sufficiently powerful to alter the future economic or political balance between these two rising and ambitious states. To judge by these simulations, it is possible that HIV/AIDS could play such a role in the years ahead -- and again, relying on these simulations, the balance of risks presently appears to weigh more heavily against India than against China.

On the other hand, and somewhat paradoxically, China may have more difficulty mounting an effective response to an emerging HIV crisis than would either Russia or India. The reasons have to do with constraints on anti-HIV/AIDS policies in China. In contemporary Eurasia, perhaps the most successful HIV-control campaign thus far has been Thailand's. The Thai campaign relied on cooperation between the government and civil society to educate the public about HIV and to intervene with high-risk groups. Analyses of the program by the World Bank and other groups have stressed the value of civil-society participation, as well as the importance of popular trust in the government in lending credibility to the state's massive public education effort. Whether China could replicate Thailand's approach is by no means clear. A public health campaign premised on the independence of nonstate actors and the population's confidence in its government could be rather more difficult for Beijing.

Even without these constraints, the prospects of a Thai-style campaign doing much for Russia or India still look grim. When Thailand inaugurated its muscular anti-HIV campaign, adult HIV prevalence was lower there than it is today in Russia and India. And even after Thailand's policies went into effect, the estimated number of HIV carriers more than doubled over the subsequent decade -- the grim arithmetic of the disease being that newly diagnosed infections will add to the patient pool for some time, even if an effective program is diminishing the stream of newcomers.

Eurasian states' responses to their respective HIV crises may also be circumscribed by economic considerations. For now, the most effective medical intervention for prolonging HIV patients' lives is the complex "drug cocktail" of anti-retroviral drugs. It is true that many people with HIV in the advanced industrialized West have been given a new lease on life by taking these drugs, and that this has made the disease less of a life sentence than it was before. The problem with thinking that this advance represents a solution to the developing world's HIV/AIDS problems, however, is that the cocktail is extremely costly -- typically $15,000 or more per patient per year. Even the generic versions of the drugs, a year's supply of which can be manufactured for $600, are not affordable by most countries for most of their people with AIDS. And even if they had the money, the
The unfortunate fact is that they would probably not spend it on this cause, because the cost of distributing the treatment (even assuming that the drugs were given away free) would often be more than the economic value to governments of the lives thus saved. The tragic truth is that until some kind of actual cure is discovered, most people with HIV/AIDS in the developing world are essentially doomed.

Despite this awful reality, there are still things states can do to at least contain the risk of contagion within their populations. Governments can competently monitor the spread of the disease and warn their citizens accordingly. They can engage in public education campaigns to apprise their people of the deadly risks they face with HIV, urging them to alter specific behaviors. They can attend to the explosion of curable sexually transmitted infections, since these have proved to be a leading indicator for HIV transmission. And they can intervene with groups at high risk of HIV to encourage lifestyles that will court fewer dangers. But governments in Eurasia are not yet doing enough of these things.

HIV in the region may be likened to a gathering tempest, and the governments in Moscow, New Delhi, and Beijing to captains of vessels in its path. The storm, already within sight and rapidly advancing, is enormously powerful and capable of untold tragedy and destruction. From the captain's deck, however, officers continue to regard the approaching squall with curious detachment, unconcerned about its implications for their ship. When they come to their senses, the tempest will be even nearer than it is now -- and they may discover that their ability to navigate out of harm's way is more limited than they would have supposed.

For the technically inclined, I assumed that 1) each epidemic got underway around 1985; 2) in each country, the median incubation period for HIV carriers between infection with HIV and the onset of AIDS is nine years; 3) life expectancy after the onset of AIDS averages two years; and 4) HIV epidemics in Russia, China, and India are all subject to the "standard heterosexual" distribution between the sexes and over age groups that has been witnessed in other low-income countries (especially those of sub-Saharan Africa). For computing demographic and epidemiological results, I selected the spectrum software package developed by the Futures Group International for the U.S. Agency for International Development.
HIV/AIDS in Africa Will Be Worse than the Black Death Plague

If no effective vaccine or cure is found within the next 20 years, areas of the world that are now witnessing explosive epidemics or are in their second or third wave of HIV infection may well find themselves harder hit -- and more deeply transformed -- than Europe was by the Black Death. Many of Africa's characteristics today mirror those of preplague Europe, including an enormous surplus of unskilled labor, a lack of clear property rights for the bulk of the population, domination by tiny elites, widespread warfare waged both by state and mercenary forces, and a transition under way from dispersed agrarian to disastrously urbanized societies. Each of these economic, political, and social characteristics of early fourteenth-century Europe was turned upside down by the Black Death. There is no reason to imagine that Africa's modern plague will have any less of an impact, albeit in slow motion.
More Than 15 Million Children Have Been Orphaned by AIDS
Avert, 2007 [“AIDS Orphans,” Avert, 2007.]

Worldwide, it is estimated that more than 15 million children under 18 have been orphaned as a result of AIDS. More than 12 million of these children live in Sub-Saharan Africa, where it is currently estimated that 9% of all children have lost at least one parent to AIDS. As HIV infections become increasingly common among the adult population of the region, the brunt of HIV-associated mortality is expected to occur within this decade; as a result, millions of children will lose parents to AIDS. By 2010, it is predicted that there will be around 15.7 million AIDS orphans in Sub-Saharan Africa.

The number of orphans in some Sub-Saharan African countries exceeds half a million, and, in some countries, children who have been orphaned by AIDS comprise half or more of all orphans nationally.
Millions of Children Have Been Orphaned by AIDS
UN, 2007 [“AIDS Orphans in Sub-Saharan Africa,” UN, 2007.]

While the tragedy of the HIV/AIDS epidemic has been drawing increased media attention, one the most troubling aspects of it – the long-term impact on African societies of some 11 million AIDS orphans in sub-Saharan Africa – has been featured less often.

There are more than 34 million orphans in the region today and some 11 million of them are orphaned by AIDS. Eight out of every 10 children in the world whose parents have died of AIDS live in sub-Saharan Africa. During the last decade, the proportion of children who are orphaned as a result of AIDS rose from 3.5% to 32% and will continue to increase exponentially as the disease spreads unchecked. As a result, the disease is in effect making orphans of a whole generation of children, jeopardizing their health, their rights, their well-being and sometimes their very survival, not to mention the overall development prospects of their countries.

The AIDS epidemic contributes to deepening poverty in many communities, since the burden of caring for the vast majority of orphans falls on already overstretched extended families; women or grandparents with the most meagre resources. Such households are expected to earn 31% less than other households. Without a real safety net, street life is the recourse for many orphans, who often suffer from poor health, trauma and psychological distress, making them more vulnerable to abuse and exploitation.

The overall situation has reached alarming proportions also because women have moved from the periphery to the epicentre of the HIV/AIDS epidemic in sub-Saharan Africa. Averaging over 55% of all people living with HIV/AIDS, girls and women are disproportionately affected. Meanwhile, constraints on their access to education and treatment, coupled with their inability to find paid employment, are causing rural households often headed by women to slide further into poverty.

With AIDS-ravaged economies starting to crumble, urgent national strategies are needed to strengthen governmental, community and family capacities and to redouble international cooperation to reverse the tide of this global calamity. “We’re all struggling to find a viable response, and there are, of course, some superb projects and initiatives in all countries but we can’t seem to take them to scale,” says Stephen Lewis, the UN Secretary-General’s Special Envoy for HIV/AIDS in Africa. “In the mean time, millions of children live traumatized, unstable lives, robbed not just of their parents, but of their childhoods and futures.”

What is often overlooked is the ripple effect the epidemic will have on future governance, social structures and growth of the worst hit countries in sub-Saharan Africa. Dramatically high mortality rates will result in the depletion of much of the labour force, both in urban and rural areas, with the losses having a profound impact on the very foundations of economies and state administration. Undoubtedly, sub-Saharan Africa is not alone in facing this challenge – several countries in Asia are beginning to feel the early impact of the “lost generation” of children orphaned and made vulnerable by AIDS.
With the toll of AIDS orphans threatening to reach 25 million by the year 2010, this problem should remain at the centre of attention of all concerned – governments, the public and the media -- to stem the spread of this scourge.
HIV/AIDS Poses a Threat to Development and Economic Growth

Since the first cases of HIV/AIDS were reported twenty years ago, nearly 58 million people have been infected and 22 million have died. Consensus in the international community has grown over the past two years that HIV/AIDS poses a threat to development, security, and economic growth. A few studies over the last ten years have looked at the impact on workers and their employers. With momentum building to prevent new infections and treat those already afflicted, more information is needed to assess economic impacts and cost efficacy of treatments.

On June 28, 2001, the Brookings Institution, the Council on Foreign Relations, and the U.S. Agency for International Development (USAID) sponsored a conference on measuring the costs of HIV/AIDS and organizing responses to it. The conference brought together researchers, business people, and policymakers to discuss economic impacts, prevention costs, education, and treatment. This report is a summary of the findings presented at the conference.
HIV/AIDS Harms Economic Growth


Malcolm McPherson of the Belfer Center at Harvard's Kennedy School of Government addressed how the spread of HIV/AIDS seriously erodes human capacity and adversely affects "capacity deepening," which is broadly defined as building upon existing skills in order to increase productivity. Skilled personnel are lost and valuable labor time is consumed when workers become debilitated, and work schedules are disrupted when organizations replace workers and managers who are ill or have died. The loss of capacity reduces economic growth. Several aggregate models project significant reductions in economic growth rates for African economies. These modeling exercises typically follow a pattern of reporting "with" and "without AIDS" scenarios. An example is the widely cited ING Barings model produced for the July 2000 HIV/AIDS conference in Durban, which showed that long-term economic growth in South Africa would decline 0.4 percent per year due to HIV/AIDS.

Recent research, however, suggests that these studies may be too optimistic. What they fail to consider is that by undermining human capacity, HIV/AIDS reduces productivity, disrupts organizations, and unravels institutions. The implication is that the epidemic's effects are more likely to be non-linear.

Both theory and practice indicate this is the case. At the aggregate level, the impact of HIV/AIDS has elements consistent with endogenous growth theory. The spread of HIV/AIDS reduces labor productivity, raises private and public consumption, and thereby reduces income and savings. With lower savings, the rate of investment falls, reinforcing the decline in economic growth. The loss of labor productivity occurs because a larger share of the work force becomes debilitated and dies causing organizations to lose workers with critical skills. The phenomenon can be likened to "running Adam Smith in reverse." Adam Smith argued that the "expansion of the market"—typically identified as economic growth—creates opportunities for specialization and the division of labor. The spread of HIV/AIDS reverses that process as organizations experience disruption, and declining income undercuts the earlier gains achieved through specialization and the division of labor.

A factor accelerating this trend has been the erosion of economic incentives to deepen capacity. With current treatment protocols, the majority of individuals in Africa who are HIV-positive (or think they may be) face dramatically shortened life spans. This raises the opportunity cost of additional training, because few of the costs incurred will be recouped in higher subsequent earnings. The same logic applies to employers who might otherwise support further training of their employees. Forbidden by law from discriminating, employers have to assume that the average productive life span of anyone they train will decline, which directly reduces the incentive to support long-term training. Without such training, capacity cannot be deepened.
So far, many enterprises across Southern Africa have sought to minimize the direct costs of HIV/AIDS by "shifting the burden." This can entail closing transport and distribution divisions—where the prevalence of HIV/AIDS is higher—reducing benefits, or shifting labor to temporary workers. Some organizations may gain a short-term cost advantage, but in aggregate, the attempt to "shift the burden" is a mirage. This is because with workers, government, and the rest of society bearing the direct costs of HIV/AIDS, resources are diverted from public services such as roads, telecommunications, and education. Enterprises require those resources to enhance productivity. Furthermore, with overall income growth declining, the enterprises' future growth prospects also diminish.

For these reasons, private enterprises need to be concerned about capacity deepening in the public sector. Without ministries of finance, health, and education, central banks, finance, revenue, and justice departments with skilled staff capable of effectively administering and managing the economies, business will suffer. This is already evident in countries such as Zambia, Zimbabwe, and Malawi.
The AIDS pandemic’s destabilizing effects have been keenly felt in developing countries, particularly in sub-Saharan Africa. According to the Center for Strategic and International Studies, HIV/AIDS in Africa has “undermine[d] education and health systems, economic growth, micro enterprises, policing and military capabilities, political legitimacy, family structures, and overall social cohesion.” In the weakest states, this multisectoral devastation increases “vulnerability to extremists and terrorists who may attempt to corrupt or coerce individuals into providing converts, cover, or cooperation.” Indeed, HIV infection rates among African armed forces are two to three times higher than those of civilian populations. (A South African military official recently announced that twenty-three percent of that country’s soldiers are HIV-positive.) If current infection rates persist, African militaries may become incapable of either dealing with internal strife or deterring ambitious neighboring states. Such instability may well spark further political and social upheaval, inspire a move away from the rule of law and toward despotism or anarchy, and lead to sustained human rights abuses on a massive scale.

These destabilizing effects potentially extend beyond the African sub-continent as well. In the so-called “second wave” states—including China, India, and Russia—infected among high-risk groups is beginning to spread into the general populations. Although the Indian government estimates that a little less than 1 percent of Indians are infected with HIV, epidemiologists deem a disease prevalence rate of 1 percent or higher an “epidemic,” and in a country the size of India, this level means millions already are infected. In China, between ten and twenty million people are predicted to be HIV-positive by 2010. In Russia, the infection rate currently is twice that of the United States—and the official number of HIV cases has been rising by 50 percent each year. The pandemic’s potential impact upon these states, given the size of their populations and their deeper integration into world economic and security structures, could have global repercussions far greater than those already seen in Africa. And because of its decimation of young adults in their most productive years, HIV’s most enduring and socially destructive legacy across all regions may be the millions of orphans it has produced and the many millions more to follow, as some 90 percent of people infected worldwide do not know they have HIV.

In light of its impact upon virtually all indicators of human well-being—from public health to national security—the global AIDS pandemic presents a quintessential human rights challenge affecting the vital interests of all nations and requiring a comprehensive, human rights-based approach if it is to be brought under control. National security officials therefore can no longer safely deem the advancement of human rights and the rule of law a noble humanitarian aspiration secondary to the vagaries of realpolitik. In the age of AIDS, human rights and the rule of law are realpolitik. Reducing AIDS-related stigma and discrimination, so that more people will get tested for HIV and receive prevention counseling, is a national security issue. Respecting and enforcing the rights of women, so that they may control their bodies, reject unwanted sexual advances, and insist
upon the use of condoms to protect against HIV infection, is a national security issue. Ending modern-day slavery and reducing the spread of HIV by eradicating human sex trafficking is a national security issue. And ensuring access for all to life-sustaining drugs, so that HIV-positive parents may provide and care for their children, is a national security issue. More than mere “issues,” in fact, these challenges are fast becoming national security imperatives.

Simply put, HIV thrives where human rights don’t. Controlling HIV therefore requires our collective global commitment—governmental, societal, and personal—to securing the human rights of all people.
HIV/AIDS Undermines Global Security

When assessing the effects of HIV/AIDS on most military and police forces, two factors stand out. First, infection among uniformed personnel has risen sharply. Second, the rate of infection in most countries' forces is at least as high as it is among their civilians. In Russia, the HIV/AIDS rate among potential 18-year-old draftees has shot up 25-fold since 1999. The annual new infection rate for HIV in Russia's military forces has also risen sharply, climbing from about 0.1 cases per 100,000 soldiers in 1995 to nearly 40 per 100,000 in 2003. In both 2002 and 2003, about 5,000 conscripts -- or about a third of all young men drafted -- were rejected for military service for health reasons that included, chiefly, HIV/AIDS, tuberculosis, drug addiction, and "psychological problems."

Murray Feshbach, a noted demographer at the Woodrow Wilson International Center for Scholars, has written that Russia will find it increasingly difficult to staff its army as illness claims more of its youth and its overall population shrinks. Feshbach sees similar trends in the armed forces of Ukraine, the Baltic states, and possibly Belarus and Moldova as well. The HIV/AIDS and tuberculosis epidemics in these countries are spiraling out of control, probably growing faster than anywhere else in the world.

This is not to say that HIV infection among police and armed forces elsewhere is not also a grave problem. Troop strength in Malawi, for example, has already reportedly fallen to 50 percent of the minimum capacity needed to guarantee state security. In 2004, the Zimbabwe Ministry of Defense admitted that the military's HIV infection rate was about 3 percent higher than that of Zimbabwe's civilian society, which was then just above 26 percent. In Mozambique, police recruits cannot be trained fast enough to replace those dying of AIDS. High HIV infection rates have impeded South Africa's attempts to transform its previously all-white military command into one that more closely mirrors South African society. In Ethiopia, a 2004 test of police officers' wives found that nearly a third of them were HIV positive. Nothing is publicly known about the HIV rates within the world's two largest military forces: China's 2.5 million-strong People's Liberation Army, and India's 1.33 million-member defense forces. Nor is much known about the levels of infection in the rest of Asia's military and police forces. In May, however, India's minister of defense stated that AIDS was the fifth-leading cause of death for his nation's armed forces.

Dead recruits and infantry troops tend to be easy to replace. A general or top technical officer, however, often represents decades of training and acquired experience. Around the world, many militaries are quietly putting their infected commanders on antiretroviral medicines, in hopes of buying time to train their replacements. U.S. military experience reveals the wisdom of this move, as HIV/AIDS-related death rates among infected U.S. armed forces plummeted from 40 percent during the period from 1985 to 2001 to just 1.4 percent since 2001, thanks largely to such treatment. Brazil's experience, however, offers a stark counterpoint. Brazil, like the United States, has also used antiretroviral drugs to treat the estimated one percent of its uniformed personnel who are HIV positive. But the
Brazilian officers and enlisted men treated have grown steadily more resistant to the drugs, with some 86 percent of affected personnel now reporting resistance to at least one of the powerful protease-inhibitor drugs used to hold the virus at bay.

There are four essential conclusions that can be drawn from the available information about HIV infection among military and police forces. First, in hard-hit parts of the world, these individuals, who are the protectors of stability and security, are increasingly falling victim to AIDS -- as much or more so than the general adult population. As death claims ever more citizens, it will also claim more troops, posing serious problems for law and order a decade from now.

Second, in some areas with high infection rates, especially in the former Soviet Union, militaries and police are finding it hard to identify healthy recruits to replace the ranks of their aging and HIV-infected forces. Third, while many uniformed services are supplying antiretroviral drugs to their command officers in the hope of prolonging their lives, providing these drugs solely to the upper echelons may eventually undermine morale among the rank and file, even leading to mutinies. Such special treatment may also undermine the moral authority of the police and the military among the general population. And even the life-prolonging wonders of antiretroviral drugs may be short-lived, due to the emergence of drug-resistant strains of HIV.

The HIV/AIDS pandemic is also having a major impact on UN peacekeepers. All military personnel stationed with UN operations are by regulation encouraged to undergo voluntary HIV screening. In addition, the UN's roughly 47,000 peacekeepers all receive training about the risks of AIDS, other sexually transmitted diseases, and appropriate behavior with civilian personnel. They also all get a plastic "HIV/AIDS Awareness Card for Peacekeeping Operations" and five or six condoms a week during foreign deployment. Most of the 65,000 peacekeepers perform their work with noble courage and free of HIV risk.

Nevertheless, the UN has recently been rocked by sex-related scandals among peacekeepers in the Democratic Republic of the Congo and elsewhere, and several studies show that troops stationed away from their home countries are at significant risk for acquiring HIV. A Nigerian military survey, for example, has found that the infection rate among soldiers who are based near their wives and homes mirrors that of society at large -- about five percent. But rates among those deployed for peacekeeping operations in Sierra Leone, Liberia, and Côte d'Ivoire are up to three times higher. Nigeria has witnessed a stark increase in noncombat mortality in its military ranks over the last five years, with 43 percent of that surge directly ascribed to HIV.

One counterintuitive effect of warfare, as the recent histories of Angola, Cambodia, Ethiopia, Namibia, Nigeria, South Africa, and Zimbabwe show, is that it can actually reduce the risk of HIV infection. During wartime, civilians either hunker down in their homes or flee war-torn regions and become refugees. Trade grinds to a halt, borders are locked tight, and social mobility is minimized.
Consider Angola, for example. For 27 years, it was wracked by a civil war that left the now-peaceful nation in shambles. War, however, largely kept HIV outside Angola, since most forms of trade and travel, both within the country and across its borders, were essentially shut down for three decades. Since the end of the conflict in 2002, Angola's borders have reopened. Peace has brought greater trade -- but also an increased HIV infection rate.

One critical and horrifying exception to the general dampening effect of warfare on the rate of HIV infection occurs when rape is used as a weapon. A recent study of women who were raped during the 1994 Rwanda genocide shows that today nearly 80 percent of them are HIV positive. Similarly, a survey of pregnant women in parts of northern Uganda where the rebel paramilitary group the Lord's Resistance Army has committed atrocities, including rapes, for two decades finds that female infection rates are double those in the rest of Uganda. About half of the rape victims who survived the Sierra Leone civil war are also infected.
HIV/AIDS Leads to Political Instability


The most obvious political dimension of the security threat caused by HIV/AIDS is the risk that it will claim the lives of national leaders, as parliamentarians, cabinet members, ministers, and the military become infected and die. Until now, such deaths have generally gone unacknowledged: the deceased are listed as victims of tuberculosis, "prolonged illness," or other less stigmatizing problems. To date, the death of not one head of state has officially been designated an AIDS death. Nevertheless, the illness has taken its toll, depriving many nations of seasoned leaders and institutional experience. For example, between 1964 and 1984, Zambia held 14 by-elections to replace incumbents who had died in office. In 1984, the country officially acknowledged its first AIDS case, and between that time and 2003, the number of by-elections soared to 102. Of this total, 29 were due to the death of the incumbent. Each of these special elections represented a loss of political experience and came at enormous monetary expense to the government. The Institute for Democracy in South Africa has published long lists of similar figures for countries all over sub-Saharan Africa.

The ranks of Africa's civil servants are also being thinned by the pandemic, rendering some previously weak bureaucracies only marginally functional. In areas with the highest HIV infection rates, even those government workers who survive often miss work due to the exigencies of caring for relatives or rearing the children of deceased family members. The UN AIDS program has documented the steady erosion of key civil-service sectors in sub-Saharan Africa. Teachers, hospital workers, and financial-sector employees have been the hardest hit.

As serious as these problems are, the most profound challenge to state stability caused by HIV/AIDS will be the death toll among men and women aged 20-50 years, who are workers, parents, leaders, and trained professionals. Already, AIDS is distorting the populations of some countries, where the older, dependent population remains comparatively intact and children and adolescents are coming to radically outnumber adults. Throughout much of sub-Saharan Africa, life expectancy has dropped precipitously.

Nicholas Eberstadt, of the American Enterprise Institute, argues that declining life expectancy constitutes the single most important threat to the security of hard-hit countries, as it will lead to diminishing state capacity. According to the U.S. Census Bureau, 40 nations will have declining life expectancies by 2010, and in 35 of them, HIV/AIDS will be the primary cause (25 of these countries are in sub-Saharan Africa). Eight Caribbean nations and seven former Soviet states will also see their life expectancies drop compared to 1990 levels, and some of the declines will be due to HIV/AIDS. It may not always be possible to tease out the impact of AIDS from the toll inflicted by its frequent companions, such as tuberculosis, malaria, and poverty. But it is noteworthy that the key reversals in life expectancy seen in Africa started between 1985 and 1990, when the first great wave of AIDS deaths swept through the region. In Malawi,
by 2000 life expectancy had fallen to the country's 1969 level, essentially reversing 30 years of development investment. Life expectancy in Botswana dropped by 30 years between 1990 and 2002 -- a decline that is unprecedented in known human history.

Most of the countries now hit hardest by HIV/AIDS already had "youth bulges" before the virus arrived, meaning that a disproportionate percentage of their populations were under 29 years of age. HIV/AIDS is now exaggerating these bulges, with the greatest percentage increases appearing in the adolescent population. In 1975, only 17 countries in the world had youth bulges so severe that more than half of their population fell in the 15-29 age bracket. Today, 37 countries belong to that category, nearly all of them in sub-Saharan Africa. Several studies show that countries that had such radically large youth bulges in the period between 1990 and 2000 were three times more likely to suffer civil wars, coups, or armed insurrections.

In general, the presence of three key population problems in a given country indicate a likelihood of instability: a youth bulge, rapidly rising population concentrations in underdeveloped cities, and poor crop or fresh-water production. Fortunately, in many countries, all three of these factors are subsiding, thanks to economic improvements and the strengthening of civil society. But in the poorest parts of the world, they are becoming increasingly pronounced, with dangerous consequences.

That HIV/AIDS is hitting hardest precisely those areas most afflicted by dire poverty may make it impossible to observe direct disease impacts on most local and regional economies. Nevertheless, the pandemic is pouring salt on economic wounds and exacerbating already widening chasms in wealth and food security, and this process will only get worse in the future. The presence of HIV/AIDS also dissuades outside investment, as few companies are interested in building operations in a region where labor productivity and costs are so dramatically affected by disease and death.
HIV/AIDS Has Reached a Crisis Point in Sub-Saharan Africa. The Current International Response is Failing.


Africa accounts for 70% of all HIV/AIDS cases in the world although it represents only 10% of the global population. More than 25 million Africans live with HIV/AIDS, and 17 million have already died.

The response of the international community has been slow and largely ineffective. The UN estimates that Africa will need $3 billion just for basic treatment and prevention programs, yet the U.S. and other Western countries donated only $300 million in assistance in 2000.

According to the UN Agency for HIV/AIDS (UNAIDS), 25.3 million Africans live with the virus or are dying of AIDS. Barring a miracle or a major change in international attention to the scourge, these Africans will die within the next decade.

Despite the horrors of the pandemic, the international response has been limited and only recently have most African governments begun to publicly address the problem. African governments are hobbled by poverty, cultural taboos about sex, and misperceptions about the cause and seriousness of AIDS. They also fear disruption of precious tourism and investment dollars from the West and have failed to warn their citizens about the dangers of AIDS. Western nations, including the U.S., have largely ignored the dangers and international repercussions of widespread infection in Africa. The United States in 2000 spent only $300 million for basic AIDS care and prevention programs in Africa—far short of the $3 billion regarded as necessary to slow down the pandemic.

The HIV/AIDS crisis in Africa is of the gravest magnitude. Every day, 6,700 families lose a loved one to the disease; the construction and sale of coffins is one of the fastest growing occupations in southern Africa. Sixteen African countries have one-tenth or more of their population infected with HIV, and Africa is home to 95% of all mother-to-child transmissions of HIV. In these countries, almost 80% of all deaths of young adults aged 25-45 will be directly linked to AIDS.

In six countries of southern Africa, by the year 2005, AIDS will claim the lives of between 8 and 25% of today’s active physicians. Women are affected more by this dreaded disease; in Africa, 12 women have HIV/AIDS for every 10 men. African women account for 85% of all global female infections. In southern Africa, one in four women aged 15-49 live with HIV/AIDS. In some countries, between 10 and 20% of teen-age girls are already infected. Infected girls are more likely than boys to drop out of school, reversing decades of slow but steady progress in female education. The much-vaunted African extended family system is faltering, as the number of orphans living without the care of extended families rises. By the year 2010, the projected number of orphans may exceed 40 million in Africa.
Africa’s hard-won health and education gains in the 1960s and 1970s were undermined by debt and by externally dictated structural adjustment policies in the 1980s and 1990s. Today, however, social services and economies are imploding from the deadly consequences of AIDS. In the coming decades, the continent will record significantly sharper declines in life expectancy rates and shrinkage of national economies from the effects of the epidemic.

Africans living with HIV/AIDS have limited or no access to lifesaving anti-retroviral medicines that have changed the course and management of AIDS in Western countries. Less than one-tenth of one percent of Africans living with AIDS have access to AIDS drugs. The World Bank estimates that half of all Africans live on $0.65 cents per day. The economic resources of African governments are equally meager, and they are burdened by $20 billion in annual foreign debt payments. With the rudimentary healthcare infrastructure of African countries, the strain of long-term hospitalization of AIDS patients is taking a heavy toll.

Economic underdevelopment and Africa’s impoverished conditions have created a wide-open gateway for HIV infection, tuberculosis (TB), and sexually transmitted diseases (STDs). According to the World Health Organization, an estimated 30-50% of all TB patients in Africa are also infected with HIV/AIDS. Africa has the highest rates of STDs in the world. STDs facilitate the spread of HIV infection, especially among women.

Political instability and violent conflicts keep many African governments from focusing on the AIDS crisis. Twenty of the continent’s 53 countries are involved in intrastate or interstate conflicts, which lead to having the world’s largest regional concentration of refugees. Another important factor in the deepening crisis is the high rate of AIDS within Africa’s armed forces—15-20% of the members of the military in some countries have AIDS. Mobility of the African male populations—through military operations, migrant labor such as mine workers, and shifts from rural to urban centers—exacerbates the spread of HIV/AIDS. As the HIV/AIDS pandemic continues, political and social instability will likely intensify as AIDS gobbles up scarce human and economic resources.
The Global Community Needs to Work Toward Disease Control in Africa

Despite the availability of effective therapies in developed nations, infectious diseases continue to take a grave toll on the population and economy of sub-Saharan Africa. Aside from a few successes, the global donor community has not adequately helped African governments meet these health challenges. However, if annual donor contributions increased approximately 10–20-fold, millions of lives could be saved, helping Africa escape the cycle of disease and impoverishment.

It is time for the global donor community—governments, multilateral agencies, foundations and individual philanthropists—to support a concerted attack on killer infectious diseases in sub-Saharan Africa, including HIV/AIDS, tuberculosis and malaria. Contrary to widespread belief, total donor support for disease control has been meager in recent years, and poor countries lack the financial means to address their public health crises. The result is that, despite existing technology, each year millions of people are dying in Africa and other hard hit regions with consequent economic, political and social turmoil. One summary measure of health, the number of children that die before the age of 5 for every 1000 births, remains staggeringly high at 172 deaths in sub-Saharan Africa compared with just 6 in the high-income countries. Global donor support of $10–20 billion per year, much less than 0.1% of the combined $25 trillion gross national product (GNP) of the rich nations, would save millions of lives each year and would enable Africa to escape from a downward spiral of disease and economic collapse.

The economics of public health in the poorest countries are stark. Sub-Saharan Africa has an average annual income of $500 per capita, and if one excludes South Africa with its $3,000 per capita, the average falls to just a little over $300 per capita. Governments of poor countries, even when not strapped for cash by debt crises, are rarely able to muster 4% of national income for public health, and the average is around 1.8% for sub-Saharan Africa (excluding South Africa). But even 4% of the GNP would leave a country with a $300 per capita annual income with just $12 per person in health spending. That allowance would have to address the multiple and interlocking crises of HIV/AIDS, malaria and tuberculosis (TB). There are also acute respiratory infections, diarrheal diseases and various vaccine-preventable diseases in under-immunized populations, which claim several million lives per year. South Asia is in a similar bind, with very low public health spending per person in an impoverished region, though the disease ecology is somewhat more benign than in sub-Saharan Africa.

The donor community has talked about support for disease control for decades, but action has been much less than promise. Specific programs have been well advertised and highly successful—most famously smallpox eradication and more recently the dramatic reduction in polio incidence and the successful battle against onchocerciasis (African river blindness). However, the larger truth is that healthcare has been shockingly under-funded. According to the data of the Organization of Economic Cooperation and
Development, the scorekeeper of official development assistance, the global donor community gave all of sub-Saharan Africa just $836 million in aid for health during 1999, or roughly $1.30 per African, added on to the meager sums that African governments themselves can muster. Donor support for HIV/AIDS control programs for sub-Saharan Africa averaged a paltry $70 million per year between 1996 and 1998, even as the pandemic surged4 (Fig. 1). Total official development assistance was in the order of $3 per HIV-infected individual in Africa.

The results are plain to see. In virtually every sphere of public health in Africa there has been regress rather than progress. Immunization rates declined in many parts of the continent during the 1990s. Malaria has been resurgent, reaching into urban areas such as Dar-es-Salaam and Accra which were essentially free of malaria in earlier generations. Most dramatic of all, HIV/AIDS has swept through the continent, especially in southern and eastern Africa, leaving behind a cumulative 17 million dead and 12 million orphans, with an estimated 25 million people now HIV-infected, 3.8 million new cases in 2000, and an estimated 2.4 million deaths during the year (http://www.unaids.org). The inequities of global health have been dramatized as never before by the lack of access of HIV-infected Africans to life-extending highly active antiretroviral therapy (HAART). While HAART has caused death rates from AIDS to plummet in the United States, Europe and in middle-income settings like Brazil where treatment has been possible, it is estimated that only 10,000 of Africa's HIV-infected individuals now receive HAART.

Africa's health crises are both a cause and effect of its' intense impoverishment. Poverty obviously affects health by limiting access to health services, sanitation and adequate nutrition and housing, but poor health also adversely impacts economic growth through a multiplicity of channels, a point being documented through scholarly studies of the Commission on Macroeconomics and Health of the World Health Organization (http://www.cid.harvard.edu/cidcmh). In stricken countries, worker productivity is reduced; foreign investors shun regions with high-disease burdens; poor families have large numbers of children in response to high rates of child mortality and so invest less in each child's health and education; and disease directly destabilizes societies. An academic study group supported by the Central Intelligence Agency, the State Failure Task Force, discovered that a high infant mortality rate was one of the most powerful predictors of subsequent governmental collapse in a worldwide study of political dynamics5. It is not surprising, then, that in a generation of surging infectious disease Africa has suffered outright declines in per capita national income despite rapid global economic growth.

Donor programs suffer from more than financial neglect. The natural leadership of global public health by the WHO (World Health Organization) has been stymied by having its core budget, provided by member governments, frozen in dollar terms for a decade. And because of an insufficient prioritization on health, the World Bank made remarkably few grants or loans for AIDS, malaria or TB control in Africa during the 1990s (http://www.worldbank.org/html/extdr/pb/pbaidactivities.htm). Until a recent revival of WHO leadership under Gro Harlem Brundtland, the international initiative lay mainly with national donor agencies and their own limited health budgets and limited expertise.
The result has been a hodge-podge of pet projects, often without scientific input or sufficient scale of intervention to make much difference. Donor agencies generally lack mechanisms for ex ante scientific review of proposed projects and ex post evaluation.
The U.S. Needs to Undertake Aggressive Global Efforts to Mitigate the Impact of the HIV/AIDS Epidemic


More people have died from HIV/AIDS over the last twenty years than from any single epidemic in human history. The devastation caused by AIDS poses a clear challenge to long-term U.S. economic and security interests. Whole societies and economies are being deprived of the educated and skilled individuals required to build democratic governments, professional militaries and free market economies. It is in America's interests to undertake aggressive global efforts to mitigate the impact of the epidemic now, before it impacts heavily on Asia, Latin America and Eastern Europe. American leadership to increase funding, to expand the search for a vaccine and access to medicines for the neediest, and to form partnerships with affected governments, businesses and communities will be critical.
More U.S. Leadership is Needed to Coordinate Donor Efforts

But because the efforts this money is paying for are largely uncoordinated and directed mostly at specific high-profile diseases -- rather than at public health in general -- there is a grave danger that the current age of generosity could not only fall short of expectations but actually make things worse on the ground.

This danger exists despite the fact that today, for the first time in history, the world is poised to spend enormous resources to conquer the diseases of the poor. Tackling the developing world's diseases has become a key feature of many nations' foreign policies over the last five years, for a variety of reasons. Some see stopping the spread of HIV, tuberculosis (TB), malaria, avian influenza, and other major killers as a moral duty. Some see it as a form of public diplomacy. And some see it as an investment in self-protection, given that microbes know no borders. Governments have been joined by a long list of private donors, topped by Bill and Melinda Gates and Warren Buffett, whose contributions to today's war on disease are mind-boggling.

Thanks to their efforts, there are now billions of dollars being made available for health spending -- and thousands of nongovernmental organizations (NGOs) and humanitarian groups vying to spend it. But much more than money is required. It takes states, healthcare systems, and at least passable local infrastructure to improve public health in the developing world. And because decades of neglect there have rendered local hospitals, clinics, laboratories, medical schools, and health talent dangerously deficient, much of the cash now flooding the field is leaking away without result.

Moreover, in all too many cases, aid is tied to short-term numerical targets such as increasing the number of people receiving specific drugs, decreasing the number of pregnant women diagnosed with HIV (the virus that causes AIDS), or increasing the quantity of bed nets handed out to children to block disease-carrying mosquitoes. Few donors seem to understand that it will take at least a full generation (if not two or three) to substantially improve public health -- and that efforts should focus less on particular diseases than on broad measures that affect populations' general well-being.

The fact that the world is now short well over four million health-care workers, moreover, is all too often ignored. As the populations of the developed countries are aging and coming to require ever more medical attention, they are sucking away local health talent from developing countries. Already, one out of five practicing physicians in the United States is foreign-trained, and a study recently published in JAMA: The Journal of the American Medical Association estimated that if current trends continue, by 2020 the United States could face a shortage of up to 800,000 nurses and 200,000 doctors. Unless it and other wealthy nations radically increase salaries and domestic training programs for physicians and nurses, it is likely that within 15 years the majority of workers staffing their hospitals will have been born and trained in poor and middle-
income countries. As such workers flood to the West, the developing world will grow even more desperate.

Yet the visionary leadership required to tackle such problems is sadly lacking. Over the last year, every major leadership position on the global health landscape has turned over, creating an unprecedented moment of strategic uncertainty. The untimely death last May of Dr. Lee Jong-wook, director general of the World Health Organization (WHO), forced a novel election process for his successor, prompting health advocates worldwide to ask critical, long-ignored questions, such as, Who should lead the fight against disease? Who should pay for it? And what are the best strategies and tactics to adopt?

The answers have not been easy to come by. In November, China's Dr. Margaret Chan was elected as Lee's successor. As Hong Kong's health director, Chan had led her territory's responses to SARS and bird flu; later she took the helm of the WHO's communicable diseases division. But in statements following her election, Chan acknowledged that her organization now faces serious competition and novel challenges. And as of this writing, the Global Fund to Fight AIDS, Tuberculosis, and Malaria remained without a new leader following a months-long selection process that saw more than 300 candidates vie for the post and the organization's board get mired in squabbles over the fund's mission and future direction.

Few of the newly funded global health projects, meanwhile, have built-in methods of assessing their efficacy or sustainability. Fewer still have ever scaled up beyond initial pilot stages. And nearly all have been designed, managed, and executed by residents of the wealthy world (albeit in cooperation with local personnel and agencies). Many of the most successful programs are executed by foreign NGOs and academic groups, operating with almost no government interference inside weak or failed states. Virtually no provisions exist to allow the world's poor to say what they want, decide which projects serve their needs, or adopt local innovations. And nearly all programs lack exit strategies or safeguards against the dependency of local governments.

As a result, the health world is fast approaching a fork in the road. The years ahead could witness spectacular improvements in the health of billions of people, driven by a grand public and private effort comparable to the Marshall Plan -- or they could see poor societies pushed into even deeper trouble, in yet another tale of well-intended foreign meddling gone awry. Which outcome will emerge depends on whether it is possible to expand the developing world's local talent pool of health workers, restore and improve crumbling national and global health infrastructures, and devise effective local and international systems for disease prevention and treatment.
More U.S. Leadership is Needed to Fight HIV/AIDS in Africa


The future of the massive, international anti-AIDS effort outlined by 128 Harvard faculty last week lies squarely in the hands of the Bush administration, which has given the plan a warm reception but which has yet to pledge any funds, according to Center for International Development Director Jeffrey Sachs.

Though the proposal to spend $4.1 billion annually to combat AIDS in Africa would require financing from many sources, the leadership - and deep pockets - of the United States are essential to give the plan life.

"Without a major U.S. role, this won't happen," Sachs said. "And I think we have to really fight against complacency with evidence right now. This isn't a matter of rich countries feeling good. It's a matter of rich countries doing enough to help poor countries stay alive." Sachs said the U.S. Senate has already voted for a significant increase in dollars to fight AIDS, approving an amendment to spend an additional $200 million in the next fiscal year, which begins Oct. 1, and $500 million in the following year. The problem is that more is needed. "The amounts that were voted ... while showing the right direction, are not enough in my view," Sachs said. "The rich countries have a way of feeling good about things that don't reach the scale that's needed. So one can be pretty sure that more will be done, but there's tremendous risk that nothing close to what needs to be done will be done."

Under the proposal, unveiled in an extraordinary consensus statement by 128 Harvard faculty last week, the United States would pay roughly one-third of an overall annual cost of $4.1 billion to fight the AIDS epidemic raging out of control in Africa today.

The proposal aims to increase the number of people treated with the potent anti-retroviral AIDS drug "cocktails" - a treatment that has proved effective in the developed world - from about 10,000 to 1 million within three years.

"This document has the potential for enormous impact on global health policy," said Richard Marlink, executive director of the Harvard AIDS Institute. "As a result of widespread discussions within our academic community and with our African partners, individual faculty members involved in the HIV epidemic have decided to speak with one voice in addressing the increasing global need for AIDS treatment."
Current U.S. HIV/AIDS Policy is Inadequate

To make significant progress against global poverty, the world needs a partnership of poor and wealthy countries working together. Poor countries are responsible for formulating development plans and goals, allocating resources to achieve the goals, and practicing good governance; wealthy countries need to implement aid, debt and trade policies that support these efforts.

How much would it take to stamp out extreme poverty? Consider what's needed to meet the Millennium Development Goals (MDGs), the international community's targets for significantly reducing poverty and related ills by 2015. According to the UN Millennium Project, the amount of overseas development aid would have to double to $135 billion in 2006, and further rise to $195 in 2015. This would cover the gap between investments that poor countries need to make, and the resources that they have available. These aid flows would then have to be bolstered by fair trade and generous debt relief policies.

The U.S.: Where Does It Stack Up?
As the wealthiest and most powerful country in the world, the United States should be the leader in efforts to improve the lives of the world's poor. Working towards this goal is consistent with American values of creating opportunity for others and relieving human suffering, and necessary to create the conditions for long-term national security and to boost U.S. economic strength through stronger trade relations.

Unfortunately, the United States has not taken up this leadership role. While the U.S. is the single largest international donor in absolute terms, it's one of the least generous countries in terms of aid given per person.

In 1970, donor nations adopted a development assistance target of .7% of GNP, a figure that many experts uphold would enable the world to meet the MDGs. Denmark, Luxembourg, the Netherlands, Norway and Sweden have already reached this target, and six other countries—including the United Kingdom—have committed to timetables to achieve it before 2015.

Meanwhile, the U.S. has failed to establish a timetable to reach this target, and its level of giving remains lagging at around .15% of GNP. In 2002, the U.S. gave $15.6 billion in development assistance, the equivalent of just 13 cents per day per person in government aid, roughly the cost of one cup of Starbucks' coffee a month. In addition, much of this aid has been tied to use of U.S. contractors and goods, which reduces its value.

American aid also often doesn't go to the most needy. Less than half U.S. aid goes to the poorest countries, where people earn less than $2 a day. The main recipients of American aid have traditionally been strategic allies like Israel, Egypt and Russia.
Recent U.S. Aid Initiatives
The Bush Administration has made two important commitments of assistance to poor countries. The Millennium Challenge Account is an initiative to boost aid to poor countries that meet criteria of good governance and open economies by $5 billion per year 2006. Meanwhile, the President's Emergency Plan for AIDS Relief is designed to increase funding to HIV/AIDS programs by $10 billion over five years. While positive steps, both programs have been slow to meet initial funding targets and even criticized as being exemplary of American "go it alone" development policies. Even if fully funded, these programs won't be nearly enough to make the U.S. a leading donor.
PEPFAR Has Failed

Comprehensive prevention programs are designed to confront the variety of factors that increase vulnerability in populations. Lessening a person’s susceptibility to HIV infection incorporates measures such as increasing their access to quality sexual education. It means addressing basic gender inequalities and other dynamics that underpin the disproportionate vulnerability levels that communities experience.

In an ideal analysis, abstinence education would figure as one segment of the “ABC” approach to the prevention of sexual transmission of HIV, educating people to “Abstain, Be faithful, and use Condoms.” Instead, PEPFAR funding has prioritized “abstinence-only” programs, advocating limited condom use only for high-risk populations, and undermining comprehensive prevention policies that had been successful in combating HIV/AIDS. In Uganda, for example, education campaigns based on the “ABC” approach had been credited with dramatically lowering the national HIV prevalence rate to 6% by 2002. However, the recent shift away from education on condom use, influenced by PEPFAR funding guidelines, threatens to reverse this progress.

As recently demonstrated by a Government Accountability Office (GAO) report, policies that over-emphasize abstinence have led to cutbacks in the funding of other approaches. Nine of PEPFAR’s fifteen focus countries decreased the amount in their 2006 budgets for prevention of mother-to-child transmission in order to meet the U.S. requirements for spending on abstinence promotion.

The narrow view of prevention promoted in current U.S. HIV/AIDS policies also leaves women in particular at risk. HIV prevalence rates are elevated and increasing rapidly among married and monogamous women in Africa, who are not addressed in the PEPFAR strategy.
PEPFAR Has Failed

Twenty-five years into the HIV/AIDS pandemic, Africa is “ground zero” of this devastating crisis – home to more than 25 million of the 40 million people living with HIV/AIDS worldwide. U.S. and international policies have fundamentally failed to address the roots and the impact of this pandemic, particularly in Africa. Across the continent, inadequate resources and other challenges continue to fuel HIV/AIDS and undermine African efforts to respond.

International support is critical to turning the tide of this pandemic in Africa and globally, but current U.S. policies on HIV/AIDS hinder the African response to this crisis in several ways. In the realm of HIV prevention, the U.S. continues to allow an ideological bias toward abstinence-only programs to bar the way of best practices and evidence-based approaches. When it comes to treatment, the U.S. preference for expensive, brand name medications rather than generic antiretroviral drugs hinders the pursuit of universal access to treatment in Africa and beyond. U.S. funding levels for HIV/AIDS programs have also fallen far short of the response a crisis of this magnitude demands. At the same time, the U.S. failure to provide strong and consistent support for the Global Fund to fight AIDS, Tuberculosis & Malaria has left this important multilateral initiative without the resources it needs to scale up its HIV/AIDS programs.

More than 80 representatives of African civil society met in Abuja, Nigeria in April 2006 to craft a position paper laying out their main concerns and recommendations for action against HIV/AIDS. In May 2006, African Union member states also convened for the five-year review of the “Abuja Declaration on HIV/AIDS, Tuberculosis and Other Related Infectious Diseases.” Through such fora, civil society organizations and governments in Africa have made their priorities clear. An effective response to HIV/AIDS requires a more urgent and comprehensive approach from the U.S. and the international community. It requires greater funding, a scale-up of effective prevention, treatment, care and support programs, support for the rights and needs of women and girls, and new investments in Africa’s human resources and health care infrastructure.

But despite these clear priorities, the U.S. continues to pursue policies that betray Africa’s most urgent needs in the fight against HIV/AIDS.

PEPFAR – the U.S. framework for fighting HIV/AIDS in Africa

In his 2003 State of the Union Address, President Bush announced a new program to act as a framework for U.S. contributions to the fight against HIV/AIDS: the President’s Emergency Plan for AIDS Relief (PEPFAR). Rather than engaging in multilateral initiatives and supporting pre-existing programs for prevention, treatment and care, the U.S. chose instead to launch its own parallel and unilateral initiative, creating a new and duplicative bureaucracy for HIV/AIDS work.
Twelve African countries are among the fifteen targeted by PEPFAR, a proportion that represents less than a quarter of the continent. This selective approach flies in the face of efforts to promote a comprehensive and coherent response to the continent-wide crisis.

The PEPFAR plan authorized spending of up to $15 billion over the course of five years, with $1 billion slated for the Global Fund to Fight AIDS, Tuberculosis and Malaria. Of the total, only $9 billion was new money, to be added to $5 billion in old bilateral assistance programs. In addition, only a portion of that money was to be dedicated to fighting HIV/AIDS in Africa, despite the President’s original promise that the initiative would focus on the HIV/AIDS crisis in Africa and the Caribbean.

The funds devoted to PEPFAR programs were allocated by Congress with specific parameters: 55% for treatment of individuals with HIV/AIDS; 15% for palliative care of individuals with HIV/AIDS; 20% for HIV/AIDS prevention; and 10% for the support of orphans and vulnerable children. In spreading out the U.S. contribution over five years, President Bush promised to make gradual increases in funding, but a real U.S. investment in the fight against HIV/AIDS in Africa would involve a significant increase to scale up essential programs and to build Africa’s health care infrastructure. This kind of financial commitment has not been a U.S. policy priority, as recent funding levels show. Meanwhile, an August 2005 UNAIDS report projects the level of resources needed to fully address the pandemic will be more than $18 billion for 2007.

In addition to criticism of the U.S. failure to input its fair share to funding of HIV/AIDS programs, policies included within PEPFAR programs and examined below have actually detracted from African countries’ capacities to adequately and comprehensively address this crisis.
PEPFAR: Abstinence Focus Is Bad
The Center for Health and Gender Equity, 2005

Funding for abstinence and faithfulness programs under the President’s Emergency Plan for AIDS Relief (PEPFAR) increasingly replaced comprehensive HIV prevention in fiscal years 2004 and 2005, and the U.S. is sending fewer condoms abroad today than in 1990, according to two new analyses by the Center for Health and Gender Equity (CHANGE). The analyses show that shifts in prevention policy acutely affect sub-Saharan Africa, the region hardest hit by the HIV epidemic. [Find a summary of key findings at www.genderhealth.org/AIDS.php.]

“PEPFAR policies and funding streams do not reflect the needs of the people at highest risk of HIV infection,” stated Jodi Jacobson, Executive Director of CHANGE. In sub-Saharan Africa, 80 percent of new infections are the result of unprotected sex, often within marriage. The highest rates of new infection are among those ages 15 to 24 and among married women in their twenties and thirties.

New guidance by the Office of the Global AIDS Coordinator (OGAC), first reported in the Baltimore Sun on December 10, 2005, requires that two-thirds of all funding for prevention of sexual transmission in fiscal year 2006 be spent on abstinence and faithfulness programs. Jacobson argues, “OGAC has far greater leeway in interpreting prevention policies in support of comprehensive approaches, but is refusing to take a broader approach in the interest of catering to a narrow ideological agenda.”

According to CHANGE, this guidance reflects the on-going change in U.S. HIV prevention policy. This includes moving from comprehensive strategies toward abstinence-only and be faithful programs for the general population; flat funding for condom procurement and condom distribution; and condom social marketing only for specific groups such as commercial sex workers and truck drivers.

“On my recent trip to Nigeria,” reported Jacobson, “I found growing resistance to and resentment of the restrictions imposed on prevention programs by PEPFAR among women's groups, youth groups, treatment advocates, medical professionals, and government and donor officials.” In Nigeria, where 55 percent of those ages 15 to 24 are already sexually active, effective condom social marketing programs previously funded by the United States are being replaced by abstinence messages, such as the “Zip Up” campaign. At the same time, large amounts of funding are being granted to faith-based groups rather than public health institutions.

“In 2004, we sent fewer condoms and more stigmatizing messages to Africa in the face of an epidemic that is driven primarily by unsafe sex,” asserted Jacobson. “With 5 million new infections each year, this approach cannot be justified. We call on the Bush Administration to revoke the restrictions on prevention funding and engage in a
transparent process of reviewing the goals, objectives, and procurement procedures for prevention programs under PEPFAR.”
Abstinence Focus Bad

In fact, any successful prevention strategy has to promote women's social and economic rights. Yet the dominant approach remains the Bush administration's ill-conceived “ABC” strategy: “Abstain, Be faithful, use Condoms.” Abstinence is not a choice for women who are raped or coerced into sex. Faithfulness is irrelevant for women whose husbands have multiple partners (for African women, marriage is actually a risk factor for contracting HIV). And condoms—presented by the Bush administration as a “last resort” in the fight against AIDS—depend on men's willingness to use them and both partner's willingness to forgo having children. Moreover, by placing the burden for prevention on individual behavior, the ABC strategy allows policymakers to ignore the poverty and inequality that form the breeding ground for AIDS.
More HIV/AIDS Prevention Is Needed

African civil society organizations have pointed out that achieving the many targets established by the international community in the fight against HIV/AIDS requires immediate action to drastically expand access to adequate prevention services, health care and affordable treatment. The resources are available, and effective programs exist. What is needed is more financial support, and more effective U.S. policies that support African priorities.

Africa Action joins the voices of civil society across the continent in calling for U.S. policies that secure sustainable financing for effective HIV/AIDS prevention and treatment programs funded by the Global Fund and other bodies. Africa Action calls for a greater U.S. investment in developing Africa’s health care infrastructure, a new focus on addressing the rights and needs of women and girls, and a new commitment to achieving the goal of universal treatment access by 2010.

A successful approach to defeating HIV/AIDS globally will require a greater focus on supporting African efforts to turn the tide of this pandemic, and a new appreciation for the priorities of African governments and civil society who are on the front-lines of this crisis.
Increasing Education Will Lead to Improved Health


The one social factor that researchers agree is consistently linked to longer lives in every country where it has been studied is education. It is more important than race; it obliterates any effects of income.

Year after year, in study after study, says Richard Hodes, director of the National Institute on Aging, education “keeps coming up.”

And, health economists say, those factors that are popularly believed to be crucial — money and health insurance, for example, pale in comparison.

Dr. Smith explains: “Giving people more Social Security income, or less for that matter, will not really affect people’s health. It is a good thing to do for other reasons but not for health.”

Health insurance, too, he says, “is vastly overrated in the policy debate.”

Instead, Dr. Smith and others say, what may make the biggest difference is keeping young people in school. A few extra years of school is associated with extra years of life and vastly improved health decades later, in old age.

It is not the only factor, of course.

There is smoking, which sharply curtails life span. There is a connection between having a network of friends and family and living a long and healthy life. And there is evidence that people with more powerful jobs and, presumably, with more control over their work lives, are healthier and longer lived.

But there is little dispute about the primacy of education.

“If you were to ask me what affects health and longevity,” says Michael Grossman, a health economist at the City University of New York, “I would put education at the top of my list.”

Graduate Student Finds Answer

The first rigorous effort to decide whether education really changes people so they live longer began in a most inauspicious way.

It was 1999 and a Columbia University graduate student, Adriana Lleras-Muney, was casting about for a topic for her doctoral dissertation in economics. She found an idea in a paper published in 1969. Three economists noted the correlation between education and
health and gave some advice: If you want to improve health, you will get more return by investing in education than by investing in medical care.

It had been an inflammatory statement, Dr. Lleras-Muney says. And for good reason. It could only be true if education in and of itself caused good health.

But there were at least two other possibilities.

Maybe sick children did not go to school, or dropped out early because they were ill. Or maybe education was a proxy for wealth, and it was wealth that led to health. It could be that richer parents who gave their children everything, including better nutrition, better medical care and a better education, had children who, by virtue of being wealthy, lived longer.

How, she asked herself, could she sort out causes and effects? It was the chicken-and-egg problem that plagues such research.

The answer came one day when Dr. Lleras-Muney was reading another economics paper. It indicated that about 100 years ago, different states started passing laws forcing children to go to school for longer periods. She knew what to do.

“The idea was, when a state changed compulsory schooling from, say, six years to seven years, would the people who were forced to go to school for six years live as long as the people the next year who had to go for seven years,” Dr. Lleras-Muney asked.

All she would have to do was to go back and find the laws in the different states and then use data from the census to find out how long people lived before and after the law in each state was changed.

“I was very excited for about three seconds,” she says. Then she realized how onerous it could be to comb through the state archives.

But when her analysis was finished, Dr. Lleras-Muney says, “I was surprised, I was really surprised.” It turned out that life expectancy at age 35 was extended by as much as one and a half years simply by going to school for one extra year.

Her prize-winning paper appeared in Review of Economic Studies. And she ended up with a job as an assistant professor at Princeton. Now, others papers have appeared, examining the effects of changed laws on compulsory education in Sweden, Denmark, England and Wales. In every country, compelling children to spend a longer time in school led to better health.

“You might think that forcing someone to go to school who does not want to be there may not be the same thing as going to school because you want to,” Dr. Lleras-Muney said. “That did not seem to be the case.”
Not everyone was convinced.

Victor Fuchs, a health economist at Stanford, points out that it is not clear how or why education would lead to a longer life.

And, he said, there are other mysteries. For example, women increased their years of schooling more than men have in recent decades. But men are catching up with women in their life spans.

And it might be expected that after a certain point, more years of school would not add to a person’s life span. That, however, is not what the data shows. The education effect never wanes. But most researchers say they are swayed by Dr. Lleras-Muney’s work and the studies in other countries. That, though, leaves the question of why the education effect occurs.

Dr. Lleras-Muney and others point to one plausible explanation — as a group, less educated people are less able to plan for the future and to delay gratification. If true, that may, for example, explain the differences in smoking rates between more educated people and less educated ones.

Smokers are at least twice as likely to die at any age as people who never smoked, says Samuel Preston, a demographer at the University of Pennsylvania. And not only are poorly educated people more likely to smoke but, he says, “everybody knows that smoking can be deadly,” and that includes the poorly educated.

But education, Dr. Smith at RAND finds, may somehow teach people to delay gratification. For example, he reported that in one large federal study of middle-aged people, those with less education were less able to think ahead.

“Most of adherence is unpleasant,” Dr. Smith says. “You have to be willing to do something that is not pleasant now and you have to stay with it and think about the future.”

He deplores the dictums to live in the moment or to live for today. That advice, Dr. Smith says, is “the worst thing for your health.”

An Observation on the Street

In the late 1970’s, Lisa Berkman, now a professor of public policy at the Harvard School of Public Health, took a part-time job at a San Francisco health care center. It drew people from Chinatown and the city’s Italian neighborhood, North Beach, as well as from the Tenderloin district, a poor area where homeless people lived on the streets and mentally ill people roamed. And she noticed something striking.

“In Chinatown and North Beach, there were these tightly bound social networks,” Dr. Berkman recalls. “You saw old people with young people. In the Tenderloin, people were
just sort of dumped. People were really isolated and did not have ways of figuring out how to make things work.”

A few years later, she was haunted by that observation. She had entered graduate school and was studying Seventh-day Adventists when she began to wonder whether the standard explanation for their longer lives — a healthy, vegetarian diet — was enough.

“They were at decreased risk from many, many diseases, even ones where diet was not implicated,” Dr. Berkman says. And, she adds, “it seemed they simply had a slower rate of aging.”

Seventh-day Adventists, like the people in Chinatown and North Beach, had “incredibly cohesive social networks,” Dr. Berkman notes. Could that be the clue?

Thirty years later, studies have borne out her hunch.

The risks of being socially isolated are “phenomenal,” Dr. Berkman says, associated with twofold to fivefold increases in mortality rates. And the correlations emerged in study after study and in country after country.

Yet, Dr. Berkman adds, there was that perennial question: Did social isolation shorten lives or were people isolated because they were sick and frail and at great risk of death?

She knows that sometimes ill health leads to social isolation. But, Dr. Berkman says, the more she investigated, the more evidence she found that social isolation might also lead to poor health and a shorter life by, for example, increasing stress and making it harder to get assistance when ill.

But researchers also warn that their findings that education and, to a lesser degree, social networks, may directly affect health do not necessarily mean that other hypotheses would also hold up. The cautionary tale, health economists say, is the story of the link between health and wealth.

Over and over again, studies show that health is linked to wealth. It even matters where a person lives.

For example, in a new analysis of Medicare beneficiaries, Stephanie Raymond and Kristen Bronner of Dartmouth College find that the lowest death rates are in the wealthiest places. So in San Francisco, with a per capita income of $57,496, just 4.16 percent of Medicare beneficiaries die each year. But in Tuscaloosa, Ala, whose per capita income is $24,257, the annual death rate was 5.97 percent.

Race was not a large factor.

“If you control for where people live, the disparities between black and white mortality rates become much smaller,” said Jonathan Skinner, a Dartmouth health economist.
An obvious explanation is that wealth buys health. And it seems plausible. Poorer people, at least in the United States, are less likely to have health insurance or access to medications.

But Dr. Fuchs says, then why don’t differences between rich and poor shrink in countries where everyone has health care?

“All you have to do is look at the experience of countries like England that have had health insurance for more than 40 years,” he says. “There is no diminution in the class differentials. It’s been the same in Sweden. It’s true everywhere.”

In fact, Dr. Smith says, the wealth-health connection, at least among adults, goes in the wrong direction. It is not that lower incomes lead to poor health so much as that poor health leads to lower incomes, he found.

A Skewing of the Numbers

Sick people tend to have modest out-of-pocket medical expenses, but often are unable to work or unable to work full time.

The result can be a drastic and precipitous and long-lasting drop in income. As the ranks of middle- and upper-income populations become depleted of people who are ill, there is a skewing of the data so healthy people are disproportionately richer.

That effect emerged when Dr. Smith analyzed data from the National Institute on Aging’s National Health and Retirement Survey, a national sample of 7,600 American households with at least one person aged 51 to 61.

If someone developed cancer, heart disease or lung disease — which will affect about a fifth of people aged 51 to 61 over the next eight years — the household’s income declined by an average of more than $37,000. And its assets — its wealth — fell by $49,000 over the ensuing eight years, even though out-of-pocket medical expenses were just $4,000.

Dr. Smith also asked whether getting richer made people healthier, an effect that could translate into a longer life. It does not, he concluded after studying the large increases in income during the stock market surge of the 1990s.

“I find almost no role of financial anything in the onset of disease,” Dr. Smith says. “That’s an almost throw-you-out-of-the-room thing,” he confesses, but the data, he and other economists insist, is consistent.

Income, says Dr. Preston, “is so heavily influenced by health itself.”

Much More Than Genes and Luck
As director of the National Institute on Aging, Dr. Hodes often speaks to policy makers, giving briefings on the latest scientific findings. But, he and others say, all too often there is a disconnect.

There are some important findings: Health and nutrition early in life, even prenatally, can affect health in middle and old age and can affect how long people live.

For the most part, genes have little effect on life spans. Controlling heart disease risk factors, like smoking, cholesterol, blood pressure and diabetes, pays off in a more vigorous old age and a longer life. And it seems increasingly likely that education plays a major role in health and life spans.
AIDS Education Are Successful

Sizanani, which means "help each" other in Zulu, is a project between HIVSA, a nonprofit associated with the Chris Hani Baragwanath hospital in Soweto, and WorldCamps, an organization founded by American Philip Lilienthal whose family has run a summer camp in Maine for decades. This month's camp was the first of six planned in South Africa this year for girls and boys. Each camp will be followed up by weekend activities run by HIVSA.

The idea, says Mr. Lilienthal, is to mix fun and games with AIDS awareness, cooperation, and a lot of love - something that has been absent from many of these children's lives.

"The biggest thing is just to have the counselors available for affection and for attention," says Lilienthal, a former lawyer and Peace Corps volunteer in Ethiopia. "The emotional needs are so obvious."

Some of the counselors are former Peace Corps volunteers or Americans who have worked in summer camps before, while others are young South Africans involved in AIDS work and counseling.

Lawrence Ndou, a 29-year-old AIDS counselor from Soweto, teaches daily life-skills classes to campers, focusing on issues like AIDS prevention and respect. Most of the messages are ones the boys have heard before - and ones Mr. Ndou has been preaching for years.

But to his surprise and shock, the messages weren't getting through.

"Believe you me, most kids here at this camp, they have engaged in sex and it was a shocking discovery for me that most of them have engaged in unprotected sex," he says. "I was kind of, basically, horrified."

So Ndou set out to debunk myths the boys pick up from friends. The campers, who range in age from 10 to 16, said they believed the lubrication on condoms contained worms that came out in the sun or in water, and that government-issued condoms contained holes. Armed with boxes of condoms, he challenged the boys to conduct their own experiments. No worms or holes to be found.

"It's not like school," says Thabanga. "I learned things about AIDS that I didn't know before."

The problem with too many AIDS programs, say camp organizers, is that too often the messages are thrown at young people by people they have no reason to trust. But after
just over a week of eating, living, and playing together, the counselors say they've built strong bonds with the boys.

"Nobody wants to go home. They want to stay here for at least another week," says Katlego Skosana, a dread-locked young counselor from Soweto. "They said to me, 'When we first came here we never thought we'd get so much love from strangers, but it's true that we got love and we felt special.' I was in tears knowing that I've touched some of the kids here." The experience has led Mr. Skosana, who just finished a business degree, to rethink his career and become a teacher.

By the last day of camp, even the tough older boys are sad to go. During final room meetings, a few cry and all sit quietly and respectfully while their friends discuss what they have learned. For the campers, many of whom are returning to difficult lives in the hard world of South Africa's townships and squatter camps, Sizanani is a place where they can just be kids.

"My mom forced me to come," says 15-year-old Fanuel Bhengu, as he waits to go back into the soccer game. "Now I see that it is beautiful. Camp is fun."
AIDS Education Leads to a Decrease in Number of AIDS Cases

A scientific study says there has been a significant drop in the number of Aids cases in Uganda. The study in the journal, Science, attributes the decrease to a successful public education campaign. This has led to a reduction in the number of people having casual sex, as well as the willingness of Ugandans to openly discuss HIV issues. The scientists called for the Ugandan approach to Aids prevention to be adopted in other countries.

Casual sex

HIV cases in Uganda dropped by 70% in the 1990s. The government's message clearly stated that Aids was deadly and that it spread through sexual activity. Because of this, HIV is now openly discussed amongst friends and family. This led to a fall of 60% of people reporting they had casual sex. Other African countries studied have similar levels of condom use as Uganda, but little reduction in the number of sexual partners. According to the scientists, only a vaccine - as yet undeveloped - that worked in 80% of all cases would have a similar effect.
HIV/AIDS Education Prevents the Spread of the Infection

Each year there are more and more new HIV infections, which shows that people either aren't learning the message about the dangers of HIV, or are unable or unwilling to act on it. Many people are dangerously ignorant about the virus, with surveys around the world showing alarmingly low levels of awareness and understanding about HIV amongst many groups. Education can help to overcome such ignorance, and thereby prevent HIV infections from occurring.

Education needs to be an ongoing process, because each generation of young people need to be informed about how they can protect themselves from HIV as they grow up. Older generations, who have already hopefully received some AIDS education, may need the message reinforced, so that they continue to take precautions against HIV infection, and are able to inform younger people of the dangers.

There are three main reasons for AIDS education:
To prevent new infections from taking place
This can be seen as consisting of two processes: firstly, giving people information about HIV and AIDS, such as how they are transmitted and how people can protect themselves from infection. Secondly, people must be taught how to put this information to use and act on it practically - how to get and use condoms, how to suggest and practice safer sex, how to prevent infection in a medical environment or when injecting drugs.

To improve quality of life for HIV positive people
Too often, AIDS education is seen as being something which should be targeted only at people who are not infected with HIV in order to prevent them from becoming infected. When AIDS education with HIV positive people is considered at all it is frequently seen only in terms of preventing new infections by teaching HIV+ people about the importance of not passing on the virus. An important and commonly-neglected aspect of AIDS education with HIV positive people is enabling and empowering them to improve their quality of life. HIV positive people have varying educational needs, but among them are the need to be able to access medical services and drug provision and the need to be able to find appropriate emotional and practical support and help.

To reduce stigma and discrimination
In many countries there is a great deal of fear and stigmatisation of people who are HIV positive. This fear is too often accompanied by ignorance, resentment and ultimately, anger. Sometimes the results of prejudice and fear can be extreme, with HIV positive people being burned to death in India, and many families being forced to leave their homes across the United States when neighbours discover a family-member's positive status. Discrimination against positive people can help the AIDS epidemic to spread,
because if people are fearful of being tested for HIV, then they are more likely to pass the infection to someone else without knowing.
Developing an HIV/AIDS Vaccine Would Enhance Global Security

It bears repeating that were extremely aggressive prevention and vaccine research efforts executed and well funded today, they could render the security concerns of tomorrow moot. Sadly, such funding has not been forthcoming. In 2004, total global spending on HIV vaccine development, public and private, was $680 million, $526 million of which came from the U.S. government and $70 million of which came from private corporations and charities. That amounted to just one percent of total spending on HIV-related programs.

In the aftermath of September 11, 2001, the United States tends to define all national security concerns through the prism of terrorism. That framework is overly limited even for the United States, and an absurdly narrow template to apply to the security of most other countries. The HIV/AIDS pandemic is aggravating a laundry list of underlying tensions in developing, declining, and failed states. As the burden of death due to HIV/AIDS skyrockets around the world over the next five to ten years, the disease may well play a more profound role on the security stage of many nations, and present the wealthy world with a challenge the likes of which it has never experienced. How countries, rich and poor, frame HIV/AIDS within their national security debates today may well determine how well they respond to the massive grief, demographic destruction, and security threats that the pandemic will present tomorrow.
A continued rise in the number of Africans living with HIV and dying from AIDS is not inevitable. There is growing evidence that HIV prevention efforts can be effective, and this includes initiatives in some of the most heavily affected countries.

In some countries there have been early and sustained HIV prevention efforts. For example, effective HIV prevention campaigns have been carried out in Senegal, which is still reflected in the relatively low adult HIV prevalence rate of 0.9%. Also, the experience of Uganda shows that a widespread AIDS epidemic can be brought under control. HIV prevalence in Uganda fell from around 15% in the early 1990s to around 5% by 2001. This change is thought to be largely due to intensive HIV prevention campaigns.

More recently, similar declines have been seen in Kenya, Zimbabwe and urban areas of Zambia and Burkina Faso. However, the extremely severe AIDS epidemics in South Africa, Swaziland and Mozambique continue to grow.

Overall a massive expansion in prevention efforts is needed, and although there is no single or immediate tool to prevent new HIV infections, the major components of a successful HIV prevention programme are now known.