

Stemming the Tide of the HIV/AIDS Epidemic in Africa

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at the **First International Conference on the State of Affairs of Africa**
Sponsored by the *International Institute for Justice and Development*

According to the UNAIDS 2006 Report, an estimated 38.6 million people are living with HIV worldwide, 4.1 million were newly infected in 2005 and 2.8 million died of AIDS in 2005. The majority more than 60% of the people in all these categories live in Sub-Saharan Africa. More than two decades have passed since researchers identified HIV as the cause of AIDS. More money has been spent on vaccine research and design than on any other vaccine effort in recent years; more than 50 different vaccine preparations have entered clinical trials. Yet, an effective HIV vaccine, which potentially could protect against millions of new HIV infections each year, remains a distant dream.

AZT, or zidovudine, the first antiretroviral (ARV) drug for the treatment of HIV infection, was licensed in 1987. Subsequent ARVs have been used in combination as Highly Active Anti-Retroviral Therapy (HAART), which has dramatically improved the prognosis of people living with HIV/AIDS, particularly in developed countries, where the majority of HIV-infected people can afford such treatments. Nevertheless, we still have to recognize that HAART has not been effective in eradicating latent reservoirs of virus, which contribute to virus resurgence when therapy is discontinued. It is now widely accepted that the strategy that will offer the best prospect for long-term control of HIV/AIDS in Africa is vaccination.

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 new infections occurred during that year. In just the past year the epidemic has claimed the lives of an estimated 2 million people in this region. More than twelve million children have been orphaned by AIDS.

The extent of the epidemic 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 on the continent will continue to rise. This means that the epidemic's impact 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 realization of this situation, the leaders of African countries met in Abuja in 2001 and adopted the Abuja Declaration in which they affirmed the gravity of the HIV/AIDS epidemic in Africa and committed themselves to the pursuit of a vaccine for the control of HIV /AIDS.

HIV prevalence rates vary greatly between African countries. According to UNAIDS estimates, the prevalence in Somalia and Senegal is under 2% of the adult population, whereas in South Africa and Zambia around 15-20% of adults are infected. In four southern African countries, the national adult HIV prevalence rate has risen higher than was thought possible and now exceeds 20%. These countries are Botswana (24.1%), Lesotho (23.2%), Swaziland (33.4%) and Zimbabwe (20.1%). West Africa has been less affected by HIV, but the prevalence rates in some countries are creeping up. Prevalence is estimated to exceed 5% in Cameroon (5.4%), Côte d'Ivoire (7.1%) and Gabon (7.9%). Until recently the national prevalence rate has remained relatively low in Nigeria, the most populous country in Sub-Saharan Africa. The rate has grown slowly from below 2% in 1993 to 3.9% in 2005. But some states in Nigeria are already experiencing HIV infection rates as high as those now found in Cameroon. Already around 2.9 million Nigerians are estimated to be living with HIV. Adult HIV prevalence in East Africa exceeds 6% in Uganda, Kenya and Tanzania.

The present situation of HIV/AIDS in Africa and its burden on the nations health and economy has been documented in detail by different institutions. Despite a variety of preventive and treatment measures being undertaken by stakeholders and development partners to stem the tide of the epidemic, it is clear that these measures have failed to reduce the rate of spread of HIV/AIDS in African countries. It has become therefore, necessary to explore new approaches for delivering the current strategies or to adopt completely new measures. Vaccination is one such obvious new measure, with each passing day, as the epidemic spreads to new parts of the world, the search becomes more urgent. In the absence of a vaccine, another 60 million people may be infected with HIV by the year 2010 according to UNAIDS.

For the past 20 years, scientists around the world have been confronting one of the greatest medical challenges in human history: the search for an AIDS vaccine. There have been more failures than successes to date in the search for an AIDS vaccine. Millions of lives and many years have slipped away as researchers struggle with the scientific, economic and political challenges of finding a vaccine. But there is cause for optimism, and hope for a coordinated international enterprise promising to fund a new wave of research.

Treatment of HIV/AIDS can be specific, using ARVs to reduce the viral load, or non-specific, treating or preventing concurrent or opportunistic diseases. In both cases, treatment does not lead to cure of the HIV infection, but only reduces the rate of disease progression. In some developed countries, where ARV treatment (ART) has been available for several years, HIV may now be considered a chronic infection that has

only a limited effect on life expectancy. Although many African countries currently have HIV/AIDS treatment programs, the limitations are so many that treatment cannot be relied upon to make a significant impact on the incidence of new HIV infections under the present circumstances, hence, most efforts in Africa have been devoted to prevention rather than treatment.

Several components of prevention and education programs have been described, such as Information, Education and Communication (IEC) techniques to change behavior, programs to prevent mother-to-child transmission (MTCT) of HIV, voluntary counseling and testing (VCT) for HIV infection, and prevention and treatment of other infections such as sexually transmitted infections (STIs) and tuberculosis (TB).

As a vaccine against HIV remains the best hope for bringing the epidemic under control, an intensive global effort is underway to develop such a vaccine; however, the challenges are considerable. Given our present state of knowledge on HIV and the treatment and prevention strategies currently available, vaccines offer the best hope for the effective containment of HIV epidemic in Africa. Therefore its development is an ethical imperative. Failure to pursue it would be equivalent to being guilty of neglect of the millions being ravaged by the disease in Africa. The global community is morally responsible for doing everything in its power to encourage and support research that would lead to the development of these vaccines. Scientists in developed countries and the major international pharmaceutical companies need to commit themselves to using some of their enormous human and material resources towards this end. The government of developed countries should encourage them in this regard through several incentives for the work and undertakings to assure them (particularly the pharmaceutical companies) of profitable returns on their investment. The endemic countries of Africa are not in a position to engage in the type of strategic research that can lead to vaccine production. They should, however, be able to give assurance of their willingness to encourage and support clinical trials of these vaccines in their populations when they become available. They should encourage their citizens to participate in trials and should not take any measures that would discourage participation. For example, in some countries in Africa, pregnant women are asked without prior counseling to have HIV tests. Those whose tests are positive are denied registration for antenatal care and face the accompanying stigmatization. This kind of situation would need to be avoided when screening volunteers for participation in HIV clinical trials. Indeed, this practice should be discontinued forthwith as its continuation would militate against getting volunteers for participation in HIV trials in future. In the meantime, Africans should start developing south-south linkages with other potential trial host countries and north-south linkages with potential sponsoring countries with a view to expanding knowledge and strengthening capacity for research in the clinical, scientific and ethical fields.

It is clear that the present HIV/AIDS control strategies are not likely to achieve a meaningful reduction in the incidence of the disease in the near future. While research should continue to improve our present prevention and treatment interventions,

additional strategies are required. Thus far, it is safe to conclude that vaccination is the intervention that offers the best hope for controlling and ultimately eradicating HIV/AIDS in Africa and global efforts need to be intensified to develop, produce, evaluate, and deploy a suitable vaccine for HIV/AIDS in Africa as soon as possible.