

Confronting Global AIDS: Prevention and Treatment

The era of apathy in the face of the HIV pandemic may be ending. A global groundswell of grassroots AIDS activism focusing on treatment access has challenged the inertia of policymakers, public health experts, and private industry. The campaign has won significant price concessions from the large pharmaceutical companies and forced changes in US trade policies that opposed efforts to produce generic versions of AIDS-related drugs. As prices dropped, the possibility of treatment converted the public perception of AIDS from an insolvable tragedy to a moral issue and an opportunity to save lives. Most important, the prospect of treatment that can alleviate suffering and postpone death has instilled hope in millions of individuals and mobilized the broader society in some of the most severely affected countries.

AN INTEGRATED APPROACH

As momentum has grown, the campaign has broadened and now demands that governments and international agencies develop a comprehensive plan to stop the global epidemic. Secretary-General of the United Nations Kofi Annan, labeling the fight against HIV his "personal number one priority," has responded by calling for the establishment of a \$7 billion to \$10 billion global health fund that would integrate prevention, treatment, and care of HIV, tuberculosis, and malaria. The basic

HIV-related goals of this program are as follows:

- Stopping the epidemic spread of HIV
- Decreasing the morbidity and mortality caused by AIDS
- Strengthening the health care infrastructure and grassroots organizations in the most severely affected countries
- Minimizing the transmission of HIV to future generations
- Developing and distributing an effective, safe vaccine
- Conducting the research needed to meet the other goals

The global health fund is potentially a tremendous step forward in uniting the world to confront AIDS. Unfortunately, but perhaps not unexpectedly, this proposal to integrate treatment and prevention has proved controversial. Some respected public health experts oppose the introduction of treatment into the most severely affected countries. They cite the limitations and dangers of antiretroviral treatment and express concern that HIV will be "medicalized" and prevention efforts lessened. These dangers, while not limited to low-income countries, are real and must be addressed.

ACCESS TO TREATMENT IS CRITICAL

There are, however, powerful reasons for, and compelling examples of, the synergy between treatment and prevention. Brazil, which guarantees antiretroviral treatment and treatment for opportunistic infections to all who

need it, has seen a dramatic reduction in the incidence of new cases of HIV as well as the expected decline in deaths. The social mobilization that accompanied the introduction of universal treatment has been key to more effective prevention efforts. The lessons from Brazil, as well as from smaller model programs in other low-income countries, suggest that access to treatment is a critical component of any program to stop the HIV epidemic.

1. *Prevention alone is inadequate in countries with established, high-prevalence epidemics.* The majority of new cases of HIV occur in those countries that have established epidemics, with more than 5% of the adult population infected. These countries, almost exclusively in sub-Saharan Africa, carry an enormous burden of suffering and death, particularly among young adults, traditionally the most productive members of a society. As mortality rates go up, these countries are regressing in terms of economic development. Massive social dislocation is occurring as families are decimated and the number of orphans rises. An approach that can only offer condoms or counsel abstinence is woefully inadequate and cannot penetrate the inertia and sense of hopelessness that accompanies epidemic death and dying.

Treatment and care offer people hope. The prospect of treatment that can alleviate suffering and postpone death can instill hope in individuals and mobilize the society. People are much more likely to seek access to the

health care system or community-based organizations for treatment and care than simply for prevention. More effective prevention can be accomplished through these venues than through the mass media, billboards, and speeches, and increased use of these venues will lead to the exposure of more people to prevention interventions.

2. *Treatment helps preserve a society's human infrastructure.* If there is one lesson that has been learned after 20 years of the HIV epidemic, it is that people do prevention. People organize the community-based organizations, staff the family planning and prenatal clinics, write the prevention pamphlets, or simply tell their neighbors that it is a good idea to get tested. Often the most effective and committed advocates for prevention are those who are HIV-positive themselves. Treatment helps to keep these people alive and motivated. Their leadership is as vital as that of any country's political leaders. Only treatment can preserve the human infrastructure, without which building health centers and laboratories will be futile.

3. *Treatment will increase voluntary testing and help break the silence.* It is widely acknowledged that stigma is a major obstacle to mobilizing communities to fight HIV. Isolation from family, social ostracism, and even physical violence can accompany a diagnosis of HIV in many areas of the world. Stigma (and all that accompanies it) is a powerful disincentive for individuals to get tested or to talk about having HIV once diagnosed. Silence kills, and thus the Durban Conference slogan, "Break the Silence."

Treatment offers a powerful life-or-death incentive for people

to be tested. Testing, as well as the counseling that should accompany it, is a crucial part of any strategy to stop the HIV epidemic. For those who test negative, counseling reinforces the need for prevention; for those who test positive, counseling will direct them into care and support groups, help them with the decision to disclose, and educate them about maintaining their own health and preventing transmission to others. Individual disclosure (and the resultant societal discussion) is the only way to lessen stigma.

4. *Treatment can reduce vertical and horizontal transmission.*

UNAIDS estimates that 600 000 babies a year are now born HIV-positive. Tested interventions with antiretroviral treatments have been shown to reduce transmission from mother to child by 50% to 90%. Some of the governments and agencies that are generally critical of expanded treatment access strongly support maternal-to-child transmission (MTCT) programs. However, MTCT programs will be handicapped if they are funded and run outside a more comprehensive treatment and care program.

MTCT programs rely on voluntary testing of pregnant women. Women who know that they can save themselves as well as their babies have an even greater incentive to be tested. Expanded treatment that includes MTCT programs could quickly and dramatically reduce the number of children infected and decrease the growing number of orphans.

Epidemiologic data suggest that lowered viral load may reduce horizontal transmission.¹ In a Ugandan study of serodiscordant heterosexual couples, no HIV-positive person with a viral

load under 1500 transmitted HIV to his or her sexual partner. Whether the same is true for someone whose viral load is reduced by medication is unanswered, but it is scientifically plausible. This cannot be translated directly into a prediction of what will happen on a population level, but some simulations suggest a significant reduction in incident cases.

5. *Expanded treatment will create the infrastructure needed for effective vaccine distribution.* The most important development in HIV prevention will be the development of a safe and effective vaccine. Initial candidate vaccines involve multiple injections over several months, requiring a health care system that can access and follow patients. It is also likely that vaccine recipients will require HIV testing. This is exactly the type of infrastructure that will be built up through expanded treatment access.

CONCLUSION

The public health community now has the opportunity to support and participate in a coordinated and comprehensive effort to stop the epidemic spread of HIV and mitigate the individual suffering and societal damage done by the epidemic over the past 20 years. By itself, this would be a tremendous step forward toward a vision of global public health.

The current initiative proposes to do more. It directly links prevention and treatment of tuberculosis and malaria with prevention and treatment of HIV. Tuberculosis and malaria are often cited as public health failures and grounds to doubt the world's ability to control HIV. The Annan initiative poses a different possi-

bility: it proposes to mobilize the financial resources, the societal commitment, the political leadership, and the expertise necessary to control HIV, and the same energy and resources will be used to control tuberculosis and malaria. Human and physical infrastructures will be built in those countries that are most affected and will contribute to their future development.

This vision is unabashedly optimistic, but it is not necessarily utopian. This is a time when the public health community throughout the world should be enthusiastically organizing support and demanding full funding for all components of the Annan initiative. Debates that counterpose prevention and treatment can potentially undermine the momentum that has been generated by treatment access campaigns in both high-income and low-income countries. The world has been humbled by the HIV epidemic and enriched by the lives and lessons of those who have struggled against it. We need to take the next step toward ending it. ■

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Public Health and Changes in Illicit Drug Prices

In this issue of the Journal, Caulkins shows that in the United States between 1981 and 1996, an increase in hospital emergency department mentions of cocaine and heroin corresponded with a sharp decline in street prices for both drugs.¹ Line-graph illustrations of the temporal relationship between drug price and emergency room mentions and the relatively large estimates of statistical correlation between the 2 trends make a compelling case that some aspects of illicit drug use may be highly responsive to changes in price. Interpretation of the data suggests that drug-related problems seen in emergency departments may be reduced by applying pressure through enforcement to drive drug prices up.

The hospital emergency department data are from the Drug Abuse Warning Network, and drug price data are from the US Drug Enforcement Agency. As Caulkins notes, the accuracy of the data from both sources is highly questionable and may vary over time.^{2,3} This feature of the data would seem to be inconsistent with the large magnitude of the association (price was found to explain more than 97% of changes in emergency department drug mentions). Errors in measurement by both systems would be more likely to attenuate any estimates of association.⁴ The strength of the association suggests that additional factors that also exerted an influence during the study period may have been missing from the model.

A potentially important factor may be the increase in drug law enforcement efforts over the same time interval. Since 1980, there has been a nearly 3-fold increase in US federal government spending on drug enforcement.⁵ Chief among the unintended con-

sequences of current drug control efforts is that drug potency may be high, contributing to unsafe use.⁵ Increasing drug concentration per volume benefits the seller by making the drug easier to conceal but may punish the user by making drug dosages less predictable. Drug Abuse Warning Network data would seem to be particularly susceptible to changes in drug potency, since they are based primarily on overdose cases.⁶ Changes in drug potency could conceivably produce the observed changes in these data even in the absence of an increase in drug use.

Caulkins raises an important public health question, which is whether adverse consequences of drug use can be reduced by efforts to increase the price of illicit drugs. However, Caulkins' data cannot provide an answer to this question. Given the massive increase in drug law enforcement efforts during a period of decreasing street drug prices, it seems unlikely that any escalation of these efforts could reverse the trend and drive street prices back down. The last 2 decades have brought the globalization of the world economy, with advances in communication, transportation, and the ability to move capital across national borders.⁷ Forces that have expanded global production and distribution of inexpensive consumer goods may have also led to improvements in global distribution of inexpensive psychoactive drugs.

Caulkins' article clearly indicates that it may be prudent to adapt public health strategies to the presence of cheaper and more potent illicit drugs. At the conference "Preventing Heroin Overdose: Pragmatic Approaches" (held in Seattle, Wash, January 13–14, 2000), several exam-

ples of new thinking in a changing public health environment were presented. These new approaches included teaching drug users to perform rescue breathing, distributing medications to counteract overdoses, and developing ways to reconcile conflicts between the objectives of law enforcement and the objectives of public health that may exist at an overdose scene. New ideas of this kind will be needed to surmount the public health challenges that may arise in relation to increased availability of less expensive and highly potent drugs. ■

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