Anthony S. Fauci is director of the National Institute of Allergy and Infectious Diseases, U.S. National Institutes of Health, Bethesda, MD. E-mail: afauci@niaid.nih.gov.

# AIDS: Let Science Inform Policy

THIRTY YEARS HAVE PASSED SINCE THE FIRST CASES OF ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS) were reported by the U.S. Centers for Disease Control and Prevention. How does this anniversary compare to the 20th or the 10th? The differences are considerable, because we now have an unprecedented opportunity, based on solid scientific data, to control and ultimately end the AIDS pandemic.

More than 60 million people have been infected with human immunodeficiency virus (HIV) worldwide. More than 30 million have died, and 34 million are currently living with HIV infection. In 2009, the most recent year for which data are available, 2.6 million people became newly infected. The burden of HIV/AIDS is overwhelmingly felt in resource-poor countries, especially in sub-Saharan Africa, which are least equipped to deal with the disease. Although the toll is staggering, the scientific progress in HIV/AIDS research over 30 years has been extraordinary, particularly in the development of antiretroviral therapy (ART), which has proven to be life-saving to many millions.

For decades, the idea of ending or even controlling the pandemic was a distant aspiration because we lacked sufficient evidence-based tools to convert the hope to reality. At this 30th anniversary, the situation has dramatically changed: We finally have scientifically validated prevention modalities that clearly work, suggesting that ending the pandemic is feasible. Older, proven prevention tools include the proper use of condoms, needle exchange programs for injection drug users, and antiretroviral treatment of HIV-infected pregnant women to prevent transmission of the virus to their newborn infants. Building on this foundation, recent HIV prevention research also has provided strong scientific evidence that adult male circumcision is highly effective in preventing infection in heterosexual men, that an antiretroviral-based topical gel prevents infection in heterosexual women, and that pre-exposure prophylaxis with ART in men who have sex with men is effective at preventing infection. And in May 2011, a randomized controlled clinical trial demonstrated that early initiation of ART by the infected partner in heterosexual couples, where one partner is HIV-infected and the other not, is highly effective in decreasing transmission of HIV to the uninfected partner.

The fact that treatment of HIV-infected adults is also prevention gives us the wherewithal, even in the absence of an effective vaccine, to begin to control and ultimately end the AIDS pandemic. Of course, the development of an AIDS vaccine would be the ultimate game-changer, and efforts toward this goal are intense. However, the existing armamentarium of scientifically proven interventions immediately offers an unprecedented opportunity to make major gains in the fight against HIV/AIDS. Global implementation of HIV interventions, including scale-up of the delivery of ART, must be accelerated, and this will be costly. Certainly, there are many competing priorities for scarce resources in the global health arena, such as other infectious diseases, maternal and child health, and tobacco control. But if one accepts the tenet that science should inform policy, then the scientific data are speaking loud and clear. Global policy-makers must seriously consider these new data in their priority-setting and decision-making.

Last month, world leaders at the United Nations General Assembly Meeting on AIDS called for providing ART for 15 million people in low- and middle-income countries by 2015, an increase from the 6.6 million currently receiving therapy, plus additional efforts toward universal access to HIV prevention, treatment, and care. An estimated $22 billion to $23 billion annually will be needed by 2015; current spending is approximately $16 billion. Such targeted investments could prevent 12 million infections and 7.4 million AIDS-related deaths by 2020. For the first time in the history of HIV/AIDS, controlling and ending the pandemic are feasible; however, a truly global commitment, including investments by those rich and middle-income countries whose contributions have thus far been limited, is essential. Major investments in implementation now will save even greater expenditures in the future; and in the meantime, countless lives can be saved.

**– Anthony S. Fauci**

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