Surgeon General's Perspectives

THE NEED FOR WIDER HIV TESTING

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In 1987, at the peak of the acquired immunodeficiency syndrome (AIDS) epidemic in the U.S., former Surgeon General C. Everett Koop released the "Surgeon General's Report on Acquired Immune Deficiency," which promoted awareness of the human immunodeficiency virus (HIV), its connection to AIDS, and its modes of transmission. It also outlined measures that should be taken to prevent the spread of AIDS.[1] The report was part of a massive public health effort that helped to dramatically decrease the annual number of new infections from a 150,000 peak in the early 1980s to approximately 56,000 in 2006, according to findings by the Centers for Disease Control and Prevention (CDC) recently published in a special HIV/AIDS issue of the *Journal of the American Medical Association*.[2] A critical component of the report, and the follow-up report authored by former Surgeon General Antonia Novello, was the emphasis on the importance of reliable HIV testing to notify infected people of their status. Today, AIDS continues to claim the lives of thousands in America each year, and it is important that we refocus our efforts on increasing the number of Americans tested for HIV.

HIV attacks CD4-expressing T-cells in the immune system, weakening the body's ability to resist infection. The natural history of the virus eventually leads to AIDS, a condition characterized by a low T-cell count and multiple infections. Scientists first identified HIV in the U.S. in the early 1980s. Its rapid transmission—primarily through anal, vaginal, or oral sex; needle-sharing; perinatal transmission; and breastfeeding—has led to hundreds of thousands of infections in the U.S. As a result, more than one million cases of AIDS have been identified in the U.S., with an estimated 9,000 of them occurring in children younger than the age of 13.[3] Currently, the most effective treatment for infection with the virus is highly active antiretroviral treatment (HAART), which has significantly improved survival rates since its introduction in 1995.

Testing for the virus is largely accomplished by identifying antibodies released in the blood in response to an HIV infection or through the detection of viral ribonucleic acid (RNA). Conventional testing typically requires several days to process; however, recently developed rapid testing allows providers to return results within 20 minutes. In addition, modern tests can now detect the presence of the virus within two to eight weeks after the initial infection.[4] As of 2002, 38% to 44% of all adults have been tested for HIV.[5]

A focus on early and accurate detection of HIV is necessary to decrease incidences of AIDS. With a transmissible virus such as HIV, it is vital that infected individuals are aware of their status. Awareness of HIV status has been proven to substantially reduce the spread of the disease to others. The rate of transmission for people unaware of their infection is estimated to be 3.5 times higher than for people who are aware of their infection. In addition, wide-ranging prenatal testing and antiretroviral prophylactic treatment have resulted in a 95% reduction in vertical HIV transmission.[6] Further, those who are aware of their HIV status can receive treatment and potentially prevent or, at minimum, delay the progression toward AIDS. HAART has been shown to result in slower clinical progression and reduced mortality.[7]

However, of the more than one million people in the U.S. who are infected with HIV, 24% to 27% are still unaware that they are infected.[8] As a result of this large gap in HIV testing, infected people can unknowingly continue to spread the virus. Until this problem is addressed, it will be difficult to effect an improvement in HIV and AIDS statistics.

One of the priorities of the Office of the Surgeon General is to reduce health disparities. While it is true that the number of annual AIDS cases and deaths has declined since the peak of the epidemic, numbers have not improved substantially in the last several years.[3] In

fact, African Americans now account for the largest percent of new HIV/AIDS cases—nearly half of all those diagnosed each year. They currently comprise a disproportionate 42% of AIDS cases that have been diagnosed in the U.S. since the beginning of the epidemic. In addition, African American people face lower survival times than those experienced by people of other ethnicities.[9] These disparities are particularly significant in women; the rate of HIV diagnosis for black women is 20 times higher than for white women. Similar disparities exist in the Hispanic/Latino population. This population comprises 17% of new HIV/AIDS cases each year,[2] and AIDS is the fourth leading cause of death for Hispanic/Latino men and women aged 35 to 44 years.[10] Young men aged 13 to 24 who have sex with men represent another population that needs further attention—HIV diagnoses in this age group grew by 12% annually from 2001 to 2006.[11] Further efforts to broaden HIV testing must address the disparities affecting these populations.

In 2006, CDC released revised recommendations based on research suggesting that early diagnosis led to more effective treatment. It advocated routine testing for all patients in all health-care settings, while retaining the option for a patient to decline testing (opt-out screening).[6] The U.S. Preventive Services Task Force (USPSTF) has also released a set of recommendations that suggest HIV testing for patients with high-risk behavior or those living in an area with a high prevalence of HIV infections.[12] Many of the major urban centers report high rates of HIV infection, and patients who live in these settings are at a greater risk for contracting HIV.

In addition, both CDC and USPSTF guidelines recommend that all pregnant women should be tested for HIV. CDC suggests that testing for the virus be a component of the regular prenatal workup, particularly as HAART can decrease rates of perinatal transmission of HIV to less than 2%.[13,14] Rates of perinatal transmission and AIDS cases in young children have declined dramatically since their peak in 1992. However, in 2006, 42 children and youth who received HIV from their mothers died from AIDS.[3] These deaths could have been prevented through more comprehensive testing. Every expectant mother should consider undergoing HIV testing for the sake of her own health and the health of her future child.

As we think about how to close the gap in the number of people unaware of their status, we will have to overcome many challenges. Currently, some of the most common issues with HIV testing practices include associated expenses and the difficulty of providing test results to patients. Particularly in temporary clinics and mobile testing units or settings with transient populations, many patients will not return to retrieve their confirmatory test results. In addition, many of the patients at the highest risk for contracting HIV do not interact regularly with the health system. By recognizing these barriers to improvement and developing further strategies to address them, we can help to prevent infections and reverse the HIV and AIDS epidemic.

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REFERENCES

1. Koop CE. Surgeon General's report on acquired immune deficiency syndrome. Washington: Public Health Service (US); 1987.
2. Hall HI, Song R, Rhodes P, Prejean J, An Q, Lee LM, et al. Estimation of HIV incidence in the United States. JAMA 2008;300:520-9.
3. Centers for Disease Control and Prevention (US). HIV/AIDS surveillance report, 2006, vol. 18, revised ed. Atlanta: Department of Health and Human Services, CDC (US); 2007.
4. CDC (US). HIV/AIDS: questions and answers [cited 2008 Jul 9]. Available from: URL: http://www.cdc.gov/hiv/topics/testing/qa.htm
5. Number of persons tested for HIV—United States, 2002. MMWR Morb Mortal Wkly Rep 2004;53(47):1110-3.
6. Branson BM, Handsfield HH, Lampe MA, Janssen RS, Taylor AW, Lyss SB, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. MMWR Recomm Rep 2006;55(RR-14):1-17.
7. Preventive Services Task Force (US). Screening for HIV: recommendation statement. Ann Intern Med 2005;143:32-7.
8. Glynn M, Rhodes P. Estimated HIV prevalence in the United States at the end of 2003. National HIV Prevention Conference; 2005 Jun 12–15; Atlanta. Abstract T1-B1101.
9. CDC (US). HIV/AIDS surveillance report, 2005, vol. 17, revised edition. Atlanta: Department of Health and Human Services, CDC (US); 2007.
10. CDC (US). Web-based Injury Statistics Query and Reporting System. Leading causes of death reports, 2005 [cited 2008 Mar 18]. Available from: URL: http://webappa.cdc.gov/cgi-bin/broker.exe
11. Trends in HIV/AIDS diagnoses among men who have sex with men—33 states, 2001–2006. MMWR Morb Mortal Wkly Rep 2008;57(25):681-6.
12. Chou R, Huffman L. Screening for human immunodeficiency virus: focused update of a 2005 systematic evidence review for the U.S. Preventive Services Task Force. Rockville (MD): Agency for Healthcare Research and Quality; April 2007.
13. Public Health Service Task Force. Recommendations for use of antiretroviral drugs in pregnant HIV-infected women for maternal health and interventions to reduce perinatal HIV transmission in the United States. Revised 2008 Jul 8 [cited 2008 Aug 8]. Available from: URL: http://aidsinfo.nih.gov/ContentFiles/PerinatalGL.pdf
14. Cooper ER, Charurat M, Mofenson L, Hanson IC, Pitt J, Diaz C, et al. Combination antiretroviral strategies for the treatment of pregnant HIV-1–infected women and prevention of perinatal HIV-1 transmission. J Acquir Immune Defic Syndr 2002;29:484-94.