

## Perspective

# Sustaining HIV Prevention: HIV Testing in Health Care Settings

The Centers for Disease Control and Prevention (CDC) recently issued revised HIV testing recommendations, including a recommendation for routine, voluntary screening for all persons aged 13 years to 64 years in health care settings. Screening is not based on risk, and prevention counseling in conjunction with HIV testing in health care settings is not required. The revisions were motivated in part by concerns regarding the substantial undiagnosed fraction of prevalent HIV infections in the United States and evidence awareness of HIV infection leads to substantial reductions in high-risk sexual behavior. It is hoped that implementation of these recommendations, which will require coordination and education initiatives, will increase identification of the large number of HIV-infected individuals unaware of their infection status and facilitate their linkage to care. This article summarizes a presentation on HIV prevention and HIV testing in health care settings made by Kevin A. Fenton, MD, PhD, at the 10th Annual Ryan White HIV/AIDS Program Clinical Update in June 2007 in Phoenix, AZ. The original presentation is available as a Webcast at [www.iasusa.org](http://www.iasusa.org).

## Epidemiology of HIV and AIDS and HIV Testing Trends

The prevalence of AIDS in the United States continues to increase in the setting of a steady rate of new cases per year and longer survival associated with the use of potent antiretroviral therapy. However, the post-potent antiretroviral therapy era is marked not only by improved survival among patients receiving high-quality treatment, but by increasing evolution of the HIV epidemic among individuals who are socially disadvantaged or have poor access to medical services. This includes an increasing concentration of the epidemic among individuals with high rates of sex partner change and involvement in sexual and social networks largely unlinked to such services. New AIDS cases occur disproportionately among blacks and Hispanics. Among 40,733 new cases of AIDS reported in 2005, nearly 50% were in blacks, who account for 13% of the population of the United States, and 18% were in Hispanics, who account

for 14% of the population (see Figure 1).

A 2006 survey by the Kaiser Family Foundation found that of non-elderly adults, 55% had been tested for HIV, including 21% within the prior 12 months (Kaiser Family Foundation Survey of Americans on HIV/AIDS, conducted March 24 to April 18, 2006). Percentages of individuals ever tested and tested within the prior 12 months were 48% and 16%, respectively, among whites; 70% and 41%, respectively, among blacks; and 56% and

28%, respectively, among Hispanics. Data from 2002 indicate that whereas 44% of all HIV tests are performed in the private physician or Health Maintenance Organization setting, positive tests in this setting account for only 17% of all positive tests. Reflecting the fact that poor, uninsured, or socioeconomically disadvantaged individuals in the United States typically use hospital and emergency department (ED) settings for primary care, testing in this setting accounts for 22% of all tests but 27% of all positive tests. Similar high yields of positive tests occur in community clinics (9% of all tests, 21% of positive tests), HIV counseling and testing settings, corrections facilities, sexually transmitted disease (STD) clinics, and drug treatment clinics (see Figure 2).

## Routine Testing: Reaching Those at Risk and the Undiagnosed

Americans have a generally positive view on routine HIV testing. The Kaiser Family Foundation survey showed that 65% of respondents agreed with the statement “HIV testing should be

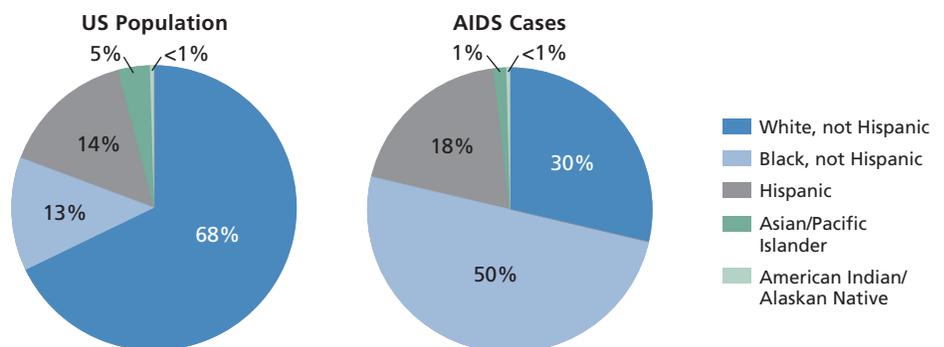


Figure 1. Proportion of 40,733 reported AIDS cases and total US population (n = 296,410,404) by race and ethnicity in the United States in 2005, including 283 persons of unknown race or multiple races. Centers for Disease Control and Prevention. Available at <http://www.cdc.gov/hiv/topics/surveillance/resources/slides/epidemiology/index.htm>. Last accessed November 18, 2007.

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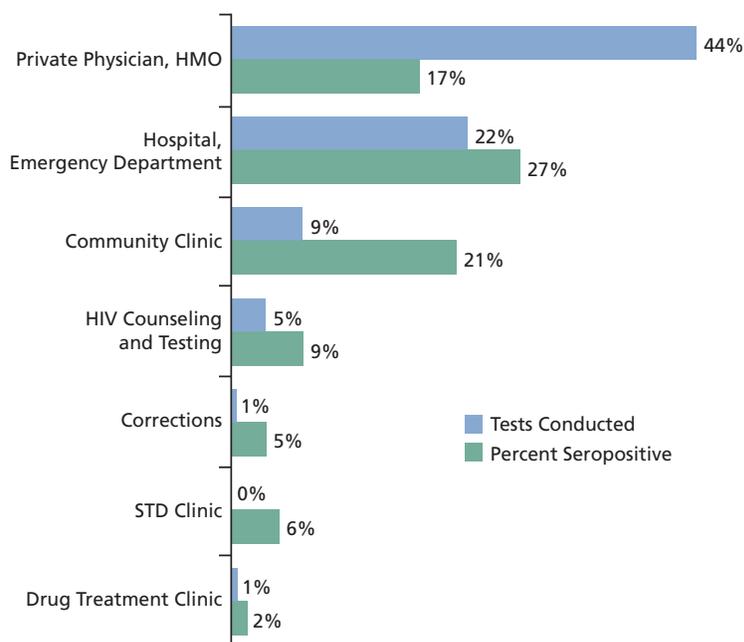


Figure 2. Proportion of HIV tests conducted and proportion of seropositive tests by testing location according to 2002 data. HMO, health maintenance organization; STD, sexually transmitted diseases. Adapted from *MMWR Recomm Rep.* 2006.

treated just like routine screening for any other disease, and should be included as part of regular check-ups and exams.” In contrast, 27% agreed with the statement “HIV testing is different from screening for other diseases, and should require special procedures, such as written permission from the patient in order to perform the test.”

It is currently estimated that of the approximately 1.2 million individuals living with HIV and AIDS in the US, 25% are undiagnosed and 25% are diagnosed but not receiving care. The undiagnosed are disproportionately people of color, and estimates from 2003 indicate that of undiagnosed individuals, blacks account for approximately 50%, whites for approximately 30%, and Hispanics for approximately 20% (see Figure 3, left). The undiagnosed are also somewhat more likely to have been infected via sexual contact, with transmission via heterosexual sex or sex among men who have sex with men (MSM) being estimated to account for approximately 80% of undiagnosed cases (see Figure 3, right). A 2004 to 2005 study of HIV testing among MSM in Baltimore, Los Angeles, Miami, New York, and San Francisco showed that

48% of HIV-seropositive individuals were unaware of their infection status, including 67% of blacks, 18% of

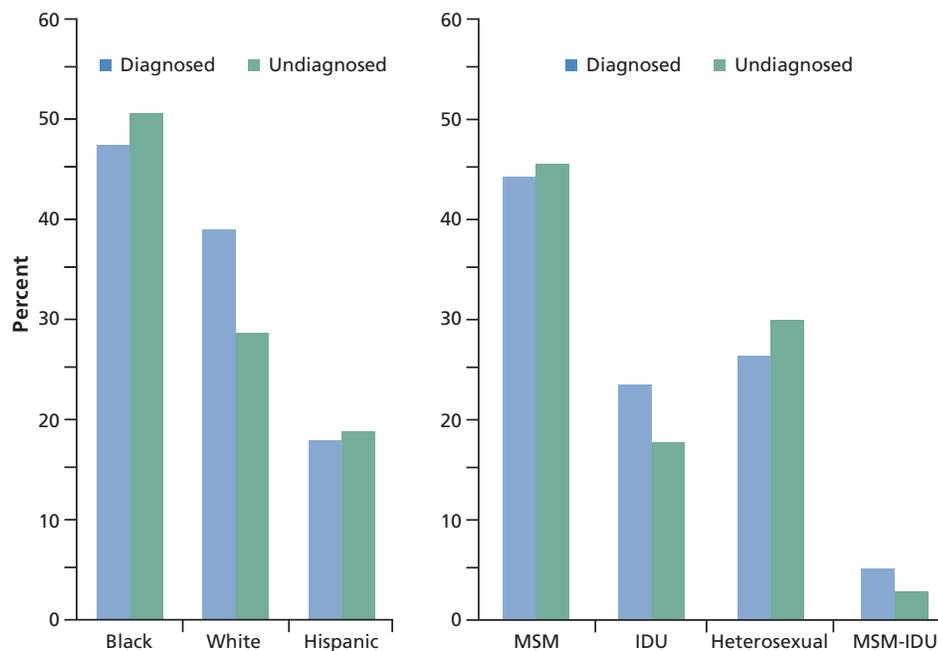


Figure 3. Estimates from 2003 showing proportions of diagnosed HIV infection and undiagnosed infection occurring (left) in black, white, and Hispanic persons, and (right) via sexual activity in men who have sex with men (MSM), injection drug use (IDU), heterosexual sex, and IDU in MSM. Adapted from Glynn and Rhodes, National HIV Prevention Conference, June 2005.

whites, and 48% of Hispanics (*MMWR*, 2005). These findings are not inconsistent with the Kaiser Family Foundation survey on prevalence of testing. First, the high rate of undiagnosed infection despite the fairly high rates of reported testing may suggest that both prevalence and incidence of infection is high and exposure is frequent in risk groups, with the testing rates being insufficient to keep pace with incidence. Second, failure to return for test results is common. For example, a 2000 study indicated that among individuals at high risk for infection, 10% of MSM, 20% of high-risk heterosexuals, and 27% of injection drug users did not return for test results (Sullivan, *JAIDS*, 2004).

### Revised Centers for Disease Control and Prevention Recommendations on Testing

The Centers for Disease Control and Prevention (CDC) issued revised recommendations for HIV testing of adults, adolescents, and pregnant women in health care settings in September 2006 (Centers for Disease Control and Pre-

vention, *MMWR Recomm Rep*, 2006). In part, the revisions were motivated by evidence gained in continued experience in HIV testing, including evidence indicating that awareness of HIV infection leads to substantial reductions in high-risk sexual behavior and evidence from numerous studies indicating that HIV screening is cost-effective, even in populations with HIV prevalence as low as 0.01%. There is an additional element of urgency to improving testing, since late testing is now common and the full benefit of effective treatments is not being realized.

### Adults and Adolescents

The revised recommendations call for routine, voluntary HIV screening for all persons aged 13 years to 64 years in health care settings. This screening is not based on risk, although screening should be repeated at least annually in persons with known risk. It is recommended that screening be opt-out screening with the opportunity to ask questions and the option to decline testing, and that HIV testing consent be included in the general consent for health care.

Prevention counseling in conjunction with HIV testing in health care settings is not required. Instead, patients with positive test results are to be linked to clinical care, counseling, support, and prevention services. Those with negative results who are known to be at high risk should be advised of the need for periodic retesting and offered or referred for prevention counseling. The prevention counseling recommendations are intended for all health care settings but are not intended for nonclinical settings; thus, for example, in community outreach programs (eg, community-based organizations and nongovernmental organizations), prevention counseling should remain linked with HIV testing.

Recommendations on referral to care remain unchanged; that is, all HIV-seropositive persons should be referred or linked to care. Recommendations for persons in low-prevalence settings call for initiation of screening, with screening no longer being war-

ranted if HIV prevalence is shown to be less than 1 case per 1000 population.

### Pregnant Women

The recommendations call for universal opt-out screening for pregnant women, with inclusion of HIV testing in the panel of prenatal screening tests and inclusion of HIV testing consent in consent for prenatal care. A second HIV test should be performed in the third trimester of pregnancy for women (1) known to be at risk of infection; (2) in high-incidence and high-prevalence jurisdictions; or (3) in high-prevalence health care facilities. Opt-out rapid testing is recommended for women presenting in labor and delivery with undocumented HIV serostatus. Antiretroviral prophylaxis should be initiated on the basis of rapid test results, and newborns should be tested if the mother's infection status is unknown.

### Moving Forward

The initiative to routinize HIV testing is already yielding results in terms of increasing testing, identifying greater numbers of HIV-infected individuals, and linking those individuals to care. The New York City Health and Hospitals Corporation, which serves approximately 1.3 million New Yorkers and is

the largest municipal hospital system in the country, has undertaken an HIV testing expansion initiative. The goals are to (1) increase the number of patients who know their HIV serostatus, with an objective of testing 100,000 patients per year; and (2) increase the proportion of HIV-infected patients who enter care early (ie, reduce the number of concurrent HIV and AIDS diagnoses). During the first year of the initiative, the number of patients tested increased by 57%, from 58,785 in fiscal year 2005 to 92,123 in fiscal year 2006. The number of new HIV diagnoses nearly doubled to 1514. Of newly diagnosed patients, 76% (589 of 774) received and kept their first appointment for primary HIV care. A report from the San Francisco Department of Public Health (Zetola et al, *JAMA*, 2007) shows a marked increase in number of tests performed and an increase in number of positive tests per month from 20.6 to 30.6 as a result of measures to streamline HIV testing, including removing the requirement for written consent for testing (see Figure 4). Consent was instead obtained by the physicians, a separate test form for the HIV test was eliminated, and the test was included as part of other diagnostic test requirements.

To support expansion of routine HIV testing, the CDC has formed planning

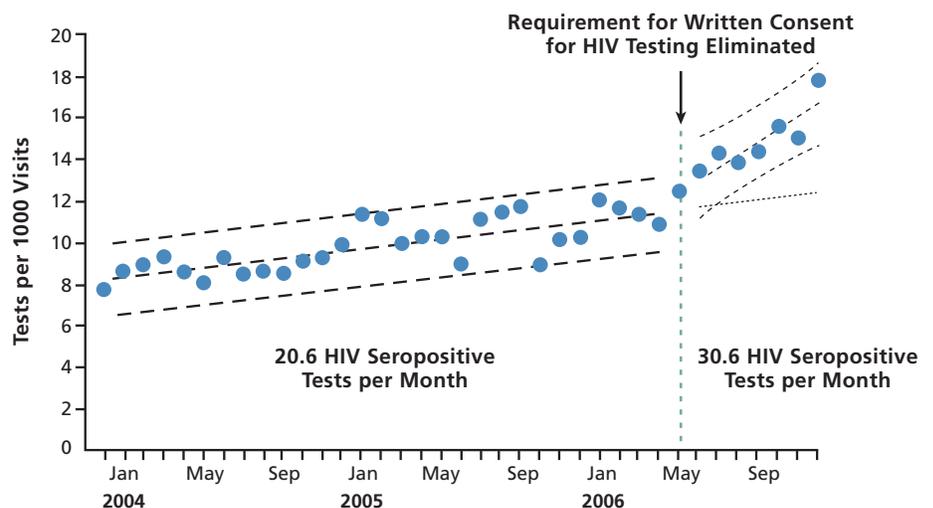


Figure 4. Data from San Francisco Department of Public Health showing increase in number of HIV tests per 1000 visits and increase in seropositive tests per month after elimination of the requirement for written consent for testing. Adapted from Zetola et al, *JAMA*, 2007.

**Table 1. Centers for Disease Control and Prevention Implementation Planning Group Domains**

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Health departments
Professional partners
Professional education
Community partners
Implementation guidance
Monitoring and evaluation
Reimbursement
Laws and regulations
Linkage to care
Corrections facilities
Social marketing
Laboratories

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groups to address issues in domains where gain from testing activities can be maximized (Table 1). Numerous partnerships with national organizations are being strengthened to support implementation of recommendations through training and technical assistance, including partnerships with the National Medical Association, American Medical Association, American Academy of Pediatrics, Society of General Internal Medicine, HIV Medicine Association, American Academy of HIV Medicine, Health Research and Educational Trust of the American Hospital Association, and the National Association of Community Health Centers.

As an example of current initiatives, the CDC and partners are formulating implementation guidance for various settings in collaboration with key stakeholders, including specific guidance for hospitals (ED, inpatient, labor and delivery), STD clinics, substance abuse treatment centers, community health centers, correctional health facilities, primary care settings, urgent care clinics, and prenatal care clinics. Over the past year, steps in fostering implementation have included regional workshops held by the CDC

for high-priority EDs in 5 cities, a close partnership with the National Medical Association and its primary care providers in select cities with high rates of disease in blacks, and a partnership with one pharmaceutical company in acute care testing in 8 cities.

The CDC also has been working with sister federal agencies and health insurers on reimbursement for screening. Work is ongoing with the Centers for Medicare and Medicaid Services and state Medicaid directors to enable HIV testing to be considered part of the Early Periodic Screening, Diagnosis, and Treatment Program. Another set of problems being addressed is that of HIV testing in the large numbers of uninsured persons in this country. Implementation of expanded testing also requires working with state and local jurisdictions to implement policies to support the current recommendations. At the time of preparing this report, 26 states and the District of Columbia require written consent for HIV testing, 24 states require specific pretest counseling, 7 have specific training and certification requirements for individuals providing pretest counseling, and 5 require test results to be given face-to-face by trained individuals. Despite apparent conflict of such policies with CDC recommendations, screening can still be implemented in these locales with education and collaboration.

To support the HIV testing initiative during fiscal year 2007, the CDC realigned \$35 million in agency funds to foster implementation of testing in 23 jurisdictions with the highest incidence of reported AIDS cases. The majority of these funds will be given to health departments for testing in clinical settings.

### Summary

HIV testing is an important HIV prevention strategy that serves as a com-

ponent of a comprehensive prevention strategy. The CDC has issued revised recommendations for HIV screening in adults, adolescents, and pregnant women in health care settings. HIV screening in health care settings is feasible. Implementation of these recommendations will require new partnerships and strategies in a variety of domains, and a number of initiatives are under way to build and support these partnerships and strategies.

*Presented by Dr Fenton in June 2007. First draft prepared from transcripts by Matthew Stenger. Reviewed and edited by Dr Fenton in November 2007.*

*Dr Fenton had no relevant financial affiliations to disclose.*

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### Suggested Reading

**Centers for Disease Control and Prevention.** Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. *MMWR Recomm Rep.* 2006;55:1-17.

**Centers for Disease Control and Prevention.** Available at <http://www.cdc.gov/hiv/topics/surveillance/resources/slides/epidemiology/index.htm>. Last accessed November 18, 2007.

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**Sullivan PS, Lansky A, Drake A, HITS-2000 Investigators.** Failure to return for HIV test results among persons at high risk for HIV infection: results from a multistate interview project. *J Acquir Immune Defic Syndr.* 2004;35:511-518.

**Zetola NM, Klausner JD, Haller B, Nassos P, Katz MH.** Association between rates of HIV testing and elimination of written consents in San Francisco. *JAMA.* 2007;297:1061-1062.

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