High-Impact HIV Prevention

CDC's Approach to Reducing HIV Infections in the United States

Centers for Disease Control and Prevention
National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Division of HIV/AIDS Prevention

The Status of HIV Prevention in the United States

In the United States, prevention has already averted more than 350,000* HIV infections.[1] Now, we have the potential to go much further.

The nation's HIV prevention efforts are guided by a single, ambitious strategy for combating the epidemic: the National HIV/AIDS Strategy (NHAS).[2] Recent scientific breakthroughs have equipped us with an unprecedented number of effective tools to prevent infection.[3-6] And in many of the communities hardest hit by HIV, there is growing leadership and momentum for change.

Yet the challenges remain daunting. By CDC's latest estimates, approximately 50,000 Americans become infected with HIV annually, and 16,000 people with AIDS died in 2008.[7,8] As a result, the number of people living with HIV in the United States, now at nearly 1.2 million, continues to grow by tens of thousands each year, creating more opportunities for HIV transmission.[9] And a range of social, economic, and demographic factors affect some Americans' risk for HIV, such as stigma, discrimination, income, education, and geographic region. While current prevention efforts have helped to keep the number of new infections stable in recent years, continued growth in the population living with HIV will ultimately lead to more new infections if prevention, care, and treatment efforts are not intensified.[10]

To address these challenges, CDC and its partners are pursuing a High-Impact Prevention approach to reducing new HIV infections.[11] By using combinations of scientifically proven, cost-effective, and scalable interventions targeted to the right populations in the right geographic areas, this approach promises to increase the impact of HIV prevention efforts – an essential step in achieving the goals of NHAS.

This approach is designed to maximize the impact of prevention efforts for all Americans at risk for HIV infection, including gay and bisexual men, communities of color, women, injection drug users, transgender women and men and youth.

*A conservative estimate examining the period 1991 to 2006.

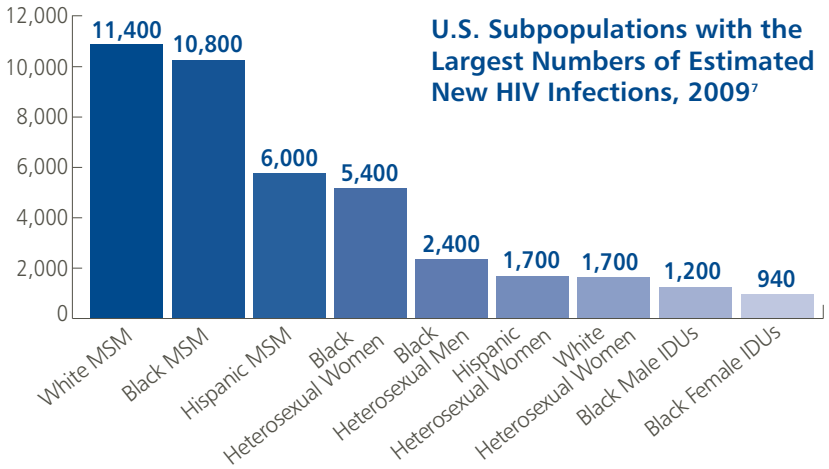
Populations at Greatest Risk

While all Americans are affected by the HIV epidemic, some populations bear an especially heavy burden and account for the largest numbers of HIV infections. Success in HIV prevention can only be achieved by addressing these disparities and working to achieve health equity. Hard-hit populations include:

- **Gay and bisexual men of all races and ethnicities** remain the group most severely and disproportionately affected by the epidemic. Men who have sex with men (MSM*) represent approximately 2 percent of the U.S. population, but accounted for 61 percent** of all new HIV infections in 2009.[7,12] By race, age and risk group, young, black gay and bisexual men (ages 13-29) are the only population in the United States in which new HIV infections increased between 2006 and 2009.[7]

- **African Americans** are by far the most affected racial/ethnic population in the United States. African Americans represent 14 percent of the U.S. population, but accounted for 44 percent of new HIV infections in 2009. The HIV infection rate among African Americans was almost eight times as high as that of whites in 2009, and among African American women it was 15 times higher than among white women.[7]

- **Hispanics/Latinos** are also disproportionately affected by HIV, representing approximately 16 percent of the total U.S. population, but accounting for 20 percent of all new HIV infections. In 2009, the HIV infection rate among Hispanics/Latinos was three times as high as that of whites.[7]



* The term men who have sex with men is used in CDC surveillance systems because it indicates the behaviors that transmit HIV infection, rather than how individuals self-identify in terms of their sexuality.

** This figure does not include MSM who are also injection drug users. MSM-IDUs accounted for 3 percent of new HIV infections in 2009.

- **Injection drug users** (IDUs) represented 9 percent of new HIV infections in 2009. African Americans accounted for 48 percent of new infections among IDUs, and Hispanics/Latinos accounted for 21 percent.[7]

- **Transgender individuals** are heavily affected by HIV. A 2008 review of studies of HIV among male-to-female women found that, on average, 28 percent tested positive for HIV.[13]

HIV Prevention Works

After 3 decades of fighting HIV in the United States, we now have more prevention tools with proven effectiveness than ever.

Our national investment in HIV prevention has contributed to dramatic reductions in the annual number of new infections since the peak of the epidemic in the mid-1980s, and an overall stabilization of new infections in recent years.[14] Given continued increases in the number of people living with HIV, this stabilization is in itself a sign of progress. Other important signs of progress include dramatic declines in mother-to-child HIV transmission and reductions in new infections among injection drug users and heterosexuals over time.

Estimated Return on U.S. Investment in HIV Prevention, 1991 – 2006

- More than 350,00 infections averted[1]
- More than $125 billion in direct medical costs saved[15]

HIV prevention has also generated substantial economic benefits. For every HIV infection that is prevented, an estimated $360,000 is saved in the cost of providing lifetime HIV treatment, resulting in significant cost-savings for the health care system.[15]

Proven HIV Prevention Interventions

Research has led to a growing number of proven, cost-effective approaches to reduce the risk of HIV infection. Many of these approaches can be particularly effective when tailored to address the social, community, financial, and structural factors that place specific groups at risk. In the United States, proven strategies include:

- **HIV testing and linkage to care.** Testing is a critical component of prevention efforts because when people learn they are infected, research shows that they take steps to protect their own health and prevent HIV transmission to others.[16] Linkage to care helps ensure people living with HIV receive life-saving medical care and treatment, and helps reduce their risk of transmitting HIV. Efforts are underway to expand HIV testing and linkage to care, especially in those populations in which new infections are occurring in high numbers.

- **Antiretroviral therapy.** Treating people living with HIV early in their infection dramatically reduces the risk of transmitting the virus to others, underscoring the importance of HIV testing and access to medical care and treatment. A recent clinical trial showed that treating people living with HIV early on reduces the risk of transmitting the virus to others by 96 percent.[4] Treatment is also essential for reducing the risk of transmission from HIV-infected pregnant women to their infants.[17,18]

- **Access to condoms and sterile syringes.** In order for HIV prevention efforts to work, people who are living with, or at risk for, HIV infection need to have access to effective prevention tools. In particular, research has shown that increasing the availability of condoms and sterile syringes is associated with reductions in HIV risk.[19,20]

- **Prevention programs for people living with HIV and their partners.** Individual and small-group interventions have been shown to significantly reduce risk behaviors among people who have been diagnosed with HIV to help ensure they do not transmit the virus to others.[21] In addition, partner services can reduce the spread of HIV by facilitating the confidential identification and notification of partners who may have been unknowingly exposed to HIV, providing them with HIV testing, and linking them to prevention and care services.[22,23]

- **Prevention programs for people at high risk of HIV infection.** Individual, small-group, and community interventions for people who are at high risk of HIV infection can reduce risk behavior and can play an important role in many comprehensive HIV prevention strategies.[21]

- **Substance abuse treatment.** Effective substance abuse treatment that helps drug users stop injecting eliminates the risk of HIV transmission through injection drug use.[20,24]

- **Screening and treatment for other sexually transmitted infections.** Many sexually transmitted infections (STIs) increase an individual's risk of acquiring and transmitting HIV, and STI treatment may reduce HIV viral load.[25-28] Therefore, STI screening and treatment may reduce risk for HIV transmission.

In addition, pre-exposure prophylaxis, or PrEP, is a new prevention intervention in which HIV-uninfected people take a daily dose of antiretroviral medication to lower their chances of acquiring HIV. PrEP has been proven effective among MSM, and CDC has issued interim guidance on its use in this population.[3,29] Other recent studies have shown PrEP to be effective among heterosexual men and women, although important questions remain about which heterosexuals would benefit most.[5,6] In time, PrEP may play an important role in HIV prevention, and work is ongoing to determine how to successfully implement PrEP programs in an efficient and cost-effective manner.

The National HIV/AIDS Strategy

In July 2010, the White House released the National HIV/AIDS Strategy (NHAS), a comprehensive roadmap for reducing the impact of HIV.[2] The strategy sets clear priorities and targets for HIV prevention and care in the United States, and calls on government agencies and their public and private partners to align efforts toward a common purpose.

HIV Prevention Goals of NHAS: The strategy includes ambitious goals for U.S. prevention efforts over the next 5 years:

- Lower the annual number of new infections by 25 percent
- Increase from 79 to 90 percent the percentage of people living with HIV who know of their infection
- Reduce the HIV transmission rate, a measure of annual transmissions in relation to the number of people living with HIV, by 30 percent
- Increase the percentage of newly diagnosed people linked to care within 3 months from 65 to 85 percent
- Increase the proportion of HIV-diagnosed gay and bisexual men, African Americans, and Latinos with undetectable viral load by 20 percent

The NHAS Vision

The United States will become a place where new HIV infections are rare and when they do occur, every person, regardless of age, gender, race/ethnicity, sexual orientation, gender identity or socio-economic circumstance, will have unfettered access to high quality, life-extending care, free from stigma and discrimination.

Priorities for HIV Prevention: NHAS lays out clear priorities for increasing the impact of HIV prevention efforts in reducing new infections:

- Intensify HIV prevention in the communities where HIV is most heavily concentrated
- Expand targeted use of effective combinations of evidence-based HIV prevention approaches
- Educate all Americans about the threat of HIV and how to prevent it

NHAS recognizes the connection between prevention, care, and treatment in reducing new infections and improving the health of people living with HIV. The strategy also emphasizes the central importance of reducing disparities in HIV prevention and care and in reducing the stigma and discrimination associated with HIV.

CDC's Role: As the agency with primary responsibility for HIV prevention, CDC's efforts are central to achieving the NHAS vision. CDC's major HIV prevention activities include supporting state and local HIV prevention programs—including the important work of health departments and community-based organizations—through funding and technical assistance; tracking the epidemic through HIV/AIDS surveillance activities; and identifying new prevention interventions through research. CDC also works to overcome complacency about HIV and ensure that all Americans know how to protect themselves, in part through the ongoing Act Against AIDS campaign, launched in 2009.

High-Impact Prevention: CDC's Approach to Reducing New HIV Infections

To advance the prevention of goals of NHAS and maximize the effectiveness of current HIV prevention methods, CDC pursues a High-Impact Prevention approach.[11] By using combinations of scientifically proven, cost-effective, and scalable interventions targeted to the right populations in the right geographic areas, this approach promises to greatly increase the impact of HIV prevention efforts.

Maximizing Limited Resources for HIV Prevention

In the last decade, CDC and its partners have used a "combination prevention" approach to reducing HIV infections, involving an increasingly comprehensive mix of proven interventions. But simply combining interventions is not enough – to maximize reductions in new infections, prevention strategies need to be combined in the smartest and most efficient ways possible for each of the populations affected by the epidemic.

Today, the need to do more with existing resources is greater than ever. The global economic crisis has led to major reductions in HIV prevention resources at the state and local levels, and federal financing is severely constrained. High-Impact Prevention addresses this reality by achieving a higher level of impact with every federal prevention dollar.

This approach guides the broad allocation of prevention resources as well as the development of specific prevention strategies for all populations at risk, including gay and bisexual men, communities of color, women, injection drug users, transgender women and men, youth and others.

Components of High-Impact Prevention

In the High-Impact Prevention approach, HIV prevention efforts are guided by five major considerations:

- **Effectiveness and cost.** While all proven interventions may have a place in HIV prevention programs, High-Impact Prevention prioritizes those that are most cost-effective at reducing overall HIV infections. Available cost-effectiveness data strongly supports interventions such as HIV testing and condom distribution, as well as many others. Programs to help people living with HIV avoid transmitting HIV to others are also cost-effective, since this group can be more efficiently served than the much larger population of people at risk for becoming infected.

- **Feasibility of full-scale implementation:** To make a substantial difference in new infections, priority should be placed on interventions that are practical to implement on a large scale, at reasonable cost. More time- and resource-intensive interventions, such as one-on-one or group counseling, should be reserved for people at the very highest risk of transmitting or becoming infected with HIV.

- **Coverage in the target populations:** Prevention planners should select interventions based in part on how many people can be reached once the intervention is fully implemented. For example, CDC recommends routine, opt-out HIV testing in health care settings for people regardless of risk, as research has shown that this approach can identify many people with undiagnosed HIV infection. Additionally, CDC supports targeted HIV testing in non-health care settings among people at higher risk, as this is a cost-effective tool for helping those individuals learn their HIV status.

- **Interaction and targeting:** It is also important to consider how different interventions interact, and how they can most effectively be combined to reach the most-affected populations in a given area. For example, expanding HIV testing can amplify the impact of efforts to increase adherence to treatment, particularly in areas where large numbers of people remain undiagnosed.

- **Prioritization:** To put the above considerations into practice, prevention planners need to rigorously assess the potential impact on HIV infections of combining different interventions for specific populations. This will allow for prioritizing the interventions that will have the greatest overall potential to reduce infections.

At the national level, CDC has recently taken important steps to establish clear priorities for directing resources to the geographic areas and interventions that could have the greatest impact on HIV rates and health equity. These include a new approach to health department funding, expanded HIV testing efforts, and combination prevention demonstration projects in the areas and populations most heavily affected by HIV. (For examples, see box on the following pages.)

High-Impact Prevention in Practice

Real-world examples of CDC's approach to HIV prevention

Health Department Funding

CDC funding: $359 million annually, FY2012-FY2016 (assumes level funding)

A new approach to health department funding that better matches prevention dollars to the HIV burden in every state, territory, and heavily affected city, focusing on high-impact interventions.

Expanded Testing Initiative

CDC funding: $111 million total, FY2007-FY2010

Targeted funding for HIV testing in communities at risk. Between 2007 and 2010, provided 2.8 million tests; resulted in more than 18,000 new HIV diagnoses; and helped avert $1.2 billion in direct medical costs.

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Enhanced Comprehensive HIV Prevention Planning (ECHPP)

CDC funding: $34.8 million anticipated total, FY2010-FY2012

Innovative demonstration projects implementing combination prevention in 12 cities with the highest AIDS burden. For example, the Houston ECHPP project brought together a diverse range of government agencies to create new links between prevention, care, substance abuse, and other services that can reduce new HIV infections.

Community-Based HIV Prevention for Young MSM and Transgender Persons of Color

CDC funding: $50 million total, FY2012-FY2016 (assumes level funding)

Support for local HIV prevention efforts to reach young MSM and transgender people of color with HIV testing and linkages to care, support, and prevention services, as well as targeted behavioral interventions and other effective approaches.

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