

HIV PREVENTION IN THE UNITED STATES

New Opportunities, New Expectations

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

INTRODUCTION

The power of HIV prevention is clear. Studies show that our nation's prevention efforts have averted hundreds of thousands of HIV infections, saving many lives and billions of dollars in medical costs since the early years of the epidemic.

Now we have the tools to achieve an even greater impact. Recent scientific breakthroughs have equipped us with prevention options that can greatly reduce new infections, illness, and deaths from HIV (see sidebar). Some are just beginning to reach people who can benefit, while others – most notably, antiretroviral therapy (ART) for people with HIV – are widely available but not being used to their full potential.

Faster progress depends on our collective ability to take full advantage of these tools in every community and every region of the country. This will require:

- **Thinking in new ways.** HIV prevention and treatment have often been thought of as separate priorities. Now that research has proven that treatment for people living with HIV dramatically reduces the risk of HIV transmission, supporting outcomes along the HIV care continuum must be a core priority of prevention efforts.
- **Focusing on what works.** With limited resources, we need to prioritize strategies that are shown to have the greatest potential impact – and set aside those that are less cost-effective or cannot be delivered on a large scale.
- **Confronting barriers to prevention.** We need to boldly address stigma, discrimination, and other social, economic, and structural issues that increase vulnerability to HIV and come between people and the care they need.
- **Preparing for the future.** Even as we increase access to existing prevention tools, we need to prepare for tomorrow's advances – from more advanced HIV tests to long-acting formulations of treatment and pre-exposure prophylaxis (PrEP) – so that people can benefit quickly.

LANDMARK HIV PREVENTION ADVANCES

- **Antiretroviral therapy:** Early treatment with antiretroviral medicines not only improves the health of people with HIV, but also reduces the risk of transmitting the virus by 96 percent.¹ To maximize health and prevent transmission, the goal of treatment is to achieve viral suppression, meaning that a person's HIV viral load – the amount of HIV in the blood – is below detectable levels.
- **PrEP:** A series of clinical trials has shown that HIV-negative people who take pre-exposure prophylaxis (PrEP), a daily anti-HIV pill, as directed can reduce their risk of acquiring HIV through by sexual transmission by 90 percent.²⁻⁵
- **HIV diagnostics:** New technologies, including antigen/antibody combination ("4th generation") HIV tests, have made it possible to quickly and routinely diagnose acute HIV infection, the stage when people are most likely to transmit the virus.⁶

STATUS OF HIV IN THE UNITED STATES

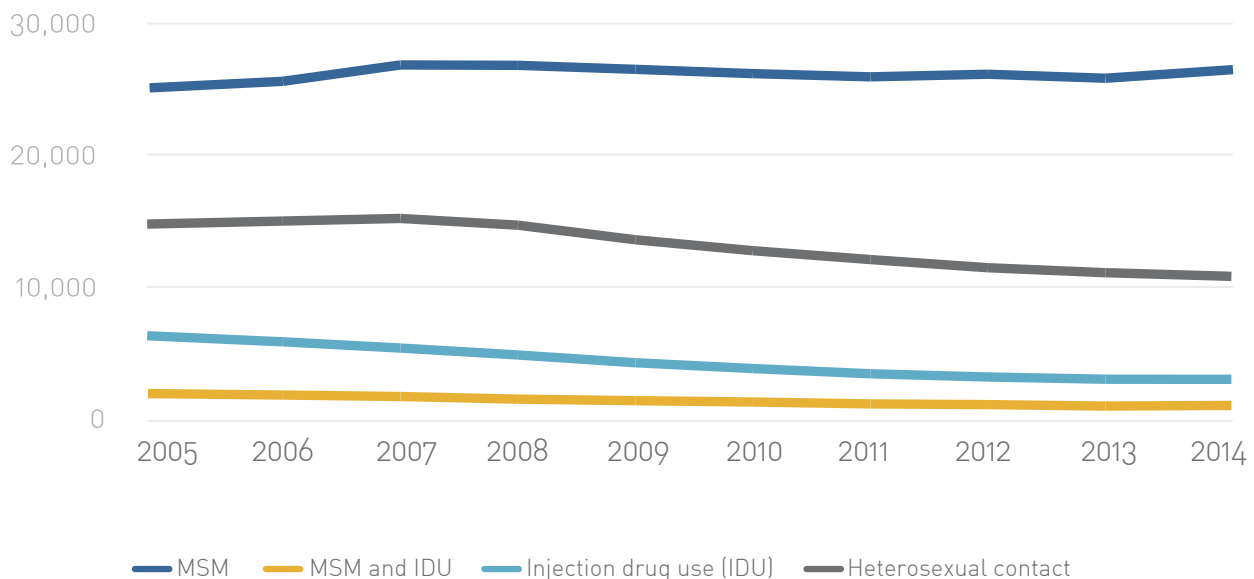
Our nation's HIV prevention efforts have achieved tremendous success. While the epidemic is far from over, there are many encouraging signs of progress. They include:

- **Recent declines in new HIV diagnoses.** The number of people diagnosed with HIV in the United States has declined substantially since 2005 (19 percent). Dramatic declines in diagnoses also have occurred in several key populations, including heterosexuals, people who inject drugs, and African Americans, with particularly steep declines among black women.

Although black men who have sex with men (MSM) experienced sharp increases (22 percent) in diagnoses beginning in 2005, those increases have stabilized since 2010. In fact, among young black MSM, diagnoses declined slightly (2 percent) between 2010 and 2014. These trends, while far from sufficient, suggest that intensified HIV testing and prevention efforts among black gay and bisexual men are having an impact.⁷ Efforts must be accelerated to sustain progress among black and white men, and must urgently address the upward trends in the burden of HIV infection among Hispanic/Latino men.

- **Increased awareness of HIV status.** As a result of expanded HIV testing efforts, most Americans with HIV are now aware of their infection. CDC estimates that 87 percent of people living with HIV are aware, up from 81 percent in 2006.⁸
- **Declining death rates.** HIV diagnosis and treatment efforts are gradually lowering death rates among people living with HIV. These declines are occurring nationally in nearly every racial, ethnic, and risk group and can be seen in most of the 27 states for which recent trend data are available.^{8,9}

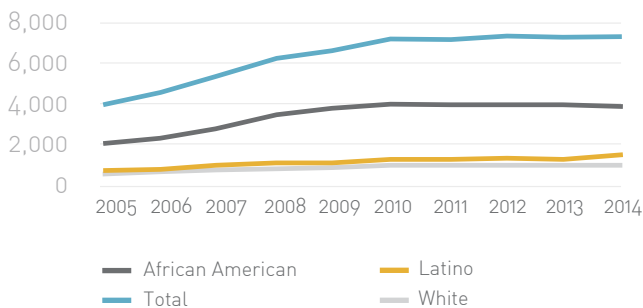
HIV Diagnoses by Risk Group, 2005-2014



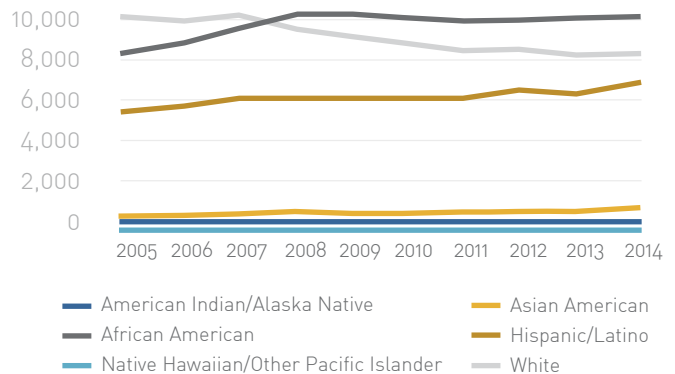
Source: CDC Fact Sheet: Trends in U.S. HIV Diagnoses, 2005-2014.

Note: Data are not adjusted for reporting delays, but are adjusted for missing risk factors.

HIV Diagnoses among MSM aged 13-24, by Race 2005-2014



HIV Diagnoses among MSM, by Race 2005-2014



Source: CDC Fact Sheet: Trends in U.S. HIV Diagnoses, 2005-2014.

Note: Data are not adjusted for reporting delays, but are adjusted for missing risk factors.

- **Reduced racial and ethnic disparities.** Targeted efforts to address HIV-related racial and ethnic disparities are making a difference. For example, the disparity in death rates among HIV-positive African Americans, whites, and Latinos has narrowed significantly in recent years.¹⁰
- **Major cost savings.** In addition to saving lives, HIV prevention saves money. It is estimated that from 1991 to 2006 alone, HIV prevention programs averted more than \$125 billion in direct medical costs.¹¹

Despite progress, far too many people still are not benefiting from quality HIV care and prevention. Nationally, just 39 percent of people living with HIV in the United States are currently receiving care for their infection, and only about 30 percent have their virus suppressed through treatment.¹²

The epidemic also remains marked by serious regional, racial, and ethnic disparities.

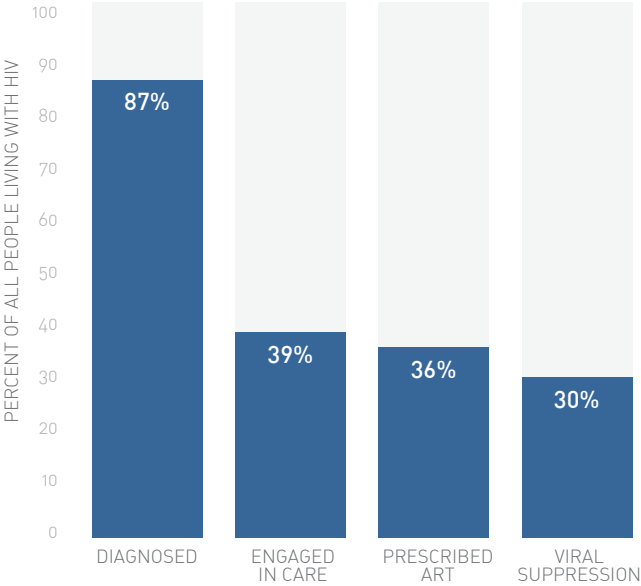
In the South, the impact of HIV is greater than in any other region and HIV care outcomes lag far behind. People in southern states are 34 percent more likely to be diagnosed with HIV than Americans overall¹³, and some southern states have death rates two to three times higher than people with HIV in other states. This may partly reflect the fact that fewer people with HIV in the region are aware of their status.⁹ Other long-standing challenges include poverty, stigma, and limited access to quality health care.¹⁴ In many cases, southern states have not widely adopted new HIV prevention advances, such as antigen/antibody combination HIV tests that can detect the earliest stages of infection.⁶

In all regions of the country, gay and bisexual men remain the most affected by HIV. MSM account for 70 percent of estimated new HIV diagnoses each year. Among MSM overall, men of color and young men are most affected: 38 percent of MSM diagnosed with HIV in 2014 were black, and 26 percent were Hispanic/Latino.¹³ The latest data also indicate that new HIV diagnoses increased steadily among Hispanic MSM between 2005 and 2014, signaling a need to intensify prevention for this population.⁷

Young MSM of all races are especially affected, with those under age 30 accounting for 47 percent of all diagnoses among MSM in 2014.¹³ While the sharpest increases in diagnoses over the past decade have been among young black and Latino MSM aged 13-24, diagnoses also increased substantially among young white MSM.⁷ Together, these findings highlight the urgent need to engage gay and bisexual men early in their lives with the HIV prevention tools and information they need to reduce their risk.

Another challenge is that the data available to track the progress of HIV prevention efforts remain incomplete. For example, while studies have shown that transgender individuals are at especially high risk for HIV, many state and national surveillance systems are not yet able to obtain complete data on this population. Additionally, many states do not report laboratory data on CD4 cell counts and viral load, which are critical to monitor HIV care outcomes at the local, state, and national levels.¹²

HIV Care Continuum Outcomes, 2012



Source: CDC. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 dependent areas—2013. HIV Surveillance Supplemental Report 2015;20(No. 2). Published July 2015.

CDC'S CURRENT HIV PREVENTION PRIORITIES

Guided by the National HIV/AIDS Strategy: Updated to 2020, CDC pursues a High-Impact Prevention (HIP) approach to reducing new HIV infections. HIP involves using combinations of scientifically proven, cost-effective, and scalable interventions, with particular attention to the most heavily affected populations and geographic areas.

CDC's commitment to HIP is evident in all aspects of the agency's work, including funding decisions, grantee requirements, public health guidelines, and research and surveillance activities. CDC is currently working to expand the reach of multiple high impact prevention strategies, including:

1. TESTING AND DIAGNOSIS

Testing is the gateway to care for people living with HIV, and to prevention services like PrEP for those who are uninfected but at substantial risk of acquiring HIV. CDC recommends that all adolescents and adults get tested at least once for HIV as a routine part of medical care. All sexually active gay and bisexual men should get tested yearly, while some gay and bisexual men and others at high risk may benefit from more frequent testing.¹⁶ In recent years, access to testing has increased as a result of the Affordable Care Act, though CDC's recommendations are still not being met.¹⁷

CDC's approach: CDC is focused on making HIV testing simple, accessible, and routine. Testing is a core component of all CDC funding to health departments and community-based organizations (CBOs). CDC has also developed recommendations on emerging testing technologies, including antigen/antibody combination tests (4th generation), to enable earlier diagnosis and prompt linkage to care. CDC's multi-year *Act Against AIDS* campaign encourages increased HIV testing among all Americans, with special efforts targeting African Americans, Hispanics/Latinos, and gay and bisexual men.

NHAS TARGETS FOR 2020

In July 2015, the National HIV/AIDS Strategy was updated to reflect the current state of the epidemic and provide bold new goals for the next five years.¹⁵

The updated strategy includes 12 key indicators that federal agencies and their state and local partners must work to address. These include:

- Increase the percentage of people living with HIV who know their serostatus to at least 90 percent
- Increase the percentage of newly diagnosed persons linked to HIV medical care within one month of their HIV diagnosis to at least 85 percent
- Increase the percentage of persons with diagnosed HIV infection who are retained in HIV medical care to at least 90 percent
- Increase the percentage of persons with diagnosed HIV infection who are virally suppressed to at least 80 percent
- Reduce the death rate among persons with diagnosed HIV infection by at least 33 percent
- Reduce disparities in the rate of new diagnoses by at least 15 percent in the following groups: gay and bisexual men, young black gay and bisexual men, black females, and persons living in the Southern United States

Over time, additional indicators will be added to track progress in the implementation of PrEP, reducing the epidemic among transgender individuals, and reducing stigma. To access the full National HIV/AIDS strategy and view other indicators, visit www.aids.gov/nhas.

2. HIV CARE AND TREATMENT

Ensuring that people with HIV are linked to early, ongoing care and treatment and are virally suppressed is one of the most powerful strategies available. CDC estimates that nine out of ten new HIV infections could be prevented by diagnosing people with HIV and linking them to and keeping them engaged in effective, ongoing treatment.¹⁸ Recent research has also shown that providing treatment as soon as possible after diagnosis provides the best health outcomes for people with HIV themselves. Current National Institutes of Health (NIH) guidelines on HIV treatment reflect this research and recommend that all individuals living with HIV initiate ART regardless of CD4 count.¹⁹

CDC's approach: A major share of CDC funding for HIV prevention is now focused on ensuring people diagnosed with HIV are swiftly linked to – and retained in – ongoing HIV care and treatment so that they can achieve and maintain viral suppression. All CDC-supported health departments and CBOs must formally partner with medical care providers to:

- Link newly diagnosed individuals to appropriate care
- Provide behavioral interventions and other support to help people with HIV reduce transmission risk, stay in care, and adhere to treatment; and
- Identify and re-engage people who have been diagnosed with HIV but have fallen out of care

One innovative way in which CDC is working to improve retention in care is the agency's Data to Care program. Three out of every five new infections can be attributed to people who have been diagnosed with HIV but aren't in care. Reaching these individuals represents a major, untapped opportunity to improve their health and reduce new infections. The Data to Care initiative helps health departments close this gap by using routinely collected HIV surveillance data to identify and follow up with people living with HIV who are not in care or have persistently elevated viral loads. CDC encourages more states and cities to implement the program.

CDC also has identified evidence-based interventions and best practices to improve linkage to care, retention in care, and adherence to medications and is developing resources to support these activities, such as the Every Dose, Every Day™ toolkit. The toolkit includes a mobile app that provides dose, refill, and medical appointment reminders. CDC also supports a communications campaign called *HIV Treatment Works*, which shows how people living with HIV have overcome barriers to get into care and stay on treatment and offers resources on how to live well.

“We have the tools to stop HIV in hand, right now. We urgently need to accelerate access to testing, treatment, and new biomedical prevention strategies so that everyone can protect themselves and their partners.”

Eugene McCray, MD
Director, CDC's Division
of HIV/AIDS Prevention

3. ACCESS TO CONDOMS

Condoms continue to be an essential HIV prevention tool. Research has shown that increasing the availability of condoms is associated with significant reductions in HIV risk.²⁰ Since consistent use is critical to avoid transmission, condoms must be readily and freely available to everyone at risk for or living with HIV.

CDC's approach: CDC-funded health departments and CBOs are required to provide condom distribution services for people living with HIV and for people at high risk of becoming infected. CDC encourages its partners to coordinate these services with local community organizations, health centers, STD clinics, health care providers, bars, clubs, and other settings where people in need of HIV prevention can be reached.

4. PrEP AVAILABILITY AND UPTAKE

PrEP is another powerful new prevention tool that could help significantly reduce the spread of HIV. CDC estimates that many Americans – including 25 percent of sexually active gay and bisexual adult men, nearly 20 percent of adults who inject drugs, and less than 1 percent of heterosexually active adults – are at substantial risk for HIV and should be counseled about PrEP based on current CDC guidelines.²¹ The latest estimates suggest that too few people in the U.S. are taking PrEP and many people at risk are not even aware that PrEP is an option. In fact, even 34 percent of primary health care providers recently reported not having heard of PrEP.²²

CDC's approach: CDC is working on multiple fronts to build awareness about PrEP and ensure it is offered to all those who are eligible. PrEP has been designated as a priority for all of CDC's major HIV prevention funding streams, including the agency's targeted prevention initiatives for gay and bisexual men and transgender individuals. In addition, CDC has developed resources to educate health care providers about PrEP, including clinical guidelines and PrEPline, a toll-free clinical consultation service. CDC is also supporting demonstration projects to understand how best to implement PrEP with people at highest risk in various communities.

5. RISK REDUCTION SUPPORT

While rigorous studies have identified a number of effective behavior-change strategies for both HIV-positive and HIV-negative people, not all strategies are cost-effective and scalable.²³ In addition to prioritizing intensive programs and support for those at greatest risk of transmitting or acquiring HIV, it is also critical to equip all individuals with the information needed to protect themselves and partners. To help individuals make informed choices about the prevention options that are right for them, CDC is expanding efforts to provide the latest science and education tools to navigate the evolving HIV prevention environment.

CDC's approach: As part of its High-Impact Prevention approach, CDC continually assesses evidence on behavioral interventions to determine which have the greatest potential to reduce HIV transmission. Through funding to health departments and CBOs, CDC currently prioritizes behavioral interventions that help HIV-positive individuals remain in care and avoid transmission. Funded partners may also pursue selected behavioral interventions targeting HIV-negative, high-risk individuals. In addition, they are expected to link individuals to other services they need to remain in care or avoid infection, including drug abuse treatment, mental health services, housing, and transportation.

Recent campaigns like *Start Talking. Stop HIV.* are designed to provide populations at high risk with information on the full range of prevention options now available. CDC is also exploring other ways to help individuals assess which strategies will most effectively meet their needs. Recently, CDC began piloting a comprehensive, online HIV Risk Reduction Tool. The tool is designed to provide information to help people determine how best to protect themselves and their partners. The tool also presents a novel interactive visual estimator that allows individuals to compare the risk of one sexual activity to another, and to see how one or a combination of prevention methods—such as condoms, PrEP, or HIV treatment to achieve viral suppression for people living with HIV—could change their level of protection.

Furthermore, CDC’s Division of Adolescent and School Health (DASH) is a unique source of support for HIV prevention efforts among youth in schools throughout the nation. DASH provides funding and technical assistance that enables state and local education agencies to deliver HIV prevention and other sexual health education, linkages to sexual health services, and the creation of safe and supportive school environments for all students, including for sexual and gender minority youth. All school activities include risk avoidance and risk reduction, are age-appropriate and medically accurate, and focus on increasing both knowledge and critical skills such as communication, decision-making, negotiation, and information- and healthcare-seeking behaviors.

ADDITIONAL STRATEGIES TO ACCELERATE PROGRESS

To help state and local partners maximize the impact of CDC’s prevention strategies, the agency is pursuing a range of innovative educational, surveillance, and research activities. These include:

- **Improving HIV surveillance:** CDC is working with partners to further strengthen surveillance efforts, not only to better understand the epidemic, but to improve prevention programs. CDC is doing this in several key ways, including the Data to Care program for improving treatment and several other evolving strategies:
 - > **Closing data gaps:** CDC is working with health departments and health care providers to meet the urgent need for reliable data on HIV among transgender people. CDC has revised the national system for reporting HIV cases to allow the reporting of sex at birth and current gender identity, and developed guidance for the state and local health departments tasked with collecting this data from providers. Separately, CDC has provided the funding and guidance that health departments need to report lab data on HIV care outcomes. Better data on key indicators like linkage to care and viral suppression are critical, given the pivotal role treatment and care play in national HIV prevention efforts.
 - > **CDC’s Advanced Molecular Detection (AMD) initiative:** CDC is using cutting-edge technologies to understand HIV transmission at a deeper level than ever before. This effort applies sequencing machines to read the genetic code of HIV, together with supercomputers that can process massive amounts of information to identify connections between HIV cases based on that genetic code. By doing so, CDC and its health department partners may be able to identify outbreaks and other emerging trends earlier and work with states to respond more effectively.

- **Responding to outbreaks:** A 2015 HIV outbreak in rural Indiana was a powerful reminder that the virus can spread quickly unless we remain vigilant about prevention, testing, and care.²⁴ CDC is working with state health departments to apply innovative tools, including AMD, to identify vulnerable communities and respond to outbreaks of HIV.
- **Communicating prevention priorities and progress:** Making new progress against HIV will require sustained investments in HIV prevention. However, serious fiscal challenges at the national, state, and local levels are leading to difficult decisions about how to apply limited resources.

CDC provides decision makers with clear and up-to-date information through surveillance analyses, national and state progress reports, and other publications that examine progress against the goals of the National HIV/AIDS Strategy. Beginning in 2016, CDC will track both national and state-level progress based on the indicators of the NHAS update through 2020. Over time, additional indicators will be added to monitor progress among transgender individuals and on PrEP implementation.

CDC also provides direct feedback to its state and local grantees on their performance on specific funding announcements. Feedback focuses on a small number of key indicators related to established HIV prevention goals, helping health departments and CBOs adjust their programs if needed and increase their impact.

MONITORING THE IMPACT OF HIV: NEW HIV DIAGNOSES

When the National HIV/AIDS Strategy was updated in 2015, several indicators from the original 2010 strategy were changed to reflect current science or advances in surveillance. Perhaps most significantly, the impact of the epidemic overall and in key populations is now monitored in terms of new diagnoses of HIV, instead of estimated new HIV infections.

HIV diagnosis data have improved substantially in recent years, and provide the most timely and reliable way to track progress. CDC now has accurate diagnosis data from all 50 states. They are available annually; are reliable over time; and can be examined for trends in very specific populations (e.g., young, black gay and bisexual men).

HIV diagnosis data do have a key limitation: since not everyone with HIV is diagnosed soon after becoming infected, the data may not always signify recent infections. Over the past decade, however, the amount of time between infection and diagnosis has declined. When assessed together with other key indicators, HIV diagnoses data offer the best available information on the impact of the epidemic.

CRITICAL GAPS AT THE STATE AND LOCAL LEVELS

CDC strives to provide the evidence, guidance, and resources needed to shift the course of the HIV epidemic. Our nation's success, however, depends on the actions of health departments, CBOs, and health care providers nationwide.

All states, particularly in the South, can do more to improve surveillance efforts and fully embrace new HIV prevention advances. In addition to providing complete and timely data on all levels of CD4 and viral load, states are encouraged to focus on:

- Ensuring that anyone diagnosed with HIV is immediately linked to care and provided HIV treatment – ideally with a starter pack of medication on the same day they receive their diagnosis. Select U.S. cities have shown this is possible, and have achieved high levels of viral suppression and reduced new HIV infections as a result. Yet one study indicated that most people did not receive HIV treatment until 130 days after their diagnosis – if they received care at all.²⁵
- Offering PrEP to anyone at substantial risk of becoming infected. This will require close collaboration with local health care providers and CBOs to increase the number of providers who are aware of and can prescribe PrEP.
- Using antigen/antibody combination HIV tests to diagnose HIV early and ensure prompt care and effective prevention. A significant number of states, particularly in the South, are not widely using these tests despite 2014 guidance from CDC.⁶

More broadly, reducing new infections and deaths from HIV requires unfettered access to quality health care in every community. Many people in greatest need are not benefiting from access to health care services, and most southern states continue to have the highest numbers of people without health insurance.²⁶

PREPARING FOR ADVANCES TO COME

Over the next several years, new diagnostic tools promise to make diagnosis of acute HIV infection quicker and easier than ever before. Some of these advances could enable people receiving HIV treatment to monitor and report their CD4 counts and viral load from home – possibly through their mobile phones. Long-acting treatments may help people adhere to their medications and keep their virus suppressed. New prevention options could address a person's HIV, STD, and contraception needs in combination, making them more desirable and easier to use. Powerful, secure data tools could further strengthen our ability to anticipate and prevent outbreaks or worrisome trends.

CDC is tracking these advances and preparing to integrate them into the nation's HIV prevention efforts, but their implementation will largely happen at the state and local levels. To ensure that new tools are delivered as quickly as possible to people who can benefit, it is essential for health departments, CBOs, and health care providers to stay up to date on emerging science and tools.

The goals of the National HIV/AIDS Strategy, while ambitious, are achievable if effective HIV prevention strategies are used to their full potential. Beyond 2020, even more ambitious goals will need to be met. If we embrace change today and prepare for tomorrow's advances, the end of the HIV epidemic in the United States can be within our grasp.

References:

- 1 Cohen MS, Chen YQ, McCauley M, et al. Prevention of HIV-1 infection with early antiretroviral therapy. *N Engl J Med* 2011;365:493-505.
- 2 Grant RM, Lama JR, Anderson PL, et al. iPrEx Study Team. Pre-exposure chemoprophylaxis for HIV prevention in men who have sex with men. *N Engl J Med* 2010; 363(27):2587-99.
- 3 Thigpen MC, Kebaabetswe PM, Paxton LA, et al; TDF2 Study Group. Antiretroviral preexposure prophylaxis for heterosexual HIV transmission in Botswana. *N Engl J Med* 2012;367(5):423-34.
- 4 Baeten JM, Donnell D, Ndase P, et al. Partners PrEP Study Team. Antiretroviral prophylaxis for HIV prevention in heterosexual men and women External. *N Engl J Med* 2012;367(5):399-410.
- 5 Choopanya K, Martin M, Suntharasamai P, et al. Bangkok Tenofovir Study Group. Antiretroviral prophylaxis for HIV infection in injecting drug users in Bangkok, Thailand (the Bangkok Tenofovir Study): a randomised, double-blind, placebo-controlled phase 3 trial External Web Site Icon. *Lancet* 2013;381(9883):2083-90.
- 6 Centers for Disease Control and Prevention (CDC) and Association of Public Health Laboratories (APHL). Laboratory Testing for the Diagnosis of HIV Infection: Updated Recommendations. Available at <http://stacks.cdc.gov/view/cdc/23447>. Published June 27, 2014.
- 7 CDC Fact Sheet: Trends in U.S. HIV Diagnoses, 2005-2014. December 2015. Available at www.cdc.gov/nchhstp/newsroom/fact-sheets.html.
- 8 CDC. National HIV Prevention Progress Report, 2015. Available at <http://www.cdc.gov/hiv/library/reports/index.html>. Published December 2015.
- 9 CDC. State HIV Prevention Progress Report, 2010-2013. Available at <http://www.cdc.gov/hiv/policies/progressreports/spr.html>. Published December 2015.
- 10 Siddiqi A, Hu X, Hall HI. Mortality Among Blacks or African Americans with HIV Infection—United States, 2008–2012. *MMWR* 2015; 64:81-86.
- 11 Farnham PG, Holtgrave DR, Sansom SL, Hall HI. Medical costs averted by HIV prevention efforts in the United States, 1991-2006. *JAIDS* 2010; 54(5): 565-567.
- 12 CDC. Monitoring selected national HIV prevention and care objectives by using HIV surveillance data—United States and 6 dependent areas—2013. HIV Surveillance Supplemental Report 2015;20(No. 2). Available at <http://www.cdc.gov/hiv/library/reports/surveillance/>. Published July 2015. Accessed November 20, 2015.
- 13 CDC. HIV Surveillance Report, 2014; vol. 26. Available at <http://www.cdc.gov/hiv/library/reports/surveillance/>. Published December 2015.
- 14 Reif S, Whetten K, Wilson E. SASI Update: The Continuing HIV Crisis in the US South. Available at <http://southernaidsstrategy.org/2012/11/28/sasi-releases-a-new-report/>. Published December 2012. Accessed November 20, 2015.
- 15 White House Office of National HIV/AIDS Policy. National HIV/AIDS Strategy for the United States: Updated to 2020. Available at <https://www.aids.gov/federal-resources/national-hiv-aids-strategy/nhas-update.pdf>. Published July 2015. Accessed November 20, 2015.
- 16 CDC. Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings. *MMWR* 2006;55(RR14):1-17
- 17 CDC. HIV Infection, Risk, Prevention, and Testing Behaviors among Heterosexuals at Increased Risk of HIV Infection—National HIV Behavioral Surveillance, 20 U.S. Cities, 2013. HIV Surveillance Special Report 13. Available at <http://www.cdc.gov/hiv/library/reports/surveillance/#panel2>. Published August 2015.
- 18 Skarbinski J, Rosenberg E, Paz-Bailey G, et al. Human immunodeficiency virus transmission at each step of the care continuum in the United States. *JAMA Intern Med* 2015;175(4):588-96.
- 19 Department of Health and Human Services Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Available at <http://aidsinfo.nih.gov/contentfiles/lvguidelines/AdultandAdolescentGL.pdf>. Section accessed November 24, 2015.

References continued:

- 20 Charania MR, Crepaz N, Guenther-Gray C, et al. Efficacy of Structural-Level Condom Distribution Interventions: A Meta-Analysis of U.S. and International Studies, 1998–2007. *AIDS Behav* 2011;15(7):1283–1297.
- 21 CDC. Vital Signs: Estimated percentages and number of adults with indications for preexposure prophylaxis to prevent HIV acquisition—United States, 2015. *MMWR* 2015;64(Early Release);1-6.
- 22 Smith, D. PrEP awareness and attitudes in a nationally representative survey of primary care clinicians in the United States, 2009-2013. National HIV Prevention Conference. December 2015.
- 23 Lyles CM, Crepaz N, Herbst JH, Kay LS. HIV/AIDS Prevention Research Synthesis Team. Evidence-based HIV behavioral prevention from the perspective of the CDC's HIV/AIDS Prevention Research Synthesis Team. *AIDS Educ Prev* 2006;18(4 Suppl A):21.
- 24 Conrad C, Bradley H, Broz D, et al. Community Outbreak of HIV Infection Linked to Injection Drug Use of Oxymorphone—Indiana, 2015. *MMWR* 2015; 64:443-444.
- 25 Pilcher C, Hatano H, Dasgupta A, et al. Providing same day, observed ART to newly diagnosed HIV+ outpatients is associated with improved virologic suppression. Eighth International AIDS Society Conference on HIV Pathogenesis, Treatment, and Prevention. July 2015.
- 26 Kaiser Family Foundation: The Kaiser Commission on Medicaid and the Uninsured. Key Facts about the Uninsured Population. Available at <http://files.kff.org/attachment/fact-sheet-key-facts-about-the-uninsured-population>. Accessed November 25, 2015.

Centers for Disease Control and Prevention

National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
Division of HIV/AIDS Prevention • 1600 Clifton Road • Atlanta, GA 30333

www.cdc.gov/nchhstp

December 2015

