

WISCONSIN AIDS/HIV PROGRAM NOTES

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Highlights of Recent National Estimates of HIV Incidence and Prevalence

“We, as a nation, must all agree that it is not acceptable for HIV and AIDS to become a rite of passage for gay and bisexual young men; that it is not acceptable for HIV and AIDS to continue to over-burden African American and Hispanic/Latino communities; and that it is not acceptable for any young American to grow up without the knowledge, skills, confidence and motivation necessary to protect themselves against HIV for their entire lifetimes. To guard against these unacceptable outcomes, the HIV/AIDS epidemic in the United States must be met with an even greater sense of commitment, purpose, and urgency by all Americans.”

from New HIV Incidence Estimates: CDC Responds¹

This issue of *Wisconsin AIDS/HIV Program Notes* reviews highlights of the newly updated national estimates of HIV incidence and prevalence which were released in recent months by the federal Centers for Disease Control and Prevention (CDC). This issue of *Program Notes* also captures key concepts CDC has developed in responding to these findings.

The CDC released revised estimates of HIV incidence in the August 6, 2008 issue of the *Journal of the American Medical Association (JAMA)*.² Subsequently, the CDC published a report on subpopulation HIV incidence estimates in the September 12, 2008 issue of the *Morbidity and Mortality Weekly Report (MMWR)*.³ New estimates of HIV prevalence were released through the October 3, 2008 issue of the *MMWR*.⁴

Incidence and prevalence estimates are important in the planning and evaluation of HIV prevention and care services. This is especially important in determining the allocation of limited resources.

¹ Centers for Disease Control and Prevention. New HIV incidence estimates: CDC responds. CDC HIV/AIDS Facts. September 2008. Available from:

<http://www.cdc.gov/HIV/topics/surveillance/resources/factsheets/response.htm>.

² Hall HI, Song R, Rhodes P, et al. Estimation of HIV incidence in the United States. *JAMA* 2008; 300(5):520-529.

³ CDC. Subpopulation estimates from the HIV incidence surveillance system – United States, 2006. *MMWR* 2008; 57(36):985-989.

⁴ CDC. HIV prevalence estimates – United States, 2006. *MMWR* 2008; 57(39):1073-1076.

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In the past, accurate assessment of the current extent of the HIV epidemic in the U.S. has been limited due to the inability to directly measure the scope of the epidemic. New HIV testing assays have changed this, especially assays that can now distinguish between recent and long-standing HIV infections.

New HIV incidence estimate

The calculation of the newly revised estimate of HIV incidence (the number of individuals who become newly infected with HIV in a given year) was based in part on a two-step testing process. Serum specimens from persons newly diagnosed with HIV infection (based on a confirmed positive HIV antibody test result) were tested with a second antibody assay known as the BED HIV-1 capture enzyme immunoassay (BED), which identifies individuals who are considered recently infected. CDC refers to the two-step testing process as the serologic testing algorithm for recent HIV seroconversion (STARHS).

Serum specimens from patients 13 years or older and newly diagnosed with HIV during 2006 in 22 states (not including Wisconsin) were tested with the BED assay to identify infections as recent or long-standing. HIV incidence in the 22 states was estimated through statistical calculations that adjusted for testing frequency and extrapolated to the U.S. Results of these calculations were confirmed with further statistical analyses (back-calculations) of HIV incidence for 1977-2006 based on reports of HIV diagnoses from 40 states and AIDS incidence from 50 states and the District of Columbia.

The new incidence estimate indicates that the HIV epidemic in the U.S. has been much larger than previously known. The estimate indicated that approximately 56,300 people were newly infected with HIV in the U.S. in 2006, roughly 40% higher than CDC's previous estimate of 40,000. It is important to note that the new estimate does not represent an actual increase in new infections but is a more precise measure of HIV incidence. A CDC historical trend analysis revealed that the number of new infections was likely never as low as the previous estimate of 40,000 and has been relatively stable since the early 2000s. The new estimate also reconfirmed that gay and bisexual men of all races, African Americans, and Hispanics/Latinos were most heavily affected by HIV.

CDC's analysis of HIV incidence in U.S. subpopulations underscored the severe impact of HIV among men of all races and ethnicities who have sex with men (MSM), African Americans, and Hispanics/Latinos. It also showed that, within these groups, the impact is most severe among young African American MSM, white MSM in their 30s and 40s, and African American women. This is demonstrated in the following points:

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- Among MSM overall, there were more new HIV infections in young African American MSM (aged 13-29) than any other age/racial group of MSM.
- White MSM account for close to half (46%) of HIV incidence in 2006. Most new infections among white MSM occurred in those aged 30-39, followed by those aged 40-49.
- Among Hispanic/Latino MSM, most new infections occurred in the youngest (13-29) age group.
- African Americans make up 12% of the total U.S. population, yet represented 46% of new HIV infections in the U.S. in 2006.
- The HIV incidence rate for African American women was nearly 15 times as high as that of white women and nearly four times as high as that of Hispanic/Latino women.
- The HIV incidence rate for African American men was nearly six times as high as that of white men and nearly three times that of Hispanic/Latino men. Among African American men, the majority of new infections (63%) were among gay and bisexual men.
- Hispanics/Latinos, while comprising 15% of the U.S. population, represented 18% of new HIV infections among the racial/ethnic groups examined in the new analysis (from 2006).
- The HIV incidence rate among Hispanic/Latino men was more than double that of white men. Men comprised 76% of new infections among Hispanics/Latinos in 2006, the majority of which (72%) were MSM.
- Hispanic/Latino women had a rate of HIV infection in 2006 that was nearly four times that of white women.

New HIV prevalence estimates

To calculate new estimates of HIV prevalence (the total number of persons living with HIV in the United States in 2006) the CDC utilized information on new HIV diagnoses (taken from 40 states with reliable, name-based HIV data) and AIDS diagnoses and deaths (taken from all 50 states and the District of Columbia). This data was utilized along with a statistical back calculation that considered a variety of factors and began with the number of new HIV diagnoses and worked backward to calculate the total number of HIV infections that would have to occur over time to produce the number of

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reported HIV diagnoses. HIV prevalence over time was then calculated by subtracting the total number of deaths among persons with HIV and/or AIDS from the total number of new infections estimated to have occurred through back calculation.

The CDC analysis of HIV prevalence for 2006 indicates that there were more than a million people – an estimated 1,106,400 adults and adolescents – living with HIV at the end of 2006. Other highlights of CDC prevalence estimates include:

- HIV prevalence increased by 11 percent (or 112,000 people) since 2003.
- Approximately one in five (21%) of persons living with HIV in 2006 were unaware of their infections, representing a slight decline from an estimated 25% unaware in 2003.
- Men made up three-quarters of persons living with HIV and women made up one-quarter. Nearly half of all persons living with HIV were MSM. Among men, MSM account for 64% of those living with HIV.
- African Americans comprised half of all persons living with HIV and had a prevalence eight times greater than that of whites. African American men bear the greatest burden of HIV disease, with a prevalence rate six times higher than white men. The prevalence rate for black women was 18 times that of white women.
- Hispanics/Latinos accounted for 18% of persons living with HIV in 2006. The prevalence rate for Hispanic/Latino men was more than twice that of white men, while the prevalence rate for Hispanic/Latino women was four times the rate for white women.
- Asian/Pacific Islanders made up approximately 1% of persons living with HIV, while American Indian/Alaska natives made up less than 1%.
- Seventy-five percent of people living with HIV in 2006 were between the ages of 25 and 49, 25% were age 50 and older, and 5% were between the ages of 13 and 24.

Summary

The new HIV incidence and prevalence estimates for the U.S. underscore the fact that the HIV epidemic is much larger than previously assumed, that it is continuing threat, and that it is growing at alarming rates among certain individuals and communities. The new estimates provide a profile of the epidemic that is primarily young, male, and

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African American. The profile also shows that the epidemic disproportionately affects Hispanics and Latinos, particularly Hispanic and Latino MSM. Gay and bisexual men of all races and ethnicities are the most affected of any group of Americans.

These latest estimates indicate that new infections overall have remained stable in recent years. Stability is an important sign of progress, however, the levels of HIV infection in the U.S. are too high and the scope of the epidemic is far worse than previously realized. The new estimates call for accelerated progress in the delivery of HIV prevention and treatment services.

The growing number of persons living with HIV in the U.S. dramatically demonstrates the need for increased HIV testing, treatment and prevention services to slow the U.S. epidemic. A critical part of the solution is ensuring that everyone infected with HIV knows their status. HIV testing is the essential first step in linking HIV-infected people to life-extending and life-enhancing medical care.

In responding to the challenges of the current HIV epidemic, we know that we can move forward with an even greater sense of commitment, purpose and urgency knowing that prevention works:

- HIV counseling and testing reduce risk behaviors and help link persons living with HIV to medical care and treatment.
- Behavioral and social interventions significantly reduce risk behaviors and sexually transmitted infections among person who are at risk and among person with HIV infection.

For more information on the 2006 HIV incidence and prevalence estimates, including CDC's podcasts, frequently asked questions and answers, fact sheets, and related surveillance information, visit the CDC website at <http://www.cdc.gov/hiv/topics/surveillance/incidence.htm>.

Web-based Data Resources from the Wisconsin AIDS/HIV Program

The website of the Wisconsin AIDS/HIV Program contains current HIV surveillance data for Wisconsin, including annual and quarterly surveillance summaries, downloadable slides highlighting current trends, and an interactive map linking to county-specific HIV data. The "Statistics and Reports" page of the AIDS/HIV Program website is located at <http://dhs.wisconsin.gov/aids-hiv/Stats>.