

Number of HIV infections falling in United States, but fails to meet reduction goals

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HIV (yellow) infecting a human immune cell. Credit: Seth Pincus, Elizabeth Fischer and Austin Athman, National Institute of Allergy and Infectious Diseases, National Institutes of Health

The number of new HIV infections occurring annually in the United States decreased by an estimated 11 percent from 2010 to 2015, while the HIV transmission rate decreased by an estimated 17 percent during the same time period, according to new research from the Johns Hopkins Bloomberg School of Public Health and the University of Pennsylvania.

But despite making important progress on these key indicators, the researchers say the U.S. fell short of the goals outlined in the first comprehensive National HIV/AIDS Strategy (NHAS) released by President Obama's administration in 2010. The 2010 NHAS called for a 25-percent reduction in HIV incidence—the number of new infections in a given time period—and a 30-percent reduction in the rate of transmission by the year 2015. Their report, published online in the journal *AIDS and Behavior*, used mathematical modeling to provide the first estimates of the nation's progress toward the NHAS targets for HIV incidence and transmission rates by 2015.

"The good news is that we appear to have made important strides in the prevention of HIV and the reduction of HIV transmission rates in the United States; unfortunately, these key gains only got us roughly halfway to the 2015 goal line," says the study's senior author, David Holtgrave, PhD, chair of the Department of Health, Behavior and Society at the Bloomberg School. "After the release of the first National HIV/AIDS strategy, researchers cautioned that failure to expand diagnostic, prevention and care services to necessary levels would result in underachievement on the NHAS goals for 2015. Our analysis suggests that is just what happened."

Holtgrave says that while he understands that federal and local resources are limited, efforts must be made to ensure they are allocated strategically, including through an intensified focus on reaching the communities most disproportionately affected by HIV, particularly gay men, young people, transgender people, African American and Hispanic

communities, and those who live in southern states.

To evaluate whether the United States achieved the NHAS goals for reducing the number of new HIV infections, the researchers used mathematical models to estimate HIV incidence and rate of transmission for 2015, and these estimates were used to calculate the net percent change from 2010 to 2015. Their calculations were based on surveillance data published by the Centers for Disease Control and Prevention (CDC) on HIV prevalence and mortality for 2007 to 2012, as well as their own previously published estimates of HIV incidence for 2008 to 2012. Changes seen from 2010 through 2012 were extrapolated for the time period 2013 through 2015.

According to the analysis, in 2015 there were approximately 33,218 new HIV infections in the United States, down from an estimated 37,366 in 2010—a reduction of 11.1 percent. The HIV transmission rate—defined as the average annual number of disease transmissions per 100 people living with HIV—was estimated to be 2.61 in 2015, a reduction of 17.3 percent from the 2010 rate of 3.16.

"Our models indicate that the country's incremental progress in reducing new HIV infections was not enough to achieve the NHAS targets for 2015," says study leader Robert Bonacci, MPH, a medical student at the Perelman School of Medicine at the University of Pennsylvania. "Going forward, as we implement the recently released updated NHAS for 2020, we must take a critical look at the past five years and apply the lessons learned to maximize the impact on our communities most affected by HIV."

Advancements in antiretroviral therapy (ART) mean that HIV can now be a manageable chronic disease. And in the U.S., the average life expectancy for people living with HIV continues to increase toward that of the general population. Yet certain populations—particularly gay

men, young people, transgender people, black and Hispanic Americans and those who live in southern states—continue to be disproportionately affected, and the partial gains made overall have not been spread evenly across all communities. For some, especially gay and other men who have sex with men, the epidemic may be worsening. Additionally, of the 1.2 million people living with HIV in the U.S., many lack access to ART, the lifesaving drugs that reduce HIV transmission by lowering the level of virus in the blood.

More information: "Evaluating the Impact of the U.S. National HIV/AIDS Strategy, 2010-2015" was written by Robert A. Bonacci, MPH, and David R. Holtgrave, PhD.

Provided by Johns Hopkins University Bloomberg School of Public Health

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