5-Year Decline in U.S. HIV Infection Rate Stalled From 2013 to 2016

The CDC has contradicted its own previous reports by characterizing this recent trend as a plateau that followed a “dramatic decline.”

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According to the Centers for Disease Control and Prevention’s (CDC) new HIV surveillance report, the estimated annual HIV transmission rate in the United States declined modestly between 2010 and 2013 and then stagnated through 2016.

The CDC has characterized this recent shift as a plateau that followed a “dramatic decline” in new HIV transmissions. In fact, information from the current report along with previous reports and statements from the federal health agency indicate that the apparent three-year leveling-off period in the new infection rate was preceded by about a five-year period of modest decline in the rate. That promising period was itself preceded by about a decade of stagnation in the HIV rate, a period that stretched back to the mid-1990s.

The true stark decline in the U.S. infection rate occurred between the mid-1980s and mid-1990s.

By the end of 2016, an estimated 1,140,400 U.S. residents 13 years old and older were living with HIV, including an estimated 14.2 percent (162,500 people) who remained undiagnosed. By comparison, an estimated 17.2 percent of the HIV population was undiagnosed as of 2010.

The annual number of new transmissions, also known as HIV incidence, declined among numerous subgroups during the 2010 to 2016 period analyzed in the report, including among white men who have sex with men (MSM) and among heterosexuals. However, troubling increases in the transmission rate among other demographics, including Latino MSM as a whole and Black and Latino MSM between 25 and 34 years old in particular, have apparently offset such promising trends.

According to the CDC, the overall plateau in progress seen between 2013 and 2016 is a result of the failure of HIV prevention efforts and treatment services to reach those who most stand to benefit from them. This includes African Americans and Latinos as well those living in the South.

Mixed messaging from the CDC: Was the decline in infections “dramatic”?

In a press release, the CDC stated that, according to the most recently available data, “The dramatic decline in annual HIV infections has stopped and new infections have stabilized in recent years.”

However, at least during the period analyzed in this new report—2010 to 2016—HIV incidence decreased by only about 5 percent, from an estimated 41,100 new cases in 2010 to 38,900 cases in 2013. The rate then remained essentially constant for the subsequent three years, such that the nation saw an estimated 38,700 transmissions in 2016.

CDC

In March 2018, the CDC published a paper in which agency researchers estimated that in 2008 HIV incidence was 45,200, a figure that declined by 15 percent to an estimated 38,500 in 2015. (The CDC now estimates that 2015 saw 39,000 transmissions.) When this study was initially presented at the 2017 Conference on Retroviruses and Opportunistic Infections (CROI) in Seattle, the agency indicated that prior to 2008, the national transmission rate had remained stagnant at about 45,000 to 50,000 infections per year since the mid-1990s.

Now, in its materials publicizing the new HIV incidence report, the CDC provided as a reference point to the current trends the very high HIV transmission rate seen in the mid-1980s, indicating that today’s annual infection rate is about two thirds smaller. Although the materials do not refer explicitly to the 2008 estimate, they do state that the leveling off of HIV incidence that began in 2013 followed “about five years of subtantial declines.”

Otherwise, neither the new report nor the CDC’s supplemental promotional materials provide any finer analysis on incidence trends during the more than two-decade period that led up to 2010.

The CDC's new characterization of the history of the U.S. HIV transmission rate comes on the heels of President Trump's announcement at his February 5 State of the Union address of the new federal initiative to combat HIV, known as "Ending the Epidemic: A Plan for America." In a press call about the initiative that took place the morning after the president's speech, CDC director Robert R. Redfield, MD, a Trump appointee, first introduced the notion that progress in fighting the spread of HIV had recently "plateaued" following considerable progress.

Robert R. Redfield, MDCourtesy of the Institute of Human Virology at the University of Maryland School of Medicine

According to an agency spokesperson, the CDC is continually revising its estimates of recent HIV incidence trends. Agency researchers draw upon the best data available at the time of the analysis conducted for each report. This fluid analytical process can complicate comparisons of estimates from one year's report to another's. Consequently, it may not be possible to draw a definitive through line between the 2018 paper's estimate of the 2008 HIV transmission rate and the new set of incidence estimates spanning 2010 to 2016.

The report:

Below are the finer details of the new report, broken down into various subgroups of the population. Note that figures are all estimates.

To estimate annual infection rates, the CDC relies on mathematical modeling that processes data reported to the National HIV Surveillance system regarding those ages 13 and older, specifically new HIV diagnoses as well as the first CD4 test result for newly diagnosed individuals.

Investigators use this CD4 count to estimate the stage of HIV disease and, by extension, how long an individual has likely been living with the virus. Such CD4 data were available for 92.2 percent of those diagnosed between 2010 and 2016.

Men who have sex with men (MSM):

MSM accounted for about 70 percent of new infections between 2010 and 2016, specifically 68.2 percent of transmissions during the last year of the period. Overall, HIV incidence among MSM remained stable during the study period, at about 26,000 transmissions annually.

Broken down by race, HIV incidence among MSM remained stable among African-Americans (9,800 cases in 2010 and in 2016), increased by 30 percent among Latinos (from 6,400 to 8,300) and declined by 16 percent among whites (from 8,000 to 6,700).

CDC

When parsing the data on MSM according to both race and age brackets, the CDC investigators

found that the HIV incidence among those 13 to 24 years old declined by more than 30 percent among Blacks (from 5,000 to 3,400) and by about one third among whites (from 1,500 to 1,000) while remaining stable among Latinos (at about 2,000). Among those 25 to 34 years old, there was, by stark and alarming contrast, a 65 percent rise in the new infection rate among Blacks (from 2,600 to 4,300) and a 68 percent rise among Latinos (from 2,200 to 3,700).

CDC

Heterosexuals:

New HIV cases among those for whom heterosexual sex was classified as the mode of transmission of the virus declined by about 17 percent among men and women as a combined category (from 10,900 to 9,100). This included a 15 percent decrease among African-American women (from 4,700 to 4,000) and no change in white heterosexual women (a stable 1,000). For heterosexual men as a whole, HIV incidence remained stable (at about 3,000 per year).

There was a 22 percent decline in HIV incidence among Black heterosexual men (from 2,300 to 1,800) and an 18 percent decline among heterosexual Latinas (from 1,200 to 980). However, such shifts were not considered statistically reliable. Consequently, the CDC considered HIV incidence effectively stable in these two demographics at about 2,000 for Black men and 1,000 for Latinas.

People who inject drugs:

The study period saw a 30 percent decline in new infections among people who inject drugs, from 2,700 in 2010 to 1,900 in 2016. However, this downward trend appears to have plateaued in more recent years as the opioid epidemic threatens to reverse some two decades of hard-fought gains in the reduction of new infections among this demographic.

Overall incidence broken down by age:

HIV incidence increased by almost one third among U.S. residents ages 25 to 34 years old (from 11,500 to 15,000) during the study period. Transmissions declined by about one third among those 13 to 24 years old (from 12,100 to 8,200), held essentially stable among those 35 to 44

years old (at about 7,000 cases), declined by about one fourth among those 45 to 54 years old (from 6,600 to 5,000) and remained essentially stable among those 55 years old and older (at about 3,000 cases).

CDC

Regional:

Between 2010 and 2016, HIV incidence declined in the Northeast while remaining stable in the Midwest, South and West. In 2016, the rate of new infections per 100,000 residents was 19.3 in the South, 12.8 in the Northeast, 12.8 in the West and 8.2 in the Midwest.

Of the 38,700 HIV transmissions that occurred in 2016, 19,700 (51 percent) were in the South, 8,200 (21 percent) were in the West, 6,100 (16 percent) were in the Northeast and 4,600 (12 percent) were in the Midwest.

During the past few years, certain urban areas have been particularly proactive about cultivating and implementing multifaceted plans to drive down new infections. The CDC's data indicate that such plans are proving successful in places like New York state and Washington, DC, which saw declines in HIV incidence of 23 percent and 40 percent, respectively, during the study period.

To read CDC materials pertaining to the new report, including the report itself, click here.

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http://beta.docker.poz.com/article/5year-decline-us-hiv-infection-rate-stalled-2013-2016