

# A path toward ending AIDS in the US by 2025

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HIV infecting a human cell. Credit: NIH

A new study describes an ambitious but feasible path toward what may

have seemed unachievable just a decade ago: an end to the AIDS epidemic in the U.S. Using prevention surveillance data to model rates of HIV incidence, prevalence and mortality, investigators at Brigham and Women's Hospital and Johns Hopkins Bloomberg School of Public Health set targets, specifically a decrease in new infections to 21,000 by 2020 and to 12,000 by 2025, that would mark a transition toward ending the HIV/AIDS epidemic. Their findings are published in *The American Journal of Preventive Medicine*.

"Achieving these targets will require a sustained and intensified national commitment to ending the epidemic," said Robert Bonacci, MD, MPH, of the BWH Department of Medicine and lead author of the study. "But if the U.S. does achieve a reduction to 12,000 new HIV infections by 2025, it could mark an important turning point in the U.S. HIV epidemic: a decline in the total number of people living with HIV in the U.S., and the beginning of the end of the U.S. AIDS epidemic."

Using Centers for Disease Control and Prevention surveillance data for 2010 to 2013, the team modeled many key indicators including incidence and prevalence rates, transmission rates, death rates and more through 2025. Taking into account goals set forward by the U.S. National HIV/AIDS Strategy (NHAS), they estimated the potential trajectory of the epidemic if those benchmarks in care were met. The NHAS goals for 2020 included that 90 percent of people living with HIV would know their status; 90 percent would receive quality care; and 90 percent of people on antiretroviral therapy would achieve viral suppression (the "90/90/90" goals). Extending beyond 2020, they evaluated an achievement of those goals at 95 percent levels by 2025 (the "95/95/95" goals).

With this framework in place, the authors evaluated whether reducing new HIV infections to 12,000 by 2025 would be achievable. Using mathematical modeling, they found that the U.S. could achieve a 46

percent reduction in HIV incidence by 2020 and a nearly 70 percent reduction in HIV incidence by 2025, provided that the U.S. implements a 90/90/90 HIV program framework by 2020 and 95/95/95 framework by 2025. In addition, the HIV transmission rate, (one measure of how fast the epidemic is spreading) would decrease from 3.53 in 2013 to 0.98 in 2025; HIV-related deaths would decrease from 16,500 in 2013 to 12,522 in 2025; and the total number of people living with HIV in the U.S. would increase from 1,104,600 in 2013 to 1,220,615 in 2025.

The authors note the importance of achieving these goals across the U.S., most especially in communities that have been disproportionately affected by HIV, including gay men, young people, transgender persons, black and Hispanic Americans and those who live in southern states, and of tracking progress in real time.

"Providing HIV services to our most disproportionately affected communities is fundamental to future success," said David Holtgrave, PhD, of the Johns Hopkins Bloomberg School of Public Health and senior study author. "In an era of limited funding and competing priorities, it is critically important that we intensify our national commitment to addressing the HIV [epidemic](#) over the next decade."

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