

HIV transmission at each step of the care continuum in the United States

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Individuals infected but undiagnosed with the human immunodeficiency virus (HIV) and those individuals diagnosed with HIV but not yet in medical care accounted for more than 90 percent of the estimated 45,000 HIV transmissions in 2009, according to an article published online by *JAMA Internal Medicine*.

Preventing new HIV infections is essential to reducing future illness and death due to HIV infection in the United States. Interventions at each step of the care continuum (diagnosis, retention in medical care, prescription of antiretroviral therapy [ART] and viral suppression) have the potential to reduce HIV transmission. Estimates of the number of HIV transmissions arising at each step of the HIV care continuum are essential for policy makers and programs to maximize the allocation of HIV prevention resources, according to the study background.

Jacek Skarbinski, M.D., of the Centers for Disease Control and Prevention, Atlanta, and coauthors estimated the rate and number of HIV transmissions attributed to people at each of five care continuum steps: infected but undiagnosed, diagnosed but not in medical care, retained in medical care but not prescribed ART, prescribed ART but not virally suppressed, and achieved viral suppression. The authors used national databases to estimate rates and transmission numbers in the HIV-infected population in the United States in 2009.

According to study results, there were more than 1.1 million people living with HIV in 2009. Of those, 207,600 (18.1 percent) were

undiagnosed; 519,414 (45.2 percent) knew of their infection but were not in medical care; 47,453 (4.1 percent) were in medical care but not prescribed ART; 82,809 (7.2 percent) were prescribed ART but not virally suppressed; and 290,924 (25.3 percent) had achieved viral suppression.

Those individuals who were infected with HIV but undiagnosed and those individuals who were diagnosed with HIV but not in medical care accounted for 91.5 percent (30.2 percent and 61.3 percent, respectively) of the estimated 45,000 transmission in 2009.

Compared with individuals who were HIV infected but undiagnosed (6.6 transmissions per 100 person-years), individuals diagnosed with HIV and not in medical care were 19 percent less likely to transmit HIV (5.3 transmissions per 100 person-years) and individuals who were virally suppressed were 94 percent less likely to transmit HIV (0.4 transmissions per 100 person-years). Men accounted for the most transmissions (86.5 percent).

"In the United States, persons living with HIV who are retained in [medical care](#) and have achieved viral suppression are 94 percent less likely to transmit HIV than HIV-infected undiagnosed persons. Unfortunately, too few persons living with HIV have achieved [viral suppression](#). These estimates of the relative number of transmissions from persons along the HIV care continuum highlight the community-wide prevention benefits of expanding HIV diagnosis and treatment in the United States. Improvements are needed at each step of the continuum to reduce HIV transmission. Through stronger coordination of efforts among individuals, HIV care providers, health departments and government agencies, the United States can realize meaningful gains in the number of persons living with HIV who are aware of their status, linked to and retained in care, receiving ART, and adherent to treatment," the study concludes.

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