

HIV/AIDS

Definition: Infection with human immunodeficiency virus (HIV) may be silent and without effective treatment may result in a variety of manifestations that become more severe over time, resulting in acquired immune deficiency syndrome (AIDS) and death. The U.S. Centers for Disease Control and Prevention defines AIDS as including HIV-infected people with severe immunodeficiency (CD4 lymphocyte count <200 cells/ μ l or <14% of total lymphocytes) and/or one of 26 opportunistic infections (e.g., *Pneumocystis carinii* pneumonia), neoplasms (Kaposi's sarcoma), or other indicator conditions (e.g., wasting syndrome).¹

Summary

At least 11,000 people live with HIV/AIDS in Washington, 64% of whom reside in King County. In 2005, there were 575 newly diagnosed cases of HIV infection in Washington. The HIV/AIDS epidemic has been stable here in recent years. Groups such as black people, people of Hispanic origin, and American Indians and Alaska Natives continue to have rates of HIV/AIDS diagnosis that are higher than those of non-Hispanic whites. These disparities have not changed since 2001. Most HIV/AIDS cases (72%) are among men who have sex with men. HIV diagnoses have increased in adults ages 40 and older. As people with HIV/AIDS continue to live longer, the number living with the disease has increased 5% per year.

Time Trends

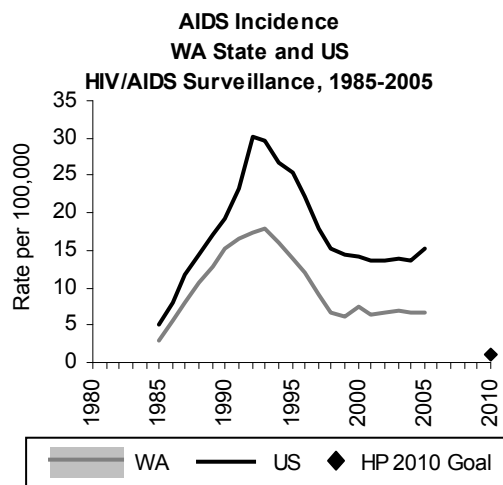
The first case of acquired immune deficiency syndrome (AIDS) in Washington was reported in 1982. Consistent with national trends, AIDS cases increased rapidly in the 1980s, peaking in 1993 as the case definition was expanded. AIDS incidence then dropped in the mid-1990s before stabilizing in 1998. In 2005, the AIDS incidence rate among Washington residents was 6.6 cases per 100,000 residents, less than half the national rate of 15 cases per 100,000.²

The widespread availability of effective drug therapies has slowed the progression of human immunodeficiency virus (HIV) disease so that AIDS data alone no longer accurately describe the full extent of the epidemic.³ In 1999, Washington made HIV infection a reportable condition, with or without the presence of AIDS signs or symptoms.

In common with AIDS diagnoses, new HIV diagnoses (including cases diagnosed with both HIV and AIDS) have changed very little in recent

years, although incidence rates appear to have fallen slightly. In 2005, [the crude HIV incidence rate](#) in Washington (based on new HIV diagnoses) was 9.1 cases per 100,000 residents. HIV rates dropped 2.5% per year during 2001–2005.

The stability of HIV incidence in Washington, despite a growing pool of HIV-infected persons, suggests that transmission of the virus that causes AIDS has been constant over time. HIV prevention and treatment efforts have affected risk behaviors and reduced HIV transmission. People who are infected with HIV in Washington have good access to medications that make them less likely to transmit the disease to others. At the same time, the overall frequency and distribution of HIV risk behaviors among Washington HIV cases have not changed greatly since the late 1990s, suggesting the continued need for prevention services.



Year 2010 Goals

The *Healthy People 2010* goal is to limit national AIDS incidence to 1.0 AIDS case per 100,000. In 2005, the AIDS incidence rate in Washington was 6.6 cases per 100,000. AIDS case data are useful for describing people who were diagnosed too late

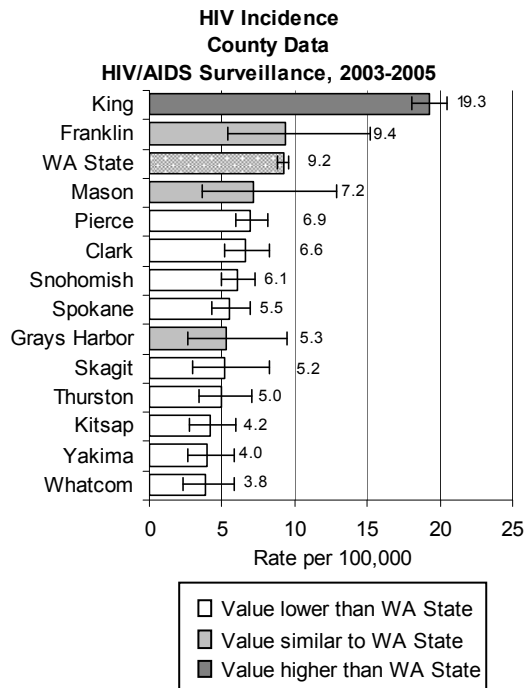
to benefit from treatments, people who did not seek or have access to care, and people for whom treatment failed. But these data do not adequately describe incidence of new HIV infections. This incidence measure is most important in describing newly infected populations and designing and evaluating HIV prevention efforts. The *Healthy People 2010* goal might eventually be modified to address new HIV diagnoses or true HIV incidence (using data from states that do incidence surveillance).

Geographic Variation

From 2003–2005, the average annual rate of new HIV diagnosis in Washington was 9.2 cases per 100,000. King County, which contains the state’s largest urban center, had a significantly higher HIV rate, 19.3 cases per 100,000. Nearly two-thirds (64%) of the state’s total HIV/AIDS cases live in King County. The next highest diagnosis rate is in Franklin County, but annual case counts there have never exceeded single digits, making it difficult to interpret what these rates mean in terms of the county’s level of HIV risk.

HIV rates are typically higher in urban areas, both nationally and in Washington. This is primarily because urban centers typically have higher concentrations of people with high-risk behaviors, such as men who have sex with men (MSM) and those who inject drugs.

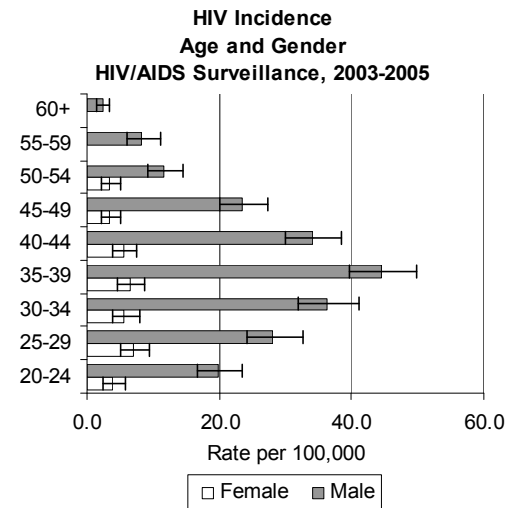
The proportion of HIV/AIDS cases diagnosed outside King County has gradually increased from 30% during the 1980s to nearly 40% since 2000. The geographic distribution of cases has stabilized in recent years. Caseloads in rural areas are smaller than in urban centers. But rural public health staff face unique challenges in providing (1) adequate prevention services to high-risk populations that are often difficult to identify and (2) appropriate medical care and services to people with HIV.



* Note: Twenty-six counties had too few cases to support a reliable rate estimate and were omitted

Age and Gender

HIV and AIDS case rates in all age groups are higher in men than in women. Women accounted for 15% of all new HIV diagnoses during 2001–2005.



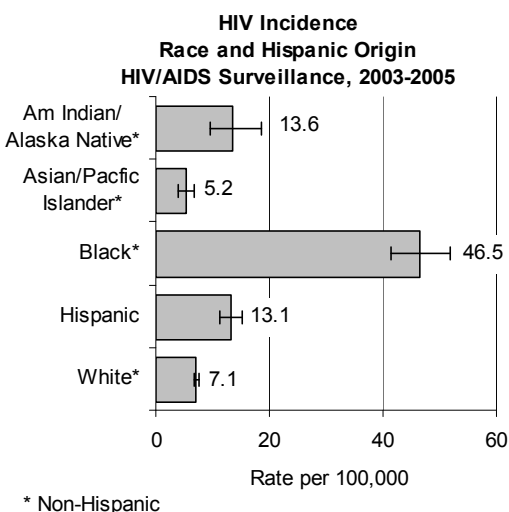
Overall, rates of new HIV diagnosis have declined slightly since 2001, but the drop has been more rapid in men than in women. In contrast, HIV rates among both men and women ages 40–49 have increased. More than three-fourths (77%) of new HIV diagnoses in 2001–2005 were among adults

ages 30 and older. There has been only one confirmed case of perinatal HIV transmission since 2001.

Race and Hispanic Origin

In 2005, 62% of all new HIV diagnoses in Washington were among non-Hispanic white people. Black people, who comprise only 3% of the state's general population, accounted for 15% and 40% of all male and female HIV diagnoses, respectively. During 2003–2005, crude HIV rates were more than six times higher among blacks than whites. Similarly, HIV rates among both people of Hispanic origin and American Indians and Alaska Natives were nearly double those of non-Hispanic whites.

These differences in HIV rates continue to be studied closely, and their causes are the subject of intense debate. Some experts suggest that the lower socioeconomic position widely experienced by people of color leads to higher levels of risk behavior.^{4,5} But emerging evidence indicates that inequalities in HIV risk might be associated with belonging to a racial or ethnic minority group even in the absence of high-risk behaviors.⁶ Beyond risk behaviors, other contextual influences, such as differences in dating patterns, might play an important role in both the formation of social networks and the transmission of HIV.⁶



HIV infection rates are higher among foreign-born blacks vs. U.S.-born blacks.⁷ Many foreign-born blacks are from African countries with high HIV seroprevalence rates. Since 2001, these cases have accounted for about one in five new HIV cases among blacks in Washington.

Foreign-born blacks have a different risk profile than their native counterparts, and they require special HIV prevention considerations due to their unique language, culture, educational background, and migration patterns.⁷ While the largest group of native-born blacks with HIV are MSM, most foreign-born black cases are believed to be the result of heterosexual transmission, although more than 40% of new diagnoses in this group have no identified risk.

Income and Education

Many studies have examined the relationships between measures of socioeconomic position and sexual risk behaviors. Poverty, low educational achievement, and being a racial or ethnic minority have been associated with increased risks for acquiring sexually transmitted diseases.⁸ But the degree to which these findings relate specifically to HIV transmission remains unclear.⁹

Most Washington cases of HIV occur in older, white men who are likely to be educated, employed, and covered by health insurance.¹⁰ HIV prevention depends heavily on providing treatment to those in need. Socially disadvantaged HIV-positive people are less likely to adhere to HIV/AIDS treatment, which increases the chances that they will spread the virus to others.¹¹

Other Measures of Impact and Burden

HIV seroprevalence and seroincidence.

Surveillance data indicate that 9,489 people were living with HIV/AIDS in Washington as of December 31, 2006 and knew of their infection. Nationally, it has been estimated that as many as 25% percent of those infected with HIV are unaware of their infection.¹² The proportion of HIV-positives in Washington who are aware of their status is probably higher than the nation as whole. This conclusion is based on national and local efforts to model the HIV epidemic, evaluations of HIV testing patterns within high-risk populations, surveillance system performance evaluation, as well as trend analyses comparing recent HIV and AIDS incidence. It is reasonable to assume that the true prevalence of HIV infection in Washington lies between 11,000 and 12,000 cases, or about 1% of all people with HIV/AIDS in the United States.¹³

Diagnosis of asymptomatic infection does not necessarily suggest recent infection. The latency period between infection and HIV diagnosis can be many years. This makes it difficult to estimate the true incidence of HIV. To provide a population-based estimate of HIV incidence, the U.S. Centers for

Disease Control and Prevention (CDC) is coordinating a new effort with 34 state and local health departments (including in Washington) to conduct HIV incidence surveillance. This project involves testing blood samples from newly diagnosed cases to determine if they were infected in the previous six months. Results of this surveillance will allow more accurate characterizations of recent infections and more appropriate targeting of treatment and preventive resources.¹⁴

Costs of care. The number of HIV-infected patients requiring hospitalization in Washington has declined over the past decade. Despite this trend, the cost of treatment (especially antiretroviral medications) has risen dramatically. Average estimated lifetime costs of health care associated with HIV have grown from less than \$100,000 per person in the 1980s to more than \$500,000 per person in the current decade.¹⁵

Currently, the average person who begins treatment for HIV will live an additional 24 years.¹⁵ As newer, more effective treatments are developed, life expectancies and costs of care for HIV-positive people are likely to increase even more.

Mortality. In 2005, HIV was the fifth leading cause of death among Washington men 35–44 years old, accounting for 5% of deaths within the group. HIV was also the sixth leading cause of death among men 25–34, accounting for 2% of deaths in that group. Among women 35–44 years of age, HIV was the ninth leading cause of death (2% of deaths). During 1982–2006, HIV/AIDS was an underlying or contributing factor in the deaths of more than 5,000 Washington residents. During 2001–2005, deaths attributed to AIDS averaged 114 per year.

Risk and Protective Factors

Sexual intercourse. While HIV can be transmitted by a single act of sexual intercourse, it is not transmitted with every act. The risk of HIV transmission during unprotected sexual intercourse with an HIV-positive person has been estimated to range from 1 in 10 acts to 1 in 1,000. The risk is greater for anal and vaginal intercourse than for oral sex. It is also much higher if the infection is recent, in the presence of other sexually transmitted diseases, for receptive or female partners compared to insertive partners, and for people with multiple

partners. The correct and consistent use of latex condoms greatly reduces sexual transmission of HIV.

During 2001–2005, 72% of new HIV diagnoses among men were associated with MSM sexual contact. While HIV cases due to MSM have declined over time, MSM still make up the highest proportion of Washington HIV/AIDS cases. Several recent studies have reported high and increasing levels of sexually transmitted diseases among MSM as well as increases in unprotected anal intercourse.¹⁴ An increase in unsafe sexual behaviors among MSM could lead to increased spread of HIV. Sexually transmitted disease rates, particularly rates of primary and secondary syphilis in King County, have risen precipitously among MSM in the past several years. Behavioral studies conducted in King County indicate that MSM continue to engage in high-risk behaviors, including unprotected anal sex, sex with partners of unknown HIV status, and having sex while under the influence of drugs such as crystal methamphetamine.

Thirteen percent of new HIV diagnoses in 2001–2005 (male and female combined) in Washington were attributed to heterosexual contact. Since 2001, about 50% of new HIV diagnoses among women in Washington resulted from heterosexual transmission. This figure is probably an underestimate because correct risk classification requires that the HIV status and/or risk factor of the partner be known, and infected women are often unable to provide risk information about their sex partners.

Sharing drug injection equipment. Sharing HIV-contaminated needles and syringes and other injection equipment such as cookers and cottons can transmit HIV and other blood-borne pathogens. Next to stopping the practice of injecting drugs, the consistent use of new or unshared equipment is the most effective method of reducing the risk of HIV infection for injection drug users. Proper cleaning and disinfection of all equipment associated with needle use can also reduce the risk for HIV.

Both the number and proportion of HIV cases due to injection drug use (IDU) have remained stable in recent years in Washington. In 2001–2005, IDU-associated cases comprised 16% of new HIV diagnoses. In addition to injection drug use, other substance use might contribute to transmission of HIV. People with impaired decision-making abilities, whether because of legal drugs such as alcohol or illegal drugs such as methamphetamines and cocaine, are at increased risk for engaging in unsafe sexual behaviors such as exchanging sex for drugs,

having anonymous sex partners, not using condoms, and not seeking medical treatment for disease symptoms. Sexual partners of substance abusers are also at increased risk for the infections contracted by their substance-abusing partners.

Maternal transmission. HIV can be transmitted to the fetus during pregnancy or to the infant during or shortly after birth. National studies have shown that 25%–30% of pregnant women who do not receive adequate treatment will transmit the virus to their newborns.¹⁶ Adherence to current perinatal HIV screening and treatment guidelines for both HIV-infected mothers and their infants reduces this risk to less than 5%.¹⁶

Other transmission routes. HIV is rarely transmitted through blood transfusions or the improper or accidental breakdown of infection control practices. Comprehensive screening of blood products, improved infection control practices, and safer medical devices all contribute to infection control.

Intervention Strategies

In 2003, the CDC introduced a new strategic plan for preventing HIV entitled *Advancing HIV Prevention: New Strategies for a Changing Epidemic*.¹⁷ That initiative consists of four key strategies:

1. Make HIV testing a routine part of medical care. This strategy promotes the adoption of simplified HIV-testing procedures in medical facilities by removing requirements for consent and HIV prevention counseling before testing. In 2006, CDC also revised its routine HIV testing recommendations and now encourages health providers to offer HIV testing to all adolescents and adults ages 13 through 64.¹⁸

2. Implement new models for diagnosing HIV infections outside medical settings. Rapid testing kits approved by the federal Food and Drug Administration are becoming widely available. They are increasingly used to provide same-visit results and considered extremely reliable.¹⁹ Although these kits still cost more than conventional testing methods, they are portable, easy to use, and provide results within minutes. Timely access to HIV testing increases the number of people who are tested and improves health outcomes among those infected.¹⁸

3. Prevent new infections by working with people diagnosed with HIV and their

partners. More people infected with HIV are living longer, healthier lives, creating more opportunities for them to transmit the virus and more challenges associated with maintaining behavior change. Although concerns about discrimination, prejudice, and stigma targeted at those infected with HIV remain, these concerns have diminished over time. It is important that these concerns not prevent the directing of adequate prevention efforts to HIV-infected people. Integration of prevention and care services will help provide them with the skills they need to maintain prolonged behavior changes. This integration will also ensure they receive effective treatment that might reduce infectivity by lowering their HIV viral load.

4. Further decrease perinatal transmission. CDC will expand its activities to monitor the integration of routine prenatal testing into medical practice (including the use of rapid test kits during labor and delivery).

It is also important that communities identify cost-effective interventions for HIV prevention in order to make the best use of limited resources.²⁰ To be most cost-effective, interventions should be directed toward people whose behavior or personal circumstances place them at increased risk for infection with HIV or other sexually transmitted diseases. Prevention efforts also depend on the widespread availability and promotion of protective devices and equipment, such as sterile syringes and other injection equipment and latex condoms. Because infection with other sexually transmitted diseases can facilitate transmission of HIV, effective control of these diseases is also an important prevention strategy for HIV.

Knowledge of HIV serostatus. Awareness of one's HIV status reduces the risk that an individual will spread the virus to others.²¹ Since 2001, the CDC has stressed the importance of increasing the proportion of HIV-infected individuals who know their serostatus from the currently estimated 75% to a target of 95%. This is a challenging goal given the CDC estimate that more than 300,000 Americans are HIV positive but unaware of their infection.¹³

See Related Chapters: [Sexual Behavior](#), [Sexually Transmitted Infections](#)

Data Sources (For additional detail, see [Appendix B](#))

State HIV/AIDS Data: Washington State Department of Health Infectious Disease and Reproductive Health Assessment Unit
National AIDS Data: U.S. Centers for Disease Control and Prevention, Divisions of HIV/AIDS Prevention

State Death Data: Washington State Department of Health Center for Health Statistics

State Hospitalization Data: Washington State Department of Health Office of Hospital and Patient Data Systems

For More Information

Washington State Department of Health Infectious Disease and Reproductive Health Assessment Unit, (360) 236-3455

Technical Notes

Year of diagnosis and year of report: Year of diagnosis indicates the time at which an individual develops the condition(s) that meets the HIV or AIDS case definition. Year of report indicates the time at which an HIV/AIDS case report is filled-out by a health care provider and sent to the health department. There can be a delay between the time a case is diagnosed and the time it is reported to the health department. For this reason, the year of diagnosis is probably a better indicator of epidemiologic trends in disease occurrence.

Time frame: As a result of reporting delays, HIV/AIDS surveillance data from 2006 are considered too incomplete for public release. Analyses in this chapter rely on data through 2005.

Endnotes

¹ U.S. Centers for Disease Control and Prevention. (1992, December 18). 1993 revised classification system for HIV infection and expanded surveillance case definition for AIDS among adolescents and adults. *Morbidity and Mortality Weekly Report*, 41(RR-17).

² National AIDS incidence rates are based on surveillance data provided by CDC via personal correspondence on January 18, 2007.

³ U.S. Centers for Disease Control and Prevention. (2006). Twenty-five years of HIV/AIDS—United States, 1981-2006. *Morbidity and Mortality Weekly Report*, 55(21), 585-589.

⁴ Krieger, N., Waterman, P. D., Chen, J. T., Soobader, M.J., & Subramanian, S. V. (2003, May-June). Monitoring socioeconomic inequalities in sexually-transmitted infections, tuberculosis, and violence: geocoding and choice of area-based socioeconomic measures—the public health disparities geocoding project. *Public Health Reports*, 118(3), 240-260.

⁵ Plowden, K. O., Fletcher, A., & Miller, J. L. (2005, January-February). Factors influencing HIV-risk behaviors among HIV-positive urban African Americans. *The Journal of the Association of Nurses in AIDS Care*, 16(1), 21-28.

⁶ Hallfors, D. D., Iritani, B. J., Miller, W. C., & Bauer, D. J. (2007). Sexual and drug behavior patterns and HIV and STD racial disparities: the need for new direction. *American Journal of Public Health*, 97(1), 125-132.

⁷ Kent, J. K., & Bauer, A. (2006). Annual review of the epidemiology of HIV and AIDS in Seattle and King County. *HIV/AIDS Epidemiology Report – Washington State and Seattle & King County, 1st Half 2006*, 9-13.

⁸ Adimora, A. A., & Schoenbach, V. J. (2005). Social context, sexual networks, and racial disparities in rates of sexually transmitted infections. *The Journal of Infectious Diseases*, 191, S115-S122.

⁹ Poppen, J., Reisen, C. A., Zea, M. C., Fernanda, T. B., & Echeverry, J. J. (2004, December). Predictors of unprotected anal intercourse among HIV-positive Latino gay and bisexual men. *AIDS and Behavior*, 8(4), 379-389.

¹⁰ Crystal, S., Akincigil, A., Sambamoorthi, U., Wenger, N., Fleishman, J. A., Zingmond, D. S., et al. (2003). The diverse older HIV-positive population: a national profile of economic circumstances, social support, and quality of life. *Journal of Acquired Immune Deficiency Syndromes*, 33, S76-S83.

¹¹ Stoskopf, C. H., Richter, D. L., & Kim, Y. K. (2001). Factors affecting health status in African Americans living with HIV/AIDS. *AIDS Patient Care*, 15(6), 331-338.

¹² Glynn, M. K., & Rhodes, P. (2005, June 14). Estimated HIV prevalence in the United States at the end of 2003 [Abstract T1-B1101]. *Proceedings of the 2005 National HIV Prevention Conference*, Atlanta, GA.

¹³ U.S. Centers for Disease Control and Prevention. (2006). Epidemiology of HIV/AIDS—United States, 1981-2005. *Morbidity and Mortality Weekly Report*, 55(21), 589-592.

¹⁴ Taylor, M. M., Hawkins, K., Gonzalez, A., Buchacz, K., Aynalem, G., Smith, L. V., et al. (2005). Use of the serologic testing algorithm for recent HIV seroconversion (STARHS) to identify recently acquired HIV infections in men with early syphilis in Los Angeles County. *Journal of Acquired Immune Deficiency Syndromes*, 38(5), 505-508.

¹⁵ Schackman, B. R., Gebo, K. A., Walensky, R. P., Losina, E., Muccio, T., Sax, P. E., et al. (2006, November). The lifetime cost of current human immunodeficiency virus care in the United States. *Medical Care*, 44(11), 990-997.

¹⁶ Perinatal HIV Guidelines Working Group. (2006, October 12). Public Health Service Task Force Recommendations for Use of Antiretroviral Drugs in Pregnant HIV-1 Infected Women for Maternal Health and Interventions to Reduce Perinatal HIV-1 Transmission in the United States. October 12, 2006, 1-65. Available at <http://aidsinfo.nih.gov/ContentFiles/PerinatalGL.pdf>. Accessed June 15, 2007.

¹⁷ U.S. Centers for Disease Control and Prevention. (2003). Advancing HIV Prevention: New Strategies for a Changing Epidemic—United States, 2003. *Morbidity and Mortality Weekly Report*, 52(15):329-332.

¹⁸ U.S. Centers for Disease Control and Prevention. (2006). Revised Recommendations for HIV testing of adults, adolescents, and pregnant women in health care settings. *Morbidity and Mortality Weekly Report*, 55(RR14), 1-17.

¹⁹ Greenwald, J. L., Burstein, G. R., Pincus, J., & Branson, B. (2006). A Rapid Review of Rapid HIV Antibody Tests. *Sexually Transmitted Diseases*, 8, 125-131.

²⁰ Cohen, D. A., Wu, S. Y., & Farley, T. A. (2004). Comparing the cost-effectiveness of HIV prevention interventions. *Journal of Acquired Immune Deficiency Syndromes*, 37(3), 1404-1414.

²¹ Marks, G., Crepaz, N., & Janssen, R. S. (2006). Estimating sexual transmission of HIV from persons aware and unaware that they are infected with the virus in the USA. *AIDS*, 20, 1447-1450.