

HIV and AIDS

Overview

- HIV is a virus that kills or damages cells of the body's immune system.
- AIDS is the most advanced stage of HIV infection.
- HIV can be spread through:
 - Any unprotected sex with an infected person,
 - Sharing of drug needles, or
 - Contact with the blood of an infected person.
- Women with HIV can pass the virus to their babies during pregnancy, childbirth, or breastfeeding.

Impact of HIV and AIDS

- The impact of HIV infection and AIDS is disproportionately higher for:
 - Racial and ethnic minorities,
 - People of lower income or education levels, and
 - Other vulnerable populations with high-risk behaviors, such as transgender people.
- Although access to care has improved, several groups of people with HIV remain less likely to have access to care and less likely to have optimal patterns of care:
 - Blacks and Hispanics,
 - Women,
 - Injection drug users,
 - Homeless people, and
 - Uninsured people (Moore, 2011).

Prevalence and Incidence of HIV Infection

- The Centers for Disease Control and Prevention (2015c) estimates that:
 - More than 1.2 million people age 13 years and over are living with HIV infection.
 - About 12.8% of people with HIV are unaware of their infection.
 - The number of people living with HIV has increased, while the number of new infections has remained fairly stable, at about 50,000 per year.
 - The rate of new infections is high among certain groups, such as men who have sex with men (MSM).

Diagnoses of HIV Infection by Race/Ethnicity

- In 2013, the total number of diagnoses of HIV infection in the United States was 47,352 (CDC, 2015d).

- The 2013 rate of diagnosis of HIV infectionⁱ per 100,000 populationⁱⁱ follows (CDC, 2015d):
 - Whites, 6.6.
 - Blacks, 55.9, approximately 8 times the rate of Whites.
 - Hispanics, 18.7, approximately 3 times the rate of Whites.
 - Multiple-race individuals, 16.8, approximately 2.5 times the rate of Whites.
 - Native Hawaiians and Other Pacific Islanders (NHOPIs), 12.7, approximately twice the rate of Whites.
 - American Indians and Alaska Natives (AI/ANs), 9.4.
 - Asians, 6 per 100,000.

Diagnoses of HIV Infection by Transmission Category

- In 2013, HIV infections among adolescents and adults in the United States were attributed to the following (CDC, 2015d):
 - Male-to-male sexual contact, 65%
 - Heterosexual contact,ⁱⁱⁱ females, 17%
 - Heterosexual contact, males, 8%
 - Injection drug use, males, 4%
 - Injection drug use, females, 2%
 - Male-to-male sexual contact and injection drug use, 3%
 - Other transmissions,^{iv} <1%

HIV and AIDS Among MSM

- In 2013, in the United States, gay and bisexual men accounted for 81% (30,689) of the 37,887 estimated HIV diagnoses among all males age 13 years and over and 55% of the estimated number of people diagnosed with AIDS among all adults and adolescents in the United States (CDC, 2015a).
- Of the estimated 14,611 gay and bisexual men diagnosed with AIDS, 40% were Black, 32% were White, and 23% were Hispanic (CDC, 2015a).
- MSM represent only 2% of the U.S. population but:
 - Is the only risk group in which new HIV infections have been gradually increasing since the 1990s and
 - Have constantly represented the largest percentage of people diagnosed with AIDS and people with an AIDS diagnosis who have died (CDC, 2015a).

ⁱ Data include people with a diagnosis of HIV infection regardless of stage of disease at diagnosis.

ⁱⁱ All displayed data are estimates. Estimated numbers resulted from statistical adjustment that accounted for reporting delays and missing transmission category, but not for incomplete reporting.

ⁱⁱⁱ Heterosexual contact is with a person known to have, or to be at high risk for, HIV infection.

^{iv} Other transmission categories include hemophilia, blood transfusion, perinatal exposure, and risk factor not reported or not identified.

- In 2011, in the United States, among MSM with diagnosed HIV infection:
 - 80.6% were linked to care,
 - 57.5% were retained in care,
 - 52.9% were prescribed antiretroviral therapy (ART), and
 - 44.6% had achieved viral suppression (CDC, 2015a).

HIV and AIDS Among Transgender People

- Transgender people have been significantly affected by the HIV/AIDS epidemic in the United States.
- Transgender women have the highest risk of HIV infection.
 - HIV prevalence in transgender women is an estimated 21.7% (Baral, et al., 2013).
 - Among male-to-female (MTF) people, 27.7% tested positive for HIV infection, but 11.8% self-reported being HIV positive (CDC, 2015b).
 - Higher HIV rates (56.3% for test results and 30.8% for self-reporting) were found among MTF Blacks (Herbst, et al., 2008).
 - By race/ethnicity, Black transgender women have the highest percentage of new HIV-positive test results.
- Transgender people often engage in behaviors that increase the risk of HIV infection, such as:
 - Multiple sex partners or unprotected sex,
 - Commercial sex work, and
 - Use of needle injections for recreational drugs or to alter gender (e.g., hormones, silicone) (Herbst, et al., 2007; Stephens, et al., 2011).
- Limited data make creating evidence-based HIV prevention interventions that meet the unique needs of transgender populations challenging, so it is imperative to collect data on transgender people.

HIV and AIDS Among People Who Inject Drugs

- Injection drug use leads to approximately 10% of HIV cases in the United States annually (AIDS.gov, 2014).
- Injection drug users can get and spread HIV by:
 - Sharing drug preparation or injecting equipment with a person who has HIV.
 - Engaging in risky sexual behaviors with their sex and drug-using partners.
- About 80% of HIV-infected injection drug users in the United States also have hepatitis C (HCV) (AIDS.gov, 2014):
 - HCV leads to cirrhosis of the liver and liver cancer.
 - HCV is more serious in people living with HIV because it leads to liver damage more quickly.

- Co-infection with HCV also affects treatment of HIV infection, making it important for people who inject drugs to know if they are infected with HCV and to continue to protect themselves.

HIV and AIDS Policy

- The White House Office of National AIDS Policy launched the National HIV/AIDS Strategy in July 2010 (ONAP, 2010):
 - Comprehensive plan focused on (1) reducing the number of people who become infected with HIV, (2) increasing access to care and optimizing health outcomes for people living with HIV, and (3) reducing HIV-related health disparities.
 - Roadmap for policymakers, partners in prevention, and the public.
- In 2013, the President launched the HIV Care Continuum Initiative, which outlines strategies to optimize health outcomes for those living with HIV.
- In 2014, funding through the HHS Secretary's Minority AIDS Initiative Fund and the Affordable Care Act helped strengthen the capacity of community health centers to identify and treat HIV.
- The Affordable Care Act provides better access to health care coverage and more health insurance options for people living with HIV (AIDS.gov, 2014).

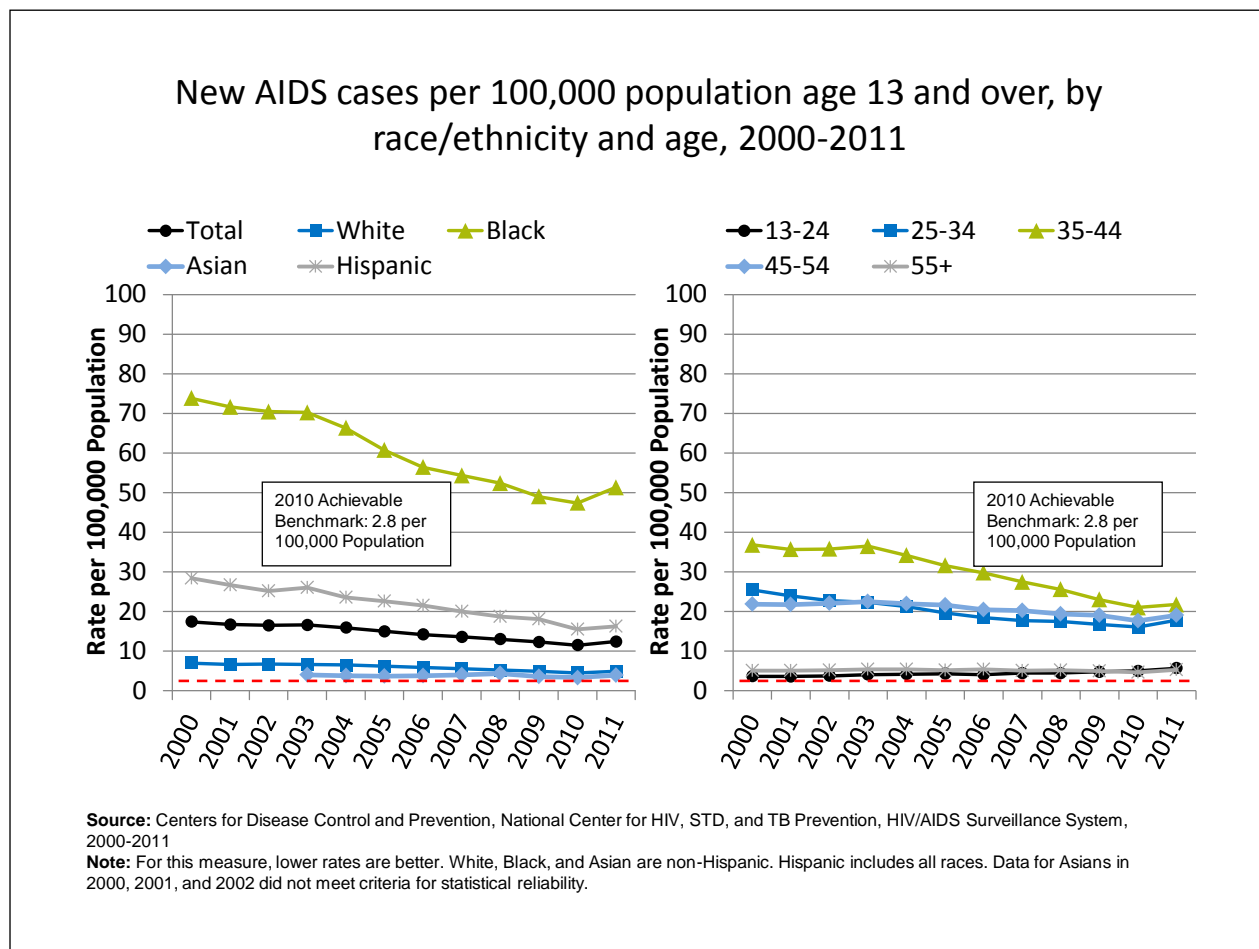
HIV and AIDS Measures

- Outcome: New AIDS cases
- Process: Adult HIV patients who had at least two outpatient visits during the year
- Outcome: Adult HIV patients with a viral load less than 200 copies/mL
- Outcome: HIV infection deaths
- Two measures from the Ryan White HIV/AIDS Program:
 - Outcome: HIV patients in Ryan White-funded care who were virally suppressed (HIV RNA <200 copies/mL)
 - Process: HIV patients in Ryan White-funded care who were retained in care (at least two ambulatory visit dates 90 days apart)
- One measure is not included in the 2014 reports due to statistical issues:
 - Adult HIV patients who received antiretroviral therapy
- One measure reached the 95% ceiling and is no longer reported^v:
 - Eligible patients receiving prophylaxis for *Pneumocystis pneumonia*

^v Measures that reach performance levels of 95% are no longer reported. Data on these measures will continue to be collected and these measures will be added back to the reports if their performance falls below 95%.

- Two measures were removed due to changes in HIV care guidelines (<http://aidsinfo.nih.gov/guidelines>):
 - Adult HIV patients who received two or more CD4 tests during the year^{vi}
 - Eligible patients receiving prophylaxis for *Mycobacterium avium* complex^{vii}

New AIDS Cases



^{vi} The treatment guideline for clinical practice in the past was generally to monitor both CD4 T lymphocyte (CD4) cell count and HIV RNA (viral load) concurrently, as markers of the response to ART and HIV disease progression. However, a new recommendation requires the initiation of ART for all HIV-infected individuals regardless of their viral load or CD4 count, weakening the rationale for frequent CD4 monitoring. When a patient is on ART, CD4 count is not useful as it will not guide changes in treatment, according to the U.S. treatment guidelines (Panel on Antiretroviral Guidelines for Adults and Adolescents, 2015). In addition, reducing the frequency of routine CD4 testing in patients who are virally suppressed can save an estimated \$18 million annually, which can be redirected to other HIV care services (Hyle, et al., 2014).

^{vii} Prophylaxis for *Mycobacterium avium* complex (MAC) is not required among patients receiving ART who are virally suppressed. Studies show that eliminating MAC prophylaxis could reduce pill burden and the risk of drug-drug interactions, along with adverse treatment effects (Yangco, et al., 2014). With ART, patients can achieve viral suppression and healthy CD4 counts and prevent the onset of secondary infections such as MAC (Buchacz, et al, 2010). Thus, we do not track specific MAC prophylaxis.

- **Overall Rate:**

- Improved management of HIV infection has contributed to declines in the number of new AIDS cases in the United States.
- Overall, in 2011, the total rate of new AIDS cases was 12.4 per 100,000 population.

- **Trends:**

- From 2000 to 2011, the rates of new AIDS cases decreased for the total population, Blacks, Hispanics, and Whites.
- From 2003 to 2011, Asians had lower rates of new AIDS cases than Whites.
- From 2000 to 2011, the rates of new AIDS cases decreased for those ages 25-34, 35-44, and 45-54.
- The rate of new AIDS cases worsened for those ages 13-24.

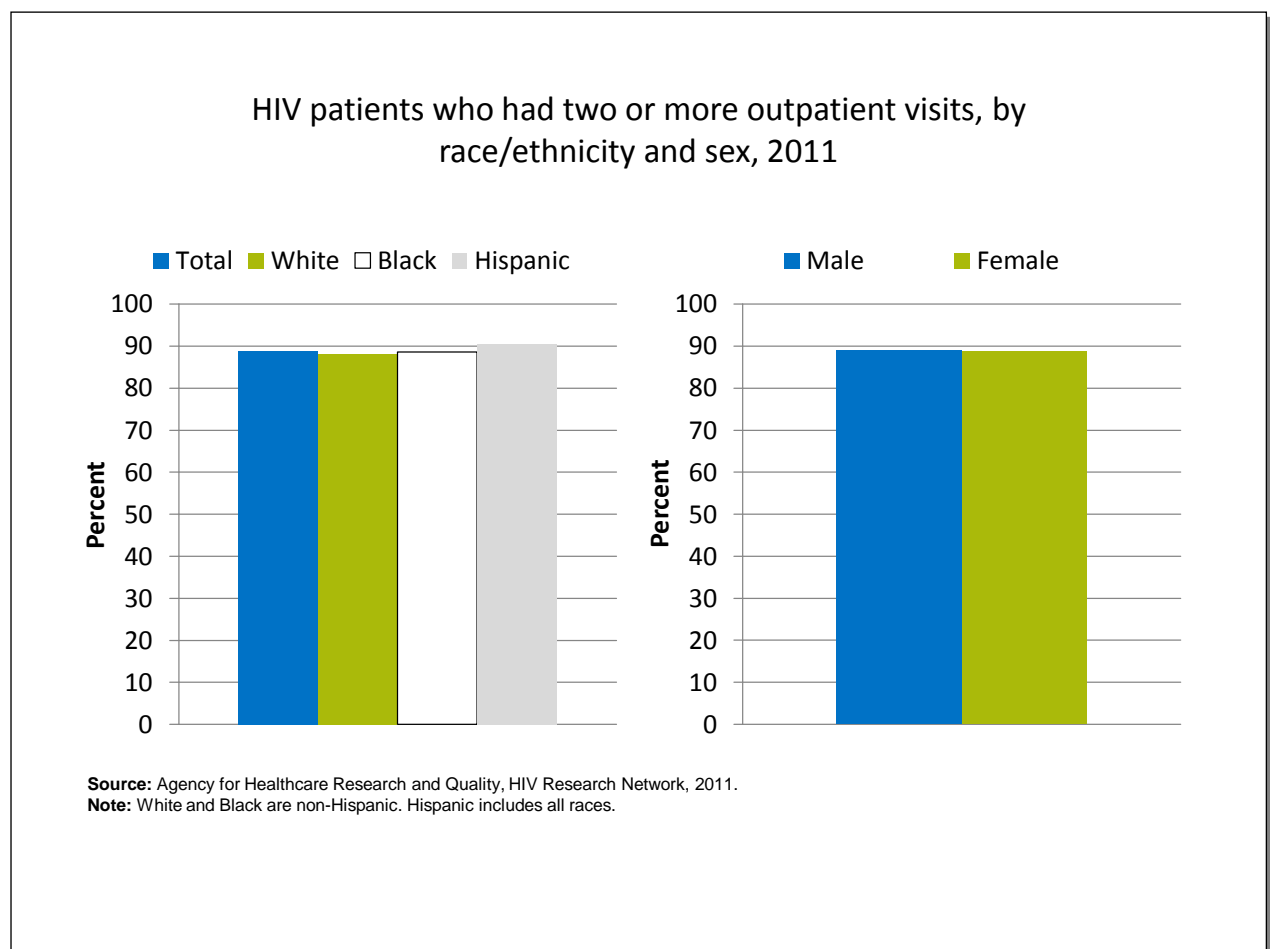
- **Disparities:**

- In all years, Blacks and Hispanics had higher rates of new AIDS cases compared with Whites, but the gap between Blacks and Whites is narrowing.
- From 2000 to 2011, people ages 25-34, 35-44, and 45-54 had higher rates of new AIDS cases compared with those age 55 and over. The gap between those ages 35-44 and 55 and over is narrowing over time.

- **Achievable Benchmark:**

- The 2010 top 5 State achievable benchmark for new AIDS cases was 2.8 per 100,000 population. The top 5 States that contributed to the achievable benchmark are Iowa, Maine, South Dakota, Utah, and Wisconsin.
- At the current rate, the total population could not achieve the benchmark for 17 years. Whites would take 9 years, Hispanics 11 years, and Blacks 18 years. Asians are not making progress toward the benchmark.
- People ages 25-34 and 35-44 could not achieve the benchmark for 18 years and 11 years, respectively. Those ages 13-24 are moving away from the benchmark, and those ages 45-54 and 55 and over are not making progress toward the benchmark.

Outpatient Visits Among HIV Patients



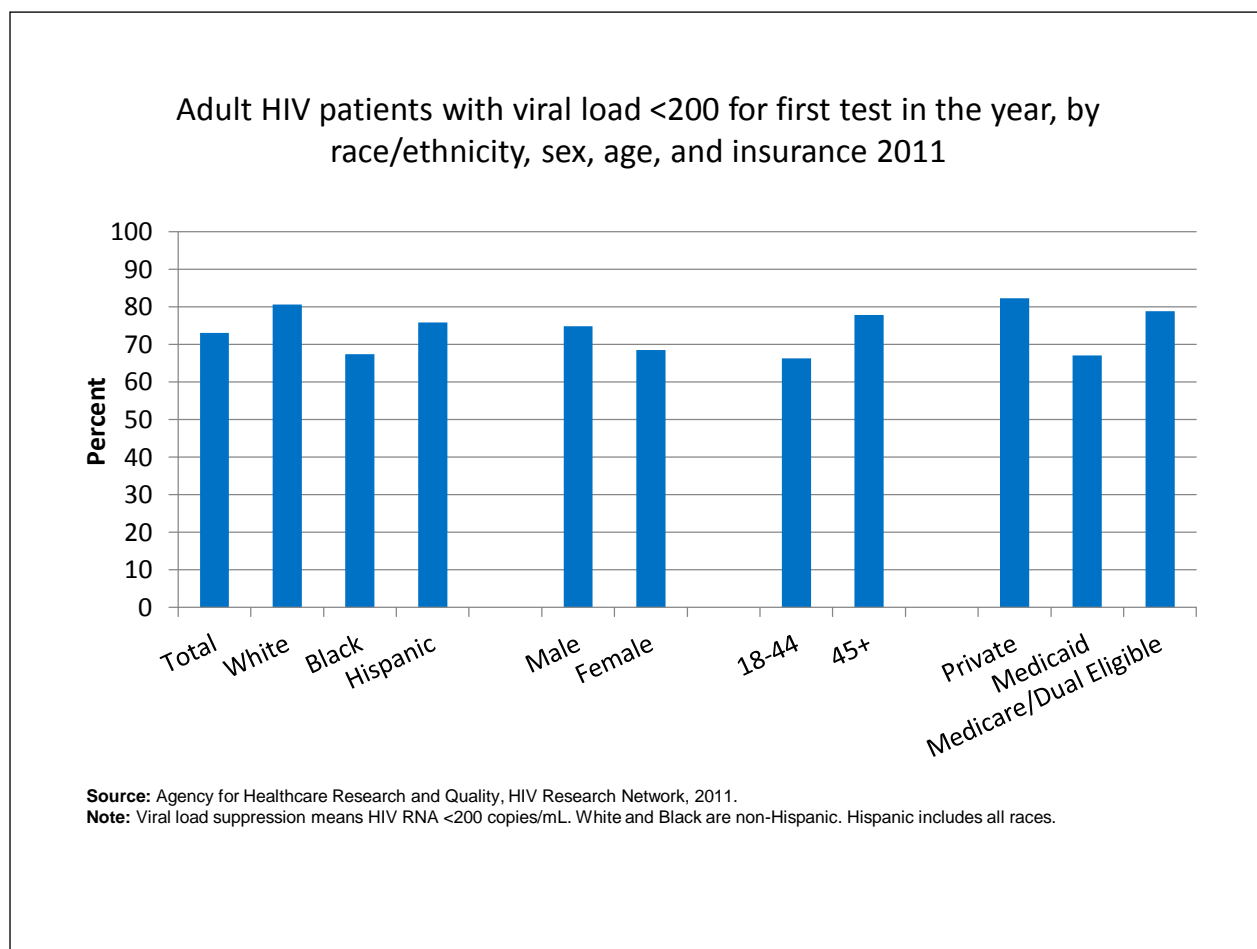
- **Overall Rate:**

- In 2011, 88.9% of people with HIV were retained in care, defined as having two or more outpatient visits during the year.
- The percentage of HIV patients retained in care in 2011 follows:
 - ◆ Whites, 88.1%,
 - ◆ Blacks, 88.6%,
 - ◆ Hispanics, 90.6%,
 - ◆ Males, 89%, and
 - ◆ Females, 88.7%.

- **Groups With Disparities:**

- In 2011, there were no statistically significant differences by race/ethnicity or sex in the percentage of people with HIV retained in care.

HIV Patients With Viral Load Below 200



Overall Rate:

- Viral load suppression below 200 copies/mL is desired, as this improves morbidity and mortality for people living with HIV and decreases the chances of spreading HIV. Thus, it is essential for HIV patients to continue to adequately manage the disease, by adhering to antiretroviral therapy and getting regular viral load testing.
- In 2011, 73.1% of adult HIV patients had a suppressed viral load, defined as HIV RNA less than 200 mL for the first test in the year.

• Groups With Disparities:

- In 2011, the percentage of adult HIV patients with viral load suppression was lower for Blacks (67.4%) compared with Whites (80.6%) and lower for females (68.5%) compared with males (74.9%).
- In 2011, the percentage of adult HIV patients with viral load suppression was lower for adults ages 18-44 (66.3%) compared with those ages 45 and over (77.8%).
- In 2011, the percentage of adult HIV patients with viral load suppression was lower for those with Medicaid (67.1%) and Medicare/dual eligible (78.8%) compared with people with private insurance (82.3%).

Deaths of People With HIV Infection

- A number of factors affect the death rate among people living with HIV, including:
 - Underlying rates of HIV risk behaviors,
 - Prevention of HIV transmission,
 - Early detection and treatment of HIV disease, and
 - Management of AIDS and its complications and comorbidities.
- With widespread use of antiretroviral therapy, a better understanding is needed of the patterns and risk factors for cause-specific mortality.

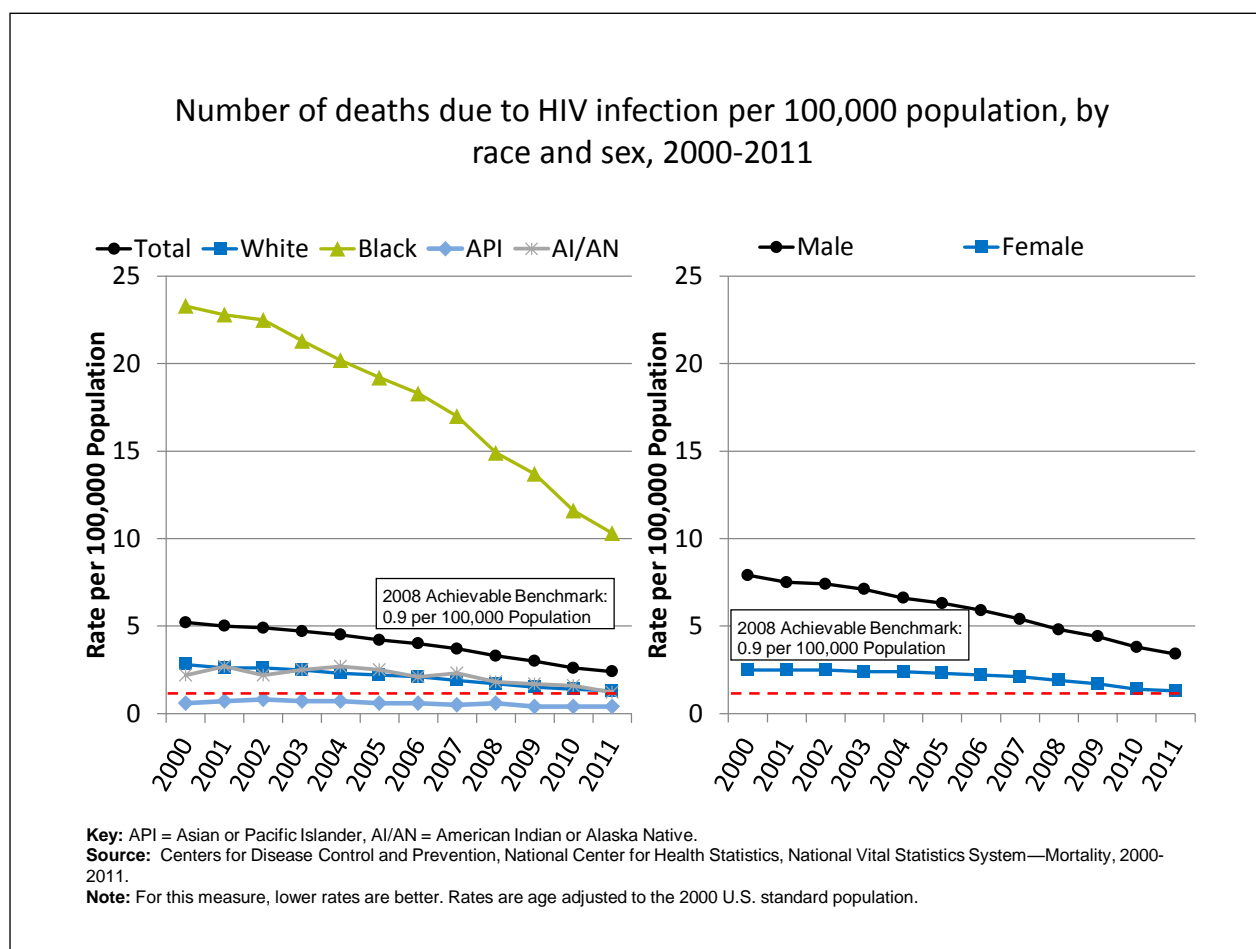
Hepatitis and Deaths of People With HIV Infection

- An estimated one-third of people with HIV are co-infected with hepatitis B or hepatitis C; hepatitis C is more common.
- Viral hepatitis progresses faster and causes more liver-related health problems among people with HIV than among those without HIV.
- Drug therapy has extended the life expectancy of people with HIV, but hepatitis has become the leading cause of non-AIDS-related death in this population (CDC, 2014).
- Hepatitis C increases the risk of death in HIV patients by about 50% (Branch, et al., 2012).
- Current recommendations are to screen all HIV-infected patients for hepatitis C.
 - Patients at high risk for hepatitis C should be screened annually and whenever this infection is suspected (AIDS Info, 2014).

Antiretroviral Therapy and HIV Deaths

- ART has reduced the death rate of people living with HIV (PLWH), allowing their life expectancy to approach that of the general population.
- AIDS-related deaths in PLWH decrease with time on ART, but overall mortality among PLWH remains higher than in the general population.
- As the HIV-infected population ages and time on ART increases, causes of death and association with patient characteristics are changing:
 - In high-income countries, deaths from cancer, cardiovascular disease, and liver disease have been identified among PLWH.
 - It is important to study cause-specific mortality to clarify whether these deaths result from effects of ART, prolonged exposure to HIV, restoration of CD4 counts after severe immunosuppression, or aging and non-HIV risk factors.
- Appropriate management based on the complex relationship between associated comorbidities and HIV disease could decrease mortality among PLWH and improve their quality of life (Ingle, et al., 2014).

Deaths Due to HIV Infection



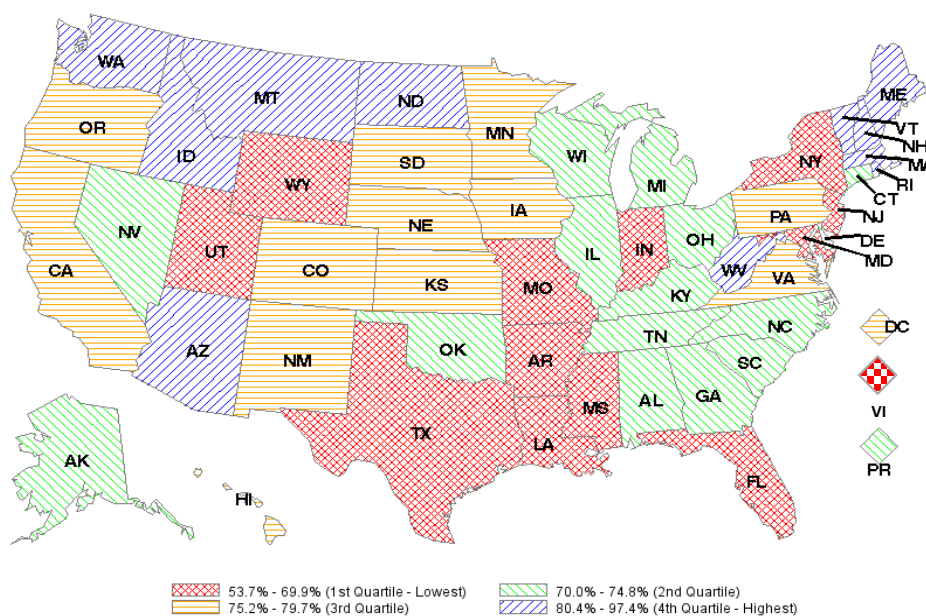
- **Overall Rate:** In 2011, the total rate of HIV infection deaths was 2.4 per 100,000 population. HIV infection death rates are decreasing overall and for all racial/ethnic groups and both sexes.
- **Groups With Disparities:**
 - From 2000 to 2011, HIV infection death rates were higher for Blacks than for Whites. The disparity between Blacks and Whites is narrowing.
 - In all years, Asians and Pacific Islanders had lower rates than Whites.
 - In all years, the rate of HIV infection deaths was higher for males than for females.
- **Achievable Benchmark:**
 - The 2008 top 4 State achievable benchmark for HIV deaths was 0.9 per 100,000 population. The top 5 States that contributed to the achievable benchmark are Kansas, Minnesota, Oregon, and Wisconsin.
 - Overall, it would take the total population 6 years to reach the benchmark. At the current rate, Whites, Blacks, and AI/ANs could achieve the benchmark in 3, 8, and 2 years, respectively. APIs have already reached the benchmark. Women would take 3 years and men would take 6 years to achieve the benchmark.

Ryan White Program Overview

- Since inception, the Ryan White HIV/AIDS Program (RWHAP) has provided funds for primary care and support services for people living with and affected by HIV.
- Working with States, cities, and local community organizations, the RWHAP works to improve the quality of HIV-related care for those who lack sufficient health care coverage or financial resources to cope with HIV.
- For a second year, we present data from the RWHAP:
 - Data presented are limited to those who received care through the RWHAP.
 - Data are not representative of the entire HIV population, which is estimated to be about 1.2 million people in the United States.
- For more information, go to <http://hab.hrsa.gov/about/aboutprogram.html>.

Ryan White Program Patients With Viral Load Below 200

Ryan White program HIV patients with at least one HIV care visit and most recent viral load <200 during the year, 2011



Source: Health Resources and Services Administration, HIV/AIDS Bureau, 2011.

- **Overall Rate:**
 - The number of HIV-positive clients with at least one HIV medical care visit and at least one viral load available was 264,595; 72.6% were virally suppressed (defined as most recent HIV RNA <200 copies/mL in the calendar year). It is important that RWHAP

providers and grantees focus on improving viral load suppression rates in their States, as well as comparing their performance with other States.

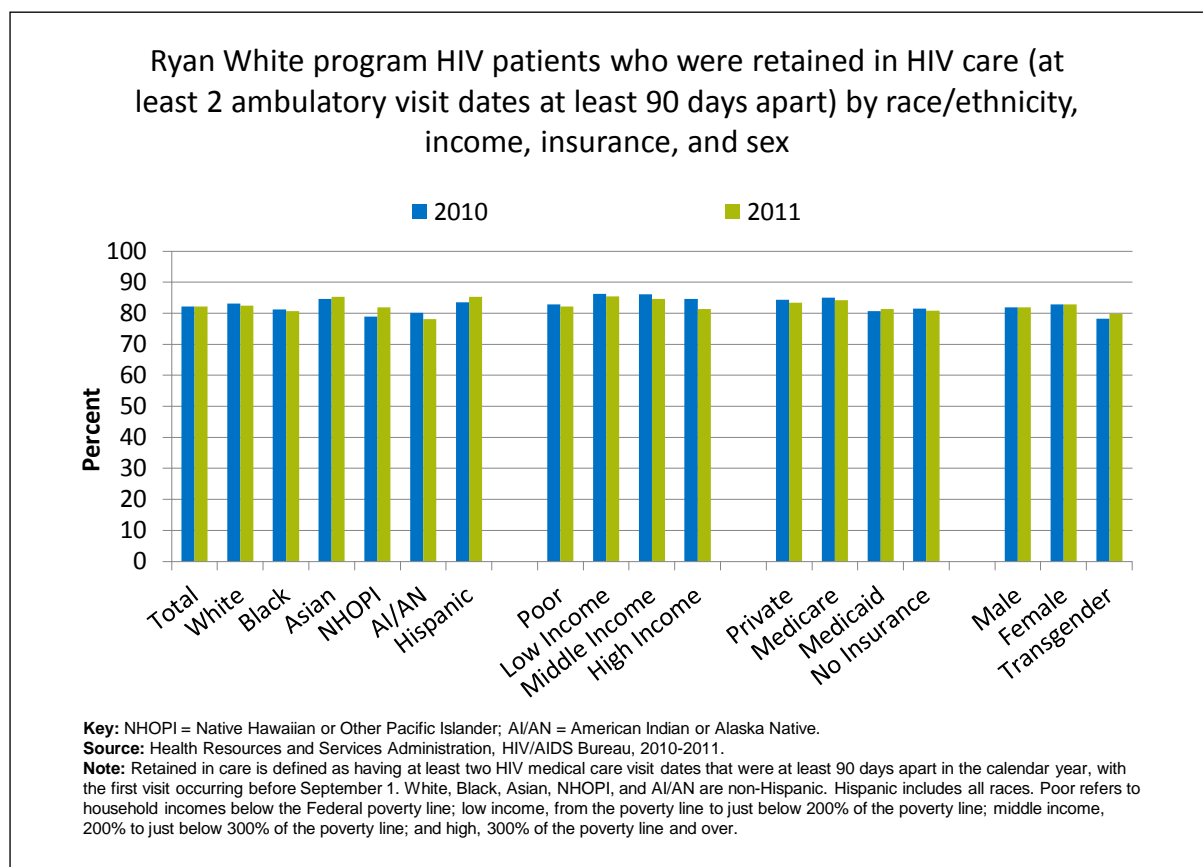
- **Differences by State:**

- Quartile ranges were as follows:

- ◆ 1st quartile (lowest): 53.7%-69.9% (AR, FL, IN, LA, MD, MS, MO, NJ, NY, TX, UT, VI, WY)
- ◆ 2nd quartile: 70.0%-74.8% (AL, AK, CT, DE, GA, IL, KY, MI, NV, NC, OH, OK, PR, SC, TN, WI)
- ◆ 3rd quartile: 75.0%-79.7% (CA, CO, DC, HI, IA, KS, MN, NE, NM, OR, PA, SD, VA)
- ◆ 4th quartile (Highest): 80.4%-97.4% (AZ, ID, MA, ME, MT, ND, NH, RI, VT, WA, WV)

- In 2011, most of the New England States were in the highest quartile for the percentage of Ryan White program patients with at least one HIV care visit and most recent viral load of less than 200 during the year. Most of the West South Central states were in the lowest quartile.

Ryan White Program Patients Retained in HIV Care



- **Overall Rate:** The number of HIV-positive clients with at least one HIV medical care service and at least one HIV medical care visit date available during 2011 was 276,067. In 2011, 82.2% of Ryan White program HIV patients were retained in care.
- **Groups With Disparities:**
 - In both years, Black and AI/AN HIV-positive clients were less likely to be retained in care than White HIV-positive clients.
 - In both years, HIV-positive clients from low and middle income households were more likely to be retained in care compared with those from high income households.
 - In both years, HIV-positive clients with Medicaid and those without insurance were less likely to be retained in care compared with those with private insurance.
 - In both years, transgender HIV-positive clients were less likely to be retained in care compared with nontransgender male HIV-positive clients.
 - The HIV/AIDS Bureau does not ask the sexual orientation of clients, but it collects variables that portray aspects of sexual orientation, including gender, transgender status, sex at birth, and client risk factors, such as men who have sex with men. For more information, go to https://careacttarget.org/sites/default/files/file-upload/resources/2014RSRManual508_0.pdf.

References

- Baral SD, Poteat T, Strömdahl S, et al. Worldwide burden of HIV in transgender women. *Lancet Infect Dis* 2013;13(3):214-22. PMID: 23260128. <http://www.sciencedirect.com/science/article/pii/S1473309912703158>. Accessed July 14, 2015.
- Branch AD, Van Natta ML, Vachon ML, et al.; Studies of the Ocular Complications of AIDS Research Group. Mortality in hepatitis C virus-infected patients with a diagnosis of AIDS in the era of combination antiretroviral therapy. *Clin Infect Dis* 2012 Jul;55(1):137-44. Epub 2012 Apr 24. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3369565/>
- Buchacz K, Baker RK, Palella Jr FJ, et al. AIDS-defining opportunistic illnesses in US patients, 1994-2007: a cohort study. *AIDS* 2010;24:1549-59.
- Centers for Disease Control and Prevention. Gay and Bisexual Men. July 2015a. <http://www.cdc.gov/hiv/group/msm/index.html>. Accessed July 13, 2015.
- Centers for Disease Control and Prevention. HIV Among Transgender People. April 2015b. <http://www.cdc.gov/hiv/group/gender/transgender/index.html>. Accessed July 13, 2015.
- Centers for Disease Control and Prevention. HIV and Viral Hepatitis. March 2014. http://www.cdc.gov/hiv/pdf/library_factsheets_hiv_and_viral_hepatitis.pdf. Accessed June 30, 2015.
- Centers for Disease Control and Prevention. HIV in the United States: At A Glance. July 2015c. <http://www.cdc.gov/hiv/statistics/basics/ata glance.html>. Accessed June 30, 2015.
- Centers for Disease Control and Prevention. Diagnoses of HIV infection in the United States and dependent areas, 2013. HIV Surveillance Report, Volume 25. <http://www.cdc.gov/hiv/library/reports/surveillance/>. February 2015d. Accessed June 27, 2015.
- Herbst JH, Jacobs ED, Finlayson TJ, et al. Estimating the HIV prevalence and risk behaviors of transgender persons in the United States: a systematic review. *AIDS Behav* 2008 Jan;12(1):1-17. Epub 2007 Aug 13. PMID: 17694429.
- Ingle SM, May MT, Gill MJ, et al. Impact of risk factors for specific causes of death in the first and subsequent years of antiretroviral therapy among HIV-infected patients. *Clin Infect Dis* 2014 Jul 15;59(2):287-97. Epub 2014 Apr 24. PMID: 24771333. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4073781/>. Accessed July 14, 2015.
- Moore R. Epidemiology of HIV infection in the United States: implications for linkage to care. *Clin Infect Dis* 2011;52(S2):S208-13. PMID: 21342909. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3106255/>. Accessed July 14, 2015.
- Office of National AIDS Policy. National HIV/AIDS strategy for the United States. Washington, DC: The White House; July. <https://www.whitehouse.gov/administration/eop/onap/nhas/>. Accessed July 29, 2015.
- Panel on Antiretroviral Guidelines for Adults and Adolescents. Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Washington, DC: U.S. Department of Health and Human Services. <http://aidsinfo.nih.gov/contentfiles/lvguidelines/AdultandAdolescentGL.pdf>. Accessed June 26, 2015.
- Stephens SC, Bernstein KT, Philip SS. Male to female transgender person have different sexual risk behaviors yet similar rates of STDs and HIV. *AIDS Behav* 2011 Apr;15(3):683-6. PMID: 20694509.
- Yangco BG, Buchacz K, Baker R, et al. Is primary *Mycobacterium avium* complex prophylaxis necessary in patients with CD4 <50 cells/uL who are virologically suppressed on cART? *AIDS Patient Care STDs* 2014;28(6):280-3.