

Epidemiology of HIV/AIDS among Non-Hispanic Black Women in the United States

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Background: HIV/AIDS has emerged as a persistent health threat to black women in the United States. For the past decade, HIV disease has been among the top 10 leading causes of death for this population.

Methods: We analyzed national HIV surveillance data from 29 states with confidential name-based HIV infection reporting that have conducted integrated HIV/AIDS surveillance since at least 1998. We also analyzed AIDS surveillance data from all 50 states and the District of Columbia.

Results: In 2002, black women represented 14% of all women in the 29 states whose HIV data were analyzed but 72.3% of annual HIV infection diagnoses among women. In that same year, black women were diagnosed with HIV infection at a rate of 68.7 per 100,000, approximately 23 times the rate for white women (three per 100,000) and four times that for Hispanic women (17.2 per 100,000). Likewise, in 2002, black women represented 13% of all women in the 50 states and the District of Columbia but an estimated 67.8% of new AIDS diagnoses among women. In that same year, black women were diagnosed with AIDS at a rate of 48 per 100,000, approximately 23 times the rate for white women (2.1 per 100,000) and more than four times that for Hispanic women (10.6 per 100,000).

Conclusions: Because black women are disproportionately affected by HIV/AIDS, effective strategies are needed to prevent new HIV infections, to detect HIV infections early and to assure adequate treatment for black women who are infected with HIV.

Key words: HIV ■ AIDS ■ black ■ women ■ epidemiology

The HIV epidemic in the United States, which began primarily among white men who have sex with men, has expanded to affect an increasing number of populations. Blacks, in particular, have been disproportionately affected by HIV/AIDS since the beginning of the epidemic, and the disparity has increased. In 1998, the number of blacks living with AIDS in the United States exceeded that of whites, and in 2002, for the first time, blacks accounted for more than half of the annual new diagnoses of HIV infection in 30 areas with confidential name-based HIV reporting systems.¹

Although the greatest number of new HIV infections and AIDS diagnoses occur in black men when compared to any other race- and sex-specific subgroup, black women account for a growing share and the majority of diagnoses among women. Furthermore, despite advances in the treatment of HIV infection, more black women are diagnosed with and die from AIDS than women of other races/ethnicities.² According to the National Center for Health Statistics, for the past decade, HIV disease has been among the 10 leading causes of death for all black women, and from 1999 through 2001 was the leading cause of death for black women aged 25–34.^{3–5}

Few studies have provided national data on the epidemiology of HIV/AIDS among black women. Our purpose is to describe the epidemiology of HIV infection and AIDS among black women in the United States by using national surveillance data reported to the CDC. We present data on HIV/AIDS diagnoses, HIV/AIDS prevalence, age distribution, risk factors,

© 2005. From Division of HIV/AIDS Prevention—Surveillance and Epidemiology, National Center for HIV, STD and TB Prevention, Centers for Disease Control and Prevention (Whitmore, Satcher) and Northrop Grumman Mission Systems, CDC Information Technology Support Contract, Atlanta, GA (Hu). Send correspondence and reprint requests for *J Natl Med Assoc*. 2005;97:19S–24S to: Suzanne Whitmore, Centers for Disease Control and Prevention, Mail Stop E-47, 1600 Clifton Road, Atlanta, GA, 30333; phone: (404) 639-2050; fax: (404) 639-2980; e-mail: Swhitmore@cdc.gov

regional variations and deaths of black women with AIDS. In addition, we provide a comparative analysis of HIV infection and AIDS among black women to women of other races/ethnicities.

METHODS

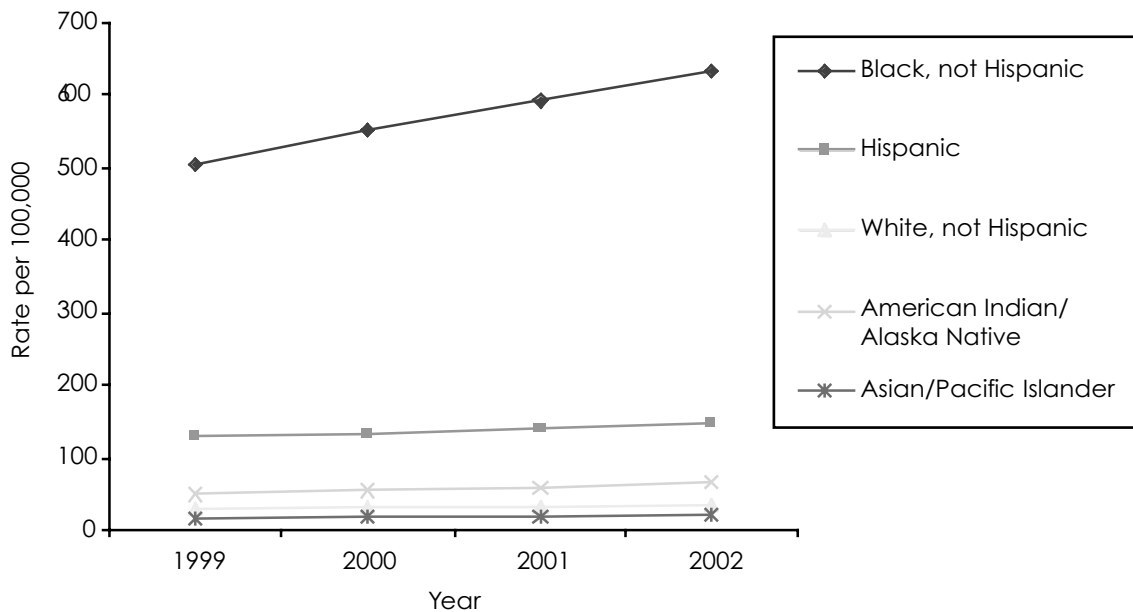
State health departments report confidential HIV infection and AIDS case reports to CDC through the HIV/AIDS Reporting System (HARS) after the removal of patient and physician identifiers. To characterize the HIV/AIDS epidemic in the United States, we analyzed HIV infection surveillance data for the most recent four years reported to CDC from 29 states (Alabama, Arkansas, Arizona, Florida, Colorado, Iowa, Idaho, Indiana, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Nebraska, New Jersey, New Mexico, Nevada, North Carolina, North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Utah, Virginia, Wisconsin, West Virginia and Wyoming) with mature HIV reporting systems (i.e., since at least 1998) to allow for stabilization of data collection and for adjustment of the data in order to monitor trends. For analysis of AIDS surveillance data, we used data reported from the 50 states and the District of

Columbia for the most recent four years.

All analyses include HIV-infected females age 13 years and older. We provide descriptive analyses by the following characteristics: race/ethnicity, disease status, exposure category, age and region of residence. Persons of unknown sex, unknown race/ethnicity or those reporting multiple races/ethnicities were excluded. Completeness of reporting of race/ethnicity in HARS is >99%.

In this report, data is presented for cases of HIV infection which include cases in persons with a diagnosis of HIV infection regardless of AIDS status at the time of diagnosis of HIV infection. Data reported to CDC through June 2003 were adjusted for delays in reporting. Data pertaining to exposure category were adjusted for reclassification; that is, cases initially reported without risk factor information were reclassified according to historical patterns of reclassification.⁶ Variance estimates were derived from data submitted monthly to CDC. Diagnosis and prevalence rates were computed using population denominators based on official postcensus estimates from the U.S. Census Bureau and bridged-race estimates for 2000 obtained from the National Center for Health Statistics.^{7,8} For geographic analy-

**Figure 1. Annual Rates for Women Living with HIV Infection, by Race/Ethnicity, 1999–2002
29 States with Confidential, Name-Based HIV Infection Reporting**



Note: Adjusted for reporting delays

sis of AIDS diagnoses, the 50 states and the District of Columbia were assigned to four regions defined by the U.S. Census Bureau.⁹

RESULTS

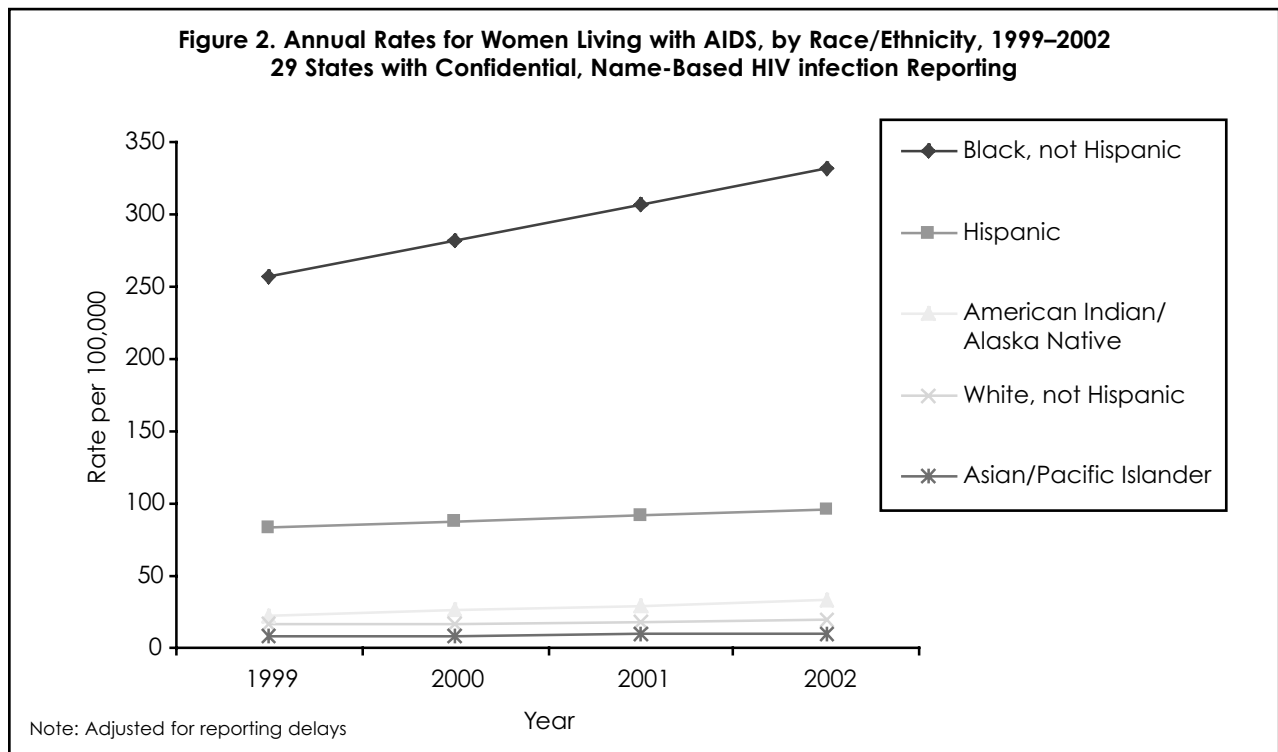
Diagnoses of HIV Infection

From 1999 through 2002, an estimated 21,466 cases of HIV infection were diagnosed among black women in the 29 states with confidential name-based HIV reporting. During this same period, the annual number of new HIV diagnoses among black women remained stable from year to year. In 2002, black women represented 14% of all women in the 29 states but 72.3% (5,340) of annual HIV infection diagnoses among women in the 29 states. White women accounted for 17.9% (1,334) of HIV diagnoses among women, Hispanic women for 9.3% (693), and Asian/Pacific Islander (29) and American Indian/Alaska Native (53) women for <1% each. From 1999 through 2002, HIV diagnosis rates for black women decreased 7% (73.9 per 100,000 in 1999 to 68.7 per 100,000 in 2002). In 2002, black women were diagnosed with HIV infection at a rate approximately 23 times the rate among white

women (three per 100,000) and four times that among Hispanic women (17.2 per 100,000).

Prevalence of HIV infection

At the end of 2002, an estimated 49,167 black women were living with HIV infection in the 29 states, accounting for 68.4% of all women living with HIV infection in the 29 states. White women accounted for 22.4% (16,087) of women living with HIV infection, Hispanic women for 8.3% (5,991), and <1% each for Asian/Pacific Islander (271) and American Indian/Alaska Native (390) women. From 1999 through 2002, HIV prevalence rates were consistently higher for black women when compared to women of other races/ethnicities (Figure 1). During this same period, HIV prevalence rates per 100,000 for black women increased 20% from 506.4 in 1999 to 632.9 in 2002. In 2002, black women had the highest rate among women living with HIV compared with 148.5 per 100,000 among Hispanic women, 64.6 per 100,000 among American Indian/Alaska Native women, 21.1 per 100,000 among white women and 36 per 100,000 among Asian/Pacific Islander women.



Diagnoses of AIDS

From 1999 through 2002, an estimated 27,323 cases of AIDS in black women were diagnosed. During the same period, the annual number of new AIDS diagnoses among black women increased steadily (13%), from 6,314 to 7,159. In 2002, although black women represented 13% of all women in the 50 states and the District of Columbia, they accounted for an estimated 67.8% of new AIDS diagnoses among women. White women accounted for 17.1% (1,801) of women diagnosed with AIDS, Hispanic women for 13.9% (1,471), and Asian/Pacific Islander (75) and American Indian/Alaska Native (54) women for <1% each. From 1999 through 2002, AIDS diagnosis rates were consistently higher for black women when compared to women of other races/ethnicities. From 1999 through 2002, AIDS diagnosis rates per 100,000 for black women increased 8.1% from 44.4 in 1999 to 48 in 2002. In 2002, black women were diagnosed with AIDS at a rate approximately 23 times the rate among white women (2.1 per 100,000), and more than four times the rate among Hispanic women (10.6 per 100,000).

Prevalence of AIDS

At the end of 2002, an estimated 49,495 black women were living with AIDS in the 50 states and the District of Columbia, accounting for 61.6 % of women living with AIDS. White women accounted for 21% (16,868) of women living with AIDS, Hispanic women for 16.4% (13,145), and <1% each for Asian/Pacific Islander (526) and American Indian/Alaska Native (315) women. From 1999 through 2002, AIDS prevalence rates were consistently higher for black women when compared to women of other races/ethnicities (Figure 2). During this same period, AIDS prevalence rates per 100,000 for black women increased 29.3% from 257.1 in 1999 to 332.6 in 2002. In 2002, black women had the highest rate of women living with AIDS compared with 95.6 per 100,000 among Hispanic women, 33 per 100,000 among American Indian/Alaska Native women, 19.6 per 100,000 among white women, and 10 per 100,000 among Asian/Pacific Islander women.

Regional Variations in AIDS

From 1999 through 2002, the south accounted for the largest proportion of AIDS diagnoses among black women in the 50 states and the District of Columbia, with an estimated 54.4% compared with 32.1% (8,780) in the northeast, 8.9% (2,420) in the midwest and 4.6% (1,261) in the west. Although the annual AIDS diagnosis rates for black women remained stable in all regions from 1999 through 2002, the northeast accounted for the highest rates each year. In 2002, the AIDS diagnosis rate for black women in the northeast was 82 per 100,000. During the same year, AIDS diagnosis rates for black women were 48.1 per 100,000 in the south, 24.1 per 100,000 in the west and 25.9 per 100,000 in the midwest.

Age Distribution

From 1999 through 2002, the majority, an estimated 62.2%, of new HIV diagnoses among black women in the 29 states were among women aged 25–34 years (6,672) and those aged 35–44 years (6,675), each accounting for 31.1%. During this same period, black women aged 45–54 years accounted for 14.6% (3,129) of new HIV diagnoses, 20–24 years for 11.6% (2,496), 13–19 years for 5.8% (1,251), and those aged 55 years and older for 5.8% (1,244).

From 1999 through 2002, an estimated 67% (18,345) of AIDS diagnoses among black women in the 50 states and the District of Columbia were among those aged 25–34 years (28.6%) and those aged 35–44 years (38.5%). During this same period, black women aged 45–54 years accounted for 19% (5,197) of new AIDS diagnoses, 55 years and older for 6.7% (1,832), 20–24 years for 5.4% (1,481), and 13–19 years for 1.7% (467).

Risk Factors

From 1999 through 2002, the majority (71.1%) of women diagnosed with HIV infection in the 29 states contracted the virus through heterosexual contact. Of all women who were infected through heterosexual contact and who received a diagnosis during 1999 through 2002, black women accounted for 74.6% (17,204) of new diagnoses of HIV infection. During

this time, white women accounted for 16% (3,682) of women infected through heterosexual contact, Hispanic women for 8.5% (1,957), American Indian/Alaska Native women and Asian/Pacific Islander for <1% each. From 1999 through 2002, an estimated 80.1% of black women with a diagnosis of HIV infection had been infected through heterosexual contact with an injection drug user, a bisexual man, a man with hemophilia, a transfusion recipient with HIV infection or an HIV-infected person whose risk is not known. From 1999 through 2002, an estimated 18.2% (3,909) of black women with a diagnosis of HIV infection were injection drug users, and 1.7% (353) were infected through other risk factors or their risk factor was not identified.

From 1999 through 2002, of all women diagnosed with AIDS, black women accounted for 68.6% (18,298) of women who had been infected through heterosexual contact. During this time, among women with AIDS, white women accounted for 15.4% (4,120) of women infected with HIV through heterosexual contact, Hispanic women for 14.8% (3,938), Asian/Pacific Islander (211) and American Indian/Alaska Native (106) women for <1% each. From 1999 through 2002, an estimated 67% of black women with a diagnosis of AIDS were infected through heterosexual contact, 30.5% were injection drug users, and 2.5% (694) were infected through other risk factors or their risk factor was not identified.

Deaths

From 1999 through 2002, black women accounted for 68% (11,101) of all women who died with AIDS in the 50 states and the District of Columbia. White women accounted for 17.5% (2,855) of deaths among women with AIDS; Hispanic women for 13.8% (2,254), and Asian/Pacific Islander and American Indian/Alaska Native women for <1% each. From 1999 through 2002, the number of deaths among black women with AIDS remained relatively stable from year to year, with a total of 11,101 deaths. Of these deaths, black women aged 35–44 accounted for 41.3% (4,576) of deaths, 45–54 years for 25.3% (2,803), 25–35 years

for 20.6% (2,283), 55 years and older for 10% (1,113), and 15–24 years for 2.8% (315).

DISCUSSION

HIV/AIDS is a major cause of morbidity and mortality among black women in the United States. Our analysis indicates that black women have been increasingly affected by HIV and, despite prevention efforts and advances in HIV treatment, are more likely to become infected with HIV or to die of AIDS than are women of other races/ethnicities. HIV infection disproportionately affects black women who are of childbearing age and who live in the northeastern and southern regions of the United States. Heterosexual contact is the most common risk factor for HIV transmission to black women.

Black women are more likely to face the challenges associated with risk for HIV infection, which include poverty, at-risk partners (e.g., bisexual man, injection drug user), substance abuse and other sexually transmitted diseases.^{10–14} In addition, increasing proportions of new AIDS diagnoses among black women may reflect disparities in testing behaviors, whether and how they seek healthcare, differential effects of HAART, lack of early access to medical care and lack of early access to drug therapies. CDC's initiative, Advancing HIV Prevention, addresses these concerns by promoting early testing and earlier access to medical care for HIV-infected persons.¹⁵ The development of new and effective strategies to increase awareness and promote focused and culturally specific prevention and intervention approaches may reduce the number of new infections in this population. An effective strategy for reducing the number of new HIV infections among black women may be to direct prevention efforts to their heterosexual partners. In addition, strategies that increase early testing, early access to medical care and therapy, and adherence to HAART is critical for black women who are currently infected.

This analysis is subject to a number of limitations. First, AIDS data do not reflect current trends in incidence. Although in the past, reported AIDS cases were used as the primary indicator of the extent and distribution of the HIV epidemic in the United States,

new cases of HIV infection are more reflective of the current epidemic than are new AIDS cases. This is because HAART slows the progression of HIV disease to AIDS and because many years elapse between the acquisition of HIV infection and the development of AIDS. Second, HIV data are dependent on HIV testing and the reporting of cases to local health departments. Name-based HIV case data were available from only 29 states. Because these 29 states accounted for only 39% of all AIDS cases reported nationally, the data may not be generalizable to the United States. Cases in women who had no identified mode of transmission were reclassified into transmission categories on the basis of information learned from follow-up investigations. Women with follow-up information were assumed to constitute a representative sample of all women initially reported without an identified exposure, and the distribution among transmission categories was assumed to be consistent for the preceding 10 years.⁶ Incompleteness of reporting and potential duplicates in reporting are also limitations to the data. Completeness of HIV/AIDS case reporting and the potential for duplicate reporting by different states are being evaluated in accordance with CDC's performance standards for HIV/AIDS surveillance.

The disproportionate effect of HIV/AIDS on black women warrants the development of effective strategies to prevent new HIV infections, to detect HIV infections early and to assure adequate treatment for black women who are infected with HIV. As is true of all races/ethnicities, the increased number of black women who are living with AIDS is largely because of treatment advances; however, this increase is also due to the epidemic's increasing effect on black women in the United States. The early diagnosis of HIV infection would enable black women to take full advantage of antiretroviral therapies and prophylaxis for opportunistic infections—both of which can forestall the development of AIDS-related symptoms and decrease the morbidity and mortality associated with HIV infection.

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