

## Report from the CDC

# Racial and Ethnic Disparities in HIV/AIDS, Sexually Transmitted Diseases, and Tuberculosis among Women

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### ABSTRACT

Disparities in health status and health outcomes exist among subpopulations of women; these disparities may be related to socioeconomic status, race, ethnicity, and country of birth. In this paper, we use surveillance data from 2003 and earlier to examine racial and ethnic differences among women in sexually transmitted diseases (STDs) (chlamydia, gonorrhea, and syphilis), human immunodeficiency virus (HIV), and tuberculosis. We also describe prevention programs the Centers for Disease Control and Prevention (CDC) has developed to address the disparities.

### INTRODUCTION

AS RECENTLY AS TWO DECADES AGO, few of the federal government's published reports on women's health included morbidity data.<sup>1</sup> The data that were presented dealt primarily with the reproductive system, and many of the reports focused on pregnancy and contraception rather than on infectious or chronic diseases. Since then, the government has made significant progress in implementing programs and policies to help understand the full range of diseases, disorders, and conditions that affect women.<sup>2,3</sup>

Although interest in women's health has increased, disparities in health outcomes among women continue to exist, especially among women from racial and ethnic minority populations. Women from racial and ethnic minority popula-

tions experience many of the same health problems as white women; however, as a group, they are in poorer health, use fewer health services, and suffer disproportionately from premature death, disease, and disabilities.<sup>4</sup> As women's health research has evolved beyond reproductive issues, attention to the contextual factors that contribute to differences in health outcomes in subpopulations of women has increased. Although socioeconomic status (SES) is a central determinant of racial and ethnic disparities in health, other factors, such as geographic location, migration and acculturation, and racism, also play a role.<sup>5</sup> In this report, we use surveillance data from 2003 and earlier to examine racial and ethnic differences in bacterial sexually transmitted diseases (STDs) (chlamydia, gonorrhea, and syphilis), HIV infection, and tuberculosis among

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The findings and conclusions in this report are those of the authors and do not necessarily represent the views of the Centers for Disease Control and Prevention.

women. We also describe some of the prevention programs funded by CDC to reduce disparities in STDs, HIV infection, and tuberculosis among women.

**BACKGROUND**

*Sexually transmitted diseases*

From 1987 through 2003, the reported rate of chlamydial infection in women in the United States increased from 78.5 cases to 466.9 cases per 100,000 population. These increases in the reported national chlamydia rate likely represent increased screening for the infection, increased use of nucleic acid amplification tests, which are more sensitive than other types of screening tests, as well as an increase in the true disease burden.<sup>6</sup> In 2003, 877,478 chlamydial infections were reported to CDC from 50 states and the District of Columbia.<sup>6</sup> The rate of chlamydial infection among African American women was more than 7 times higher than the rate among white women; the rate among American Indian/Alaska Native women was approximately 5 times higher than the rate among white women (Table 1). From 1999 to 2003, the reported numbers of cases of chlamydial infection increased among women from each racial and ethnic group. The increase was higher among Hispanic (34.1%), white (30.7%), and Asian/Pacific Islander (29.4%) women compared with American Indian/Alaska Native (25.7%) and African American (24.1%) women.<sup>7</sup>

In 2003, 335,104 cases of gonorrhea were reported to CDC, making it the second most frequently reported communicable disease in the United States in that year.<sup>8</sup> The reported national rate of gonorrhea was 116.2/100,000 population in 2003, which decreased from 129.3 in 1999. The gonorrhea rate for women also decreased slightly from 1999 to 2003 (126.1 vs. 118.8/100,000 females).<sup>7</sup> African American women had the highest rate in 2003 (616.1/100,000 females) and Asian/Pacific Islander women had the lowest (25.8/100,000 females) (Table 1). The number of cases among African American women, however, decreased 13.2% from 1999 to 2003. The numbers of cases increased during that time period for women from other racial and ethnic groups: 27.1% among Asian/Pacific Islanders, 23.8% among Hispanics, 15.7% among whites, and 6.0% among American Indians/Alaska Natives.<sup>7</sup>

In 2003, primary and secondary syphilis cases reported to CDC increased to 7,177 from 6,862 in 2002.<sup>9</sup> The number of cases among women, however, decreased from 1,594 to 1,217. Rates of primary and secondary syphilis have steadily declined among women for more than a decade; the average annual yearly percentage decrease during 1991–2003 was 21.4%. Although primary and secondary syphilis rates decreased 31.8% from 2002 to 2003 among African American females,<sup>7</sup> the rate among this population in 2003 (4.2/100,000 females) was approximately 20 times the rate among white females (0.2/100,000 females) (Table 1). The rate among American Indian/Alaska Native women (1.5/100,000 females) was more than 7 times the rate among white women.

TABLE 1. REPORTED CASES AND RATES<sup>a</sup> OF SELECTED STDs IN THE UNITED STATES, BY RACE/ETHNICITY AND SEX, 2003<sup>b</sup>

Race/ethnicity	Syphilis		Gonorrhea		Chlamydia	
	No.	Rate	No.	Rate	No.	Rate
Black, not Hispanic	805	4.2	116,771	616.1	294,918	1,633.1
White, not Hispanic	227	0.2	39,673	39.1	210,693	217.9
Hispanic	159	0.8	14,872	79.2	128,053	721.3
American Indian/Alaska Native	19	1.5	1,666	136.6	13,105	1,098.3
Asian/Pacific Islander	8	0.1	1,652	25.8	13,573	224.5

Source: Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance, 2003. Atlanta, GA: U.S. Department of Health and Human Services, September 2004.

<sup>a</sup>Rates for females are per 100,000 female population.

<sup>b</sup>This table should be used only for race/ethnicity comparisons. If race/ethnicity was not specified, cases were reported according to the distribution of cases for which these variables were specified. The following areas did not report age and/or race/ethnicity for most cases, and their case data and population denominators were excluded from 2003 data: CO, DC, and NJ.

The number of cases of primary and secondary syphilis among Hispanic women increased from 139 in 1999 to 159 in 2003.<sup>7</sup> The number of cases decreased during this time period among women from the four racial groups: white (428 in 1999 to 227 in 2003), African American (2,163 in 1999 to 805 in 2003), Asian/Pacific Islander (13 in 1999 to 8 in 2003), and American Indian/Alaska Native (36 in 1999 to 19 in 2003). Syphilis is concentrated in a small number of counties in the United States—most of them are in the South and in urban areas that have large populations of men who have sex with men.<sup>10</sup> In 2003, 18 counties and one city accounted for half of the reported syphilis cases in this country.<sup>9</sup>

### HIV/AIDS

In 2003, women accounted for 27% of the estimated 32,048 persons who were diagnosed with HIV/AIDS (i.e., persons diagnosed with HIV infection, regardless of AIDS status at diagnosis) in 33 areas (32 states and the Virgin Islands) with confidential name-based HIV reporting since at least 1999.<sup>11</sup> In addition, 11,498 women were diagnosed with AIDS in the 50 states and the District of Columbia, accounting for 27% of the estimated 43,171 diagnoses of AIDS in 2003. Of 87,940 women living with HIV/AIDS at the end of 2003, 66% were African American, 22% were white, 10% were Hispanic, and <1% each were Asian/Pacific Islander and American Indian/Alaska Native (Table 2). Heterosexual contact

was the primary method of transmission for women in each racial and ethnic category. In 2003, the rate of AIDS diagnosis for African American women (50.2/100,000 women) was approximately 25 times the rate for white women (2.0/100,000 population) and 4 times the rate for Hispanic women (12.4/100,000 population) (Table 3). Of an estimated 88,815 women who were living with AIDS at the end of 2003, nearly 60% were African American, and 19% were Hispanic.

### Tuberculosis

During 2003, a total of 14,874 tuberculosis cases were reported to CDC from the 50 states and District of Columbia.<sup>12</sup> The percentage of cases occurring in foreign-born persons was 53%, comprising a majority of cases for the second consecutive year. In addition, the case rate among foreign-born persons was more than 8 times higher than among U.S.-born persons. Among foreign-born women, case counts were highest among Asians and Hispanics/Latinas (Table 4). However, among U.S.-born women, African Americans and whites accounted for the highest case counts. In 2003, case rates of tuberculosis (regardless of country of birth) were higher among Asian women (25.4/100,000 population) and Native Hawaiian/other Pacific Islander women (19.6) compared with African American (8.7), Hispanic (7.8), American Indian/Alaska Native (5.6), and white women (0.9).

TABLE 2. ESTIMATED NUMBERS OF WOMEN LIVING WITH HIV/AIDS AT THE END OF 2003, BY RACE/ETHNICITY AND TRANSMISSION CATEGORY—33 AREAS WITH CONFIDENTIAL NAME-BASED HIV REPORTING<sup>a</sup>

Transmission category	Black, not Hispanic		White, not Hispanic		Hispanic		Asian/Pacific Islander		American Indian/Alaskan Native	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Injection drug use	13,244	(23)	6,625	(34)	1,957	(23)	51	(14)	164	(34)
Heterosexual contact	43,957	(75)	12,494	(64)	6,498	(75)	290	(81)	306	(64)
Other <sup>b</sup>	1,118	(2)	447	(2)	183	(2)	18	(5)	7	(2)
Total	58,319	(100)	19,566	(100)	8,638	(100)	359	(100)	477	(100)

Source: Centers for Disease Control and Prevention. HIV/AIDS Surveillance Report, 2003 (Vol. 15). Atlanta: U.S. Department of Health and Human Services, 2004:18. Also available at [www.cdc.gov/hiv/stats/hasrlink.htm](http://www.cdc.gov/hiv/stats/hasrlink.htm)

<sup>a</sup>These numbers do not represent reported case counts. Rather, these numbers are point estimates, which result from adjustments of reported case counts. The reported case counts are adjusted for reporting delays and for redistribution of cases in persons initially reported without an identified risk factor. The estimates do not include adjustment for incomplete reporting. Data include persons with a diagnosis of HIV infection only, a diagnosis of HIV infection and a later AIDS diagnosis, and concurrent diagnoses of HIV infection and AIDS.

<sup>b</sup>Includes hemophilia, blood transfusion, perinatal, and risk factor not reported or not identified.

TABLE 3. ESTIMATED NUMBERS OF CASES AND RATES PER 100,000 POPULATION OF AIDS IN WOMEN IN THE UNITED STATES, BY RACE/ETHNICITY, 2003<sup>a</sup>

Race/ethnicity	No.	Rate
Black, not Hispanic	7,551	50.2
White, not Hispanic	1,725	2.0
Hispanic	1,744	12.4
Asian/Pacific Islander	86	1.6
American Indian/Alaska Native	46	4.8
Total <sup>b</sup>	11,211	9.2

Source: Centers for Disease Control and Prevention. HIV/AIDS Surveillance Report, 2003 (Vol. 15). Atlanta: U.S. Department of Health and Human Services, 2004:18. Also available at [www.cdc.gov/hiv/stats/hasrlink.htm](http://www.cdc.gov/hiv/stats/hasrlink.htm)

<sup>a</sup>These numbers do not represent reported case counts. Rather, these numbers are point estimates, which result from adjustments of reported case counts. The reported case counts are adjusted for reporting delays. The estimates do not include adjustment for incomplete reporting. Data exclude cases from the U.S. dependencies, possessions, and associated free nations, as well as cases in persons whose state or area of residence is unknown because of the lack of census information by race and age categories for these cases.

<sup>b</sup>Includes persons of unknown race or multiple races.

### CDC-FUNDED PREVENTION PROGRAMS

To be successful, prevention programs for HIV infection, STDs, and tuberculosis must address diverse communities and focus on groups at greatest risk. Programs should be appropriate as to gender, age, culture, community standards, and language and should be developed and delivered in partnership with the affected communities. We describe some of the prevention programs that CDC has implemented over the past two decades to reduce the disproportionate burden of HIV/AIDS, STDs, and tuberculosis on women and on racial/ethnic minorities. In addition to these programs, CDC has helped develop treatment guidelines for HIV infection,<sup>13,14</sup> STDs,<sup>15</sup> and tuberculosis.<sup>16</sup>

#### *Sexually transmitted diseases*

National programs have been developed to prevent chlamydia-related infertility and to address disparities in syphilis rates. Chlamydia screening and prevalence monitoring activities were initiated in 1988 in one Health and Human Services (HHS) region of the United States as a CDC-supported demonstration project.<sup>6</sup> In 1993,

services for women were initiated in three additional HHS regions as part of development of the National Infertility Prevention Program (IPP).<sup>6,17</sup> Six more HHS regions were added in 1995. Currently, there are 10 HHS regions that cover all 50 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands. All regional projects, in collaboration with state STD control and family planning programs, report their chlamydia testing data to CDC.<sup>6</sup> In some HHS regions, federally funded screening supplements existing testing programs that are funded at the local and state levels. Although the publicly funded programs support chlamydia screening primarily in family planning clinics, some STD clinics, prenatal clinics, jails, and juvenile detention centers are also supported.

The Syphilis Elimination Effort (SEE) is a national initiative to reduce syphilis rates.<sup>10</sup> This effort is part of a broader National Plan to Eliminate Syphilis from the United States. SEE focuses on the following five strategies for eliminating syphilis in the United States: enhanced surveillance, community involvement and partnerships, rapid outbreak response, expanded clinical and laboratory services, and enhanced health promotion. SEE Community Mobilization Toolkits have been developed to give state and local health departments the tools to build partnerships needed to mobilize specific target audiences.<sup>18</sup> Toolkit

TABLE 4. TUBERCULOSIS CASES IN FOREIGN-BORN AND IN U.S.-BORN WOMEN, BY RACE/ETHNICITY, 2003<sup>a</sup>

Race/ethnicity	Foreign-born	U.S.-born
Hispanic/Latina <sup>b</sup>	1,074	420
Non-Hispanic		
American Indian/ Alaska Native	0	62
Asian	1,465	55
Black	461	1,148
Native Hawaiian/ Pacific Islander	16	22
White	195	758
Total <sup>b</sup>	3,211	2,465

Source: CDC. Reported Tuberculosis in the United States, 2003. Atlanta, GA: U.S. Department of Health and Human Services, September 2004.

<sup>a</sup>Case counts for race categories (American Indian or Alaska Native, Asian, black or African American, Native Hawaiian or Other Pacific Islander, and white) are mutually exclusive and do not include persons of Hispanic ethnicity or multiple race.

<sup>b</sup>Persons of Hispanic or Latina origin may be of any race or multiple races.

materials support efforts to change or modify knowledge, attitudes, behaviors, and perceptions about syphilis. The materials are also used to help educate political leaders, healthcare providers, and community leaders. Toolkits include a guide that provides advice on how to mobilize a community; camera-ready print ads; educational materials specifically developed for healthcare providers, community leaders, and elected officials; a sexual history-taking guide and a pocket guide for physicians; form letters (e.g., for partners, policymakers, and the media); radio public service announcements; resource guides (e.g., list of community-based organizations [CBOs]); and a CD-ROM containing all the kit materials in a format that enables users to customize the materials for use with existing health communication initiatives and campaigns.

STD prevention research that CDC has supported to reduce racial and ethnic disparities in STDs includes studies that examined determinants of female and male condom use among immigrant women of Central American descent,<sup>19</sup> the social context of sexual relationships among rural African Americans,<sup>20</sup> and community-based interventions to reduce low-income African American women's risk of sexually transmitted diseases.<sup>21</sup> Several studies have been funded that examined risk factors in adolescent African American females.<sup>22-26</sup>

### *HIV/AIDS*

CDC is collaborating with state and local health departments, CBOs, and other stakeholders to disseminate effective prevention interventions. The Diffusion of Effective Behavioral Interventions (DEBI) project is a national-level strategy to provide high-quality training and ongoing technical assistance on selected evidence-based HIV prevention interventions to state and community HIV prevention program staff.<sup>27</sup> Researchers, government agencies, and multiple capacity building providers helped establish the integrated diffusion structure, which is designed to quickly move behavioral interventions into practice.

One of the HIV prevention interventions disseminated through DEBI that targets women is Sisters Informing Sisters about Topics on AIDS (SISTA).<sup>28</sup> SISTA is a social skills training intervention for African American women that is based on a study by DiClemente and Wingood.<sup>29</sup>

It comprises five gender-specific and culturally relevant sessions, delivered by peer facilitators in a community-based setting. The sessions focus on ethnic and gender pride, HIV knowledge, and skills training around sexual risk reduction behaviors and decision making. Another intervention is Video Opportunities for Innovative Condom Education and Safer Sex (VOICES/VOCES), a single-session, video-based HIV/STD prevention program designed to encourage condom use and improve condom negotiation skills.<sup>30</sup> VOICES/VOCES is based on the theory of reasoned action, which explains how behaviors are guided by personal attitudes, beliefs, and experiences and by expectations of other persons' reactions. Gender-specific and ethnic-specific groups are convened for the sessions, and a bilingual video is available for Hispanic/Latina participants.

The DEBI project also disseminates interventions that target both women and men who abuse illegal substances. Safety Counts is an intervention to help reduce HIV risk among active injection drug and crack cocaine users who are not in treatment. It is a behaviorally focused, seven-session intervention that is aimed at reducing both high-risk drug use and high-risk sexual behaviors among the target population.<sup>31</sup> The program is also designed to help increase understanding of the relationship between drug use patterns and HIV infection and to monitor HIV seroprevalence among drug users.

Since 1999, CDC has received funding through the Minority AIDS Initiative to enhance efforts to prevent HIV infections in racial and ethnic populations. Some of the activities CDC supports under this initiative include community-based programs to prevent HIV infection, capacity building programs to assist CBOs, and targeted education efforts to raise awareness of the importance of HIV testing. In addition, CDC conducts supplemental surveillance to help monitor the epidemic in racial and ethnic populations and research to develop, evaluate, and refine prevention programs.

### *Tuberculosis*

To address the high rate of tuberculosis among foreign-born persons, CDC is collaborating with public health partners to implement tuberculosis control initiatives targeting recent international arrivals along the border between the United States and Mexico and to strengthen tuberculosis

programs in countries with a high incidence of tuberculosis disease.<sup>32</sup> In 2002, CDC began funding three ongoing demonstration projects (in Georgia, Illinois, and South Carolina) to identify new strategies to further reduce tuberculosis rates among non-Hispanic blacks.<sup>33</sup> The delivery of healthcare to African Americans will be examined, and social, racial, and cultural factors related to disparities in tuberculosis rates will be identified.

Community leaders have been engaged as partners in these efforts. In 2003, the federal Advisory Council for the Elimination of Tuberculosis and CDC developed a strategy for non-governmental organizations to help reduce tuberculosis disparities in the United States by studying local tuberculosis epidemiology, increasing awareness about tuberculosis disparities (especially among non-Hispanic blacks), and educating legislators. CDC has also updated its comprehensive national action plan to reflect alignment of its priorities with the Institute of Medicine report on tuberculosis<sup>34</sup> and to ensure that priority prevention activities are undertaken with optimal collaboration and coordination among national and international public health partners.<sup>35</sup> In 2004, to help identify instances of recent transmission, CDC began the CDC Tuberculosis Genotyping Program. This program will enable investigators to detect outbreaks earlier and conduct more thorough contact investigations, which may help reduce racial disparities in tuberculosis in the United States.<sup>36</sup> To address disparities in tuberculosis in foreign-born women, CDC funded the African Refugee Women's Health Improvement Project. This project is designed to increase the capacity of the public health system in Massachusetts to respond to needs related to tuberculosis as well as to increase understanding of strategies to improve health outcomes among African refugee women who have settled in the area.

## DISCUSSION

Surveillance data described in this report indicate that substantial racial and ethnic disparities in HIV infection, STDs, and tuberculosis exist among women. Multiple contextual factors contribute to disparities in infectious diseases; therefore, social and cultural differences in disease vulnerability should be considered when prevention

strategies are developed and implemented. CDC has responded to health disparities in HIV infection, STDs, and tuberculosis by collaborating with other stakeholders, including state and local health departments, CBOs, and healthcare providers, to target disproportionately affected populations for prevention. However, additional efforts are needed to evaluate prevention programs, to build technical capacity in communities to develop and implement prevention activities, and to identify gaps in prevention services.

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