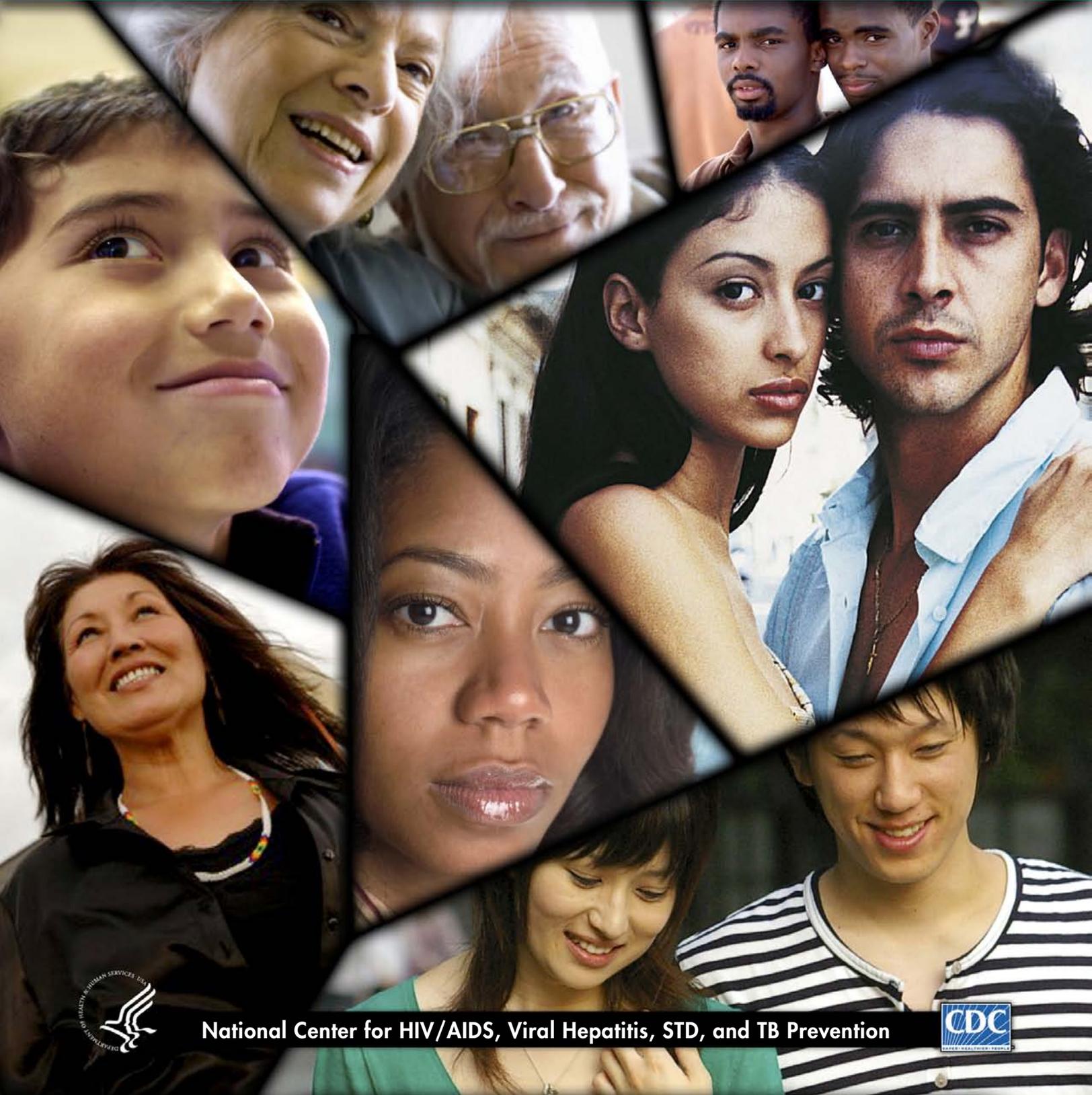# Health Disparities in HIV/AIDS, Viral Hepatitis, Sexually Transmitted Diseases, and Tuberculosis in the United States

## Issues, Burden, and Response

### November 2007

**National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention**

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# Executive Summary

## *Issues*

Despite substantial improvements in the prevention of human immunodeficiency virus (HIV)/ Acquired Immunodeficiency Syndrome (AIDS), viral hepatitis, sexually transmitted diseases (STDs), and tuberculosis in the United States, some populations continue to be disproportionately affected by these diseases. The existence of such "health disparities" among populations in the United States has been discussed in the literature for several years, although there is not a consensus on how this term should be defined. The Department of Health and Human Services' *Healthy People 2010* presents a comprehensive, nationwide health promotion and disease prevention agenda that specifies that health disparities include "differences that occur by gender, race or ethnicity, education or income, disability, geographic location, or sexual orientation" (1). The Centers for Disease Control and Prevention (CDC) uses surveillance data from state and local health departments to monitor disparities and other patterns in HIV/ AIDS, viral hepatitis, STDs, and tuberculosis. In this report, health disparities are measured by examining differences in HIV/AIDS, viral hepatitis, STDs, and tuberculosis surveillance data with respect to such sociodemographic factors as race/ethnicity, gender, and age. In addition, where possible, disparities are measured by examining differences by sexual orientation and geographic location.

This report includes a retrospective review of CDC surveillance data for HIV/AIDS, viral hepatitis, STDs, and tuberculosis over the period 2000-2004. This time period was selected because at the time this report was written, 2004 was the most recent year for which surveillance data were available for all diseases. The inclusion of surveillance data from the same time period allows for comparisons between diseases. In addition to an overview of the surveillance data, this report includes information on some of the CDC programmatic, educational, and research activities that have been implemented to address health disparities related to HIV/ AIDS, viral hepatitis, STDs, and tuberculosis. An overview of CDC priorities for future action to address health disparities related to these diseases is also included in the report.

Factors contributing to health disparities include poverty, unequal access to health care, and lower educational attainment. Intertwined with these factors are dynamics such as racism and homophobia. People's physical locations—e.g., urban vs. rural and living situation—in addition to social networks and social stigma, also contribute.

## *Burden*

Blacks had the highest HIV/AIDS infection rate in 2004, with 69.3 cases per 100,000 in population, 8.5 times the rate for whites. Blacks accounted for 50% of all HIV/AIDS cases diagnosed in 2004. In 2004, males accounted for 73% of all HIV/AIDS cases among adults and adolescents. In addition, men who have sex with men accounted for 65% of cases among men.

In 2004, the overall rate of hepatitis A—1.9 cases per 100,000 in population—was the lowest ever recorded. Historically, the highest rates of hepatitis A have been found among American Indians/Alaska Natives (AI/AN); however, these rates have dramatically decreased following the widespread vaccination in this group begun in 1995. Rates of hepatitis B continue to decline among all racial and ethnic groups, but they remain highest among non-Hispanic blacks, with 2.9 cases per 100,000 population. The majority of hepatitis C cases continue to occur in adult age groups, with injecting drug use as the most commonly identified risk factor for infection.

Despite national progress toward syphilis elimination, syphilis remains an important problem in the South and in urban areas where there are large populations of men who have sex with other men. Blacks have the highest rate of syphilis infections, with a rate of 9 cases per 100,000 in population in 2004, almost three times the rate among the second highest groups, Hispanics and American Indian/Alaska Natives. Blacks also had the highest gonorrhea rates, with 629.6 cases per 100,000 in population.

Since 2000, there has been a 21% increase in the chlamydia rate among the 20- to 24-year-old group, consistently the age group with the highest rate of infection. The 15-19 age group has maintained the second highest rate for this period of time, with an overall increase of 17.5%.

Among all racial and ethnic groups, in 2004, Asians had the highest tuberculosis rate, 27.6 cases per 100,000 population—17 times the rate of whites. In 2004, 82% of tuberculosis cases in the United States occurred in racial and ethnic minorities. In addition, 54% of all cases in 2004 occurred among foreign-born persons. Among US-born persons reported with tuberculosis in 2004, 45% were African Americans, the highest percentage among US-born racial and ethnic groups.

## *Response*

Developed through a national process, the document *Healthy People 2010* identifies a set of 10-year health objectives to be achieved during the first decade of the 21st century. It has two overarching goals—to increase quality and years of healthy life and to eliminate health disparities (1). CDC has a major leadership role in carrying out the goals set forward in *Healthy People 2010*, including the goal to eliminate racial and ethnic disparities in health. Through specific objectives with measurable targets, *Healthy People 2010* provides a framework by which programs are to achieve the Department of Health and Human Services' vision for a healthier nation. A mid-year progress report provided a mid-course assessment through January 2005. The mid-course review suggested that the nation's health improved overall, but health disparities remain virtually unchanged (2).

To help accomplish goals related to reducing health disparities, CDC has (1) launched agency-wide and disease-specific initiatives; (2) developed culturally appropriate, community-driven programs; (3) collaborated with community and government partners on prevention research; (4) developed educational outreach activities for the community and for CDC employees; and (5) implemented programs to increase diversity in the public health workforce.

CDC has developed several strategic planning documents addressing the task of reducing health disparities. For example, in January 2001, CDC released a 5-year *HIV Prevention Strategic Plan*, with an overarching goal of significantly reducing the number of new HIV infections. The plan was later updated in 2007. However, disparities continue to persist in HIV/AIDS among racial and ethnic minority populations, especially among African Americans. To further reduce the incidence of HIV, in 2003, CDC launched *Advancing HIV Prevention: New Strategies for a Changing Epidemic*. In 2007, CDC launched *A National Heightened Response to the HIV/AIDS Crisis Among African Americans*. The National Plan to Eliminate Syphilis was launched in 1999, resulting in substantial reductions in cases among African-American women. A revised plan was launched in 2006. A project to vaccinate AI/AN children routinely against hepatitis A and the "Stop TB in the African-American Community" initiative have also shown progress.

CDC provides leadership, capacity-building assistance, and funding for programs at the state, local, and community levels for the prevention and control of HIV/AIDS, viral hepatitis, STDs, and tuberculosis. The funding supports staffing, program infrastructure, program implementation, and evaluation of interventions. Many program activities target groups disproportionately affected by these diseases. Among these programs providing interventions and services to many racial and ethnic minorities are the Replicating Effective Programs (REP) project for HIV prevention; the Infertility Prevention project, which focuses on chlamydia and gonorrhea; and the US-Mexico Binational Referral and Case Management project, targeting tuberculosis patients who migrate across the US-Mexico border.

CDC's research agenda includes studies to monitor patterns of disease in different populations as well as to further understand and address health disparities through intervention research. The results of these studies will be used to develop and evaluate programs to address health disparities in HIV infection, viral hepatitis, STDs, and tuberculosis.

Education and outreach are other tools for helping eliminate health disparities. Educational and training efforts are directed toward those who can aid in this effort, including legislators, health professionals, community leaders, academicians, journalists, and representatives from the faith, business, and entertainment communities.

Finally, in order to address the healthcare needs of this nation's diverse population in an effective and culturally sensitive manner, CDC has implemented training programs and related activities to help ensure that the public health workforce is also diverse. The training programs focus primarily on increasing the interest, representation, and competence of racial and ethnic minority students, researchers, and health professionals in public health.

In addition to CDC's existing efforts to address health disparities in the incidence of HIV/AIDS, viral hepatitis, STDs, and tuberculosis, the following are priorities for future action: 1) enhancing and improving partnerships; 2) increasing screening and testing for diseases in populations with known health disparities; 3) adopting an integrated service model to improve health care delivery; 4) improving monitoring through the enhancement of current data systems and the development of new systems; and 5) adopting new diagnostic, treatment, and prevention technologies.

No single public health program can eliminate racial and ethnic, socioeconomic, and gender inequities or homophobia. However, CDC will continue to work with community partners, healthcare providers, legislators, and other stakeholders to identify collaborative activities that may influence some of the social determinants that contribute to health disparities in HIV/AIDS, viral hepatitis, STDs, and tuberculosis.

# Background

Despite substantial improvements in the prevention of HIV/AIDS, viral hepatitis, sexually transmitted diseases (STDs), and tuberculosis in the United States, some populations continue to be disproportionately affected by these diseases. For example, blacks and Hispanics accounted for nearly 67% of the estimated cases of HIV/AIDS diagnosed in 2004. In 2004, rates of hepatitis B were higher among blacks than for whites, Asians/Pacific Islanders, American Indians/Alaska Natives, and Hispanics. Blacks and American Indians/Alaska Natives had higher rates of gonorrhea in 2004 than whites, Asians/Pacific Islanders, and Hispanics. While overall tuberculosis rates continued to decline in 2004, 82% of all reported tuberculosis cases occurred in racial and ethnic minorities. As the nation's population becomes more diverse demographically, efforts to improve health will require a closer examination of differences in risk factors for disease, as well as in differences in access to and use of health care services. CDC, which has been a leader in addressing disparities in disease, receives many requests for public health information about different population subgroups.

Developed through a national process, *Healthy People 2010* identifies a set of 10-year health objectives to achieve during the first decade of the 21st century. It has two overarching goals—to increase quality and years of healthy life and to eliminate health disparities (1). CDC has a major leadership role in carrying out the goals set forward in *Healthy People 2010*, including the goal to eliminate racial and ethnic disparities in health. Through specific objectives with measurable targets, it provides a framework for programs to achieve the Department of Health and Human Services' vision for a healthier nation. A mid-year progress report provided a mid-course assessment through January 2005. The mid-course review suggested that the nation's health improved overall, but health disparities remain virtually unchanged (2).

CDC uses surveillance data from state and local health departments to monitor disparities and other patterns in HIV/AIDS, viral hepatitis, STDs, and tuberculosis. In this report, health disparities are measured by examining differences in HIV/AIDS, viral hepatitis, STDs, and tuberculosis surveillance data with respect to such sociodemographic factors as race/ethnicity, gender, and age. In addition, where possible, disparities are measured by examining differences by sexual orientation and geographic location.

This report includes a retrospective review of CDC surveillance data for HIV/AIDS, viral hepatitis, STDs, and tuberculosis between 2000-2004. This time period was selected because at the time this report was written, 2004 was the most recent year for which surveillance data were available for all diseases. The inclusion of surveillance data from the same time period allows for comparisons between diseases. In addition to an overview of the surveillance data, this report includes information on some of the CDC programmatic, educational, and research activities that have been implemented to address health disparities related to HIV/AIDS, viral hepatitis, STDs, and tuberculosis. An overview of CDC priorities for future action to address health disparities related to these diseases is also included in the report. This is the first analysis of health disparities across all of the diseases included in the National Center

for HIV/AIDS, Viral Hepatitis, Sexually Transmitted Diseases, and Tuberculosis Prevention (NCHHSTP).  Future reports will include updated surveillance data, additional data analyses among demographic variables to further describe health disparities, as well as a description of additional efforts CDC is undertaking to address health disparities related to HIV/AIDS, viral hepatitis, STDs, and tuberculosis.

## Health Disparities Issues

### *How Are Health Disparities Defined?*

The term *health disparity* is used almost exclusively in the United States. *Health inequality* and *health inequity* are more commonly used outside this country. There is little consensus about how these terms should be defined (3-19). The Department of Health and Human Services' *Healthy People 2010*, which presents a comprehensive, nationwide health promotion and disease prevention agenda, specifies that the term *health disparities* designates "differences that occur by gender, race or ethnicity, education or income, disability, geographic location, or sexual orientation (1)." According to some definitions, health disparities are differences in the incidence, prevalence, mortality, and burden of diseases and other adverse health conditions that exist among specific population groups in the United States (15). Another definition describes a health disparity in a population as ". . . a significant disparity in the overall rate of disease incidence, prevalence, morbidity, or survival rates in the population as compared to the health status of the general population." (16). Other definitions of health disparities examine the role of social status and control over one's life as important influences on health disparities (19). Some definitions of health disparities suggest that the health differences between individuals or social groups are in some way unfair and avoidable (3-4).

### *What Factors Contribute to Health Disparities?*

Many factors contribute to disparities in the distribution of disease. They include poverty, unequal access to health care, and lower educational attainment (20-25). Racism is intertwined with these factors (20, 21, 24, 25). For example, racial and ethnic discrimination in employment may restrict access to higher paying jobs, making it difficult to pay for health care. In 2004, 24.7% of blacks and 21.9% of Hispanics lived in poverty; these are the highest percentages across all racial and ethnic groups (26). The percentage of uninsured Hispanics (32.7%) was higher than the percentages of blacks (19.7%), Asians (16.8%), and whites (14.9%) (26). Among foreign-born persons, 44.1% of those who were not citizens lacked insurance coverage compared with 17.2 % of naturalized citizens. The percentage of persons without health insurance was also high among persons with household incomes less than $25,000 (24.3%) and between $25,000 and $49,999 (20.0%), compared to higher income groups.

Persons from racial and ethnic minority populations may have poor access to health and medical services and inconsistent relationships with health care providers because of the lack of doctors in many minority communities (27). A 1997 study of physician practice found that wealthier areas had 33 to 50 times more physicians than poorer areas (28). In addition, discrimination in education that affects literacy skills can mean that messages regarding risk and prevention are inaccessible (29). Between October 2002 and October 2003, Hispanic students were more likely to drop out of high school than white students, Asian students, and black students; students living in low-income families were approximately five times more likely than their peers in high-income families to be drop-outs (30). Language barriers also contribute to health disparities. In 2000, of 47 million people in the United States (18% of the total population

aged 5 and over) who reported they spoke a language other than English at home, 45% reported they spoke English less than "very well" (31).

The physical locations (e.g., prisons) and social networks within which people interact can promote or encourage risky health behaviors (32) and may account for some health disparities. Following changes in U.S. drug policy in the 1980s, the number of individuals in prisons increased dramatically. It has been reported that, while the number of white prisoners incarcerated for drug offenses rose by a factor of seven between 1983 and 1998, Hispanic drug-related incarcerations increased 18-fold, and African-American drug incarcerations increased more than 26-fold (33). Compared with the general population, persons incarcerated in correctional systems have a disproportionately greater burden of infectious diseases, including HIV, viral hepatitis, STDs, and tuberculosis infections (34). In general, studies suggest that while sex and drug use decrease overall among incarcerated persons, sex and drug use behaviors are conducted in a riskier manner inside prison than outside (35, 36). Although it is difficult to assess whether African Americans and whites have different risks of transmitting sexually transmitted diseases (STDs) while in prison, some studies indicate that there are few differences in their risk behaviors during incarceration (35, 37). This suggests that any association between incarceration and black-white disparities in STDs relating to prison as a risk environment results from the greater likelihood that African Americans will be exposed to this environment (38). Rates of STDs and tuberculosis are also higher among persons within the correctional system (39-41).

The social networks, especially sexual networks, of individuals influence their risks of acquiring and transmitting infectious diseases. The term *sexual network* refers to a set of people who are linked directly or indirectly through sexual contact (42, 43). Recent studies suggest that there are differences between blacks and whites in the type and number of partners they include in their sexual networks (44-46). These differences have been influenced by some of the same factors that contribute to health disparities (e.g., residential segregation by race, high incarceration rates among African-American males, and poverty). In one analysis, the data indicated that STDs remain high within the black population because they are more likely than other racial and ethnic groups to choose other African Americans as partners, and this group bears a disproportionate burden of STDs (47). Other potential factors with direct relevance to sexual networks and the transmission of STDs include targeted marketing of legal and illegal psychoactive substances, inadequate health care from healthcare facilities and from specific providers, factors that alter the ratio of women to men, and forces that discourage long-term stable relationships (48).

Social stigma also contributes to health disparities (24). Like racial and ethnic minorities, sexual minorities, including lesbian, gay, bisexual, and transgender individuals, also experience a wide range of health disparities (49-52). A growing number of studies have examined disparities among sexual minorities, documenting significant differences in rates of disease, mental health, and risk behaviors that can lead to poor health. Negative societal attitudes towards homosexuality by some may contribute to social stigma experienced by sexual minorities that contribute to health disparities. Although homophobia cuts across racial lines, many racial and

ethnic minority men who have sex with men (MSM) remain secretive about their sexuality because of a historical lack of acceptance by leaders and religious institutions within their communities. Keeping secrets, including concealing one's own sexual orientation, can have a negative effect on the individual's health (53-58). For example, research with MSM living with HIV has shown that hiding sexual orientation is associated with more rapid progression of HIV-related illness (53-58). In addition, some men also have sex with women but do not disclose their sexual relationships with men. It is difficult to assess the extent to which lack of disclosure contributes to rates of STDs in women, especially women from racial and ethnic minority populations. In one review of the literature on bisexual black men, HIV risk, and heterosexual transmission, the authors found that black MSM were more likely than MSM of other races and ethnicities to be bisexually active (59). Their data also revealed that black MSM who did not disclose their homosexual or bisexual activities to their partners engaged in fewer sexual risks than black MSM who are open about their sexuality (59). They concluded, however, that the high prevalence of HIV infection in the African-American community and the greater likelihood of bisexuality among black men place heterosexual African-American women at risk for HIV infection (59).

## *How Are Health Disparities Measured?*

There is little consensus about how to measure health disparities (12, 60-69). Several issues are important in choosing health disparity measures. For example, should one measure disparities between or within different populations? Comparing health outcomes in one population with outcomes in another may mask differences that exist within each group. Another issue in choosing disparity measures is the selection of the comparison group. Should the rate of a disease in a group that is disproportionately affected be compared with the rate in the general population, the majority population, or the population with the lowest rate of the disease? The results one would get may differ according to which groups are compared. Some measures of health disparities that have been used include measures of "total disparity" (68), measures of "disproportionality" (69), and measures of "social-group disparity" (12). Measuring total disparity in health involves evaluating the distribution of health among all individuals in a population, without regard to their social group membership (61). One limitation of this measure is that it does not distinguish differences between social groups (e.g., racial, ethnic). Describing health disparity in terms of disproportionality—i.e., a "disproportionate share" or an "unequal burden"—implies that it is unfair that some groups experience more ill health than others (61).

Social group disparity, which is the basis for one of the overarching goals in *Healthy People 2010*, measures differences between individuals from social groups (1). HHS uses a "progress quotient" to monitor progress toward *Healthy People 2010* targets. The quotient measures the percentage of targeted change that was achieved. To compare the remaining progress needed among population subgroups, an absolute measure of the difference remaining between the target and the most recent data value is used. One of the challenges in using social group disparity as a measure of health is choosing social groups that are comparable for the purpose of measuring disparities over time.

## *What Data Do CDC Use to Monitor Health Disparities in HIV/AIDS, Viral Hepatitis, STDs, and Tuberculosis?*

Surveillance data are used by the CDC to monitor disparities and other patterns in HIV/AIDS, viral hepatitis, STDs, and tuberculosis. CDC funds and assists state and local health departments, which collect the data and report it to CDC. The ultimate surveillance goals for these diseases are nationwide systems that combine information on existing cases, new infections, and behaviors and characteristics of people at risk, so that CDC can monitor national disease trends and direct prevention funding to where it is needed most. In 2004, AIDS data were collected by all 50 states, the District of Columbia, U.S. dependencies and possessions, and independent nations. HIV infection data were reported by 35 areas (33 states, Guam, and the Virgin Islands) with confidential name-based reporting since at least 2000. In 2004, all 50 states collected data about acute hepatitis A, acute hepatitis B, and acute hepatitis C. In 2004, reports of tuberculosis cases were submitted to CDC by 60 reporting areas (50 states, the District of Columbia, New York City, Puerto Rico, and seven jurisdictions in the Pacific and Caribbean). In the same year, cases of nationally notifiable sexually transmitted diseases were reported by 50 states, the District of Columbia, selected cities, U.S. dependencies and possessions, and independent nations in free association with the United States. Although there are differences in the data collection and reporting systems for these diseases, core surveillance data are similar. For example, data on age, race and ethnicity, and sex are collected for all the systems. HIV/AIDS and viral hepatitis surveillance data, however, also include risk behavior and exposure data (e.g., intravenous drug use). Tuberculosis and HIV/AIDS data include nativity and country of origin. STD surveillance includes data from persons entering correctional facilities, and HIV/AIDS and tuberculosis surveillance data include diagnoses among persons residing in correctional facilities.

# The Burden of Disease

Surveillance data on specific racial or ethnic groups, geographic regions, genders, or age groups can help identify health disparities among those groups or regions. In the following section of this report, surveillance data submitted to CDC are used to describe the overall burden of HIV/AIDS, viral hepatitis, STDs, and tuberculosis in the United States during the period 2000-2004 and how this burden is greater among certain population groups than in others.

## *HIV/AIDS*

HIV is the pathogen responsible for AIDS. HIV attacks the immune system and undermines its function, allowing opportunistic infections and malignancies to occur. HIV infection is spread by sexual intercourse, intravenous drug use, perinatal transmission, transfusion of blood and blood products, organ transplantation, and occupational exposure to HIV-contaminated blood or body fluids.

This report includes estimated numbers of cases of HIV/AIDS from surveillance data from the 35 areas (33 states, Guam, and the US Virgin Islands) with integrated HIV and AIDS surveillance since at least 2000. Surveillance data on HIV infections provides a clearer picture of the epidemic and of the need for prevention and care services than does the picture provided by AIDS data by itself. However, the number of new HIV diagnoses does not necessarily reflect trends in HIV incidence, because some newly diagnosed persons were infected recently, while others were infected some time in the past. The numbers presented for HIV/AIDS are combined rates, and they include newly diagnosed HIV infection cases and newly diagnosed AIDS cases. The overall rate of HIV/AIDS in 2004 was 18.8 cases per 100,000 population, reflecting approximately a 15% decrease from the rate in 2000 (22.1 cases per 100,000 population).

## Figure 1. HIV/AIDS rates by race/ethnicity, 2001-2004
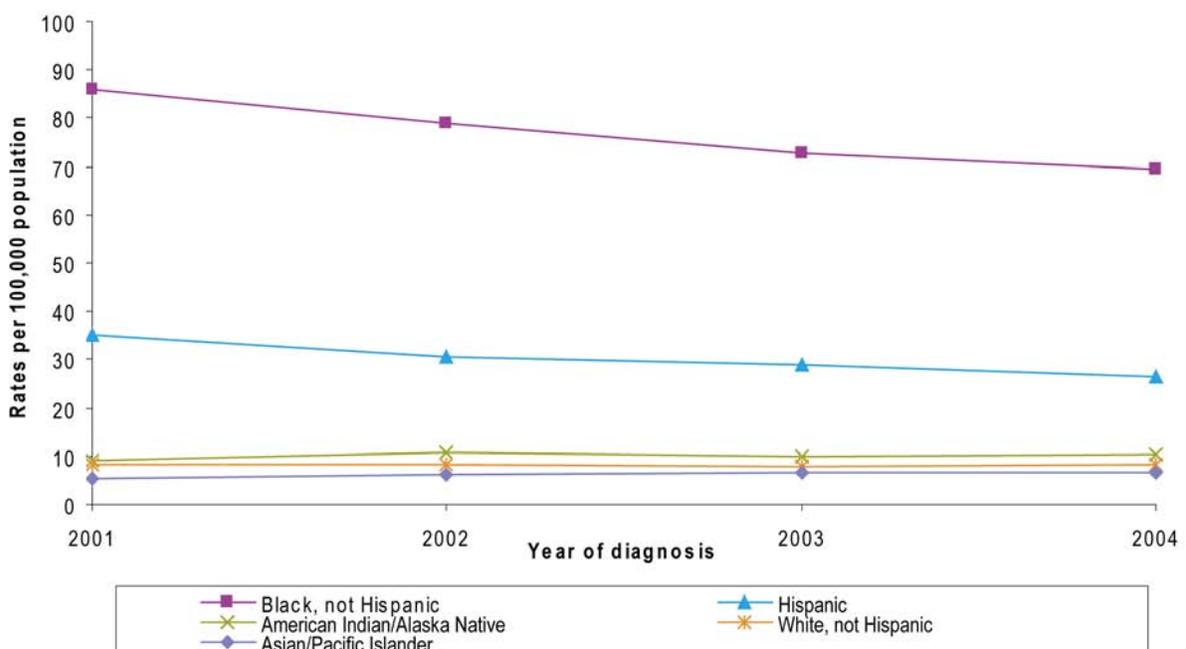
Blacks had the highest HIV/AIDS infection rate in 2004, with 69.3 cases per 100,000 population—8.5 times the rate for whites—and blacks accounted for 50% of all HIV/AIDS cases diagnosed in 2004. Hispanics had the second highest rate, with 26.6 cases per 100,000 population, followed by Indians, whites, and Asians with 10.2, 8.2, and 6.5, respectively. A decrease in rates was observed in blacks and Hispanics of 19.3% and 24.6%, respectively, between 2001 and 2004. In this same period, rates among whites, Indians, and Asians increased 3.5%, 12.3%, and 16.5%, respectively (Figure 1).

**Figure 2. HIV/AIDS rates by US geographic region, 2001-2004**
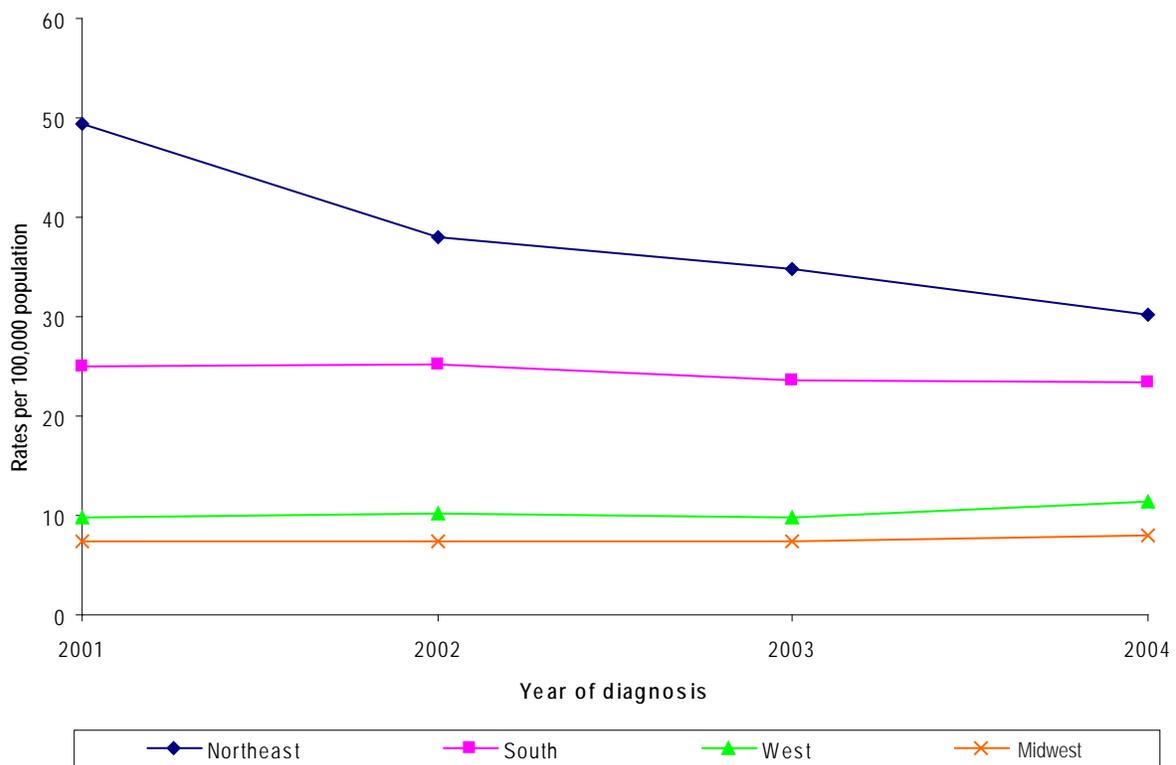


The Northeast region had the highest rates of HIV/AIDS infection in 2004, with 30.1 cases per 100,000 population, followed by the South with 23.5 cases per 100,000 population, the West with 11.3 cases per 100,000 population, and the Midwest with approximately 8 cases per 100,000 population (Figure 2).

**Figure 3.  HIV/AIDS rates by gender, 2001-2004**
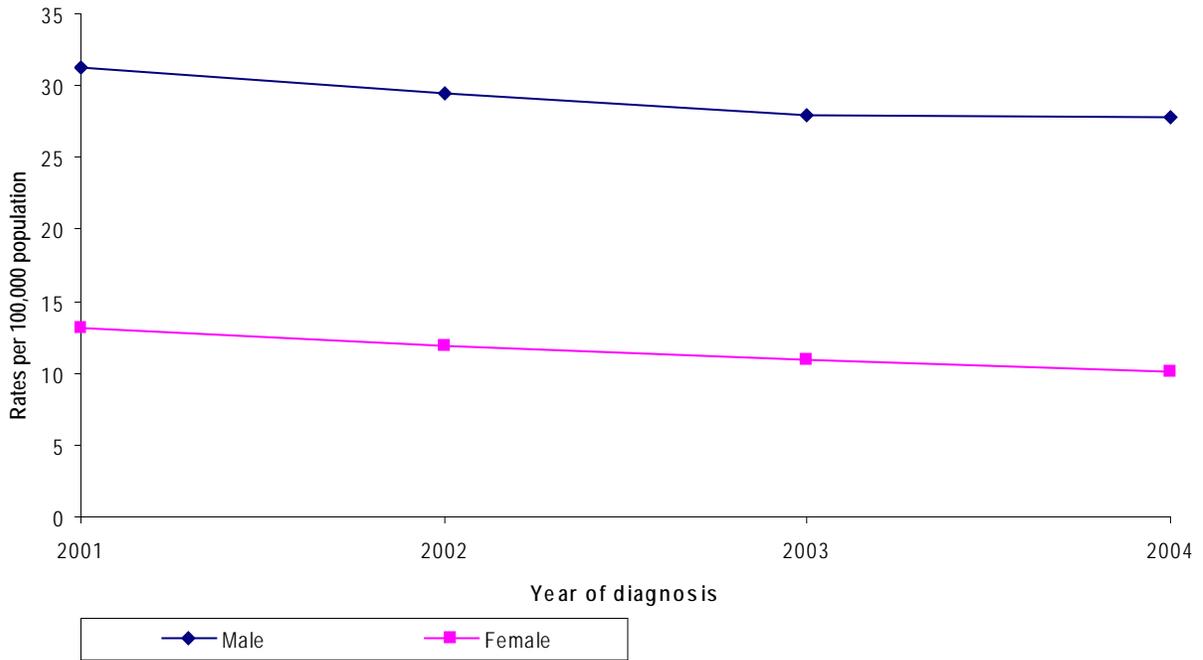


In 2004, males accounted for 73% of all HIV/AIDS cases among adults and adolescents.  Also in 2004, the HIV/AIDS rate for males was 27.8 cases per 100,000 population, 2.75 times greater than the rate for females for that year (10.1 cases per 100,000 population) [Figure 3].

## Figure 4. HIV/AIDS rates by age group, 2004
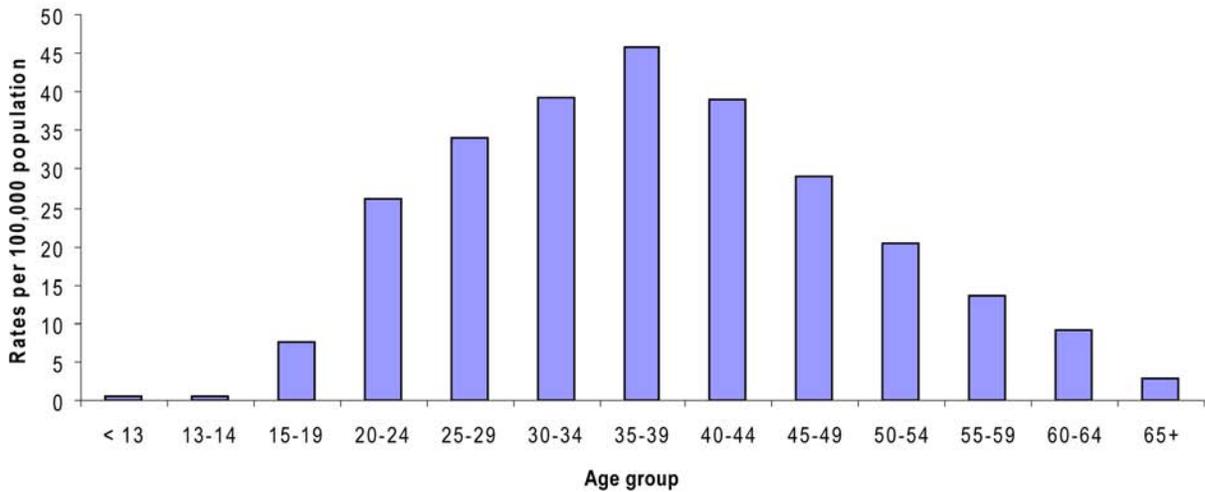


The largest number of HIV/AIDS cases occurred among persons age 35-39 years, and these cases accounted for 17% of all HIV/AIDS cases diagnosed in 2004. In 2004, the group with the highest HIV/AIDS rates consisted of those 35-39 years of age, with 45.9 cases per 100,000 population; however, the rates for this group have consistently decreased since 2001, with a total decline of 19.4%. Since 2001, all groups had a decline in their rates except for the age group 20-24 years; that group had an increase of 3.4% (Figure 4).

**Figure 5. HIV/AIDS cases among males by transmission category, 2001-2004**
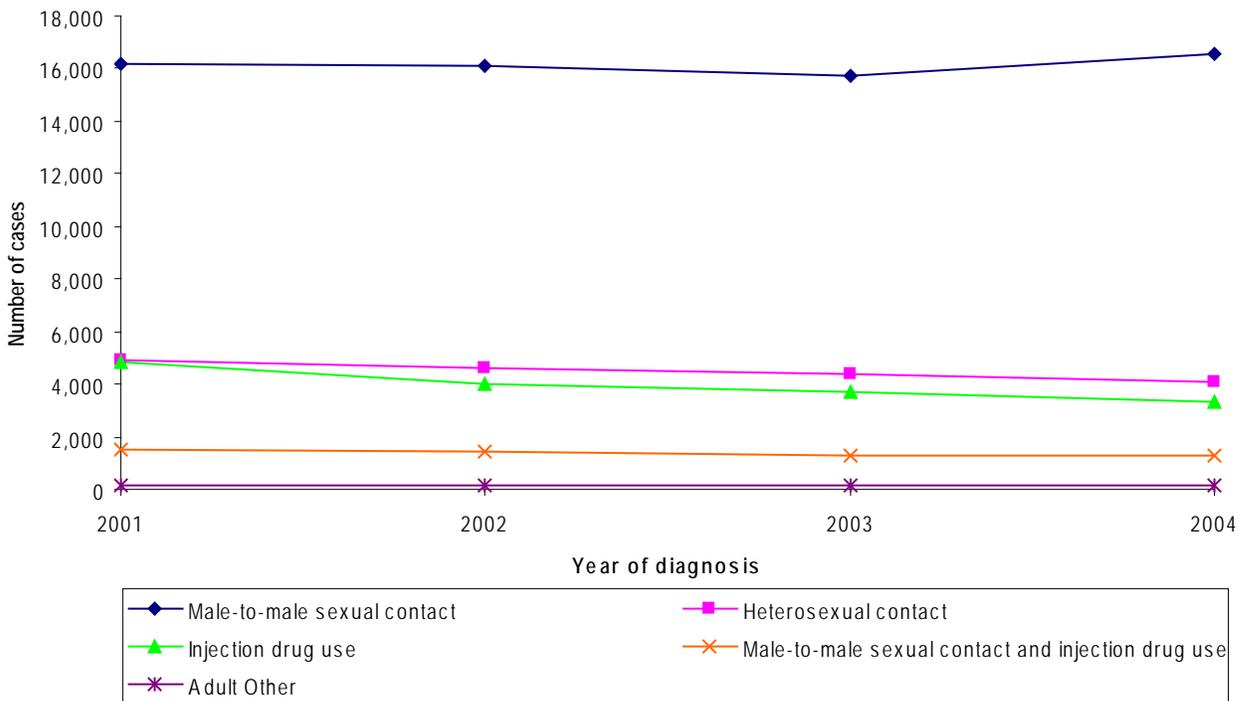


MSM experience the greatest burden of HIV/AIDS among adult males. From 2001 through 2004, the estimated number of HIV/AIDS cases increased among men who have sex with men (MSM).  In contrast the estimated number of HIV/AIDS cases decreased among drug injection users (IDU), MSM who were also IDU, and heterosexuals.  MSM (65%) and males exposed through heterosexual contact (16%) accounted for approximately 80% of all HIV/AIDS cases diagnosed in 2004 (Figure 5).

**Figure 6. HIV/AIDS cases among females by transmission category, 2001-2004**
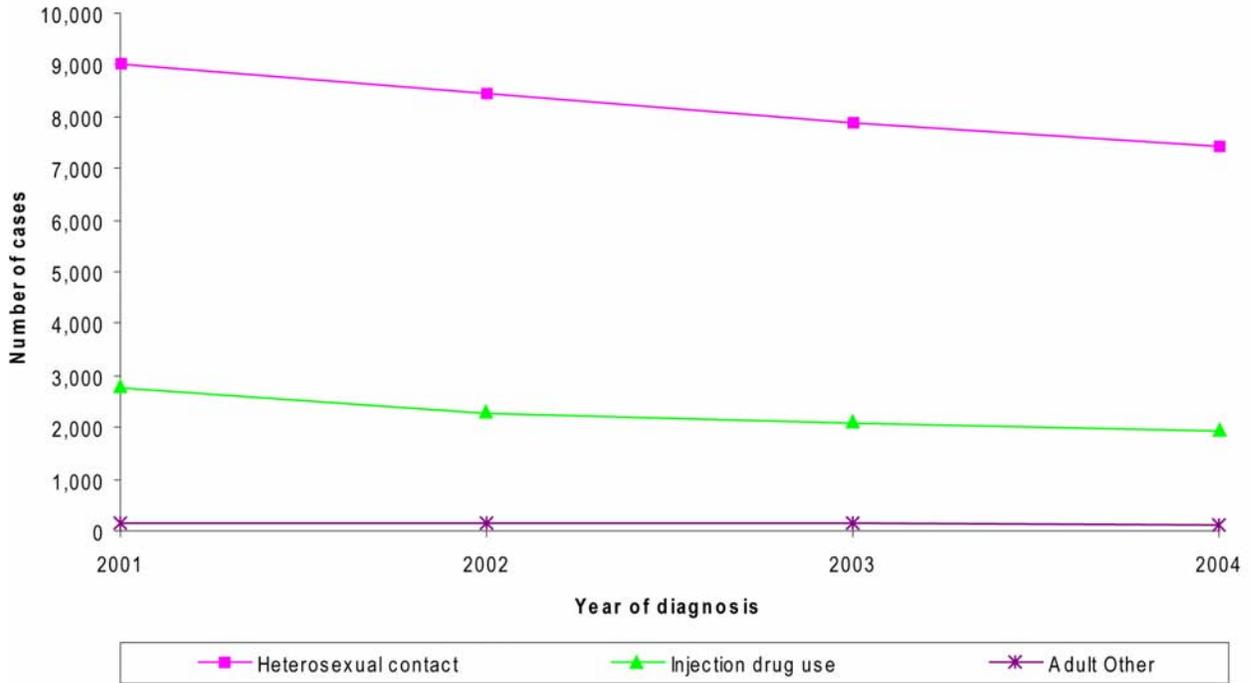


For females, the most common transmission mode for HIV/AIDS is heterosexual contact. In 2004, heterosexual contact accounted for approximately 78% of all the cases diagnosed that year. Injection drug use accounted for 20% of HIV/AIDS cases.

## *AIDS*

AIDS has metamorphosed from an epidemic in the 1980s to a pandemic in the 1990s and 2000s. The estimated rate of newly diagnosed persons with AIDS in the United States for 2004 was 13.5 cases per 100,000 population; this rate decreased 2.5% from the rate in 2001—13.9 cases per 100,000 population.

From 2000 through 2004, the estimated number of AIDS cases increased among all racial and ethnic groups. Blacks had the highest rate of AIDS in 2004, with 54.5 cases per 100,000 population, approximately 9 times the rate of whites, who had 5.8 cases per 100,000 population. Hispanics were the racial/ethnic group with the second highest rate, 17.3 cases per 100,000 population, followed by AI/AN, whites, and Asians, with 7.7, 5.8, and 3.6 per 100,000 population, respectively. Hispanics were the only group that experienced a decline (6.2%) in AIDS rates between 2000 and 2004. AIDS rates for blacks remained stable, and rates for whites, AI/AN, and Asians increased 4.7%, 9.2%, and 16%, respectively (Figure 6).

Historically, the Northeast region has had the highest rate for AIDS. Although in 2004 the region experienced a decline, it was still the region with the highest rate for 2004, (18.8 cases per 100,000 population). It was closely followed by the South (17.9 cases per 100,000 population). The West and Midwest had approximately half the rates of the Northeast and South, with 9.2 and 6.5 cases per 100,000 population, respectively. Both the South and the Midwest had increases (10.3% and 7.8%, respectively) since 2001; and the Northeast and the West experienced declines (9.6% and 5.7%, respectively).

From 2000 through 2004, the estimated number of AIDS cases increased 10% among females and 7% among males. Males accounted for 73% of all AIDS cases diagnosed in 2004. In 2004, AIDS rates were 20.1 cases per 100,000 population for males and 7.2 cases per 100,000 population for females. The rate for males was 2.8 times that of females.

## Figure 7. AIDS rates by age group, 2004
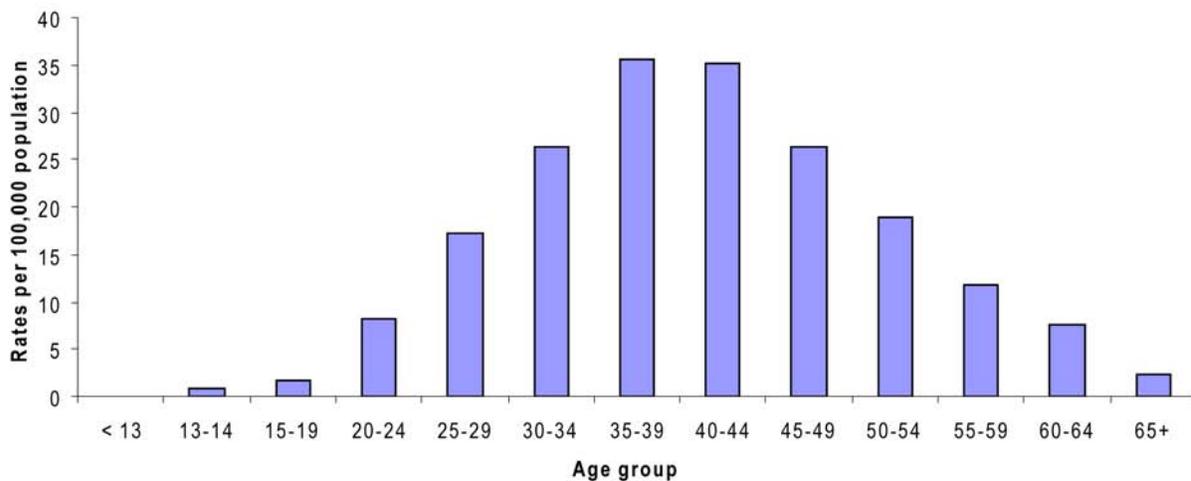


From 2000 through 2004, the estimated number of AIDS cases decreased 61% among children less than 13 years of age. The greatest number of cases occurred among persons aged 40-44 years, accounting for 21% of all AIDS cases diagnosed in 2004.

In 2004, the group with the highest AIDS rate was persons aged 35–39 years (35.6 cases per 100,000 population) [Figure 7].

Among men, MSM (58%) and persons exposed through heterosexual contact (16%) accounted for approximately 75% of AIDS cases in 2004. MSM cases of AIDS increased by 10% from 2001 to 2004. Intravenous drug users accounted for 18% of all AIDS cases in 2004, but this group showed a decline of 11% since 2001. For females, 7,489 AIDS cases were due to heterosexual contact, approximately 70% of all cases in 2004. There has been an increase (11%) in the number of AIDS cases by this transmission category since 2001. Transmission through injection drug use showed a slight decrease for females, from 3,393 cases to 3,184 cases (6.2%) between 2000 and 2004.

## *Viral Hepatitis*

Hepatitis A is a liver disease caused by the hepatitis A virus (HAV). Hepatitis A can affect anyone. In the United States, hepatitis A can occur in situations ranging from isolated cases of disease to widespread epidemics.  Hepatitis B is a serious disease caused by a virus that attacks the liver. The virus, which is called hepatitis B virus (HBV), can cause lifelong infection, cirrhosis (scarring) of the liver, liver cancer, liver failure, and death.  Hepatitis C is a liver disease caused by the hepatitis C virus (HCV), which is found in the blood of persons who have the disease. HCV is spread by contact with the blood of an infected person.

**Figure 8.  Trends in viral hepatitis rates, 2000-2004**
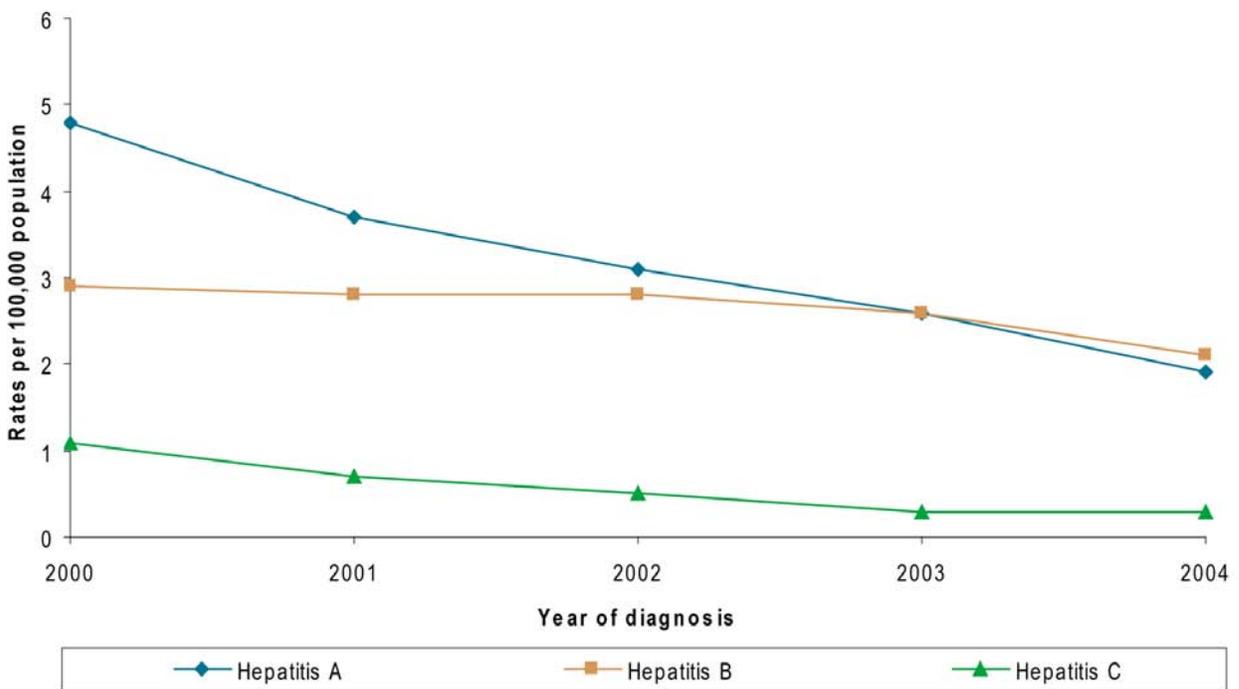


From 2000-2004, rates for hepatitis A, hepatitis B, and hepatitis C have declined.  For hepatitis C, a 73% decline was observed from 2000 to 2004. During this time period, a 60% and a 28% decline were observed for hepatitis A and hepatitis B, respectively (Figure 8).

<u>Hepatitis A</u>
Hepatitis A has historically been one of the most frequent notifiable diseases in the United States.  However, with the 1995 introduction of vaccines to prevent hepatitis A virus infection, there has been a substantial reduction in disease incidence.  In 2004, the overall rate of hepatitis A, 1.9 cases per 100,000 population, was the lowest ever recorded.  With the introduction of vaccines, the epidemiologic profile of this disease has experienced changes in the past years, with an increase in the proportion of cases occurring among adults, particularly those in high-risk populations, such as international travelers and MSM.  Rates of hepatitis A have been historically higher among males. During the late 1990s through 2001, the difference in the

gender-specific rates increased in such a way that rates in males were approximately double the rates of females. However, since 2001, rates have declined more in males, and in 2004, hepatitis A rates were 2.1 cases per 100,000 population for males and 1.8 cases per 100,000 population for females.

## Figure 9. Trends in hepatitis A by race/ethnicity, 2000-2004
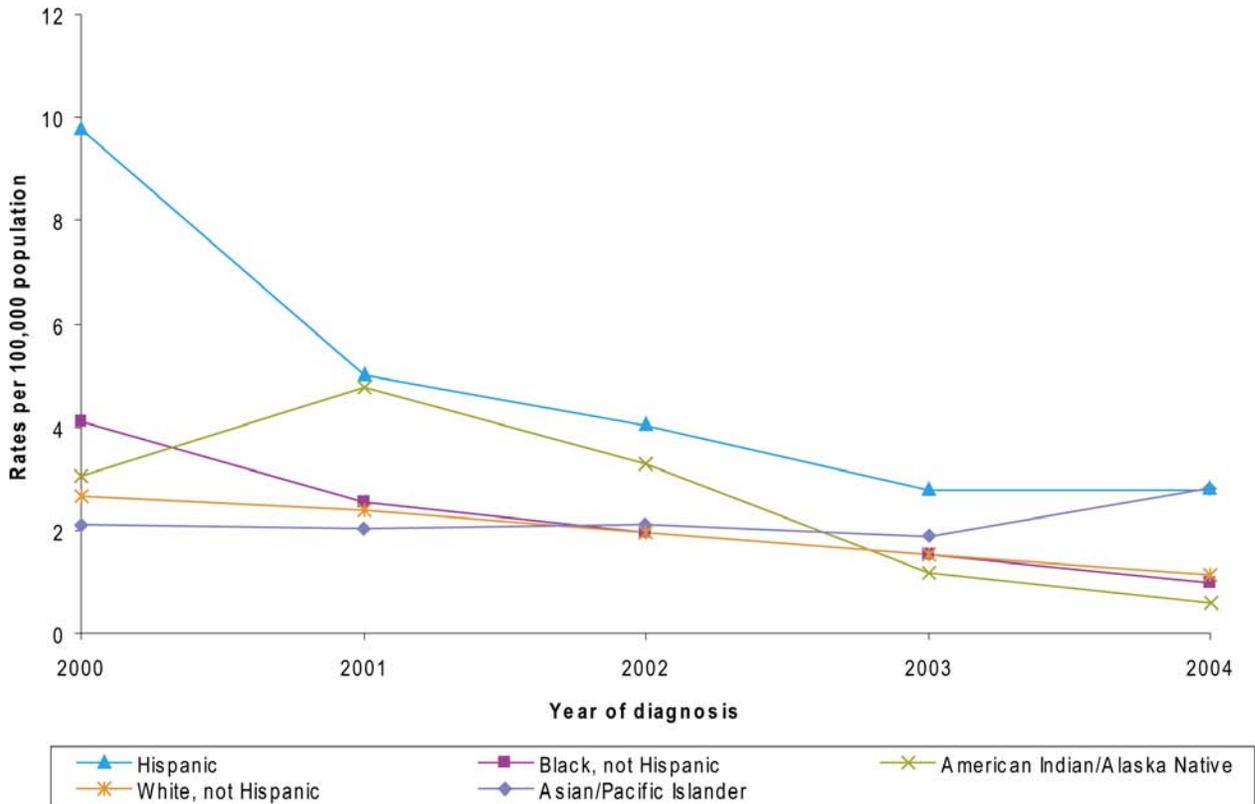


Historically, hepatitis A rates have differed by race, with the highest rate among AI/AN and the lowest rate among Asians. However, rates among AI/AN, which were greater than 60/100,000 prior to 1995, have decreased dramatically following widespread vaccination in this group, and since 2001, the rates have been approximately the same or lower than those of other races. By ethnicity, rates are higher among Hispanics than among non-Hispanics. Rates among Hispanics have also decreased since 1997, but they remain higher than those for non-Hispanics (Figure 9).

Hepatitis A rates have consistently been higher in the West than elsewhere in the country. However, in 2004, the Northeast had the highest hepatitis A rate, with 3.4 cases per 100,000 population, followed by the West, Southeast, and Midwest, with rates of 2.2, 1.8, and 1.1 cases per 100,000, respectively.

*19*

## Figure 10. Hepatitis A rates by age group, 2004
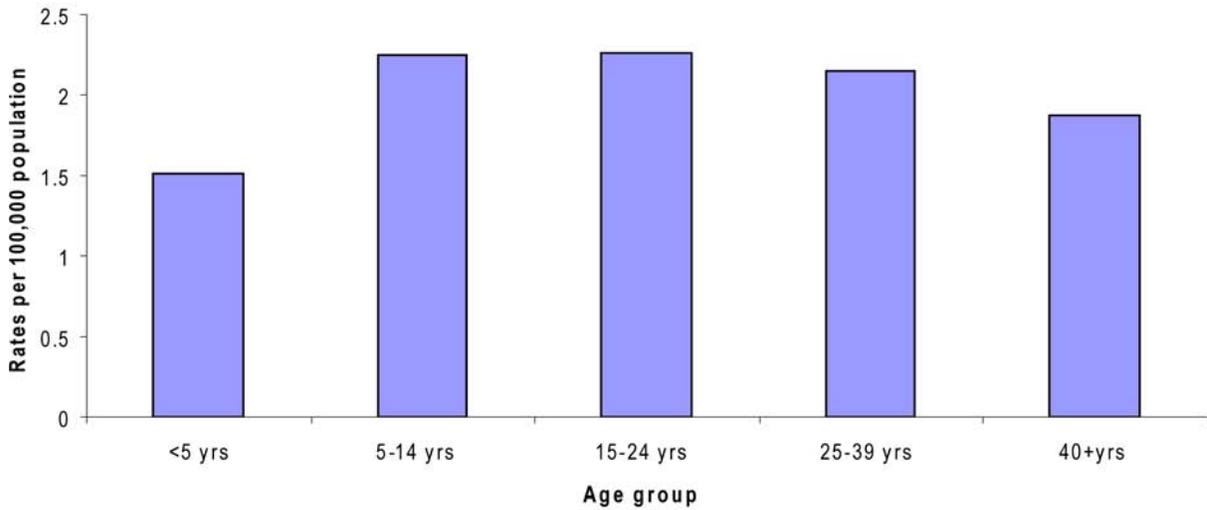


The incidence of hepatitis A varies by age group.  Rates have declined among all groups, but the greatest decreases have been among children. In 2004, rates were similar across all age groups, ranging from a low of 1.5 per 100,000 among children <5 years of age to 2.2 per 100,000 among persons 5-14 years old.  The low and relatively stable rates among persons 40+ years of age in large part reflect the higher proportion of persons in this age group with immunity due to previous infection (Figure 10).

Hepatitis B
In 2004 the number of reported cases of hepatitis B was 6,212. The overall incidence rate of hepatitis B was 2.1 cases per 100,000 population.  This rate is the lowest recorded, and it represents a decline of 27.6% since 2000.

## Figure 11. Trends in hepatitis B by race/ethnicity, 2000-2004
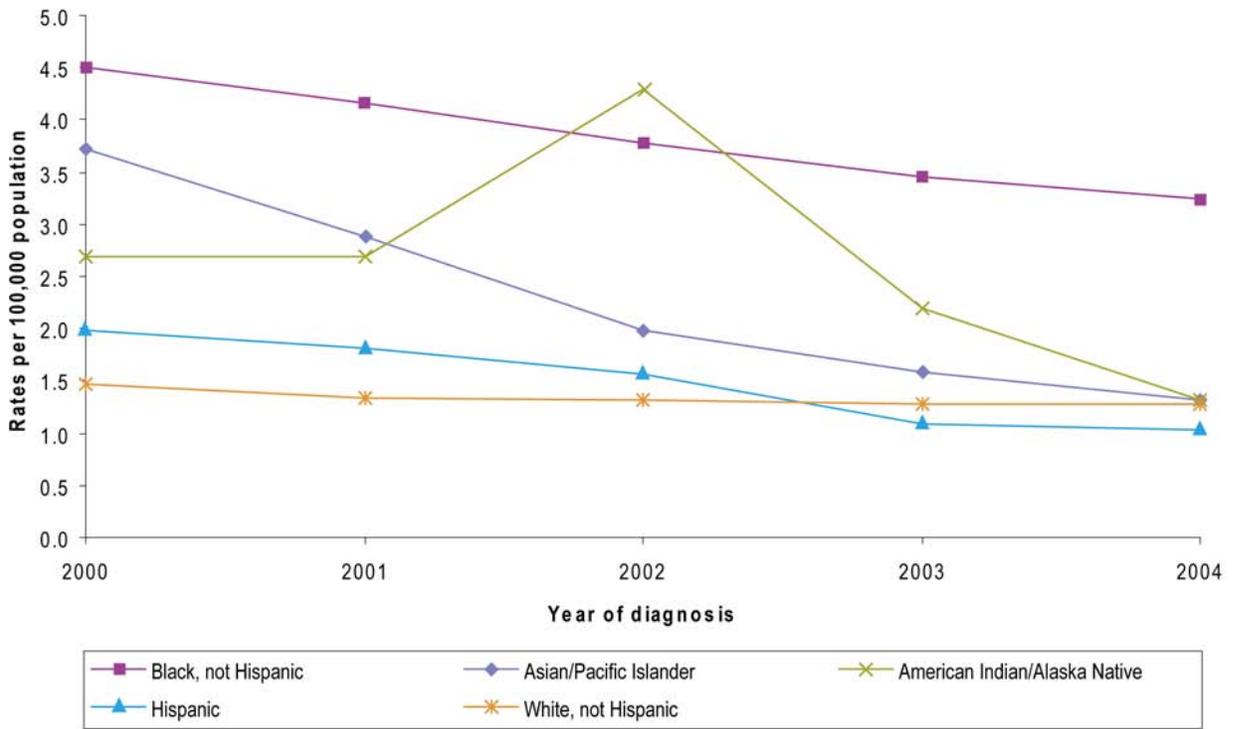


Rates of hepatitis B are not only low, but also continue to decline among all racial and ethnic groups. Rates of hepatitis B remain highest among non-Hispanic blacks, with 2.9 cases per 100,000 population, and they are the lowest among Hispanics, with 1 case per 100,000 population, a rate lower than that of non-Hispanic whites, 1.3 cases per 100,000 population (Figure 11).

In 2004, hepatitis B rates were similar in the West, Midwest, and Northeast, with 1.8, 1.4, and 2.1 cases per 100,000 population, respectively, but the rate remained higher in the Southeast (3.2 cases per 100,000 population).

The rate of hepatitis B in males in 2004 was 2.7 per 100,000 population; for females, the rate was 1.6 cases per 100,000 population. The ratio of cases among males to cases among women has increased gradually from less than 1.6 in 1990 to 1.7 in 2004.

## Figure 12. Hepatitis B rates by age group, 2004
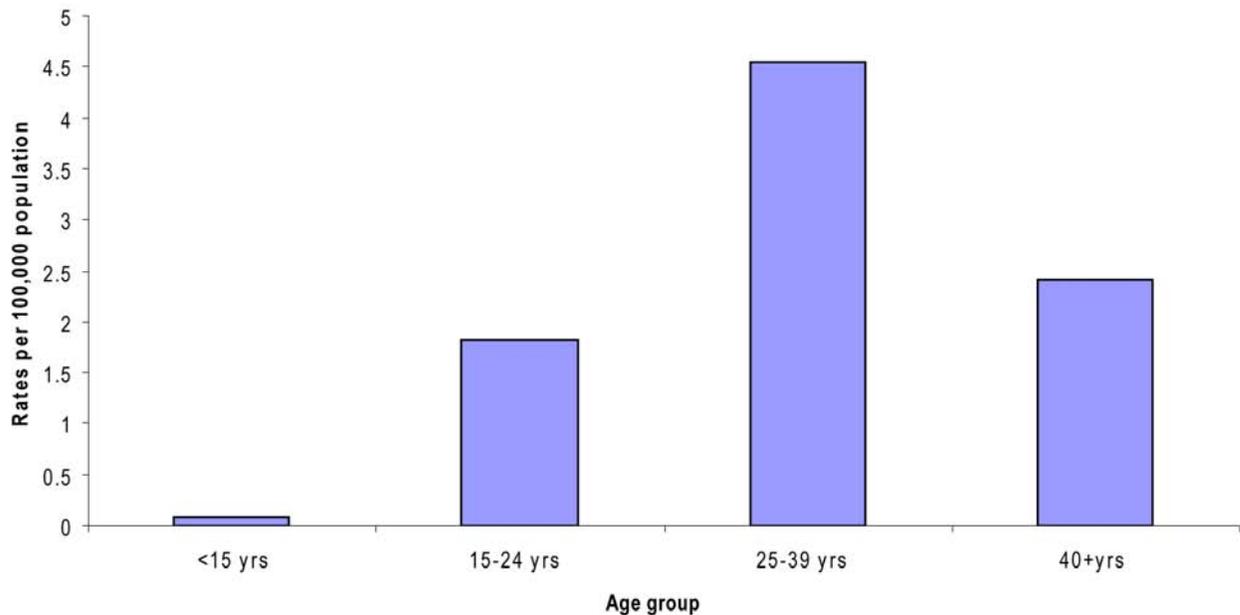


Rates have declined in all age groups. Hepatitis B rates vary by age, with the highest rates among persons 25-39 years of age (4.5 cases per 100,000 population) and the lowest among persons less than 15 years of age (.08 cases per 100,000 population) [Figure 12]. The greatest percentage decline occurred among children <15 years of age–a 95% decrease in rate–and among young adults aged 15-24, with an 87% decline. Although less dramatic than the declines in the younger age groups, substantial decreases in hepatitis B rates have occurred among 25- to 44-year-olds (71%) and among those older than 45 (51%).

Hepatitis C
Hepatitis C virus is the most common bloodborne infection in the United States, with an estimated 3.2 million chronically infected persons nationwide. The incidence of hepatitis C has declined since the late 1980s. The majority of hepatitis C cases continue to occur among adults, with injecting drug use as the most commonly identified risk factor for infection. In 2004, there were 758 cases of confirmed acute hepatitis C (0.3 cases per 100,000 population).

## Figure 13. Trends in hepatitis C infection rates by race/ethnicity, 2000-2004



The incidence of hepatitis C has declined in all racial groups since 1995. In 2004, rates were similar across racial and ethnic groups, ranging from 0.06/100,000 among Asian/Pacific Islanders to 0.57/100,000 among American Indian/Alaska Natives (Figure 13).

As in previous years, the rate of hepatitis C in 2004 is higher among males, with a rate of 0.3 per 100,000 population, than in females, with a rate of 0.2 per 100,000 population. However, this difference has diminished over the decade, and in 2004 the ratio of male to female rates was the smallest observed since reporting began.
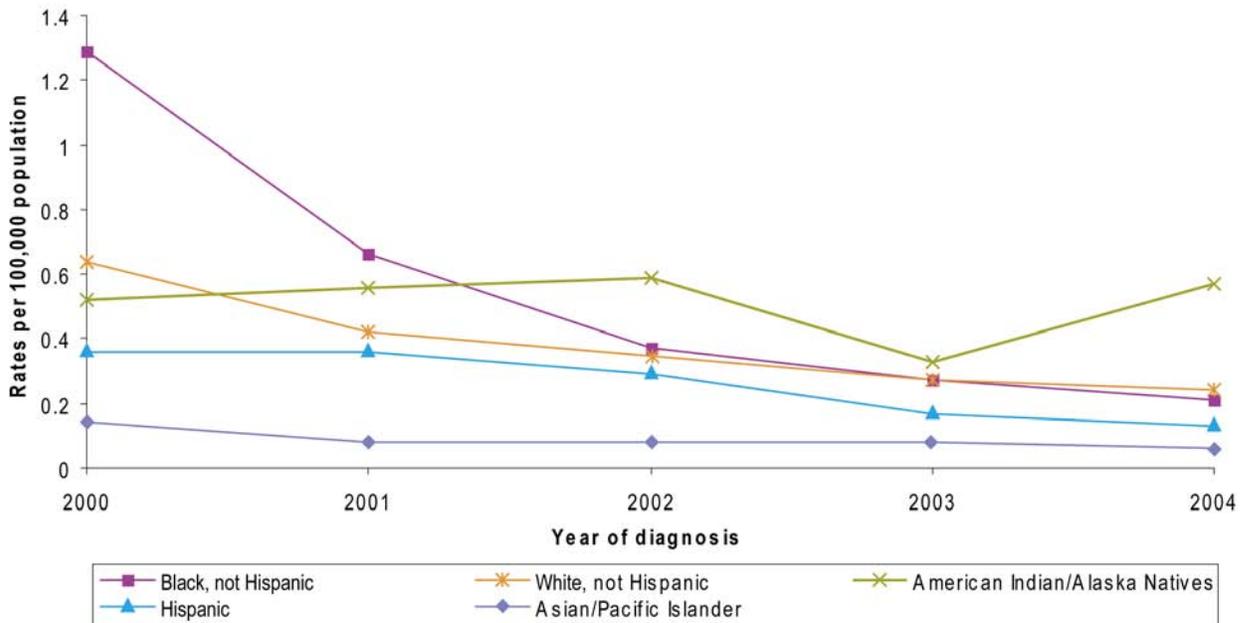
## Figure 14. Hepatitis C rates by age group, 2004
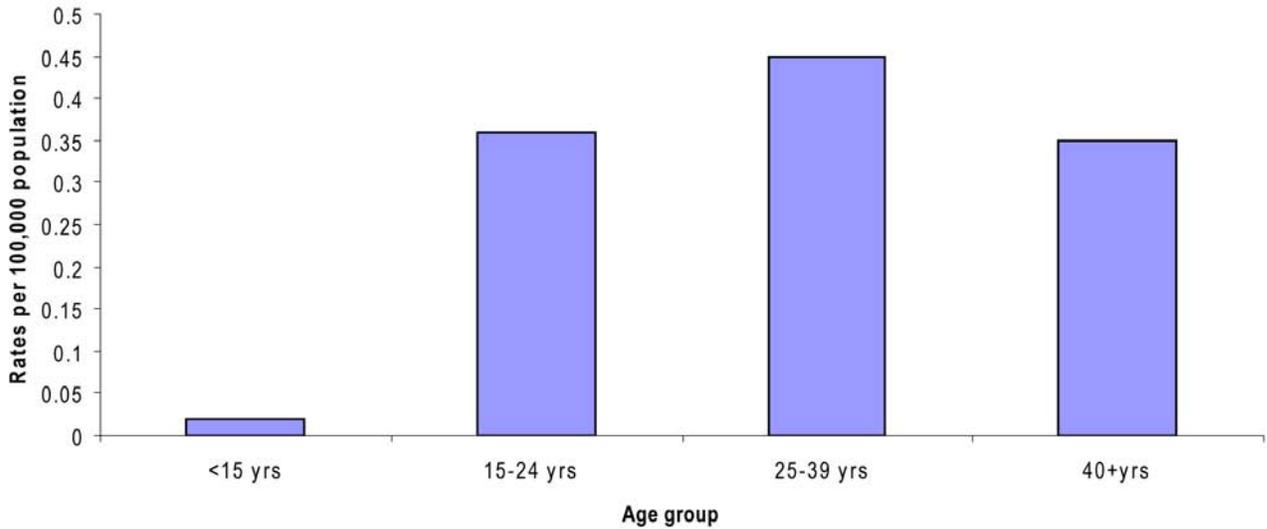


Hepatitis C rates vary by age, with the highest rates in 2004 among persons 25-39 years of age (.04 cases per 100,000 population) and the lowest among persons less than 15 years of age (Figure 14). Hepatitis C rates have been declining in all age groups since the mid-1990s. The greatest decline in incidence has been among 25- to 39-year-olds, which has historically been the age group with the highest rates of disease. In this group, incidence has declined by 62% since 2000, to 0.4 cases per 100,000 population.

## *Sexually Transmitted Diseases*

Primary and Secondary Syphilis
Syphilis is a genital ulcerative disease caused by the bacterium *Treponema pallidum* that facilitates the transmission of HIV and may be important in contributing to HIV transmission in those parts of the country where rates of both infections are high. Despite national progress towards syphilis elimination, syphilis remains an important problem in the South and in urban areas with large populations of MSM. In 2000, the rate of primary and secondary syphilis was the lowest reported since 1941. Syphilis rates declined by 89.2% from 1990 through 2000. However, these rates increased from 2000 to 2004, primarily because of increases in syphilis among men. In 2004, primary and secondary syphilis cases reported to the CDC increased to 7,980 from 7,177 in 2003, an increase of 11.2%.

**Figure 15. Syphilis rates by race/ethnicity, 2000-2004**
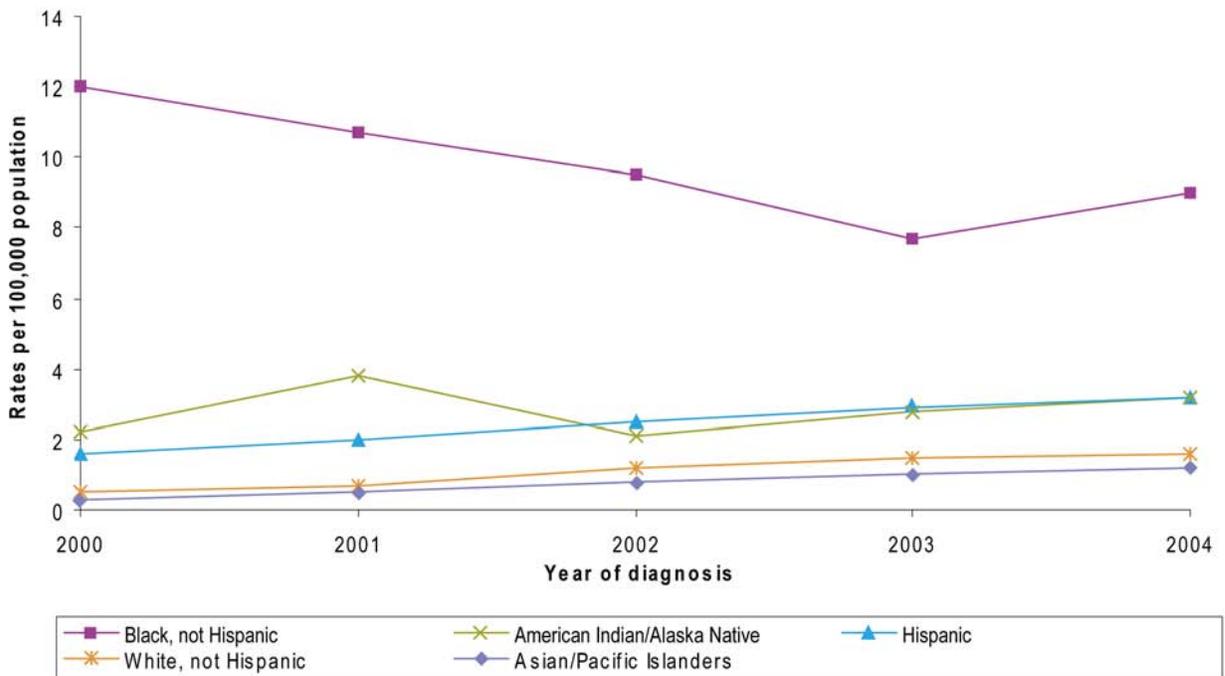


In 2004, blacks had the highest rate of syphilis infections (9 cases per 100,000 population), almost three times the rate of Hispanics and AI/AN, both the latter groups with a rate of 3.2 cases per 100,000 population. Rates in Hispanics have doubled between 2000 and 2004, rates among whites have tripled, and rates for Asians/Pacific Islanders have quadrupled. In 2004, the African-American rate was 5.6 times the rate among whites, reflecting a substantial decline from 2000, when the rate among African Americans was 24 times greater. This decline in the ratio is partially a reflection of actual decreases among African Americans, but it is also partly attributable to increases among whites (Figure 15).

In 2004, the South had the highest rates of syphilis infection (3.6 cases per 100,000 population); in fact, the South accounted for 48% of syphilis cases (16,302 cases) reported that year. During 2003–2004, rates increased in all US regions except the Midwest; the Northeast region rate increased 4.8%, the West 7.4%, and the South 16.1%. All these rates were greater than the *Healthy People 2010* target of 0.2 cases per 100,000 population.

**Figure 16. Syphilis rates by gender, 2000-2004**



Rates per 100,000 population

Year of diagnosis

Male    Female
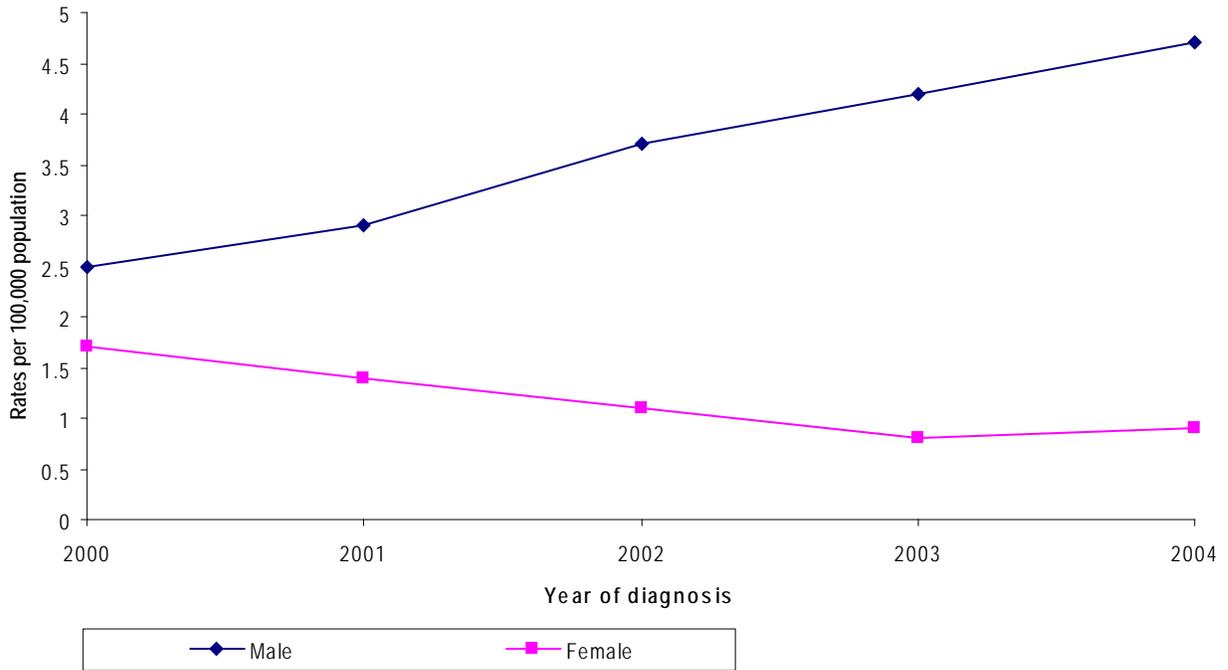
Overall increases in rates of syphilis during the period 2000–2004 were observed only among men.  In the last 5 years, male rates of syphilis have increased from 2.5 to 4.7 cases per 100,000 population, representing an 11.9% increase. In 2004, male rates were 5.2 times female rates (Figure 16).  The male-to-female rate ratio for primary and secondary syphilis has been on the rise since 1996. The increase is primarily attributable to increases in syphilis among MSM.

**Figure 17.  Syphilis rates by age group, 2004**



Rates per 100,000 population

14-Oct   15-19   20-24   25-29   30-34   35-39   40-44   45-54   55-64   65+   TOTAL
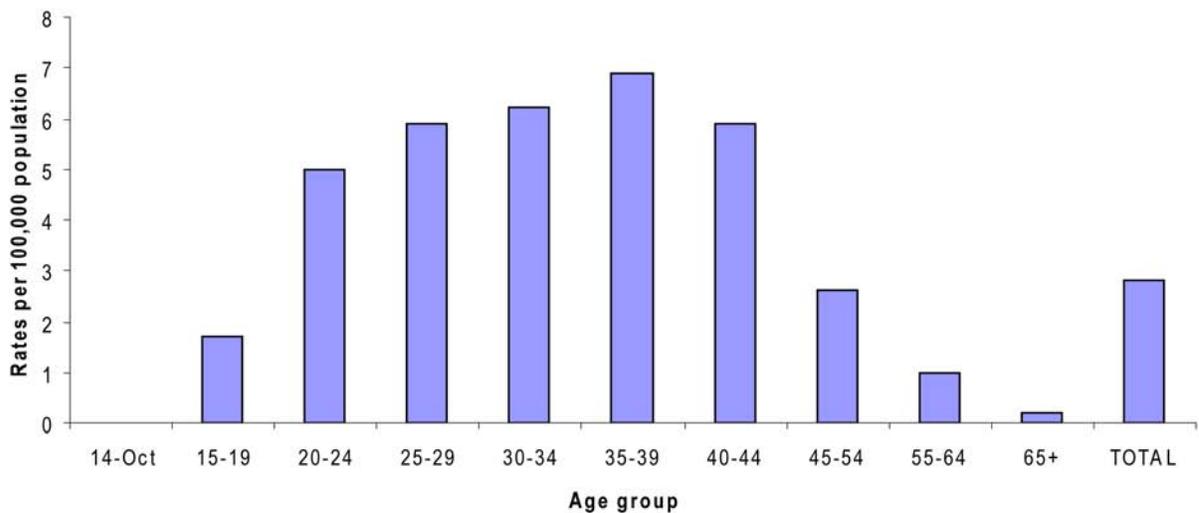
Age group

In 2004, the age group with the highest syphilis rate consisted of individuals between 35 and 39 years, and, from 2001 to 2004, this group has had the highest syphilis rate. This group experienced an increase of 26%. Individuals between the ages of 30 and 34 have had the second highest syphilis rate, with an overall increase of 24% since 2001 (Figure 17).

Gonorrhea

Gonorrhea is the second-most commonly reported notifiable disease in the United States. Infections due to *Neisseria gonorrhoeae* are a major cause of pelvic inflammatory disease (PID). PID can lead to serious outcomes, such as tubal infertility, ectopic pregnancies, and chronic pelvic pain. There is strong epidemiologic evidence that gonococcal infections facilitate the transmission of HIV infection.

The number of gonorrhea cases reported in the United States in 2004 was 330,132 (113.5 cases per 100,000 population). Although this is the lowest gonorrhea rate the United States has ever reported, it still considerably exceeds the *Healthy People 2010* target of 19 cases per 100,000 population. Gonorrhea rates decreased 11.8% between 2000 and 2004, but true changes in rates may be masked by changes in screening practices, use of diagnostic tests with different sensitivities, and changes in reporting practices.

## Figure 18. Gonorrhea rates by race/ethnicity, 2000-2004
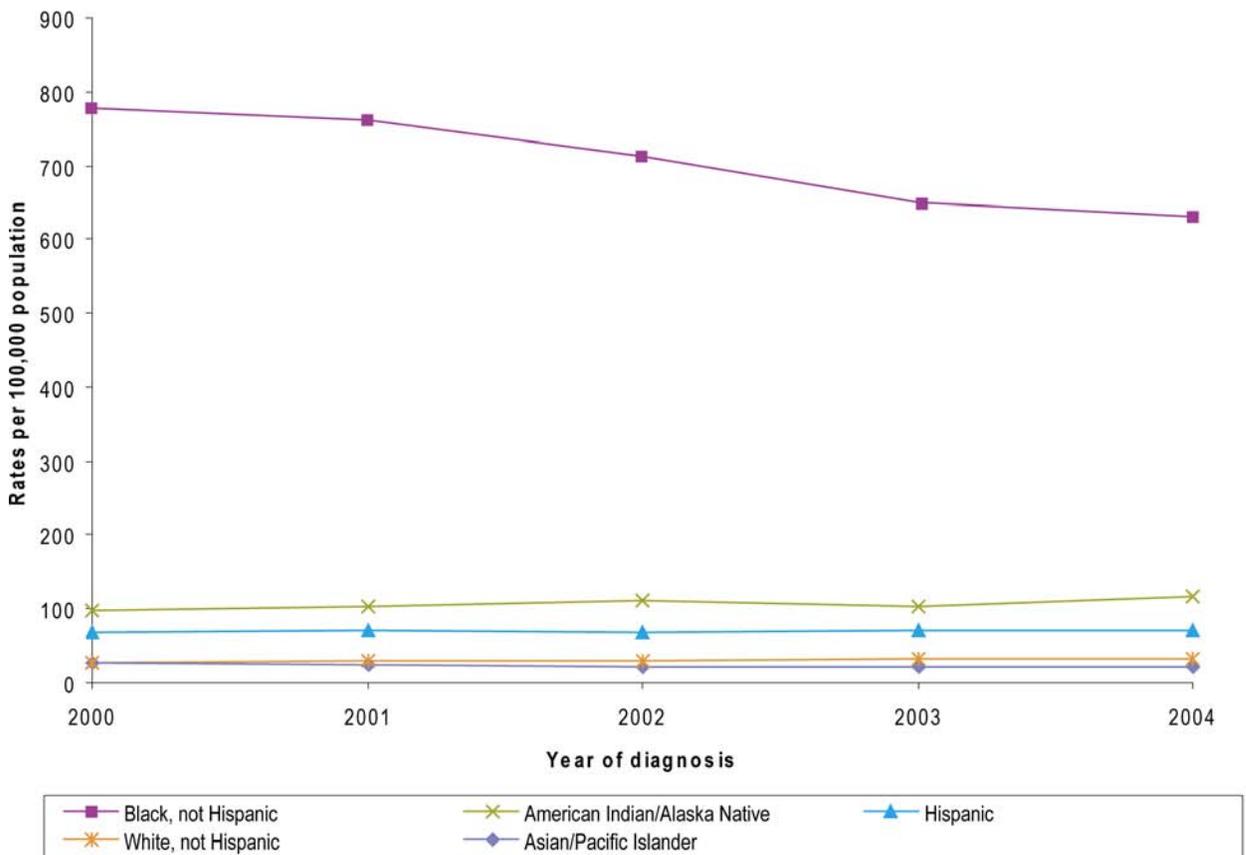
In 2004, blacks had the highest gonorrhea rates (629.6 cases per 100,000 population).  Although rates among blacks decreased annually since 2000, the rate is nevertheless approximately 6 times that of AI/AN, more than 18 times that of whites, and almost 30 times the rate of Asians/ Pacific Islanders (Figure 18).

In 2004, the South was the geographic region with the highest gonorrhea rate (143.5 cases per 100,000 population), but that rate still represents a decline of 22% from a rate of 184 cases per 100,000 in 2000.  This rate is closely followed by the Midwest, with a rate of 134.3 cases per 100,000 population.  In contrast, the gonorrhea rate in the West increased by 27.3%, from 57.2 cases per 100,000 population in 2000 to 72.8 in 2004.  Rates in the Northeast, 80.6 in 2004, and the Midwest, 134.3 in 2004, have shown minimal changes since 2000.

**Figure 19.  Gonorrhea rates by gender, 2000-2004**
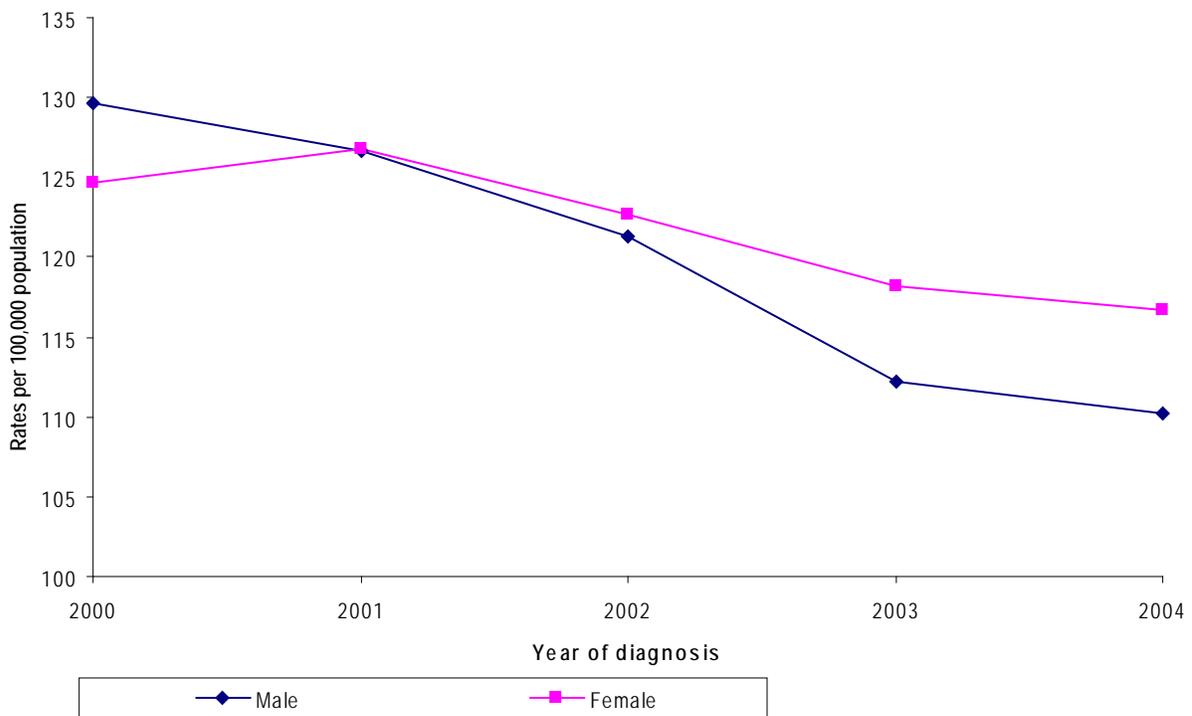


Prior to 1996, rates of gonorrhea among men were higher than rates among women.  However, since 2001, gonorrhea rates among women have increased, and, in 2004, they were slightly higher than in men.  In 2004, the gonorrhea rate among women was 116.5; it was 110.0 cases per 100,000 population among men (Figure 19).

**Figure 20. Gonorrhea rates by age group, 2004**
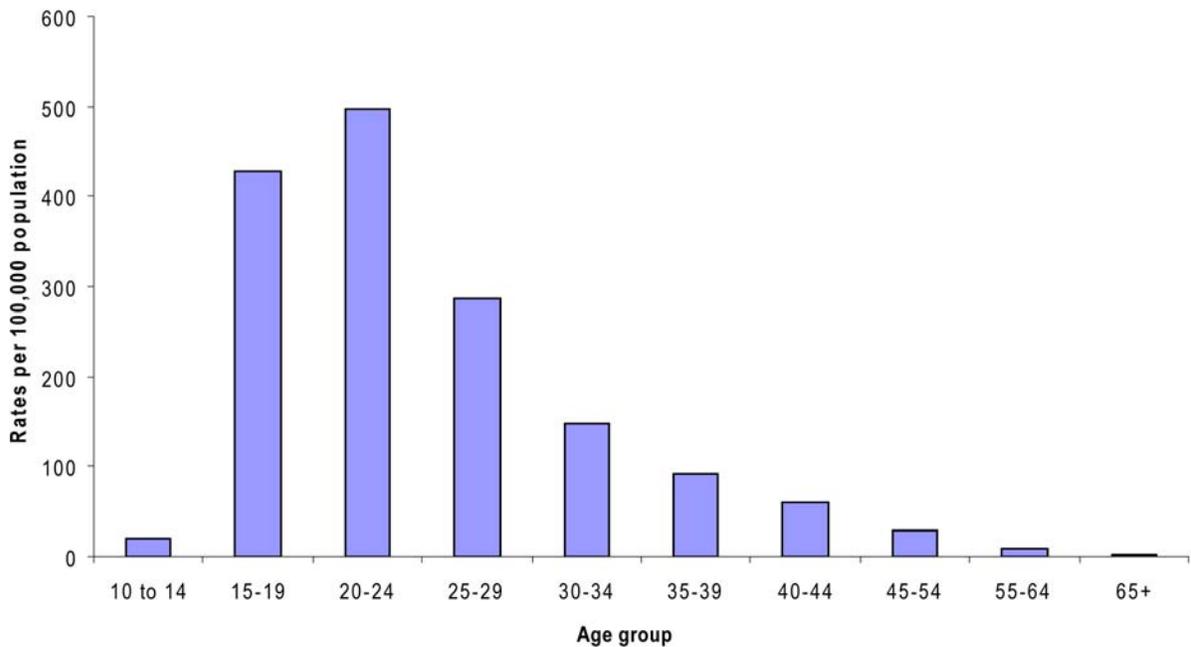


In 2004, the age group with the highest gonorrhea rate consisted of individuals between 20 and 24 years, with a rate of 497.8 per 100,000 population. Since 2000, there has been a 15.4% decrease in the rate of gonorrhea among 15- to 19-year-olds and a 15.2% decrease among 20- to 24-year-olds, greater than in any other age group. Decreases over this period of time were greater among males than females (Figure 20).

Chlamydia

*Chlamydia trachomatis* infection is the most commonly reported sexually transmitted disease (STDs) in the United States, and increases in infection have been reported over the past 10 years. In men, the most common syndrome is chlamydial urethritis, typically presented as mucoid discharge associated with dysuria and urethral itching. In women, cervical infection is the most commonly reported syndrome, but the infection is usually asymptomatic. If left untreated, approximately 30% of women with chlamydial infection develop pelvic inflammatory disease (PID). PID is associated with high rates of subsequent infertility, ectopic pregnancy, and chronic pelvic pain. In homosexual men who have had unprotected receptive anal sex, the most commonly reported syndrome is chlamydial proctitis. As with other inflammatory STDs, chlamydia infection can facilitate the transmission of HIV infection. In addition, infected pregnant women can pass the infection to their infants during delivery, potentially resulting in neonatal ophthalmia and pneumonia.

The increase in reported infections reflects expansion of chlamydia screening activities, use of increasingly sensitive diagnostic tests, increased emphasis on case reporting from providers and laboratories, and improvements in the information systems for reporting.

**Figure 21. Chlamydia rates by race/ethnicity, 2000-2004**
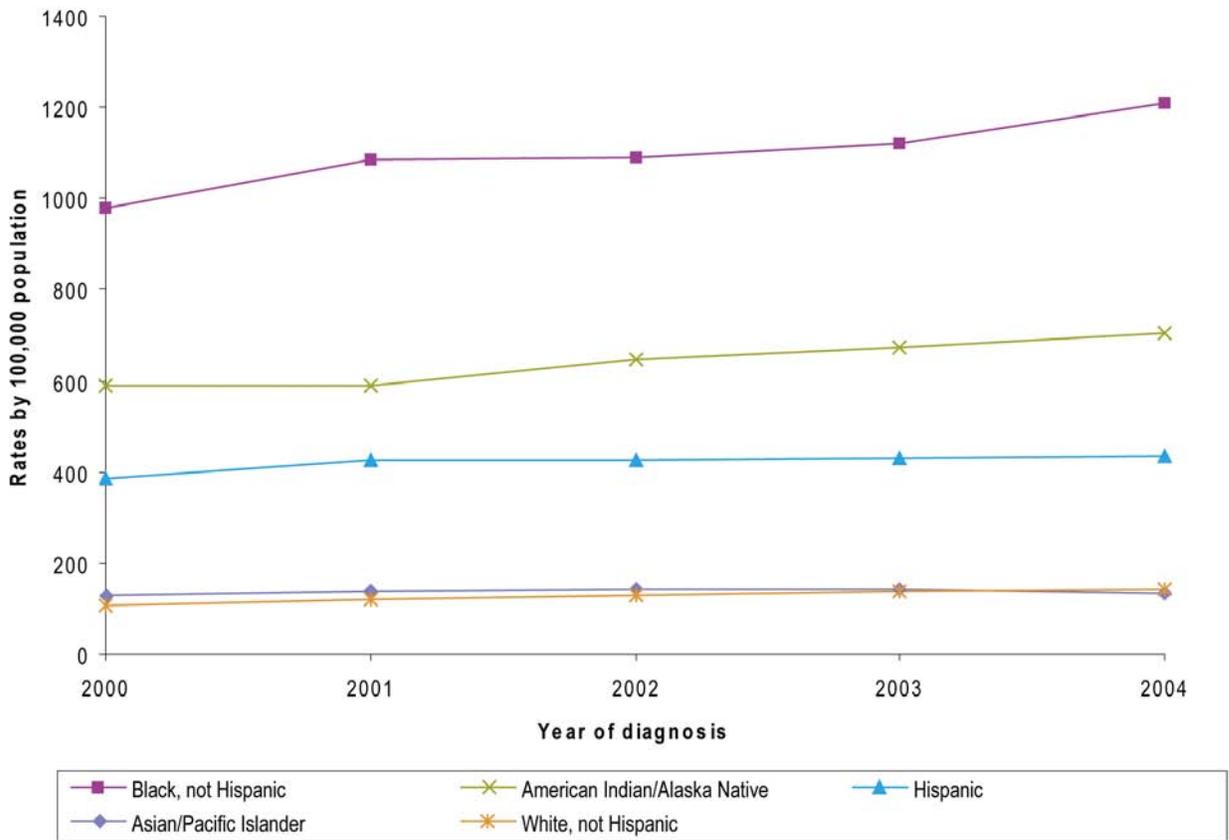


In 2004, blacks had the highest chlamydia rates (1,209.4 cases per 100,000 population), approximately two times the rate for AI/AN (705.8 cases per 100,000 population) and 8.4 times that of whites (143.6 cases per 100,000 population). Chlamydia rates have increased annually for all racial/ethnic groups, except for Asians/Pacific Islanders (Figure 21).

The Midwest region reported the highest chlamydia rates in 2004 (340.1 cases per 100,000 population), closely followed by the South and the West with rates of 331.4 and 323.1 cases per 100,000 population, respectively. The Northeast region reported the lowest rates (268 cases per 100,000 population).

**Figure 22. Chlamydia rates by gender, 2000-2004**
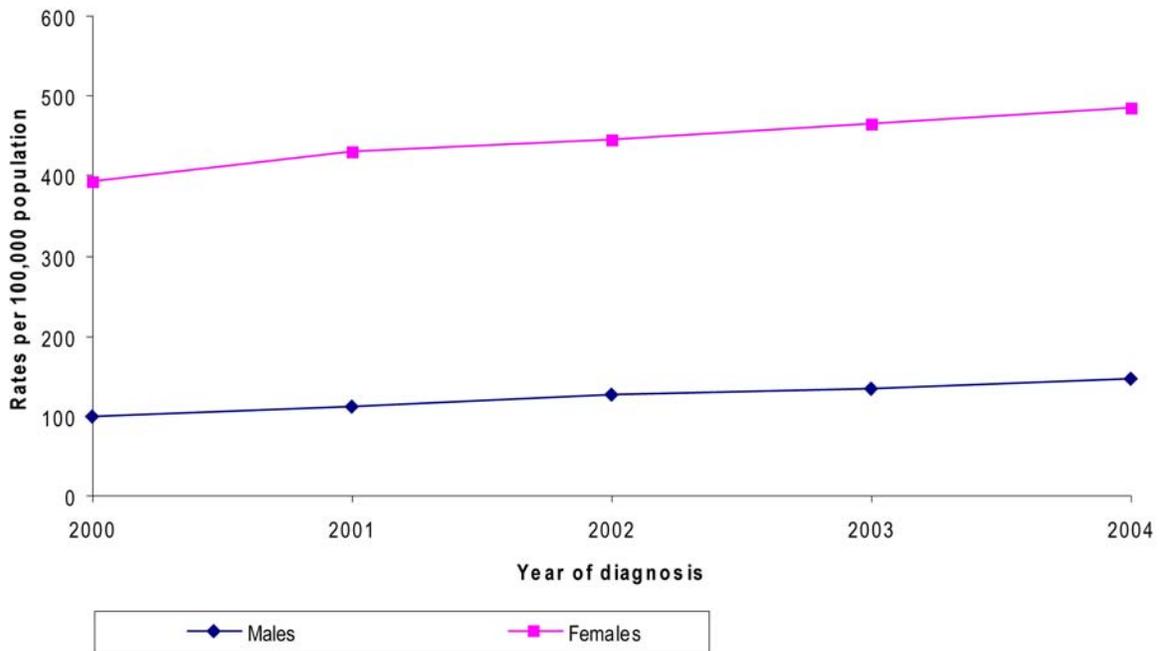


Chlamydia rates for males in 2004 were 147.5 cases per 100,000 population; for females, this number was more than three times the male rate, 486.2 cases per 100,000 population (Figure 22), likely reflecting a greater number of women screened for this infection. The lower rates among men suggest that many of the sex partners of women with chlamydia are not diagnosed or reported.

## Figure 23. Chlamydia rates by age group, 2004
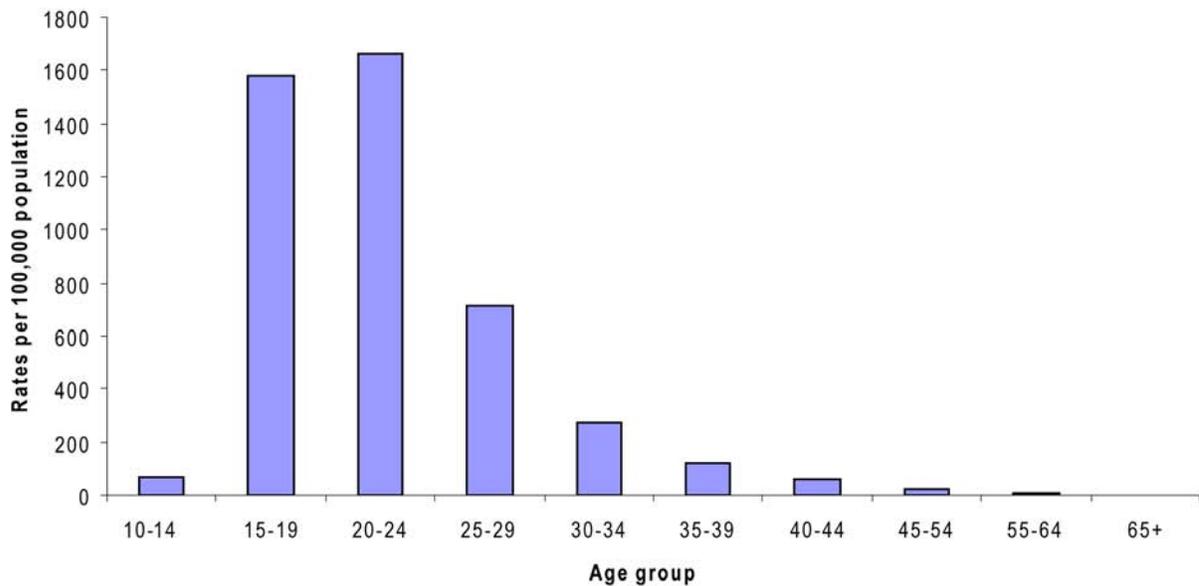


In 2004, chlamydia rates were highest among 20- to 24-year-olds (Figure 23). Since 2000, there has been a 21% increase in the chlamydia rate among this group. Chlamydia rates are second highest among 15- to 19-year-olds, and during the period 2000-2004, rates for this group increased 17.5%.

## *Tuberculosis*

Tuberculosis (TB) is a complex communicable disease and a major cause of disability and death in most of the world, especially in developing countries. Tuberculosis generally affects the lungs and respiratory tract, but it can strike nearly any organ system in the body. It is caused by *Mycobacterium tuberculosis* and less commonly by the related bacteria *M. africanum* and *M. bovis*, collectively referred to as *tubercle bacilli*. In the 1980s and 1990s, reductions in tuberculosis prevention and control programs coincided with the rise of the HIV epidemic, and tuberculosis rebounded. In 1999, the World Health Organization ranked tuberculosis among the most serious health threats in the world.

Tuberculosis rates have declined since 1993. In 2004, a total of 14,517 tuberculosis cases were reported to CDC from the 50 states and the District of Columbia, representing a 2.3% decrease from 2003 and 11% from 2000. Tuberculosis infection rates have decreased annually from 5.8 cases per 100,000 in 2000 to 4.9 cases per 100,000 in 2004, a 15.5% decrease.

## Figure 24. Tuberculosis infection rates by race/ethnicity, 2000-2004



**Legend:**
- Asian/Pacific Islander
- Hispanic
- White, not Hispanic
- Native Hawaiian/other Pacific Islander
- Black, not Hispanic
- American Indian/Alaska Native
- Asian
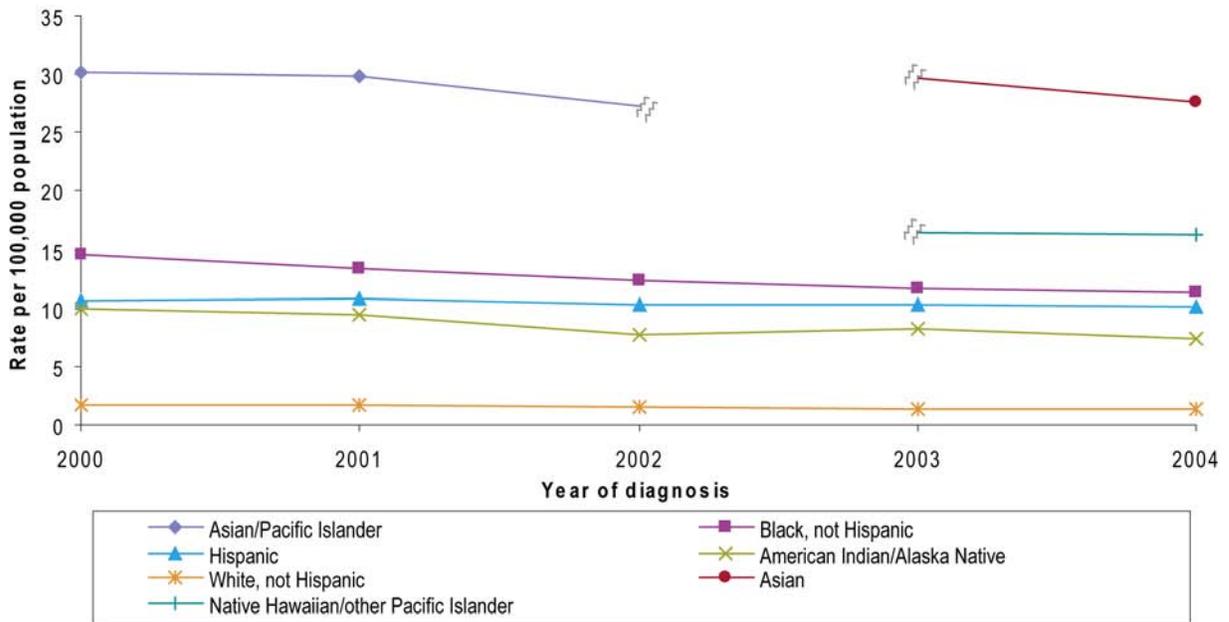
All racial and ethnic minority groups have rates of tuberculosis at least five times higher than the rate for the white population. In 2004, Asians had the highest tuberculosis rate, 27.6 cases per 100,000 population, 17 times the rate of whites (Figure 24). In 2003, the category Asian/Pacific Islander was split into the categories Asian and Native Hawaiian/Other Pacific Islander; results for these categories were first reported for 2003. In 2004, 82% of tuberculosis cases in the United States occurred in racial and ethnic minorities: 29% in Hispanics, 28% in blacks or African Americans, 23% in Asians, and 1% among AI/AN and Native Hawaiians/Other Pacific Islanders. Among US-born persons reported with tuberculosis in 2004, 45% were African-Americans. Although rates of tuberculosis in US-born blacks, as well as whites, have declined substantially over the past decade, since 1993. US-born blacks have consistently had tuberculosis rates eight times higher than US-born whites.

**Figure 25. Tuberculosis infection rates among US-born and foreign-born persons, 2000-2004**
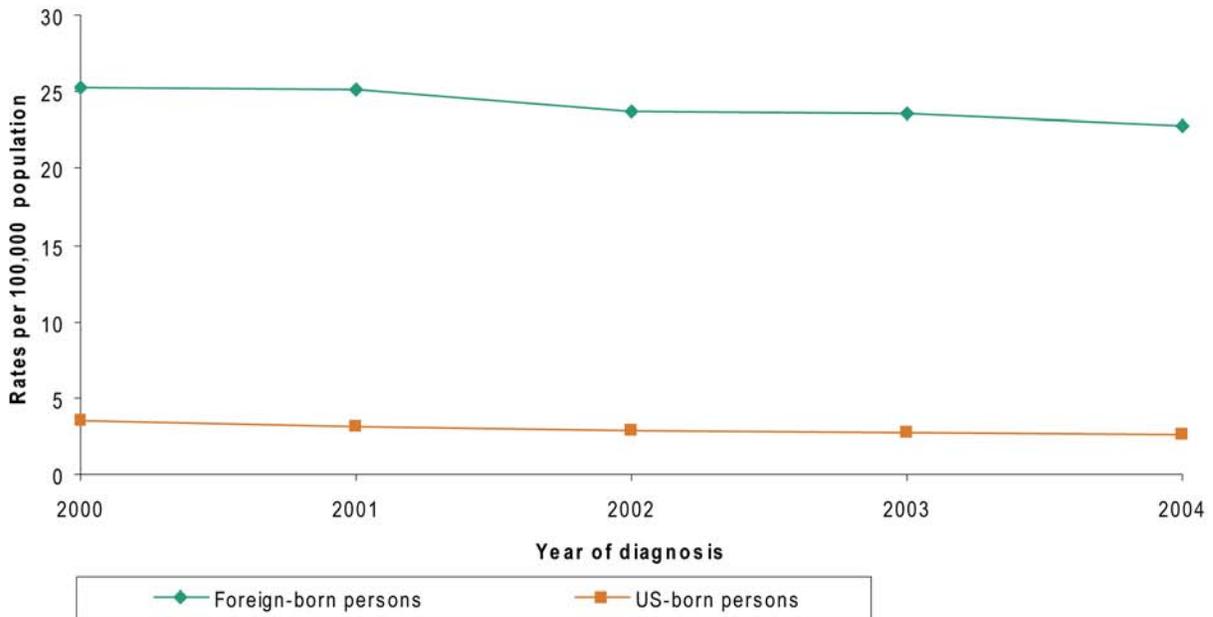


In 2000, 53% of reported cases were among US-born persons (3.5 cases per 100,000 population), while 47% occurred among foreign-born persons (25.3 cases per 100,000 population). In comparison, in 2004, 46% of the reported cases occurred among US-born persons (2.6 cases per 100,000) and 54% occurred among foreign-born persons (22.8 cases per 100,000), the third consecutive year that foreign-born persons represented a majority of cases (Figure 25). The top five countries of origin of foreign-born persons with tuberculosis were Mexico, the Philippines, Vietnam, India, and China.

In 2004, the age group with the highest tuberculosis rate consisted of persons 65 years of age or older (7.8 cases per 100,000 population), closely followed by those 25–44 years of age and 45–64 years of age, each with a case rate of 5.9 per 100,000 population. The largest declines (22%) occurred in persons 65 years and older, from a rate of 10 cases per 100,000 population in 2000 to 7.8 in 2004. Among persons 45–64 years of age, reported cases declined 20.3%, from 7.4 cases per 100,000 population in 2000 to 5.9 in 2004.

## What is CDC Doing to Help Reduce Health Disparities in HIV/AIDS, Viral Hepatitis, STDs, and Tuberculosis?

CDC plays a major leadership role in carrying out the goals set forward in *Healthy People 2010*, including the goal to eliminate racial and ethnic disparities in health. To help accomplish this goal, CDC has launched agency-wide and disease-specific initiatives; developed culturally appropriate, community-driven programs; collaborated with community and government partners on prevention and intervention research; developed educational outreach activities for the community and for CDC employees; and implemented programs to increase diversity in the public health workforce. Some of CDC's activities to address disparities in HIV/AIDS, viral hepatitis, STDs, and tuberculosis are described below. For the purposes of this report, initiatives include guidelines and recommendations, strategic plans, workgroups, and consultations. The term *program* generally refers to activities that take place under CDC funding at the local, community, and state levels.

### *Initiatives*

#### HIV/AIDS

The majority of the Division of HIV/AIDS Prevention's resources are dedicated to further understanding and addressing disparities among population groups that are disproportionately affected by HIV/AIDS. Initiatives include revising HIV testing recommendations, mobilizing community leaders, and conducting consultations to address HIV/AIDS in African Americans, Hispanics, women, and MSM. In addition, CDC targets programs to these groups to reduce their risk of getting HIV and to help those infected with HIV to live healthy lives and reduce the transmission to others.

In September 2006, CDC released *Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings*. The document encourages routine HIV screening of adults, adolescents, and pregnant women in healthcare settings in the United States. CDC also recommends that MSM get tested at least annually. Increased testing will enable those who are infected with HIV to get into treatment that can improve their health and extend their lives and reduce further transmission of the virus. HIV testing is especially important for MSM of racial or ethnic minorities, as research has shown that black and Hispanic MSM who are infected with HIV enter treatment at a later stage than their white counterparts.

In January 2001, CDC released a 5-year *HIV Prevention Strategic Plan* with an overarching goal of significantly reducing the number of new HIV infections in the United States by 2005 (70). The plan was updated in 2007. The plan focused primarily on eliminating racial and ethnic disparities in new HIV infections. New programs were implemented that helped to improve treatment, care, and support for persons living with HIV, funded HIV prevention behavioral interventions for uninfected persons at high risk for HIV, and strengthened the capacity and infrastructure of community-based organizations (CBO) that provide HIV prevention and care

services. However, disparities continue to persist among racial and ethnic minority populations, especially African Americans. To further reduce the incidence of HIV, CDC announced the *Advancing HIV Prevention (AHP)* initiative in 2003 (71). AHP, which focuses on people at greatest risk for transmitting HIV and their partners, consists of four strategies: (1) making HIV testing a routine part of medical care, (2) implementing new models for diagnosing HIV infections outside medical settings, (3) preventing new infections by working with HIV-infected persons and their partners, and (4) further reducing perinatal transmission.

In 2005, CDC established a workgroup to address HIV/AIDS in African Americans, charging it with carrying out two tasks. The first task was to engage new partners to help mobilize African-American communities for a heightened, collaborative response to the HIV/AIDS epidemic. A consultation, which included representatives of faith- and community-based organizations, media, clinical organizations, and African-American sororities and fraternities, was convened in 2006. The second task charged the workgroups with developing a CDC action plan outlining an urgent response to the epidemic among African Americans. The action plan was linked to goals and objectives contained in the *HIV Prevention Strategic Plan* and to recommendations from consultation participants. These goals and objectives included new activities to expand partnerships, conduct and integrate research, develop and evaluate programs, and collaborate with media and other communications channels to disseminate information. Building on this, in 2007, CDC launched *A Heightened National Response to the HIV/AIDS Crisis Among African Americans*.    The *Heightened National Response* focuses on four main areas: (1) expanding the reach of prevention services; (2) increasing opportunities for diagnosing and treating HIV; (3) developing new, effective interventions; and (4) mobilizing broader community action (72). In March 2007, CDC supported a consultation with African-American leaders from health departments, community-based organizations, local businesses, the faith community, and nontraditional partners, such as media and entertainment groups to publicly commit to strengthening the national response to the high rates of HIV/AIDS in African-American communities.  During the consultation, African-American leaders made public commitments to intensify their HIV prevention efforts. These efforts will be evaluated by CDC. In addition to this consultation, CDC has convened other consultations, including an August 2005 consultation to enhance HIV prevention programs and research activities directed toward African-American men who have sex with men.  In addition, in June 2007, CDC sponsored the *HIV/AIDS and African American Women: A Consultation Supporting CDC's Heightened National Response to the HIV/AIDS Crisis among African Americans*.  Also, in October 2007, CDC, the National Institutes of Health, and the Health Resources and Services Administration co-sponsored the *Consultation to Address Intervention Strategies for HIV/AIDS Prevention with African Americans*.  CDC is also working internally and with external partners to examine and further improve HIV prevention efforts for Hispanic as well as MSM populations.

Viral Hepatitis
Historically, hepatitis A incidence in the United States has been substantially higher among AI/AN than in other racial and ethnic populations in the United States (73). The high rates of hepatitis A among AI/AN populations were largely the result of periodic community-wide epidemics on reservations and in rural Alaskan communities. In 1996, the Advisory

Committee on Immunization Practices first recommended routine hepatitis A vaccination of AI/AN children. CDC collaborated with the Indian Health Service (IHS) in implementing pilot programs in a few areas and then in expanding coverage. Rates of hepatitis A virus among AI/ANs have decreased dramatically since the widespread vaccination program was introduced. In 2003, rates were the same as or lower than those in other races. Through another collaborative agreement between CDC, the IHS, and the Tanana Chiefs Conference, a CDC-supported demonstration project called the Viral Hepatitis Integration Project is under way in central Alaska. Viral hepatitis, HIV, and STDs share risk factors, and Alaska Natives have a higher risk for these diseases compared with other Alaskans. For this project, "integration" refers to the delivery of comprehensive hepatitis, HIV, and STD prevention services in locations where patients may be at risk, but where such services have not previously been offered together.

STDs

Prior to the launch in October 1999 of the National Plan to Eliminate Syphilis from the United States, syphilis was one of the most glaring examples of racial disparities in the burden of disease between African Americans and whites. From 1997 to 2003, however, there was a 75% reduction in the number of infectious syphilis cases in African-American women. CDC collaborated with Federal, state, local, and nongovernmental partners to develop the National Plan to Eliminate Syphilis (74). In the plan, CDC identified the following key strategies needed for successful elimination of syphilis from the United States:  expanded surveillance and outbreak response activities, rapid screening and treatment in and out of medical settings, expanded laboratory services, strengthened community involvement and agency partnerships, and enhanced health promotion. Since the implementation of the plan 6 years ago, numerous gains have been made in reducing the national incidence of syphilis, in raising professional and public awareness of the disease, in increasing financial investment into public STD clinic services, and in building the capacities of local public health departments and CBOs to provide prevention services. The evolving epidemiology of syphilis, including changes in risk groups and regions where it is concentrated, presents challenges to elimination of the disease. As in the issue of HIV/AIDS, socioeconomic factors continue to drive the concentration of STDs in those with high-risk behaviors, poor access to care, or both; the disease is largely concentrated in African Americans in the Southeastern states.

In reframing the future of the Syphilis Elimination Effort, CDC's vision is to create an evidence-based and culturally competent prevention and control action plan with three key goals: (1) investment in and enhancement of public health services; (2) prioritization of evidence-based, culturally competent interventions; and (3) creation of accountable services and interventions. In 2006, a revised *National Plan to Eliminate Syphilis from the United States* was launched to provide a strategic framework and action plans to continue progress towards eliminating syphilis from the United States.

In June 2007, CDC sponsored the *Consultation to Address STD Disparities in African-American Communities*.  The consultation included experts in a variety of fields with perspectives on public health, infectious diseases, and health in African-American communities.   Participants in the consultation represented academia, Federal and local government, faith-based organizations,

grassroots organizations, and the private sector. The consultation focused on the causes of racial disparities in STD rates as well as on how best to combat them. CDC and partners will follow up on implementing recommendations that were derived from the consultation.

Tuberculosis

Tuberculosis rates among racial and ethnic minorities are substantially higher than rates among whites, and the disease persists among foreign-born persons and U.S.-born blacks (75). Several factors likely contribute to the burden of tuberculosis in these populations, including an unequal distribution of such risk factors as HIV infection. Since 2003, CDC has responded to the epidemic among blacks with a *Stop TB in the African-American Community* initiative. In 2003, the Advisory Council for the Elimination of Tuberculosis (ACET) and CDC cosponsored a consultation with national nongovernmental, African-American organizations and agencies whose programs could have an impact on tuberculosis control efforts in the African-American population. The discussion groups identified a number of unmet needs and provided important comments and specific recommendations for activities to raise awareness and stimulate actions to address and reduce tuberculosis in racial and ethnic minorities. In 2006, CDC held a summit to engage new partners to create links and build networks that will lead to ongoing activities and strategies to decrease tuberculosis in the African-American community. In addition, CDC launched a "Stop TB in the African-American Community" listserv and Web page.

## *Programs*

CDC provides leadership, capacity-building assistance, and funding for programs at the state, local, and community levels. CDC funding supports staffing, program infrastructure, program implementation, and evaluation of interventions. CDC strives to ensure that programs meet local needs and that they are science-based and culturally proficient. Selected prevention programs are described below.

HIV/AIDS

The majority of the Division of HIV/AIDS Prevention's program resources are dedicated to addressing disparities among population groups that are disproportionately affected by HIV/AIDS, in particular, racial and ethnic minorities. HIV prevention programs consist of interventions intended to change risky behavior and improve the health of the people served. Interventions include encouraging early HIV diagnosis; providing HIV counseling, testing, and referral services; developing educational programs and materials; and training peers to deliver educational messages. CDC has partnered with community- and faith-based organizations and business and labor groups to help deliver some of these interventions. To reach populations with high rates of HIV/AIDS, interventions have been delivered to individuals, groups, and communities in places such as storefronts, barber shops, beauty shops, health centers, schools, housing communities, faith-based organizations, and gay bars. Street outreach techniques, such as using mobile testing vans, offering incentives for participation or referral, and recruiting peers, are some of the ways to reach people with limited access to care and those who may be homeless. In addition, community planning helps ensure that priorities for HIV prevention are determined locally with input from affected communities and that they meet the needs and values of the populations they serve.

Through the Replicating Effective Programs (REP) project and the Diffusion of Effective Behavioral Interventions (DEBI) project, CDC develops and provides culturally competent, evidence-based HIV prevention interventions for persons at risk of acquiring or transmitting HIV. REP/DEBI projects are the cornerstones of a national prevention program (76, 77). The interventions target specific racial and ethnic populations at high risk for HIV infection. Many of the DEBI projects are targeted to racial and ethnic minorities, and they were tested with representatives from racial and ethnic communities. CDC funds health departments, community-based organizations, and other partners across the United States to provide these interventions to the populations they serve. Interventions found to be effective for persons of color include training black youth as peer educators in their communities; teaching healthcare providers how to work with young black and Latino/Hispanic MSM and heterosexuals in prevention activities; using culturally appropriate videos to teach small groups of sexually active black and Latino/Hispanic men and women about condom use, negotiation skills, and safer sex; offering HIV counseling and testing services and outreach activities to black churches; and offering outreach, discharge planning, community case management, and education services to correctional institutions (76, 77). Some examples of these interventions are highlighted below:

- Healthy Relationships, a small-group intervention for people living with HIV and AIDS
- Many Men, Many Voices (3MV), a group-level STD/HIV prevention intervention for African-American men who have sex with men (MSM) of color
- Popular Opinion Leader (POL), an intervention to identify opinion leaders to encourage safer sex as the norm in social networks of MSM
- Safety Counts, an intervention for active injection drug and crack cocaine users, aimed at reducing high-risk drug use and sexual behaviors
- Sisters Informing Sisters About Topics on AIDS (SISTA), a group intervention for African-American women to help them increase condom use
- Street Smart, a skills-building program to help runaway and homeless youth practice safer sexual behaviors and reduce substance abuse

Other programs that help reduce disparities in HIV/AIDS include the Minority AIDS Initiative (MAI), which provides funding for HIV prevention resources for programs targeted to communities of color, including activities to build capacity for HIV prevention. Another source of funding is Supplemental Funding for Community-based Strategies to Increase HIV Testing of Persons at High Risk in Communities of Color. These funds support a social network model to increase HIV counseling and testing among high-risk minority communities. CDC also works with media and other communications channels to deliver HIV prevention messages. Newspapers, local radio stations, magazines, and trade shows that target racial and ethnic minorities have partnered with the agency on projects. The Black AIDS Institute, a black HIV/AIDS policy center, is funded by CDC for two important media-related projects. For example, the Drumbeat Project uses media messages to influence the way black America views the AIDS epidemic and to fight stigma and homophobia that may impede HIV testing, treatment, and mobilization efforts in the African-American community. The second project involves the use of communications modalities (e.g., media and town hall meetings). CDC also conducts its

own social marketing campaigns to communicate important HIV-related messages to relevant communities. For example, "Take Charge, Take the Test" targets African-American women in select urban areas to encourage them to get tested for HIV.

Viral Hepatitis
To help address disparities in viral hepatitis among AI/AN, CDC supports two staff members who coordinate joint CDC/Indian Health Service activities around viral hepatitis epidemiology, research, prevention, and policy. CDC also supports long-term follow-up of groups of American Indians and Alaska Natives vaccinated for hepatitis A and hepatitis B to ensure that protection from these viruses continues for many years after vaccination. In addition, efforts to determine the causes of chronic liver disease in these populations and the factors that contribute to more severe chronic liver disease are supported.

Sexually Transmitted Diseases
The Syphilis Elimination Effort, described elsewhere in this report, is a national initiative that includes goals to reduce disparities in syphilis. The Infertility Prevention Project is a national program that funds chlamydia and gonorrhea screening and treatment services for low-income, sexually active women attending clinics for family planning, sexually transmitted diseases, and other women's healthcare needs. To address disparities in AI/AN, CDC funds projects to strengthen the local capacity of American Indian communities on Native American reservations to decrease STDs. One project is creating awareness among tribal or reservation councils about STDs in their communities and about how to prevent STDs. Another project is working with CDC's Prevention Training Centers to develop collaborations with state health departments, regional infertility prevention programs, the IHS, tribal epidemiological centers, and other relevant partners for sharing resources and information that could strengthen an STD program. CDC also assists state STD programs to design, implement, and evaluate Comprehensive STD Prevention Systems, including strategies specific to the prevention of STD-related infertility and to the elimination of syphilis.

Tuberculosis
Current tuberculosis control, treatment, and prevention programs are being strengthened to ensure their capacity for diagnosing and properly treating people with active tuberculosis and thus prevent the spread to others. One program that was developed to accomplish this goal is the U.S.-Mexico Binational Referral and Case Management Project (Binational Card Project). The Binational Card Project is a collaborative effort between CDC and the National Tuberculosis Program in Mexico to ensure continuity of care and completion of therapy for tuberculosis patients migrating across the border, to reduce tuberculosis incidence and prevent drug resistance, to coordinate referral of patients between health systems, and to provide a model for addressing other diseases.

Another CDC goal is to mobilize support for tuberculosis elimination. To accomplish this goal, CDC has consulted with leaders, organizations, healthcare providers, and other stakeholders within high-risk communities, including the African-American community.

## *Research*

NCHHSTP's research agenda includes studies to monitor patterns of disease in different populations and to identify factors associated with increased risk of disease. The results of these studies are used to develop and evaluate programs to address health disparities in HIV/AIDS, viral hepatitis, STDs, and tuberculosis.

HIV/AIDS
HIV/AIDS research includes epidemiologic studies and analyses of surveillance data in an effort to better characterize behavioral trends and determinants of HIV risk and infection in understudied groups, including African Americans, Hispanics/Latinos, and others who have been disproportionately affected by HIV/AIDS.

In addition, multiple intervention studies that test new and innovative strategies for reducing HIV risk in disproportionately affected populations, including biomedical approaches, are conducted. These intervention studies focus on African-American and Hispanic/Latino women, MSM, heterosexual men, and persons living with HIV, as well as substance-using MSM, young incarcerated men, homeless and unstably housed persons living with HIV, transgender persons, and other populations. A number of these studies seek to address social and structural determinants of HIV risk, such as poverty, homelessness, and the effects of racism and discrimination. The Division of HIV/AIDS Prevention is also conducting research to identify optimally effective strategies to get at-risk persons to know their HIV status, to reduce undiagnosed HIV infection among African-American men and women, to increase access to care among persons who are diagnosed with HIV, and to increase access and utilization of HIV prevention services among Latinas living along the U.S.-Mexico border. In addition, the Division of HIV/AIDS Prevention is working to increase the number of investigators working to reduce HIV-related health disparities. In 2002, CDC created the Minority AIDS Research Initiative (MARI). The MARI program is a capacity-building initiative to fund investigators to conduct studies that address gaps in HIV/AIDS research in African-American and Latino/Hispanic populations.

Viral Hepatitis
To address disparities in viral hepatitis among minorities, the Division of Viral Hepatitis supports research on African-American and Hispanic/Latino injection drug users as well as studies of acute hepatitis B and hepatitis A in minority communities. The Division of Viral Hepatitis supports field staff responsible for coordinating joint CDC/Indian Health Service activities around viral hepatitis epidemiology, research, prevention, and policy. The Division of Viral Hepatitis also supports long-term follow-up for groups of American Indians and Alaska Natives vaccinated for hepatitis A and for hepatitis B to ensure that protection from these viruses continues for many years after vaccination. A series of studies in Pacific Island nations that were or are US trust territories—American Samoa, Chuuk (formerly Truk), Pohnpei, and the Marshall Islands—are evaluating the preservation of immune function in adolescents and young adults vaccinated in infancy for hepatitis B. In addition, efforts to determine the causes of chronic liver disease in these populations and the factors that contribute to more severe chronic liver disease are supported.

Sexually Transmitted Diseases

Research on STDs includes an examination of how diagnosis of a high-risk strain of the human papillomavirus affects African-American, Latino/Hispanic, and white women and their sexual partners; an evaluation of the degree to which STDs and viral hepatitis control and prevention services are integrated into public and private HIV clinical care settings that provide services to African-American, Asian, and Latino/Hispanic MSM; and an examination of racial and ethnic disparities in prenatal syphilis screening and treatment among Medicaid patients in Florida and Georgia. Studies on viral hepatitis prevention include follow-up of a group of Alaska Native infants, children, and adults initially vaccinated with hepatitis A or hepatitis B vaccines 5 - 22 years ago to evaluate the protection afforded by the vaccination. In addition, groups of adults with chronic hepatitis B or chronic hepatitis C will be evaluated to determine outcomes of infection and the influence of additional risk factors.

Tuberculosis

Tuberculosis research includes a project titled "Addressing Tuberculosis Among African Americans in the Southeast." The objectives of the project are to determine barriers to health-seeking behavior and treatment adherence for African Americans with or at risk for tuberculosis; to determine barriers to tuberculosis guideline adherence among providers who serve this population; to develop and test interventions to overcome identified barriers; and to improve partnerships and collaborations among tuberculosis programs and the providers and organizations serving this population. To address disparities in tuberculosis among foreign-born populations, CDC has sponsored several studies. The Division of Tuberculosis Elimination (DTBE) has funded an epidemiologic research study of the determinants of early diagnosis, prevention, and treatment of tuberculosis among foreign-born individuals. In addition to the epidemiologic study, DTBE supports a research project to assess the tuberculosis-related attitudes and beliefs of foreign-born persons in the United States. Findings from in-depth interviews conducted among persons (with and without tuberculosis disease) from China, Laos, Mexico, Somalia, and Vietnam will be used to create ethnographic guides for health care providers. DTBE has also funded a research project to understand the barriers and facilitators that influence primary care management of latent and active tuberculosis among immigrant populations. The objectives of the research are to describe the factors influencing the diagnosis and the efficient management of latent and active tuberculosis among primary care providers treating immigrants from Mexico, the Philippines, and Vietnam. Finally, DTBE has also funded a project to determine the epidemiologic and geographic profile of tuberculosis cases among Asians and Pacific Islanders in the United States. This project will provide information to help in developing specific prevention strategies and in allocating resources for this population.

## *Educational Outreach*

NCHHSTP engages in or supports education and outreach to help eliminate health disparities in HIV/AIDS, viral hepatitis, STDs, and tuberculosis. Training is provided to medical and public health practitioners and others through STD/HIV and tuberculosis training centers, initiatives with Historically Black Colleges and Universities (HBCU), and activities with partners, such as CDC's participation in the Migrant Stream Farmworkers Forums. In addition, educational

outreach includes the creation and distribution of guidelines, recommendations, and supporting educational materials addressing specific populations (e.g., the foreign-born, racial or ethnic minorities, and MSM) or targeting providers within specific settings (e.g., correctional facilities and substance abuse treatment centers).

The STD/HIV training centers serve as a national network to design, deliver, and evaluate training that targets healthcare providers and prevention specialists. Similarly, the tuberculosis Regional Training and Medical Consultations Centers (RTMCCs) provide training and technical assistance to increase human resource development in tuberculosis programs; to develop tuberculosis educational materials; and to provide medical consultation to tuberculosis programs and medical providers.

An HBCU initiative includes providing technical assistance to schools participating in the Consortium of African-American Public Health Programs. In addition, the Migrant Stream Farmworkers Forums provide a variety of workshops and sessions on current issues, policy, and programs related to HIV, viral hepatitis, STDs, and tuberculosis infections and other health issues in migrant populations. Furthermore, NCHHSTP has supported or coordinated several initiatives and events, including a media roundtable for black journalists, activities to increase awareness about HIV/AIDS prevention among black students, and national HIV/AIDS awareness days that help to raise awareness and spread information about HIV/AIDS. These annual national awareness days include the National Black HIV/AIDS Awareness and Information Day (February 7), National Women and Girls HIV/AIDS Awareness Day (March 10), National Native HIV/AIDS Awareness Day (March 21), National Asian and Pacific Islanders HIV/AIDS Awareness Day (May 19), and National Latino AIDS Awareness Day (October 15). Finally, syphilis elimination outreach activities include prevention education in minority communities.

To help bring visibility to health disparities in HIV/AIDS, STDs, viral hepatitis, and tuberculosis within the CDC community, in 2005, NCHHSTP inaugurated the *Third Thursdays: Lunch and Learn Health Disparities Lecture Series*. The *"Third Thursdays"* lunch-and-learn lecture series was developed to highlight research and programs aimed at reducing disparities in HIV, viral hepatitis, STDs, and tuberculosis.

## *Workforce Diversity*

In order to address the healthcare needs of this nation's diverse population in an effective and culturally sensitive manner, CDC has implemented training programs and related activities to help ensure that the public health workforce is also diverse. The training programs focus primarily on increasing the interest, representation, and competence of racial and ethnic minority students, researchers, and health professionals in public health. This includes support for internships and fellowships within NCHHSTP. For example, the Research Fellowship on HIV Prevention in Communities of Color supports the training of scientists researching sociocultural, structural, psychological, and behavioral factors in minority health and HIV. There are summer internships for AI/AN, African-American, and Latino-Hispanic colleges and graduate students. An annual biomedical symposium fosters learning among minority

high school and college students about and fosters a commitment to professions in medicine, science, and research. In addition, a tribal college that offers an Associate of Science degree program in public health receives support for curricula development, and a Consortium of African-American Public Health Programs at HBCU schools that offer a master's degree in public health (MPH) and a doctorate in public health (DrPH) receives support to develop schools of public health.

# Priorities and Recommendations for Future Action to Address Health Disparities

As discussed in this report, the factors that influence health disparities are multifaceted. They include poverty, unequal access to health care, educational level, racism, geographic location, and social networks, as well as other factors. While it is clear there are health disparities with respect to HIV/AIDS, viral hepatitis, STDs, and tuberculosis, the solutions for addressing those disparities are less clear. In considering solutions, it is important to be aware of the varied influences on health disparities. These influences have been described in this report and by others elsewhere (27, 78). The priorities for future action presented in this section attempt to acknowledge the role of individuals, communities, policymakers, the health care system, as well as the underlying social and economic conditions that contribute to health disparities. Despite the complex nature of health disparities, this section provides priorities to which the CDC is committed in order to influence policy, planning, and action to reduce health disparities. These priorities include enhancing and improving partnerships, increasing screening and testing for diseases in populations with known health disparities, adopting an integrated service model to improve health care delivery, improving monitoring through the enhancement of current data systems and the development of new systems, and adopting new diagnostic, treatment, and prevention technologies (79).

## *Partnerships*

Reducing and eliminating health disparities cannot be achieved by a single agency or group; rather, the task will require partnerships from individuals, communities, agencies, community-based organizations, policymakers, the public and private health care sectors, and others. Strengthened collaborations with local, state, national, and international partners from all sectors of society will help reach individuals at the highest risk for HIV/AIDS, viral hepatitis, STDs, and tuberculosis. These collaborations and partnerships will assist in identifying innovative strategies to improve testing and treatment among high-risk populations. Partners can help provide education, change perceptions, motivate people to seek diagnosis and treatment, and encourage health behaviors that prevent the spread of disease. Moreover, partnerships are not only important for addressing the diseases described in this report, but also for understanding and addressing other social and economic conditions that often contribute to health disparities. Partners are essential to help change the risk environment from which many health disparities are derived by addressing issues such as housing, employment, homelessness, mental health, substance abuse, racism, homophobia, and stigma (79, 80). New partnerships with non-traditional partners should be formed with representatives from all sectors of society, including health, social service (e.g., substance abuse treatment and housing providers), faith, civic, entertainment, and business sectors.

Although new partnerships are essential, it is also important to strengthen existing relationships with public health partners. In addition, improved collaboration among governmental agencies

is important to provide a unified public health infrastructure for research, prevention, treatment, and care for HIV/AIDS, viral hepatitis, STDs, and tuberculosis (79). Efforts must be made to sustain and build upon these partnerships and to evaluate the usefulness of enhanced and new partnerships for addressing health disparities.

## *Screening and Testing for Infectious Diseases*

To reduce the number of persons with undiagnosed HIV/AIDS, viral hepatitis, STDs, and tuberculosis, new efforts are needed to increase access to screening and testing services. Health disparities will be reduced by targeting screening and testing services for individuals who are at highest risk for these diseases and who have the greatest health disparities. Enhanced screening and testing can increase the number of persons who are aware of their infection, can decrease disease transmission to others, and can link infected individuals to care, treatment, and prevention services. Efforts should be made to spread the message for testing among high-risk populations where they live, work, play, and worship. In addition, efforts to increase screening and testing should target providers to make testing for HIV/AIDS, viral hepatitis, STDs, and tuberculosis standard for populations at greatest risk for these diseases. Finally, strategies should be considered to enhance screening and testing services offered by community organizations and other partners that serve populations at highest risk for these diseases.

For HIV and other STDs, testing is important, for it can provide the impetus for infected individuals to begin treatment. Persons who know they are infected with HIV or another sexually transmitted disease are also more likely to change their behavior to prevent themselves from transmitting the disease to others (81). Testing also provides the opportunity to identify other sexual partners who are at risk of having the disease.

For tuberculosis, it is important to identify individuals with tuberculosis disease to prevent these individuals from spreading the disease to others. The identification of individuals with tuberculosis disease often leads to the initiation of a contact investigation to identify others who may have been exposed to someone with infectious tuberculosis disease. It is also important to identify individuals with latent tuberculosis infection who may develop active tuberculosis disease at some time in the future. Targeted tuberculin testing for latent tuberculosis infection is a strategic component of tuberculosis control that identifies persons at high risk for developing tuberculosis who would benefit from treatment if the disease is detected.

While vaccines for hepatitis A and hepatitis B exist, persons already infected with hepatitis can benefit from hepatitis screening, care, and treatment to protect their health and prevent transmission to others. For example, treatment for chronic hepatitis B is increasingly effective; however, many individuals with hepatitis B may be unaware they have the disease, specifically persons from countries where hepatitis infection is endemic (82).

Testing and screening activities should be targeted to the populations that experience the greatest health disparities for HIV/AIDS, viral hepatitis, STDs, and tuberculosis. Increased testing and screening activities for HIV/AIDS, viral hepatitis, STDs, and tuberculosis will

help identify individuals most at risk for these diseases and contribute to reducing the health disparities associated with them.

## *Collaborative and Integrated Programs*

One approach that may address health disparities for individuals with HIV/AIDS, viral hepatitis, STDs, and tuberculosis is to improve screening, treatment, care, and prevention services through program collaboration and service integration.  Integrated services seek to organize and blend interrelated health issues and services in order to maximize public health impact through new and established linkages to facilitate the delivery of services.  The rationale cited for integrated service delivery for HIV/AIDS, viral hepatitis, STDs, and tuberculosis includes the following: (1) the diseases have similar or overlapping at-risk populations; (2) there is a similarity of risk behaviors among at-risk populations; (3) the diseases feature significant co-morbidity among population groups; (4) there exist advances in HIV and STD testing technology that make testing easier to conduct; and (5) disease outcomes are influenced by concurrent disease.

Program collaboration is necessary to facilitate service integration. Efforts should be focused in the clinical setting, where the interface between the health system and the client takes place. Integration may result in more holistic and comprehensive services for patients. Integrated approaches are not limited to addressing HIV/AIDS, viral hepatitis, STDs, and tuberculosis. They may also address other relevant diseases, as well as address other issues that contribute to health disparities, such as mental health and substance abuse services.  Integration efforts can extend beyond the clinical setting. They can also take place with governmental and community organizations, as well as with social service providers. In addition, within CDC, integration efforts can build collaborations across the HIV/AIDS, STDs, viral hepatitis, and tuberculosis prevention programs. Local, state, and Federal efforts toward program collaboration and integration related to the prevention and treatment of HIV/AIDS, STDs, viral hepatitis, and tuberculosis may help reduce health disparities by enhancing the public health impact of screening, treatment, and prevention programs.

## *Improved Monitoring for Infections and Effectiveness of Prevention Programs*

Reliable and accurate surveillance data are the cornerstone to public health activities. Population-based data are essential to tracking and understanding the distribution of HIV/AIDS, STDs, viral hepatitis, and tuberculosis disease in the United States.  Surveillance data indicate disease trends and are the foundation for identifying health disparities among population groups disproportionately affected by HIV/AIDS, STDs, viral hepatitis, and tuberculosis. In addition, data systems that measure the implementation of prevention programs will assist in the evaluation of the effectiveness of reaching individuals most at risk for HIV/AIDS, STDs, viral hepatitis, and tuberculosis, and they may help identify effective prevention programs worth expanding, as well as programs in need of improvement.

Understanding the burden of diseases among different populations allows for setting priorities and allocating resources for testing, treatment, and prevention services. Improved monitoring of

diseases should take place through the enhancement of current data systems and the development of new systems. If they do not already exist, monitoring systems need to include measures to differentiate between race/ethnicity, socioeconomic factors, health care access, risk factors, risk behaviors, co-morbid health conditions, as well as other factors that may contribute to health disparities. New data systems should be developed to refine estimates of disease incidence, as well as to monitor and evaluate prevention programs at the local level. Detailed surveillance analyses for subpopulations with documented health disparities will help to further understand the factors that need to be addressed to reduce and eliminate health disparities. Accurate, comprehensive data allow programs and policymakers to better understand what is causing disparities and to know where resources should be directed. Improved monitoring can assist in the identification of target areas where interventions should be implemented to address health disparities.

## *New Technologies*

An important priority in addressing health disparities is improving the access to and the acceptability of new technologies in assessing the incidence of HIV/AIDS, STDs, viral hepatitis, and tuberculosis, for access to medical, health, and prevention technologies is not consistently distributed among population groups in different types of health care settings (67). Prevention technologies include vaccines, diagnostic tests (e.g., rapid HIV tests and the blood test for tuberculosis), and prevention tools, such as microbicides, as well as effective behavior-change interventions. As new technologies become available, resources will be needed to provide access to these tools consistently across all health care settings. Settings that disproportionately serve uninsured or poor populations, such as public hospitals, public health clinics, and community health centers, are more likely to face financial and human resource constraints that discourage or prevent the use of new technologies (67). In addition, even when new technologies become available, special efforts are needed to ensure that new tools are acceptable to the populations experiencing the greatest health disparities. Improving acceptability will enhance utilization of important new technologies and tools. Efforts to improve acceptability should involve the inclusion of representatives from the disproportionately affected populations in the development and testing of new technologies, wherever possible.

In addition, the latest testing and treatment standards and recommendations may not be consistently implemented across all settings. The consistent implementation of the most up-to-date standards for testing and treatment are important to reducing health disparities.

Many prevention technologies are still under development, including vaccines, diagnostic tests, microbicides, and behavior-change interventions. Resources for the development and testing of these innovative efforts must be sustained, and technology gaps must be addressed to further reduce health disparities.

## Conclusion

Addressing health disparities in HIV/AIDS, viral hepatitis, STDs, and tuberculosis is a complex task. It will require the implementation of priorities for future action. These priorities include (1) expanding partnerships to include non-traditional partners; (2) increasing screening and testing for infectious diseases in populations at greatest risk for acquiring and transmitting diseases; (3) adopting integrated program services focused on delivering more comprehensive and holistic services to clients; (4) monitoring infectious diseases through the revision of current data systems and the development of new systems to better define populations experiencing health disparities and to assess the effectiveness of prevention programs to address disparities; and (5) improving access to new technologies in all settings and ensuring that their use is acceptable to groups experiencing health disparities.

It is clear that such social determinants of health as racism and socioeconomic factors need to be addressed in order to eliminate health disparities in HIV/AIDS, viral hepatitis, STDs, and tuberculosis. However, no single public health program can eliminate racial and ethnic, socioeconomic, and gender inequities or homophobia. Therefore, it is important to be realistic about what can be achieved when goals and objectives for programs are developed. CDC will continue to work with partners in the community, with healthcare providers, with legislators, and with other stakeholders to identify collaborative activities that may influence some of the social determinants of health that contribute to health disparities in HIV/AIDS, viral hepatitis, STDs, and tuberculosis.

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