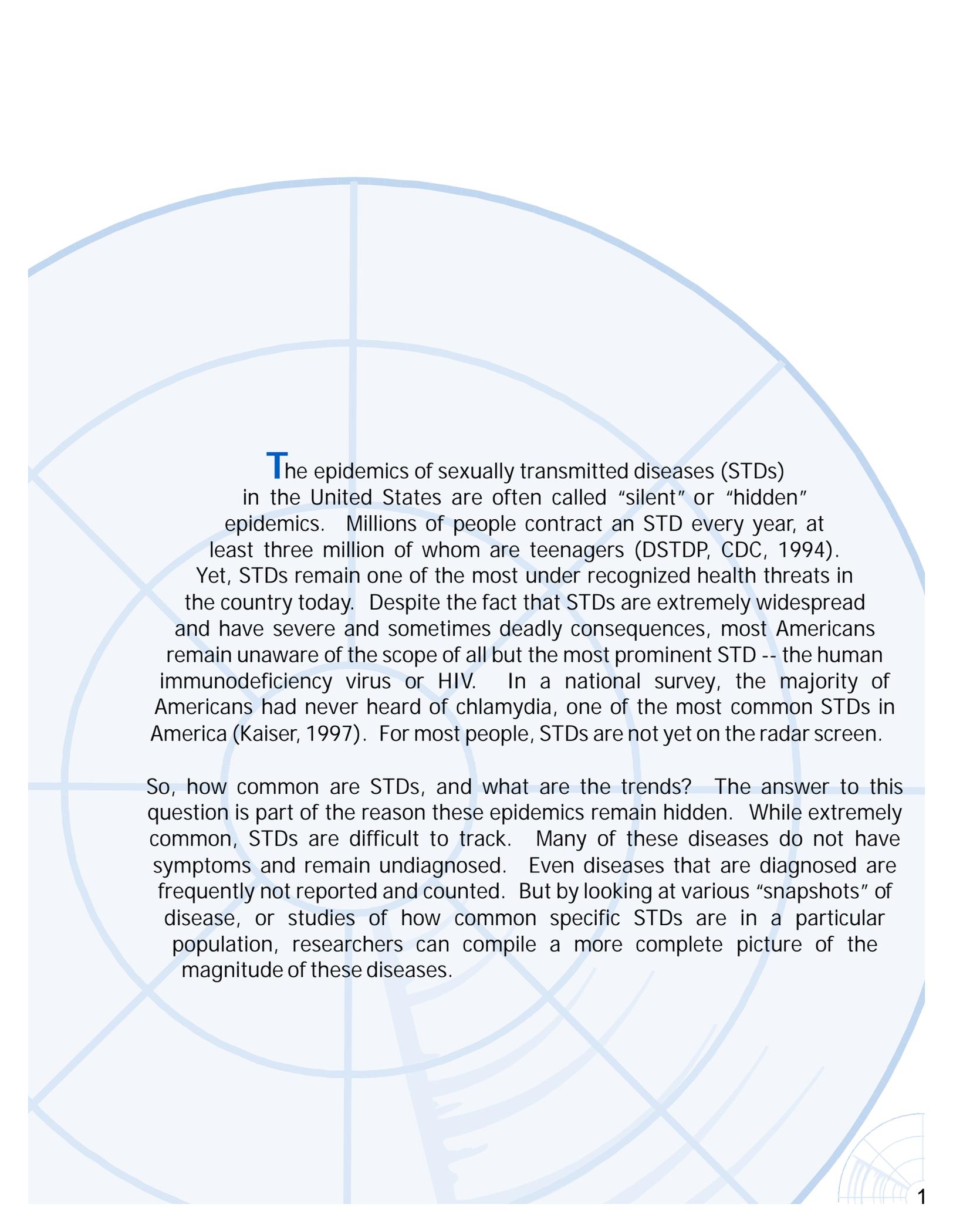


Tracking the Hidden Epidemics

Trends in the STD Epidemics in the United States

	Introduction.....	1
	Magnitude of the Epidemics Overall.....	2
Answers to the Most Frequently Asked Questions.....	3	
	Trends by Disease -	
	Chlamydia.....	7
	HPV (Human Papillomavirus).....	11
	Herpes.....	13
	Gonorrhea.....	15
	Syphilis.....	20
	Hepatitis B.....	24
	Trichomoniasis and Bacterial Vaginosis.....	26
	Chancroid.....	26
Status of STDs by City and State.....	29	



The epidemics of sexually transmitted diseases (STDs) in the United States are often called “silent” or “hidden” epidemics. Millions of people contract an STD every year, at least three million of whom are teenagers (DSTDP, CDC, 1994). Yet, STDs remain one of the most under recognized health threats in the country today. Despite the fact that STDs are extremely widespread and have severe and sometimes deadly consequences, most Americans remain unaware of the scope of all but the most prominent STD -- the human immunodeficiency virus or HIV. In a national survey, the majority of Americans had never heard of chlamydia, one of the most common STDs in America (Kaiser, 1997). For most people, STDs are not yet on the radar screen.

So, how common are STDs, and what are the trends? The answer to this question is part of the reason these epidemics remain hidden. While extremely common, STDs are difficult to track. Many of these diseases do not have symptoms and remain undiagnosed. Even diseases that are diagnosed are frequently not reported and counted. But by looking at various “snapshots” of disease, or studies of how common specific STDs are in a particular population, researchers can compile a more complete picture of the magnitude of these diseases.

Magnitude of the Epidemics Overall

The latest estimates indicate that there are 15 million new STDs in the United States each year (ASHA, 1998). And while some STDs, such as syphilis and gonorrhea, have been brought to all time lows, others, like herpes and chlamydia, continue to spread widely throughout the population.

Because there is no single STD epidemic, but rather multiple epidemics, discussions about trends over time and populations affected must focus on each specific STD. There are over 20 diseases that are sexually transmitted, and the trends for each disease vary considerably. More is known about the frequency and trends of some STDs than others. This document presents the best available information on the most common STDs. The most common STDs other than HIV include:

STD	Incidence (Estimated number of new cases every year)	Prevalence* (Estimated number of people currently infected)
Chlamydia	3 million	2 million
Gonorrhea	650,000	Not Available
Syphilis	70,000	Not Available
Genital Herpes (HSV-2)	1 million	45 million
Human Papillomavirus (HPV) Infection	5.5 million	20 million
Hepatitis B	120,000	417,000
Trichomoniasis	5 million	Not Available
Bacterial Vaginosis**	Not Available	Not Available

*No recent surveys on national prevalence for gonorrhea, syphilis, trichomoniasis, or bacterial vaginosis have been conducted.

**Bacterial vaginosis is a genital infection that is not sexually transmitted, but is associated with sexual intercourse.

Source: ASHA, 1998

At a Glance: Answers to the Most Frequently Asked Questions

Note: More detailed answers and supporting data are provided in the Trends by Disease section.

Are STDs increasing or decreasing in the U.S.?

It depends on the disease. The latest scientific data suggests that chlamydia is declining in areas with screening and treatment programs, but remains at very high levels. Syphilis and gonorrhea are declining and have reached all time lows. Hepatitis B is declining, as is trichomoniasis and chancroid. Herpes is believed to be increasing, with dramatic increases documented through the early 1990s. Human papillomavirus (HPV) and bacterial vaginosis are both extremely widespread, but researchers are unsure if they are increasing.

What are the most serious STDs in women?

By far, women bear the greatest burden of STDs. The most serious STDs among women are chlamydia, gonorrhea, and HPV. Millions of women are infected with these diseases every year in the U.S. Untreated, both chlamydia and gonorrhea can lead to infertility, potentially fatal tubal pregnancies, and chronic pelvic pain. If not diagnosed and treated in time, during pregnancy, gonorrhea and chlamydia can result in serious health problems for infants. Moreover, women infected with chlamydia or gonorrhea are much more likely to be infected with HIV, if exposed.

HPV can also result in severe consequences for women. Long term infection with certain types of HPV is the single most important risk factor for cervical cancer. Additionally, many women, particularly in the South, still experience significant rates of syphilis, and an estimated one in four women nationwide is infected with herpes. Both syphilis and herpes can significantly increase a woman's chances of becoming infected with HIV and can be fatal in infants.

What are the most common STDs among teens?

Teens are at high behavioral risk for acquiring most STDs. Teenagers and young adults are more likely than other age groups to have multiple sex partners, to engage in unprotected sex, and for young women, to choose sexual partners older than themselves. Moreover, young women are biologically more susceptible to chlamydia, gonorrhea, and HIV.

Chlamydia and gonorrhea are the most common curable STDs among teens. Curable STDs are typically caused by a bacteria that can be killed with antibiotics. However, if these diseases remain undetected and untreated, they can result in severe health consequences later in life. Among teens, it is not uncommon to see over 5% of young boys and 5%-10% of young girls infected with chlamydia (Mertz, CDC, 1998). Rates of gonorrhea are highest in adolescent females 15-19 years of age and in young men 20-24 years of age.

The prevalence of viral STDs that can not be cured, like herpes and HPV, increases with age. Since these diseases stay with you once acquired, the older you are, the more likely you are to have been infected. The rate of new infections for herpes and HPV is typically highest during the late teens and early twenties. Among women under the age of 25, studies have found that from 28% to 46% are typically infected with HPV. Between 15% to 20% of young men and women have become infected with herpes by the time they reach young adulthood.

Are STDs in teens increasing or decreasing?

Gonorrhea, syphilis, hepatitis B, and chancroid are declining among teens and other age groups. Chlamydia is likely going down in areas where there is screening and treatment among teens (i.e., family planning clinics and school-based screening programs), but may be stable or increasing where these services are not available. Herpes was increasing among teens through the early 1990s. Currently, the data are not available to tell us whether HPV, trichomoniasis, or bacterial vaginosis are increasing, but they are extremely widespread.

What areas of the country have the greatest problems with STDs?

Herpes and HPV are widespread throughout the nation. Chlamydia is also extremely common across geographic boundaries, but is on the decline in regions where effective screening and treatment programs are in place. Chlamydia remains most widespread among women in the Southern region of the country. The South also faces the highest rates of both gonorrhea and syphilis. The high rates of STDs in the South may be due to high rates of poverty and the availability of quality of health care.

Which STDs threaten infants?

Most STDs can be transmitted from a mother to her fetus or infant and can result in fetal death, premature birth, or severe long-term problems for the baby. Many of these consequences can be prevented through proper screening and treatment during pregnancy. Untreated syphilis and herpes can result in severe mental disorders and death in infants. Gonorrhea and chlamydia, if not properly diagnosed and treated in time, can cause prematurity, eye disease, and pneumonia in infants.

Other STDs and related syndromes (like bacterial vaginosis) may cause harm to infants through their association with premature delivery. Preterm birth is the leading cause of infant death and disability in the U.S. and has been increasing in recent years, particularly among African Americans. It is estimated that 40%-50% of excess preterm births and infant deaths in this population are due to STDs and bacterial vaginosis (Goldenberg, 1996).

Are STDs more common among racial and ethnic minorities? If so, why?

While STDs, like chlamydia, HPV, and herpes, are widespread across racial groups, STD rates have traditionally been higher among African Americans than white Americans. Reported rates of some STDs, like gonorrhea and syphilis, are as much as 40 times higher for African Americans than for whites. This disparity, in part, is due to the fact that African Americans are more likely to seek care in public clinics that report STDs more completely than private providers. However, this reporting bias does not fully explain these differences. Other important factors include the distribution of poverty, access to quality healthcare, health-seeking behaviors, the level of illicit drug use, and social networks with high STD prevalence.

Moreover, the level of prevention education may vary widely across communities. In some areas, community-based efforts may be widespread across social, educational, and religious organizations, but in others, STD prevention may not yet be a high priority. Efforts to increase both public and private sector HIV and STD prevention efforts in communities at risk throughout the nation are underway. Yet, research demonstrates that some groups at very high risk still lack even basic information about STD prevention (Bunel, CDC, 1998).

Why don't we have more exact data on the number of STDs?

For any disease, data on the number of new infections are only reliable when 1) all infected people are diagnosed and 2) all people who are diagnosed are reported. People are diagnosed only when they seek treatment for symptoms, or are offered screening by a health care provider or public health worker. Since most STDs do not cause symptoms, and there is not widespread screening for all STDs, many people do not know they are infected.

Additionally, not all diseases are reportable. Each state's laws specify which STDs have to be reported to state health departments. These laws are typically based on recommendations from the Council of State and Territorial Epidemiologists (CSTE). CSTE's recommendations consider a number of factors, including the availability of practical tests to detect the disease, availability of effective treatment, and the severity of the disease. Chlamydia, gonorrhea, syphilis, hepatitis B, and chancroid are reportable STDs in the majority of states.

Trends by Disease

CHLAMYDIA

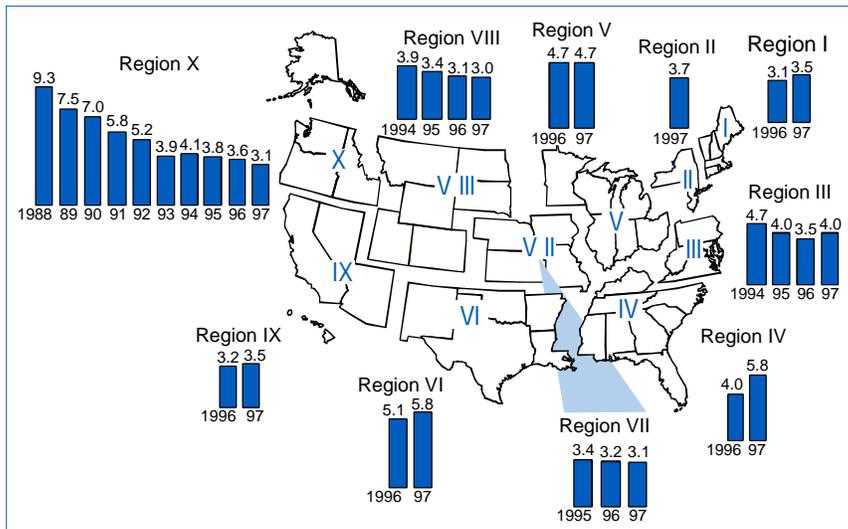
Chlamydia is the most commonly reported infectious disease in the United States and may be one of the most dangerous STDs among women today. While the disease can easily be cured with antibiotics, millions of cases go unrecognized and untreated. If left untreated, chlamydia can have severe consequences, particularly for women. Up to 40% of women with untreated chlamydia will develop pelvic inflammatory disease (PID), and one in five women with PID becomes infertile. Chlamydia can also cause prematurity, eye disease, and pneumonia in infants. Moreover, women infected with chlamydia are three to five times more likely to become infected with HIV, if exposed.

Seventy-five percent of women and 50% of men with chlamydia have no symptoms. The majority of cases therefore go undiagnosed and unreported. The number of reported cases (just over one-half million in 1997) is merely the tip of the iceberg.

- An estimated 3 million people contract chlamydia each year (Groseclose, CDC, 1996).
- While there are very few data on the prevalence of chlamydia among men, it is assumed that half of new cases (1.5 million) occur among women, and half occur among men. This assumption is based on the fact that chlamydia is believed to be spread primarily through heterosexual intercourse (ASHA, 1998).
- Chlamydia is believed to be declining overall in the U.S., primarily because of increased efforts to screen and treat women for chlamydia. Chlamydia is estimated to have declined from well over 4 million annual infections in the early 1980s to the current level of 3 million annual infections (Groseclose, CDC, 1996).
- Since 1994, there has been increased funding available for chlamydia screening in publicly funded family planning and STD clinics. The greatest declines in chlamydia have been seen in areas of the country with the most effective and prolonged screening programs.



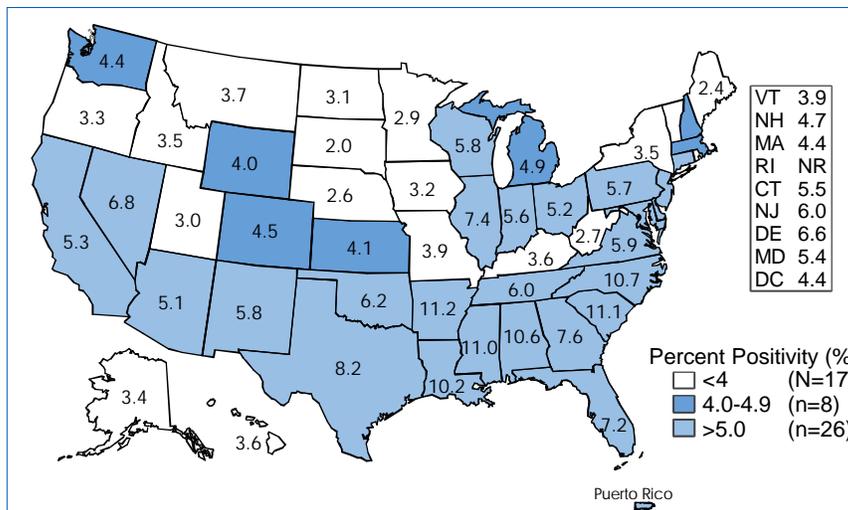
- From 1988 to 1997, the Pacific Northwest (Washington, Oregon, Idaho, and Alaska) witnessed a 67% decline in the percent of women infected.
- In the Mid-Atlantic (Delaware, Washington, D.C., Maryland, Pennsylvania, Virginia, and West Virginia) and the Mountain States (Colorado, Montana, North and South Dakota, Utah, and Wyoming), similar trends are occurring, with declines of 15% and 23%, respectively, since 1994 (DSTD, CDC, 1998).



Chlamydia

Trends in positivity among 15- to 44-year-old women tested in family planning clinics by HHS regions

- The percent of women testing positive for chlamydia (chlamydia positivity) in family planning clinics by state provides a good indication of where the disease remains most widespread. The highest level of infection is seen in areas where screening and treatment have not been as widely implemented.



Chlamydia

Positivity among 15- to 24-year-old women tested in family planning clinics by state, 1997

Note: States reported chlamydia positivity data on at least 500 women ages 15-24 years screened from January- December 1997 except for: Rhode Island - no chlamydia positivity data reported (NR); Puerto Rico - chlamydia positivity data reported for August-December only; and North Carolina - chlamydia positivity data reported for January-April only.

Source: Regional Infertility Prevention Programs; Office of Population Affairs; Local and State STD Control Programs; Centers for Disease Control and Prevention

Reducing the level of disease will also require that screening be expanded to men. While men experience symptoms and seek treatment on their own more often than women, half of men with chlamydia are asymptomatic. Reaching these men with treatment is critical to stem the spread of chlamydia and its severe consequences.

In addition to increased efforts to screen and treat disease, efforts to reduce the risk of infection through safer sexual behaviors must be targeted to those at greatest risk for STDs, primarily adolescents and young adults.

A Closer Look at Chlamydia

Chlamydia is widespread among sexually active Americans, regardless of race, age, or gender. Like the majority of STDs, chlamydia is most common among adolescents, with the highest rates seen among female adolescents. Data among young male adolescents also demonstrates an alarming level of infection (prevalence).

By gender and age, reported prevalence among sexually active women is consistently over 5%, with prevalence among teenage girls often exceeding 10% (more than 1 in 10 young girls infected). And while data are more limited among men, studies of men tested in high schools and other settings have also found prevalence of over 5% (Cohen, 1998; Ku, 1997). Recent studies throughout the country come to the same conclusion: chlamydia continues to exact a devastating toll among our nation's young people.

By race, the disease is common among all races, but prevalence is somewhat higher among racial and ethnic minorities. This is likely due in part to the lack of access to screening and treatment in some communities.

- Data from a pilot household survey of prevalence in ten U.S. counties (three in the Midwest, four in the West, and three in the South) suggests that chlamydia is widespread in the general population. And while prevalence was somewhat higher among young minority women, high levels of chlamydia were detected among all groups of adolescents.
- The prevalence of chlamydia was higher in women than in men among non-Hispanic blacks (7% vs. 6%), Mexican-Americans (5% vs. 2%), and non-Hispanic whites (2% vs. 1%).



Chlamydia

- Among 15- to 19-year-olds, prevalence was more than 12% for non-Hispanic blacks, 6% for Mexican-Americans, and nearly 4% for non-Hispanic whites.
- A 1997 study of over 13,000 female military recruits from 50 states found an overall prevalence of chlamydia of 9.2%, with a peak of 12.2% among 17-year-old recruits. Prevalence fell sharply with increased age. Among 17- to 25-year-olds, 10% were infected, and among 26- to 39-year-olds, 3.6% were infected. Prevalence was 5.5% for whites, 14.9% for blacks, and 8.1% for other races (Gaydos, 1998).
- A 1998 school-based screening program among high school students in New Orleans found that nearly 13% of girls and 6% of boys 15-19 years of age were infected with chlamydia (Cohen, 1998).
- A 1994 household sample of young men 18-19 years of age in three Maryland counties found that 6% were infected with chlamydia (Ku, 1996).
- An innovative program in Denver took screening to high-risk youth through outreach to young people in field (i.e., alleys, parking lots, parks, and residences) and non-clinical settings (i.e., high schools, recreation centers). The study found an extremely high prevalence of chlamydia among young men (12%) screened in the field, compared to young men screened in the facilities in which screening was offered (4.4%). The study suggests that the prevalence of chlamydia may be much higher among high-risk youth who are not likely to access STD treatment in traditional health care settings (Rietmeijer, 1997).

These studies combined point to the need to reach all sexually active youth with prevention and treatment services through traditional (family, school, and community) and non-traditional (street outreach, drug-treatment centers, correctional facilities) avenues.

By region, chlamydia prevalence remains higher in areas without longstanding screening and treatment programs. Hopefully, if the level of screening and treatment continues to increase, the disease will decline in women across the nation.

- In the study of female military recruits, prevalence of chlamydia was more than 15% for recruits in South Carolina, Georgia,

Alabama, Louisiana, and Mississippi. For New Jersey, North Carolina, Kentucky, Texas, Oklahoma, and Arkansas, the prevalence was 10% to 15%, and for the other 17 states and Puerto Rico, the prevalence was 5% to 10%. For five states, (Washington, Oregon, Minnesota, Arizona, and Massachusetts), prevalence was less than 5% (Gaydos, 1998).

HPV (HUMAN PAPILOMAVIRUS)

HPV is likely the most common STD among young, sexually active populations. While there is no way to know for sure if HPV is increasing, there are no signs of a significant decline. With improved testing technology, researchers have been able to get a much clearer picture of the true extent of HPV in certain groups in recent years, and the disease is even more common than originally believed.

HPV

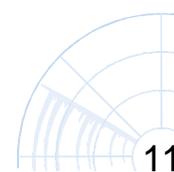
There are more than 80 distinct types of HPV. Some cause genital warts, and others cause subclinical infection with no symptoms. Genital warts are extremely common, but can be treated and cured. Subclinical HPV infection is both more common and much more serious than genital warts. There is currently no treatment for subclinical HPV and the disease can lead to cervical, penile, and anal cancer. Persistent cervical infection with certain types of HPV is the single most important risk factor for cervical cancer. HPV type 16 accounts for over 50% of cervical cancers and high-grade dysplasia (abnormal cell growth). HPV types 16, 18, 31, and 45 account for 80% of cervical cancers (Bosch, 1995; Shah, 1997).

Genital Warts

- Estimates indicate that 1% of sexually active adults in the U.S. have genital warts. These estimates are based on select studies demonstrating levels of infection ranging from 1.5% among female college students treated in student health centers to 13% in some STD clinics (Koutsky, 1997).

Subclinical HPV Infection

- An estimated 5.5 million people become infected with HPV each year in the United States, and an estimated 20 million Americans are currently living with HPV (ASHA, 1998).
- An estimated 75% of the reproductive-age population has been infected with HPV (Koutsky, 1997).



- While few data are available on men, studies repeatedly show high levels of HPV infection in women, with the highest levels among young women:
 - A recent U.S. study among female college students found that an average of 14% were infected each year. About 43% of the women in the study were infected with HPV during the three-year study period, revealing an extremely high risk among both heterosexual men and women in a college environment (Ho, 1998).
 - High levels of HPV have been found among some high-risk teens. One study of inner-city teenagers found that 24% of young women were infected with HPV (Martinez, 1988).
 - The highest rates of infection have been found among sexually active women less than 25 years of age. Of nearly 450,000 premenopausal women screened in one study, women less than 30 had about twice the rate of HPV, when compared with older patients (Meisels, 1992).
 - Typical prevalence of HPV for women under the age of 25 is 28%-46% (Burk, 1996; Bauer, 1991).
- HPV may be an even greater concern for HIV-positive women and men. HIV-positive individuals have a higher prevalence of HPV infection and precancerous lesions in the cervix and anus than HIV-negative individuals. Co-infection with HIV and HPV is most likely due to shared risk behaviors for both diseases, as well as increased susceptibility to HPV because of a compromised immune system.
 - A San Francisco study of gay and bisexual men found that 60% of HIV-negative men had HPV, with almost universal HPV infection among HIV-positive individuals with severely compromised immune systems (Palefsky, unpublished data). Similarly, a six-city study among high-risk and infected women found a 26% prevalence of HPV among HIV-negative women and a 70% prevalence among HIV-positive women with severely compromised immune systems (Palefsky, 1998).

HERPES

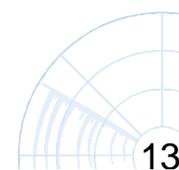
Genital herpes (HSV-2) is extremely common in the United States and has increased dramatically over the past few decades. Herpes continues to spread across all social, economic, and racial boundaries, and it is spreading fastest among teens (Fleming, 1997). Herpes causes recurrent painful ulcers in many people and is potentially fatal in infants. The disease can be particularly severe in people with HIV infection.

Symptoms of herpes can be treated, but the disease cannot be cured. With or without visible symptoms, the disease can be transmitted between sex partners, from mothers to newborn babies, and can greatly increase a person's risk of becoming infected with HIV. Herpes is believed to play a major role in the heterosexual spread of HIV in this country. Herpes can make people more susceptible to HIV infection and make HIV-infected individuals more infectious. Preventing the spread of herpes can help slow both epidemics.

- 45 million Americans (more than one in five) are infected with genital herpes (Fleming, CDC, 1997).
- As many as 1 million new herpes infections are estimated to occur each year (ASHA, 1998).
- From the late 1970s to the early 1990s, herpes prevalence increased 30% (Fleming, CDC, 1997).
- Most people with herpes have no symptoms and are unaware of their infection. Less than 10% of people with herpes in a national household survey knew they were infected (Fleming, CDC, 1997).
- Studies have demonstrated a high level of co-infection with herpes and HIV. A 1996 ten-city study demonstrated a high level of HIV infection in patients with herpes. Among the 316 patients with herpes, 7% were infected with HIV (Mertz, CDC, 1998).

A Closer Look at Herpes

By gender, herpes is slightly more common among women (approximately one out of four) than men (almost one out of five). This may be related to the higher efficiency of transmission from men to women.



By age, the number of people infected with herpes increases with age because, once infected, people remain infected throughout their lives. Herpes infection is believed to occur most commonly during adolescence and young adulthood, as individuals become sexually active and may have multiple partners.

Herpes is increasing fastest among white teens ages 12-19. White teens are nearly five times more likely to have herpes today than they were in the 1970s. Young whites 20-29 years of age are twice as likely to have herpes.

		NHANES II (1976-1980)*	NHANES III (1988-1994)*
		Percent Seroprevalence**	Percent Seroprevalence**
Whites	12-19	1	4.5
	20-29	7.7	14.7
Blacks	12-19	5.7	8.8
	20-29	29.5	33.3
Mexican-Americans	12-19	not available	5.4
	20-29	not available	14.8

Herpes

Changes in herpes prevalence among teens and young adults by race NHANES II(1976-1980) and NHANES III(1988-1994)*

*Seroprevalence has been adjusted to the 1980 census.

**Rounded to the nearest tenth.

By race, herpes is more common among blacks (more than 45%) than among whites (approximately 17%), although the disease is increasing fastest among young whites. Herpes has increased among men and women in all racial groups.

Category of Subjects	NHANES II (1976-1980)*	NHANES III (1988-1994)*	Percent Relative Increase
	Age-Adjusted Percent Seroprevalence	Age-Adjusted Percent Seroprevalence	
All races and ethnic groups**			
Both sexes	16.0	20.8	30
Men	13.4	17.1	27
Women	18.4	24.2	32
Whites			
Both sexes	12.7	16.5	30
Men	10.7	14.1	32
Women	14.5	18.7	29
Blacks			
Both sexes	43.6	47.6	9
Men	34.1	37.5	10
Women	51.4	55.7	8

Herpes

Changes in age-adjusted HSV-2 seroprevalence between NHANES II(1976-1980) and NHANES III(1988-1994)*

*Seroprevalence has been adjusted to the 1980 census. The age range is ≥ 12 years.

**Totals differ from the numbers for whites and blacks because other races and ethnic groups are included in the category of all races and ethnic groups.

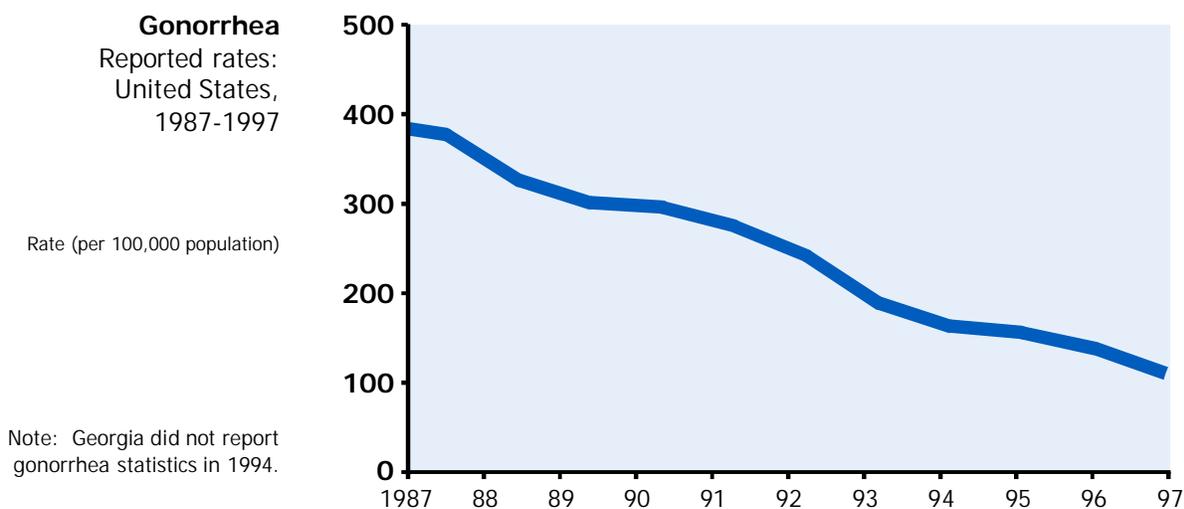
By region, herpes is common in all regions of the country and in both urban and rural areas. There are no significant differences in prevalence by geographic location.

GONORRHEA

Gonorrhea has declined steadily since the mid-1970s, following the introduction of a national control program. However, 1997 data on reported cases of gonorrhea indicate that declines may be slowing. Since 1985, decreases have been nearly 10% each year (Fox, CDC, 1998). Yet, the U.S. gonorrhea rate remained roughly stable from 1996 to 1997 (DSTDP, CDC, 1998). This stabilization, combined with signs of an increase in gonorrhea among gay and bisexual men, is reason for concern.

Moreover, despite overall declines in gonorrhea during the past few decades, rates of infection remain high among adolescents, young adults, and African Americans. Gonorrhea remains a major cause of pelvic inflammatory disease and subsequent infertility and tubal pregnancies in women. Additionally, gonorrhea may facilitate HIV transmission and may be contributing significantly to the spread of HIV in the South. There is a critical need to reach populations that remain at high risk for gonorrhea with intensified prevention and treatment efforts. Gonorrhea can be easily cured, if detected early, and the long-term consequences can be prevented.

- An estimated 650,000 cases of gonorrhea occur each year in the United States (ASHA, 1998).
- Cases reported to CDC are believed to represent about half of all annual infections. While an underestimate of actual cases, these reports provide a good indication of trends in the disease.
- From 1987 to 1997, reported rates of gonorrhea declined an average of 9% each year. Yet from 1996 to 1997, the rate of reported cases remained roughly stable (123.1 per 100,000 to 122.5 per 100,000).



- Although the 1997 gonorrhea rate is the lowest in history, it remains well above the goal for the nation by the year 2000 (100 per 100,000). Moreover, the reported gonorrhea rate in the U.S. remains the highest of any industrialized country and is roughly 50 times that of Sweden and 8 times that of Canada.
- While cases of gonorrhea have declined in almost all groups in recent years, researchers have seen alarming indications that gonorrhea may be on the rise among gay and bisexual men (men who have sex with men or MSM). In the mid-1980s, reports of increased condom use and reduced risky sexual practices accompanied dramatic decreases in rectal gonorrhea among MSM in several cities (Fox, CDC, 1998). Yet, data from STD clinics in 26 cities suggests that this trend may be reversing, and that gonorrhea may be facilitating the spread of HIV in the gay community.
 - The proportion of gonorrhea cases diagnosed among MSM in STD clinics in 26 cities increased 74% between 1993 and 1996. From 1994 to 1995, gonorrhea cases among MSM in one Seattle STD clinic increased 125%, and between 1995 and 1996, the number of MSM with gonorrhea increased 124% in one Portland clinic (CDC, 1997).
 - In these two sites, one quarter of the MSM with gonorrhea were also infected with HIV.

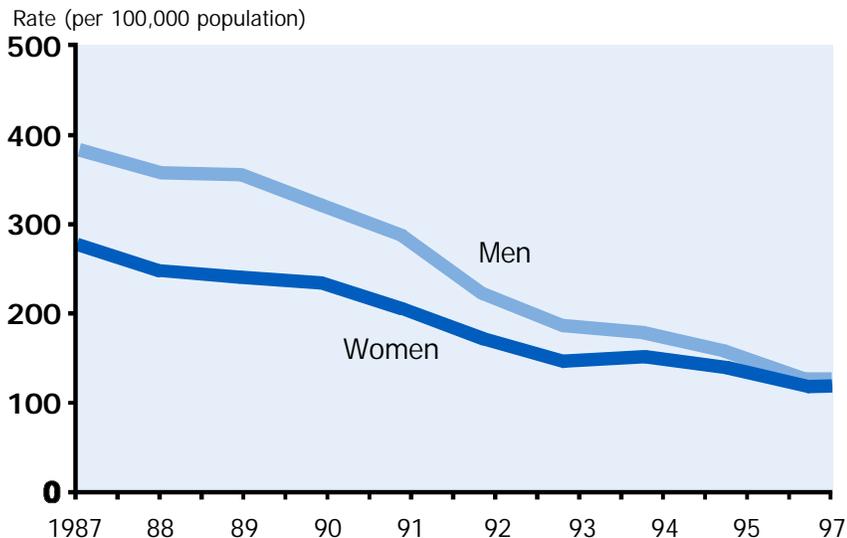
These data should serve as a wake-up call to all populations at risk, including gay and bisexual men, that high-risk sexual behaviors continue to have very real consequences.

A Closer Look at Gonorrhea

By gender, while reported rates of gonorrhea were once substantially higher among men than among women, that gap has narrowed. This is most likely due to increased screening in women. Because women are more likely to be asymptomatic than men, cases in women are less likely to be reported. From 1996 to 1997:

- the gonorrhea rate decreased slightly among men from 127.3 to 125.4 per 100,000.
- the gonorrhea rate increased slightly in females from 118.8 to 119.3 per 100,000 (DSTDP, CDC, 1998).

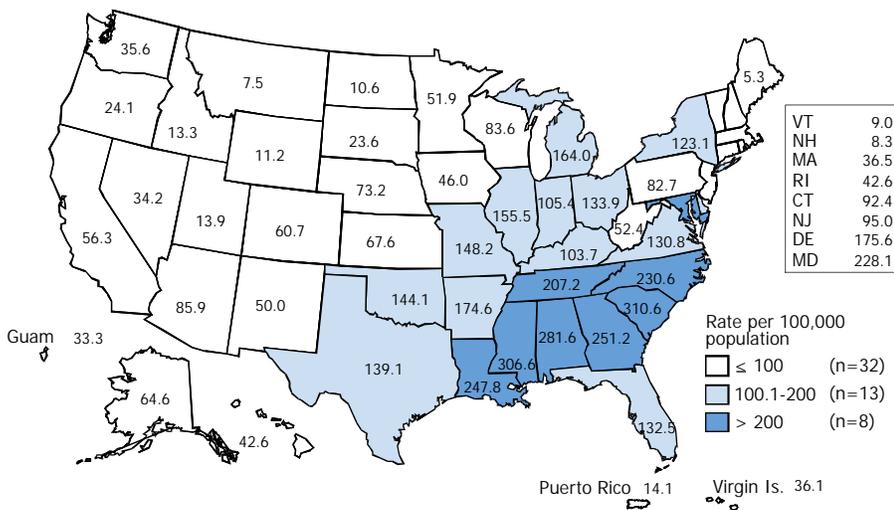
Gonorrhea
Rates by gender:
United States, 1987-1997



Note: Georgia did not report gonorrhea statistics in 1994.

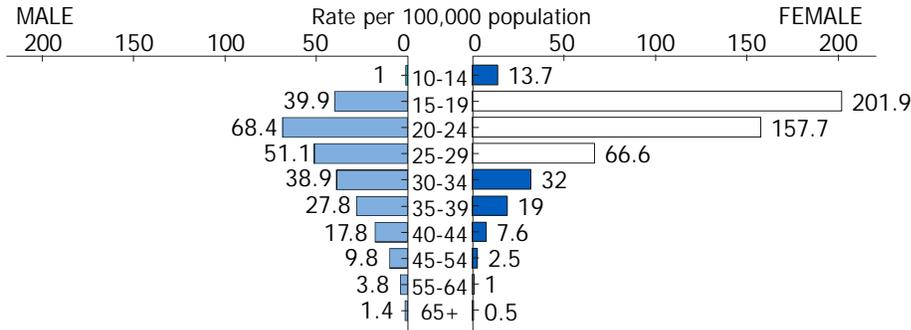
By region, gonorrhea rates declined in three regions (West, Midwest, and Northeast), although these declines slowed from 1996 to 1997, compared to earlier years. In the South, the gonorrhea rate has decreased over the decade, but increased slightly from 1996 to 1997 (187.6 to 187.9 per 100,00). The Southern states continue to have the highest gonorrhea rates of any region. The reasons for this may include the level of poverty and access to quality health care and preventive services.

Gonorrhea
Rates by state:
United States and
outlying areas, 1997

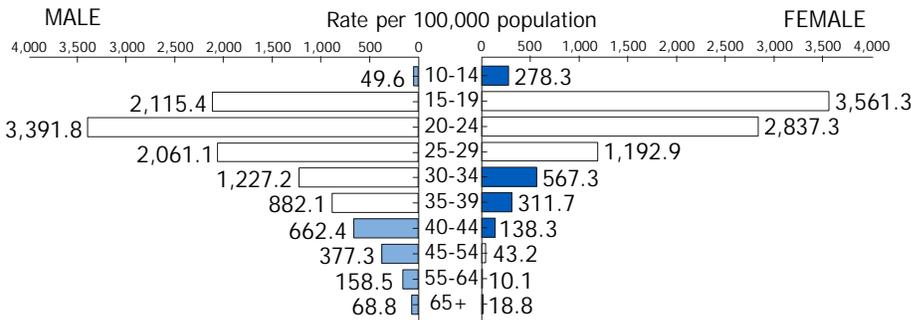


Gonorrhea

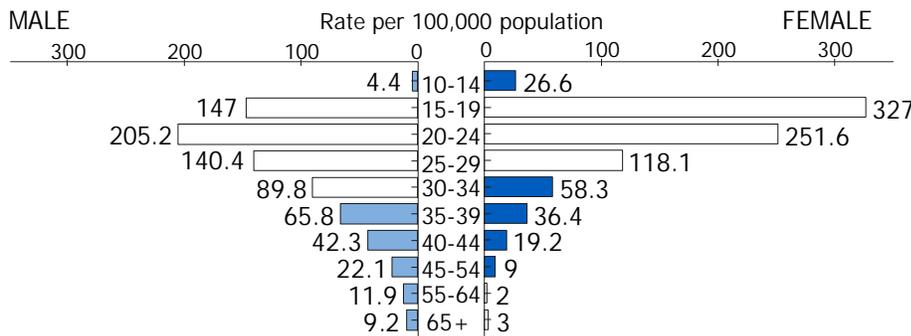
By age, gonorrhea most dramatically affects teens and young adults. Gonorrhea rates are highest among females between the ages of 15 and 19 and among males between the ages of 20 and 24. This is true regardless of race.



Gonorrhea
Race, Age, and
Gender Specific
United States, 1997
White, Non-Hispanic



Gonorrhea
Race, Age, and
Gender Specific
United States, 1997
Black, Non-Hispanic

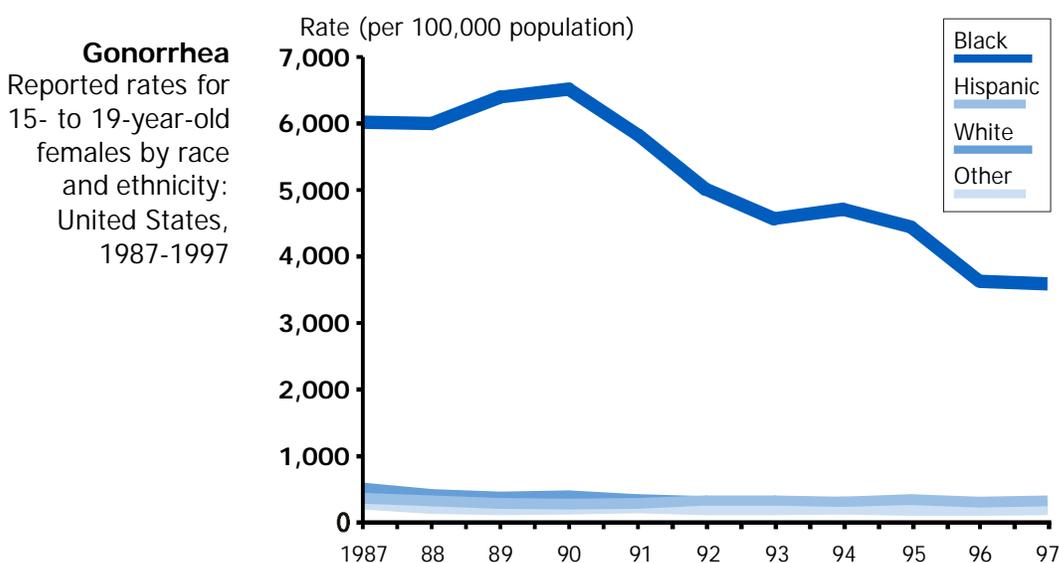


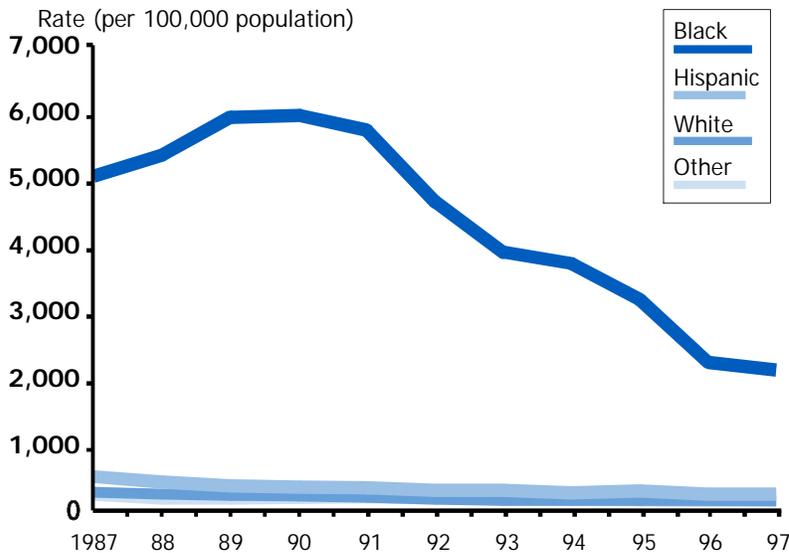
Gonorrhea
Race, Age, and
Gender Specific
United States, 1997
Hispanic

By race, Over the past few decades, gonorrhea has declined among all races (Fox, CDC, 1998). However, reported rates of gonorrhea among African Americans remain more than 30 times higher than rates among whites and more than 10 times higher than rates among Hispanics. This trend most likely reflects differences in access to prevention and treatment services. From 1996 to 1997:

- the gonorrhea rate among African Americans decreased slightly from 826.5 to 807.9 per 100,000.
- the gonorrhea rate among whites remained stable at 26.0 per 100,000.
- the gonorrhea rate among Hispanics remained stable at 69.4 per 100,000.
- the gonorrhea rate decreased for American Indian/Alaska Natives from 105.8 to 99.7 per 100,000.
- the gonorrhea rate increased slightly for Asian and Pacific Islanders from 18.7 to 19.8 per 100,000.

Among adolescents of all races, gonorrhea rates are declining, but young African-American women and men remain at extremely high risk.





Gonorrhea
Reported rates for
15- to 19-year-old
males by race
and ethnicity:
United States,
1987-1997

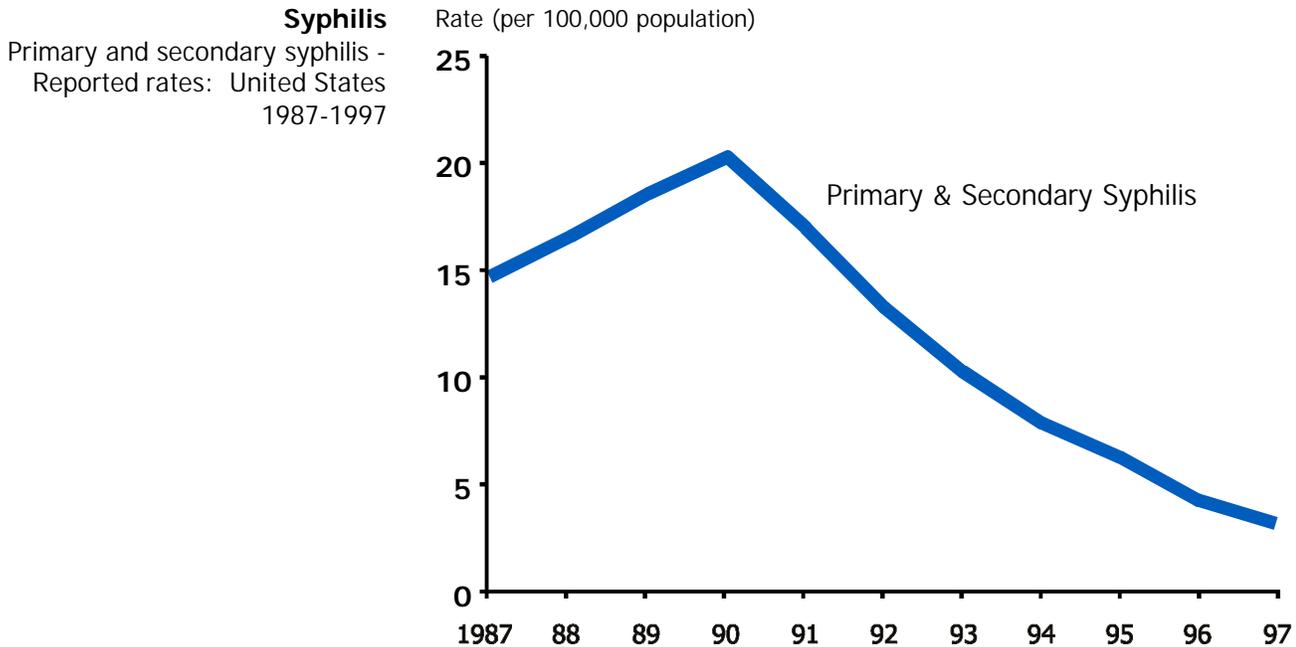
SYPHILIS

While once a major cause of cardiovascular disease, neurologic disease, and blindness, syphilis is now virtually non-existent in most parts of the United States. In 1997, 31 counties (1% of U.S. counties) reported half of all syphilis cases. With intensified efforts, particularly in the Southern region of the country, CDC is committed to the elimination of syphilis in the U.S. (St. Louis, CDC, 1998).

Syphilis elimination efforts are critical to prevent the continuing health consequences of this disease. Principle among these consequences is the acceleration of the HIV epidemic, especially among young African-American women in the South. Syphilis causes genital ulcers which dramatically increase the likelihood of sexual HIV transmission. Syphilis can also result in severe neurological problems among HIV-infected individuals who are immunosuppressed, and can be fatal in infants. Untreated early syphilis during pregnancy results in infant death in up to 40% of cases (DSTDP, CDC, 1998).

- An estimated 70,000 cases of syphilis (all stages) are diagnosed each year in the U.S. (ASHA, 1998).
- Since the introduction of penicillin and the organization of a national STD control program in the 1940s, the initial near elimination of syphilis in 1957 has been followed by cyclic national epidemics every 7 to 10 years (St. Louis, CDC, 1998).

- The most recent epidemic peaked in 1990 at 20.3 per 100,000. Since 1990, syphilis rates have declined 84% to 3.2 per 100,000, in 1997 (DSTDP, CDC, 1998).
- In 1997, 8,551 cases of primary and secondary (P&S) syphilis were reported. P&S syphilis cases represent recent infections (DSTDP, CDC, 1998). Cases of P&S syphilis reported to CDC are believed to represent about 80% of all cases (ASHA, 1998).



A Closer Look at Syphilis

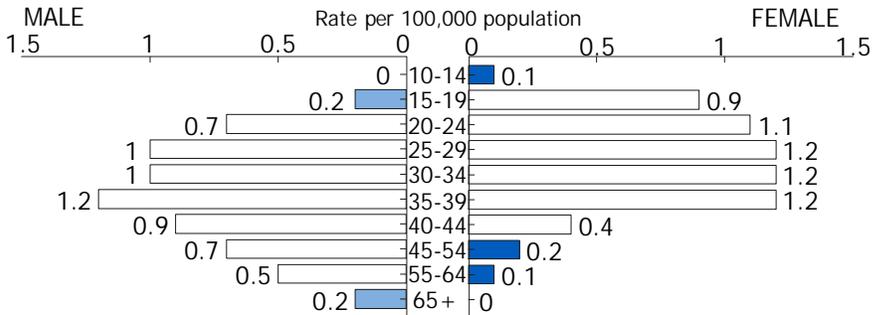
By gender, the overall male-to-female ratio of P&S syphilis is 1.2 (20% more cases among men than among women). This ratio varies by race however, with a higher male-to-female ratio among Hispanics (2.1) than for blacks (1.3) and whites (1.2) (CDC, 1998).

- Since 1990, P&S syphilis rates have declined 85% among men and 83% among women.

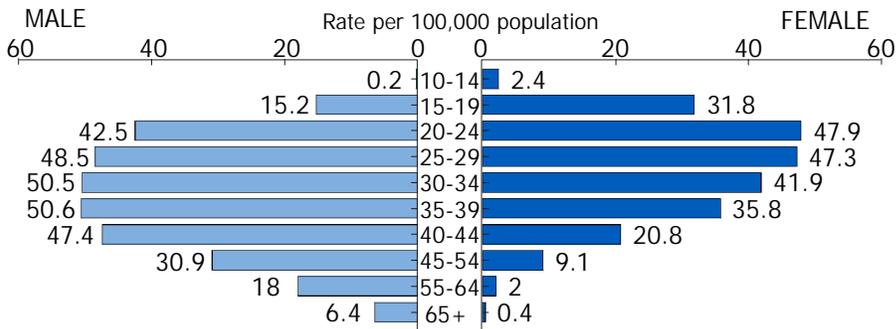
By race, syphilis continues to disproportionately affect African Americans. Syphilis has been called one of the “most glaring examples of existing gaps in minority health status.” Despite the fact that the disease can be easily treated and cured with basic medical care, reported rates of P&S syphilis are 44 times higher among blacks than among whites (St. Louis, CDC, 1998). With increased awareness and access to acceptable health care, this health disparity could be largely eliminated.

- Rates of P&S syphilis have declined for all racial and ethnic groups since 1990, with the largest declines among Hispanics (90%), followed by blacks (85%), and whites (81%).

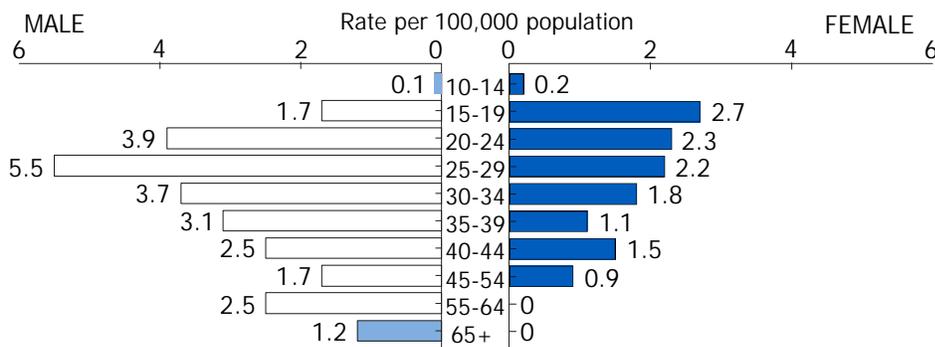
By age, syphilis rates are highest overall among women ages 20-24 and men ages 25-29. However, the age groups at highest risk vary by race.



Primary and Secondary Syphilis- Race, Age, and Gender Specific
United States, 1997
White, Non-Hispanic



Primary and Secondary Syphilis- Race, Age, and Gender Specific
United States, 1997
Black, Non-Hispanic



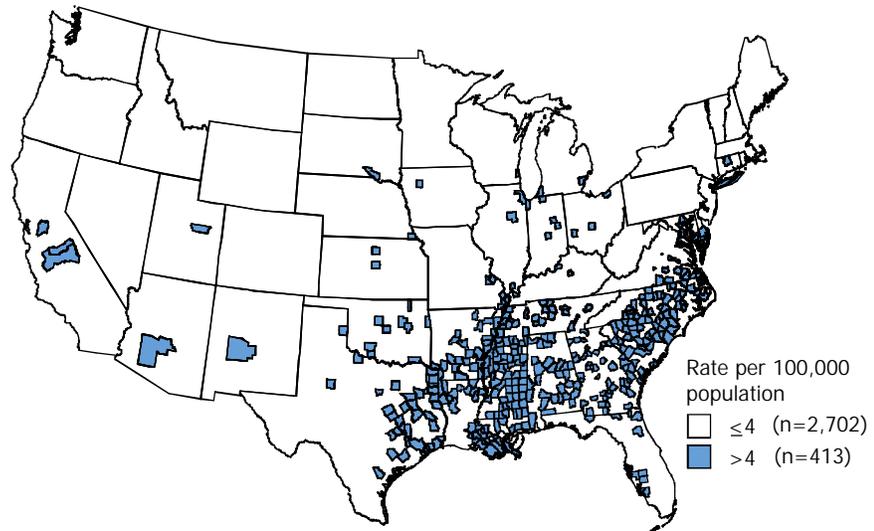
Primary and Secondary Syphilis- Race, Age, and Gender Specific
United States, 1997
Hispanic

- Over 1,000 cases of congenital (infants infected by their mother during pregnancy or delivery) syphilis were reported in 1997. Rates of congenital syphilis closely follow trends in P&S syphilis in women. Peaks in congenital syphilis usually occur one year after peaks in P&S syphilis in women. The congenital syphilis rate in the U.S. peaked in 1991 at 107.3 cases per 100,000 live births and declined 75% to 26.9 by 1997.

By region, syphilis is concentrated in the South and in a small number of counties. In 1997, no cases of syphilis were reported in 75% of counties in the U.S. Fifty percent of cases were reported from the 1% of U.S. counties shown below.

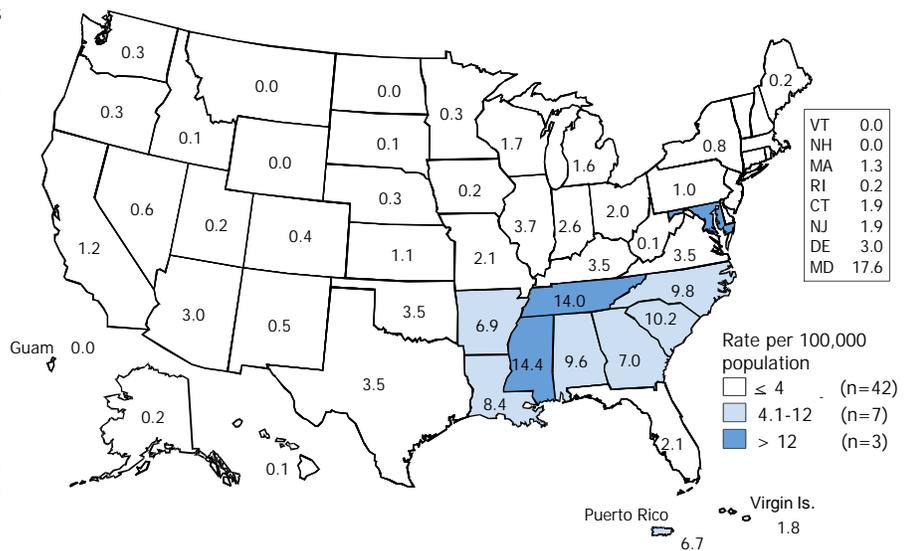
Primary and secondary syphilis

Counties with rates above and counties with rates below the Healthy People Year 2000 objective: United States, 1997



Primary and secondary syphilis

Rates by state: United States and outlying areas, 1997



Note: The total rate of primary and secondary syphilis for the United States and outlying areas (including Guam, Puerto Rico, and Virgin Islands) was 3.3 per 100,000 population.

HEPATITIS B

The acute and chronic consequences of hepatitis B virus (HBV) infection are major public health problems in the United States. According to data from the Third National Health and Nutrition Examination Survey (NHANES III), approximately 5% of the population has been infected with HBV, with an estimated 200,000 infections occurring each year (Coleman, 1998). Of these, it is believed that 120,000 infections are acquired through sexual transmission annually, mostly among young adults. An estimated 417,000 people are currently living with sexually-acquired HBV.

An acute HBV infection is a newly acquired, symptomatic infection. In some people, the infection resolves and the virus is cleared. However, many will remain chronically infected with the virus after the symptoms associated with their new infection have abated. People chronically infected with HBV face an increased risk of developing chronic liver disease, including cirrhosis and liver cancer.

Infants and young children have the highest risk of chronic infection. An estimated 5,000-6,000 deaths occur each year from chronic hepatitis B-related liver disease.

Hepatitis B vaccination has been recommended for people with risk factors for HBV infection since the vaccine became available in 1981. However, many teens and young adults at risk through sexual or drug-related behavior have not been vaccinated for HBV. Intensified efforts to vaccinate high risk groups are urgently needed.

- 10,416 cases of acute hepatitis B were reported to the CDC in 1997. However, reported cases dramatically underestimate the actual number of people who are infected with hepatitis B virus each year (an estimated 200,000).
- A recent study demonstrates the high degree of under-vaccination among those at high risk. Among acute hepatitis B cases reported by sentinel counties in 1996, 70% had a missed opportunity for vaccination in the past. Of these, 42% had been treated for an STD in the past, 31% had been in prison or jail at some time in their lifetime, and 25% reported sexual or household contact with an HBV-infected person (Mast, CDC, 1998).

A Closer Look at Hepatitis B

By Gender, the incidence of acute hepatitis B is higher among men than women. This difference is believed to reflect a higher prevalence of behavioral risk factors among males.

By Age, in the United States, adults and adolescents account for the majority of reported cases of acute hepatitis B, with the highest incidence rates observed among 25-39 year olds. Sexual transmission is the most common mode of transmission of HBV among adults and adolescents. According to data reported by sentinel counties in 1996, 40% of acute hepatitis B were attributed to high-risk heterosexual practices (>1 partner in the prior 6 months, history of other STDs) and 18% were associated with homosexual activity. Other risk factors associated with acute hepatitis B include injecting drug use (15%), household contact with another person infected with HBV (3%), and health care employment (2%) (Mast, CDC, 1998).

An estimated 20,000 infants are born to mothers with HBV each year. These infants are given post-exposure treatment to prevent infection. The treatment is 90%-95% effective in preventing infection in infants. Pregnant women should be screened for HBV to detect infection and ensure the best treatment for themselves and their infants.

Hepatitis B Distribution of Reported Acute Hepatitis B by Age, Sex, Race/Ethnicity, United States, 1996 (N=10,637)	Characteristic		
	Age (Years)	Number	Cases/100,000
	<5	93	1.65
	5-14	186	0.49
	15-24	55	5.31
	25-39	314	7.46
	40-64	1,403	4.06
	65+	1,326	1.61
	<u>Sex</u>		
	Male	6243	4.87
	Female	4091	3.04

Race

According to seroprevalence data for the general U.S. population from NHANES III, the prevalence of HBV infection is higher among blacks (12%) than among whites (3%) or Mexican Americans (4.4%).



TRICHOMONIASIS AND BACTERIAL VAGINOSIS

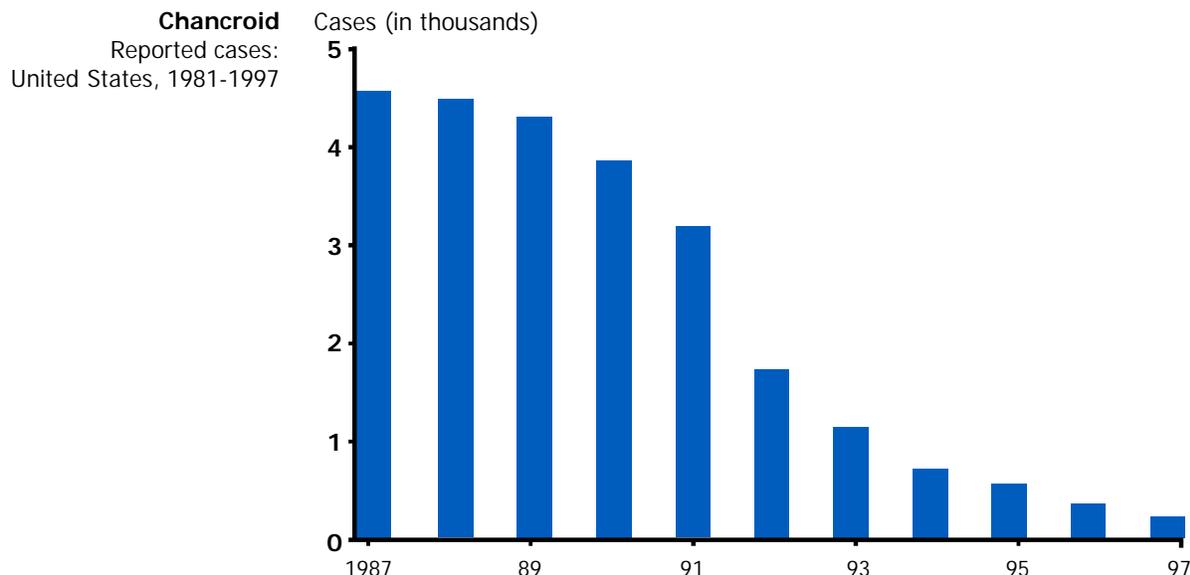
There are virtually no national data available on trichomoniasis, bacterial vaginosis, and other vaginal infections, but these infections are among the most common conditions found in women in health care settings. While these diseases are treatable, untreated bacterial vaginosis may lead to pelvic inflammatory disease and may increase the risk of HIV infection. In pregnant women, these diseases may also cause babies to be born prematurely or with low birth weights. However, the biomedical mechanisms for these outcomes are just beginning to be understood.

- The latest estimates suggest that as many as 5 million cases of *Trichomonas vaginalis* (*T. vaginalis*) occur each year in the United States (ASHA, 1998).
- The diagnosis of trichomonal infections in doctors' offices has declined in recent years, but remains common. In 1997, at least 175,000 of women were diagnosed with trichomoniasis in these settings.
- Diagnoses of other vaginal infections (of which bacterial vaginosis is the most common cause) increased dramatically over the decade, but have now begun to decline. In 1997, more than three million women were diagnosed with vaginitis in private doctors' offices. Because these cases do not include women diagnosed in public health care settings or who are not diagnosed at all, these are minimum numbers of infection.
- The prevalence of bacterial vaginosis varies from 17% among women in family planning settings, to 37% among some groups of pregnant women (ASHA, 1998).

CHANCROID

Over the last decade, reported cases of chancroid have declined steadily in the United States from 4,986 cases in 1987 to 243 cases in 1997 (DSTDP, CDC, 1997). While chancroid is not widespread, it is believed to be substantially under diagnosed and underreported. Moreover, chancroid has the potential to cause large outbreaks. It is difficult to diagnose without a laboratory test, which most health care providers do not have the capability to perform. Even large outbreaks may go unrecognized despite a large burden of disease in the community (Beck-Sague, CDC, 1996). The disease causes

genital ulcers and is of concern because it may contribute to increased HIV transmission in some communities.



- In 1997, four states (California, New York, South Carolina, and Texas) accounted for 85% of reported chancroid cases.
- The cities with the largest number of reported cases include New York City (119 cases), Houston (23 cases), Dallas (13 cases), and Los Angeles (12 cases).
- While not consistently seen in most communities, the disease occurs in outbreaks, resulting in occasional surges in cases.
- A 1996 ten-city study demonstrated the substantial level of unrecognized chancroid that exists in some cities. In both Chicago and Memphis, a significant percentage of patients with genital ulcers in STD clinics had evidence of chancroid (12% and 20%, respectively). In Memphis, none of the patients had been diagnosed with chancroid, and few had received the appropriate treatment. In Chicago, the disease had been suspected, but not confirmed. Fortunately, most of these patients were treated appropriately for chancroid (Mertz, CDC, 1998).
- In this ten-city study, a higher percentage of men were infected than women (4% vs. 1%) (Mertz, CDC, 1998). This is consistent with trends seen in reported cases. In 1997, 65% of cases of chancroid were reported among men.

Chancroid

Sixty percent of chancroid cases in this study were diagnosed in people over 35 years of age, showing that STD risk is not limited to young people (Mertz, CDC, 1998).

The study also found a high prevalence of HIV infection (6%) in patients with genital ulcers (Mertz, CDC, 1998).

Status of STDs by City and State

Detailed national data by city and state are only available for reportable STDs. And while chlamydia became nationally reportable in 1994, the data are currently more representative of trends in screening than of trends in disease. Because chlamydia often has no symptoms, cases are frequently identified only through widespread screening. Therefore, high rates of chlamydia may indicate more effective screening programs, rather than higher incidence of disease. This section will therefore present the status of gonorrhea and syphilis by city and state. To provide an indication of where chlamydia is currently the most common, data on the percentage of women who test positive for chlamydia in family planning clinics are also provided on the overview maps.

Other STDs, like genital herpes and HPV, are known to be widespread across all states and communities. There is very little regional variation in the prevalence of these diseases.

Areas Currently Facing the Greatest Rates of Common STDs

While national rates of gonorrhea and syphilis have reached all-time lows, rates remain high in many areas, mainly in the South and Northeast. Fifteen cities share the grim distinction of leading the nation in reported rates of both diseases.

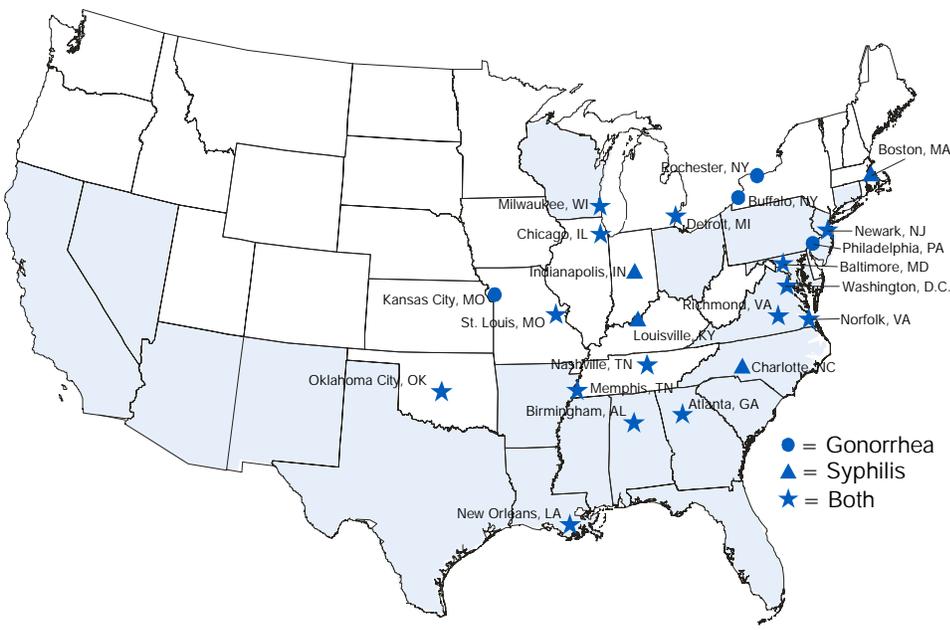
Gonorrhea			Syphilis		
City	Cases	Rate per 100,000 Population	City	Cases	Rate per 100,000 Population
1. Baltimore, MD	669	99.1	1. Baltimore, MD	6,693	991.0
2. Memphis, TN	343	39.5	2. Washington, DC	4,557	838.9
3. Nashville, TN	203	37.9	3. St. Louis, MO	2,901	825.2
4. Atlanta, GA	204	28.4	4. Rochester, NY	1,867	769.6
5. New Orleans, LA	132	27.7	5. Atlanta, GA	5,468	761.2
6. Richmond, VA	49	24.7	6. Detroit, MI	7,887	755.2
7. Washington, DC	117	21.5	7. Richmond, VA	1,466	739.4
8. Norfolk, VA	44	18.8	8. Newark, NJ	1,967	688.6
9. St. Louis, MO	60	17.1	9. Norfolk, VA	1,462	626.3
10. Oklahoma City, OK	73	16.6	10. New Orleans, LA	2,743	575.5
11. Birmingham, AL	107	16.2	11. Memphis, TN	4,876	562.1
12. Louisville, KY	107	15.9	12. Oklahoma City, OK	2,080	471.9
13. Chicago, IL	346	11.8	13. Birmingham, AL	3,104	468.9
14. San Juan, PR	99	11.4	14. Kansas City, MO	2,000	448.5
15. Detroit, MI	101	9.7	15. Philadelphia, PA	6,504	440.1
16. Boston, MA	52	9.3	16. Chicago, IL	11,498	393.0
17. Milwaukee, WI	84	9.1	17. Nashville, TN	2,050	383.2
18. Newark, NJ	26	9.1	18. Minneapolis, MN	1,430	371.1
19. Indianapolis, IN	71	8.7	19. Buffalo, NY	1,172	362.4
20. Charlotte, NC	48	8.0	20. Milwaukee, WI	3,303	358.1

*Rate for U.S.: 3.2

*Rate for U.S.: 122.5



Many of these communities also face a significant threat from chlamydia, which remains widespread across much of the United States. The highest levels of chlamydia remain in areas where screening and treatment have not been widely implemented.

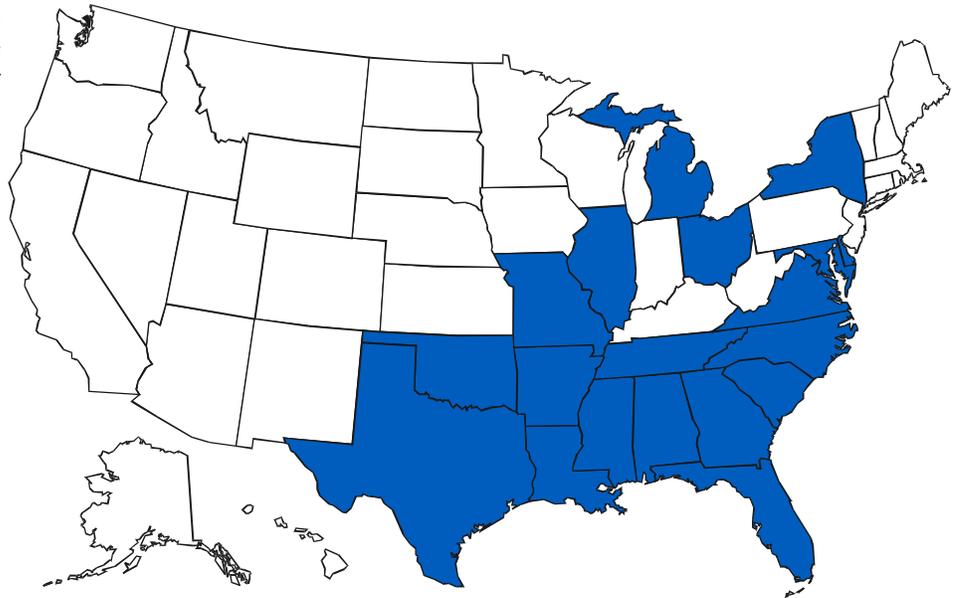


States with Highest Rates of Gonorrhea and Syphilis

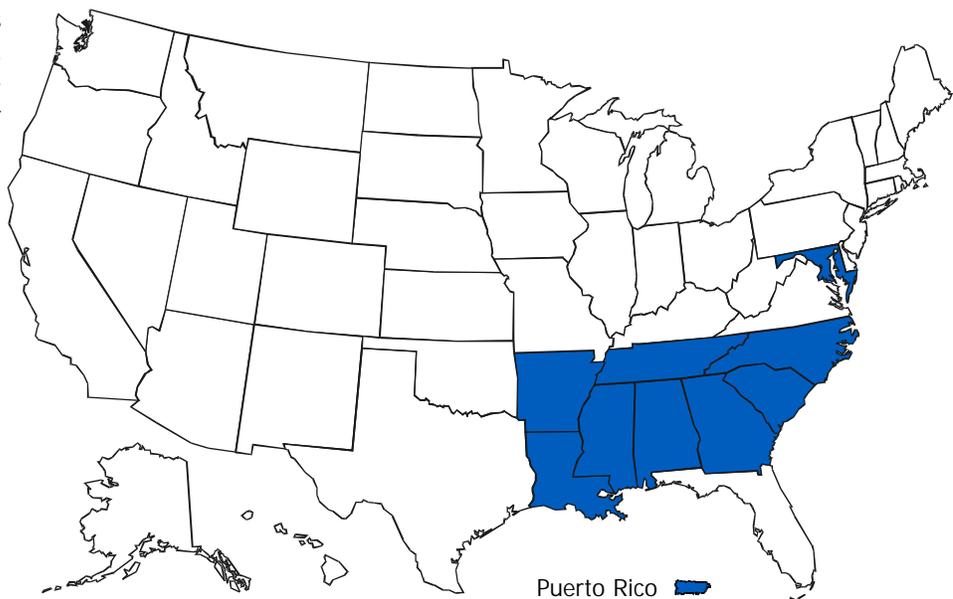
Twenty-one states now have rates of gonorrhea that exceed the goals for the nation. From last year, gonorrhea increased in six of these states (Illinois, Louisiana, Michigan, Mississippi, New York, and Texas).

Syphilis now exceeds the goals for the nation in nine states and Puerto Rico. Last year, cases increased in two of these areas, Maryland and Puerto Rico, with Maryland, Mississippi, and Tennessee facing the worst levels of syphilis in the country.

Gonorrhea
States with rates above
the Healthy People Year
2000 Objective;
United States, 1997



Syphilis
States and territories
with rates above the
Healthy People Year
2000 Objective;
United States, 1997



Bibliography

American Social Health Association Panel to Estimate STD Incidence and Cost. Estimates of Incidence and Prevalence of STDs in the United States, 1996. Special Supplement for *Sex Transm Dis*, in press.

Baur HM, Ting Y, Greer CE, et al. Genital Human Papillomavirus Infection in Female University Students as Determined by a PCR-Based Method. *JAMA* 1991 Jan 23-30;265(4):472-7.

Beck-Sague CM, Cordts JR, Brown K, et al. Laboratory Diagnosis of Sexually Transmitted Diseases in Facilities within the United States. Results of a National Survey. *Sex Transm Dis* 1996 Jul-Aug;23(4):342-9.

Bosch FX, et al. Prevalence of Human Papillomavirus in Cervical Cancer: A Worldwide Perspective. *J Natl Cancer Inst* 1995;87:796-802.

Bunnell R, Dahlberg L, Stone K, et al. Misconceptions about STD Prevention and Associations with STD Prevalence and Incidence in Adolescent Females in a Southeastern City [abstract]. In: Program and Abstracts of the 1998 National STD Prevention Conference; December 1998.

Burk RD, Ho GY, Beardsley L, Lempa M, et al. Sexual Behavior and Partner Characteristics are the Predominant Risk Factors for Genital Human Papillomavirus Infection in Young Women. *J Infect Dis* 1996 Oct;174(4):679-89.

CDC. Gonorrhea Among Men Who Have Sex with Men – Selected Sexually Transmitted Diseases Clinics, 1993-1996. *MMWR* 1997;46(No. 38):889-92.

CDC. Primary and Secondary Syphilis – United States, 1997. *MMWR* 1998;47(24):493-7.

Cohen DA, Nsuami M, Bedimo Etame R, et al. A School-Based Chlamydia Control Program Using DNA Amplification Technology. *Pediatrics* 1998 January;101(1).

Coleman PJ, McQuillan GM, Moyer LA, et al. Incidence of Hepatitis B Virus Infection in the United States, 1976-1994: Estimates from the National Health and Nutrition Examination Surveys. *J Infect Dis* 1998;178:954-9.

Division of STD Prevention. *Division of STD/HIV Prevention Annual Report, 1994*. U.S. Department of Health and Human Services, Atlanta: Centers for Disease Control and Prevention (CDC), 1994. Mertz KJ, McQuillan GM, Levine WC, et al. A Pilot Study of the Prevalence of Chlamydial Infection in a National Household Survey. *Sex Transm Dis* 1998 May;225-8.

Division of STD Prevention. *Sexually Transmitted Disease Surveillance, 1997*. U.S. Department of Health and Human Services, Atlanta: Centers for Disease Control and Prevention (CDC), September 1998.

Fleming DT, McQuillan GM, Johnson RE, et al. Herpes Simplex Virus Type 2 in the United States, 1976 to 1994. *N Engl J Med* 1997;337(16):1105-11.

Fox KK, Whittington WL, Levine WC, et al. Gonorrhea in the United States, 1981-1996. Demographic and Geographic Trends. *Sex Transm Dis* 1998. August;26(7):386-93.

Gaydos CA, Howell MR, Pare B, et al. Chlamydia trachomatis Infections in Female Military Recruits. *N Engl J Med* 1998;339:739-41.

- Goldenberg RL, Andrews WW, Yuan AC, et al. Sexually Transmitted Diseases and Adverse Outcomes of Pregnancy. *Clin Perinatol* 1997 March;24(1):23-41.
- Groseclose SL, Zaidi AA, DeLisle SJ, et al. An Approach to Estimation of Chlamydia Incidence and Prevalence in the United States [abstract O158]. International Congress of Sexually Transmitted Diseases; October 19-22, 1997; Seville, Spain.
- Ho GYF, Bierman R, Beardsley L, et al. Natural History of Cervicovaginal Papillomavirus Infection in Young Women. *N Engl J Med* 1998;338(7):423-8.
- Kaiser Family Foundation/*Glamour*. STDs Still a Hidden Epidemic: Men and Women Unaware of How Common They Are -- And Don't Think They Are At Risk. The Kaiser Family Foundation/*Glamour* 1998 Survey of Men and Women on Sexually Transmitted Diseases.
- Koutsky L. Epidemiology of Genital Human Papillomavirus Infection. *Am J Med* 1997;102(5A):3-8.
- Ku L, Sonenstein FL, Turner CF, et al. The Promise of Integrated Representative Surveys About Sexually Transmitted Diseases and Behavior. *Sex Transm Dis* 1997 May:299-309.
- Martinez J, Smith R, Farmer M, et al. High Prevalence of Genital Tract Papillomavirus Infection in Female Adolescents. *Pediatrics* 1988;82:604-8.
- Mast E. *Vaccine*, 1998, in press.
- Meisels A. Cytologic Diagnosis of Human Papillomavirus. Influence of Age and Pregnancy Stage. *Acta Cytol* 1992;36:480-2.
- Mertz KJ, Trees D, Levine WC, et al. Etiology of Genital Ulcers and Prevalence of Human Immunodeficiency Virus Coinfection in 10 U.S. Cities. *J Infect Dis* 1998;178.
- Mertz KJ, McQuillan GM, Levine WC, et al. A Pilot Study of the Prevalence of Chlamydial Infection in a National Household Survey. *Sex Transm Dis* 1998 May:225-8.
- Palefsky JM. Human Papillomavirus Infection and Anogenital Neoplasia in Human Immunodeficiency Virus-Positive Men and Women. *Monogr Natl Cancer Inst* 1998;23:15-20.
- Rietmeijer CA, Yamaguchi KJ, Ortiz CG, et al. Feasibility and Yield of Screening Urine for *Chlamydia trachomatis* by Polymerase Chain Reaction Among High-Risk Male Youth in Field-Based and Other Nonclinic Settings. A New Strategy for Sexually Transmitted Disease Control. *Sex Transm Dis* 1997 August;24(7):429-35.
- Shah KV. Human Papillomaviruses and Genital Cancers. *N Engl J Med* 1997;337:1386-8.
- St. Louis ME and Wasserheit JN. Elimination of Syphilis in the United States. *Science* 1998 July 17;281:353-4.

NOTES