

Chlamydia

Chlamydia trachomatis infections are the most commonly reported notifiable disease in the United States. They are among the most prevalent of all STDs and, since 1994, have comprised the largest proportion of all STDs reported to CDC (Table 1). In women, chlamydia infections, which are usually asymptomatic, may result in pelvic inflammatory disease (PID), which is a major cause of infertility, ectopic pregnancy, and chronic pelvic pain. Data from a randomized controlled trial of chlamydia screening in a managed care setting suggest that such screening programs can lead to a reduction in the incidence of PID by as much as 60%.¹ As with other inflammatory STDs, chlamydia infection can facilitate the transmission of HIV infection. In addition, pregnant women infected with chlamydia can pass the infection to their infants during delivery, potentially resulting in neonatal ophthalmia and pneumonia.

The increase in reported chlamydia infections during the last 10 years reflects the expansion of chlamydia screening activities, use of increasingly sensitive diagnostic tests, an increased emphasis on case reporting from providers and laboratories, and improvements in the information systems for reporting. However, many women who are at risk are still not being tested, reflecting, in part, lack of awareness among some health care providers and the limited resources available to support screening. Chlamydia screening and reporting are likely to expand further in response to the recently implemented Health Plan Employer Data and Information Set (HEDIS) measure for chlamydia screening of sexually active women 15 through 25 years of age who receive medical care through managed care organizations.² To better monitor trends in disease burden in defined populations during the expansion of chlamydia screening activities, data on chlamydia positivity among persons screened in a variety of settings are used; in most instances, test positivity serves as a reasonable approximation of prevalence.³

- In 2000, for the first time, all 50 states and the District of Columbia had regulations requiring the reporting of chlamydia cases to CDC (Figure 1).
- In 2003, 877,478 chlamydia infections were reported to CDC from 50 states and the District of Columbia (Table 1). This case count corresponds to a rate of 304.3 cases per 100,000 population, an increase of 5.1% compared with the rate of 289.4 in 2002. The reported number of chlamydia infections was more than two and one half times the number of reported cases of gonorrhea (335,104 gonorrhea cases were reported in 2003) (Table 1).
- From 1987 through 2003, the rates of reported chlamydia infection increased from 50.8 to 304.3 cases per 100,000 population (Figure 2, Table 1). The continuing increase in reported cases likely represents the further expansion of screening for this infection, the development and use of more sensitive screening tests, and more complete national reporting.
- For the years 1999-2001, the chlamydia rates in the Southern region of the United States were higher than the rates in any other region of the country (Figures 3-5, Table 3). Before 1996, chlamydia rates were highest in the West and Midwest, where substantial public resources had been committed for screening

programs in family planning clinics. For the years 2002-2003, overall rates were highest in the Midwest although rates among women remained highest in the South. Rates have remained lowest in the Northeast.

- In 2003, the overall rate of reported chlamydia infection among women in the United States (466.9 cases per 100,000 females) was over 3 times higher than the rate among men (134.3 cases per 100,000 males), likely reflecting a greater number of women screened for this infection (Figure 6, Tables 4 and 5). The lower rates among men suggest that many of the sex partners of women with chlamydia are not diagnosed or reported. However, with the advent of highly sensitive nucleic acid amplification tests that can be performed on urine, symptomatic and asymptomatic men are increasingly being diagnosed with chlamydia infection. From 1999 through 2003, the chlamydia infection rate in males increased by 46.6% (from 91.6 to 134.3 cases per 100,000 males) compared with a 18.2% increase in women over this period (from 395.1 to 466.9 cases per 100,000 females) (Tables 4 and 5).
- For women, the highest age-specific rates of reported chlamydia in 2003 were among 15- to 19-year-olds (2,687.3 per 100,000 females) and 20- to 24-year-olds (2,564.4 per 100,000 females). These increased rates in women may be, in part, due to increased screening in this group. Age-specific rates among men, while substantially lower than the rates in women, were highest in the 20- to 24-year-olds (Figure 7, Table 10).
- In 2003, the rate of chlamydia among African-American females in the United States was more than 7 times higher than the rate among white females (1,633.1 and 217.9 per 100,000, respectively) (Table 11B). The chlamydia rate among African-American males was 11 times higher than that among white males (584.2 and 52.9 per 100,000 respectively).
- Chlamydia screening and prevalence monitoring activities were initiated in Health and Human Services (HHS) Region X in 1988 as a CDC-supported demonstration project. From 1988 through 2003, the screening programs in HHS Region X (Alaska, Idaho, Oregon, Washington) family planning clinics demonstrated a 52.3% decline in chlamydia positivity from 15.1% to 7.2% among 15- to 24-year-old women (Figure 9); chlamydia positivity was adjusted for changes in laboratory test methods and associated test sensitivity.^{4,5}
- In 1993, chlamydia screening services for women were expanded to three additional HHS regions (III, VII, and VIII) and, in 1995, to the remaining HHS regions (I, II, IV, V, VI, and IX). In some regions, federally-funded chlamydia screening supplements local- and state-funded screening programs.
- In 2003, the median state-specific chlamydia test positivity among 15- to 24-year-old women who were screened during visits to selected family planning clinics in all states and outlying areas was 5.9% (range 2.8% to 18.9%) (Figure 8). In nearly all states chlamydia positivity was greater than the HP2010 target of 3.0%.⁶ See **Appendix** (Chlamydia, Gonorrhea, and Syphilis Prevalence Monitoring) for details.
- After adjusting trends in chlamydia positivity to account for changes in laboratory test methods and associated increases in test sensitivity (see **Appendix**), chlamydia test positivity decreased in 4 of 10 HHS regions from 2002 through 2003, increased in 5 regions, and remained the same in 1 region (Figure 9).

Although chlamydia positivity has declined in the past year in some regions presumably due to the effectiveness of screening and treatment of women, continued expansion of screening programs to populations with higher prevalence of disease may have contributed to increases in positivity in other regions.

- Additional information on chlamydia screening programs for women of reproductive age and chlamydia among adolescents and minority populations can be found in the **Special Focus Profiles**.

¹ Scholes D, Stergachis A, Heidrich FE, Andrilla H, Holmes KK, Stamm WE. Prevention of pelvic inflammatory disease by screening for cervical chlamydial infection. *NEngl J Med* 1996;34(21): 1362-66.

² National Committee for Quality Assurance (NCQA). *HEDIS 2000: Technical Specifications*, Washington, DC, 1999, pp. 68-70, 285-286.

³ Dicker LW, Mosure DJ, Levine WC. Chlamydia positivity versus prevalence: what's the difference? *Sex Transm Dis* 1998;25:251-3.

⁴ Dicker LW, Mosure DJ, Levine WC, et al. Impact of switching laboratory tests on reported trends in *Chlamydia trachomatis* infections. *Am J Epidemiol* 2000;51:430-5.

⁵ Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2003 Supplement: Chlamydia Prevalence Monitoring Project Annual Report 2003*. Atlanta, GA: U.S. Department of Health and Human Services (in press).

⁶ U.S. Department of Health and Human Services. *Healthy People 2010*. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000.

Figure 1. Chlamydia — Number of states that require reporting of *Chlamydia trachomatis* infections: United States, 1987–2003

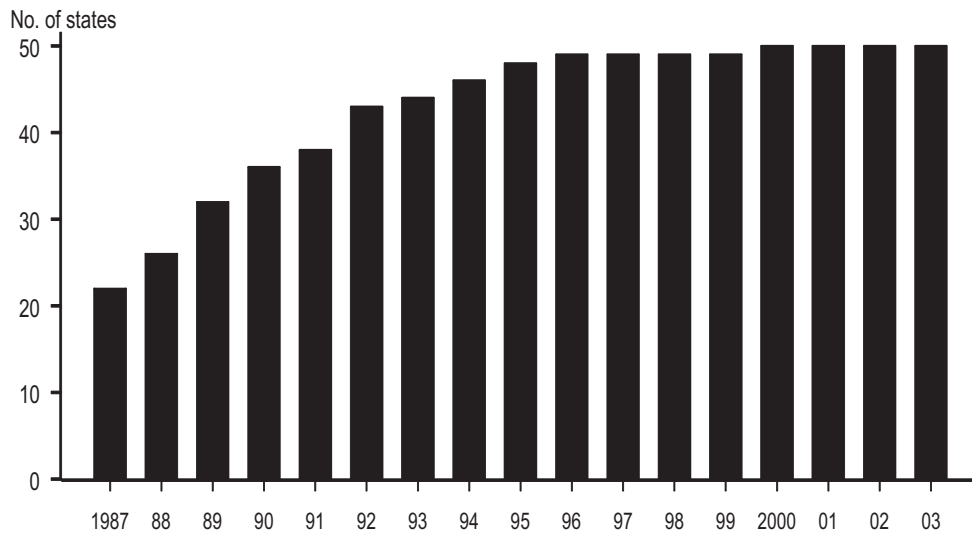


Figure 2. Chlamydia — Rates: United States, 1984–2003

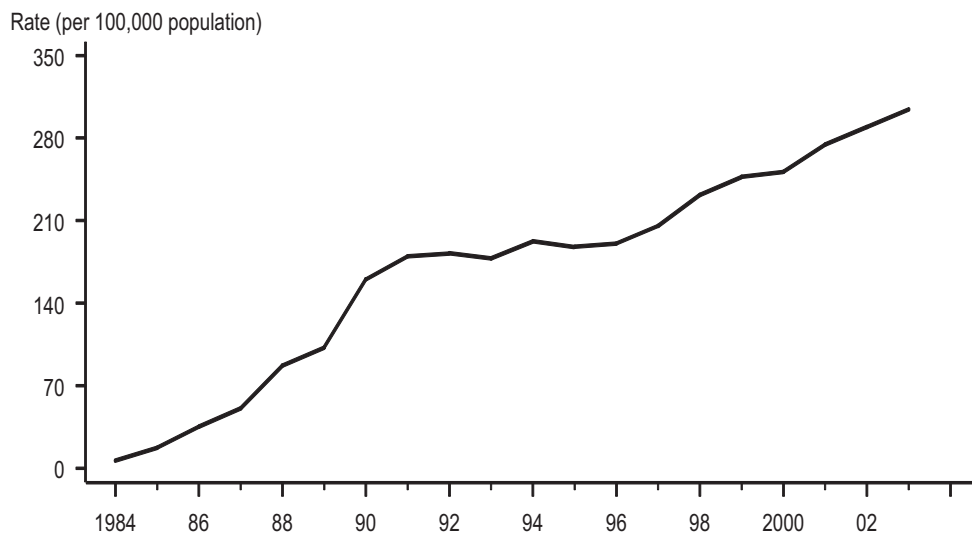


Figure 5. Chlamydia — Rates by region: United States, 1984–2003

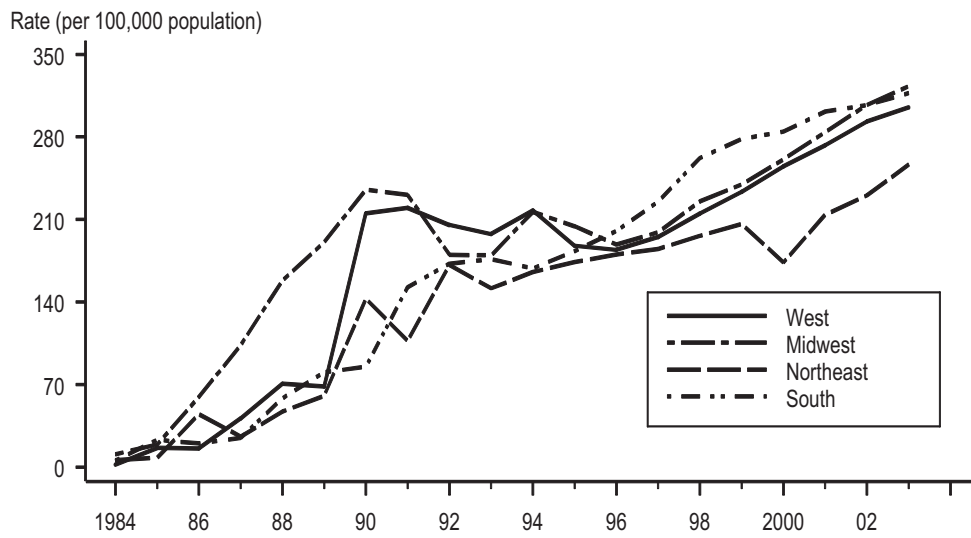


Figure 6. Chlamydia — Rates by sex: United States, 1984–2003

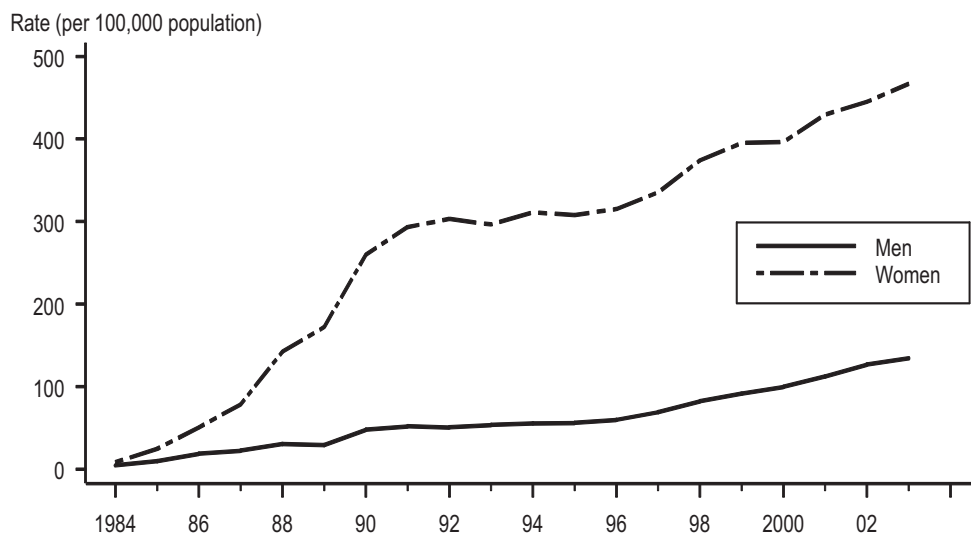
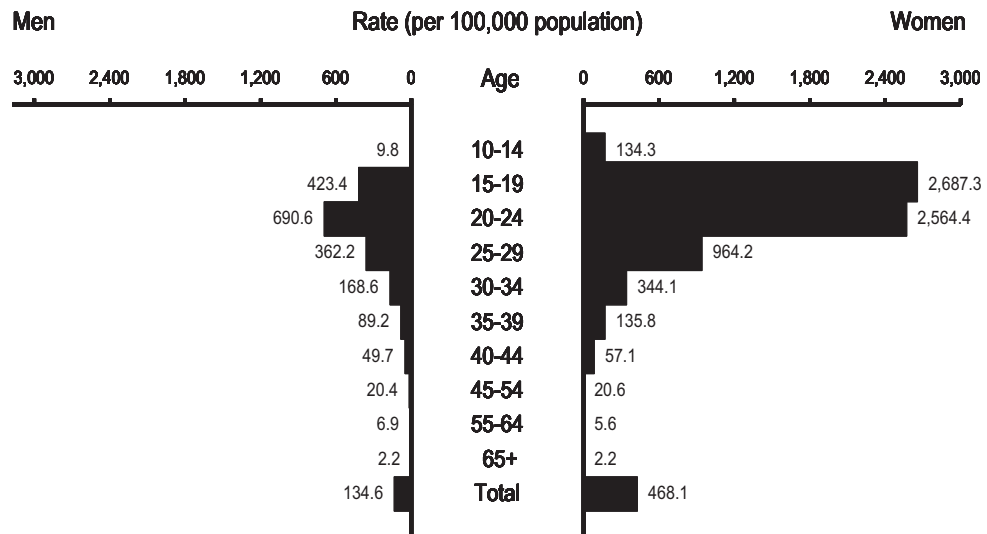
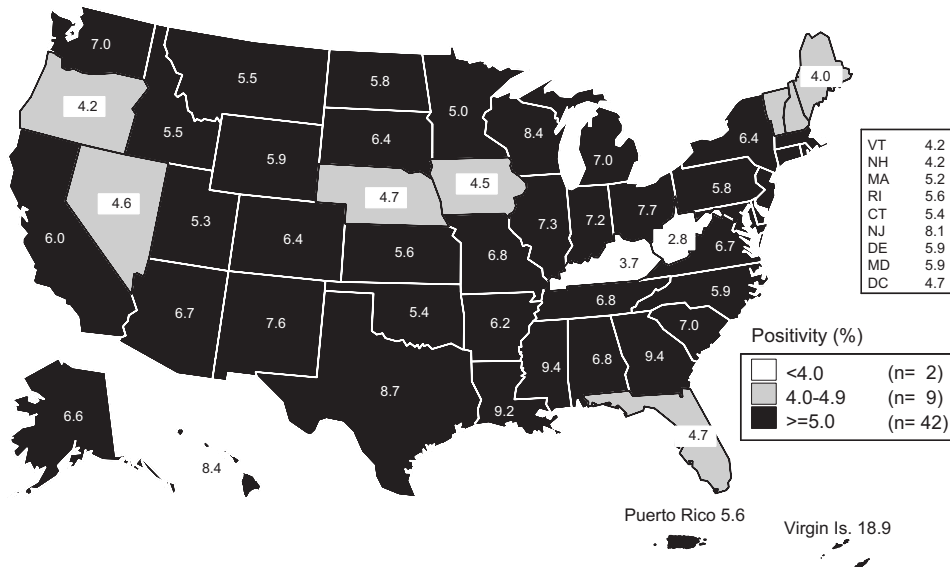


Figure 7. Chlamydia — Age- and sex-specific rates: United States, 2003



Note: See Table 10 and Appendix (Reporting of Chlamydia Cases) for more information.

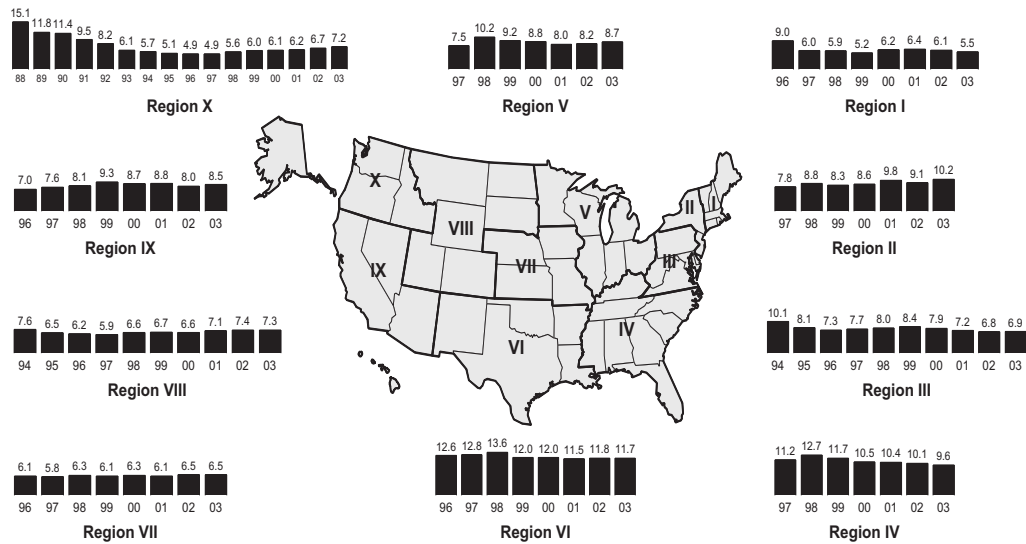
Figure 8. Chlamydia — Positivity among 15- to 24-year-old women tested in family planning clinics by state: United States and outlying areas, 2003



Note: Includes states and outlying areas that reported chlamydia positivity data on at least 500 women aged 15-24 years screened during 2003.

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

Figure 9. Chlamydia — Trends in positivity among 15- to 24-year-old women tested in family planning clinics by HHS regions, 1988–2003



Note: Trends adjusted for changes in laboratory test method and associated increases in test sensitivity. See Appendix (Chlamydia, Gonorrhea, and Syphilis Prevalence Monitoring) for more information. No data on laboratory test method available for Region VII in 1995 and Regions IV and V in 1996. See Appendix for definition of Health and Human Services (HHS) regions.

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