Sexually Transmitted Disease Surveillance 2001 Supplement

Chlamydia Prevalence Monitoring Project Annual Report 2001

Division of STD Prevention
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Chlamydia Prevalence Monitoring Project
Annual Report – 2001

The Centers for Disease Control and Prevention's (CDC) Chlamydia Prevalence Monitoring Project is a collaborative effort among the Regional Infertility Prevention Projects, STD project areas, state epidemiologists and public health laboratory directors, the U.S. Department of Labor, and the Indian Health Service (IHS). The purpose of the project is to monitor the prevalence of genital *Chlamydia trachomatis* infections among women screened for this infection in the United States through publicly-funded programs. The data presented on chlamydial infection in this report complement and supplement data presented in CDC's 2001 STD Surveillance Report.[1]

Introduction

Since 1988, CDC has supported screening programs for *Chlamydia trachomatis* infections in women and has monitored positivity to evaluate program impact. As documented by chlamydia case reporting (i.e., morbidity) data, case rates following initiation of chlamydia screening and treatment programs have resulted in initial increases in cases detected and reported. To minimize the impact of variation in chlamydia testing and reporting on the interpretation of surveillance data, CDC, states, and Regional Infertility Prevention Projects use screening positivity data to estimate chlamydia prevalence among selected populations. This report compares data on chlamydia prevalence in selected populations with data reported to CDC through the case reporting system.

Sources of Data

Regional Infertility Prevention Projects

Chlamydia screening and prevalence monitoring activities were initiated in Health and Human Service (HHS) Region X in 1988 as a CDC-supported demonstration project. In 1993, as part of the development of the National Infertility Prevention Program, chlamydia screening services for women were initiated in three additional HHS regions (III, VII, VIII) and in 1995 services were implemented in the remaining HHS regions (I, II, IV, V, VI, IX).[2,3] All regional projects, in collaboration with state STD control and family planning programs, report their chlamydia positivity data to CDC. In some of the HHS regions, federally-funded chlamydia screening supplements existing local- and state-funded testing programs. These publicly-funded programs support chlamydia screening primarily in family planning clinics, but also in some STD clinics, prenatal clinics, jails and juvenile detention centers, and other sites.

The ten Health and Human Services (HHS) regions referred to in the text and figures are as follows: Region I = Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont; Region II = New Jersey, New York, Puerto Rico, and U.S. Virgin Islands; Region III = Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia; Region IV = Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee; Region V = Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin; Region VI = Arkansas, Louisiana, New Mexico, Oklahoma, and Texas; Region VII = Iowa, Kansas, Missouri, and Nebraska; Region VIII = Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming; Region IX = Arizona, California, Hawaii, and Nevada; and Region X = Alaska, Idaho, Oregon, and Washington.

State and Local Health Departments

As of 2000, all 50 states and the District of Columbia have regulations requiring the reporting of chlamydia cases to CDC.

Corrections Facilities

In 2001, 10 states reported STD prevalence data from persons entering jails and juvenile detention facilities as part of the Jail STD Prevalence Monitoring Project. Four states reported chlamydia data from corrections facilities as part of the Adolescent Women Reproductive Health Monitoring Project. Twenty-two states reported chlamydia data from corrections facilities as part of the Regional Infertility Prevention Projects.

National Job Training Program

Since 1990, approximately 20,000 female National Job Training Program entrants have been screened each year for chlamydia, with all tests performed at a central laboratory using a single

test type.[4] Changes in laboratory and test type (EIA to DNA probe) occurred in mid-1997. The National Job Training Program, administered by the U.S. Department of Labor, is primarily a residential job training program for urban and rural disadvantaged youth aged 16 to 24 years at more than 100 sites throughout the country. The U.S. Department of Labor makes these chlamydia test results available to CDC to calculate prevalence in this population.

Indian Health Service

In 2001, approximately 38,000 women aged 15 to 30 years were screened at 86 facilities in four of 12 Indian Health Service (IHS) areas. The Indian Health Service provided these data to CDC.

The 12 Indian Health Service (IHS) areas referred to in the text and figures are as follows, with overlap in some states: Aberdeen Area (Iowa, North Dakota, Nebraska, and South Dakota); Alaska Area (Alaska); Albuquerque Area (Colorado and New Mexico); Bemidji Area (Illinois, Indiana, Michigan, Minnesota, and Wisconsin); Billings Area (Montana and Wyoming); California Area (California); Nashville Area (Alabama, Connecticut, Florida, Louisiana, Maine, Maryland, Massachusetts, Mississippi, New York, North Carolina, Rhode Island, South Carolina, and Tennessee); Navajo Area (Arizona, New Mexico, and Utah); Oklahoma City Area (Kansas, Oklahoma, and Texas); Phoenix Area (Arizona, Nevada and Utah); Portland Area (Idaho, Oregon, and Washington); and Tucson Area (Arizona).

Data Limitations

The interpretation of chlamydia data is complicated by several factors. First, case reports and prevalence data result from the use of several different types of diagnostic tests for chlamydial infection (e.g., direct fluorescent antibody, EIA, DNA probe assay, DNA amplification); these tests vary in their sensitivity and specificity. Second, chlamydia positivity among women attending clinics is an estimate of prevalence; it is not true prevalence. Crude positivity may include those women who are tested two or more times during a single year. Comparisons of positivity with prevalence have shown that in family planning clinics, positivity is generally similar to or slightly higher than prevalence, and in STD clinics, positivity is somewhat lower than prevalence; however, these differences are usually small, with the relative difference <10%.[5] Third, while nearly all family planning clinics perform universal screening of sexually active women <20 years of age, and most clinics do so among women <25 years of age, some selective screening is performed among women 20-24 years old and some level of screening is frequently performed among women $\geq$25 years of age. Fourth, while monitoring prevalence among persons seeking care at clinics provides important information on certain segments of the population, these data cannot be generalized to the population as a whole.

The data from the National Job Training Program are an exception to the first three caveats. All tests are performed using a single test type. Data are limited to entrance exam testing; therefore, no women are included twice. All women entering the National Job Training Program are required to be tested.

As noted above, various laboratory test methods were used for all data. Except for Figure 4, the figures presented do not include an adjustment of test positivity based on laboratory test type and sensitivity. In Figure 4, the chlamydia test results for each test type were weighted to reflect the sensitivity of the test used.[6,7] Test-specific sensitivities were defined as the midpoints of the ranges of published values for the sensitivities for each technology type.[7] Limitations of this adjustment include unknown dates when laboratories changed tests, missing information on the type of test used, variation of test sensitivity within a technology type and between laboratories, and no adjustment for use of supplemental methods that could increase test sensitivity.

Chlamydia Data Reported In 2001

Case reports

In 2001, 783,242 chlamydial infections were reported to CDC from 50 states and the District of Columbia. The reported number of cases of chlamydial infection was about two times greater than the reported cases of gonorrhea (361,705 gonorrhea cases were reported in 2001). From 1987 through 2001 the reported rate of chlamydial infection among women increased from 78.5 cases per 100,000 population to 435.2 (Figure 1). These increases in the reported national chlamydia rate likely represent increased chlamydia screening, increased use of nucleic acid amplification tests which are more sensitive than other types of screening tests, and improved reporting, as well as the continuing high burden of disease.

In 2001, state- and outlying area-specific chlamydia rates among women ranged from 117.1 per 100,000 to 697.3 per 100,000 (Figure 2). This variation in rates reflects both state-specific differences in screening and reporting practices, and in true disease burden.

Chlamydia positivity among women in family planning and prenatal clinics

In 2001, the median state-specific chlamydia test positivity among 15- to 24-year-old women who were screened at selected family planning clinics in all states, the District of Columbia, Puerto Rico, and the Virgin Islands was 5.6% (range, 2.7% to 13.9%, Figure 3).

The effectiveness of large-scale screening programs in reducing chlamydia prevalence has been well documented in areas where this intervention has been in place for several years.[8,9] In 2001, after adjusting trends in chlamydia positivity to account for changes in laboratory test methods and associated increases in test sensitivity,[10] chlamydia test positivity decreased in five of 10 HHS regions from 2000 to 2001, increased in four regions, and remained the same in one region (Figure 4). Although chlamydia positivity has declined in the past year in some regions due to the effectiveness of screening and treatment of women, continued expansion of screening programs to populations with higher disease prevalence may have contributed to the increases in positivity in other regions.

In 2001, the median state-specific chlamydia test positivity among 15- to 24-year-old women screened in selected prenatal clinics in 22 states and Puerto Rico was 7.4% (range, 3.7% to 13.5%, Figure 5).

Chlamydia prevalence among female National Job Training Program entrants

Among women entering the National Job Training Program in 2001, based on their place of residence before program entry, state-specific chlamydia prevalence ranged from 5.1% to 18.0% in 26 states and Puerto Rico (Figure 6). The median state-specific chlamydia prevalence was 10.6%.

Chlamydia positivity among women entering juvenile and adult corrections facilities

Data on positivity of chlamydial infection among women entering juvenile or adult corrections facilities were reported to CDC from 22 states (Figure 7). Among adolescent women entering juvenile detention facilities, the median facility positivity for chlamydia was 14.8% (range 4.0% to 25.8%); positivity was greater than 10% in 19 of 24 facilities (79%) reporting data. Among adult women entering 23 corrections facilities, the median positivity for chlamydia was 4.1% (range 0.5% to 11.0%).

Chlamydia positivity among women attending Indian Health Service clinics

In 2001, chlamydia positivity among 15- to 30- year-old women screened at clinics in four IHS areas ranged from 3.1% to 10.0% (Figure 8).

Notes on State-Specific Data

Morbidity Surveillance: Reporting of Chlamydia Cases

Figure A. Chlamydia rate per 100,000 women, 1992 - 2001.

Crude incidence rates (new cases/population) were calculated on an annual basis per 100,000 population. In this report, the 2001 rates for all states were calculated by dividing the number of cases reported from each area in 2001 by the estimated area-specific 2000 population. Rates for 1992-2001 were calculated using postcensal population estimates based on the Bureau of the Census data (U.S. Bureau of the Census; 1991-2000 Estimates of the Population of Counties by Age, Sex and Race/Hispanic Origin: 1990 to 2000; machine-readable data files).

Prevalence Monitoring: Reporting of Chlamydia Positivity

Figure B. Chlamydia positivity among women 15 to 24 years of age, by testing site, 1990-2001; Table 1. Chlamydia positivity among women 15 to 44 years of age by testing site, 2001; Figure C. Chlamydia positivity by age group among women attending family planning clinics, 2001.

Chlamydia test positivity data are presented from those states reporting results on 500 or more women screened during 2001. Chlamydia test positivity was calculated by dividing the number of women testing positive for chlamydia (numerator) by the total number of women tested for chlamydia (denominator includes those with valid test results only and excludes unsatisfactory and indeterminate tests) and was expressed as a percentage. The denominator may contain multiple tests from the same individual if that person was tested more than once during the period for

which screening data are reported. Various chlamydia laboratory methods were used and no adjustments of test positivity were made based on laboratory test type and sensitivity. Chlamydia prevalence data on female National Job Training Program entrants are not presented when the number of persons tested from a state was fewer than 100. The number of clinics cited in Table 1 (state profile) for each state represents family planning (FP), sexually transmitted disease (STD), prenatal, Indian Health Service (IHS), and other clinics screening 25 or more women and juvenile and adult corrections facilities screening 100 or more women.

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Acknowledgments

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This report was prepared by the following staff members of the Surveillance and Special Studies Section of the Epidemiology and Surveillance Branch and the Statistics and Data Management Branch of the Division of STD Prevention, National Center for HIV, STD, and TB Prevention, Centers for Disease Control and Prevention: Susan Bradley, Jim Braxton, Sharon Clanton, Darlene Davis, Linda Webster Dicker, LaZetta Grier, Kathleen Hutchins, Richard Kahn, Debra Mosure, Michael Phillips, and Emmett Swint.

Figure 1. Chlamydia — Rates by gender: United States, 1984–2001

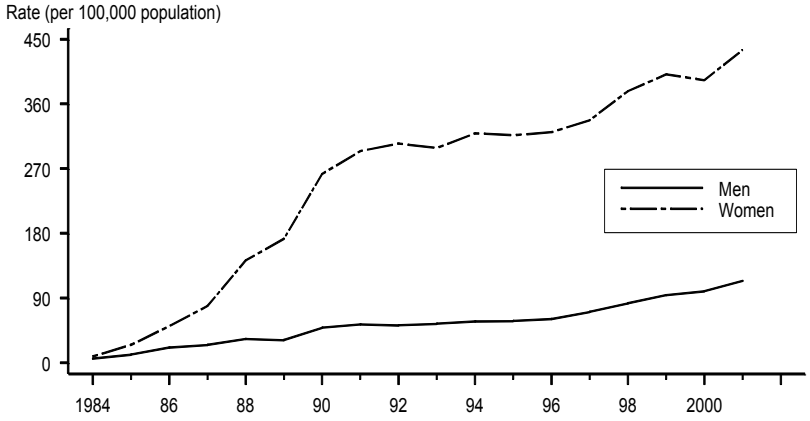
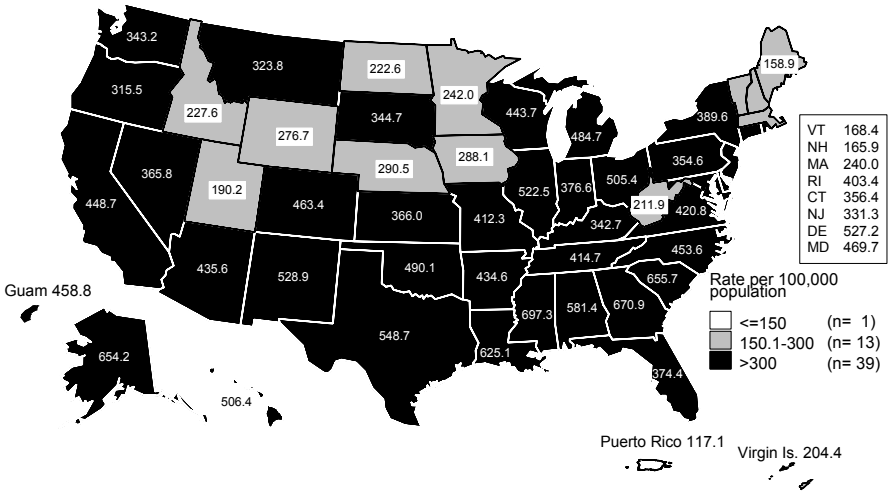
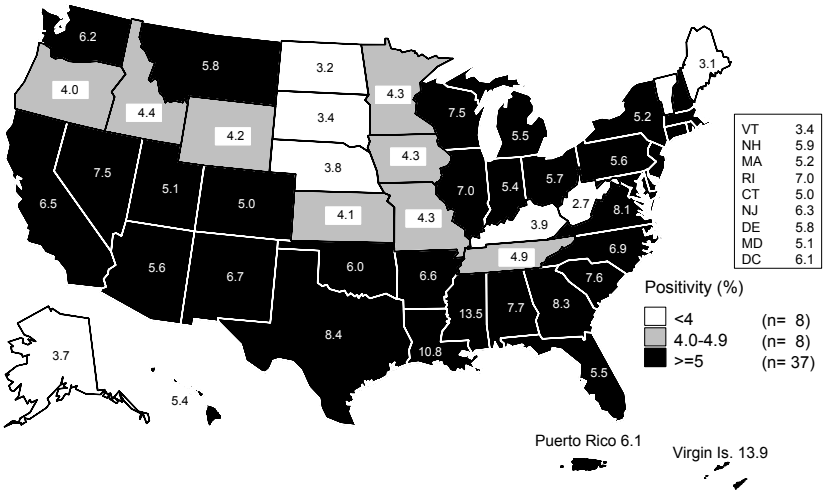


Figure 2. Chlamydia — Rates for women: United States and outlying areas, 2001



Note: The total rate of chlamydia for women in the United States and outlying areas (including Guam, Puerto Rico and Virgin Islands) was 430.8 per 100,000 population.

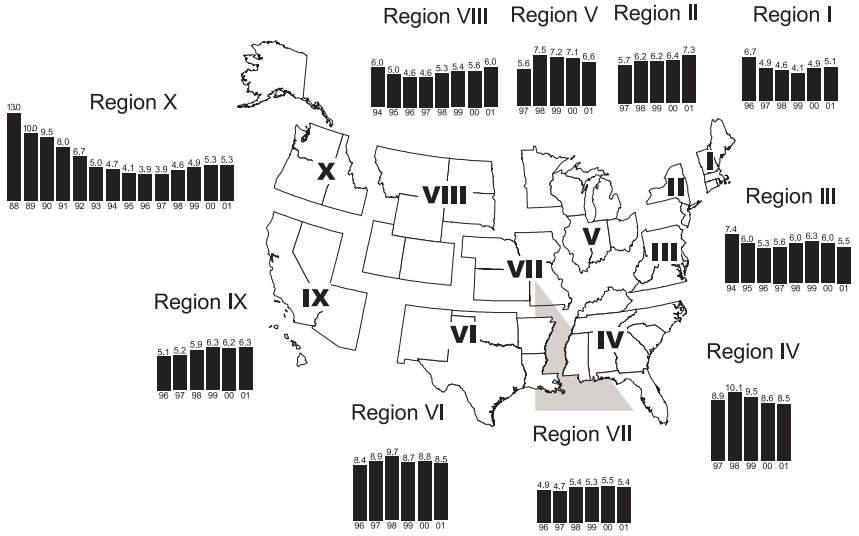
Figure 3. Chlamydia — Positivity among 15-24 year old women tested in family planning clinics by state, 2001



Note: States reported chlamydia positivity data on at least 500 women aged 15-24 years screened during 2001.

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

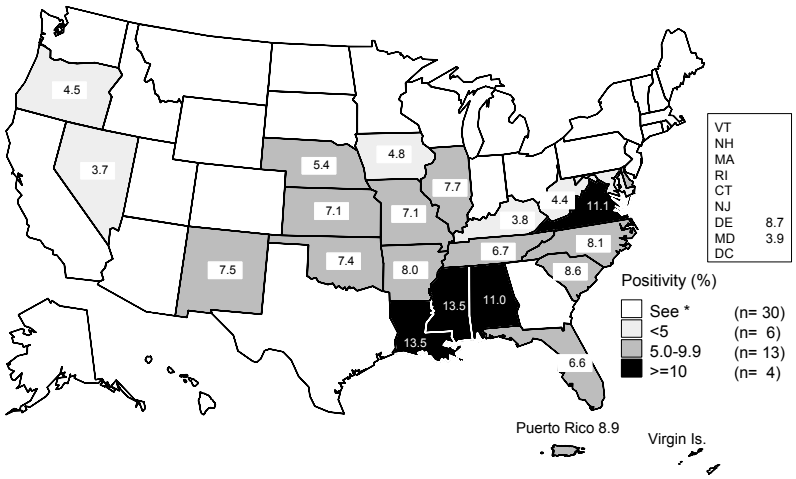
Figure 4. Chlamydia — Trends in positivity among 15-44 year old women tested in family planning clinics by HHS regions, 1988–2001



Note: Trends adjusted for changes in laboratory test method and associated increases in test sensitivity. No data on laboratory test method available for Region VII in 1995 and Regions IV and V in 1996.

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

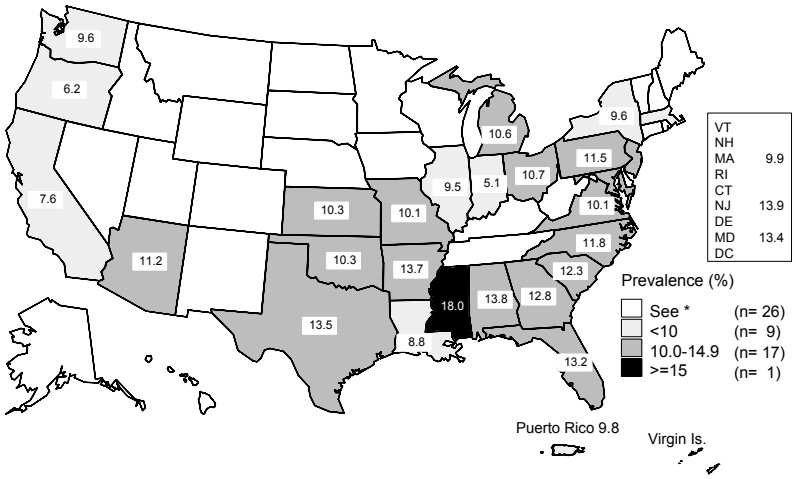
Figure 5. Chlamydia — Positivity among 15-24 year old women tested in prenatal clinics by state, 2001



*States not reporting chlamydia positivity data in prenatal clinics.
Note: States reported chlamydia positivity data on at least 100 women aged 15-24 years during 2001.

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

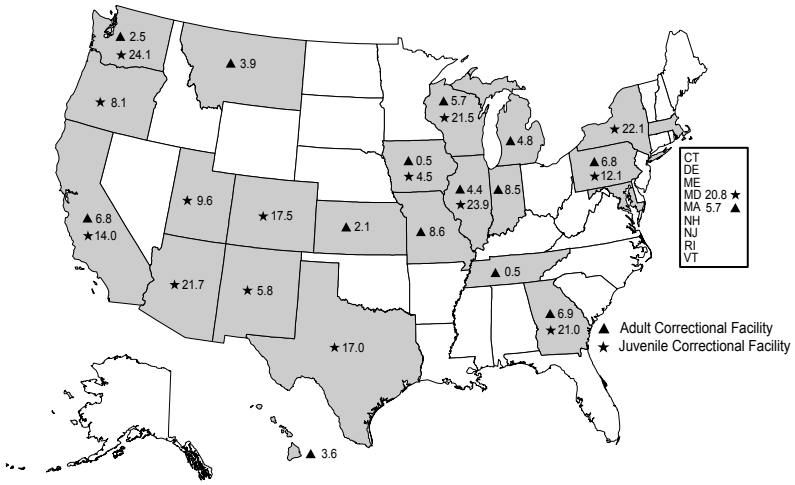
Figure 6. Chlamydia — Prevalence among 16-24 year-old women entering the National Job Training Program by state of residence, 2001



*Fewer than 100 women residing in these states and entering the National Job Training Program were screened for chlamydia in 2001.
Note: The median chlamydia prevalence among female students entering the National Job Training Program in 2001 was 10.6%.

SOURCE: U.S. Department of Labor

Figure 7. Chlamydia — Positivity in women entering juvenile and adult corrections facilities, 2001



Note: The median positivity is presented from facilities reporting >100 test results. Hawaii, Kansas, Pennsylvania, Massachusetts and Wisconsin submitted data from more than one adult corrections facility. California, Texas, Utah, and Wisconsin submitted data from more than one juvenile corrections facility.

SOURCE: Local and State STD Control Programs; Regional Infertility Prevention Programs; Centers for Disease Control and Prevention

Figure 8. Chlamydia — Positivity among 15-30 year old women tested in Indian Health Service Clinics by IHS areas, 2001

*IHS regions not reporting chlamydia positivity data during 2001.
Note: Albuquerque Area - chlamydia positivity data reported for January-October only.

SOURCE: Indian Health Service