

# Sexually Transmitted Disease Surveillance

# STDs 2015



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



# **Sexually Transmitted Disease Surveillance 2015**

**Division of STD Prevention  
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**U.S DEPARTMENT OF HEALTH AND HUMAN SERVICES  
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## Web Site

The online version of this report is available at <https://www.cdc.gov/std/stats>.

## Selected STD Surveillance and Prevention References and Web Sites

### STD Surveillance Reports 1993–2014

<https://www.cdc.gov/std/stats/>

### STD Data in the NCHHSTP Atlas

<https://www.cdc.gov/nchhstp/atlas/>

### STD Data on Wonder

<https://wonder.cdc.gov/std.html>

### STD Data Management & Information Technology

<https://www.cdc.gov/std/Program/data-mgmt.htm>

### STD Fact Sheets

[https://www.cdc.gov/std/healthcomm/fact\\_sheets.htm](https://www.cdc.gov/std/healthcomm/fact_sheets.htm)

### STD Treatment Guidelines

<https://www.cdc.gov/STD/treatment/>

### STD Program Evaluation Guidelines

<https://www.cdc.gov/std/program/pupestd.htm>

### STD Program Operation Guidelines

<https://www.cdc.gov/std/program/GL-2001.htm>

### Recommendations for Public Health Surveillance of Syphilis in the United States

<https://www.cdc.gov/std/SyphSurvReco.pdf>

### Behavioral Surveillance

Youth Risk Behavior Surveillance System:

<https://www.cdc.gov/healthyyouth/data/yrbs/index.htm>

### National Survey of Family Growth

<https://www.cdc.gov/nchs/nsfg.htm>



# Foreword

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Sexually transmitted diseases (STDs) have long been an underestimated opponent in the public health battle. A 1997 Institute of Medicine (IOM) report described STDs as, “hidden epidemics of tremendous health and economic consequence in the United States,” and stated that the “scope, impact, and consequences of STDs are under-recognized by the public and healthcare professionals.”<sup>1</sup> Since well before this report was published, and nearly two decades later, those facts remain unchanged.

It is estimated that there are 20 million new STDs in the U.S. each year, and half of these are among young people ages 15 to 24 years. Across the nation, at any given time, there are more than 110 million total (new and existing) infections.<sup>2</sup> These infections can lead to long-term health consequences, such as infertility; they can facilitate HIV transmission; and they have stigmatized entire subgroups of Americans.

Yet not that long ago, gonorrhea rates were at historic lows, syphilis was close to elimination, and we were able to point to advances in STD prevention, such as better chlamydia diagnostic tests and more screening, contributing to increases in detection and treatment of chlamydial infections. That progress has since unraveled. The number of reported syphilis cases is climbing after being largely on the decline since 1941, and gonorrhea rates are now increasing. This is especially concerning given that we are slowly running out of treatment options to cure *Neisseria gonorrhoeae*. Many young women continue to have undiagnosed chlamydial infections, putting them at risk for infertility.

Beyond the impact on an individual’s health, STDs are also an economic drain on the U.S. healthcare system. Data suggest the direct cost of treating STDs in the U.S. is nearly \$16 billion annually.<sup>3</sup> STD public health programs are increasingly facing challenges and barriers in achieving their mission. In 2012, 52% of state and local STD programs experienced budget cuts. This amounts to reductions in clinic hours, contact tracing, and screening for common STDs. CDC estimates that 21 local health department STD clinics closed that year.

It is imperative that federal, state, and local programs employ strategies that maximize long-term population impact by reducing STD incidence and promoting sexual, reproductive, maternal, and infant health. The resurgence of syphilis, and particularly congenital syphilis, is not an arbitrary event, but rather a symptom of a deteriorating public health infrastructure and lack of access to health care. It is exposing hidden, fragile populations in need that are not getting the health care and preventive services

they deserve. This points to our need for public health and health care action for each of the cases in this report, as they represent real people, not just numbers.

We also need to modernize surveillance to move beyond counting only those cases in persons who have access to diagnosis and treatment, to develop innovative strategies to understand the burden of disease in those who may not access care, and to improve our surveillance systems to collect the information needed to target prevention activities. Further, it will be important for us to measure and monitor the adverse health consequences of STDs, such as ocular and neurosyphilis, pelvic inflammatory disease, ectopic pregnancy, infertility, HIV, congenital syphilis, and neonatal herpes.

It is my hope that a decade from now, we will be reporting on progress, instead of more health inequity in our society. This is our challenge and our call to effectively respond to the information shared in this report.

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<sup>1</sup> Eng TR, Butler WT, editors; Institute of Medicine (US). Summary: The hidden epidemic: confronting sexually transmitted diseases. Washington (DC): National Academy Press; 1997. p. 43.

<sup>2</sup> Satterwhite CL, Torrone E, Meites E, et al. Sexually transmitted infections among US women and men: prevalence and incidence estimates, 2008. *Sex Transm Dis*. 2013 Mar;40(3):187–93. doi: 10.1097/OLQ.0b013e318286bb53. Review.

<sup>3</sup> Owusu-Edusei K Jr, Chesson HW, Gift TL, et al. The estimated direct medical cost of selected sexually transmitted infections in the United States, 2008. *Sex Transm Dis*. 2013 Mar;40(3):197–201. doi: 10.1097/OLQ.0b013e318285c6d2.

# Preface

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*Sexually Transmitted Disease Surveillance 2015* presents statistics and trends for sexually transmitted diseases (STDs) in the United States through 2015. This annual publication is intended as a reference document for policy makers, program managers, health planners, researchers, and others who are concerned with the public health implications of these diseases. The figures and tables in this edition supersede those in earlier publications of these data.

The surveillance information in this report is based on the following sources of data: (1) notifiable disease reporting from state and local STD programs; (2) projects that monitor STD positivity and prevalence in various settings, including the National Job Training Program, the STD Surveillance Network, and the Gonococcal Isolate Surveillance Project; and (3) other national surveys implemented by federal and private organizations.

The STD surveillance systems operated by state and local STD control programs, which provide the case report data for chlamydia, gonorrhea, syphilis, and chancroid, are the data sources of many of the figures and most of the statistical tables in this publication. These systems are an integral part of program management at all levels of STD prevention and control in the United States. Because of incomplete diagnosis and reporting, the number of STD cases reported to the Centers for Disease Control and Prevention is less than the actual number of cases occurring in the U.S. population. National summary data of case reports for other STDs are not available because they are not nationally notifiable diseases.

The collection of information on race/ethnicity has been standardized since 1997 in the United States from the Office of Management and Budget (OMB). Following a revision in the National Electronic Telecommunication System for Surveillance (NETSS) implementation guide in April 2008, jurisdictions reporting STD data were to collect race according to the OMB standard categories: American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian or Other Pacific Islander, White and Multirace. While 49 states collect and report data for all STDs in formats compliant with these standards as of 2015, some jurisdictions only recently adopted this standard and used previous standards to report their case data to CDC in past years. Consequently, historical trend and rate data by race/ethnicity displayed in figures and interpreted in this report for 2011–2015 include only those jurisdictions reporting in the current standard consistently for 2011 through 2015.

*Sexually Transmitted Disease Surveillance 2015* consists of four sections: the National Profile, the Special Focus Profiles, the Tables, and the Appendix. The National Profile section contains figures that provide an overview of STD morbidity in the United States. The accompanying text identifies major findings and trends for selected STDs. The Special Focus Profiles section contains figures and text that describe STDs in selected populations that are a focus of national and state prevention efforts. The Tables section provides statistical information about STDs at county, metropolitan statistical area, regional, state, and national levels. The Appendix includes information on how to interpret the STD surveillance data used to produce this report, as well as information about *Healthy People 2020* STD objectives and progress toward meeting these objectives, Government Performance and Results Act goals and progress toward meeting these goals, and STD surveillance case definitions.

Any comments and suggestions that would improve future publications are appreciated and should be sent to:

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# Guide to Acronyms

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|         |                                                                       |
|---------|-----------------------------------------------------------------------|
| ACA     | Patient Protection and Affordable Care Act                            |
| AI/AN   | American Indians/Alaska Natives                                       |
| CDC     | Centers for Disease Control and Prevention                            |
| CI      | confidence interval                                                   |
| CIA     | chemiluminescence immunoassay                                         |
| CSF     | cerebrospinal fluid                                                   |
| CSTE    | Council of State and Territorial Epidemiologists                      |
| EIA     | enzyme immunoassay                                                    |
| EP      | ectopic pregnancy                                                     |
| FTA-ABS | fluorescent treponemal antibody absorbed                              |
| GISP    | Gonococcal Isolate Surveillance Project                               |
| HEDIS   | Healthcare Effectiveness Data and Information Set                     |
| HMOs    | health maintenance organizations                                      |
| HIV     | human immunodeficiency virus                                          |
| HP2020  | <i>Healthy People 2020</i>                                            |
| HPV     | human papillomavirus                                                  |
| HSV     | herpes simplex virus                                                  |
| IHC     | immunohistochemistry                                                  |
| MHA-TP  | microhemagglutination assay for antibody to <i>Treponema pallidum</i> |
| MICs    | minimum inhibitory concentrations                                     |
| MPC     | mucopurulent cervicitis                                               |
| MSAs    | metropolitan statistical areas                                        |
| MSM     | gay, bisexual, and other men who have sex with men                    |
| MSW     | men who have sex with women only                                      |
| NAATs   | nucleic acid amplification tests                                      |
| NCHHSTP | National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention |
| NCHS    | National Center for Health Statistics                                 |
| NHOPI   | Native Hawaiians/Other Pacific Islanders                              |
| NDTI    | National Disease and Therapeutic Index                                |
| NGU     | nongonococcal urethritis                                              |
| NHANES  | National Health and Nutrition Examination Survey                      |
| NJTP    | National Job Training Program                                         |
| NNDSS   | National Notifiable Diseases Surveillance System                      |
| OMB     | Office of Management and Budget                                       |
| P&S     | primary and secondary                                                 |
| PCR     | polymerase chain reaction                                             |
| PID     | pelvic inflammatory disease                                           |
| RPR     | rapid plasma reagin                                                   |
| SSuN    | STD Surveillance Network                                              |
| STD     | sexually transmitted disease                                          |
| TP-PA   | <i>T. pallidum</i> particle agglutination                             |
| VDRL    | Venereal Disease Research Laboratory                                  |
| WBC     | white blood cell                                                      |



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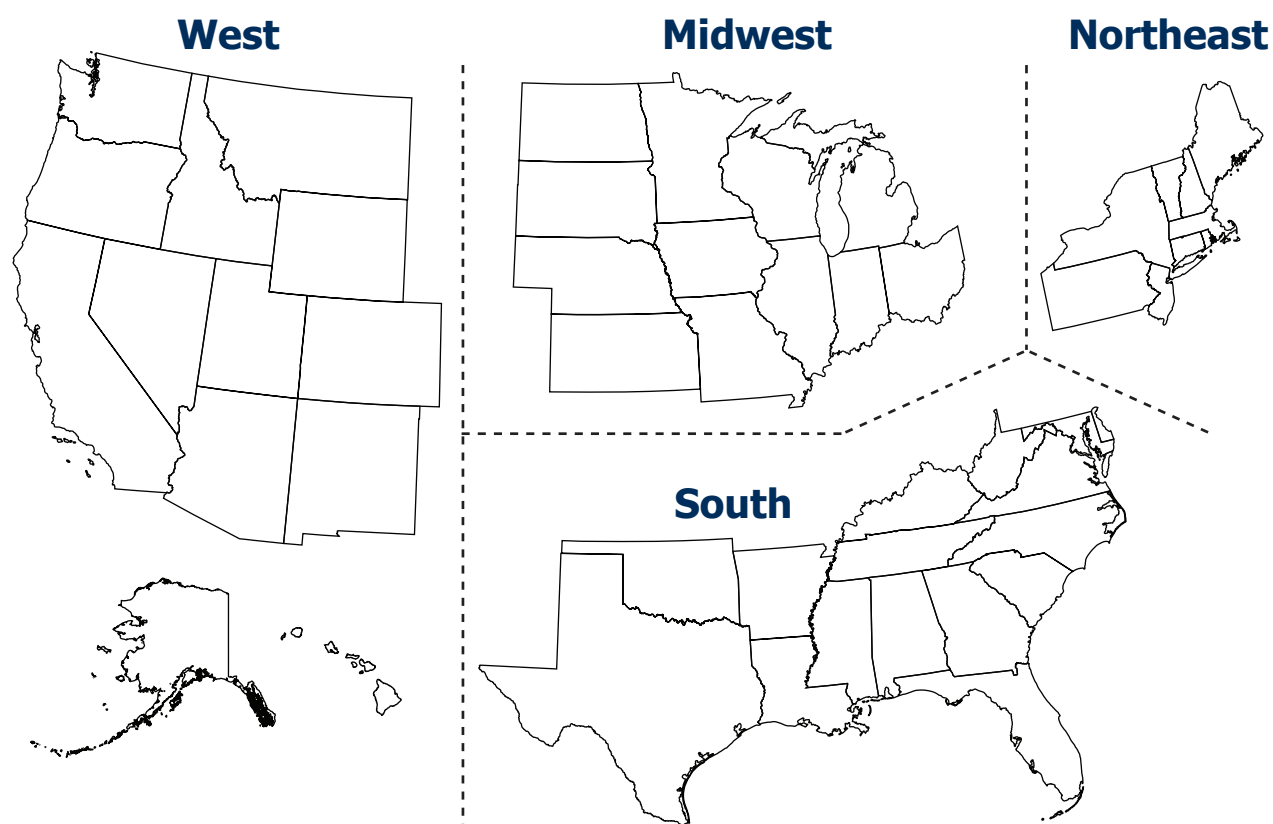
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# Census Regions of the United States



## West

Alaska  
Arizona  
California  
Colorado  
Hawaii  
Idaho  
Montana  
Nevada  
New Mexico  
Oregon  
Utah  
Washington  
Wyoming

## Midwest

Illinois  
Indiana  
Iowa  
Kansas  
Michigan  
Minnesota  
Missouri  
Nebraska  
North Dakota  
Ohio  
South Dakota  
Wisconsin

## South

Alabama  
Arkansas  
Delaware  
District of Columbia  
Florida  
Georgia  
Kentucky  
Louisiana  
Maryland  
Mississippi  
North Carolina  
Oklahoma  
South Carolina  
Tennessee  
Texas  
Virginia  
West Virginia

## Northeast

Connecticut  
Maine  
Massachusetts  
New Hampshire  
New Jersey  
New York  
Pennsylvania  
Rhode Island  
Vermont



# National Overview of Sexually Transmitted Diseases (STDs), 2015

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All Americans should have the opportunity to make choices that lead to health and wellness. Working together, interested, committed public and private organizations, communities, and individuals can take action to prevent sexually transmitted diseases (STDs) and their related health consequences. In addition to federal, state, and local public support for STD prevention activities, local community leaders can promote STD prevention education. Health care providers can assess their patients' risks and talk to them about testing. Parents can better educate their children about STDs and sexual health. Individuals can use condoms consistently and correctly, and openly discuss ways to protect their health with partners and providers. As noted in the Institute of Medicine report, *The Hidden Epidemic: Confronting Sexually Transmitted Diseases*, surveillance is a key component of all our efforts to prevent and control these diseases.<sup>1</sup>

This overview summarizes national surveillance data for 2015 on the three notifiable diseases for which there are federally funded control programs: chlamydia, gonorrhea, and syphilis.

## Chlamydia

In 2015, a total of 1,526,658 cases of *Chlamydia trachomatis* infection were reported to the CDC. This case count corresponds to a rate of 478.8 cases per 100,000 population, an increase of 5.9% compared with the rate in 2014. During 2014–2015, the rate of reported chlamydia cases among women increased 3.8% and the rate among men increased 10.5%. Following three years of decreases in rates during 2011–2014, the rate among women aged 15–19 years increased 1.5% during 2014–2015.

In 2015, the overall rate of chlamydial infection in the United States among women (645.5 cases per 100,000 females) based on reported cases was over two times the rate among men (305.2 cases per 100,000 males), reflecting the larger number of women screened for this infection. However, with the increased availability of urine testing and extragenital testing, men, including gay, bisexual, and other men who have sex with men (collectively referred to as MSM) are increasingly being tested for chlamydial infection. During 2011–2015, the chlamydia rate in men increased 20.0%, compared with a 0.3% increase in women during this period.

The facilities reporting chlamydial infections have changed over the last 10 years. In 2015, over 75% of chlamydia cases were reported from venues outside of STD clinics. Among women, only 4.5% of chlamydia cases were reported through an STD clinic and about a third of cases were reported from private physicians/health maintenance organizations.

Rates of reported chlamydia varied among different racial and ethnic minority populations. In 2015, the rate of chlamydia among Blacks was 5.9 times the rate among Whites, and the rate among American Indians/Alaska Natives was 3.8 times the rate among Whites.

## Gonorrhea

In 2009, the national rate of reported gonorrhea cases reached an historic low of 98.1 cases per 100,000 population. However, during 2009–2012, the rate increased slightly each year to 106.7 cases per 100,000 population in 2012 and then increased again during 2013–2015. In 2015, 395,216 gonorrhea cases were reported for a rate of 123.9 cases per 100,000 population, an increase of 12.8% from 2014.

During 2014–2015 the rate of reported gonorrhea increased 18.3% among men and 6.8% among women. Gonorrhea rates among both men and women increased in every region of the United States, with largest increases in the West and the South. The magnitude of the increase among males suggest either increased transmission or increased case ascertainment (e.g., through increased extra-genital screening) among MSM or both.

In 2015, the rate of reported gonorrhea cases remained highest among Blacks (424.9 cases per 100,000 population) and among American Indians/Alaska Natives (192.8 cases per 100,000 population). While rates of gonorrhea declined 4.0% among Blacks during 2011–2015, rates increased among all other racial and ethnic groups, including a 71.3% increase among American Indians/Alaska Natives.

Antimicrobial resistance remains an important consideration in the treatment of gonorrhea. With increased resistance to the fluoroquinolones and declining susceptibility to cefixime, dual therapy with ceftriaxone and azithromycin is now the only CDC recommended treatment for gonorrhea.<sup>2</sup> In 2015, the percentage of isolates with elevated minimum inhibitory concentrations

(MICs) of cefixime and ceftriaxone remained low (0.5% and 0.3%, respectively). During 2013–2015, the percentage of isolates with reduced azithromycin susceptibility increased from 0.6% to 2.6%. Continued monitoring of susceptibility patterns to these antibiotics is critical.

## Syphilis

In 2000 and 2001, the national rate of reported primary and secondary (P&S) syphilis cases was 2.1 cases per 100,000 population, the lowest rate since reporting began in 1941. However, the P&S syphilis rate has increased almost every year since 2001. In 2015, a total of 23,872 P&S syphilis cases were reported, and the national P&S syphilis rate increased to 7.5 cases per 100,000 population, a 19.0% increase from 2014.

During 2014–2015, the P&S syphilis rate increased both among men (18.1%) and women (27.3%) and rates increased among both sexes in every region of the country. Nationally, P&S syphilis rates increased in every 5-year age group among those aged 15–64 years and in every racial and ethnic group except for American Indians/Alaska Natives during 2014–2015.

During 2000–2015, the rise in the P&S syphilis rate was primarily attributable to increased cases among men and, specifically, among MSM. In 2015, men accounted for over 90% of all cases of P&S syphilis. Of those male cases for whom sex of sex partner was known, 81.7% were MSM. Reported cases of P&S syphilis continued to be characterized by a high rate of HIV co-infection, particularly among MSM. In the 31 states able to classify at least 70.0% of reported P&S syphilis cases as MSM, men who have sex with women (MSW), or women and at least 70.0% of reported cases as HIV-positive or HIV-negative, 49.8% of MSM with P&S syphilis were also reported as HIV-positive compared with 10.0% of cases among MSW and 3.9% of cases among women.

The 2013 rate of congenital syphilis (9.2 cases per 100,000 live births) marked the first increase in congenital syphilis since 2008. During 2013–2014, the rate increased 27.2% and during 2014–2015 increased 6.0%, primarily attributable to an increase in the West. There were 487 cases of congenital syphilis reported in 2015 compared with 461 in 2014. Rates of congenital syphilis were highest among Blacks (35.2 cases per 100,000 live births), followed by Hispanics (15.5 cases per 100,000 live births) and American Indians/Alaska Natives (10.3 cases per 100,000 live births).

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<sup>1</sup> Eng TR, Butler WT, editors; Institute of Medicine (US). The hidden epidemic: confronting sexually transmitted diseases. Washington (DC): National Academy Press; 1997. p 43.

<sup>2</sup> Centers for Disease Control and Prevention. Sexually transmitted diseases treatment guidelines, 2015. MMWR Morb Mortal Wkly Rep 2015; 64(No. RR-3): 1–137

# NATIONAL PROFILE

# NATIONAL PROFILE

# National Profile

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The National Profile section contains figures that show trends and the distribution of nationally reportable STDs (chlamydia, gonorrhea, syphilis, and chancroid) by age, sex, race/ethnicity, and location for the United States.

# Chlamydia

## Background

Chlamydia, caused by infection with *Chlamydia trachomatis*, is the most common notifiable disease in the United States. It is among the most prevalent of all STDs, and since 1994, has comprised the largest proportion of all STDs reported to CDC (Table 1). Studies also demonstrate the high prevalence of chlamydial infections in the general U.S. population, particularly among young women.<sup>1</sup>

Chlamydial infections in women are usually asymptomatic.<sup>2</sup> Untreated infection can result in pelvic inflammatory disease (PID), which is a major cause of infertility, ectopic pregnancy, and chronic pelvic pain. Data from randomized controlled trials of chlamydia screening suggested that screening programs can lead to a reduction in the incidence of PID.<sup>3,4</sup> As with other inflammatory STDs, chlamydial infection could facilitate the transmission of HIV infection.<sup>5</sup> In addition, pregnant women infected with chlamydia can pass the infection to their infants during delivery, potentially resulting in ophthalmia neonatorum, which can lead to blindness, and pneumonia. Because of the large burden of disease and risks associated with infection, CDC recommends annual chlamydia screening for all sexually active women younger than age 25 years and women  $\geq 25$  years at increased risk for infection (e.g., women with new or multiple sex partners).<sup>6</sup>

The Healthcare Effectiveness Data and Information Set (HEDIS) contains a measure which assesses chlamydia screening coverage of sexually active young women who receive medical care through commercial or Medicaid managed care organizations. Among sexually-active women aged 16–24 years in commercial health maintenance organization (HMO) plans, chlamydia screening increased from 23.1% in 2001 to 47.0% in 2014. Among sexually-active women aged 16–24 years covered by Medicaid, screening rates increased from 40.4% in 2001 to 58.0% in 2011, then decreased to 54.6% in 2014.<sup>7</sup> Although chlamydia screening has expanded over the past two decades, many women who are at risk are still not being tested—reflecting, in part, the lack of awareness among some health care providers and the limited resources available to support these screenings.

## Interpreting Rates of Reported Cases of Chlamydia

Trends in rates of reported cases of chlamydia are influenced by changes in incidence of infection, as well as changes in diagnostic, screening, and reporting practices. As chlamydial infections are usually asymptomatic, the

number of infections identified and reported can increase as more people are screened even when incidence is flat or decreasing. Expanded use of more sensitive diagnostic tests (e.g., nucleic acid amplification tests [NAATs]) can also increase the number of infections identified and reported independently of increases in incidence. Although chlamydia has been a nationally notifiable condition since 1994, it was not until 2000 that all 50 states and the District of Columbia required reporting of chlamydia cases. National case rates prior to 2000 reflect incomplete reporting. Additionally, increasing use of electronic laboratory reporting has likely increased the proportion of diagnosed cases that are reported. Consequently, an increasing chlamydia case rate may reflect increases in incidence of infection, screening coverage, and use of more sensitive tests, as well as more complete reporting. Likewise, decreases in chlamydia case rates may suggest decreases in incidence of infection or screening coverage.

## Chlamydia — United States

In 2015, a total of 1,526,658 chlamydial infections were reported to CDC in 50 states and the District of Columbia (Table 1). This case count corresponds to a rate of 478.8 cases per 100,000 population. During 2000–2011, the rate of reported chlamydial infection increased from 251.4 to 453.4 cases per 100,000 population (Figure 1, Table 1). During 2011–2013, the rate of reported cases decreased to 443.5 cases per 100,000 population. The rate of reported cases then increased in 2014 and again in 2015. During 2014–2015, the rate increased 5.9%, from 452.2 to 478.8 cases per 100,000 population (Figure 1, Table 1).

## Chlamydia by Region

In 2015, rates of reported cases of chlamydia were highest in the South (520.5 cases per 100,000 population, 7.0% increase from 2014), followed by the Midwest (464.8, 3.8% increase from 2014), West (464.4, 6.4% increase from 2014), and Northeast (425.9, 5.1% increase from 2014) (Table 3). During 2006–2012, rates of reported cases of chlamydia increased in all regions (Figure 2). During 2012–2013, rates decreased in the Northeast, Midwest, and South and remained stable in the West. During 2013–2015, rates increased in all regions, with the largest increase occurring in the West (421.1 to 464.4 cases per 100,000 population, 10.3% increase) (Table 3).

## Chlamydia by State

In 2015, rates of reported cases of chlamydia by state ranged from 233.3 cases per 100,000 population in New Hampshire to 768.3 cases in Alaska (Figure 3, Table 2);

the rate in the District of Columbia was 1,198.1 cases per 100,000 population (Table 3). During 2014–2015, rates of reported chlamydia increased in 37 states and the District of Columbia. The rate of reported chlamydia cases in 2015 was above the U.S. total in 18 states.

## Chlamydia by Metropolitan Statistical Area

The rate of reported cases of chlamydia per 100,000 population in the 50 most populous metropolitan statistical areas (MSAs) increased 5.5% during 2014–2015 (469.1 to 494.8 cases per 100,000 population, respectively) (Table 6). In 2015, 56.7% of chlamydia cases were reported by these MSAs. During 2014–2015, the rate of reported cases of chlamydia in these MSAs increased 3.1% among women (626.7 to 646.4 cases per 100,000 females) and 10.5% among men (303.4 to 335.4 cases per 100,000 males) (Tables 7 and 8).

## Chlamydia by County

In 2015, 784 (25.0%) of 3,141 counties had rates of reported chlamydia higher than 444 cases per 100,000 population (Figure 4). Seventy counties and independent cities reported 43.0% of all chlamydia cases in 2015 (Table 9). Of the 70 counties and independent cities reporting the highest number of chlamydia cases, 49 (70.0%) were located in the South and West (Table 9).

## Chlamydia by Sex

In 2015, 1,045,143 cases of chlamydia were reported among females for a rate of 645.5 cases per 100,000 females (Table 4). After increasing each year during 2000–2011, the rate among females decreased during 2011–2013 from 643.4 to 619.0 cases per 100,000 females (Figure 1). The rate among females increased 0.4% during 2013–2014 and increased 3.8% during 2014–2015, for a total increase of 4.3% since 2013.

After remaining stable during 2012–2013, the rate of reported cases of chlamydia among males increased each year during 2013–2015 (for a total increase of 17.1%). During 2014–2015, the rate among men increased 10.5%, from 276.1 to 305.2 per 100,000 males. As in previous years, the rate of reported chlamydia cases among females was about two times the rate among males in 2015, likely reflecting a larger number of women screened for this infection (Figure 1, Tables 4 and 5). The lower rate among men also suggests that many of the sex partners of women with chlamydia are not receiving a diagnosis of chlamydia or being reported as having chlamydia.

However, with the advent of highly sensitive NAATs that can be performed on urine, chlamydial infection is increasingly being diagnosed in symptomatic and

asymptomatic men. During 2011–2015, rates of reported cases among men increased 20.0% (from 254.4 to 305.2 cases per 100,000 males) compared with a 0.3% increase among women during the same time period (from 643.4 to 645.5 cases per 100,000 females) (Tables 4 and 5).

## Chlamydia by Age

The rates of reported cases of chlamydia are highest among adolescents and young adults aged 15–24 years (Table 10). In 2015, the rate of reported cases of chlamydia among 15–19 year olds was 1,857.8 cases per 100,000 population and the rate among 20–24 year olds was 2,574.9 cases per 100,000 population (Table 10).

Among females, the highest age-specific rates of reported cases of chlamydia in 2015 were among those aged 15–19 years (2,994.4 cases per 100,000 females) and 20–24 years (3,730.3 cases per 100,000 females) (Figure 5, Table 10). Within these age groups, rates were highest among women aged 19 years (4,790.9 cases per 100,000 females) and 20 years (4,646.2 cases per 100,000 females) (Table 12). After increasing steadily during 2000–2011, the rate among women aged 15–19 years decreased each year during 2011–2014 (for a total decrease of 15.4%), but increased 1.5% during 2014–2015. The rate increased 2.7% among women aged 20–24 years during 2014–2015 (3,632.7 to 3730.3 per 100,000 females) (Table 10).

In 2015, the age-specific rates of reported cases of chlamydia among men, although substantially lower than rates among women, were highest in those aged 20–24 years (1,467.8 cases per 100,000 males) (Figure 5, Table 10). Similar to trends in women, after increasing for the last decade, rates among men aged 15–19 years decreased each year during 2011–2014 (for a total decrease of 11.5%), but increased 6.3% during 2014–2015 (722.4 to 767.6 per 100,000 males). Among men aged 20–24 years, the rate increased 7.8% during 2014–2015 (1,361.3 to 1,467.8 cases per 100,000 males).

## Chlamydia by Race/Ethnicity

Among the 50 states that submitted race and ethnicity data in 2015 according to Office of Management and Budget (OMB) standards (see Section A1.5 in the Appendix), rates of reported cases of chlamydia were highest among Black men and women (Figure P, Table 11B). The rate of reported cases of chlamydia among Blacks was 5.9 times the rate among Whites (1,097.6 and 187.2 cases per 100,000 population, respectively). The rate among American Indians/Alaska Natives (709.1 cases per 100,000 population) was 3.8 times the rate among Whites. The rate among Hispanics (372.7 cases per 100,000 population) was 2.0 times the rate among Whites. The rate among Native Hawaiians/Other Pacific Islanders (622.1 cases per 100,000 population) was 3.3 times the rate among Whites.

The rate among Asians was lower than the rate among Whites (114.1 cases per 100,000 population).

During 2011–2015, 45 states submitted race and ethnicity data according to the OMB standards (see Section A1.5 in the Appendix). During 2011–2015, rates of reported chlamydia cases increased among Asians (7.8%), Native Hawaiians/Other Pacific Islanders (8.9%), Whites (14.6%), and Multirace (43.1%), and decreased in Blacks (11.2%) (Figure 6). Rates were stable among American Indians/Alaska Natives and Hispanics during 2011–2015. During 2014–2015, rates increased among Whites (2.6%), Asians (7.2%), Multirace (5.2%), and Hispanics (2.0%), and decreased among American Indians/Alaska Natives (3.5%). Rates were stable among Blacks and Native Hawaiians/Other Pacific Islanders during 2014–2015 (Figure 6).

More information on chlamydia rates among race/ethnicity groups can be found in the Special Focus Profiles.

## Chlamydia by Reporting Source

In 2015, 7.2% of chlamydia cases were reported from STD clinics, 78.4% were reported from venues outside of STD clinics, and 14.4% had an unknown source of report (Table A2). Over time, the proportion of male cases reported from STD clinic sites has decreased substantially, from 32.7% in 2006 to 12.9% in 2015 (Figure 7). In 2015, among women, only 4.5% of chlamydia cases were reported through an STD clinic (Table A2). A large proportion of cases among women (32.8%) were reported from private physicians/HMOs (Figure 8). Among men, 12.9% of chlamydia cases were reported from an STD clinic in 2015 and 24.4% were reported from private physicians/HMOs (Table A2, Figure 7).

## Chlamydia Prevalence in the Population

The National Health and Nutrition Examination Survey (NHANES; see Section A2.4 in the Appendix) is a nationally representative survey of the U.S. civilian, non-institutionalized population that provides an important measure of chlamydia disease burden in respondents aged 14–39 years. During 2007–2012, the overall prevalence of chlamydia among persons aged 14–39 years was 1.7% (95% Confidence Interval [CI]: 1.4–2.0) (Figure 10). Among sexually active females aged 14–24 years, the population targeted for screening, prevalence was 4.7% (95% CI: 3.2–6.1), with the highest prevalence among non-Hispanic Black females (13.5%, 95% CI: 9.2–17.7) (Figure 11).<sup>1</sup>

## Chlamydia Positivity in Selected Populations

The STD Surveillance Network (SSuN) is an ongoing collaboration of 10 state, county, and city health departments collecting enhanced clinical and behavioral information among patients attending 30 STD clinics in the SSuN jurisdictions (See Section A2.2 of the Appendix).

In 2015, the proportion of STD clinic patients testing positive for chlamydia varied by age, sex, and sexual behavior. Adolescent men who have sex with women only (MSW) had the highest prevalence (31.2%), either reflecting disproportionate testing of men with urethritis or targeted testing of partners of women diagnosed with chlamydia. Prevalence among all those tested decreased with age, though the variation in prevalence by age was not as pronounced for gay, bisexual, and other men who have sex with men (collectively referred to as MSM) (Figure 9).

## Chlamydia Among Special Populations

More information on chlamydia among women of reproductive age, adolescents and young adults, MSM, and minority populations is presented in the Special Focus Profiles.

## Chlamydia Summary

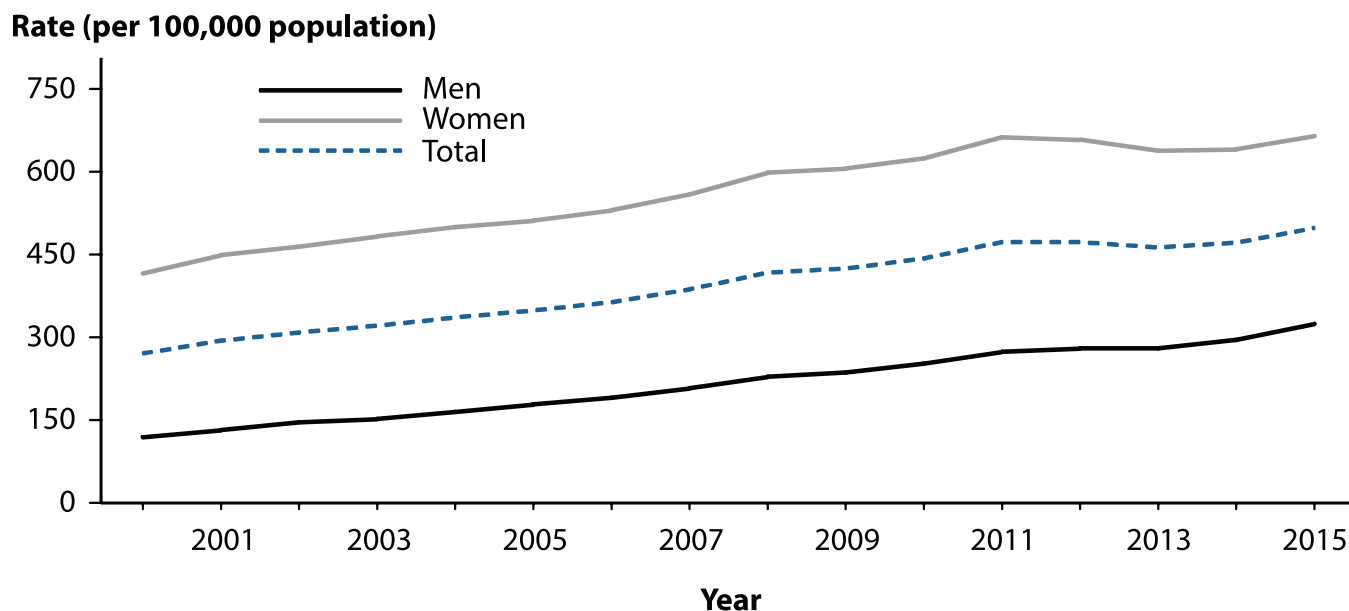
Chlamydia continues to be the most commonly reported nationally notifiable disease, with 1,526,658 cases reported in 2015 and increasing rates of reported cases over each of the last two years. Rates of reported chlamydia cases increased 5.9% during 2014–2015. The Southern region of the U.S. reported the highest rate of chlamydial infection in 2015, as well as the largest rate increase during 2014–2015, at 7.0%. However, the Western region experienced the largest rate increase in reported chlamydia cases during 2011–2015, at 10.7%. In 2015, the rate of reported cases of chlamydia in women was 2.1 times the rate in men; however, the rate in men increased 20.0% during 2011–2015, whereas, the rate in women increased only 0.3% during the same time frame. After decreasing during 2011–2014, the rate among women aged 15–19 years increased 1.5% during 2014–2015.

The facilities reporting chlamydial infections have changed over the last 10 years, with most (78.4%) chlamydia cases in 2015 reported from venues outside of STD clinics. The proportion of men being diagnosed with chlamydia in STD clinics decreased 60.6% from 32.7% in 2006 to 12.9%

in 2015, and approximately one-third of chlamydia cases among women were reported from private physicians/HMOs. Racial differences also persist; reported case rates and prevalence estimates among Blacks continue to be substantially higher than among all other racial/ethnic groups. However, both test positivity and the number of reported cases of *C. trachomatis* infections remain high among most age groups, racial/ethnic groups, geographic areas, and both sexes.

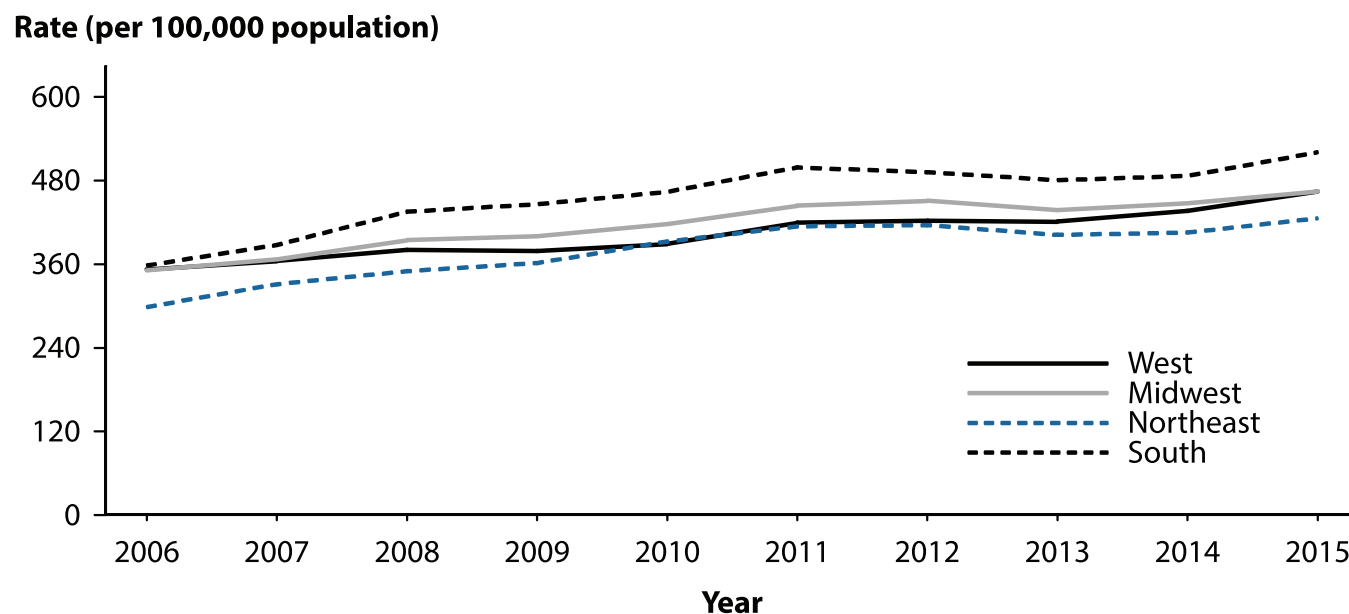
- 
- <sup>1</sup> Torrone E, Papp J, Weinstock H. Prevalence of *Chlamydia trachomatis* genital infection among persons aged 14-39 years - United States, 2007-2012. MMWR. 2014 September 26, 2014; 63(38): 834-8.
  - <sup>2</sup> Stamm WE. *Chlamydia trachomatis* infections in the adult. Sexually Transmitted Diseases. 4th ed. New York, NY: McGraw-Hill; 2008. p. 575-606.
  - <sup>3</sup> Scholes D, Stergachis A, Heidrich FE, et al. Prevention of pelvic inflammatory disease by screening for cervical chlamydial infection. N Engl J Med. 1996; 334(21): 1362-6.
  - <sup>4</sup> Oakeshott P, Kerry S, Aghaizu A, et al. Randomised controlled trial of screening for *Chlamydia trachomatis* to prevent pelvic inflammatory disease: the POPI (prevention of pelvic infection) trial. BMJ. 2010; 340: c1642.
  - <sup>5</sup> Fleming DT, Wasserheit JN. From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection. Sex Transm Infect. 1999; 75(1): 3-17.
  - <sup>6</sup> Centers for Disease Control and Prevention. Sexually transmitted diseases treatment guidelines, 2015. MMWR Recomm Rep. 2015; 64(RR-3): 1-137. Erratum in: MMWR 2015; 64(33): 924.
  - <sup>7</sup> National Committee for Quality Assurance. The state of healthcare quality 2015. Washington, DC: National Committee for Quality Assurance; 2015: p. 67-68.

**Figure 1. Chlamydia — Rates of Reported Cases by Sex, United States, 2000–2015**

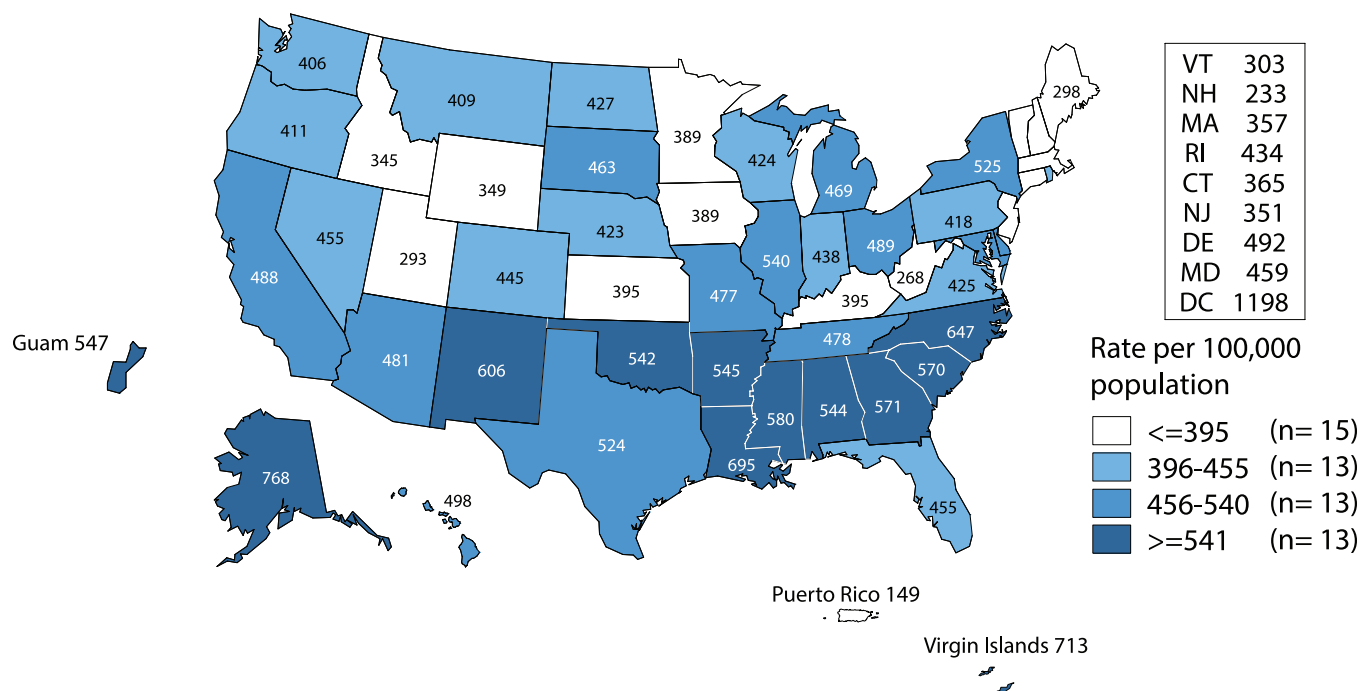


**NOTE:** Data collection for chlamydia began in 1984 and chlamydia was made nationally notifiable in 1995; however, chlamydia was not reportable in all 50 states and the District of Columbia until 2000. Refer to the National Notifiable Disease Surveillance System (NNDSS) website for more information: <https://wwwn.cdc.gov/nndss/conditions/chlamydia-trachomatis-infection/>.

**Figure 2. Chlamydia — Rates of Reported Cases by Region, United States, 2006–2015**

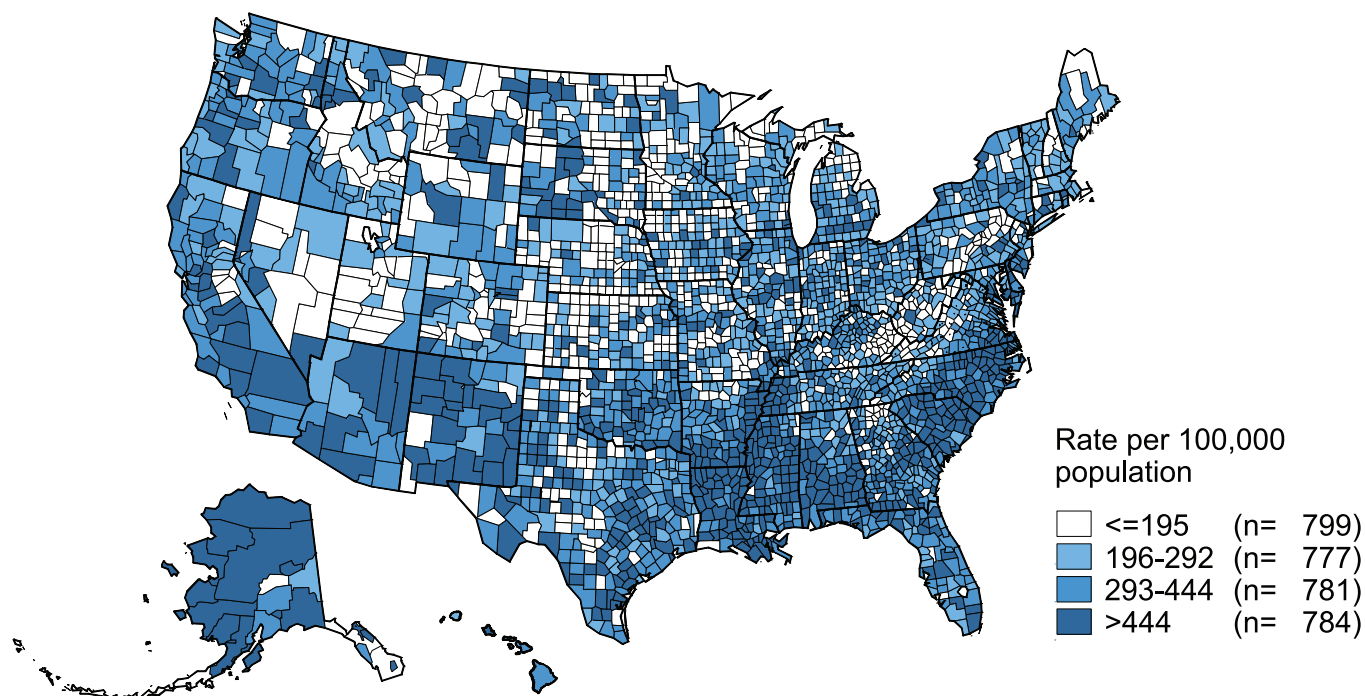


**Figure 3. Chlamydia — Rates of Reported Cases by State, United States and Outlying Areas, 2015**



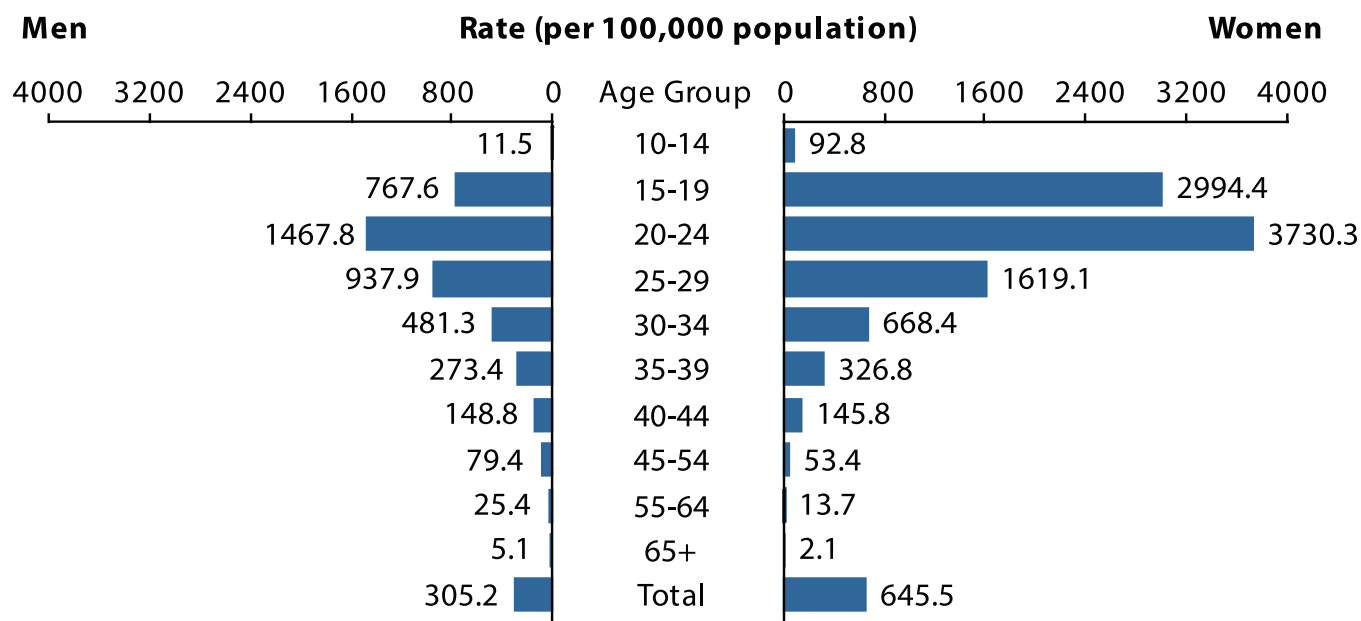
**NOTE:** The total rate of reported cases of chlamydia for the United States and outlying areas (Guam, Puerto Rico, and Virgin Islands) was 475.3 cases per 100,000 population.

**Figure 4. Chlamydia — Rates of Reported Cases by County, United States, 2015**

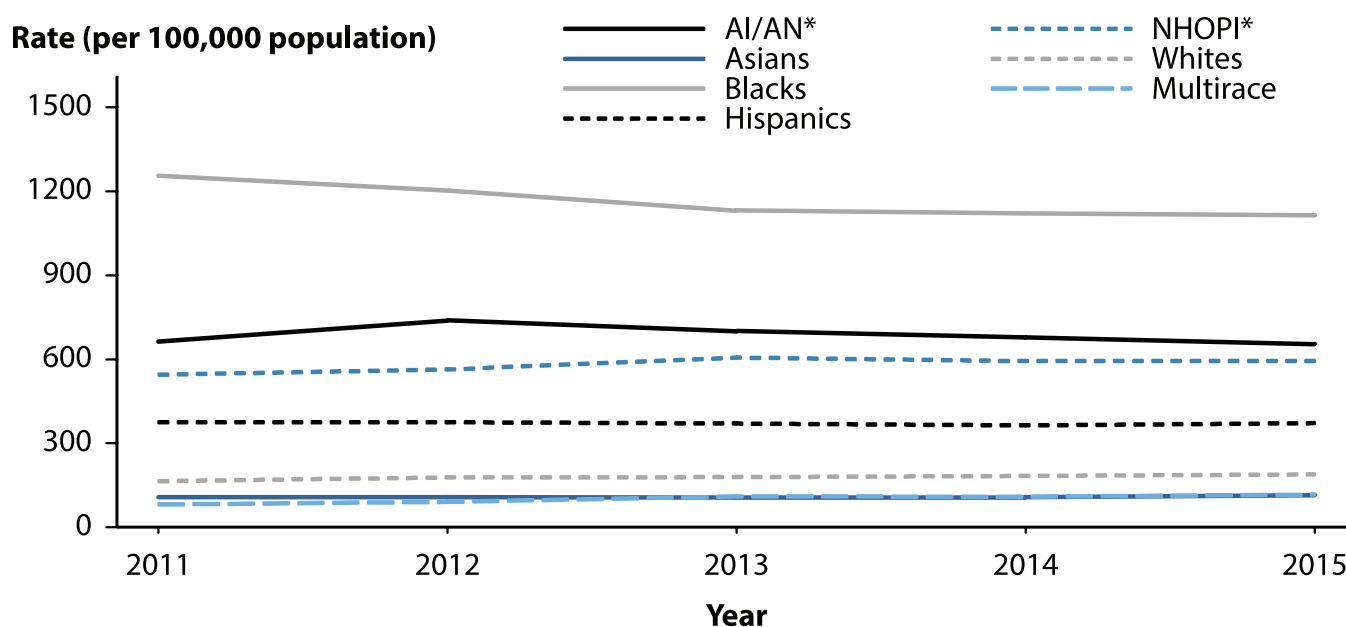


**NOTE:** Refer to the NCHHSTP Atlas for further county-level rate information: <https://www.cdc.gov/nchhstp/atlas/>.

**Figure 5. Chlamydia — Rates of Reported Cases by Age Group and Sex, United States, 2015**



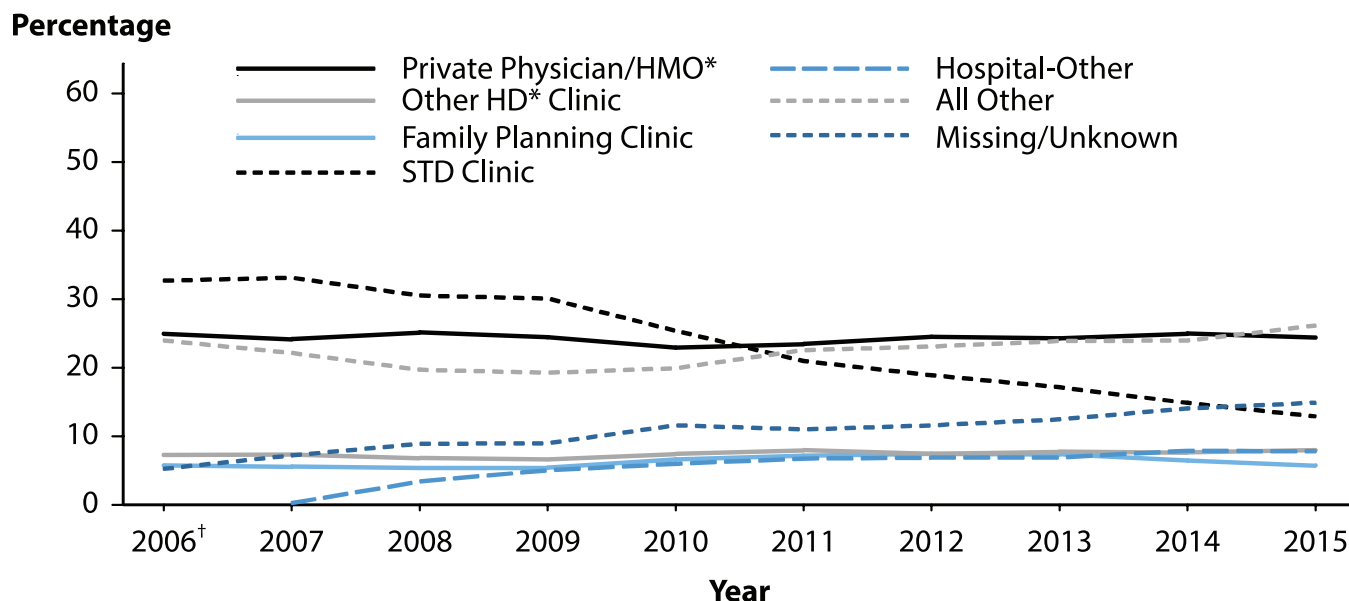
**Figure 6. Chlamydia — Rates of Reported Cases by Race/Ethnicity, United States, 2011–2015**



\* AI/AN = American Indians/Alaska Natives; NHOPi = Native Hawaiians/Other Pacific Islanders.

**NOTE:** Includes 45 states reporting race/ethnicity data in Office of Management and Budget compliant formats during 2011–2015 (see Section A1.5 in the Appendix).

**Figure 7. Chlamydia — Reported Cases Among Men by Reporting Source, United States, 2006–2015**

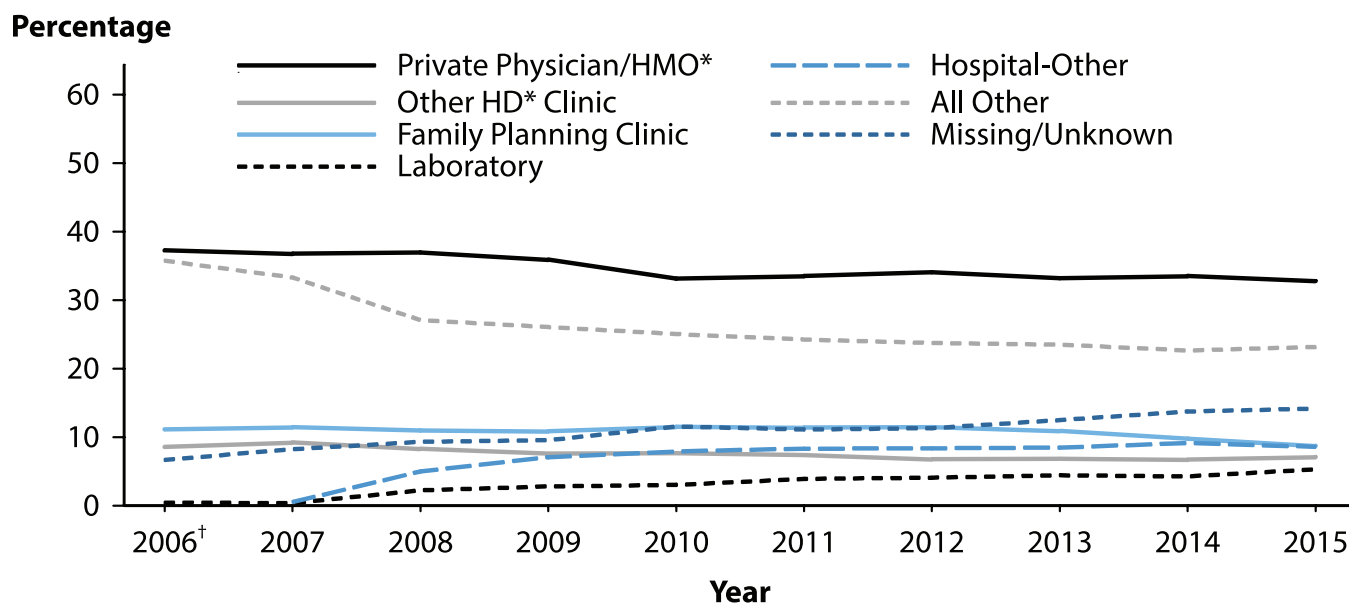


\* HMO = health maintenance organization; HD = health department.

† The variable “Hospital-Other” (i.e., other hospital clinics/facilities) was not added as a response option for reporting source until calendar year 2007; therefore, there are no data available for the “Hospital-Other” variable in 2006.

**NOTE:** All Other includes: Drug Treatment, Tuberculosis Clinic, Correctional Facility, Laboratory, Blood Bank, Labor and Delivery, Prenatal Care, National Job Training Program, School-based Clinic, Mental Health Provider, Indian Health Service, Military, Emergency Room, and HIV Counseling and Testing Site.

**Figure 8. Chlamydia — Reported Cases Among Women by Reporting Source, United States, 2006–2015**

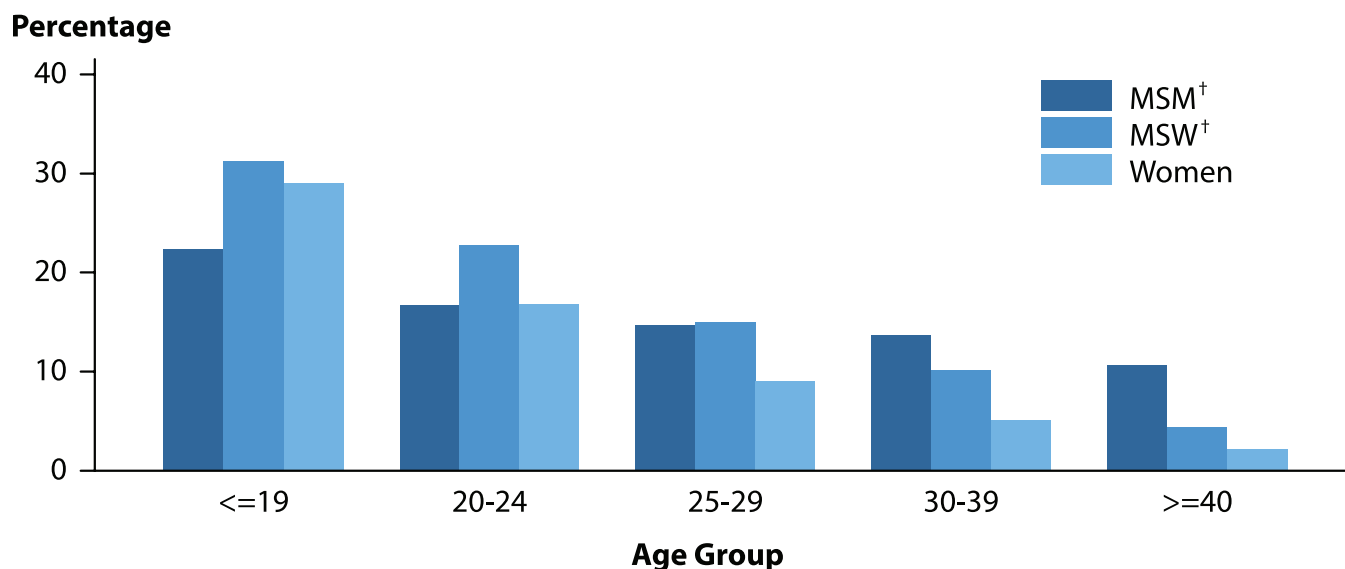


\* HMO = health maintenance organization; HD = health department.

† The variable “Hospital-Other” (i.e., other hospital clinics/facilities) was not added as a response option for reporting source until calendar year 2007; therefore, there are no data available for the “Hospital-Other” variable in 2006.

**NOTE:** All Other includes: Drug Treatment, Tuberculosis Clinic, Correctional Facility, Blood Bank, Labor and Delivery, Prenatal Care, National Job Training Program, School-based Clinic, Mental Health Provider, Indian Health Service, Military, Emergency Room, STD Clinic, and HIV Counseling and Testing Site.

**Figure 9. Chlamydia — Proportion of STD Clinic Patients Testing Positive\* by Age Group, Sex, and Sexual Behavior, STD Surveillance Network (SSuN), 2015**

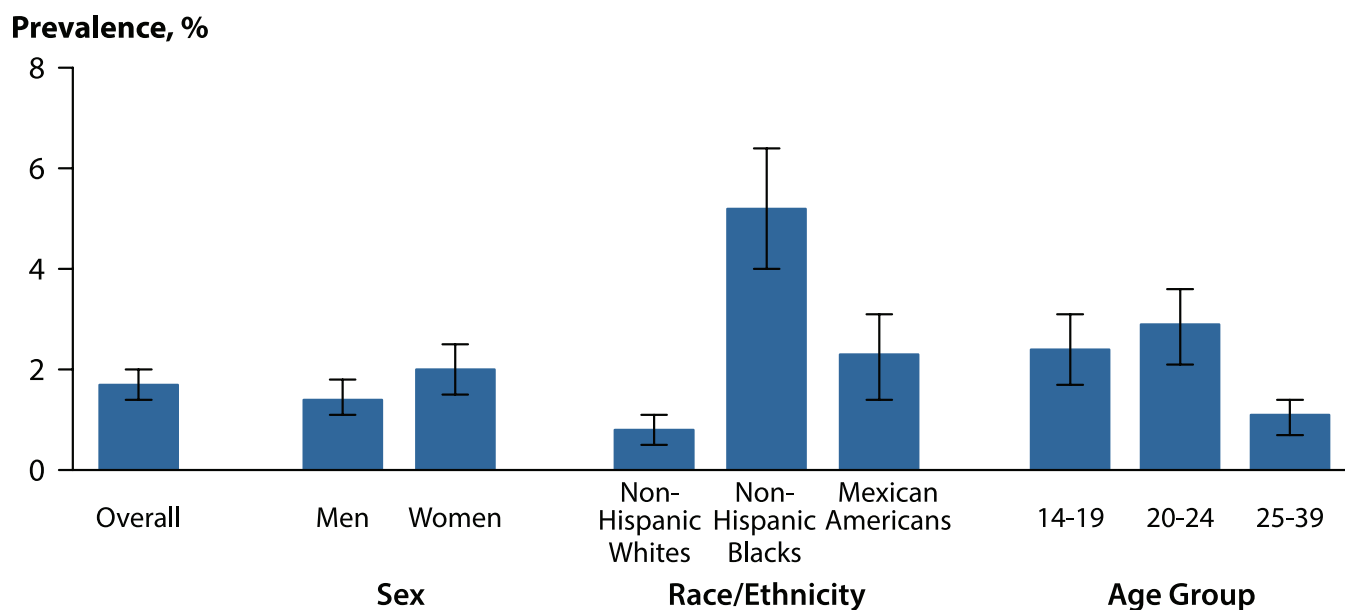


\* Results based on data obtained from patients (n=125,238) attending SSuN STD clinics in 2015 in all SSuN jurisdictions, excluding Minnesota.

<sup>†</sup> MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM); MSW = Men who have sex with women only.

**NOTE:** See Section A2.2 in the Appendix for SSuN methods.

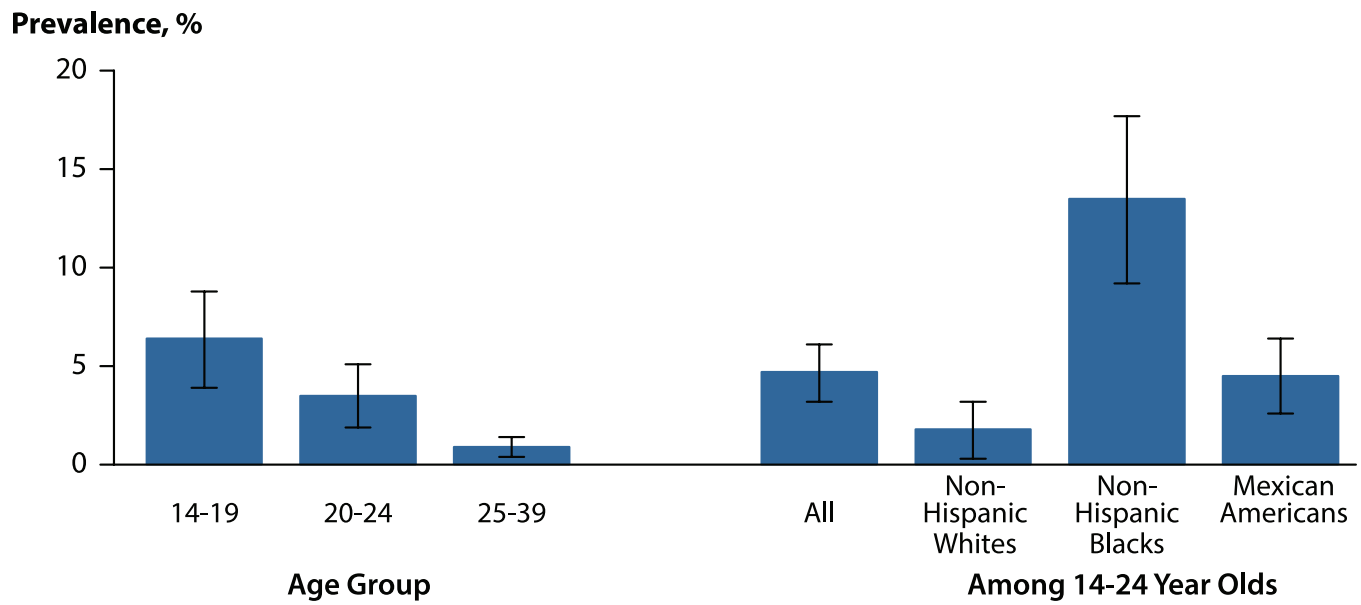
**Figure 10. Chlamydia — Prevalence Among Persons Aged 14–39 Years by Sex, Race/Ethnicity, or Age Group, National Health and Nutrition Examination Survey, 2007–2012**



**NOTE:** Error bars indicate 95% confidence intervals.

**SOURCE:** Torrone E, Papp J, Weinstock H; Centers for Disease Control and Prevention (CDC). Prevalence of *Chlamydia trachomatis* genital infection among persons aged 14–39 — United States, 2007–2012. MMWR Morb Mortal Wkly Rep. 2014 Sep 26;63(38):834–8.

**Figure 11. Chlamydia — Prevalence Among Sexually-Active Women Aged 14–39 Years by Race/ Ethnicity and Age Group, National Health and Nutrition Examination Survey, 2007–2012**



**NOTE:** Error bars indicate 95% confidence intervals.

**SOURCE:** Torrone E, Papp J, Weinstock H; Centers for Disease Control and Prevention (CDC). Prevalence of *Chlamydia trachomatis* genital infection among persons aged 14–39 — United States, 2007–2012. MMWR Morb Mortal Wkly Rep. 2014 Sep 26;63(38):834–8.



# Gonorrhea

## Background

Gonorrhea is the second most commonly reported notifiable disease in the United States. Infections due to *Neisseria gonorrhoeae*, like those resulting from *Chlamydia trachomatis*, are a major cause of pelvic inflammatory disease (PID) in the United States. PID can lead to serious outcomes in women, such as tubal infertility, ectopic pregnancy, and chronic pelvic pain. In addition, epidemiologic and biologic studies provide evidence that gonococcal infections facilitate the transmission of HIV infection.<sup>1</sup> Together, sexual behavior and community prevalence can increase the risk of acquiring gonorrhea. Social determinants of health, such as socioeconomic status, discrimination, and access to quality health care, may contribute to the burden of gonorrhea in a community.<sup>2</sup>

In 2009, the national rate of reported gonorrhea cases reached an historic low of 98.1 cases per 100,000 population (Figure 12, Table 1). However, during 2009–2012, the rate increased slightly each year to 106.7 cases per 100,000 population in 2012. In 2013, the rate decreased slightly to 105.3 cases per 100,000 population and then during 2013–2015, the rate increased each year. In 2015, a total of 395,216 cases were reported for a rate of 123.9 gonorrhea cases per 100,000 population (Figure 12, Table 1).

The increase in the gonorrhea rate during 2014–2015 was observed among both males and females; however, the increase was larger among males (Figure 13). During 2014–2015, the gonorrhea rate increased in all regions and during 2011–2015, with the largest increase in the West (92.2%; 61.4 to 118.0 cases per 100,000 population) (Figure 14, Table 14). The rate of gonorrhea continued to increase among persons in every age group among those aged 15 years and older during 2014–2015 (Table 21).

*N. gonorrhoeae* has progressively developed resistance to each of the antimicrobials used for treatment of gonorrhea. Most recently, declining susceptibility to cefixime (an oral cephalosporin antibiotic) resulted in a change to the CDC treatment guidelines, so that dual therapy with ceftriaxone (an injectable cephalosporin) and azithromycin is now the only CDC-recommended treatment regimen for gonorrhea.<sup>3</sup> The emerging threat of cephalosporin resistance highlights the need for continued surveillance of *N. gonorrhoeae* antimicrobial susceptibility.

The combination of persistently high gonorrhea morbidity in some populations and the threat of cephalosporin-resistant gonorrhea reinforces the need to better understand the epidemiology of gonorrhea.

## Interpreting Rates of Reported Cases of Gonorrhea

Although gonorrhea case reporting is useful for monitoring disease trends, the number of gonorrhea cases reported to CDC is affected by many factors in addition to the actual occurrence of the infection within the population. Changes in the burden of gonorrhea may be masked by changes in screening practices (e.g., screening for chlamydia with tests that also detect *N. gonorrhoeae* infections or increased screening at extra-genital anatomic sites), the use of diagnostic tests with different test performance (e.g., the broader use of nucleic acid amplification tests [NAATs]), and changes in reporting practices. As with other STDs, the reporting of gonorrhea cases to CDC is incomplete.<sup>4</sup> For these reasons, supplemental data on gonorrhea prevalence in persons screened in a variety of settings are useful in assessing the burden of disease in selected populations.

## Gonorrhea — United States

In 2015, a total of 395,216 cases of gonorrhea were reported in the United States, yielding a rate of 123.9 gonorrhea cases per 100,000 population (Table 1). Since 2014, the rate of reported gonorrhea cases increased 12.8% since 2014, and increased 19.9% since 2011.

## Gonorrhea by Region

In 2015, as in previous years, the South had the highest rate of reported gonorrhea cases (146.3 cases per 100,000 population) among the four regions of the United States, followed by the West (118.0 cases per 100,000 population), the Midwest (115.7 cases per 100,000 population), and the Northeast (94.2 cases per 100,000 population) (Figure 14, Table 14). This is the first year that the West has had a higher rate than both the Midwest and Northeast. During 2014–2015, the gonorrhea rate increased in all four regions: 18.1% in the West, 12.6% in the South, 11.6% in the Northeast, and 8.9% in the Midwest (Figure 14, Table 14). During 2011–2015, the rate of gonorrhea in the West increased by 92.2% (61.4 to 118.0 cases per 100,000 population) while other regions had smaller overall increases during this time period (i.e., 10.3% in the Northeast, 9.3% in the South, and 4.4% in the Midwest).

## Gonorrhea by State

In 2015, rates of reported gonorrhea cases per 100,000 population ranged by state from 18.5 in New Hampshire to 221.1 in Louisiana; the gonorrhea rate in the District of

Columbia was 416.2 cases per 100,000 population (Figure 15, Table 13).

During 2014–2015, gonorrhea rates increased in 80% of states and the District of Columbia, decreased in 18% of states, and remained the same in 2% (Table 14).

## Gonorrhea by Metropolitan Statistical Area

The overall rate of reported gonorrhea cases in the 50 most populous metropolitan statistical areas (MSAs) was 137.0 cases per 100,000 population in 2015 and represents a 12.9% increase compared with the rate in 2014 (121.4 cases per 100,000 population) (Table 17). In 2015, 60.6% of reported gonorrhea cases were reported by these MSAs. Since 2011, the gonorrhea rate among females in the 50 most populous MSAs has been lower than the rate among males (Tables 18 and 19). In 2015, the rate among females in these MSAs was 107.0 cases per 100,000 females, while the rate among males was 167.9 cases per 100,000 males.

## Gonorrhea by County

In 2015, 51% of reported gonorrhea cases occurred in just 70 counties or independent cities (Table 20). In 2015, 806 counties (25.7%) in the United States had a rate less than or equal to 16 cases per 100,000 population (Figure 16). The rate ranged from 17 to 41 cases per 100,000 population in 766 counties (24.3%), ranged from 42 to 97 cases per 100,000 population in 787 counties (25.1%), and was more than 97 cases per 100,000 population in 782 counties (24.9%). As in previous years, counties with the highest gonorrhea rates were concentrated in the South.

## Gonorrhea by Sex

As was observed during 2013–2014, the rate of reported gonorrhea cases among males was higher than the rate among females in 2015 (Figure 13, Tables 15 and 16). During 2014–2015, the gonorrhea rate among males increased 18.3% (119.0 to 140.9 cases per 100,000 males), and the rate among females increased 6.8% (100.4 to 107.2 cases per 100,000 females). During 2011–2015, the rate among males increased 44.2% (97.7 to 140.9 cases per 100,000 males), while the rate among females decreased 0.7% (108.0 to 107.2 cases per 100,000 females). The magnitude of the increase among males suggest either increased transmission or increased case ascertainment (e.g., through increased extra-genital screening) among gay, bisexual, and other men who have sex with men (collectively referred to as MSM). However, most jurisdictions do not routinely report sex of sex partner or site of infection for gonorrhea cases, so trends in gonorrhea rates among MSM over time cannot be assessed.

## Gonorrhea by Region and Sex

In all regions, the rate of gonorrhea increased among both males and females during 2014–2015 and the rate of increase among males was larger than the rate of increase among females (Tables 15 and 16). The rate of reported gonorrhea cases increased the most in the West (20.7% among males and 13.8% among females) and in the South, where the rate of reported gonorrhea cases increased 19.2% among males and 6.2% among females (Tables 15 and 16).

## Gonorrhea by Age

In 2015, rates of reported gonorrhea cases continued to be highest among adolescents and young adults (Figure 17, Table 21). In 2015, the highest rates among females were observed among those aged 20–24 years (546.9 cases per 100,000 females) and 15–19 years (442.2 cases per 100,000 females). Among males, the rate was also highest among those aged 20–24 years (539.1 cases per 100,000 males) and 25–29 years (448.8 cases per 100,000 males).

In 2015, persons aged 15–44 years accounted for 92.7% of reported gonorrhea cases with known age. Among 15–19 year olds, rates decreased during 2011–2014; however, during 2014–2015, rates increased 5.2%. During 2014–2015, the gonorrhea rate also increased among other age groups: 7.2% among those aged 20–24 years, 19.1% among those aged 25–29 years, 19.0% among those aged 30–34 years, 25.7% among those aged 35–39 years, and 18.5% among those aged 40–44 years (Figures 18 and 19, Table 21). Among persons aged 15–44 years, increases were observed in all age groups for both men and women.

## Gonorrhea by Race/Ethnicity

In 2015, among the 50 states that submitted data in the race and ethnicity categories according to Office of Management and Budget (OMB) standards (see Section A1.5 in the Appendix), the rate of reported gonorrhea cases remained highest among Blacks (424.9 cases per 100,000 population) (Table 22B). The rate among Blacks was 9.6 times the rate among Whites (44.2 cases per 100,000 population). The gonorrhea rate among American Indians/Alaska Natives (192.8 cases per 100,000 population) was 4.4 times that of Whites, the rate among Native Hawaiians/Other Pacific Islanders (123.0 cases per 100,000 population) was 2.8 times that of Whites, the rate among Hispanics (80.5 cases per 100,000 population) was 1.8 times that of Whites, and the rate among Asians (22.9 cases per 100,000 population) was half the rate of Whites (Table 22B).

During 2011–2015, among the 45 states that submitted race and ethnicity data according to OMB standards (see Section A1.5 in the Appendix) for all five years during that period, the gonorrhea rate increased among Whites

(75.1%), American Indians/Alaska Natives (71.3%), Asians (70.0%), Native Hawaiians/Other Pacific Islanders (61.0%), and Hispanics (53.8%) (Figure 20). During this same time period, the gonorrhea rate decreased 4.0% among Blacks.

More information on gonorrhea rates among race and ethnicity groups can be found in the Special Focus Profiles.

## Gonorrhea by Reporting Source

In 2015, 11.9% of gonorrhea cases were reported from STD clinics, 74.2% were reported from venues outside of STD clinics, and 13.9% had an unknown source of report (Table A2).

During 2006–2015, the number of gonorrhea cases reported by STD clinics declined 60.1% among males and 53.3% among females. During 2014–2015, the number of gonorrhea cases reported by STD clinics continued to decrease; 12.2% among males and 4.9% among females (Figures 21 and 22).

In 2015, among males, private physicians/health maintenance organizations (HMOs) (20.3 %) and STD clinics (15.1 %) were the most common reporting sources, followed by other hospital clinics/facilities (11.5%), other health department clinics (8.9%), and emergency rooms (5.9%) (Figure 21). Among females, private physicians/HMOs (24.8%) were the most common reporting source, followed by other hospital clinics/facilities (12.7%), STD clinics (7.8%), family planning clinics (7.6%), and other health department clinics (6.8%) (Figure 22).

## STD Surveillance Network

The STD Surveillance Network (SSuN) is an ongoing collaboration of states and independently funded cities collecting enhanced information on a representative sample of gonorrhea case reports received from all reporting sources in their jurisdiction. Enhanced gonorrhea case report data for this report were obtained from Cycle 3 of SSuN, which includes 10 jurisdictions, of which 8 collected data on randomly sampled cases in 2015. SSuN collaborators interviewed 2,278 gonorrhea cases representing 3% of total morbidity reported from participating jurisdictions during that time period. The estimated burden of disease represented by MSM, men who have sex with women only (MSW), and women varied substantially across collaborating sites (Figure 23). San Francisco had the highest proportion of estimated MSM cases (87.8 %), while the lowest proportion of morbidity estimated to be attributed to MSM was found in Baltimore at 16.9% (Figure 23). Across all SSuN collaborating jurisdictions in 2015, 42.2% of gonorrhea cases were estimated to be among MSM, 25.4% among MSW, and 32.4% among women.

Clinic data for this report include information from patients attending STD clinics during 2015 in the 10 jurisdictions participating in Cycle 3 of SSuN. In 2015, the proportion of STD clinic patients who tested positive for gonorrhea varied by age group, sex, and sex of sex partner (Figure 24). Among those attending these clinics, MSM disproportionately had higher positivity rates when compared to MSW and women in all age groups. While positivity rates declined with increasing age for heterosexual males and females, a much slower decline by age was seen in MSM.

Additional information about SSuN methodology can be found in Section A2.2 of the Appendix.

## Gonococcal Isolate Surveillance Project

Antimicrobial resistance remains an important consideration in the treatment of gonorrhea.<sup>3,5–7</sup> In 1986, the Gonococcal Isolate Surveillance Project (GISP), a national sentinel surveillance system, was established to monitor trends in antimicrobial susceptibilities of urethral *N. gonorrhoeae* strains in the United States.<sup>7</sup> Data are collected from selected STD clinic sentinel sites and from regional laboratories (Figure 25).

Antimicrobial susceptibility is measured by the minimum inhibitory concentration (MIC), the lowest antimicrobial concentration that inhibits bacterial growth in the laboratory. Increases in MICs demonstrate that the bacteria can survive at higher antimicrobial concentrations in the laboratory. Monitoring of MIC trends is useful because increasing MICs can oftentimes be an early indicator of the emergence of antimicrobial resistance.

Information on the antimicrobial susceptibility criteria used in GISP can be found in Section A2.3 in the Appendix. More information about GISP and additional data can be found at <https://www.cdc.gov/std/GISP>.

## Ceftriaxone Susceptibility

Susceptibility testing for ceftriaxone began in 1987. During 2007–2015, the percentage of GISP isolates that exhibited elevated ceftriaxone MICs, defined as  $\geq 0.125$   $\mu\text{g/ml}$ , fluctuated between 0.1% and 0.4% (Figure 26). Five isolates with decreased ceftriaxone susceptibility (MIC = 0.5  $\mu\text{g/ml}$ ) have been previously identified in GISP: one from San Diego, California (1987), two from Cincinnati, Ohio (1992 and 1993), one from Philadelphia, Pennsylvania (1997), and one from Oklahoma City, Oklahoma (2012).

## Cefixime Susceptibility

Susceptibility testing for cefixime began in 1992, was discontinued in 2007, and was restarted in 2009. The percentage of isolates with elevated cefixime MICs ( $\geq 0.25 \mu\text{g/ml}$ ) declined from 1.4% in 2011 to 0.5% in 2015 (Figure 26).

## Azithromycin Susceptibility

Susceptibility testing for azithromycin began in 1992. Figure 27 displays the distribution of azithromycin MICs among GISP isolates collected during 2011–2015. Most isolates had MICs of 0.125–0.5  $\mu\text{g/ml}$ . During 2011–2013, the percentage of isolates with reduced azithromycin susceptibility (MICs  $\geq 2 \mu\text{g/ml}$ ) ranged from 0.3% to 0.6%; during 2013–2015, the percentage increased from 0.6% to 2.6%.

## Ciprofloxacin Susceptibility

During 1999–2007, the percentage of isolates that were resistant to ciprofloxacin increased from 0.4% to 14.8%. The percentage declined in 2008 and 2009 and then increased. In 2015, 22.3% of GISP isolates were resistant to ciprofloxacin. Among isolates from MSM, 32.1% were resistant; 16.4% of isolates from MSW exhibited ciprofloxacin resistance.

## Susceptibility to Other Antimicrobials

In 2015, 39.6% of isolates collected from GISP sites were resistant to penicillin, tetracycline, ciprofloxacin, or some combination of those antimicrobials (Figure 28). Although these antimicrobials are no longer recommended for treatment of gonorrhea, the resistance phenotypes remain common. Conversely, 60.4% of isolates were susceptible to all three of these antimicrobials.

## Antimicrobial Treatments Given for Gonorrhea

The antimicrobial agents given to GISP patients for gonorrhea therapy are shown in Figure 29. The proportion of patients treated with ceftriaxone 250 mg increased from 84.0% in 2011 to 96.9% in 2013, then decreased to 94.4% in 2015. In 2015, 1.5% of patients were treated with azithromycin 2 grams as monotherapy and 17 patients (0.3%) were treated with cefixime.

## Gonorrhea Among Special Populations

More information about gonorrhea in race/ethnicity groups, women of reproductive age, adolescents, and MSM can be found in the Special Focus Profiles.

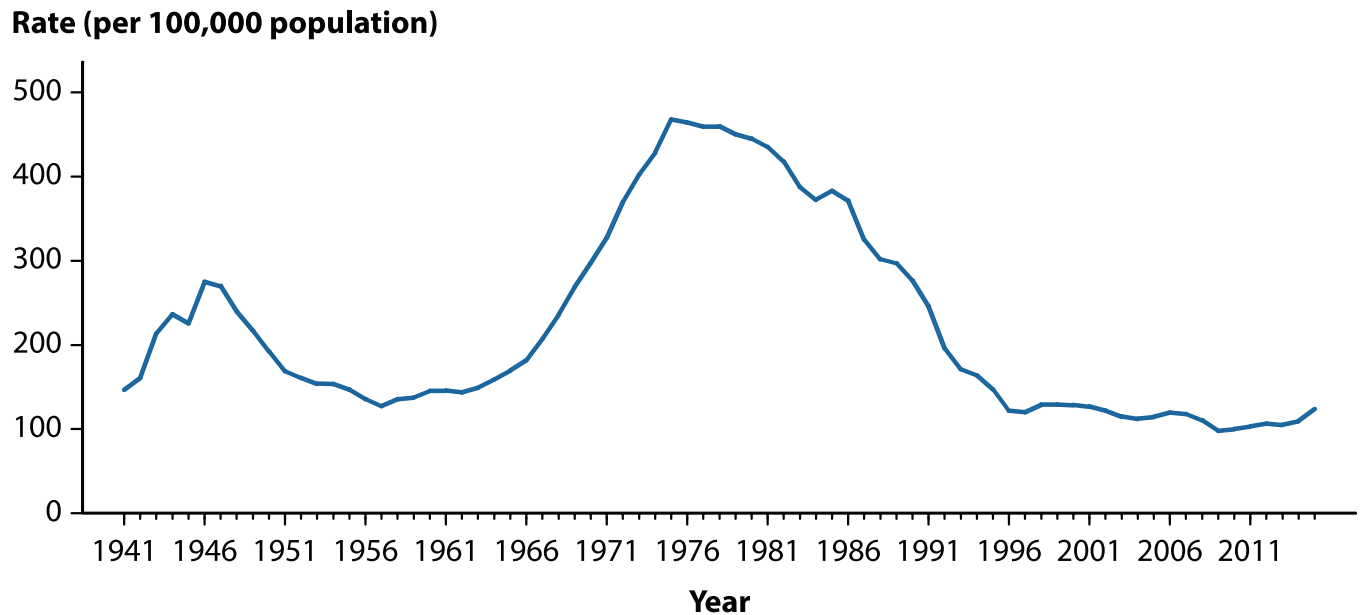
## Gonorrhea Summary

The national rate of reported gonorrhea cases reached a historic low in 2009, but increased each year during 2009–2012. After a temporary decrease in 2013, the gonorrhea rate increased again during 2014–2015. This increase was largely attributable to increases among men. High gonorrhea rates persist in certain geographic areas, among adolescents and young adults, and in some racial/ethnic groups.

GISP continues to monitor for the emergence of decreased susceptibility and resistance to cephalosporins and azithromycin.

- <sup>1</sup> Fleming DT, Wasserheit JN. From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection. *Sex Transm Infect* 1999; 75(1): 3–17.
- <sup>2</sup> Hogben M, Leichter JS. Social determinants and sexually transmitted disease disparities. *Sex Transm Dis*. 2008 Dec; 35(12 Suppl):S13–8.
- <sup>3</sup> Centers for Disease Control and Prevention. Sexually transmitted diseases treatment guidelines, 2015. *MMWR Morb Mortal Wkly Rep* 2015; 64(No. RR-3): 1–137.
- <sup>4</sup> Satterwhite CL, Torrone E, Meites E, et al. Sexually transmitted infections among US women and men: prevalence and incidence estimates, 2008. *Sex Transm Dis*. 2013 Mar;40(3):187–93. doi: 10.1097/OLQ.0b013e318286bb53. Review.
- <sup>5</sup> Centers for Disease Control and Prevention. Update to CDC's sexually transmitted diseases treatment guidelines, 2006: fluoroquinolones no longer recommended for treatment of gonococcal infections. *MMWR Morb Mortal Wkly Rep* 2007; 56: 332–336.
- <sup>6</sup> Centers for Disease Control and Prevention. Sexually transmitted diseases treatment guidelines, 2010. *MMWR Recomm Rep* 2010; 59(No. RR-12): 1–110.
- <sup>7</sup> Schwarcz S, Zenilman J, Schnell D, et al. National surveillance of antimicrobial resistance in *Neisseria gonorrhoeae*. *JAMA* 1990; 1413–1417.

**Figure 12. Gonorrhea — Rates of Reported Cases by Year, United States, 1941–2015**



**NOTE:** Data collection for gonorrhea began in 1941; however, gonorrhea became nationally notifiable in 1944. Refer to the National Notifiable Disease Surveillance System (NNDSS) website for more information: <https://wwwn.cdc.gov/nndss/conditions/gonorrhea/>.

**Figure 13. Gonorrhea — Rates of Reported Cases by Sex, United States, 2006–2015**

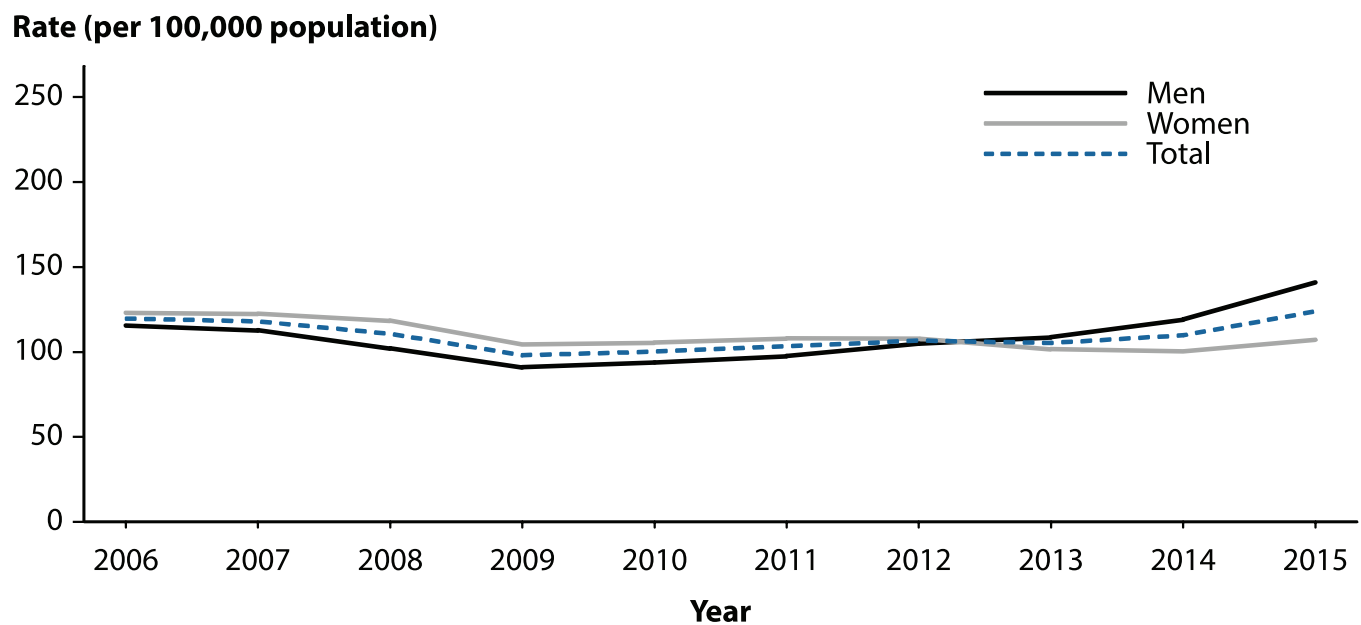


Figure 14. Gonorrhea — Rates of Reported Cases by Region, United States, 2006–2015

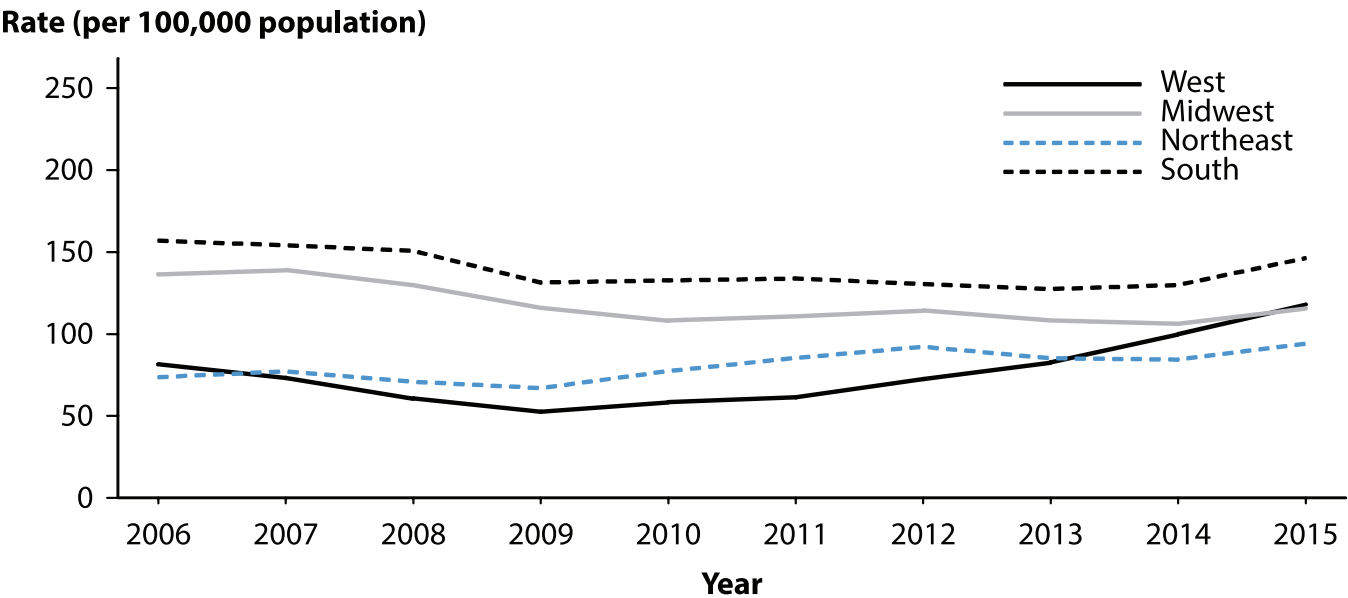
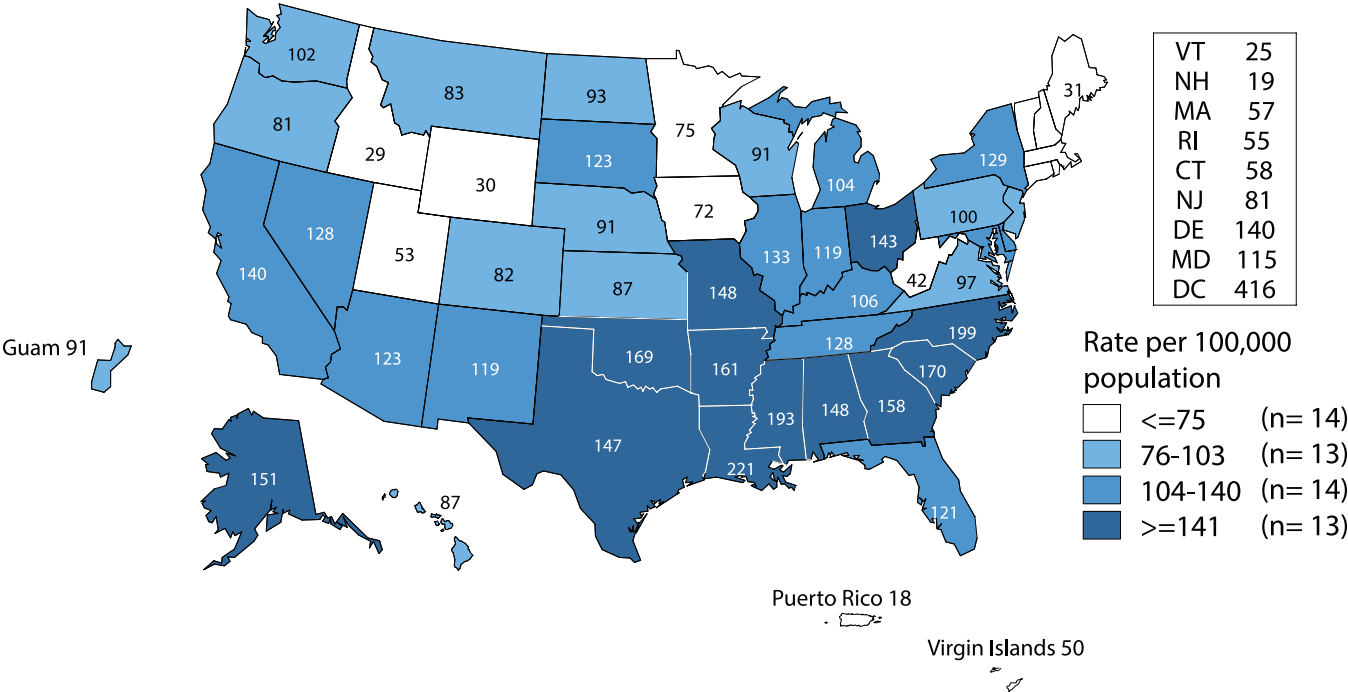
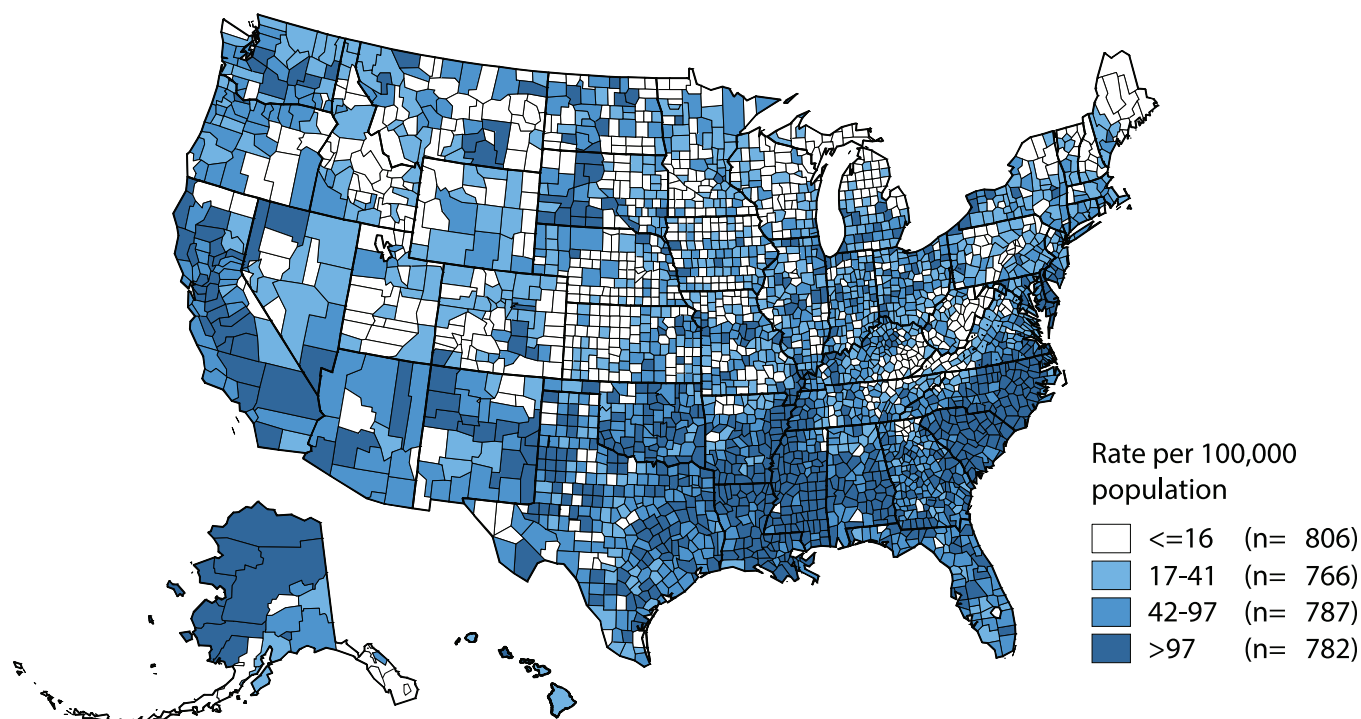


Figure 15. Gonorrhea — Rates of Reported Cases by State, United States and Outlying Areas, 2015



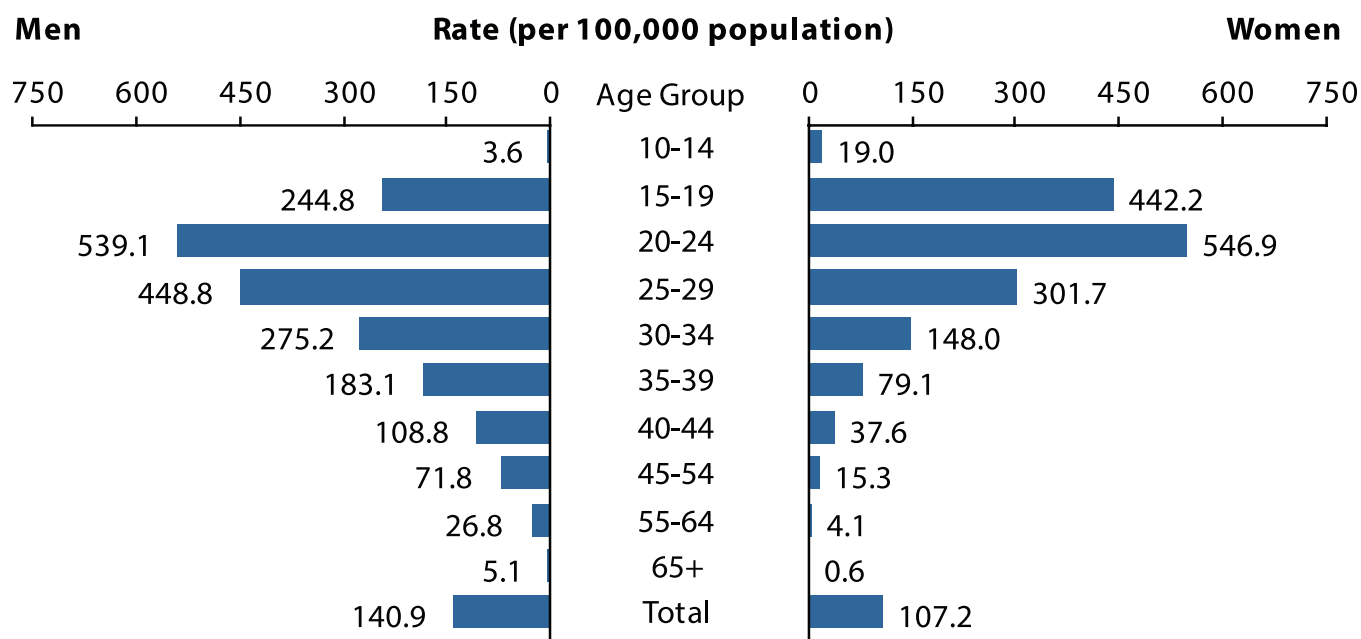
**NOTE:** The total rate of reported cases of gonorrhea for the United States and outlying areas (Guam, Puerto Rico, and Virgin Islands) was 122.7 cases per 100,000 population.

**Figure 16. Gonorrhea — Rates of Reported Cases by County, United States, 2015**

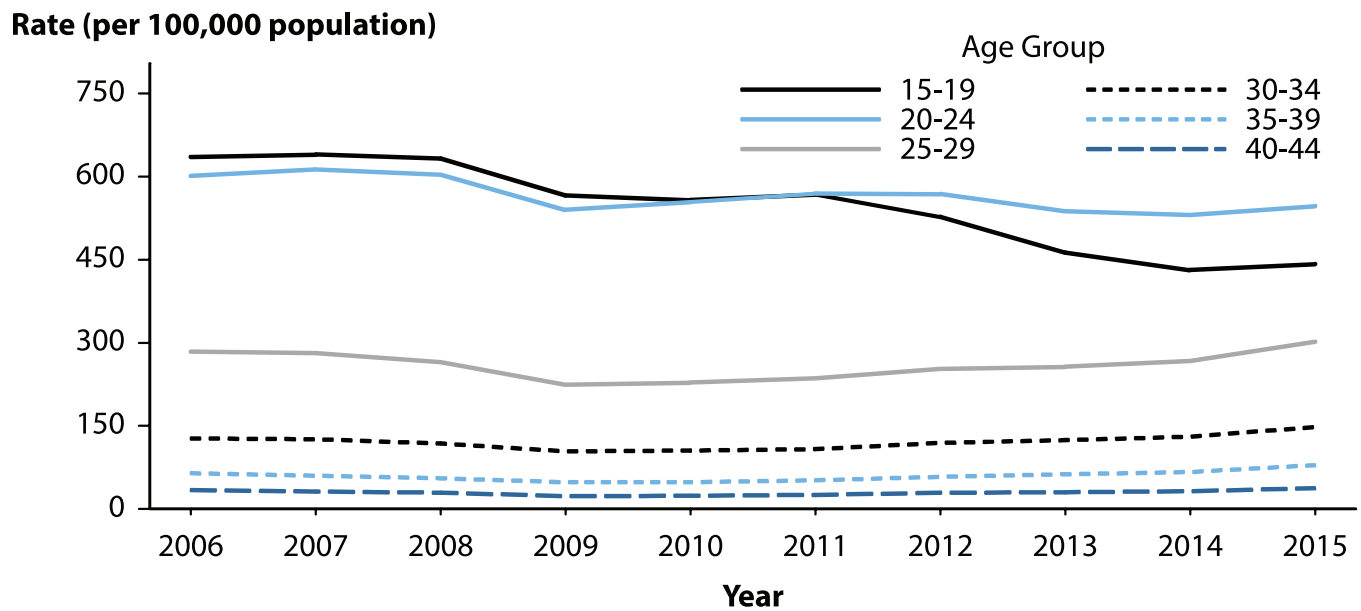


**NOTE:** Refer to the NCHHSTP Atlas for further county-level rate information: <https://www.cdc.gov/nchhstp/atlas/>.

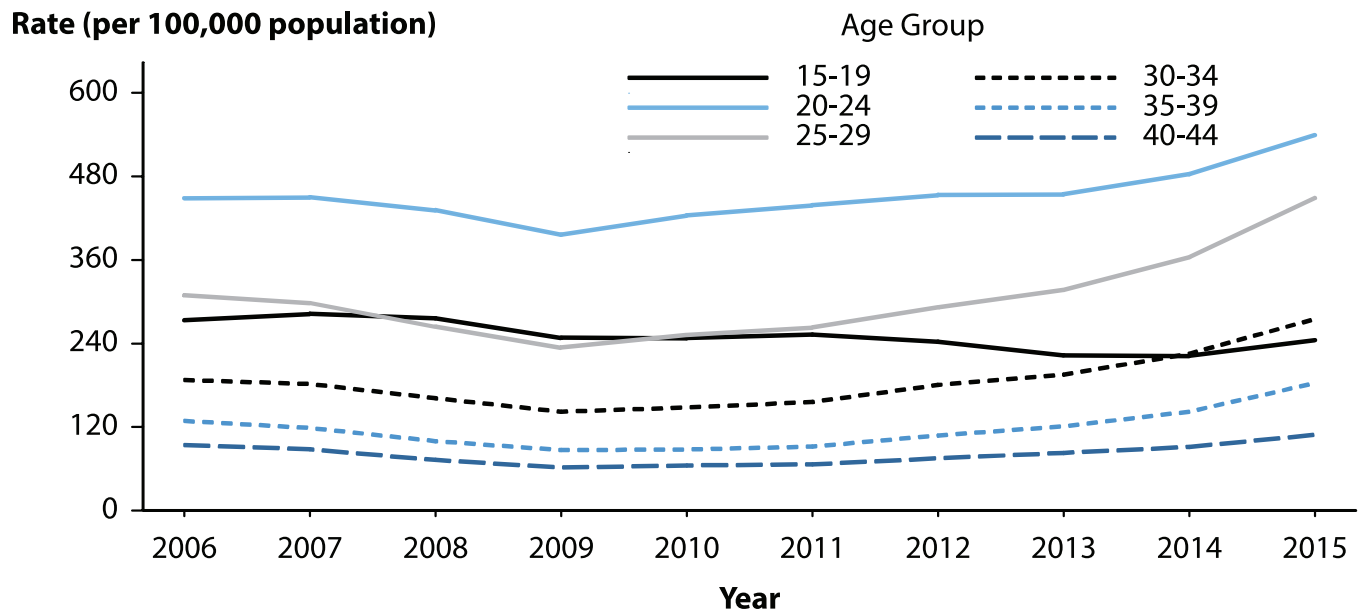
**Figure 17. Gonorrhea — Rates of Reported Cases by Age Group and Sex, United States, 2015**



**Figure 18. Gonorrhea — Rates of Reported Cases Among Women Aged 15–44 Years by Age Group, United States, 2006–2015**

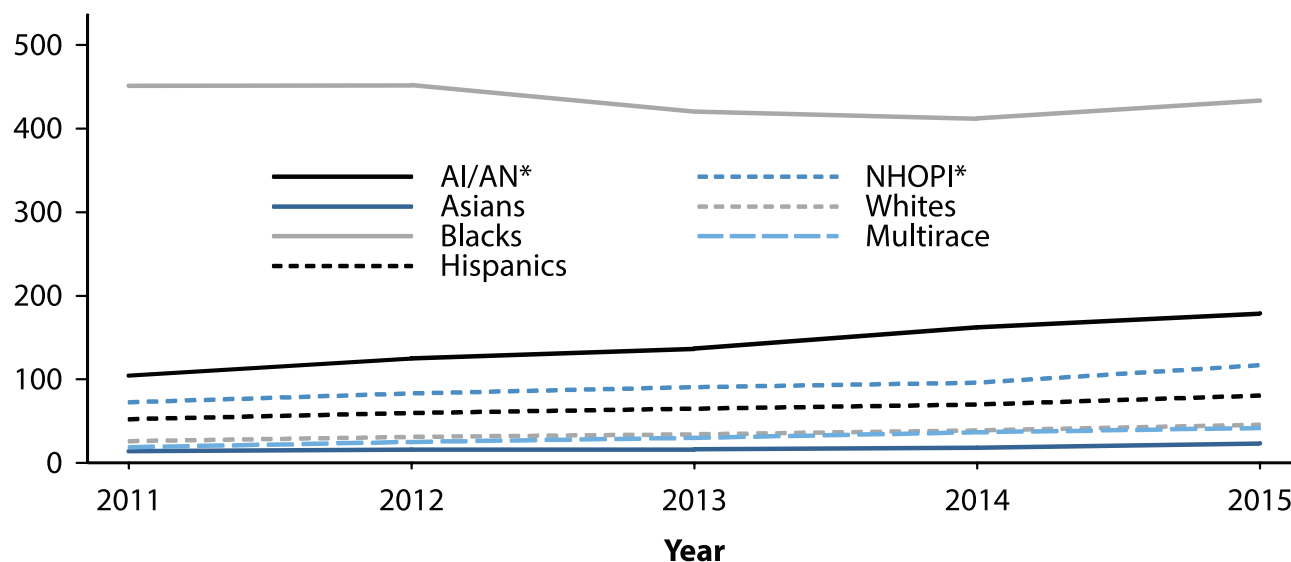


**Figure 19. Gonorrhea — Rates of Reported Cases Among Men Aged 15–44 Years by Age Group, United States, 2006–2015**



**Figure 20. Gonorrhea — Rates of Reported Cases by Race/Ethnicity, United States, 2011–2015**

Rate (per 100,000 population)

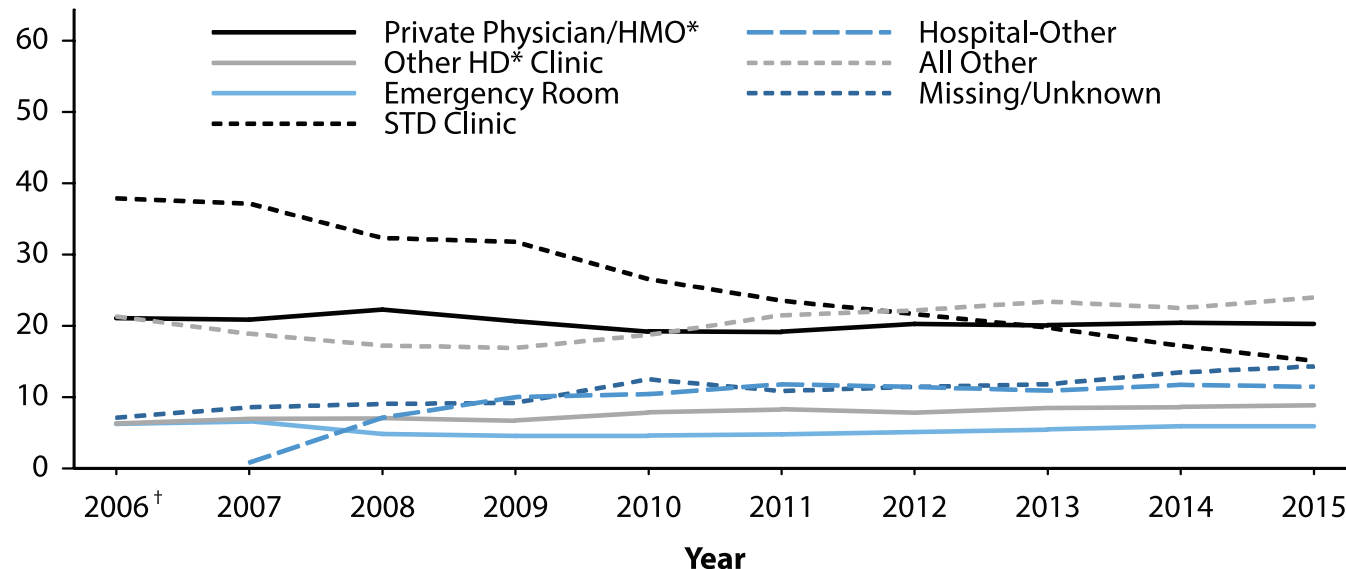


\* AI/AN = American Indians/Alaska Natives; NHOPI = Native Hawaiians/Other Pacific Islanders.

**NOTE:** Includes 45 states reporting race/ethnicity data in Office of Management and Budget compliant formats during 2011–2015 (see Section A1.5 in the Appendix).

**Figure 21. Gonorrhea — Reported Cases Among Men by Reporting Source, United States, 2006–2015**

Percentage

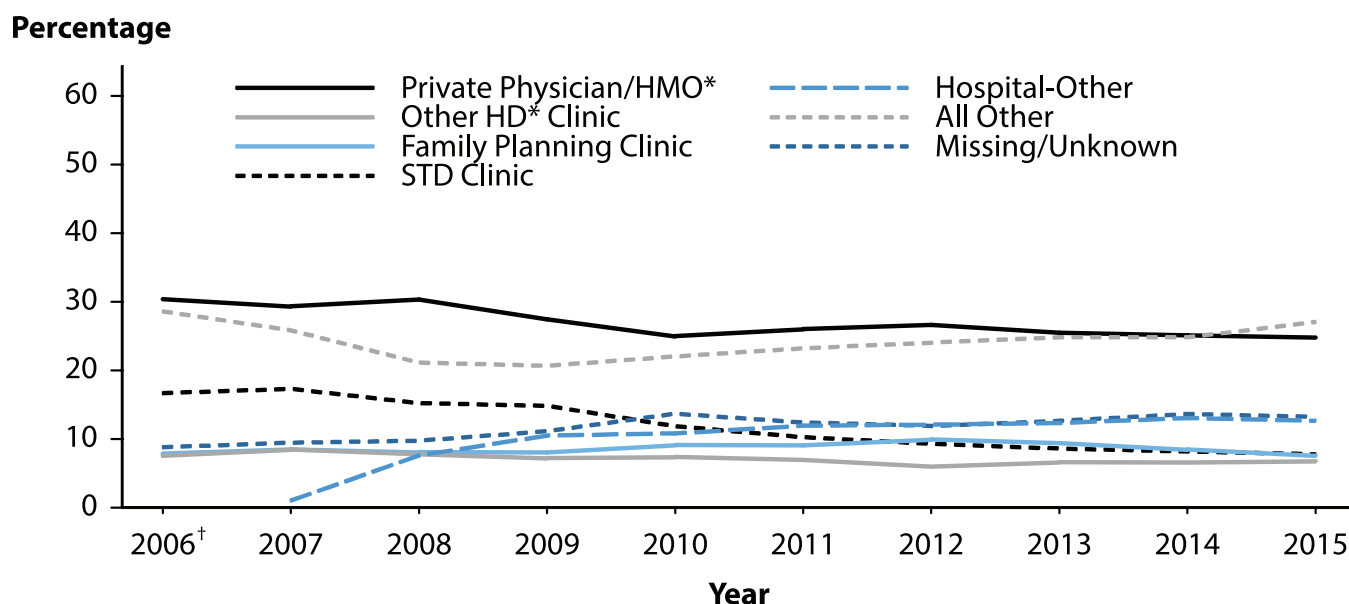


\* HMO = health maintenance organization; HD = health department.

<sup>†</sup> The variable “Hospital-Other” (i.e., other hospital clinics/facilities) was not added as a response option for reporting source until calendar year 2007; therefore, there are no data available for the “Hospital-Other” variable in 2006.

**NOTE:** All Other includes: Drug Treatment, Tuberculosis Clinic, Correctional Facility, Laboratory, Blood Bank, Labor and Delivery, Prenatal Care, National Job Training Program, School-based Clinic, Mental Health Provider, Indian Health Service, Military, Family Planning, and HIV Counseling and Testing Site.

**Figure 22. Gonorrhea — Reported Cases Among Women by Reporting Source, United States, 2006–2015**

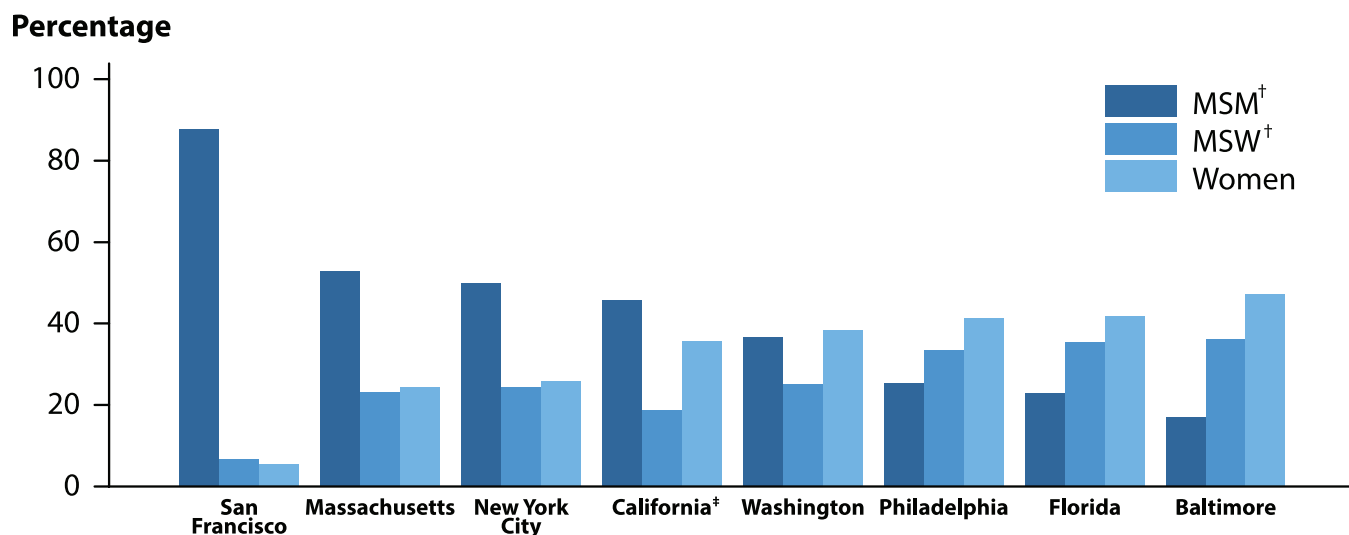


\* HMO = health maintenance organization; HD = health department.

† The variable “Hospital-Other” (i.e., other hospital clinics/facilities) was not added as a response option for reporting source until calendar year 2007; therefore, there are no data available for the “Hospital-Other” variable in 2006.

**NOTE:** All Other includes: Drug Treatment, Tuberculosis Clinic, Correctional Facility, Laboratory, Blood Bank, Labor and Delivery, Prenatal Care, National Job Training Program, School-based Clinic, Mental Health Provider, Indian Health Service, Military, Emergency Room, and HIV Counseling and Testing Site.

**Figure 23. Estimated Proportion\* of MSM†, MSW†, and Women Among Gonorrhea Cases by Jurisdiction, STD Surveillance Network (SSuN), 2015**



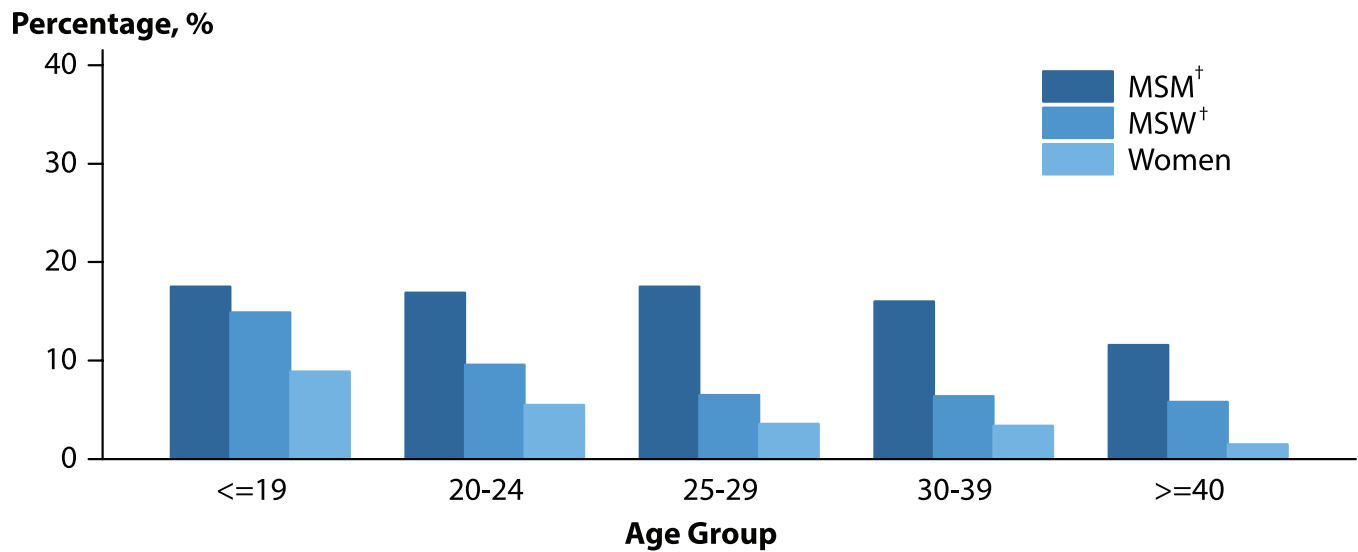
\* Estimate based on weighted analysis of data obtained from interviews (n=2,278) conducted among a random sample of reported gonorrhea cases during June to December 2015.

† MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM); MSW = Men who have sex with women only.

\* California data excludes San Francisco (shown separately).

**NOTE:** See section A2.2 in the Appendix for SSuN methods.

**Figure 24. Gonorrhea — Proportion of STD Clinic Patients Testing Positive\* by Age Group, Sex, and Sexual Behavior, STD Surveillance Network (SSuN), 2015**

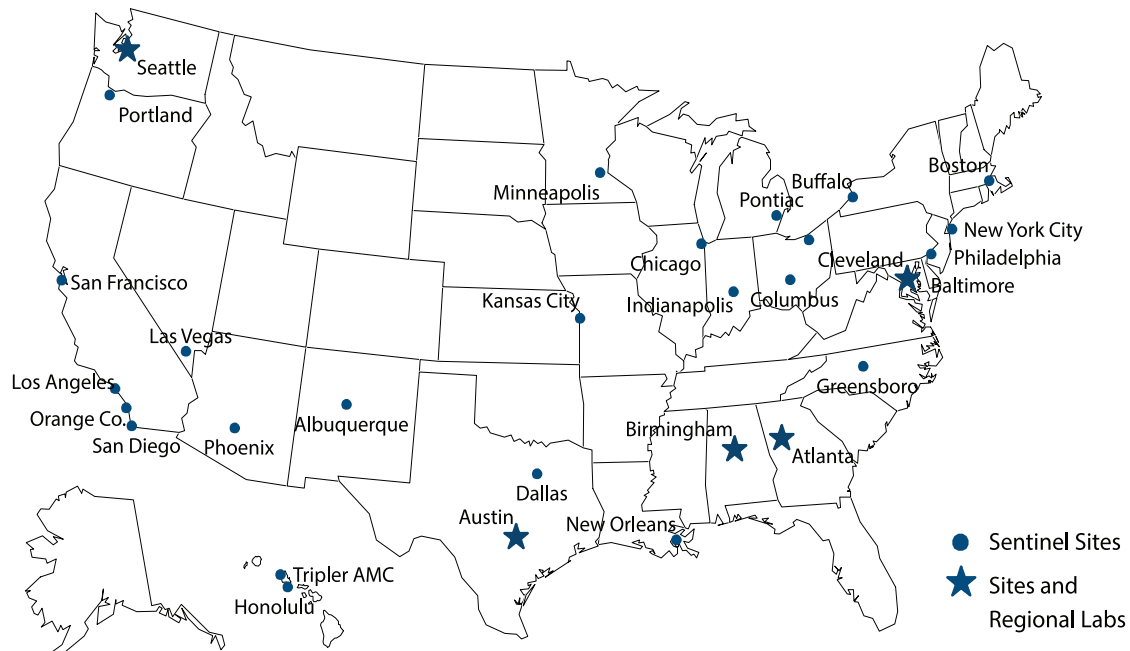


\* Results based on data obtained from patients (n=124,441) attending SSuN STD clinics in 2015 in all SSuN jurisdictions, excluding Minnesota.

<sup>†</sup> MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM); MSW = Men who have sex with women only.

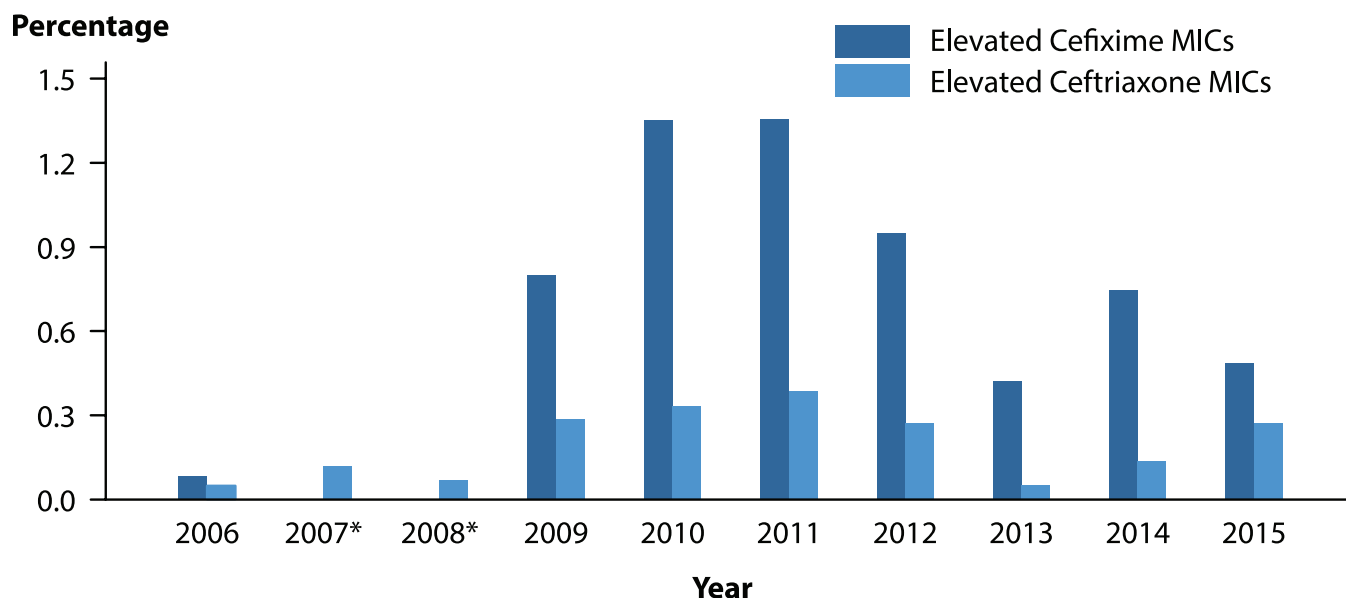
**NOTE:** See section A2.2 in the Appendix for SSuN methods.

**Figure 25. Location of Participating Sentinel Sites and Regional Laboratories, Gonococcal Isolate Surveillance Project (GISP), United States, 2015**



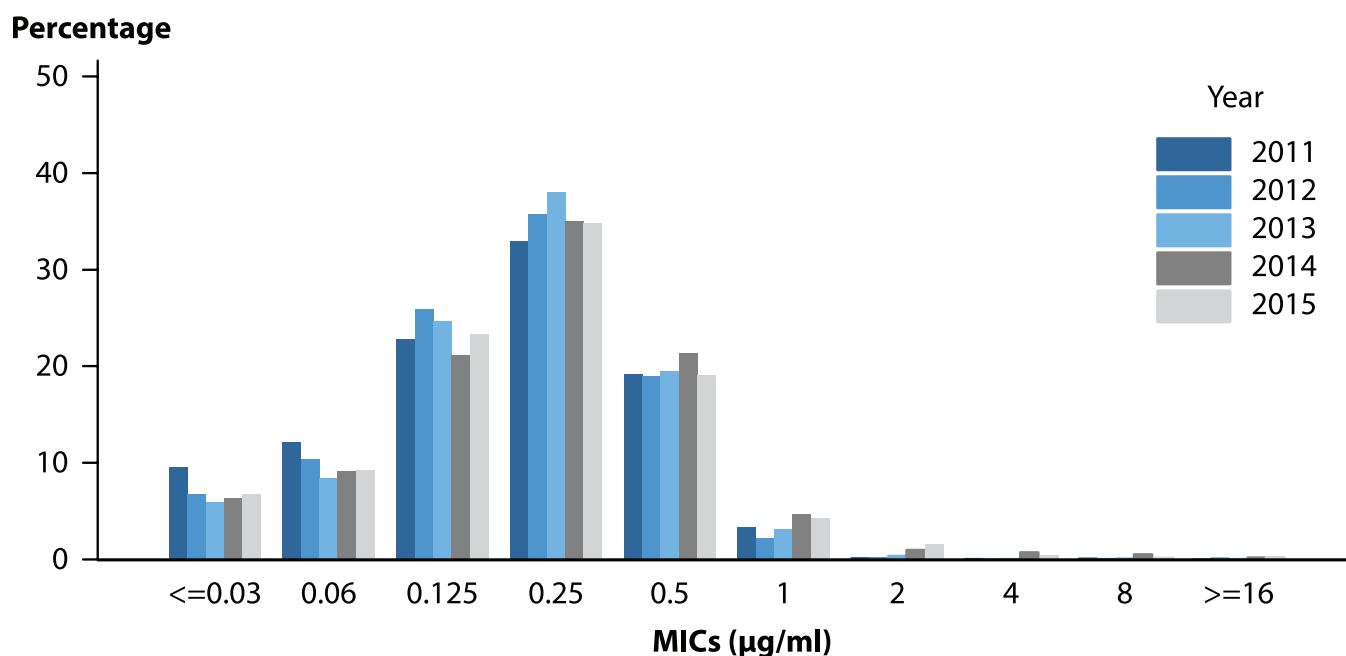
**NOTE:** Austin is a regional laboratory only.

**Figure 26. *Neisseria gonorrhoeae* — Percentage of Isolates with Elevated Ceftriaxone Minimum Inhibitory Concentrations (MICs) ( $\geq 0.125$   $\mu\text{g/ml}$ ) and Elevated Cefixime MICs ( $\geq 0.25$   $\mu\text{g/ml}$ ), Gonococcal Isolate Surveillance Project (GISP), 2006–2015**

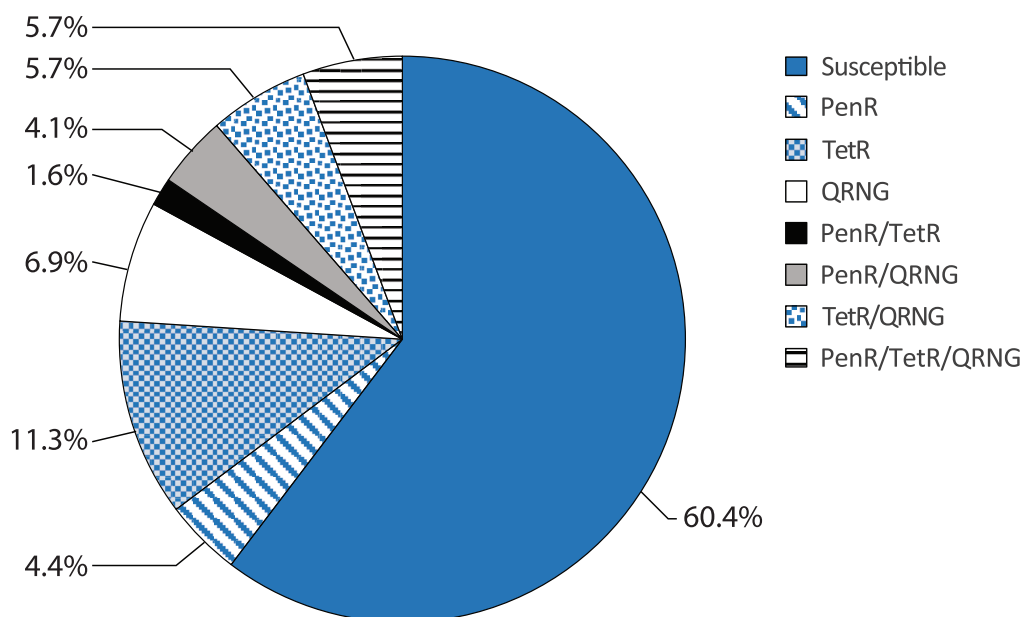


\* Isolates not tested for cefixime susceptibility in 2007 and 2008.

**Figure 27. *Neisseria gonorrhoeae* — Distribution of Azithromycin Minimum Inhibitory Concentrations (MICs) by Year, Gonococcal Isolate Surveillance Project (GISP), 2011–2015**

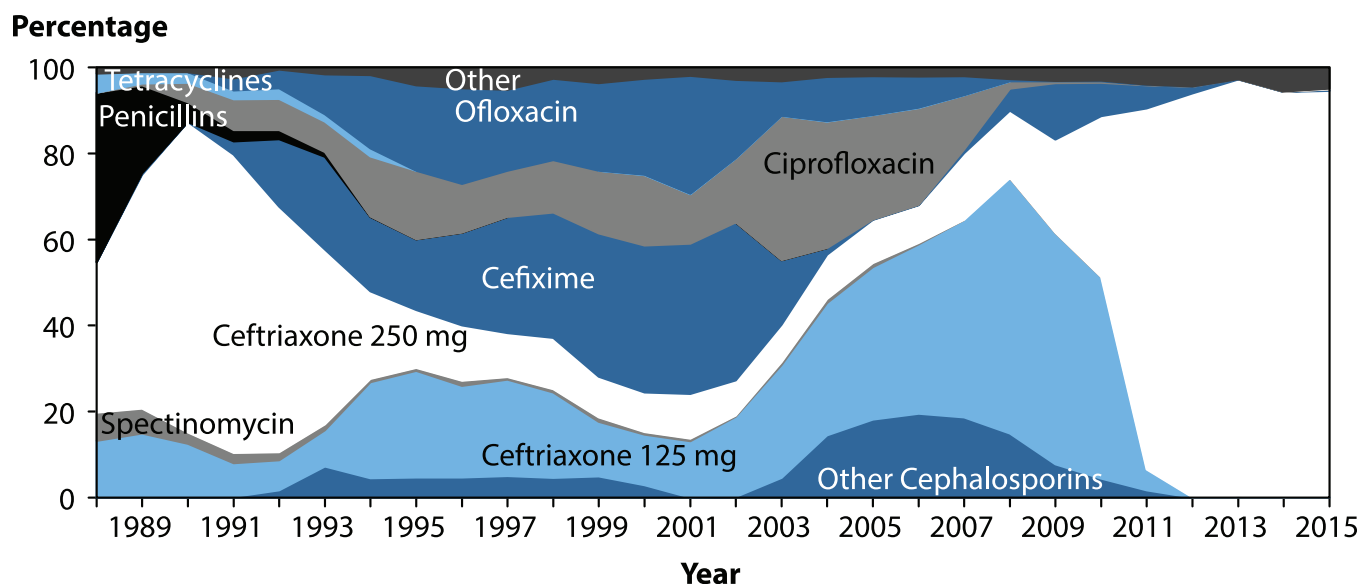


**Figure 28. *Neisseria gonorrhoeae* — Distribution of Isolates with Penicillin, Tetracycline, and/or Ciprofloxacin Resistance, Gonococcal Isolate Surveillance Project (GISP), 2015**



**NOTE:** PenR = penicillinase-producing *Neisseria gonorrhoeae* and chromosomally-mediated penicillin-resistant *N. gonorrhoeae*; TetR = chromosomally- and plasmid-mediated tetracycline-resistant *N. gonorrhoeae*; and QRNG = quinolone-resistant *N. gonorrhoeae*.

**Figure 29. Distribution of Primary Antimicrobial Drugs Used to Treat Gonorrhea Among Participants, Gonococcal Isolate Surveillance Project (GISP), 1988–2015**



**NOTE:** For 2015, “Other” includes clinical trial study drugs (2.7%), azithromycin 2g (1.5%), no therapy (0.6%), and other less frequently used drugs (0.1%).



# Syphilis

## Background

Syphilis, a genital ulcerative disease caused by the bacterium *Treponema pallidum*, is associated with significant complications if left untreated and can facilitate the transmission and acquisition of HIV infection.<sup>1-3</sup> Additionally, historical data demonstrate that untreated early syphilis in pregnant women, if acquired during the 4 years before delivery, can lead to infection of the fetus in up to 80% of cases and may result in stillbirth or death of the infant in up to 40% of cases.<sup>4</sup>

In 2000 and 2001, the national rate of reported primary and secondary (P&S) syphilis cases was 2.1 cases per 100,000 population, the lowest rate since reporting began in 1941 (Figure 30, Table 1). However, the P&S syphilis rate has increased almost every year since 2000–2001. In 2015, a total of 23,872 P&S syphilis cases were reported. During 2014–2015, the national P&S syphilis rate increased 19.0% to 7.5 cases per 100,000 population, the highest rate reported since 1994.

During 2000–2015, the rise in the rate of reported P&S syphilis was primarily attributable to increased cases among men and, specifically, among gay, bisexual, and other men who have sex with men (collectively referred to as MSM) (Figures 31 and 32). However, during 2013–2015, the rate increased both among men and women (Tables 28 and 29). During 2014–2015, the rate increased 18.1% among men and 27.3% among women. These increases among women are of particular concern because congenital syphilis cases tend to increase as the rate of P&S syphilis among women increases (Figure 44). During 2014–2015, the national, male, and female P&S syphilis rates increased in every region of the country (Figure 33, Tables 27, 28, and 29). Nationally, P&S syphilis rates increased in every age group among those aged 15–64 years and in every race/ethnicity group except for American Indians/Alaska Natives during 2014–2015 (Figures 38 and 39, Table 34).

As in recent years, MSM accounted for the majority of reported P&S syphilis cases in 2015 (Figures 31 and 40). Nationally, the highest rates of P&S syphilis in 2015 were observed among men aged 25–29 years and 20–24 years, among men in the West and in the South, and among Black men (Figure 36, Tables 29, 34 and 35B).

## Interpreting Rates of Reported Cases of Syphilis

Left untreated, infection with syphilis can span decades. Primary and secondary syphilis are the earliest stages of

infection, reflect symptomatic disease, and are indicators of incident infection.<sup>5</sup> For these reasons, trend analyses of syphilis focus on reported cases and rates of reported cases of P&S syphilis. When referring to “P&S syphilis”, case counts are the sum of both primary and secondary cases, and “rate of P&S syphilis” refers to this sum per unit population.

Changes in reporting and screening practices can complicate interpretation of trends over time. To minimize the effect of changes in reporting over time, trend data in this report are restricted to jurisdictions that consistently report data of interest (e.g., sex of sex partner) for each year of a given time period. Details of these restrictions are provided in the text and footnotes of the pertinent text and figures.

## P&S Syphilis — United States

In 2015, a total of 23,872 cases of P&S syphilis were reported in the United States, yielding a rate of 7.5 cases per 100,000 population (Table 1). This rate represents a 19.0% increase compared with 2014 (6.3 cases per 100,000 population), and a 66.7% increase compared with 2011 (4.5 cases per 100,000 population).

## P&S Syphilis by Region

In 2015, the West had the highest rate of reported P&S syphilis cases (9.6 cases per 100,000 population), followed by the South (8.1 cases per 100,000 population), the Northeast (6.6 cases per 100,000 population), and the Midwest (4.8 cases per 100,000 population) (Table 27). During 2014–2015, the P&S syphilis rate increased in every region: 23.1% in the West, 20.0% in the Northeast, 19.1% in the South, and 9.1% in the Midwest (Figure 33, Table 27).

## P&S Syphilis by State

In 2015, rates of reported P&S syphilis cases per 100,000 population ranged by state from 0.9 in Wyoming to 15.0 in Louisiana (Figure 34, Table 26). During 2014–2015, P&S syphilis rates increased in 74.0% (37/50) of states, and decreased in 26.0% (13/50) of states and in the District of Columbia (Table 27).

## P&S Syphilis by Metropolitan Statistical Area

The overall rate of reported P&S syphilis cases in the 50 most populous metropolitan statistical areas (MSAs) was

9.9 cases per 100,000 population in 2015, which represents a 15.1% increase since 2014 (8.6 cases per 100,000 population) (Table 30). In 2015, 72.3% of reported P&S syphilis cases (74.0% of male cases and 55.7% of female cases) were reported by these 50 MSAs. In 2015, the rate among women in these MSAs was 1.4 cases per 100,000 females, while the rate among men was 18.6 cases per 100,000 males (Tables 31 and 32).

## P&S Syphilis by County

In 2015, 65.3% of reported P&S syphilis cases occurred in 70 counties or independent cities (Table 33). Of 3,141 counties in the United States, 445 (14.2%) had a rate greater than 6.4 cases per 100,000 population, 451 (14.4%) reported a rate from 2.9 to 6.4 cases per 100,000 population, 434 (13.8%) reported a rate from 0.3 to 2.8 cases per 100,000 population, and 1,811 (57.7%) counties reported no cases of P&S syphilis in 2015 (Figure 35).

## P&S Syphilis by Sex and Sexual Behavior

As has been observed in previous years, in 2015 the rate of reported P&S syphilis cases among men (13.7 cases per 100,000 males) was much higher than the rate among women (1.4 cases per 100,000 females), and men account for a large majority (90.3%) of P&S syphilis cases (Figure 40, Tables 28 and 29). Among men, the rate of P&S syphilis has increased every year since 2000, and during 2014–2015, the rate among men increased 18.1% (Figure 32, Table 29). In contrast, the P&S syphilis rate among women has fluctuated between 0.8 and 1.7 cases per 100,000 females since 2000 (Figure 32, Table 28). During 2014–2015, the P&S syphilis rate among women increased 27.3%.

These increases in male and female P&S syphilis rates were observed in every region of the country during 2014–2015. Among men, the rate increased 22.2% in the West, 19.6% in the Northeast, 18.6% in the South, and 8.9% in the Midwest (Table 29). Among women, the largest increases were observed in the West (41.7%) and Northeast (40.0%), followed by the South (20.0%) and the Midwest (11.1%) (Table 28).

MSM continued to account for the majority of P&S syphilis cases in 2015 (Figures 31 and 40). Of 23,872 reported P&S syphilis cases in 2015, 14,229 (59.6%) were among MSM, including 12,891 (54.0%) cases among men who had sex with men only and 1,338 (5.6%) cases among men who had sex with both men and women (Figure 40). Overall, 3,178 (13.3%) cases were among men who had sex with women only (MSW), 2,298 (9.6%) were among women, 4,140 (17.3%) were among men without information about sex of sex partner, and 27 (0.1%) were cases reported with unknown sex (Figure 40). Among the

17,407 male cases with information on sex of sex partner, 81.7% occurred among MSM.

A total of 37 states were able to classify at least 70.0% of reported P&S syphilis cases as MSM, MSW, or women each year during 2011–2015 (Figure 31). In these states during 2014–2015, the number of cases increased 12.8% among MSM, 22.5% among MSW, and 27.1% among women.

## P&S Syphilis by Age

As in previous years, in 2015, rates of reported P&S syphilis cases were highest among persons aged 24–29 years and 20–24 years (Figure 36, Table 34). In 2015, the highest rates were observed among men aged 25–29 years (41.8 cases per 100,000 males) and 20–24 years (35.7 cases per 100,000 males). Similarly, the highest rates among women were among those aged 20–24 years (5.1 cases per 100,000 females) and those aged 25–29 years (4.5 cases per 100,000 females).

During 2014–2015, the P&S syphilis rate increased in all age groups among those aged 15–64 years (Table 34). Rates increased 10.2% among those aged 15–19 years, 14.9% among those aged 20–24 years, 26.3% among those aged 25–29 years, 23.1% among those aged 30–34 years, 21.4% among those aged 35–39 years, 8.2% among those aged 40–44 years, 17.6% among those aged 45–54 years, and 31.8% among those aged 55–64 years (Table 34).

In 2015, persons aged 15–44 years accounted for 79.6% of reported P&S syphilis cases with known age. Among both men and women, the P&S syphilis rate increased during 2014–2015 in all age groups among those aged 15–44 years (Figures 37 and 38).

## P&S Syphilis by Race/Ethnicity

In 2015, among the 49 states that submitted data in the race and ethnicity categories according to Office of Management and Budget (OMB) standards (see Section A1.5 in the Appendix), the rate of reported P&S syphilis cases remained highest among Blacks (21.4 cases per 100,000 population) (Table 35B). The rate among Blacks was 5.2 times the rate among Whites (4.1 cases per 100,000 population). The P&S syphilis rates among Native Hawaiians/Other Pacific Islanders (10.4 cases per 100,000 population) was 2.5 times the rate among Whites, the rate among Hispanics (9.1 cases per 100,000 population) was 2.2 times the rate among Whites, the rate among American Indians/Alaska Natives (5.6 cases per 100,000 population) was 1.4 times the rate among Whites, and the rate among Asians (3.0 cases per 100,000 population) was 0.7 times the rate among Whites (Table 35B).

During 2011–2015, among the 45 states that submitted race and ethnicity data according to OMB standards (see

Section A1.5 in the Appendix) for all five years during that period, the P&S syphilis rate increased among all race/ethnicity groups (Figure 39). During 2014–2015, rates increased in every race/ethnicity group except for American Indians/Alaska Natives. The greatest increases during 2014–2015 were observed among Native Hawaiians/Other Pacific Islanders (63.1%) and those who identified as Multiracial (45.5%), followed by Hispanics (25.4%), Whites (17.6%), Asians (15.4%), and Blacks (13.1%).

More information on P&S syphilis rates among racial/ethnic groups can be found in the Special Focus Profiles.

## **P&S Syphilis and HIV Co-infection**

Reported cases of P&S syphilis continue to be characterized by a high rate of HIV co-infection, particularly among MSM. In 2015, 31 states were able to classify at least 70.0% of reported P&S syphilis cases as MSM, MSW, or women and at least 70.0% of reported cases as HIV-positive or HIV-negative (Figure 41). Among P&S syphilis cases with known HIV-status in these states, 49.8% of cases among MSM were HIV-positive, compared with 10.0% of cases among MSW, and 3.9% of cases among women.

## **P&S Syphilis by Reporting Source**

In 2015, 20.1% of cases were reported from STD clinics, 72.5% were reported from venues outside of STD clinics, and 7.4% of cases had an unknown source of report (Table A2). During 2014–2015, the number of P&S syphilis cases reported by STD clinics and by non-STD clinic settings increased (Figure 42). However, the proportion of P&S syphilis cases that were reported by STD clinics has declined over the last decade from 34.2% of cases in 2006 to 20.1% of cases in 2015. In 2015, private physicians/health maintenance organizations (HMOs) and STD clinics were the most common reporting sources among MSM (27.7% and 25.4%, respectively), MSW (21.8% and 23.9%, respectively), and women (25.4% and 16.7%, respectively) (Figure 43).

## **Congenital Syphilis**

After decreasing from 10.5 to 8.4 reported congenital syphilis cases per 100,000 live births during 2008–2012, the rate of reported congenital syphilis has subsequently increased each year during 2012–2015 (Table 1). In 2015, there were a total of 487 reported cases of congenital syphilis, for a national rate of 12.4 cases per 100,000 live births. This rate represents a 6.0% increase relative to 2014 (11.7 cases per 100,000 live births) and a 36.3% increase relative to 2011 (9.1 cases per 100,000 live births). As has been observed historically, these increases paralleled increases in P&S syphilis among women during 2014–

2015 (27.3%) and during 2011–2015 (55.6%) (Figure 44, Table 28).

During 2014–2015, the increase in reported congenital syphilis cases was primarily attributable to an increase in the West. During this time period, the congenital syphilis rate increased 42.3% in the West, but decreased 3.5% in the Midwest, 7.7% in the South, and 17.4% in the Northeast (Table 41). In 2015, the highest congenital syphilis rates were reported from the West (18.5 cases per 100,000 live births), followed by the South (14.4 cases per 100,000 live births), Midwest (8.2 cases per 100,000 live births), and the Northeast (3.8 cases per 100,000 live births). In addition, rates were highest among Blacks (35.2 cases per 100,000 live births), followed by Hispanics (15.5 cases per 100,000 live births), American Indians/Alaska Natives (10.3 cases per 100,000 live births), Asians/Pacific Islanders (5.9 cases per 100,000 live births), and Whites (4.4 cases per 100,000 live births) (Table 42).

## **Syphilis — All Stages (P&S, Early Latent, Late, Late Latent, and Congenital)**

In 2015, total case counts and rates for reported syphilis were the highest recorded since 1994. The total number of cases of syphilis (P&S, early latent, late, late latent, and congenital) reported to CDC increased 17.7% during 2014–2015 (from 63,453 cases to 74,702 cases) (Table 1). The number of cases of early latent syphilis reported to CDC increased 24.3% (from 19,452 cases to 24,173 cases), and the number of cases of late and late latent syphilis increased 11.2% (from 23,541 cases to 26,170 cases) (Tables 1, 36, and 38).

## **Syphilis among Special Populations**

More information about syphilis and congenital syphilis in racial/ethnic groups, women of reproductive age, adolescents, and MSM can be found in the Special Focus Profiles.

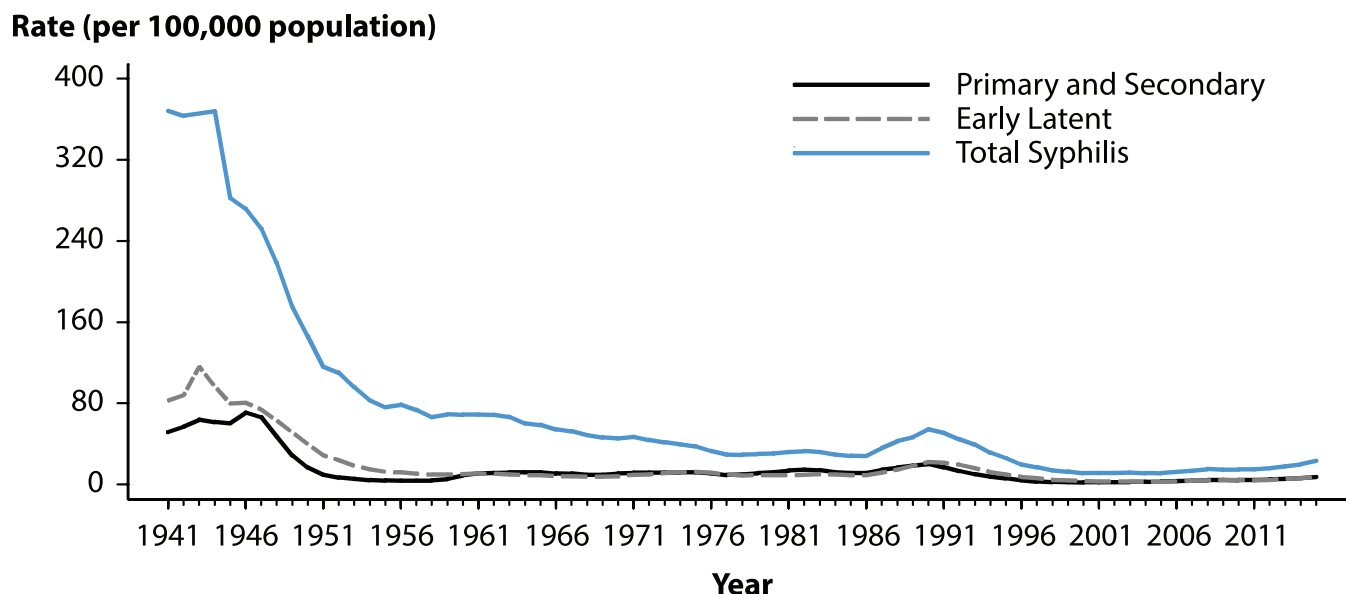
## **Syphilis Summary**

The national rate of reported P&S syphilis cases reached an historic low in 2000 and 2001, but has increased almost every year since then. This increase was largely attributable to an increase among men, and in particular among MSM. However, during 2014–2015, rates increased among both men and women in every region of the country. Rates of reported congenital syphilis cases also increased during 2014–2015, although this increase was primarily attributable to an increase in the West.

MSM continued to account for the majority of reported P&S syphilis cases in 2015. Nationally, the highest rates of P&S syphilis in 2015 were observed among men aged 25–29 years and 20–24 years, among men in the West and in the South, and among Black men.

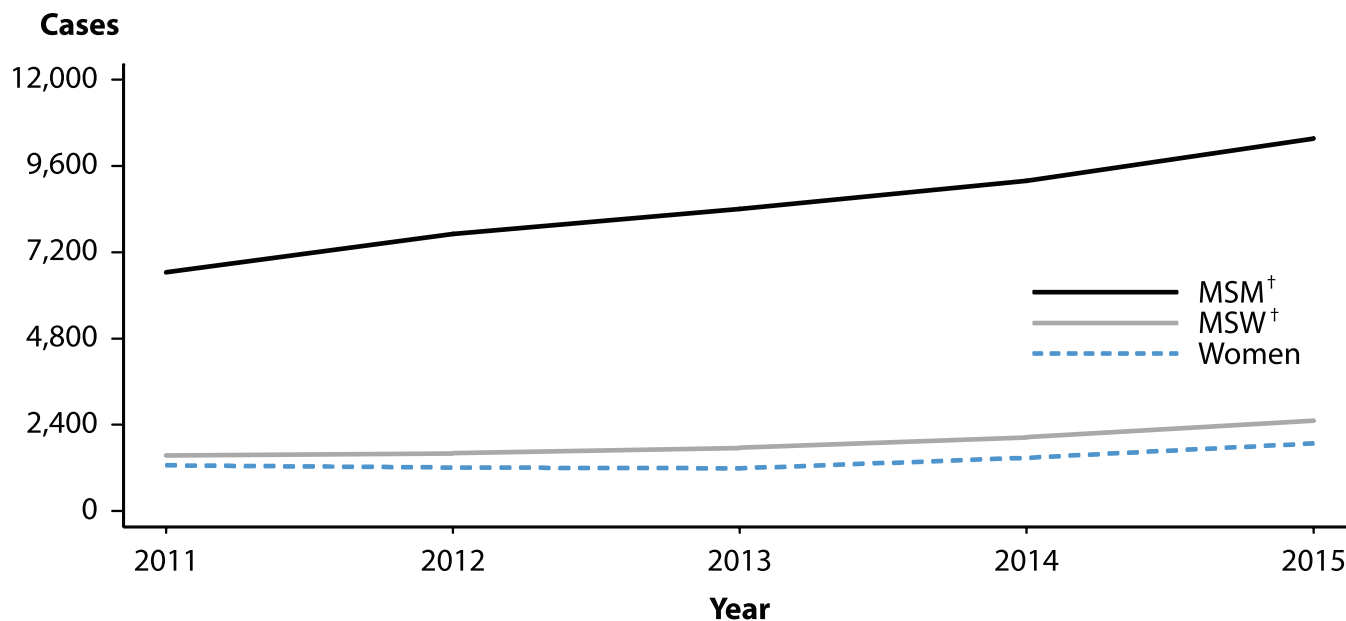
- 
- <sup>1</sup> Jarzebowski W, Caumes E, Dupin N, et al. Effect of early syphilis infection on plasma viral load and CD4 cell count in human immunodeficiency virus-infected men: results from the FHDH- ANRS CO4 cohort. *Arch Intern Med* 2012; 172: 1237–1243.
  - <sup>2</sup> Buchacz K, Patel P, Taylor M, et al. Syphilis increases HIV viral load and decreases CD4 cell counts in HIV-infected patients with new syphilis infections. *AIDS* 2004; 18:2075–2079.
  - <sup>3</sup> Fleming DT, Wasserheit JN. From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection. *Sex Trans Infect* 1999; 75: 3–17.
  - <sup>4</sup> Ingraham NR. The value of penicillin alone in the prevention and treatment of congenital syphilis. *Acta Derm Venereol* 1951; 31(Suppl 24): 60–88.
  - <sup>5</sup> Peterman TA, Kahn RH, Ciesielski CA, et al. Misclassification of the stages of syphilis: implications for surveillance. *Sex Transm Dis*. 2005;32(3):144-9.

**Figure 30. Syphilis — Rates of Reported Cases by Stage of Infection, United States, 1941–2015**



**NOTE:** Data collection for syphilis began in 1941; however, syphilis became nationally notifiable in 1944. Refer to the National Notifiable Disease Surveillance System (NNDS) website for more information: <https://www.cdc.gov/nndss/conditions/syphilis/>.

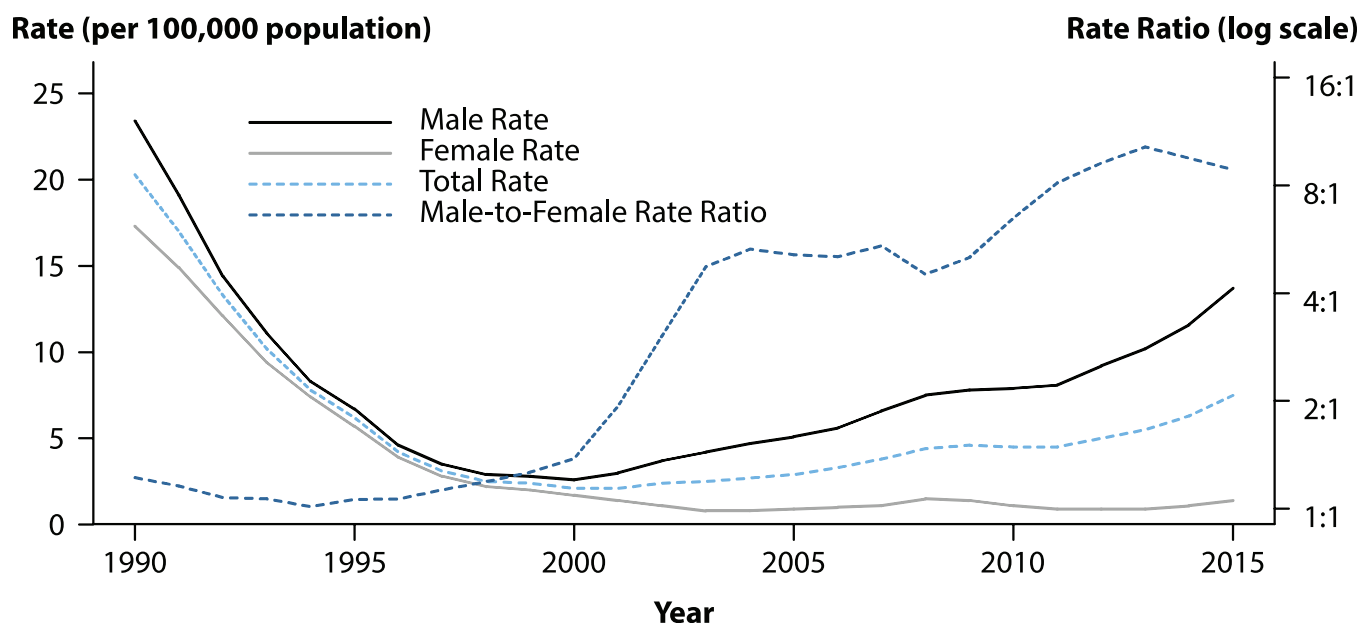
**Figure 31. Primary and Secondary Syphilis — Reported Cases by Sex and Sexual Behavior, 37 States\*, 2011–2015**



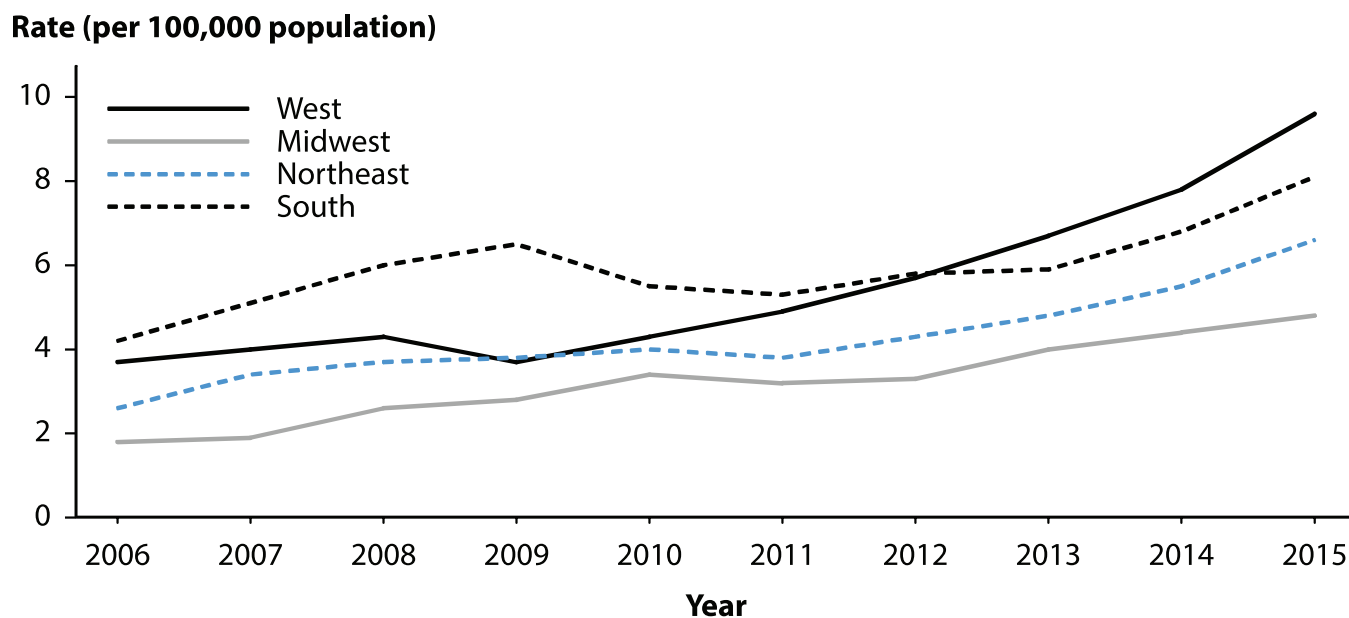
\* 37 states were able to classify  $\geq 70\%$  of reported cases of primary and secondary syphilis as either MSM<sup>†</sup>, MSW<sup>†</sup>, or women for each year during 2011–2015.

<sup>†</sup> MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM); MSW = Men who have sex with women only.

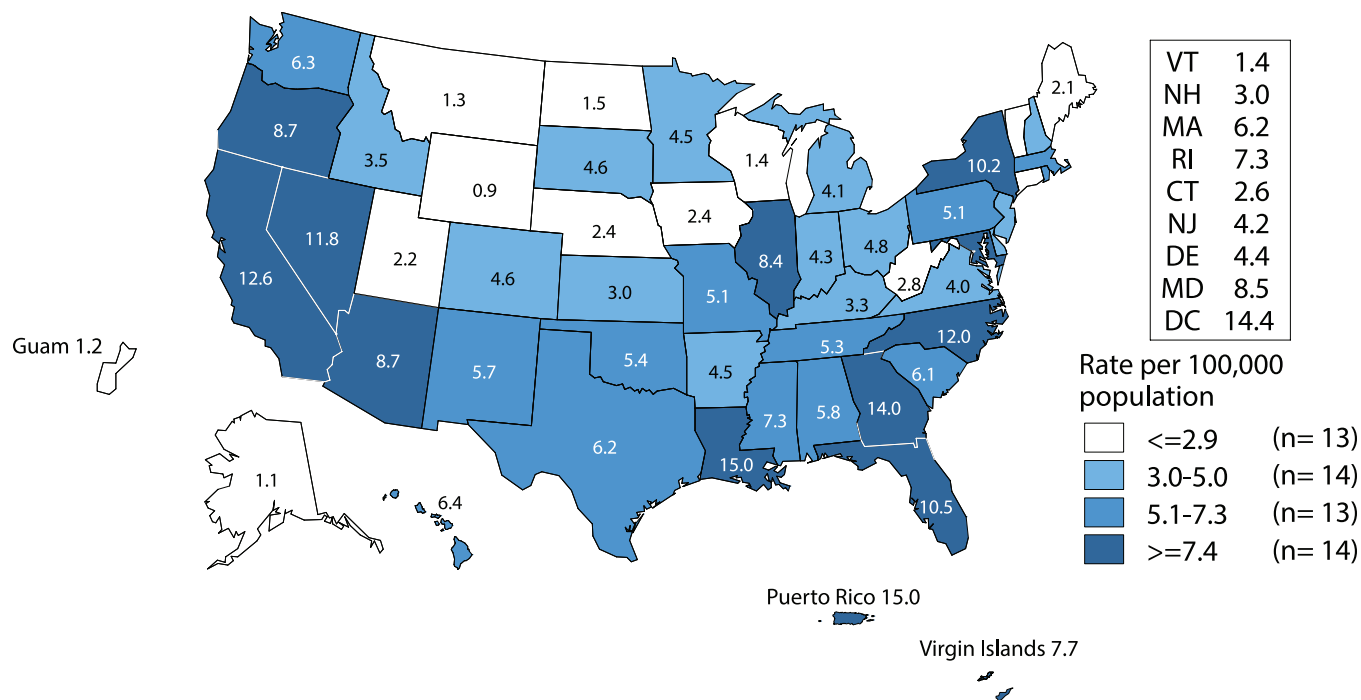
**Figure 32. Primary and Secondary Syphilis — Rates of Reported Cases by Sex and Male-to-Female Rate Ratios, United States, 1990–2015**



**Figure 33. Primary and Secondary Syphilis — Rates of Reported Cases by Region, United States, 2006–2015**

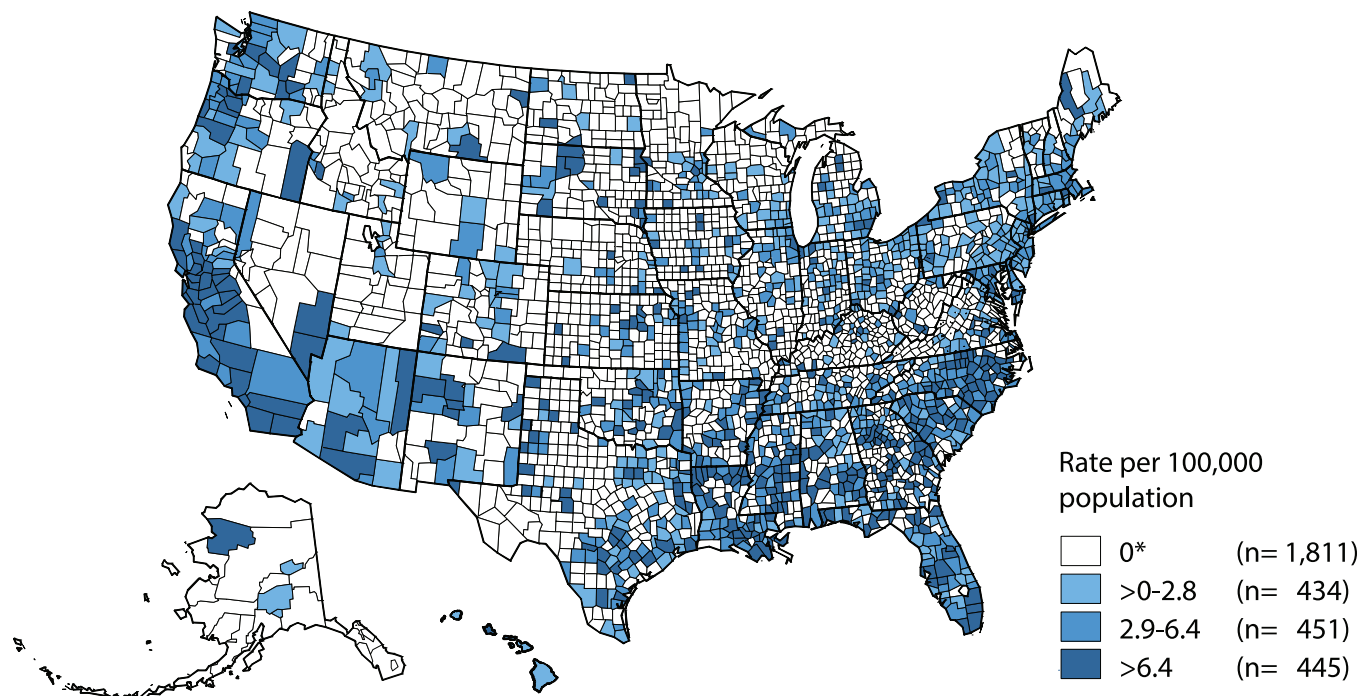


**Figure 34. Primary and Secondary Syphilis — Rates of Reported Cases by State, United States and Outlying Areas, 2015**



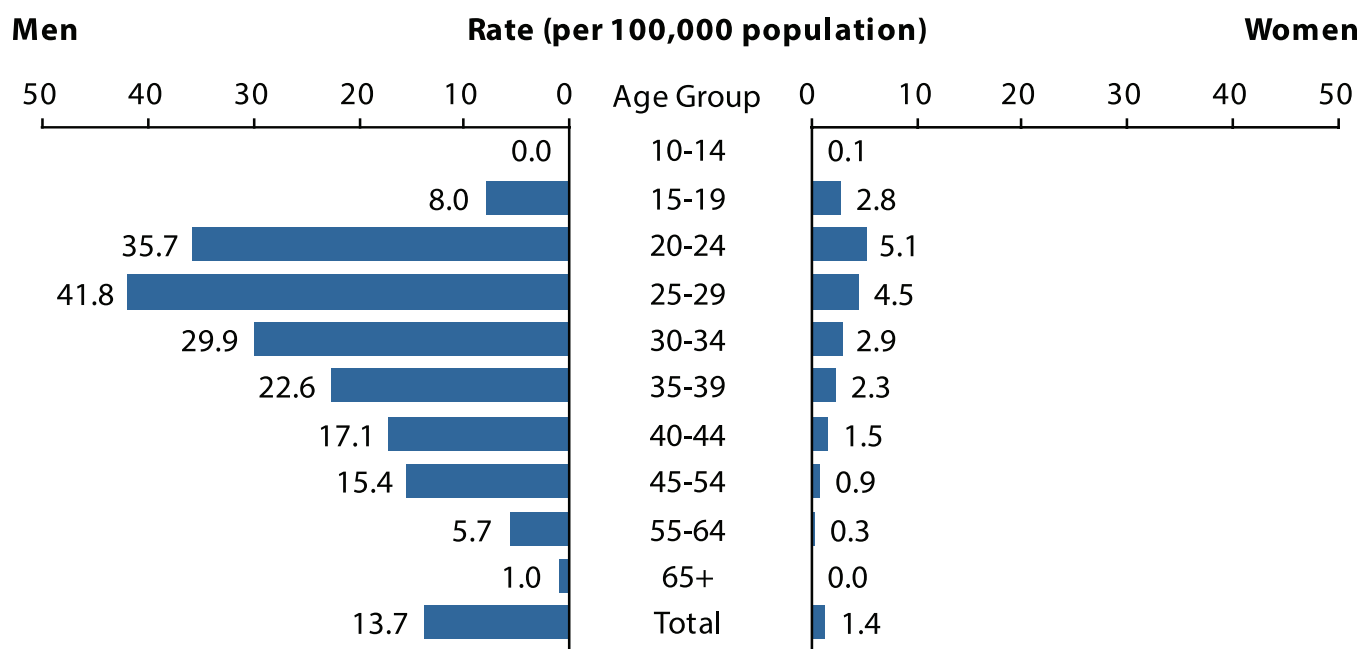
**NOTE:** The total rate of primary and secondary syphilis for the United States and outlying areas (Guam, Puerto Rico, and Virgin Islands) was 7.6 cases per 100,000 population.

**Figure 35. Primary and Secondary Syphilis — Rates of Reported Cases by County, United States, 2015**

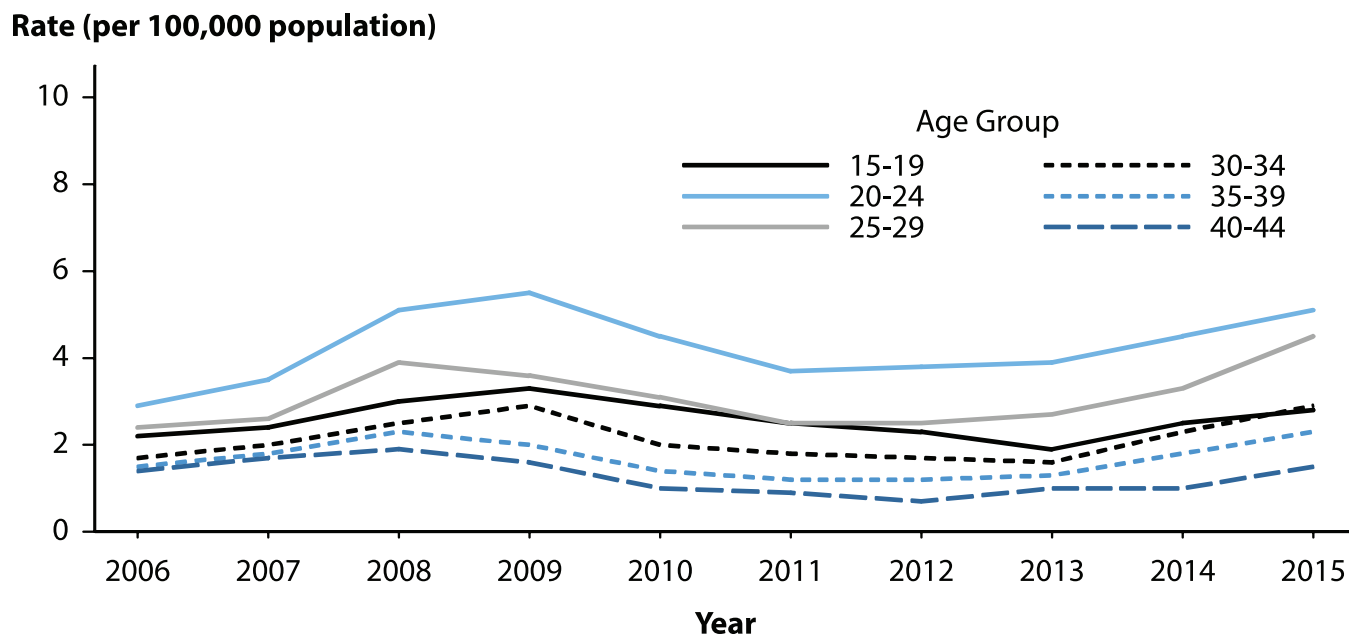


\* In 2015, 1,811 (57.7%) of 3,141 counties in the United States reported no cases of primary and secondary syphilis. Refer to the NCHHSTP Atlas for further county-level rate information: <https://www.cdc.gov/nchhstp/atlas/>.

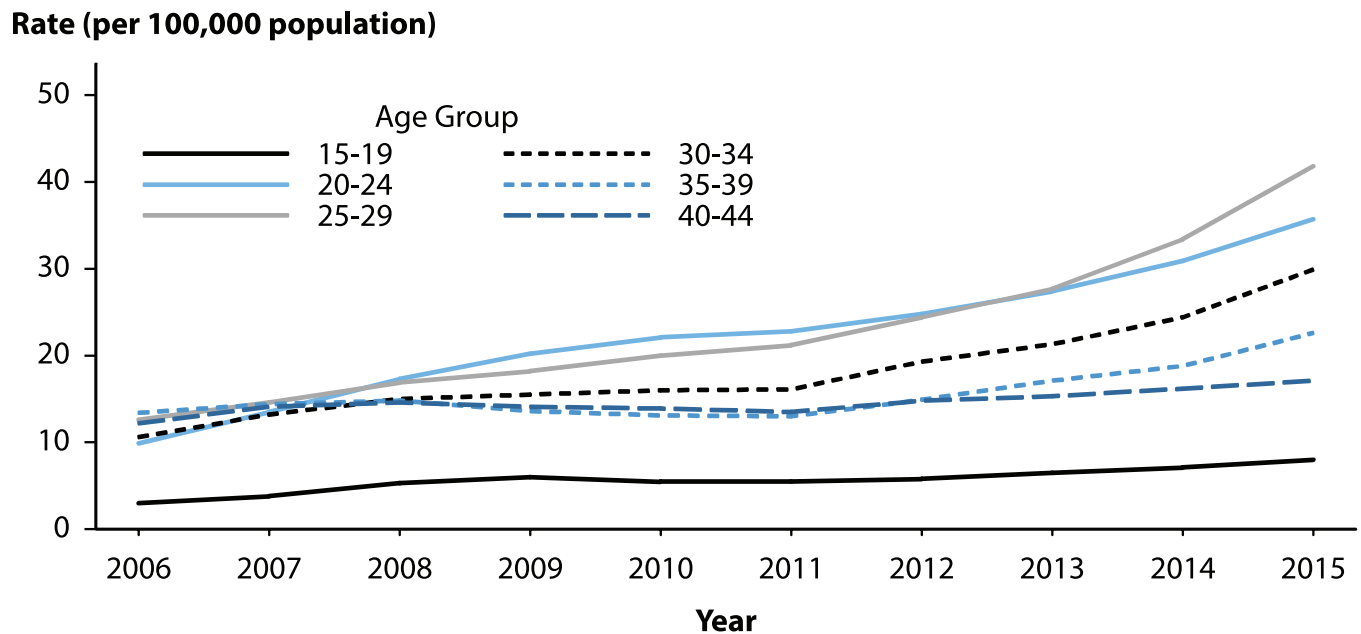
**Figure 36. Primary and Secondary Syphilis — Rates of Reported Cases by Age Group and Sex, United States, 2015**



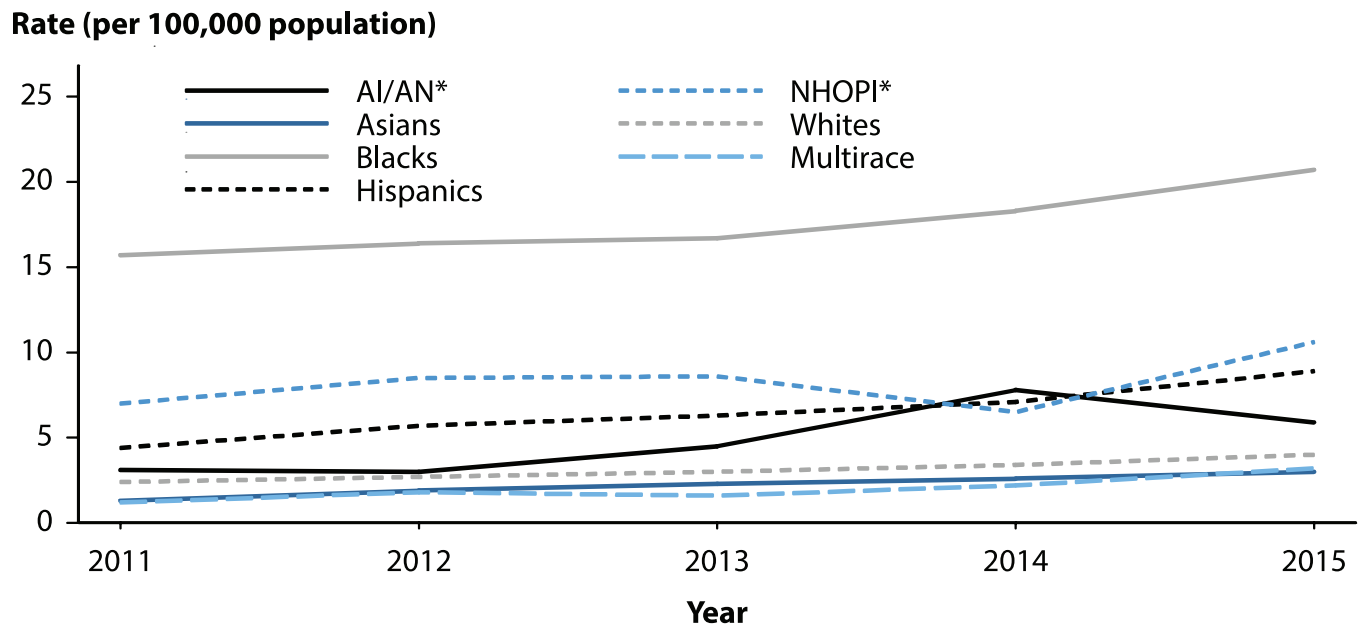
**Figure 37. Primary and Secondary Syphilis — Rates of Reported Cases Among Women Aged 15–44 Years by Age Group, United States, 2006–2015**



**Figure 38. Primary and Secondary Syphilis — Rates of Reported Cases Among Men Aged 15–44 Years by Age Group, United States, 2006–2015**



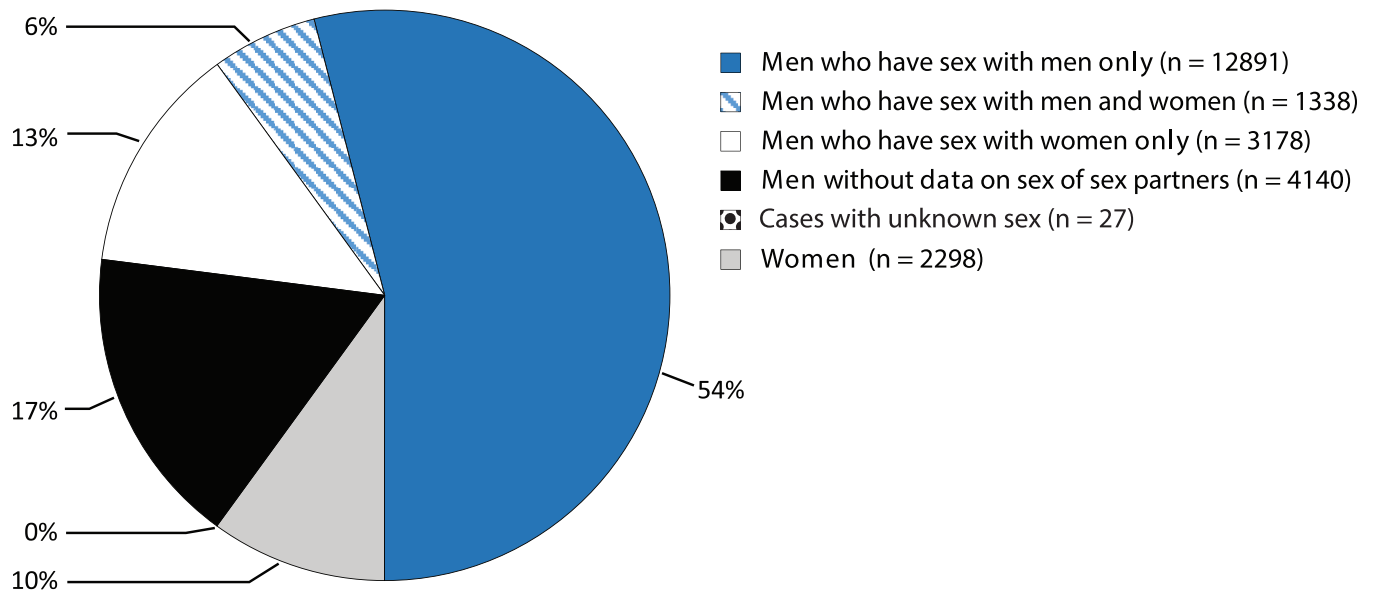
**Figure 39. Primary and Secondary Syphilis — Rates of Reported Cases by Race/Ethnicity, United States, 2011–2015**



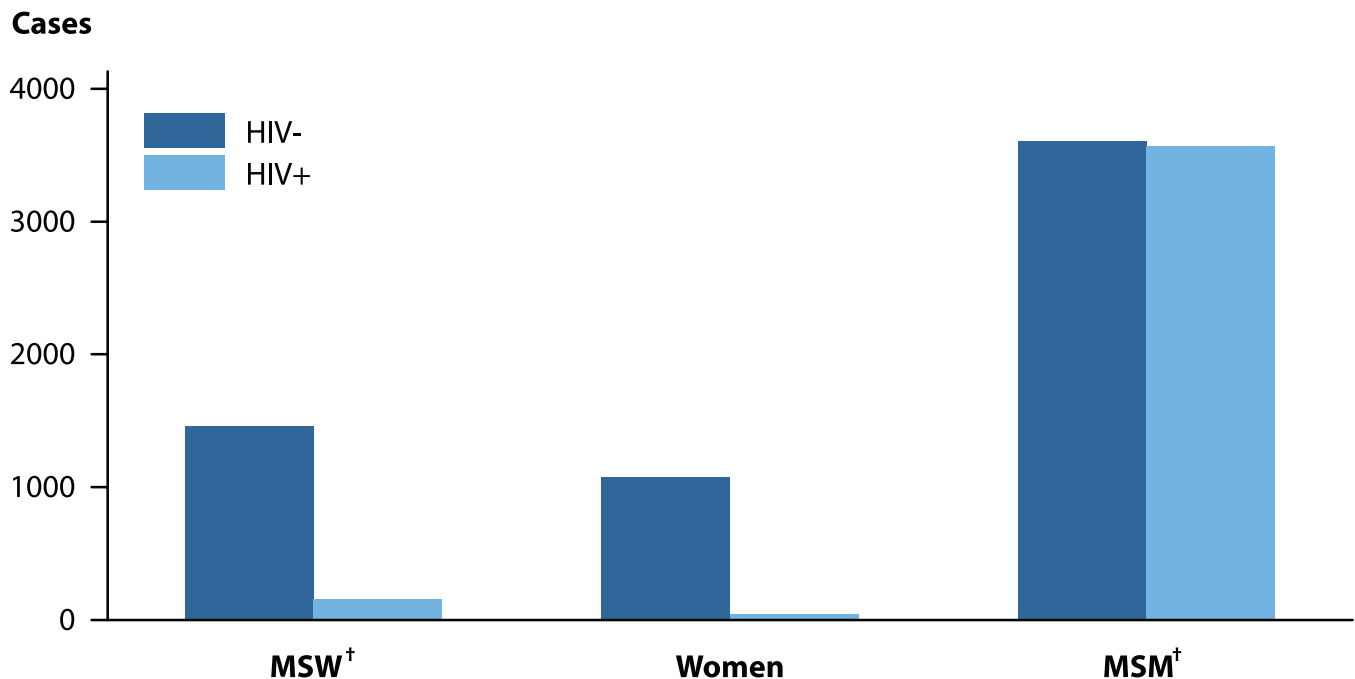
\* AI/AN = American Indians/Alaska Natives; NHOPI = Native Hawaiians/Other Pacific Islanders.

**NOTE:** Includes 45 states reporting race/ethnicity data in Office of Management and Budget compliant formats during 2011–2015 (see Section A1.5 in the Appendix).

**Figure 40. Primary and Secondary Syphilis — Distribution of Cases by Sex and Sexual Behavior, 2015**



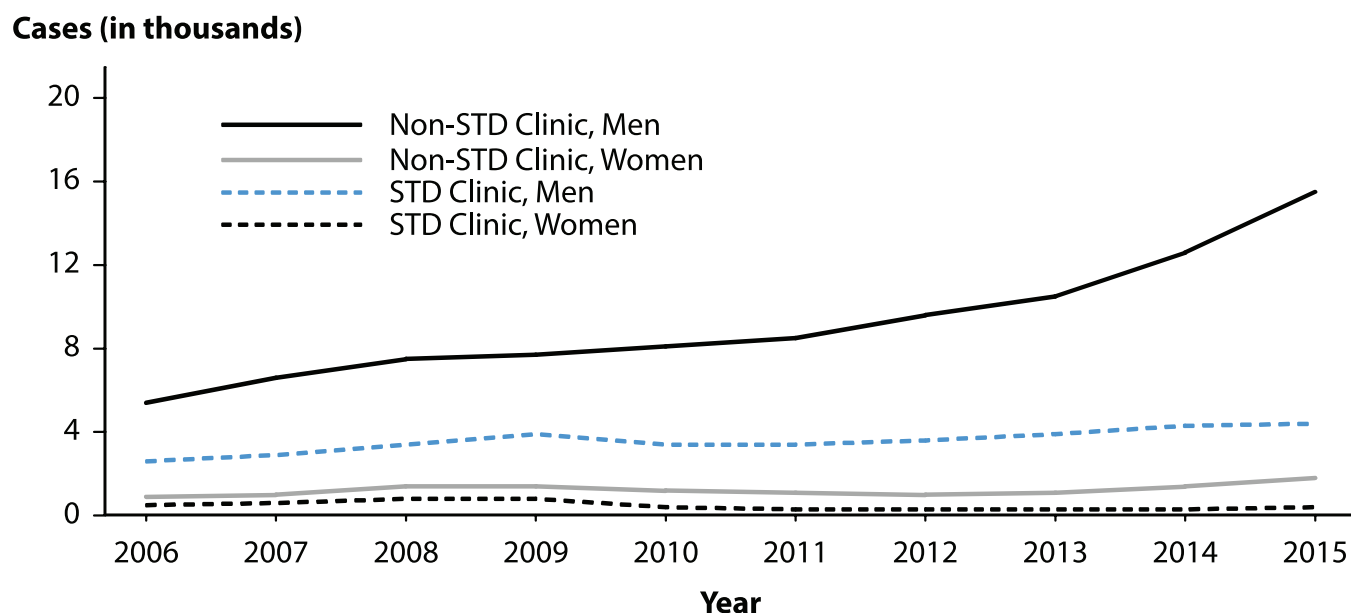
**Figure 41. Primary and Secondary Syphilis — Reported Cases by Sex, Sexual Behavior, and HIV Status, 31 States\*, 2015**



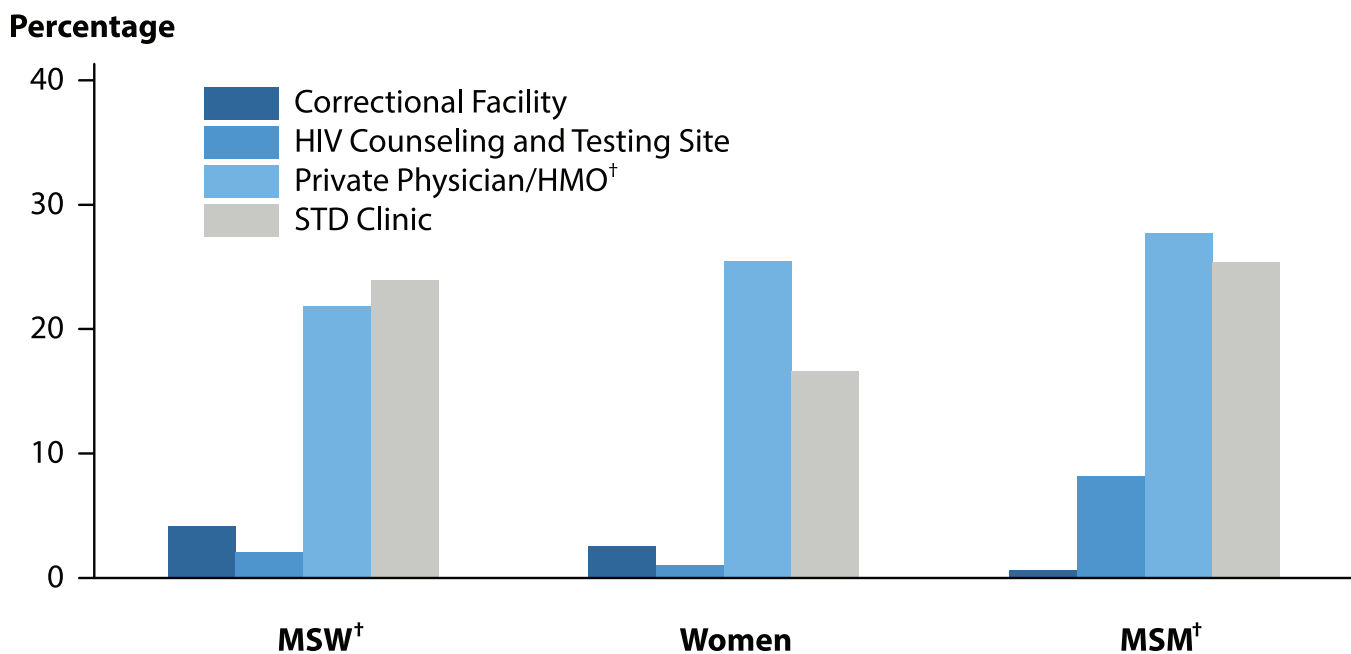
\* 31 states were able to classify  $\geq 70\%$  of reported cases of primary and secondary syphilis as MSW<sup>†</sup>, MSM<sup>†</sup>, or women and  $\geq 70\%$  of cases as HIV-positive or HIV-negative during 2015.

<sup>†</sup> MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM); MSW = Men who have sex with women only.

**Figure 42. Primary and Secondary Syphilis — Reported Cases by Reporting Source and Sex, United States, 2006–2015**



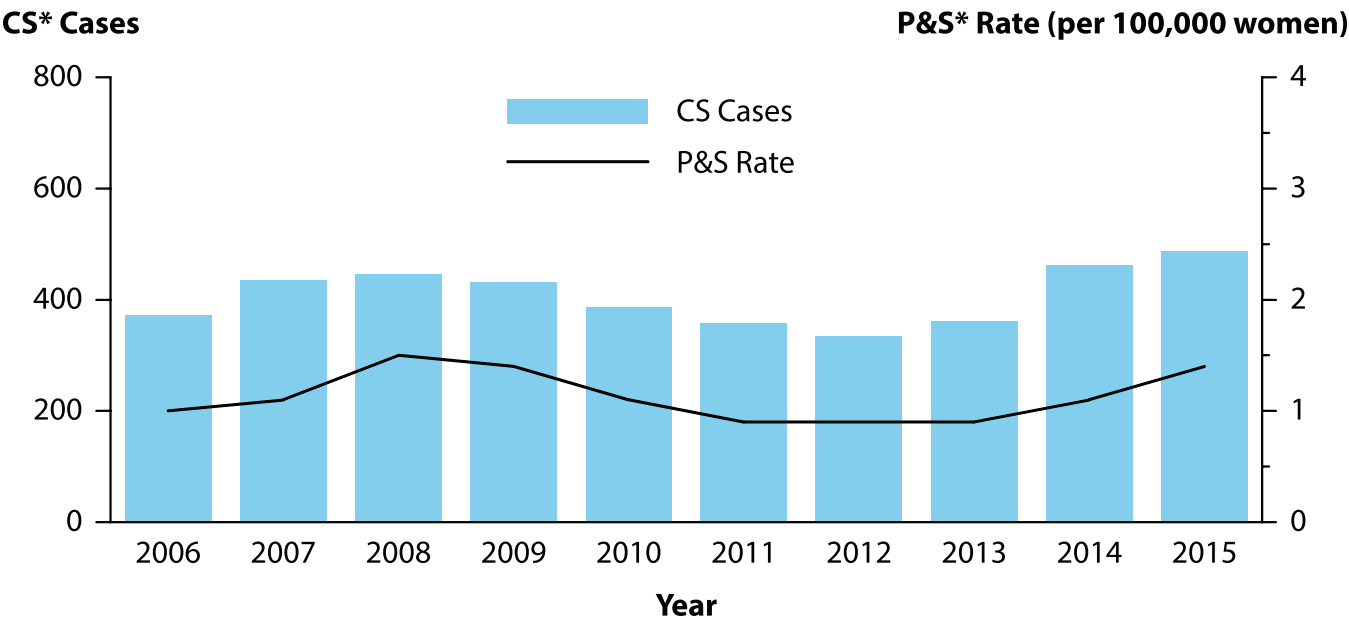
**Figure 43. Primary and Secondary Syphilis — Percentage of Reported Cases\* by Sex, Sexual Behavior, and Selected Reporting Sources, 2015**



\* Of all primary and secondary syphilis cases, 7.4% had a missing or unknown reporting source. Among all cases with a known reporting source, the reporting source categories presented represent 57.8% of cases; 42.2% were reported from sources other than those shown.

<sup>†</sup> HMO = health maintenance organization; MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM); MSW = Men who have sex with women only.

**Figure 44. Congenital Syphilis — Reported Cases by Year of Birth and Rates of Primary and Secondary Syphilis Among Women, United States, 2006–2015**



\* CS = Congenital syphilis; P&S = Primary and secondary syphilis.

# Other Sexually Transmitted Diseases

## Chancroid

Chancroid is caused by infection with the bacterium *Haemophilus ducreyi*. Clinical manifestations include genital ulcers and inguinal lymphadenopathy or buboes.<sup>1</sup> Reported cases of chancroid declined steadily between 1987 and 2001 (Figure 45, Table 1). Since then, the number of reported cases has fluctuated somewhat, while still appearing to decline overall. In 2015, a total of 11 cases of chancroid were reported in the United States. Seven states reported one or more cases of chancroid in 2015 (Table 43).

Although the overall decline in reported chancroid cases most likely reflects a decline in the incidence of this disease, these data should be interpreted with caution because *Haemophilus ducreyi* is difficult to culture; as a result, this condition may be substantially underdiagnosed.<sup>2,3</sup>

## Human Papillomavirus

Human papillomavirus (HPV) is the most common sexually transmitted infection in the United States.<sup>4</sup> Over 40 distinct types can infect the genital tract;<sup>5</sup> about 90% of infections are asymptomatic and resolve spontaneously within two years.<sup>6</sup> However, persistent infection with some HPV types can cause cancer and genital warts. HPV types 16 and 18 account for approximately 70% of cervical cancers worldwide,<sup>7,8</sup> while HPV types 6 and 11 are responsible for approximately 90% of genital warts.<sup>9,10</sup>

A quadrivalent HPV vaccine that protects against infection by HPV types 6, 11, 16 and 18 has been licensed in the United States for use in females since June 2006,<sup>11</sup> and in males since October 2009.<sup>12</sup> In October 2009, a bivalent HPV vaccine that protects against infection by HPV types 16 and 18 was licensed for use in females.<sup>13</sup> In December 2014, a 9-valent vaccine that protects against infection by the HPV types included in the quadrivalent vaccine, as well as five additional cancer causing types (HPV types 31, 33, 45, 52, and 58), was licensed for use in the United States.<sup>14</sup> For females, all three vaccines have been recommended for routine use in those aged 11 or 12 years, and through age 26 in those who have not been vaccinated previously.<sup>14</sup> For males, the quadrivalent and 9-valent vaccines have been recommended for routine use in those aged 11 or 12 years, and through age 21 in those who have not been vaccinated previously.<sup>14</sup> Vaccination of gay, bisexual, and other men who have sex with men (collectively referred to as MSM) through age 26 is also recommended; other males aged 22–26 years may be vaccinated.<sup>14</sup> Vaccination is also recommended through

age 26 years for immunocompromised persons (including those infected with HIV) who have not been vaccinated previously.<sup>14</sup>

HPV vaccine uptake in the United States remains lower than the Healthy People 2020 goal of 80% coverage.<sup>15</sup> In 2015, a national survey found that 63% of girls aged 13–17 years had received at least 1 dose of the HPV vaccine, and 42% had received all 3 doses in the series.<sup>16</sup> HPV vaccine uptake is lower among boys; 50% aged 13–17 years received at least 1 dose, but only 28% received all 3 doses.<sup>16</sup>

HPV infection is not a nationally reportable condition. Cervicovaginal prevalence of quadrivalent HPV vaccine types 6, 11, 16, and/or 18 was estimated using data for females aged 14–34 years from the National Health and Nutrition Examination Survey (NHANES; see Section A2.4 in the Appendix). Prevalence decreased significantly from the pre-vaccine era (2003–2006) to the early post-vaccine era (2009–2012) in specimens from females aged 14–19 and 20–24 years, the age groups most likely to benefit from HPV vaccination (Figure 46).<sup>17</sup> Among those aged 25–34 years, vaccine-type HPV prevalence did not differ significantly between the two time periods, and no differences were observed in the prevalence of non-quadrivalent HPV vaccine types by time period for any age group. In a population-based study of female residents of four geographic catchment areas (Alameda County, California; New Haven County, Connecticut; Monroe County, New York; Washington and Multnomah Counties, Oregon), incidence of high-grade cervical intraepithelial neoplasia in 18–20 year olds, based on laboratory reports and medical record review, decreased during 2008–2012. However, cervical cancer screening, which was estimated using age-group-specific screening rates derived from a variety of data sources in three catchment areas, also declined in this age group during the same period.<sup>18</sup> The larger observed decrease in cervical neoplasia, relative to the estimated decline in screening, suggests that HPV vaccination may be impacting the true burden of cervical neoplasia in young women.

Data from the National Disease and Therapeutic Index (NDTI; see Section A2.5 in the Appendix) suggest that cases of genital warts, as measured by initial visits to physicians' offices, may have increased during the late 1990s through 2014 (Figure 47, Table 44). Although the number of visits appears to have decreased in 2012 and 2013, visits in 2014 (465,000) slightly exceeded those in 2011; more years of data are needed to better elucidate recent trends in initial genital wart visits from these data. The 2015 NDTI data were not obtained in time to

include them in this report. NHANES data for 1999–2004 indicated that 5.6% of sexually active adults aged 18–59 years self-reported a history of a genital wart diagnosis.<sup>19</sup>

Prevalence of genital warts during 2003–2010 was examined using health-care claims records from a large United States cohort of individuals with employer-provided private health insurance (Figure 48).<sup>20</sup> Prevalence among females aged 15–19 years was stable during 2003–2007, but then significantly declined during 2007–2010. Among females aged 20–24 years, genital wart prevalence significantly increased during 2003–2007, then was stable during 2007–2010; although prevalence in this age group appeared to decrease during 2009–2010, more years of data are needed to interpret this observation. Prevalence in females aged 25–39 years significantly increased throughout the time period, but among those aged 25–29 years a potential inflection in trend was observed in 2009, for which additional years of data are needed to appropriately assess. Genital wart prevalence significantly increased in males of all age groups during 2003–2010, although for those aged 20–24 years a potential inflection in trend again was observed in 2009.

For data reported in Figure 49, enhanced behavioral and demographic information on patients who presented for care in 2015 in 7 jurisdictions of the STD Surveillance Network (SSuN) was used (See Section A2.2 in the Appendix). Only jurisdictions that contributed data for all of 2015 were included in the figure. Genital warts were identified by provider diagnosis or by documentation from the physical examination. MSM and men who have sex with women only (MSW) were defined by self-report or by sex of reported sex partners. The prevalence of genital warts in 2015 is presented separately for MSM, MSW, and women by SSuN jurisdiction in the figure. Among women, the median prevalence of genital warts was 0.9% (range 0.7 to 2.2) across all sites, compared to 3.3% (range 1.9 to 4.6) for MSM and 4.3% (range 1.7 to 8.1) for MSW.

## Pelvic Inflammatory Disease

For information on pelvic inflammatory disease, see Special Focus Profiles, STDs in Women and Infants.

## Herpes Simplex Virus

Herpes simplex virus (HSV) is among the most prevalent of sexually transmitted infections.<sup>4,21</sup> Although most infections are subclinical,<sup>22</sup> clinical manifestations are characterized by recurrent, painful genital and/or anal lesions.<sup>23</sup> Most genital HSV infections in the United States are caused by HSV type 2 (HSV-2), while HSV type 1 (HSV-1) infections are typically orolabial and acquired during childhood.<sup>22,24</sup>

HSV infection is not a nationally reportable condition. Data on initial visits to physicians' offices for genital HSV

infection are available from the NDTI; however the 2015 NDTI data were not obtained in time to include them in this report (Figure 50, Table 44). Visits have generally increased over time; the maximum number of initial visits (371,000) occurred in 2006, while 299,000 visits took place in 2014.

Most persons with genital HSV infection have not received a diagnosis. The overall percentage of HSV-2 seropositive NHANES participants aged 14–49 years who reported never being told by a doctor or health care professional that they had genital herpes did not change significantly between 1988–1994 and 2007–2010, and remained high (90.7% and 87.4%, respectively).<sup>25</sup> However, an overall increase in the number of physician visits for genital HSV infection over time, as suggested by the NDTI data, may indicate increased recognition of infection.

NHANES data on the gender- and race/ethnicity-specific seroprevalence of HSV-2 among those aged 14–49 years were compared across survey years 1988–1994, 1999–2002, 2003–2006, and 2007–2010 (Figure 51). Overall, HSV-2 seroprevalence decreased between 1988–1994 and 2007–2010, from 21.2% to 15.5%.<sup>25</sup> Among non-Hispanic White females, HSV-2 seroprevalence significantly decreased from 19.5% in 1988–1994 to 15.3% in 2007–2010; HSV-2 seroprevalence remained stable among non-Hispanic Black females, from 52.5% in 1988–1994 to 49.9% in 2007–2010. Similar race/ethnicity differences were observed for males. These data, along with data from NHANES survey years 1976–1980,<sup>26</sup> indicate that non-Hispanic Blacks had higher overall seroprevalence than non-Hispanic Whites in each survey period.

NHANES data also show that among adolescents aged 14–19 years HSV-1 seroprevalence has significantly decreased by almost 23%, from 39.0% in 1999–2004 to 30.1% in 2005–2010, indicating declining orolabial infection in this age group.<sup>24</sup> HSV-2 seroprevalence in this age group was much lower, less than 2% in both time periods.<sup>24</sup> Other studies have found that genital HSV-1 infections are increasing among young adults.<sup>27,28</sup> This has been attributed, in part, to the decline in orolabial HSV-1 infections, because those who lack HSV-1 antibodies at sexual debut are more susceptible to genital HSV-1 infection;<sup>24,29</sup> increasingly common oral sex behavior among adolescents and young adults also has been suggested as a contributing factor.<sup>24,30</sup> The absence of HSV-1 antibodies also increases the likelihood of developing symptomatic disease from newly-acquired (i.e., primary) genital HSV-2 infection.<sup>31</sup> Young women may therefore be increasingly likely to first acquire HSV-1 infection genitally, or acquire a primary genital HSV-2 infection, during their child-bearing years,<sup>29,32</sup> and first-episode primary HSV infection during pregnancy increases the risk of neonatal HSV transmission.<sup>29,33</sup>

For information on neonatal HSV infections, see Special Focus Profiles, STDs in Women and Infants.

## *Trichomonas vaginalis*

*Trichomonas vaginalis* is a common sexually transmitted protozoal infection associated with adverse health outcomes such as preterm birth and symptomatic vaginitis.<sup>4,34,35</sup> It is not a nationally reportable condition, and trend data are limited to estimates of initial physician office visits from the NDTI (Figure 52, Table 44). Visits appear to be fairly stable since the 1990's; the number of initial visits for *Trichomonas vaginalis* infection in 2014 was 155,000. The 2015 NDTI data were not obtained in time to include them in this report. NHANES data from 2001–2004 indicated an overall *Trichomonas vaginalis* infection prevalence of 3.1%, with the highest prevalence of 13.3% observed among non-Hispanic Blacks.<sup>35</sup>

<sup>1</sup> Lewis DA. Chancroid: clinical manifestations, diagnosis, and management. *Sex Transm Infect* 2003;79:68–71.

<sup>2</sup> Schulte JM, Martich FA, Schmid GP. Chancroid in the United States, 1981–1990: evidence for underreporting of cases. *MMWR Morb Mortal Wkly Rep* 1992;41(SS-3):57–61.

<sup>3</sup> Mertz KJ, Trees D, Levine WC, et al. Etiology of genital ulcers and prevalence of human immunodeficiency virus coinfection in 10 US cities. *J Infect Dis* 1998;178(6):1795–8.

<sup>4</sup> Satterwhite CL, Torrone E, Meites E, et al. Sexually transmitted infections among US women and men: prevalence and incidence estimates, 2008. *Sex Transm Dis* 2013;40(3):187–93.

<sup>5</sup> de Villiers E-M, Fauquet C, Broker TR, et al. Classification of papillomaviruses. *Virol* 2004;324:17–27.

<sup>6</sup> 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.

<sup>7</sup> Clifford GM, Smith JS, Plummer M, et al. Human papillomavirus types in invasive cervical cancer worldwide: a meta-analysis. *Br J Cancer* 2003;88(1):63–73.

<sup>8</sup> Bosch FX, Manos MM, Munoz N, et al. Prevalence of human papillomavirus in cervical cancer: a worldwide perspective. *J Natl Cancer Inst* 1995;87(11):796–802.

<sup>9</sup> Garland SM, Steben M, Sings HL, et al. Natural history of genital warts: analysis of the placebo arm of 2 randomized phase III trials of a quadrivalent human papillomavirus (types 6, 11, 16, and 18) vaccine. *J Infect Dis* 2009;199(6):805–14.

<sup>10</sup> Gissmann L, Wolnik L, Ikenberg H, et al. Human papillomavirus types 6 and 11 DNA sequences in genital and laryngeal papillomas and in some cervical cancers. *Proc Natl Acad Sci USA*. 1983;80(2):560–3.

<sup>11</sup> Markowitz LE, Dunne EF, Saraiya M, et al. Quadrivalent human papillomavirus vaccine. Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Morb Mortal Wkly Rep* 2007;56(RR02):1–24.

<sup>12</sup> Centers for Disease Control and Prevention. FDA licensure of quadrivalent human papillomavirus vaccine (HPV4, Gardasil) for use in males and guidance from the Advisory Committee on Immunization Practices (ACIP). *MMWR Morb Mortal Wkly Rep* 2010;59(20):630–2.

<sup>13</sup> Centers for Disease Control and Prevention. FDA licensure of bivalent human papillomavirus vaccine (HPV2, Cervarix) for use in females and updated HPV vaccination recommendations from the Advisory Committee on Immunization Practices (ACIP). *MMWR Morb Mortal Wkly Rep* 2010;59(20):626–9.

<sup>14</sup> Petrosky E, Bocchini JA, Hariri S, et al. Use of 9-valent human papillomavirus (HPV) vaccine: updated HPV vaccination recommendations of the Advisory Committee on Immunization Practices. *MMWR Morb Mortal Wkly Rep* 2015;64(11):300–4.

<sup>15</sup> HealthyPeople.gov. Healthy People 2020 Topics & Objectives. Immunization and Infectious Diseases. Objectives IID-11.4 and IID-11.5. <https://www.healthypeople.gov/2020/topics-objectives/topic/immunization-and-infectious-diseases/objectives> Accessed July 20, 2016.

<sup>16</sup> Reagan-Steiner S, Yankey D, Jeyarajah J, et al. National, regional, state, and selected local area vaccination coverage among adolescents aged 13–17 years — United States, 2015. *MMWR Morb Mortal Wkly Rep* 2016; 65(33):850–8.

<sup>17</sup> Markowitz LE, Gui L, Hariri S, et al. Prevalence of HPV after introduction of the vaccination program in the United States. *Pediatrics* 2016;137(3):e20151968.

<sup>18</sup> Hariri S, Johnson ML, Bennett NM, et al. Population-based trends in high-grade cervical lesions in the early human papillomavirus vaccine era in the United States. *Cancer* 2015;121:2775–81.

<sup>19</sup> Dinh T-H, Sternberg M, Dunne EF, et al. Genital warts among 18- to 59-year-olds in the United States, National Health and Nutrition Examination Survey, 1999–2004. *Sex Transm Dis* 2008;35(4):357–60.

<sup>20</sup> Flagg EW, Schwartz R, Weinstock H. Prevalence of anogenital warts among participants in private health plans in the United States, 2003–2010: potential impact of human papillomavirus vaccination. *Am J Public Health* 2013;103(8):1428–35.

<sup>21</sup> Smith JS, Robinson NJ. Age-specific prevalence of infection with herpes simplex virus types 2 and 1: a global review. *J Infect Dis* 2002;186(Suppl 1):S3–28.

<sup>22</sup> Corey L, Wald A. Genital herpes. In: Holmes KK, Sparling FP, Stamm WE, et al., eds. *Sexually Transmitted Diseases*, 4th ed. New York, NY: McGraw-Hill; 2008:399–437.

<sup>23</sup> Kimberlin DW, Rouse DJ. Genital herpes. *N Engl J Med* 2004;350(19):1970–7.

<sup>24</sup> Bradley H, Markowitz LE, Gibson T, et al. Seroprevalence of herpes simplex virus types 1 and 2 — United States, 1999–2010. *J Infect Dis* 2014;209(3):325–33.

<sup>25</sup> Fanfair RN, Zaidi A, Taylor LD, et al. Trends in seroprevalence of herpes simplex virus type 2 among non-Hispanic blacks and non-Hispanic whites aged 14 to 49 years — United States, 1988 to 2010. *Sex Transm Dis* 2013;40(11):860–4.

<sup>26</sup> Xu F, Sternberg MR, Kottiri BJ, et al. Trends in herpes simplex virus type 1 and type 2 seroprevalence in the United States. *JAMA* 2006;296(8):964–73.

<sup>27</sup> Bernstein DI, Bellamy AR, Hook EW III, et al., Epidemiology, clinical presentation, and antibody response to primary infection with herpes simplex virus type 1 and type 2 in young women. *Clin Infect Dis* 2013;56:344–51.

<sup>28</sup> Roberts CM, Pfister JR, Spear SJ. Increasing proportion of herpes simplex virus type 1 as a cause of genital herpes infection in college students. *Sex Transm Dis* 2003;30(10):797–800.

<sup>29</sup> Kimberlin DW. The scarlet H. *J Infect Dis* 2014;209(3):315–7.

<sup>30</sup> Copen CE, Chandra A, Martinez G. Prevalence and timing of oral sex with opposite-sex partners among females and males aged 15–24 years: United States, 2007–2010. *National Health Statistics Reports*; no. 56. Hyattsville, MD: National Center for Health Statistics, 2012.

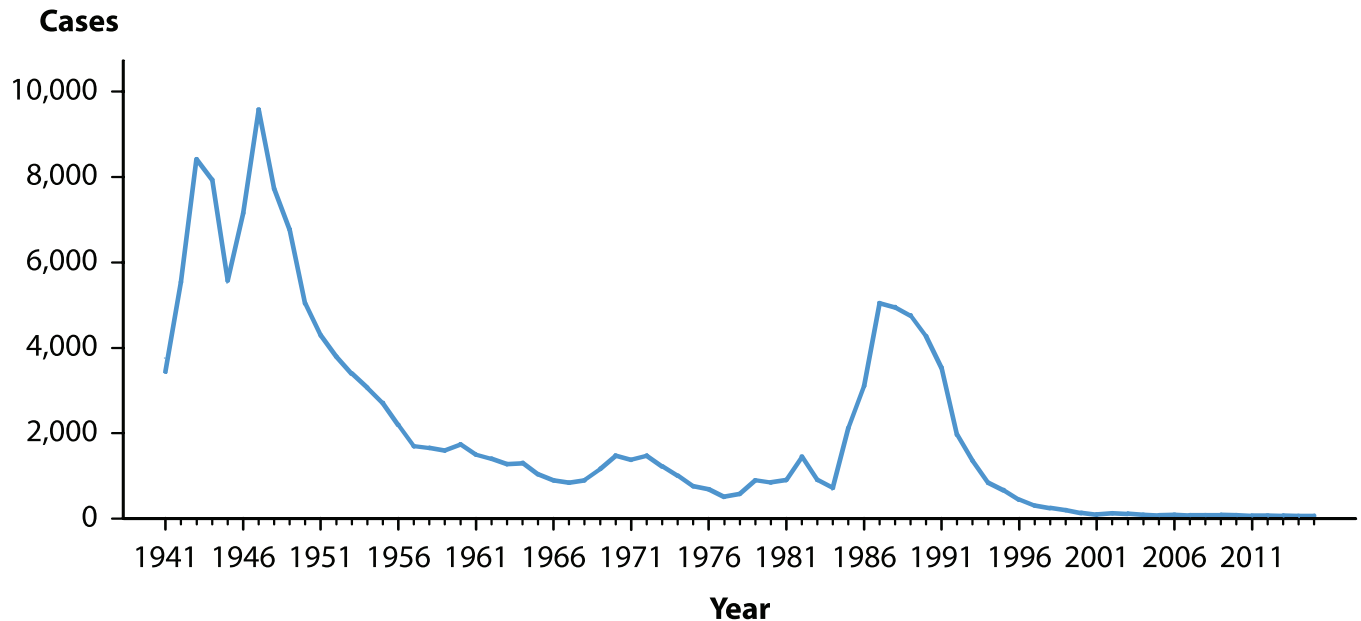
<sup>31</sup> Langenberg AGM, Corey L, Ashley RL, et al. A prospective study of new infections with herpes simplex virus type 1 and type 2. *N Engl J Med* 1999;341:1432–8.

<sup>32</sup> Sampath A, Maduro G, Schillinger JA. Infant deaths due to herpes simplex virus, congenital syphilis, and HIV in New York City. *Pediatrics* 2016;137(4):e20152387.

<sup>33</sup> Brown ZA, Wald A, Morrow RA, et al. Effect of serologic status and cesarean delivery on transmission rates of herpes simplex virus from mother to infant. *JAMA* 2003;289(2):203–9.

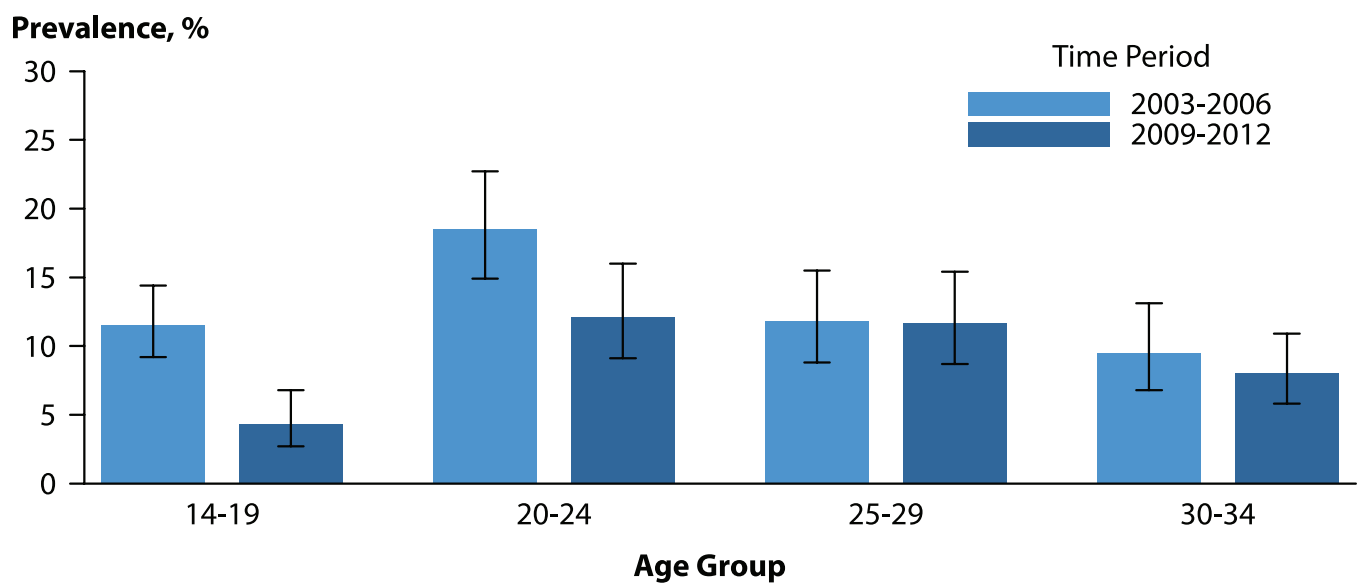
- <sup>34</sup> French JL, McGregor JA, Parker R. Readily treatable reproductive tract infections and preterm birth among black women. *Am J Obstet Gynecol* 2006;194:1717–27.
- <sup>35</sup> Sutton M, Sternberg M, Koumans EH, et al. The prevalence of *Trichomonas vaginalis* infection among reproductive-age women in the United States, 2001–2004. *Clin Infect Dis* 2007;45(10):1319–26.

**Figure 45. Chancroid — Reported Cases by Year, United States, 1941–2015**



**NOTE:** Data collection for chancroid began in 1941; however, chancroid became nationally notifiable in 1944. Refer to the National Notifiable Disease Surveillance System (NNDSS) website for more information: <https://wwwn.cdc.gov/nndss/conditions/chancroid/>.

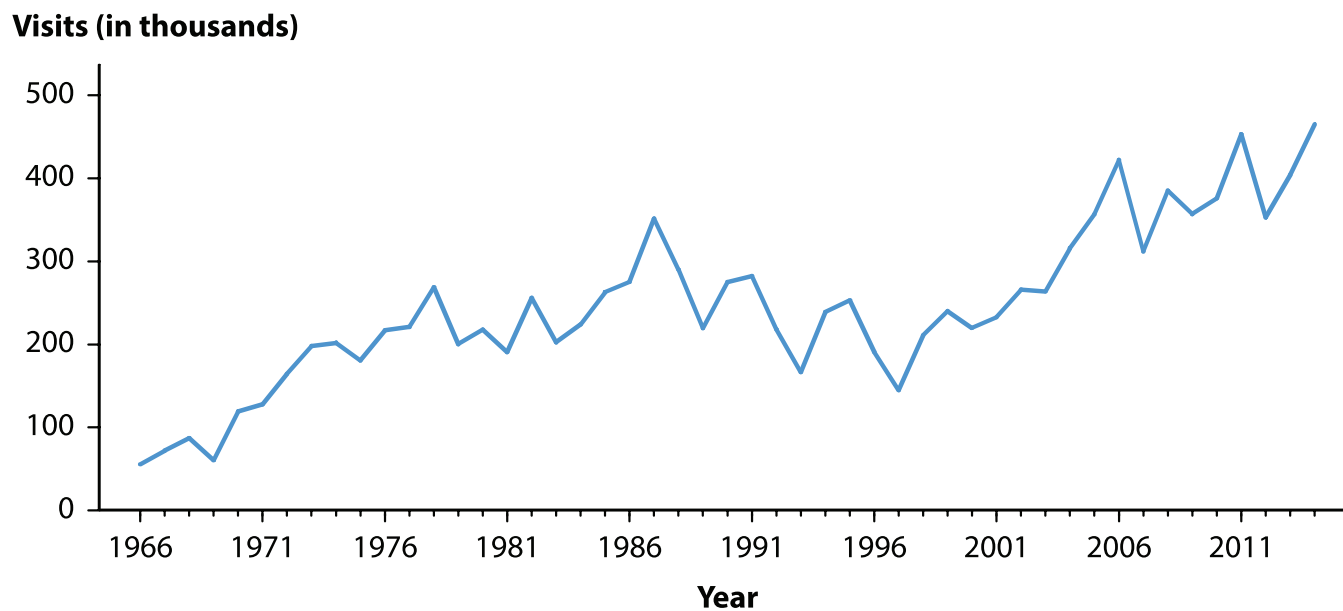
**Figure 46. Human Papillomavirus — Cervicovaginal Prevalence of Types 6, 11, 16 and 18 Among Women Aged 14–34 Years by Age Group and Time Period, National Health and Nutrition Examination Survey, 2003–2006 and 2009–2012**



**NOTE:** Error bars indicate 95% confidence interval.

**SOURCE:** Markowitz LE, Liu G, Hariri S, et al. Prevalence of HPV after introduction of the vaccination program in the United States. *Pediatrics* 2016;137(3):e20151968.

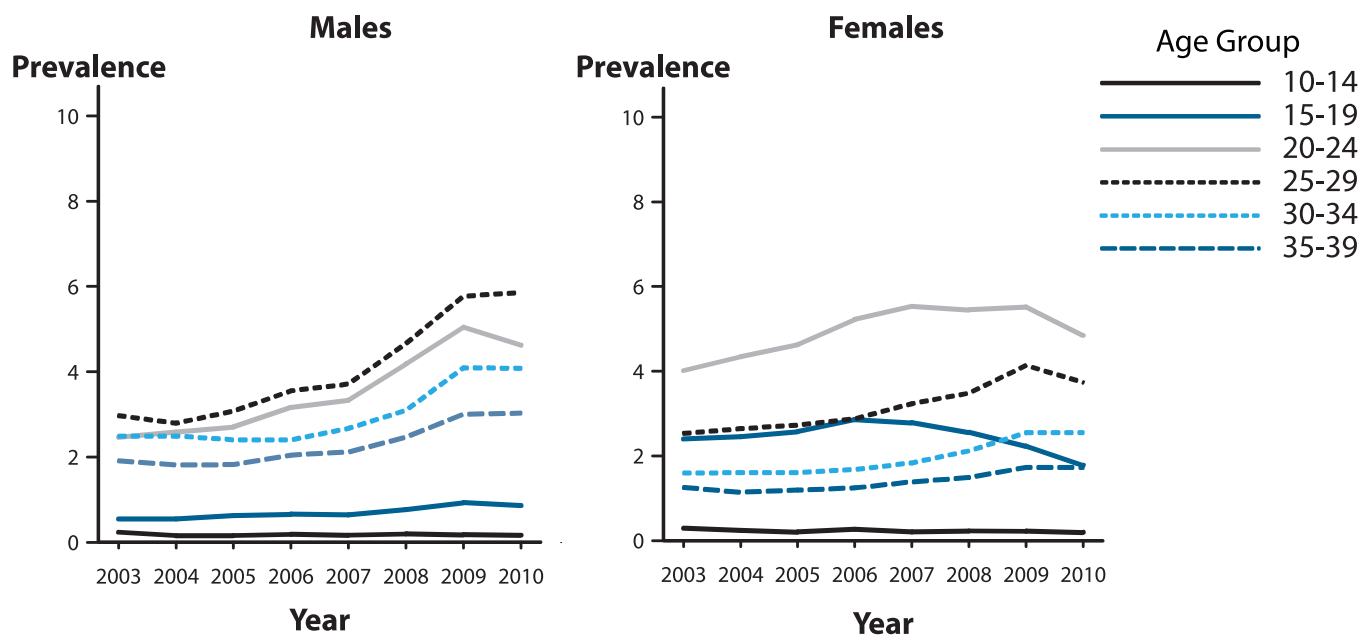
**Figure 47. Genital Warts — Initial Visits to Physicians' Offices, United States, 1966–2014**



**NOTE:** The relative standard errors for genital warts estimates of more than 100,000 range from 18% to 23%. See Section A2.5 in the Appendix and Table 44.

**SOURCE:** National Disease and Therapeutic Index, IMS Health, Integrated Promotional Services™. IMS Health Report, 1966–2014. The 2015 data were not obtained in time to include them in this report.

**Figure 48. Genital Warts — Prevalence per 1000 Person-Years Among Participants in Private Health Plans Aged 10–39 Years by Sex, Age Group, and Year, 2003–2010**



**SOURCE:** Flagg EW, Schwartz R, Weinstock H. Prevalence of anogenital warts among participants in private health plans in the United States, 2003–2010: potential impact of human papillomavirus vaccination. *Am J Public Health* 2013;103(8):1428–35.

**Figure 49. Genital Warts — Prevalence Among STD Clinic Patients by Sex, Sex of Partners, and Jurisdiction\*, STD Surveillance Network (SSuN), 2015**

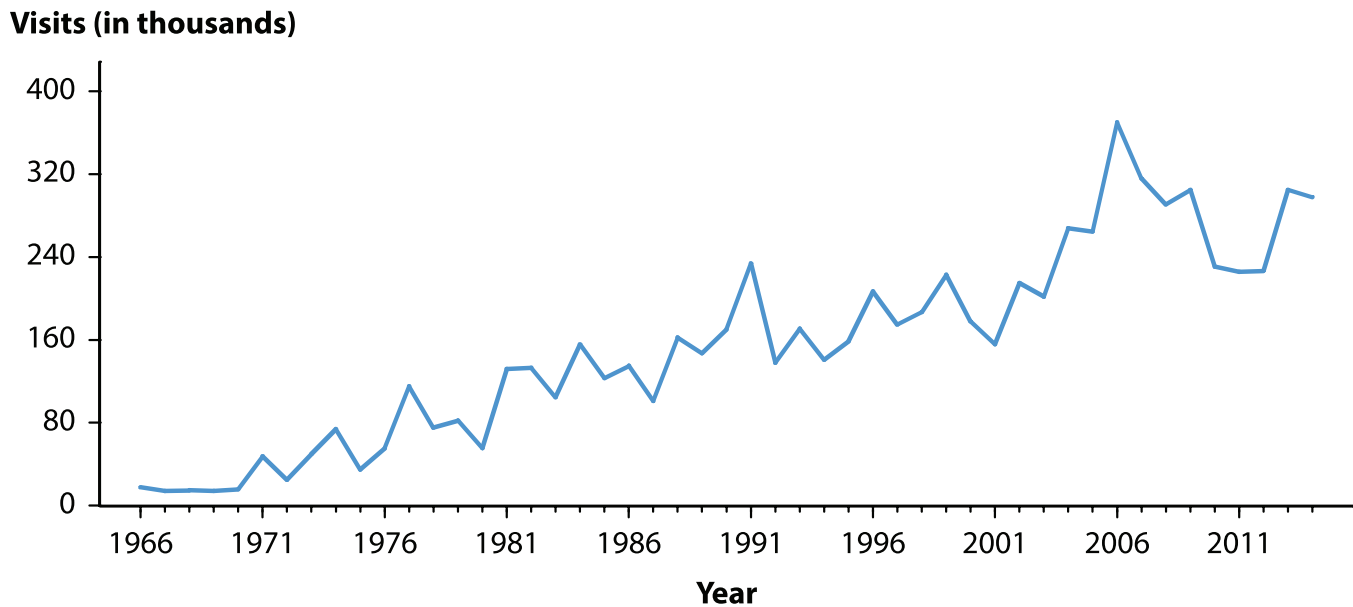


\* Includes SSuN jurisdictions that contributed data for all of 2015.

<sup>†</sup> MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM); MSW = Men who have sex with women only.

**NOTE:** See section A2.2 in the Appendix for SSuN methods.

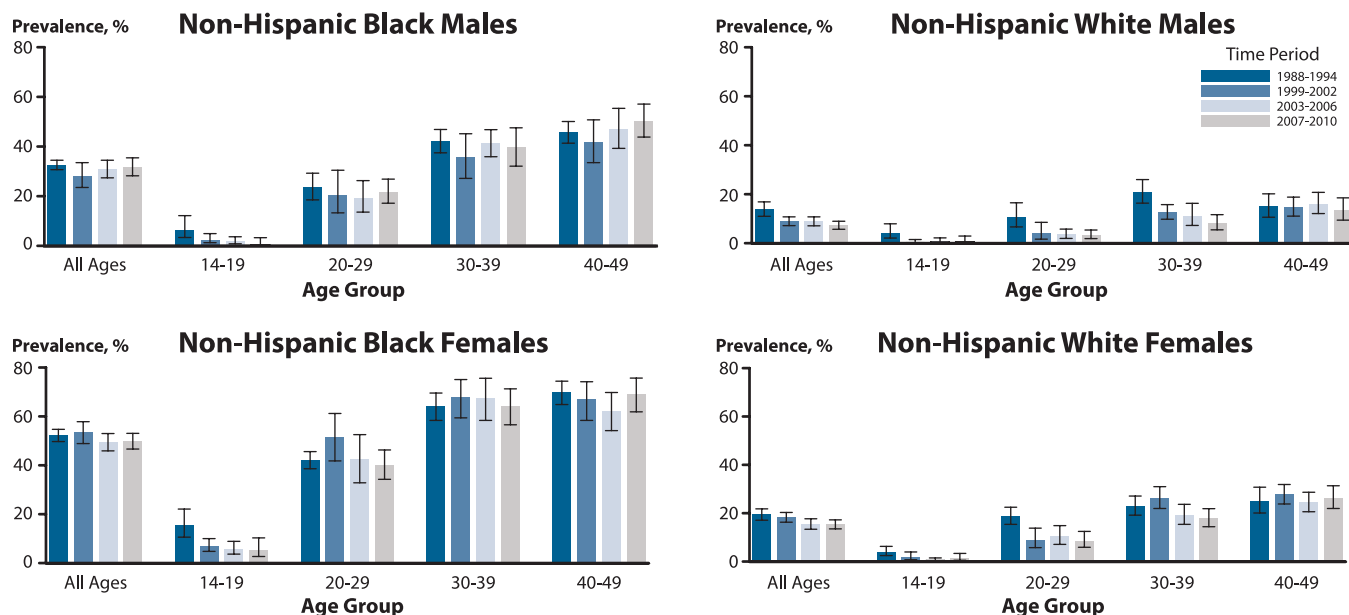
**Figure 50. Genital Herpes Simplex Virus (HSV) Infections — Initial Visits to Physicians' Offices, United States, 1966–2014**



**NOTE:** The relative standard errors for genital HSV infection estimates of more than 100,000 range from 18% to 23%. See Section A2.5 in the Appendix and Table 44.

**SOURCE:** National Disease and Therapeutic Index, IMS Health, Integrated Promotional Services™. IMS Health Report, 1966–2014. The 2015 data were not obtained in time to include them in this report.

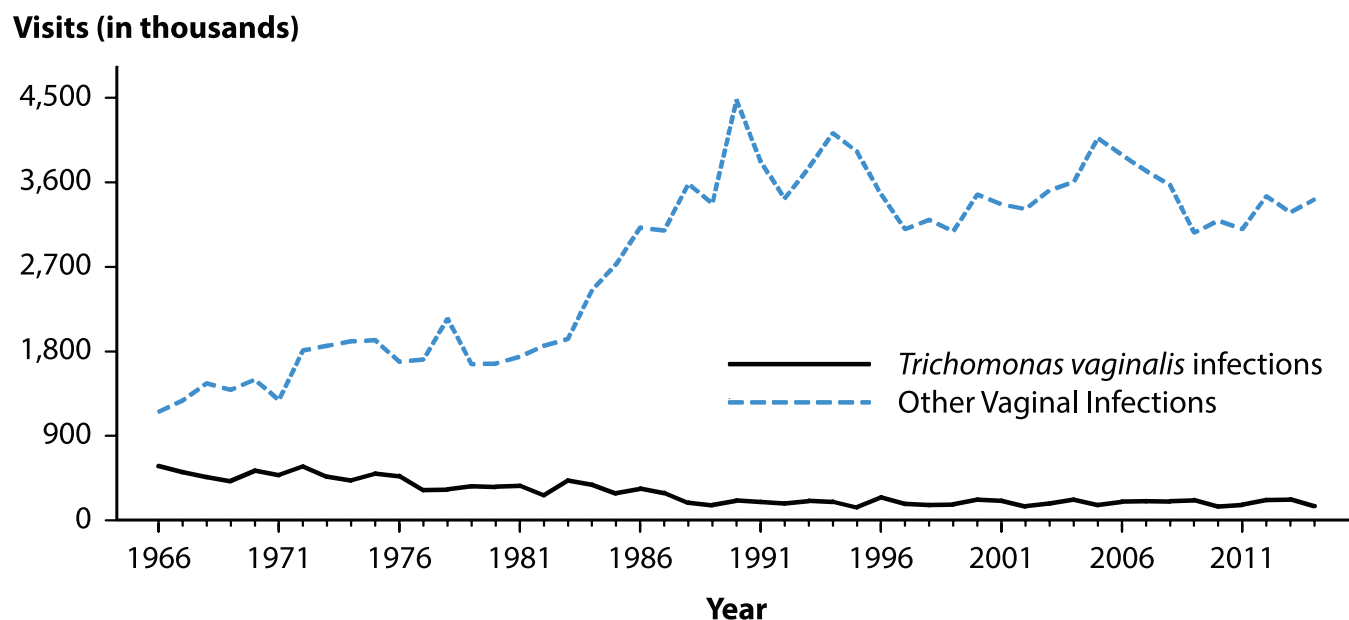
**Figure 51. Herpes Simplex Virus (HSV) Type 2 — Seroprevalence Among Non-Hispanic Whites and Non-Hispanic Blacks by Sex and Age Group, National Health and Nutrition Examination Survey, 1988–1994, 1999–2002, 2003–2006, and 2007–2010**



**NOTE:** Error bars indicate 95% confidence interval.

**SOURCE:** Fanfair RN, Zaidi A, Taylor LD, et al. Trends in seroprevalence of herpes simplex virus type 2 among non-Hispanic blacks and non-Hispanic whites aged 14 to 49 years — United States, 1988 to 2010. *Sex Transm Dis* 2013;40(11):860–4.

**Figure 52. *Trichomonas vaginalis* and Other Vaginal Infections Among Women — Initial Visits to Physicians' Offices, United States, 1966–2014**



**NOTE:** The relative standard errors for *Trichomonas vaginalis* infection estimates range from 16% to 21% and for other vaginal infection estimates range from 8% to 13%. See Section A2.5 in the Appendix and Table 44.

**SOURCE:** National Disease and Therapeutic Index, IMS Health, Integrated Promotional Services™, IMS Health Report, 1966–2014. The 2015 data were not obtained in time to include them in this report.

# **SPECIAL FOCUS PROFILES**

# SPECIAL FOCUS PROFILES

# Special Focus Profiles

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The Special Focus Profiles highlight trends and distribution of STDs in populations of particular interest to STD and HIV prevention programs in state and local health departments: women and infants, adolescents and young adults, racial and ethnic minority groups, and gay, bisexual, and other men who have sex with men (collectively referred to as MSM). These populations are most vulnerable to STDs and their consequences and often lack adequate access to healthcare services. In 2014, in the U.S., age was strongly associated with having health insurance. Older adults (65 years and older) and children (19 years and under) were most likely to have health insurance. Working-age adults (19 years to 64 years) had higher uninsured rates. The rates of non-insured for non-Hispanic Whites, non-Hispanic Blacks, and Hispanics were: 7.6%, 11.8%, and 19.9%, respectively.<sup>1</sup> The Patient Protection and Affordable Care Act (ACA) aims to increase access to sexual and reproductive health services through reforms based on the U.S. Preventive Services Task Force recommendations that include: chlamydia and gonorrhea screening (for sexually active women under 25 years and all women at increased risk), HIV screening (everyone 15–65 years old, pregnant, and higher risk), STD counseling (for all sexually active adolescents and higher-risk adults), and syphilis screening (for pregnant women and adults at higher risk).<sup>2</sup> However, although health insurance coverage has been expanded for most groups, including both men and women, and for most race and ethnic groups, evidence suggests that disparities in health insurance coverage and access to STD services remain.<sup>3,4</sup>

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# STDs in Women and Infants

## Public Health Impact

Women and infants are at significant risk for long-term consequences of STDs. A woman's relationship status with her male partner, such as the concurrency of the relationship, has been identified as an important predictor of her sexual health.<sup>1-3</sup> In addition to social factors such as poverty and lack of access to quality STD services, homelessness or unstable housing may increase a woman's risk for acquiring a sexually transmitted infection.<sup>4</sup> For some women maintaining the relationship with her partner may take a higher priority than STD risk reduction<sup>5</sup>, thereby affecting her sexual and reproductive health, as well as the health of her unborn baby.<sup>6,7</sup>

Because it may be her male partner's risk, rather than the woman's that increases a woman's risk for STDs, even a woman who has only one partner may be obliged to practice safer sex, such as using condoms.<sup>8</sup> A number of studies have found significant associations between condom use and socio-demographic characteristics, including age, income, education, and acculturation.<sup>9</sup>

Women infected with *Chlamydia trachomatis* or *Neisseria gonorrhoeae* can develop pelvic inflammatory disease (PID), which, in turn, can lead to reproductive morbidity such as ectopic pregnancy and tubal factor infertility. An estimated 10–20% of women with chlamydial and gonococcal infections may develop PID if they do not receive adequate treatment.<sup>10,11</sup> Among women with PID, tubal scarring can cause infertility in 8% of women, ectopic pregnancy in 9%, and chronic pelvic pain in 18%.<sup>12</sup>

The majority of chlamydial and gonococcal infections in women are asymptomatic, and hence are detected primarily through screening. Because the symptoms associated with PID can be nonspecific, up to 85% of women with PID delay seeking medical care, thereby increasing the risk for infertility and ectopic pregnancy.<sup>13</sup> Data from two randomized controlled trials of chlamydia screening suggest that such screening programs reduce PID incidence.<sup>14,15</sup>

Human papillomavirus (HPV) infections are highly prevalent in the United States, especially among young sexually active adults. Although most HPV infections in women are cleared within several years, high-risk HPV-type infections can be accompanied by abnormal changes in the uterine cervical epithelium, which are detected by cytological examination of Papanicolaou (Pap) smears. Persistent high-risk HPV-type infections may lead to cervical cancer precursors, which if undetected can result in cancer. Other low-risk HPV types cause genital warts,

low-grade Pap smear abnormalities, and, rarely, recurrent respiratory papillomatosis in infants born to infected mothers.<sup>16</sup> For more information on adolescent and adult HPV infections, see Other STDs.

## Impact on Maternal and Fetal Outcomes

As with non-pregnant women, a high proportion of pregnant women with chlamydial and gonococcal infections are asymptomatic. Documented sequelae of untreated infections in pregnancy include stillbirth, premature delivery, premature rupture of the membranes, and low birth weight. Maternal infection can also affect the neonate, leading to neonatal ophthalmia, and, in the case of *C. trachomatis*, neonatal pneumonia. Although topical prophylaxis of infants at delivery is effective for prevention of gonococcal ophthalmia neonatorum, prevention of neonatal pneumonia requires prenatal detection and treatment.

Genital infections with herpes simplex virus (HSV) are extremely common, can cause painful outbreaks, and can have serious consequences for pregnant women and their infants.<sup>17</sup> Neonatal herpes can be a severe illness presenting with pulmonary disease, seizures, fever, and a high case fatality rate following contact with infected genital secretions during delivery. Risk of transmission to the infant is greatest when the mother has primary genital lesions during delivery, especially if she acquires infection towards the end of her pregnancy.<sup>18</sup>

Syphilis has long been known to be an important risk factor for adverse pregnancy outcomes. The consequences of untreated maternal infection include fetal death, preterm birth, and also congenital infection in a proportion of surviving infants resulting in both physical and mental developmental disabilities. Most cases of congenital syphilis are easily preventable if women are screened for syphilis and treated early during prenatal care.<sup>19</sup>

## Observations

### *Chlamydia*

Chlamydial infections in women are usually asymptomatic and screening is necessary to identify most infections.<sup>20</sup> Routine chlamydia screening of sexually-active young women has been recommended by the CDC since 1993.<sup>21</sup> Rates of reported cases of chlamydia among women increased steadily from the early 1990s, likely reflecting expanded screening coverage and use of more sensitive

diagnostic tests (Figure 1). During 2011–2013, rates decreased from 643.4 to 619.0 cases per 100,000 females and then increased a total of 4.3% over the next 2 years, resulting in a rate of 645.5 cases per 100,000 females in 2015 (Table 4).

Chlamydia rates are highest among young women, the population targeted for screening (Figure 5, Table 10). During 2014–2015, rates of reported chlamydia cases increased 1.5% and 2.7% among females aged 15–19 and 20–24 years, respectively. Regionally, chlamydia case rates were highest among women in the South, with a rate of 720.2 cases per 100,000 females in 2015 (Table 4). Rates of reported chlamydia cases exceeded gonorrhea rates among women in all regions (Figures A and B, Tables 4 and 15).

## **Gonorrhea**

Like chlamydia, gonorrhea is often asymptomatic in women. Thus, gonorrhea screening is an important strategy for the identification of gonorrhea among women. Large-scale screening programs for gonorrhea in women began in the 1970s. After an initial increase in cases detected through screening, rates of reported gonorrhea cases for both women and men declined steadily throughout the 1980s and early 1990s, and then declined more gradually in the late 1990s and the 2000s. However, more recently, there have been increases in cases since 2009 (Figure 12).

After reaching a 40-year low in 2009 (104.5 cases per 100,000 females), the rate of reported cases of gonorrhea for women increased slightly each year during 2009–2011, and then decreased each year during 2012–2014 (Figure 13). In 2015, the gonorrhea rate among women increased 6.8% to 107.2 cases per 100,000 females (Figure 13, Table 15).

The gonorrhea rate among women was slightly higher than the rate among men during 2006–2012; however, the rate among men was higher than the rate among women during 2013–2015 (Figure 13, Tables 15 and 16). During 2011–2015, gonorrhea rates were highest among young women and adolescents aged 15–24 years (Figure 17, Table 21). For women in this age group, rates were highest among 19-year olds in 2015 (666.0 cases per 100,000 females) (Table 23).

## **Congenital Syphilis**

Trends in congenital syphilis usually follow trends in primary and secondary (P&S) syphilis among women, with a lag of 1–2 years (Figure 44). After plateauing at a relatively low rate (0.9 cases per 100,000 females) during 2011–2013, the rate of reported P&S syphilis cases among women increased to 1.1 cases per 100,000 females in

2014, and then increased 27.3%, to 1.4 cases per 100,000 females during 2014–2015 (Figure 32, Table 28).

Similarly, the rate of reported congenital syphilis cases has increased each year since 2012 (Figure 44, Table 1). In 2015, there were 487 reported cases of congenital syphilis and the national congenital syphilis rate was 12.4 cases per 100,000 live births. This increase in 2015 represents a 6.0% increase relative to 2014 and a 36.3% increase relative to 2011 (Table 41).

In 2015, the highest rates of P&S syphilis among women and the highest rates of congenital syphilis were observed in the South and in the West (Figures C and D, Tables 28 and 41). The P&S syphilis rates among women increased in every region during 2014–2015. However, only the West experienced an increase in the congenital syphilis rate during this time period. During 2014–2015, the largest increases in the P&S syphilis rates among women were seen in the West (41.7%), followed by the Northeast (40.0%), South (20.0%), and Midwest (11.1%). The congenital syphilis rate increased 42.3% in the West and decreased 17.4% in the Northeast, 7.7% in the South, and 3.5% in the Midwest (Table 44).

Although most cases of congenital syphilis occur among infants whose mothers have had some prenatal care, late or limited prenatal care has been associated with congenital syphilis. Failure of health care providers to adhere to maternal syphilis screening recommendations also contributes to the occurrence of congenital syphilis.<sup>19</sup>

## **Neonatal Herpes Simplex Virus**

Neonatal herpes simplex virus (HSV) infections, although relatively rare, cause significant morbidity and mortality.<sup>17</sup> Most neonatal HSV infections result from perinatal transmission from mother to neonate,<sup>22</sup> but postnatal infection can occur.<sup>23</sup> Although reporting of neonatal HSV infection is required in a few jurisdictions,<sup>24,25</sup> it is not a nationally reportable disease.

An examination of inpatient records of infants aged 60 days or younger at admission using the Healthcare Cost and Utilization Project Kid's Inpatient Database showed an overall incidence of 9.6 cases per 100,000 live births in 2006.<sup>26</sup> Rates did not vary significantly by region or race/ethnicity; however prevalence was significantly higher among cases for which the expected primary payer was Medicaid (15.1 cases per 100,000) compared with private insurance or managed health care (5.4 cases per 100,000).

In New York City, 76 cases of neonatal HSV infection were identified through population-based surveillance during a 4.5 year period (April 2006–September 2010), for an average annual incidence of 13.3 cases per 100,000 live births.<sup>25</sup> Forty-one percent of the confirmed cases were

infected with HSV type 1. A review of certificates of death or stillbirth issued in New York City during 1981–2013 identified 34 deaths due to neonatal HSV infection, or 0.82 deaths per 100,000 live births.<sup>27</sup>

For information on adolescent and adult HSV infections, see Other STDs.

## Pelvic Inflammatory Disease

Accurate estimates of PID and tubal factor infertility resulting from chlamydial and gonococcal infections are difficult to obtain, in part because definitive diagnoses of these conditions can be complex. Published data suggest overall declining U.S. rates of women diagnosed with PID in both hospital and ambulatory settings.<sup>28–30</sup> The National Disease and Therapeutic Index (NDTI; see Section A2.5 in the Appendix) provides estimates of initial visits to office-based, private physicians for PID. NDTI estimated that from 2005–2014 the number of initial visits to such physicians for PID among women aged 15–44 years have decreased by 71.0% from 176,000 to 51,000 visits (Figure E). The 2015 NDTI data were not obtained in time to include them in this report.

Differences in PID diagnoses or treatment by race/ethnicity have been observed in earlier research.<sup>30</sup> Data from the National Survey of Family Growth indicates that the overall proportion of sexually experienced women who have been treated for PID declined from 8.6% in 1995 to 4.1% during 2011–2013 (Figure F).<sup>31</sup> While this pattern was observed across all racial/ethnic groups, the proportion who had received PID treatment was higher in non-Hispanic Blacks than in Hispanics or non-Hispanic Whites. These disparities are consistent with the marked racial disparities observed for chlamydia and gonorrhea. However, because of the subjective methods by which PID is diagnosed, racial disparity data should be interpreted with caution.

Several factors may be contributing to declining PID rates, including increases in chlamydia and gonorrhea screening coverage, more sensitive diagnostic technologies, and availability of single-dose therapies that increase adherence to treatment.<sup>29–30,32</sup> While PID is declining nationally, it still causes an enormous amount of unnecessary and expensive morbidity.

## Ectopic Pregnancy

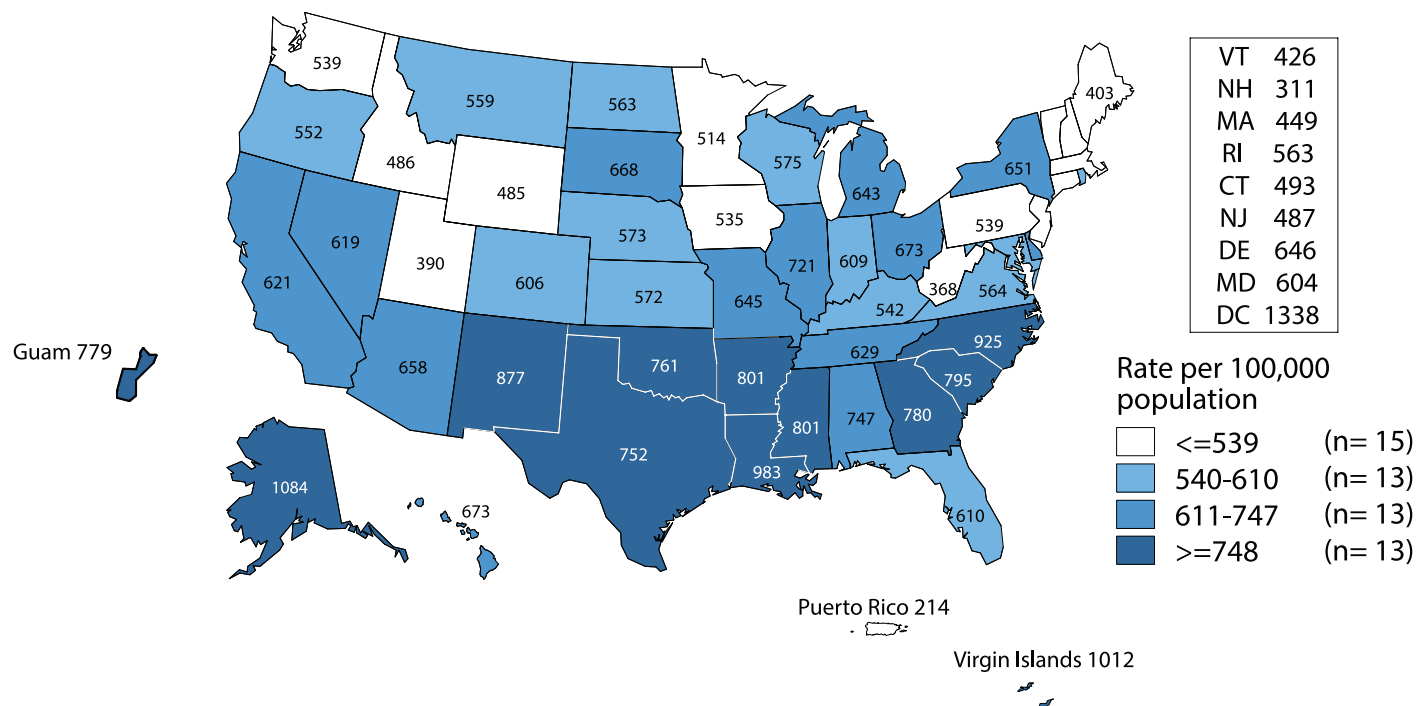
Ectopic pregnancy (EP) is a potentially life-threatening condition that requires prompt evaluation and treatment. In 1992, CDC estimated the U.S. ectopic rate at 2% of all pregnancies.<sup>33</sup> Since then, reliable estimates using national healthcare surveys has been challenging because medical and surgical treatment of EP is currently provided in both inpatient and outpatient settings. More recent attempts

to estimate EP incidence use data from administrative databases of public and private insurance and managed care systems.<sup>34,35</sup> Using data from a large administrative claims database of U.S. commercial health plans, trends in the rate of ectopic pregnancy among pregnancies in females aged 15–44 years during the period of 2003–2014 have remained relatively stable across all 5 year age groups (Figure G). Rates of ectopic pregnancy increased with age, with the greatest rate concentrated in the 35–39 and 40–44 year age groups.

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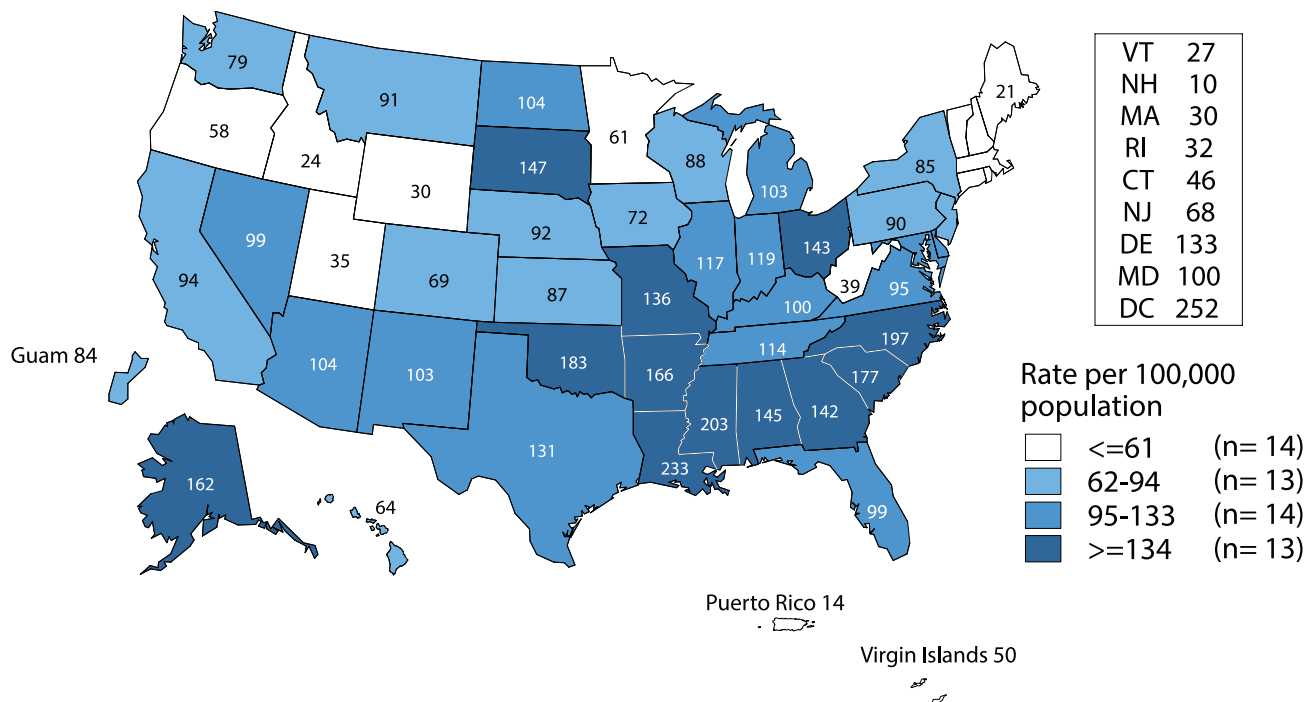
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**Figure A. Chlamydia — Rates of Reported Cases Among Women by State, United States and Outlying Areas, 2015**



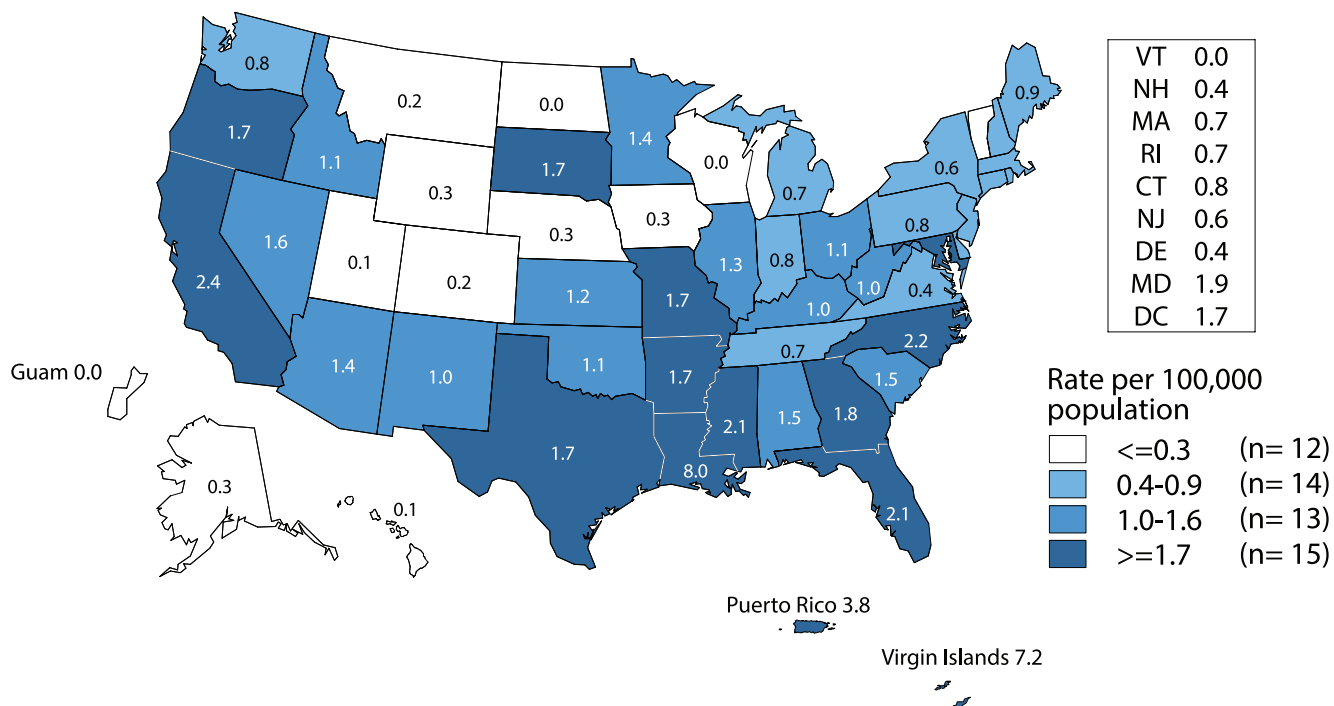
**NOTE:** The total rate of reported cases of chlamydia among women in the United States and outlying areas (Guam, Puerto Rico, and Virgin Islands) was 640.8 cases per 100,000 females.

**Figure B. Gonorrhea — Rates of Reported Cases Among Women by State, United States and Outlying Areas, 2015**



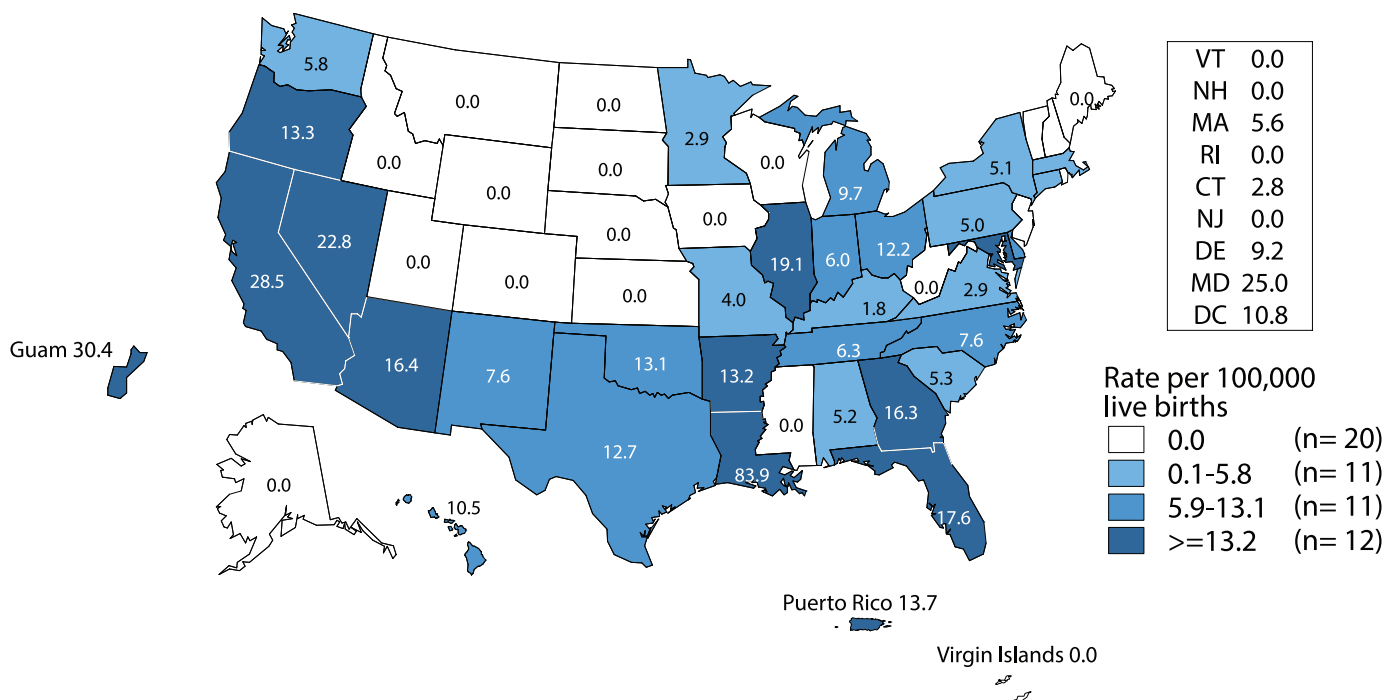
**NOTE:** The total rate of reported cases of gonorrhea among women in the United States and outlying areas (Guam, Puerto Rico, and Virgin Islands) was 106.1 cases per 100,000 females.

**Figure C. Primary and Secondary Syphilis — Rates of Reported Cases Among Women by State, United States and Outlying Areas, 2015**



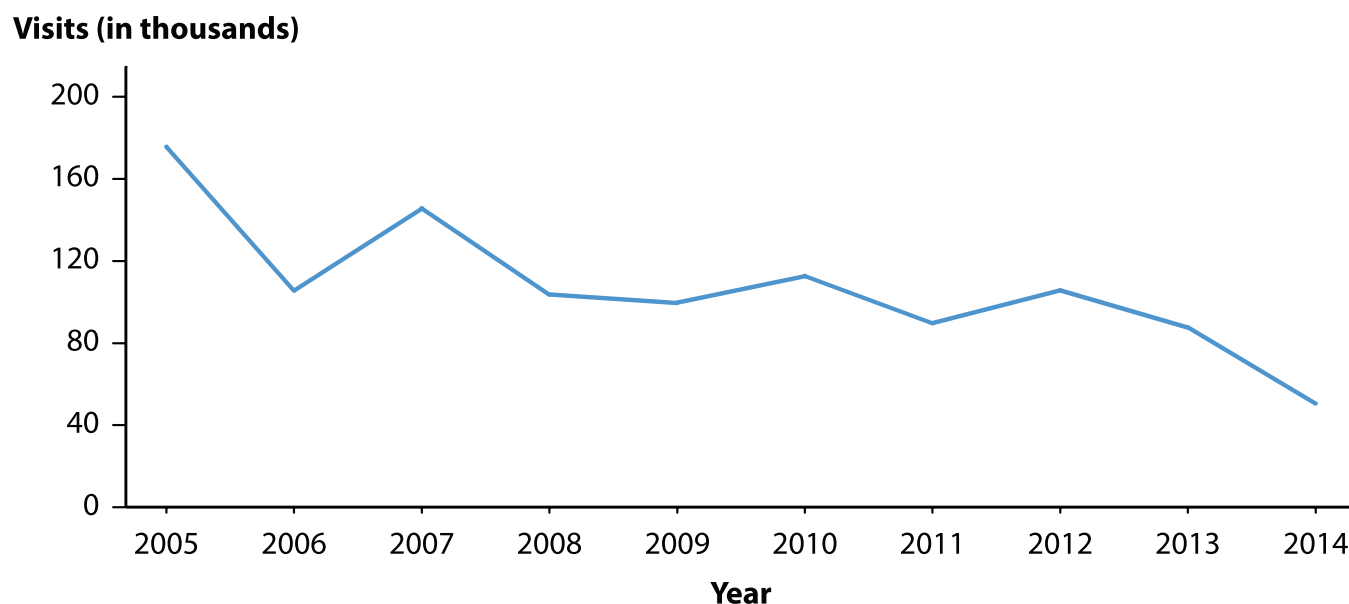
**NOTE:** The total rate of primary and secondary syphilis among women in the United States and outlying areas (Guam, Puerto Rico, and Virgin Islands) was 1.4 cases per 100,000 females.

**Figure D. Congenital Syphilis — Rates of Reported Cases Among Infants by Year of Birth and State, United States and Outlying Areas, 2015**



**NOTE:** The total rate of congenital syphilis for infants by year of birth for the United States and outlying areas (Guam, Puerto Rico, and Virgin Islands) was 12.4 cases per 100,000 live births.

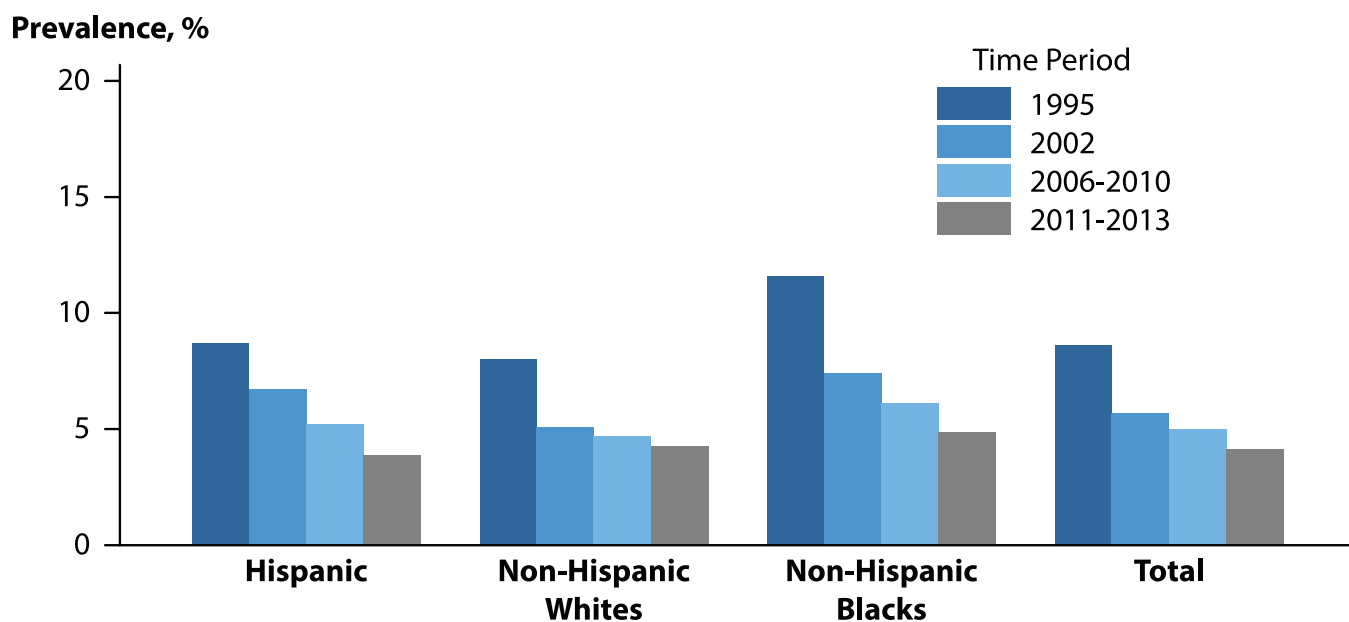
**Figure E. Pelvic Inflammatory Disease — Initial Visits to Physicians' Offices Among Women Aged 15–44 Years, United States, 2006–2014**



**NOTE:** The relative standard errors for these estimates are 16% to 23%. See section A2 in the Appendix for more information on other data sources and Table 45.

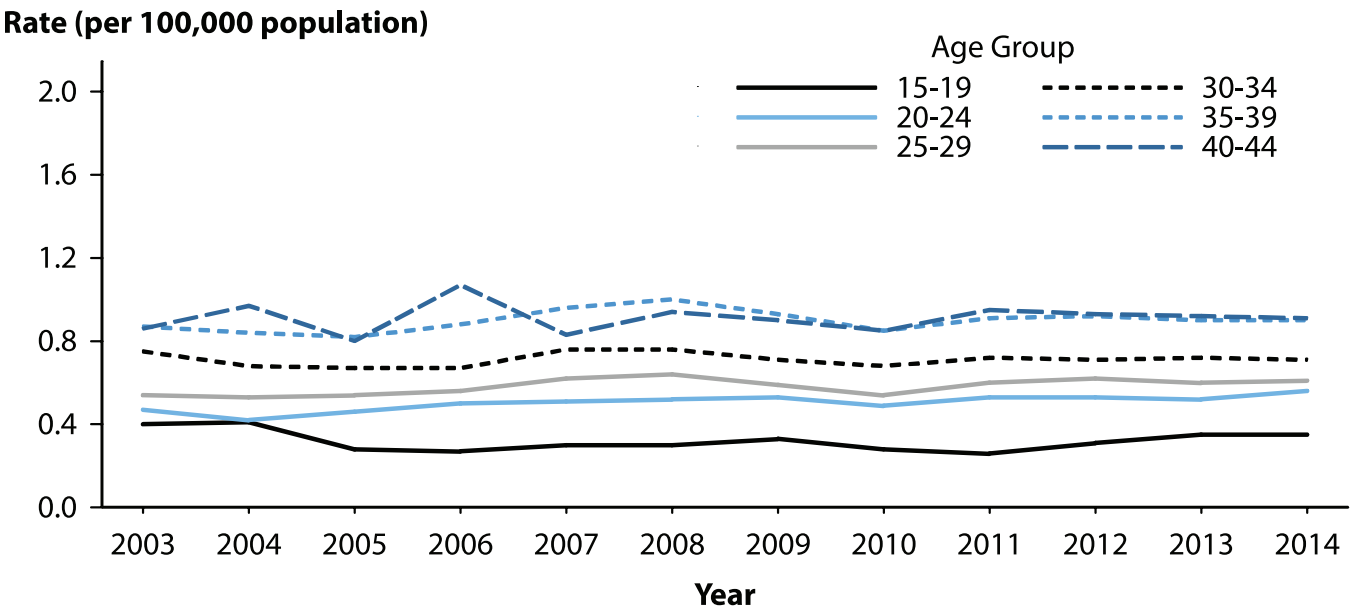
**SOURCE:** National Disease and Therapeutic Index, IMS Health, Integrated Promotional Services™, IMS Health Report, 1966–2014. The 2015 data were not obtained in time to include them in this report.

**Figure F. Pelvic Inflammatory Disease — Lifetime Prevalence of Treatment Among Sexually Experienced Women Aged 15–44 Years by Race/Ethnicity and Time Period, National Survey of Family Growth, 1995, 2002, 2006–2010, 2011–2013**



**SOURCE:** Leichter, J, Chandra A, Aral SO. Correlates of Self-Reported Pelvic Inflammatory Disease Treatment in Sexually Experienced Reproductive-Aged Women in the United States, 1995, 2002, and 2006–2010. Sex Transm Dis. 2013;40(5):413–418. Additional data for 2011–2013 provided separately.

**Figure G. Ectopic Pregnancy — Rates Among Commercially Insured Pregnant Women Aged 15–44 Years by Age Group, 2003–2014**



**SOURCE:** MarketScan Commercial Claims and Encounters Database, Truven Health Analytics, Ann Arbor, MI, 2003–2014.

# STDs in Adolescents and Young Adults

## Public Health Impact

Incidence and prevalence estimates suggest that young people aged 15–24 years acquire half of all new STDs<sup>1</sup> and that 1 in 4 sexually active adolescent females has an STD, such as chlamydia or human papillomavirus (HPV).<sup>2</sup> Compared with older adults, sexually active adolescents aged 15–19 years and young adults aged 20–24 years are at higher risk of acquiring STDs for a combination of behavioral, biological, and cultural reasons. For some STDs, such as chlamydia, adolescent females may have increased susceptibility to infection because of increased cervical ectopy. Cervical ectopy refers to columnar cells, which are typically located within the cervical canal, being located on the outer surface of the cervix. Although this is a normal finding in adolescent and young women, these cells are more susceptible to infection. The higher prevalence of STDs among adolescents may also reflect multiple barriers to accessing quality STD prevention and management services, including inability to pay, lack of transportation, long waiting times, conflict between clinic hours and work and school schedules, embarrassment attached to seeking STD services, method of specimen collection, and concerns about confidentiality (e.g., Explanation of Benefits for services received mailed to parents or guardians).<sup>3</sup>

Traditionally, intervention efforts have targeted individual level factors associated with STD risk which do not address higher-level factors (e.g., peer norms and media influences) that may also influence behaviors.<sup>4</sup> Interventions for at-risk adolescents and young adults that address underlying aspects of the social and cultural conditions affecting sexual risk-taking behaviors are needed, as are strategies designed to improve the underlying social conditions themselves.<sup>5,6</sup> In addition, in designing STD programs, consideration should be given to the needs of adolescent and young adult populations including extended hours, optimizing privacy in waiting rooms, and urine based specimen collection.<sup>3</sup>

## Observations

### *Chlamydia*

In 2015, there were 981,359 reported cases of chlamydial infection among persons aged 15–24 years, representing 64.3% of all reported chlamydia cases. Among those aged 15–19 years, the rate of reported cases of chlamydia increased 2.5% during 2014–2015 (1,811.9 to 1,857.8 cases per 100,000 population) (Table 10). Among those

aged 20–24 years, the rate increased 4.2% during 2014–2015 (2,472.0 to 2,574.9 cases per 100,000 population) (Table 10).

Among women aged 15–24 years, the population targeted for chlamydia screening, the overall rate of reported cases of chlamydia was 3,377.6 cases per 100,000 females. Among men aged 15–24 years, the overall rate of reported cases of chlamydia was 1,132.5 cases per 100,000 males. Rates varied by state for both males and females, with the majority of states having the highest reported case rates in the South (Figures H and I).

**15–19 Year Old Females** — In 2015, the rate of reported chlamydia cases among women aged 15–19 years was 2,994.4 cases per 100,000 females, a 1.5% increase from the 2014 rate of 2949.3 cases per 100,000 females (Table 10). Increases in rates of reported cases of chlamydia were largest among 17–, 18–, and 19–year old women (2.1%, 2.8%, and 2.2% increases, respectively) (Table 12). However, during 2011–2015, the rate for women in this age group decreased 14.1% (Table 10).

**20–24 Year Old Females** — In 2015, women aged 20–24 years had the highest rate of reported chlamydia cases (3,730.3 cases per 100,000 females) compared with any other age group for either sex (Figure 5, Table 10). The overall rate of reported chlamydia cases among women in this age group increased 2.7% during 2014–2015 (Table 10). However, increases in rates of reported cases of chlamydia were largest among 23– and 24–year old women (3.0% and 5.9% increases, respectively) (Table 12). Similarly, during 2011–2015, the rate for women in this age group increased 2.8% (Table 10).

**15–19 Year Old Males** — In 2015, the rate of reported chlamydia cases among men aged 15–19 years was 767.6 cases per 100,000 males. During 2014–2015, the rate of reported chlamydia cases for men in this age group increased 6.3% (Table 10). However, during 2011–2015, the rate for men aged 15–19 years decreased 6.0% (Table 10).

**20–24 Year Old Males** — In 2015, as in previous years, men aged 20–24 years had the highest rate of reported chlamydia cases among all men (1,467.8 cases per 100,000 males). The rate for men in this age group increased 7.8% during 2014–2015 (Table 10). Similarly, during 2011–2015, the rate for men aged 20–24 years increased 12.2% (Table 10).

## **Gonorrhea**

During 2014–2015, the rate of reported gonorrhea cases increased 5.2% for persons aged 15–19 years and 7.2% for persons aged 20–24 years (Table 21). Among women aged 15–24 years, the rate was 496.7 cases per 100,000 females. Rates varied by state, with the majority of states with the highest reported case rates in the South (Figure J). Among men aged 15–24 years, the overall rate was 398.2 cases per 100,000 males. Rates varied by state, with the majority of states having the highest reported case rates in the South (Figure K).

**15–19 Year Old Females** — In 2015, women aged 15–19 years had the second highest rate of reported gonorrhea cases (442.2 cases per 100,000 females) compared with other women (Figure 17, Table 21). During 2014–2015, the rate of reported gonorrhea for women in this age group increased 2.4%. However, during 2011–2015, the rate for women in this age group decreased 22.1% (Table 21).

**20–24 Year Old Females** — In 2015, women aged 20–24 years had the highest rate of reported gonorrhea cases (546.9 cases per 100,000 females) compared with any other age group for either sex (Figure 17, Table 21). During 2014–2015, the rate of reported gonorrhea for women in this age group increased 3.0%. However, during 2011–2015, the rate for women in this age group decreased 4.0% (Table 21).

**15–19 Year Old Males** — In 2015, the rate of reported gonorrhea cases among men aged 15–19 years was 244.8 cases per 100,000 males (Figure 17, Table 21). During 2014–2015, the rate of reported gonorrhea for men in this age group increased 10.1%. However, during 2011–2015, the rate for men in this age group decreased 3.1% (Table 21).

**20–24 Year Old Males** — In 2015, as in previous years, men aged 20–24 years had the highest rate of reported gonorrhea cases (539.1 cases per 100,000 males) compared with other men (Figure 17, Table 21). During 2014–2015, the rate of reported gonorrhea for men in this age group increased 11.6%. Similarly, during 2011–2015, the rate for men in this age group increased 22.9% (Table 21).

## **Primary and Secondary Syphilis**

During 2014–2015, the rate of reported primary and secondary (P&S) syphilis cases increased 10.2% among persons aged 15–19 years and 14.9% among persons aged 20–24 years (Table 34).

**15–19 Year Old Females** — The rate of reported P&S syphilis cases among women aged 15–19 years decreased each year during 2009–2013 (from 3.3 to 1.9 cases per 100,000 females) (Figure 37, Table 34). However, the rate increased in 2014 and again in 2015. During 2014–2015,

the rate increased 12.0%, from 2.5 to 2.8 cases per 100,000 females (Figure 37, Table 34).

**20–24 Year Old Females** — In 2015, women aged 20–24 years had the highest rate of P&S syphilis (5.1 cases per 100,000 females) compared with other women (Figure 36, Table 34). The P&S syphilis rate among women in this age group has increased each year since 2011 (Figure 37, Table 34). During 2014–2015, the rate increased 13.3%.

**15–19 Year Old Males** — In 2015, the rate of reported P&S syphilis among men aged 15–19 years was 8.0 cases per 100,000 males (Figure 36, Table 34). The P&S syphilis rate among men in this age group has increased each year since 2011 (Figure 38, Table 34). During 2014–2015, the rate increased 12.7%.

**20–24 Year Old Males** — In 2015, men aged 20–24 years had the second highest rate of reported P&S syphilis cases compared with any other age group for either sex (Figure 36). The P&S syphilis rate among men in this age group has increased each year since 2006 (Figure 38, Table 34). During 2014–2015, the rate increased 15.5%, from 30.9 to 35.7 cases per 100,000 males.

## **National Job Training Program**

The National Job Training Program (NJTP) is an educational program for socioeconomically disadvantaged youth aged 16–24 years and is administered at more than 100 sites throughout the country. The NJTP screens participants for chlamydia and gonorrhea within two days of entry to the program. All of NJTP's chlamydia screening tests and the majority of gonorrhea screening tests are conducted by a single national contract laboratory\*. To increase the stability of the estimates, chlamydia or gonorrhea prevalence data are presented when valid test results for 100 or more students per year are available for the population subgroup and state. Additional information about NJTP can be found in Section A2.1 in the Appendix.

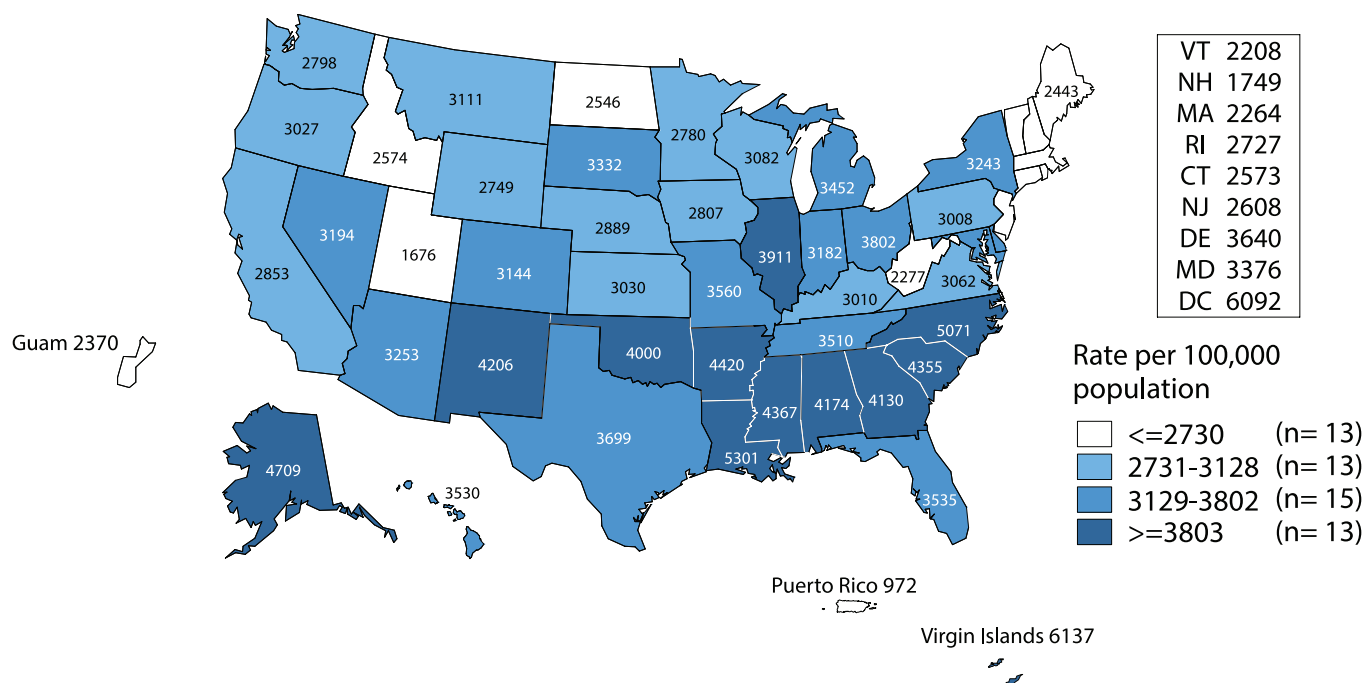
Among women entering the program in 43 states and Puerto Rico, the median state-specific chlamydia prevalence in 2015 was 12.7% (range: 5.4% to 20.5%) (Figure L). Among men entering the program in 48 states, the District of Columbia and Puerto Rico, the median state-specific chlamydia prevalence was 7.5% (range: 2.6% to 12.3%) (Figure M).

Among women entering the program in 43 states and Puerto Rico, the median state-specific gonorrhea prevalence in 2015 was 1.9% (range: 0.0% to 6.8%) (Figure N). Among men entering the program in 39 states and Puerto Rico, the median state-specific gonorrhea prevalence was 0.7% (range: 0.0% to 2.9%) (Figure O).

\* Laboratory tests are conducted by the Center for Disease Detection, LLC San Antonio, Texas.

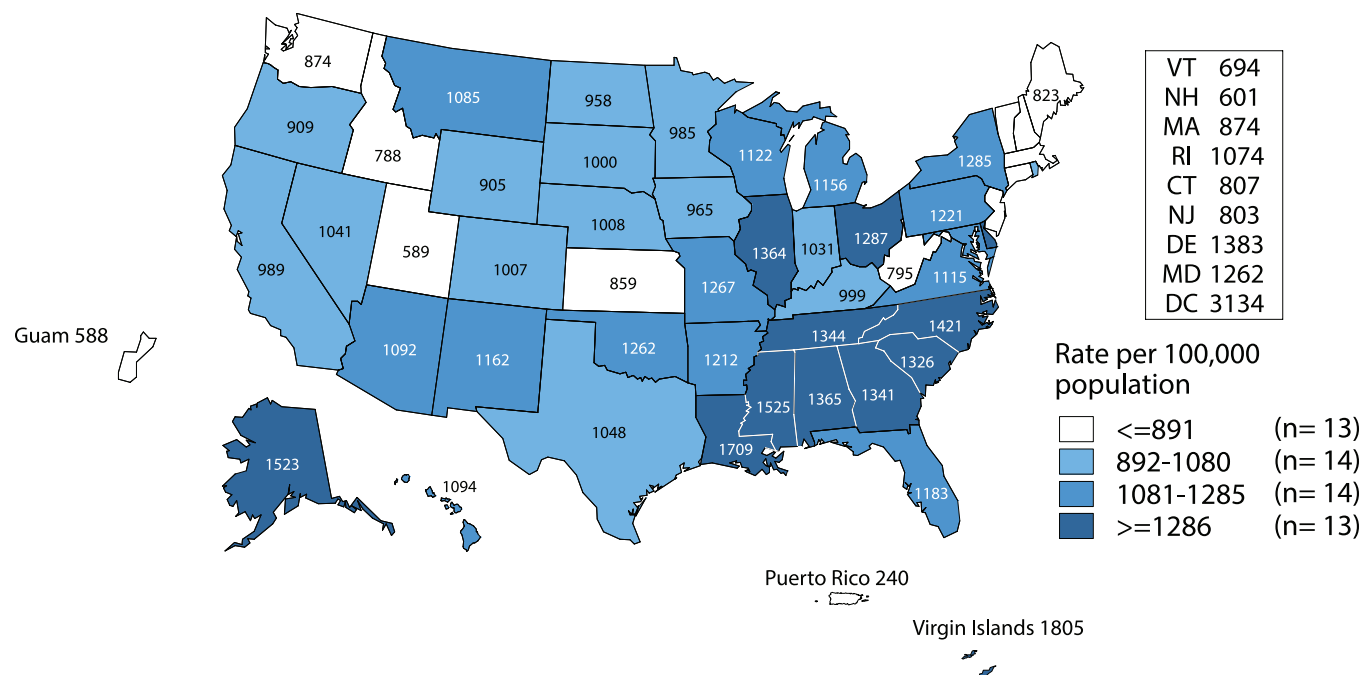
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- <sup>1</sup> Satterwhite CL, Torrone E, Meites E, et al. Sexually transmitted infections among US women and men: prevalence and incidence estimates, 2008. *Sex Trans Dis*. 2013;40(3):187-93.
  - <sup>2</sup> Forhan SE, Gottlieb SL, Sternberg MR, et al. Prevalence of sexually transmitted infections among female adolescents aged 14 to 19 in the United States. *Pediatrics*. 2009;124(6):1505-12.
  - <sup>3</sup> Tilson EC, Sanchez V, Ford CL, et al. Barriers to asymptomatic screening and other STD services for adolescents and young adults: focus group discussions. *BMC Public Health*. 2004;4:21.
  - <sup>4</sup> DiClemente RJ, Salazar LF, Crosby RA. A review of STD/HIV preventive interventions for adolescents: sustaining effects using an ecological approach. *J Pediatr Psychol*. 2007;32(8):888-906.
  - <sup>5</sup> Sieving RE, Bernat DH, Resnick MD, et al. A clinic-based youth development program to reduce sexual risk behaviors among adolescent girls: prime time pilot study. *Health Promot Pract*. 2012;13(4):462-71.
  - <sup>6</sup> Upchurch DM, Mason WM, Kusunoki Y, et al. Social and behavioral determinants of self-reported STD among adolescents. *Perspect Sex Reprod Health*. 2004;36(6):276-87.

**Figure H. Chlamydia — Rates of Reported Cases Among Women Aged 15–24 Years by State, United States and Outlying Areas, 2015**



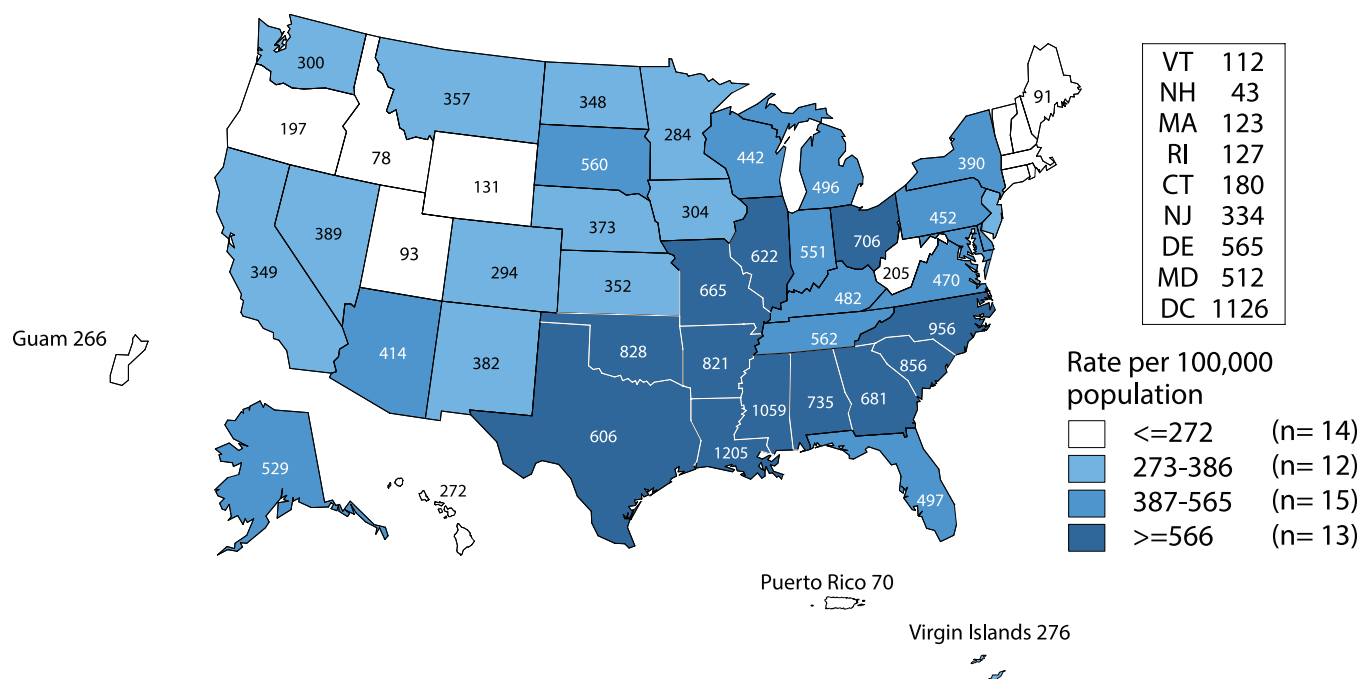
**NOTE:** Rates for Guam and the Virgin Islands were calculated by using the 2010 population estimates (see Section A1.2 in the Appendix).

**Figure I. Chlamydia — Rates of Reported Cases Among Men Aged 15–24 Years by State, United States and Outlying Areas, 2015**



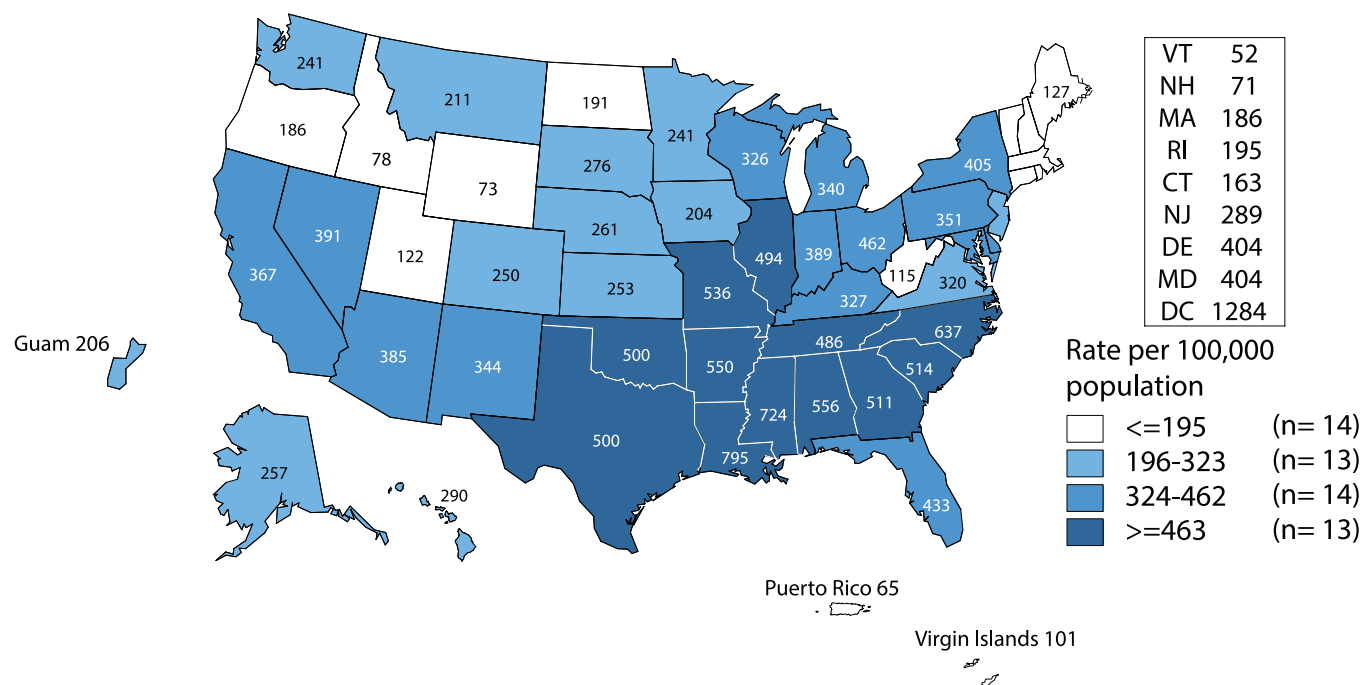
**NOTE:** Rates for Guam and the Virgin Islands were calculated by using the 2010 population estimates (see Section A1.2 in the Appendix).

**Figure J. Gonorrhea — Rates of Reported Cases Among Women Aged 15–24 Years by State, United States and Outlying Areas, 2015**



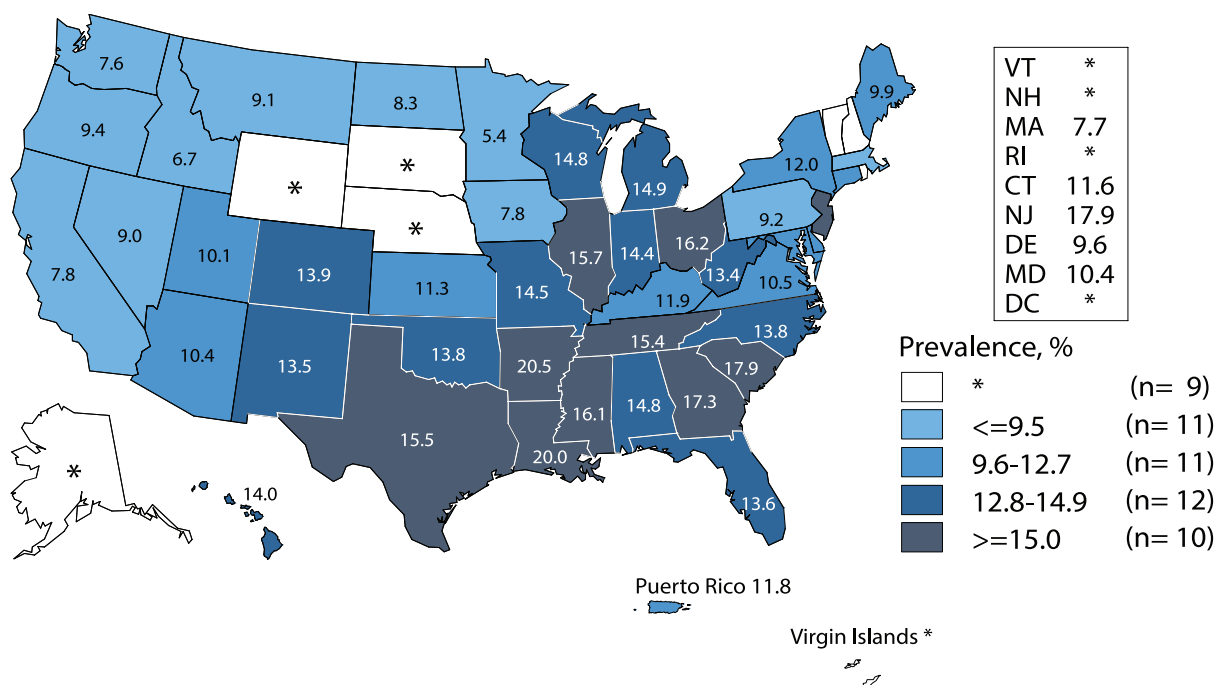
**NOTE:** Rates for Guam and the Virgin Islands were calculated by using the 2010 population estimates (see Section A1.2 in the Appendix).

**Figure K. Gonorrhea — Rates of Reported Cases Among Men Aged 15–24 Years by State, United States and Outlying Areas, 2015**



**NOTE:** Rates for Guam and the Virgin Islands were calculated by using the 2010 population estimates (see Section A1.2 in the Appendix).

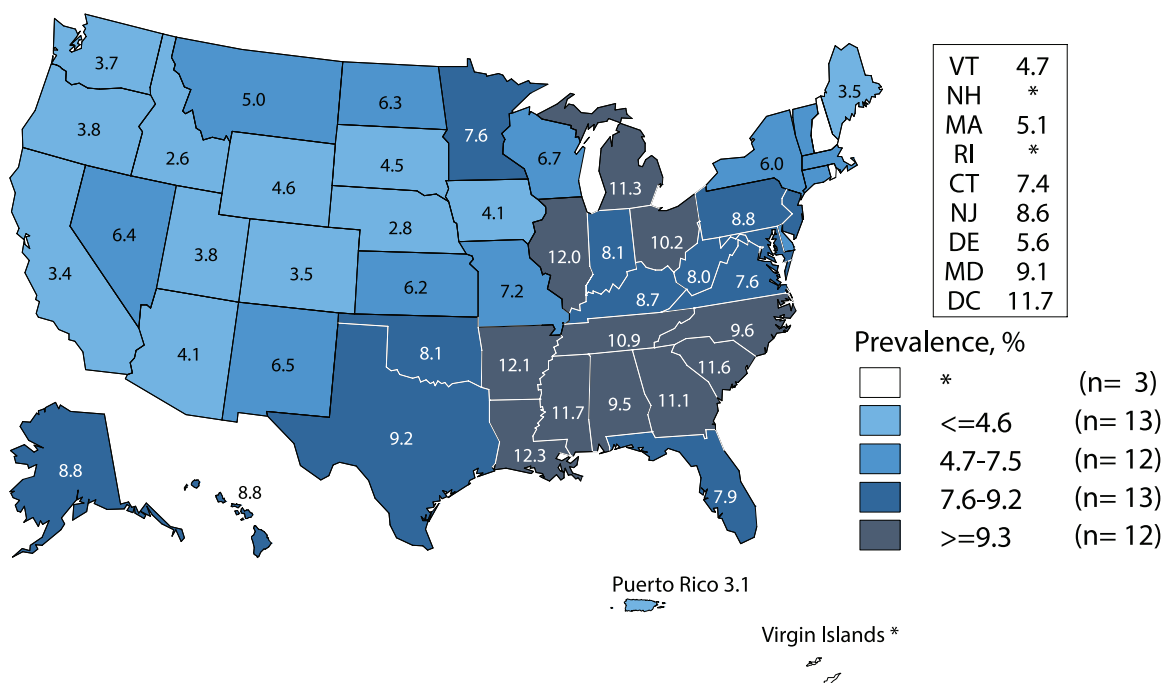
**Figure L. Chlamydia — Prevalence Among Women Aged 16–24 Years Entering the National Job Training Program (NJTP) by State of Residence, United States and Outlying Areas, 2015**



\* Fewer than 100 women who resided in these states/areas and entered the NJTP were screened for chlamydia in 2015.

**NOTE:** See Section A2.1 in the Appendix for more information regarding NJTP methods.

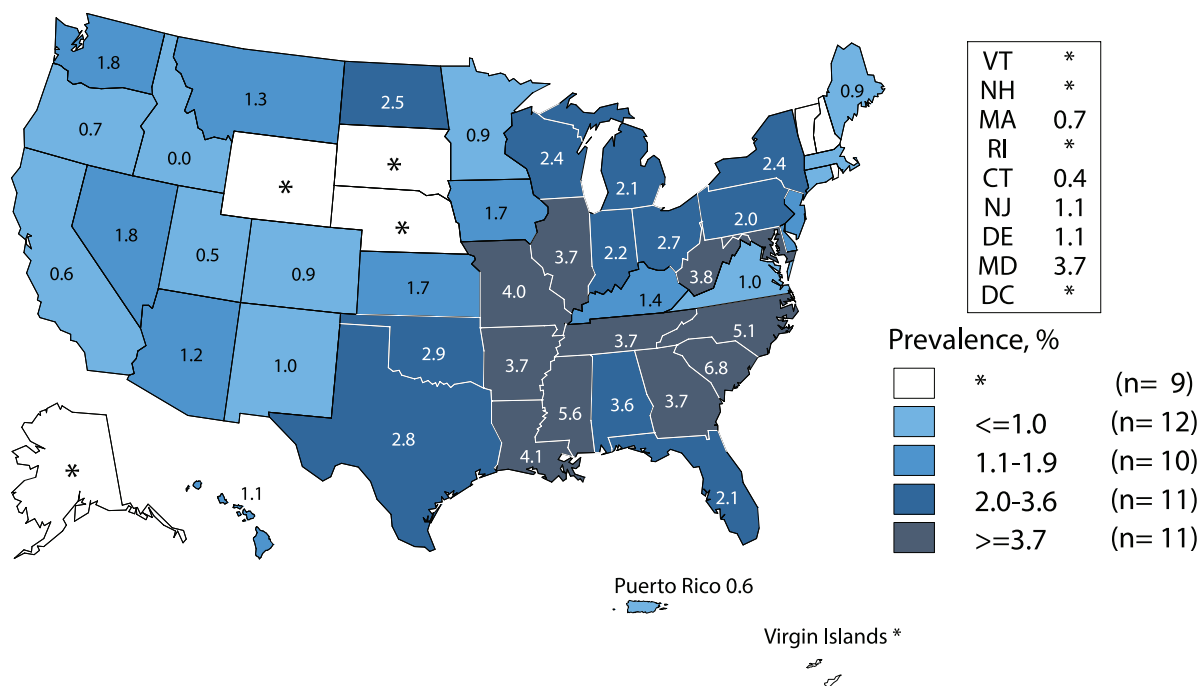
**Figure M. Chlamydia — Prevalence Among Men Aged 16–24 Years Entering the National Job Training Program (NJTP) by State of Residence, United States and Outlying Areas, 2015**



\* Fewer than 100 men who resided in these states/areas and entered the NJTP were screened for chlamydia in 2015.

**NOTE:** See Section A2.1 in the Appendix for more information regarding NJTP methods.

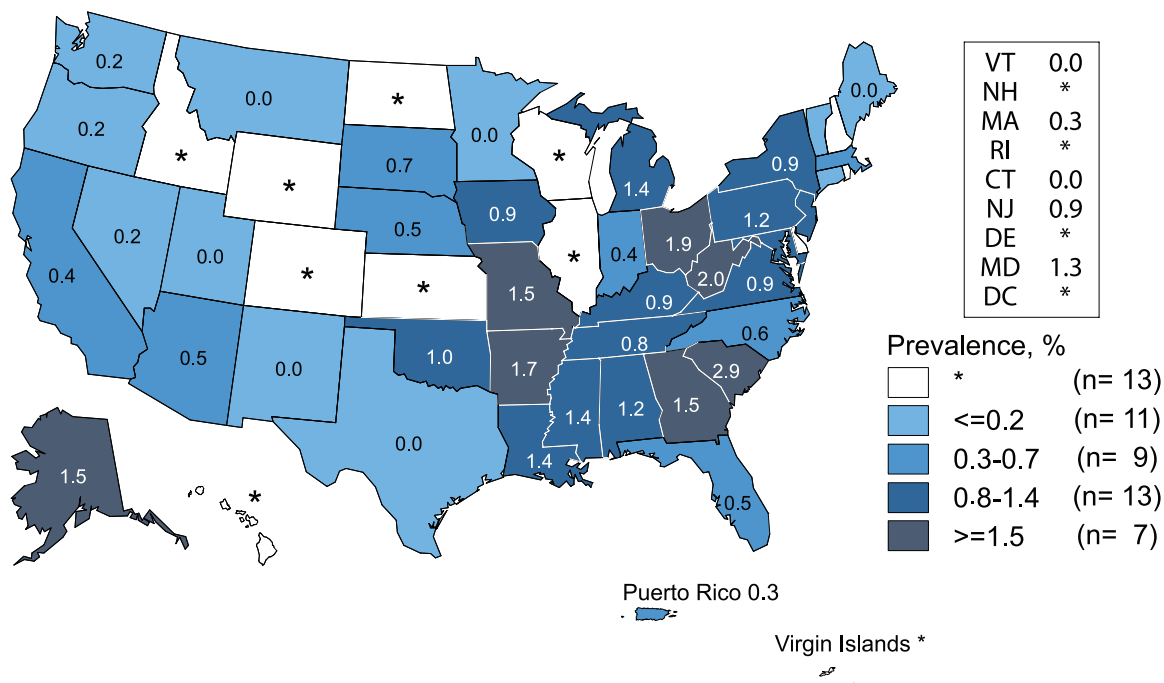
**Figure N. Gonorrhea — Prevalence Among Women Aged 16–24 Years Entering the National Job Training Program (NJTP) by State of Residence, United States and Outlying Areas, 2015**



\* Fewer than 100 women who resided in these states/areas and entered the NJTP were screened for gonorrhea in 2015.

**NOTE:** See Section A2.1 in the Appendix for more information regarding NJTP methods.

**Figure O. Gonorrhea — Prevalence Among Men Aged 16–24 Years Entering the National Job Training Program (NJTP) by State of Residence, United States and Outlying Areas, 2015**



\* Fewer than 100 men who resided in these states/areas and entered the NJTP were screened for gonorrhea in 2015.

**NOTE:** See Section A2.1 in the Appendix for more information regarding NJTP methods.

# STDs in Racial and Ethnic Minorities

## Public Health Impact

Surveillance data show higher rates of reported STDs among some racial or ethnic minority groups when compared with rates among Whites.<sup>1,2</sup> Race and Hispanic ethnicity in the United States are population characteristics that are correlated with other fundamental determinants of health status such as high rates of poverty, income inequality, unemployment and low educational attainment.<sup>3-5</sup> Those who cannot afford basic necessities may have trouble accessing and affording quality sexual health services.<sup>6</sup> The overall proportion of the U.S. population living in poverty in 2014, the most recent year for which poverty statistics are available, was 14.8% (or 46.7 million) and remained statistically unchanged from the previous year. Although the overall poverty rate is currently stable, many Americans continue to face challenges overcoming inequalities in economic opportunity. The poverty rate for Whites was 10.1% (19.7 million), for Blacks it was 26.2% (or 10.8 million), and for Hispanics it was 23.6% (or 13.1 million).<sup>3</sup> People who struggle financially are often experiencing life circumstances that potentially increase their risk for STDs.<sup>6</sup>

Access to quality STD prevention and treatment services is key to reducing STD disparities in the United States. In March 2010 the Patient Protection and Affordable Care Act (ACA) was signed into law significantly increasing the availability of insurance coverage for all Americans, particularly for young adults aged 19–26 years – an important demographic for STD prevention.<sup>7</sup> Of the estimated 19 million new cases of sexually transmitted infections that occur each year, approximately half of the cases occur among people aged 15–24 years.<sup>8</sup> Although the overall proportion of adults without health insurance decreased from 13.3% in 2013 to 10.4% (or 316 million) in 2014, many people in the U.S. may still not have access to health care.<sup>9</sup> For example many of the states with the highest burden of STDs and disparities in STD incidence did not expand Medicaid coverage as the ACA allowed.<sup>10</sup> Among all races and ethnicities in the U.S., Hispanics had the lowest rate of health insurance coverage in 2014 at 80.1%.<sup>9,12,14</sup>

Non-U.S. citizens (i.e., immigrants or undocumented persons) may face additional barriers in accessing care. In 2014, 31.2% (or 7 million) of non-U.S. citizens did not have health insurance coverage. Even when health care is available, fear and distrust of health care institutions can negatively affect the health care-seeking experience for many racial/ethnic minorities when there is social discrimination, provider bias, or the perception that these may exist.<sup>14</sup> Moreover, the quality of care may differ

substantially for minority patients.<sup>15</sup> Inequities in social and economic conditions are reflected in the profound disparities observed in the incidence of STDs among some racial and ethnic minorities.

In communities where STD prevalence is higher because of these inequalities, individuals may have a more difficult time reducing their risk for infection. With each sexual encounter, they face a greater chance of encountering an infected partner than those in lower prevalence settings.<sup>2</sup> Acknowledging inequities in STD rates by race or ethnicity is one of the first steps in empowering affected communities to organize and focus on this problem.

## STD Reporting Practices

Surveillance data are based on cases of STDs reported to state and local health departments (see Section A.1 in the Appendix). In many state and local health departments, electronic laboratory reporting is increasingly a primary source of initial case notification. The reports are often missing race and ethnicity of the patient; ascertainment of information on race and Hispanic ethnicity is therefore a function of active follow-up, or dependent on previous information available about the patient in existing health department surveillance databases. Prevalence data from population-based surveys, such as the National Health and Nutrition Examination Survey (NHANES) and the National Longitudinal Study of Adolescent Health, confirm the existence of marked STD disparities in some minority populations.<sup>16, 17</sup>

## Method of Classifying Race & Hispanic Ethnicity

Interpretation of racial and ethnic disparities among persons with STDs is influenced by data collection methods and by the categories by which these data are displayed. Race/ethnicity data are presented in Office of Management and Budget (OMB) race and ethnic categories, according to the 1997 revised OMB standards. However, the National Center for Health Statistics (NCHS) bridged-race categories are used where OMB categories are not available (i.e., congenital syphilis).<sup>18</sup> As of 2015, fifty states and/or reporting jurisdictions now collect and report data in OMB-compliant formats for chlamydia and gonorrhea and 49 states and/or reporting jurisdictions report syphilis cases in OMB-compliant formats. Historical trend and rate data by race and Hispanic ethnicity displayed in figures and interpreted in this report for 2011–2015 include only those states and/or reporting jurisdictions (45 jurisdictions for chlamydia, gonorrhea and syphilis) reporting in the current standard

consistently for all years from 2011 through 2015 (See Section A1.5 of the Appendix for additional information on reporting of race and Hispanic ethnicity).

## Completeness of Race/Ethnicity Data in 2015

**Chlamydia** — 29.3% of chlamydia case reports were missing race or ethnicity data, ranging by jurisdiction from 0.9% to 100% (Table A1).

**Gonorrhea** — 19.8% of gonorrhea case reports were missing information on race or ethnicity, ranging by jurisdiction from 0.0% to 100% (Table A1).

**Syphilis** — 4.4% of P&S syphilis case reports were missing information on race or ethnicity, ranging from 0.0% to 100% among jurisdiction with 10 or more cases of P&S syphilis (Table A1).

## Observations

### *Chlamydia*

Among the 45 states that submitted data on race and ethnicity for each year during 2011–2015 according to the OMB standards, rates of reported chlamydia cases increased during that time frame among Asians (7.8%), Native Hawaiians/Other Pacific Islanders (8.9%), Whites (14.6%), and Multirace persons (43.1%), and decreased among Blacks (11.2%) (Figure 6). Rates were stable among American Indians/Alaska Natives and Hispanics during 2011–2015.

In 2015, 50 states submitted data on race and ethnicity according to the OMB standards. The following data pertain to those states:

**Blacks** — In 2015, the overall rate of reported chlamydia cases among Blacks in the United States was 1,097.6 cases per 100,000 population (Table 11B). The rate among Black women was 5.4 times the rate among White women (1,384.8 and 256.7 cases per 100,000 females, respectively) (Figure P and Table 11B). The rate among Black men was 6.8 times the rate among White men (782.0 and 115.4 cases per 100,000 males, respectively). Rates of reported cases of chlamydia were highest for Blacks aged 15–19 and 20–24 years in 2015 (Table 11B). The rate of reported chlamydia cases among Black women aged 15–19 years was 6,340.3 cases per 100,000 females, which was 4.7 times the rate among White women in the same age group (1,339.1 cases per 100,000 females). The rate among Black women aged 20–24 years was 3.9 times the rate among White women in the same age group (6,782.5 and 1,737.8 cases per 100,000 females, respectively) (Table 11B).

Similar racial disparities in reported chlamydia rates exist among men. Among males aged 15–19 years, the rate of reported chlamydia cases among Blacks was 8.8 times the rate among Whites (2,119.6 and 240.3 cases per 100,000 males, respectively) (Table 11B). The rate among Black men aged 20–24 years was 4.9 times the rate among White men of the same age group (3,128.8 and 637.2 cases per 100,000 males, respectively).

**American Indians/Alaska Natives** — In 2015, the rate of reported chlamydia cases among American Indians/Alaska Natives was 709.1 cases per 100,000 population (Table 11B). Overall, the rate of chlamydia among American Indians/Alaska Natives in the United States was 3.8 times the rate among Whites.

**Native Hawaiians/Other Pacific Islanders** — In 2015, the rate of reported chlamydia cases among Native Hawaiians/Other Pacific Islanders was 622.1 cases per 100,000 population (Table 11B). The overall rate among Native Hawaiians/Other Pacific Islanders was 3.3 times the rate among Whites and 5.5 times the rate among Asians.

**Hispanics** — In 2015, the rate of reported chlamydia cases among Hispanics was 372.7 cases per 100,000 population, which is 2.0 times the rate among Whites (Table 11B).

**Asians** — In 2015, the rate of reported chlamydia cases among Asians was 114.1 cases per 100,000 population (Table 11B). The overall rate among Whites is 1.6 times the rate among Asians.

### *Gonorrhea*

Among 45 states submitting race and ethnicity data consistently according to OMB standards for all years from 2011–2015, rates of reported gonorrhea cases increased 75.1% among Whites (26.1 to 45.7 cases per 100,000 population), 71.3% among American Indians/Alaska Natives (104.5 to 179.0 cases per 100,000 population), 70.0% among Asians (14.0 to 23.8 cases per 100,000 population), 61.0% among Native Hawaiians/Other Pacific Islanders (72.6 to 116.9 cases per 100,000 population), and 53.8% among Hispanics (52.4 to 80.6 cases per 100,000 population) (Figure 20). The gonorrhea rate decreased 4.0% among Blacks (451.3 to 433.3 cases per 100,000 population).

In 2015, 50 states submitted data on race and ethnicity according to the OMB standards. The following data pertain to those states:

**Blacks** — In 2015, 42.2% of reported gonorrhea cases with known race and ethnicity occurred among Blacks (excluding cases with missing information on race or ethnicity, and cases whose reported race or ethnicity was Other) (Table 22A). The rate of gonorrhea among Blacks

in 2015 was 424.9 cases per 100,000 population, which was 9.6 times the rate among Whites (44.2 cases per 100,000 population) (Table 22B). Although the calculated rate ratio for 2015 differs when considering only the 45 jurisdictions that submitted data in race and ethnic categories according to the OMB standards for each year during 2011–2015, this disparity has decreased slightly in recent years (Figure Q). In 2015, this disparity was similar for Black men (9.6 times the rate among White men) and Black women (9.7 times the rate among White women) (Figure R, Table 22B). As in previous years, the disparity in gonorrhea rates for Blacks in 2015 was larger in the Midwest and Northeast than in the West or the South (Figure S).

Considering all racial/ethnic and age categories, rates of gonorrhea were highest for Blacks aged 20–24, 15–19, and 25–29 years in 2015 (Table 22B). Black women aged 20–24 years had a gonorrhea rate of 1,760.5 cases per 100,000 females, which was 9.0 times the rate among White women in the same age group (195.8 cases per 100,000 females). Black women aged 15–19 years had a gonorrhea rate of 1,547.3 cases per 100,000 females, which was 11.3 times the rate among White women in the same age group (136.4 cases per 100,000 females). Black men aged 20–24 years had a gonorrhea rate of 1,681.5 cases per 100,000 males, which was 9.5 times the rate among White men in the same age group (176.1 cases per 100,000 males). Black men aged 25–29 years had a gonorrhea rate of 1,415.0 cases per 100,000 males, which was 8.2 times the rate among White men in the same age group (173.6 cases per 100,000 males).

**American Indians/Alaska Natives** — In 2015, the gonorrhea rate among American Indians/Alaska Natives was 192.8 cases per 100,000 population, which was 4.4 times the rate among Whites (Table 22B). The disparity between gonorrhea rates for American Indians/Alaska Natives and Whites was larger for American Indian/Alaska Native women (6.1 times the rate among White women) than for American Indian/Alaska Native men (3.0 times the rate among White men) (Figure R, Table 22B). The disparity in gonorrhea rates for American Indians/Alaska Natives in 2015 was larger in the Midwest than in the West, Northeast, and South (Figure S).

**Native Hawaiians/Other Pacific Islanders** — In 2015, the gonorrhea rate among Native Hawaiians/Other Pacific Islanders was 123.0 cases per 100,000 population, which was 2.8 times the rate among Whites (Table 22B). The disparity between gonorrhea rates for Native Hawaiians/Other Pacific Islanders and Whites was the same for Native Hawaiian/Other Pacific Islander women (2.8 times the rate among White women) and Native Hawaiian/Other Pacific Islander men (2.8 times the rate among White men) (Figure R, Table 22B). The disparity in gonorrhea rates for Native Hawaiians/Other Pacific Islanders in 2015 was

lower in the West than in the Midwest, Northeast, and South (Figure S).

**Hispanics** — In 2015, the gonorrhea rate among Hispanics was 80.5 cases per 100,000 population, which was 1.8 times the rate among Whites (Table 22B). This disparity was similar for Hispanic women (1.7 times the rate among White women) and Hispanic men (1.9 times the rate among White men) (Figure R, Table 22B). The disparity in gonorrhea rates for Hispanics in 2015 was higher in the Northeast than in the Midwest, South, and West (Figure S).

**Asians** — In 2015, the gonorrhea rate among Asians was 22.9 cases per 100,000 population, which was 0.5 times the rate among Whites (Table 22B). This difference is larger for Asian women than for Asian men (Figure R, Table 22B). In 2015, rates among Asians were lower than rates among Whites in all four regions of the United States (Figure S).

## ***Primary and Secondary Syphilis***

During 2011–2015, 45 states submitted race and Hispanic ethnicity data for syphilis for each year according to the OMB standards. In these states, rates of reported primary and secondary (P&S) syphilis cases increased 130.8% among Asians (1.3 to 3.0 cases per 100,000 population), 102.3% among Hispanics (4.4 to 8.9 cases per 100,000 population), 90.3% among American Indians/Alaska Natives (3.1 to 5.9 cases per 100,000 population), 66.7% among Whites (2.4 to 4.0 cases per 100,000 population), 51.4% among Native Hawaiians/Other Pacific Islanders (7.0 to 10.6 cases per 100,000 population), and 31.8% among Blacks (15.7 to 20.7 cases per 100,000 population) (Figure 39).

In 2015, 49 states submitted syphilis data by race and ethnicity according to the OMB standards. The following data pertain to those states:

**Blacks** — In 2015, 37.6% of reported P&S syphilis cases with known race/ethnicity occurred among Blacks (excluding cases with missing information on race or ethnicity, and cases whose reported race or ethnicity was Other) (Table 35A). The P&S syphilis rate among Blacks in 2015 was 21.4 cases per 100,000 population, which was 5.2 times the rate among Whites (4.1 cases per 100,000 population) (Table 35B). The disparity was higher for Black women (8.8 times the rate among White women) than for Black men (5.1 times the rate among White men) (Figure T, Table 35B).

Considering all race/ethnicity, sex, and age categories, P&S syphilis rates were highest among Black men aged 20–24 years and 25–29 years in 2015 (Table 35B). Black men aged 20–24 years had a P&S syphilis rate of 110.1 cases per 100,000 males. This rate was 7.6 times the rate

among White men in the same age group (14.5 cases per 100,000 males). Black men aged 25–29 years had a P&S syphilis rate of 133.2 cases per 100,000 males, which was 6.9 times the rate among White men in the same age group (19.4 cases per 100,000 males).

**Native Hawaiians/Other Pacific Islanders** — In 2015, the P&S syphilis rate among Native Hawaiians/Other Pacific Islanders was 10.4 cases per 100,000 population, which was 2.5 times the rate among Whites (Table 35B). This disparity was similar for Native Hawaiian/Other Pacific Islander women (2.7 times the rate among White women) and Native Hawaiian/Other Pacific Islander men (2.5 times the rate among White men).

**Hispanics** — In 2015, the P&S syphilis rate among Hispanics was 9.1 cases per 100,000 population, which was 2.2 times the rate among Whites (Table 35B). This disparity was similar for Hispanic women (2.3 times the rate among White women) and Hispanic men (2.2 times the rate among White men).

**American Indians/Alaska Natives** — In 2015, the P&S syphilis rate among American Indians/Alaska Natives was 5.6 cases per 100,000 population, 1.4 times the rate among Whites (Table 35B). This disparity was larger for American Indian/Alaska Native women (3.5 times the rate among White women) than for American Indian/Alaska Native men (1.2 times the rate among White men).

**Asians** — In 2015, the P&S syphilis rate among Asians was 3.0 cases per 100,000 population, which was 0.7 times the rate among Whites (Table 35B). This difference was larger for Asian women (0.5 times the rate among White women) than for Asian men (0.8 times the rate among White men).

## Congenital Syphilis

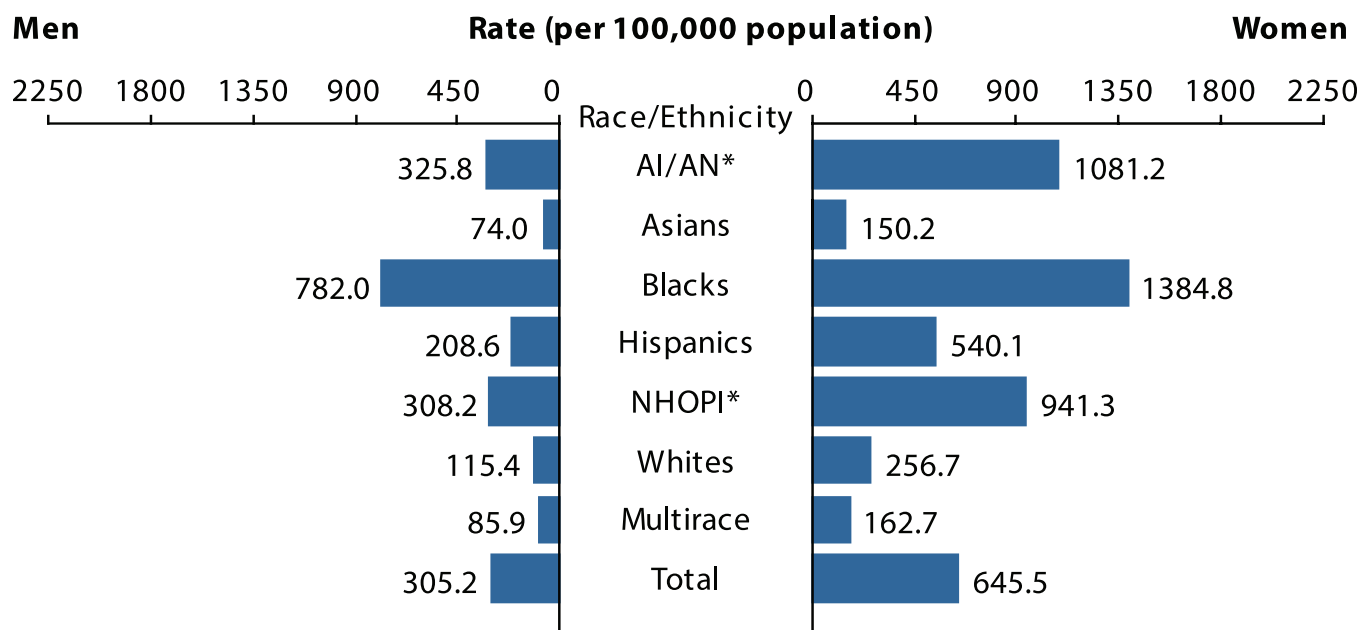
Race/ethnicity for cases of congenital syphilis is based on the mother's race/ethnicity. During 2014–2015, rates of reported congenital syphilis cases increased 25.0% among Hispanics and 18.9% among Whites (Figure U, Table 42). However, rates decreased 19.5% among American Indians/Alaska Natives, 15.7% among Asians/Pacific Islanders, and 8.8% among Blacks.

In 2015, 44.9% of congenital syphilis cases with known race/ethnicity occurred among Blacks (excluding cases with missing information on race or ethnicity, and cases whose reported race or ethnicity was 'Other') (Table 42). The rate of congenital syphilis among Blacks in 2015 was 35.2 cases per 100,000 live births, which was 8.0 times the rate among Whites (4.4 cases per 100,000 live births). The rate of congenital syphilis was 15.5 cases per 100,000 live births among Hispanics (3.5 times the rate among Whites), 10.3 cases per 100,000 live births among American

Indians/Alaska Natives (2.3 times the rate among Whites), and 5.9 cases per 100,000 live births among Asians/Pacific Islanders (1.3 times the rate among Whites).

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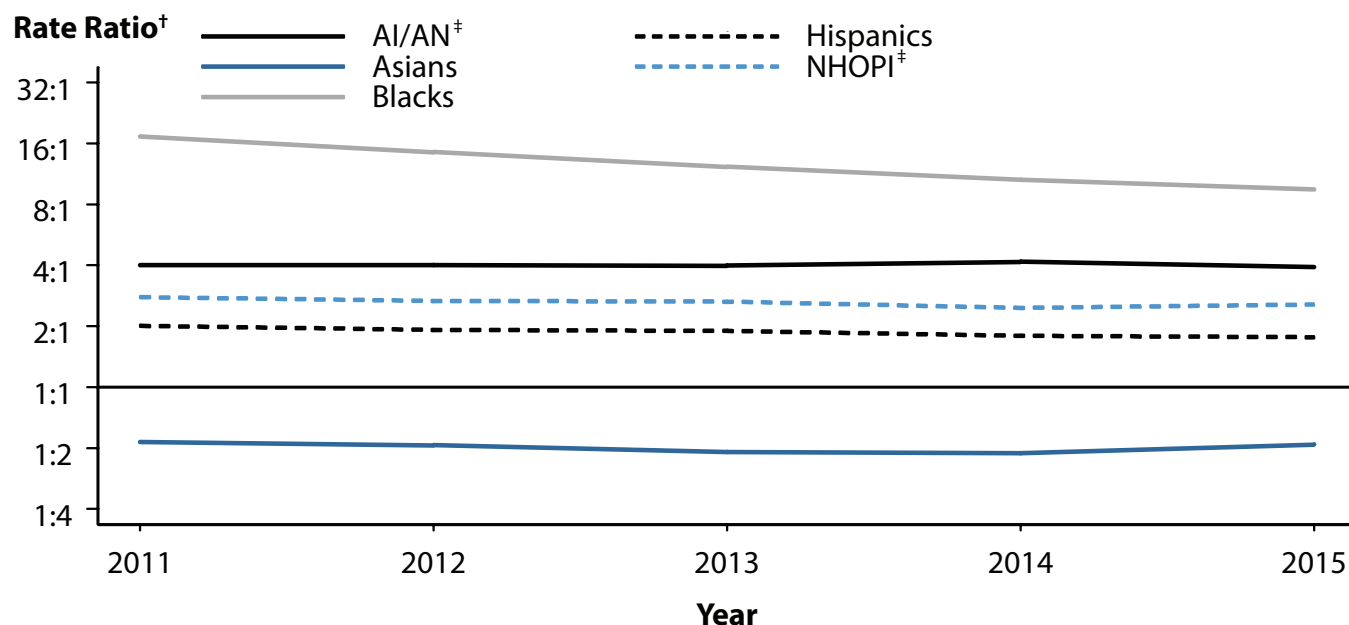
**Figure P. Chlamydia — Rates of Reported Cases by Race/Ethnicity and Sex, United States, 2015**



\* AI/AN = American Indians/Alaska Natives; NHOPI = Native Hawaiians/Other Pacific Islanders.

**NOTE:** Includes 50 states reporting race/ethnicity data in Office of Management and Budget compliant formats in 2015 (see Section A1.5 in the Appendix).

**Figure Q. Gonorrhea — Rate Ratios\* by Race/Ethnicity, United States, 2011–2015**



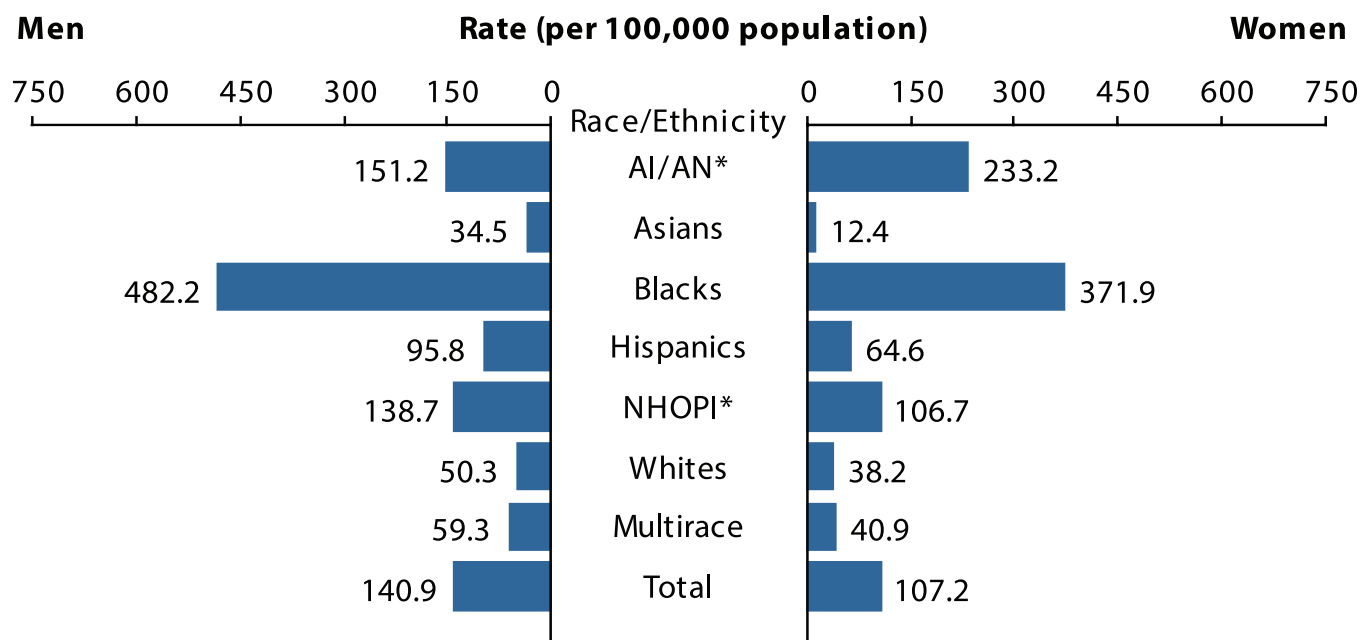
\* Rate ratios are calculated as the rate of reported gonorrhea cases per 100,000 population for a given racial or ethnic minority population divided by the rate of reported gonorrhea cases per 100,000 population for Whites. Any population with a lower rate of reported cases of gonorrhea than the White population will have a rate ratio of less than 1:1.

<sup>†</sup> Y-axis is log scale.

\* AI/AN = American Indians/Alaska Natives; NHOPI = Native Hawaiians/Other Pacific Islanders.

**NOTE:** Includes 45 states reporting race/ethnicity data in Office of Management and Budget compliant formats in 2011–2015 (see Section A1.5 in the Appendix).

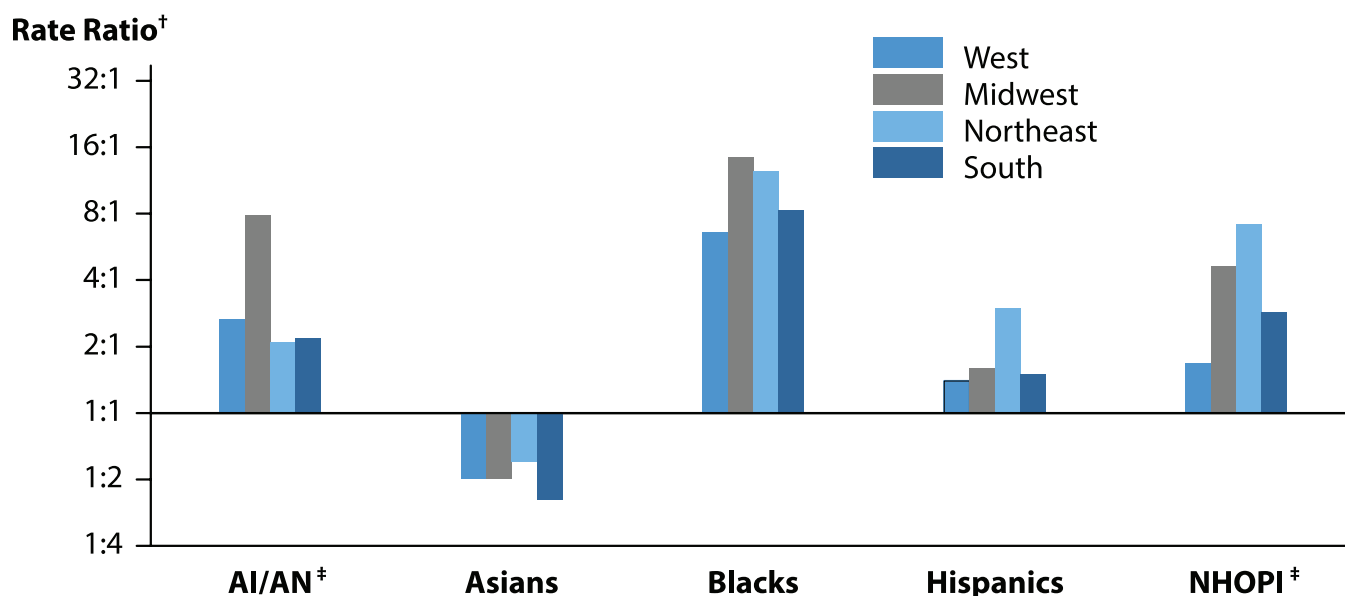
**Figure R. Gonorrhea — Rates of Reported Cases by Race/Ethnicity and Sex, United States, 2015**



\* AI/AN = American Indians/Alaska Natives; NHOPI = Native Hawaiians/Other Pacific Islanders.

**NOTE:** Includes 50 states reporting race/ethnicity data in Office of Management and Budget compliant formats in 2015 (see Section A1.5 in the Appendix).

**Figure S. Gonorrhea — Rate Ratios\* by Race/Ethnicity and Region, United States, 2015**



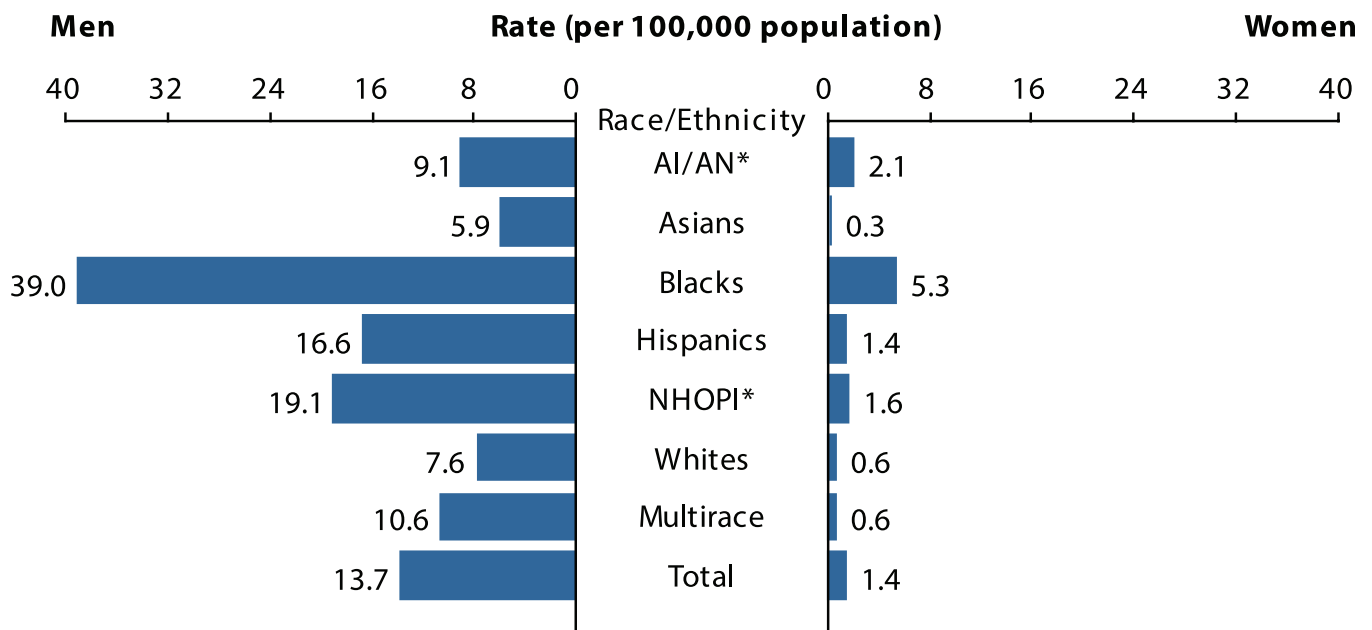
\* Rate ratios are calculated as the rate of reported gonorrhea cases per 100,000 population for a given racial or ethnic minority population divided by the rate of reported gonorrhea cases per 100,000 population for Whites. Any population with a lower rate of reported cases of gonorrhea than the White population will have a rate ratio of less than 1:1.

<sup>†</sup> Y-axis is log scale.

<sup>‡</sup> AI/AN = American Indians/Alaska Natives; NHOPI = Native Hawaiians/Other Pacific Islanders.

**NOTE:** Includes 50 states reporting race/ethnicity data in Office of Management and Budget compliant formats in 2015 (see Section A1.5 in the Appendix).

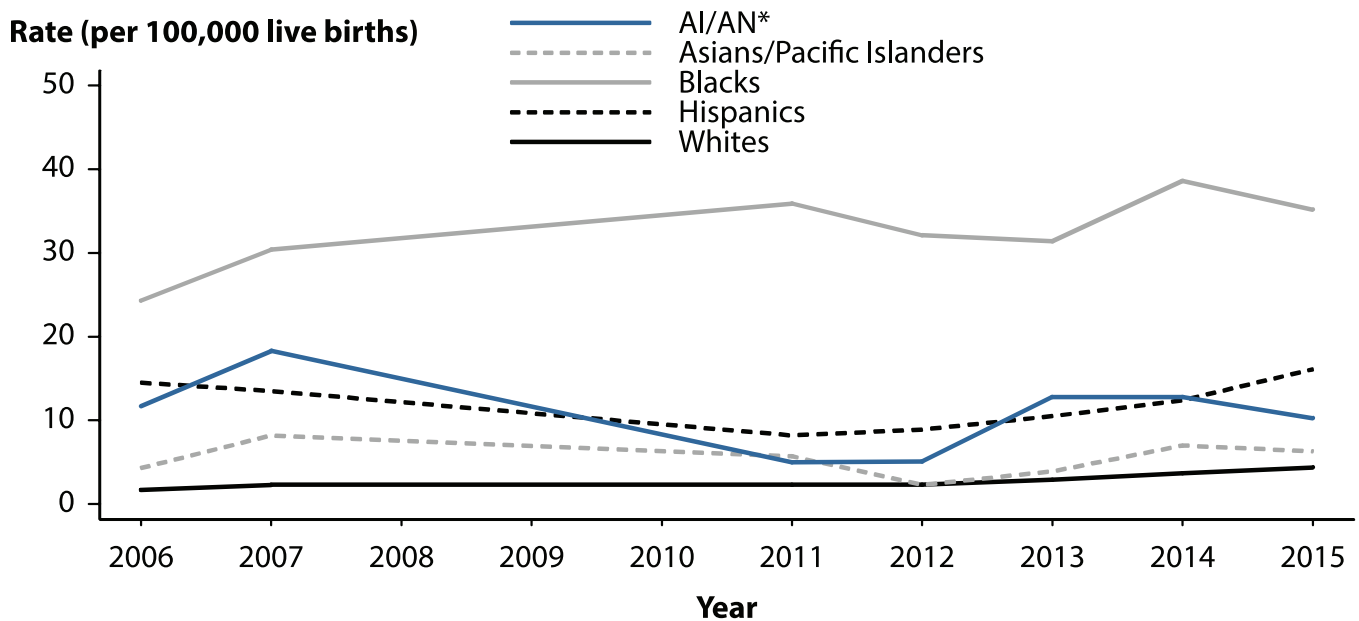
**Figure T. Primary and Secondary Syphilis — Rates of Reported Cases by Race/Ethnicity and Sex, United States, 2015**



\* AI/AN = American Indians/Alaska Natives; NHOPI = Native Hawaiians/Other Pacific Islanders.

**NOTE:** Includes 49 states reporting race/ethnicity data in Office of Management and Budget compliant formats in 2015 (see Section A1.5 in the Appendix).

**Figure U. Congenital Syphilis — Rates of Reported Cases Among Infants, by Year of Birth and Mother's Race/Ethnicity, United States, 2006–2015**



\* AI/AN = American Indians/Alaska Natives.

**NOTE:** National Center for Health Statistics bridged race categories are presented to allow the display of data across several years.

# STDs in Men Who Have Sex With Men

## Public Health Impact

Gay, bisexual, and other men who have sex with men (collectively referred to as MSM) are at increased risk for STDs, including antimicrobial resistant gonorrhea, when compared to women and exclusively heterosexual men.<sup>1-4</sup> Because STDs, and the behaviors associated with acquiring them, increase the likelihood of acquiring and transmitting HIV infection, STD incidence among MSM may also be an indicator of higher risk for subsequent HIV infection.<sup>5,6</sup>

Individual-level risk behaviors, such as number of lifetime sex partners, rate of partner exchange and frequency of unprotected sex, may contribute to disparities observed in the sexual health of MSM. However, population-level factors such as limited or overlapping social and sexual networks are also associated with higher rates of STDs, including HIV among MSM.<sup>7</sup>

MSM of lower economic status may be particularly vulnerable to poor health outcomes, especially if they belong to racial and ethnic minority populations.<sup>8,9</sup> Among Black MSM, factors such as community isolation and limited social support may drive sexual risk-taking. Similarly, for Hispanic MSM, the relationship between individual experiences of oppression (e.g., social discrimination and financial hardship) and risk for sexually transmitted infections in the United States has also been documented.<sup>10</sup>

With the exception of reported syphilis cases, most nationally notifiable STD surveillance data do not include information on sexual behaviors; therefore, trends in STDs among MSM in the United States are based on findings from sentinel and enhanced surveillance systems. Testing strategies are also evolving to include more extragenital STD screening, which may increase detection of asymptomatic infections. Until recently, testing for gonorrhea and chlamydia in MSM largely focused on detecting urethral infections, which are more likely to be symptomatic than pharyngeal or rectal infections.<sup>11</sup>

Data from the STD Surveillance Network (SSuN), a sentinel and enhanced surveillance project established in 2005, are presented in this section to provide supplemental information on STDs in MSM. SSuN is an ongoing collaboration of state, county and city health departments collecting enhanced provider and patient-based information among a random sample of reported gonorrhea cases, as well as clinical and behavioral information among all patients attending STD clinics in collaborating jurisdictions.<sup>12</sup> Additional information about SSuN can be found in Section A2.2 of the Appendix.

## Incidence of Gonorrhea among MSM, STD Surveillance Network, 2010–2013

The proportion of all diagnosed and reported gonorrhea cases attributable to MSM was estimated based on patient interviews conducted among a random sample of cases reported to collaborating health departments between January 2010 and June 2013. Estimates of the size of the MSM population in each area were developed to calculate the incidence of gonorrhea among all MSM. The estimated incidence of gonorrhea among MSM in SSuN sites increased from 1,169.7 cases per 100,000 MSM in 2010 to 1,474.4 cases per 100,000 MSM in 2013.<sup>13</sup> The estimated rate-ratio of MSM to female and MSM to heterosexual males during the study period ranged from 10.7 to 13.9 demonstrating a substantial and increasing inequality in the burden of disease between MSM and heterosexuals.<sup>13</sup>

## Prevalence of STDs among MSM Who Visit STD Clinics, STD Surveillance Network, 2015

Data for 2015 were obtained from 30 STD clinics in ten SSuN jurisdictions. For data reported in this section, MSM were defined as men who either reported having one or more male sex partners or who self-reported as gay/homosexual or bisexual. Men who have sex with women (MSW) were defined as men who reported having sex with women only or who did not report the sex of their sex partner, but reported that they considered themselves straight/heterosexual.

## Gonorrhea and Chlamydial Infection

In 2015, the proportion of MSM who tested positive for gonorrhea and chlamydia at STD clinics varied by SSuN jurisdiction (Figure W). Among jurisdictions providing sexual behavior data, a larger proportion of MSM who visited STD clinics tested positive for gonorrhea than tested positive for chlamydia (except Massachusetts, Multnomah County, and Philadelphia).

Across the participating STD clinics, 26,878 MSM were tested for gonorrhea and 26,694 MSM were tested for chlamydia. The median site-specific gonorrhea prevalence among those tested was 19.0% (range by site: 10.9%–22.7%). The median site-specific chlamydia prevalence among those tested was 16.0% (range by site: 11.8%–17.6%). For this report, a person who tested positive for gonorrhea or chlamydia at any anatomic site more

than one time in a year was counted only once for each infection.

## Primary and Secondary Syphilis and HIV

Among MSM who presented to participating STD clinics with primary and secondary (P&S) syphilis infection in 2015, the proportion who were also infected with HIV ranged from 20.9% in Los Angeles to 58.6% in Baltimore (Figure X). P&S syphilis was identified by provider diagnosis and HIV was identified by laboratory report, self-report, or provider diagnosis.

## HIV Status and STDs

Among MSM visiting SSuN STD clinics, the burden of STDs was higher among HIV-positive MSM than among HIV-negative MSM (Figure Y). Among HIV-positive MSM, 10.3% were diagnosed with P&S syphilis compared to 2.6% among HIV-negative MSM. Among HIV-positive MSM, urethral gonorrhea positivity was 11.3%, pharyngeal gonorrhea positivity was 9.2%, and rectal gonorrhea positivity was 17.1% (compared to 6.8%, 7.7%, and 7.3%, respectively, among HIV-negative MSM). Among HIV-positive MSM, urethral chlamydia positivity was 5.6% and rectal chlamydia positivity was 18.6% (compared to 6.4% and 8.1%, respectively, among HIV-negative MSM).

## Nationally Notifiable Syphilis Surveillance Data

The number of reported cases of P&S syphilis among MSM has been increasing since at least 2000.<sup>3,14</sup> Thirty-seven states were able to classify at least 70% of reported P&S syphilis cases as MSM, MSW, or women each year during 2011–2015. Among these states, cases among MSM increased 12.8% during 2014–2015, and 56.1% during 2011–2015 (Figure 31). Among all cases reported in 2015, MSM accounted for 81.7% of all male P&S syphilis cases with known information about sex of sex partners (Figure 40). In 31 states able to classify at least 70.0% of reported P&S syphilis cases as MSM, MSW, or women and at least 70.0% of reported cases as HIV-positive or HIV-negative, 49.8% of MSM with P&S syphilis were also reported to be HIV-positive (Figure 41). Among MSM P&S cases, the proportion attributed to White MSM was 37.8% while the proportion of cases attributable to Black MSM was 33.0%, and 23.4% for Hispanic MSM, demonstrating a significant inequality in the burden of disease for non-White MSM. Moreover, non-Whites comprise a large plurality of cases reported among MSW and women as well (Figure V). More information about syphilis can be found in the Syphilis section of the National Profile.

## Gonococcal Isolate Surveillance Project

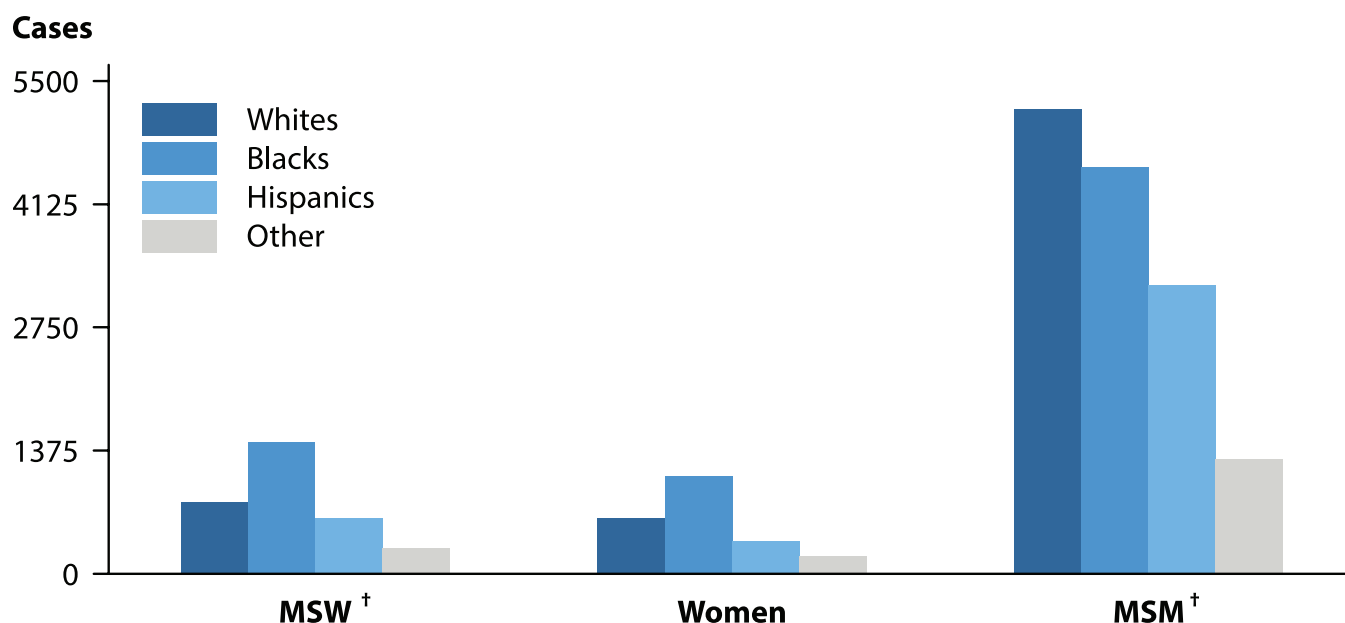
The Gonococcal Isolate Surveillance Project (GISP) is a national sentinel surveillance system designed to monitor trends in antimicrobial susceptibilities of *Neisseria gonorrhoeae* strains in the United States.<sup>15</sup> Overall, the proportion of isolates from MSM in selected STD clinics from GISP sentinel sites has increased steadily, from 3.9% in 1989 to 38.1% in 2015 (Figure Z). The reason for this increase is unclear, but might reflect changes in the epidemiology of gonorrhea or in health care seeking behavior of men infected with gonorrhea. GISP has demonstrated that gonococcal isolates from MSM are more likely to exhibit antimicrobial resistance than isolates from MSW.<sup>4</sup> During 2007–2015, the prevalence of elevated ceftriaxone minimum inhibitory concentrations (MICs) ( $\geq 0.125$  µg/ml) was higher in isolates from MSM than from MSW (Figure AA).

More information on GISP can be found in the Gonorrhea section of the National Profile.

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- <sup>12</sup> Rietmeijer K, Donnelly J, Bernstein K, et al. Here comes the SSuN—early experiences with the STD Surveillance Network. *Pub Health Rep.* 2009;124(Suppl 2):72-77.
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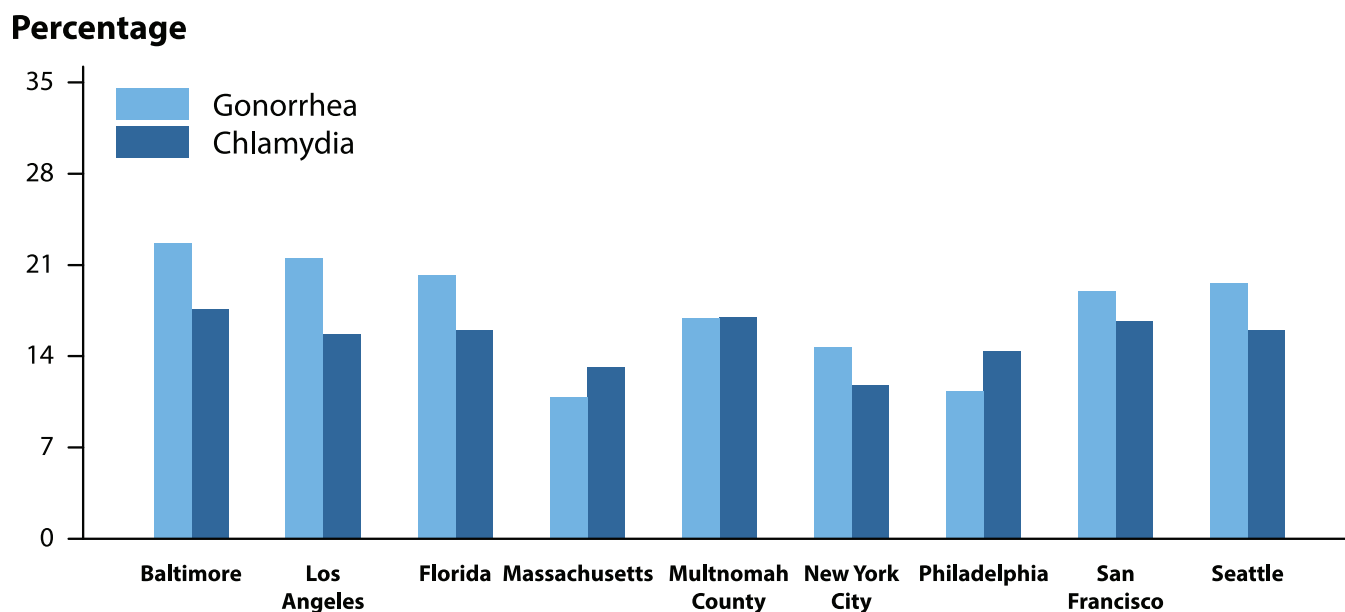
**Figure V. Primary and Secondary Syphilis — Reported Cases\* by Sex, Sexual Behavior, and Race/Ethnicity, United States, 2015**



\* Of all reported cases of primary and secondary syphilis, 17.3% were among men without data on sex of sex partner, and <1% were cases with unknown sex; 5.0% of all cases had missing or unknown race/ethnicity.

<sup>†</sup> MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM); MSW = Men who have sex with women only.

**Figure W. Gonorrhea and Chlamydia — Proportion of MSM\* Attending STD Clinics Testing Positive<sup>†</sup> for Gonorrhea and Chlamydia by Jurisdiction, STD Surveillance Network (SSuN), 2015**

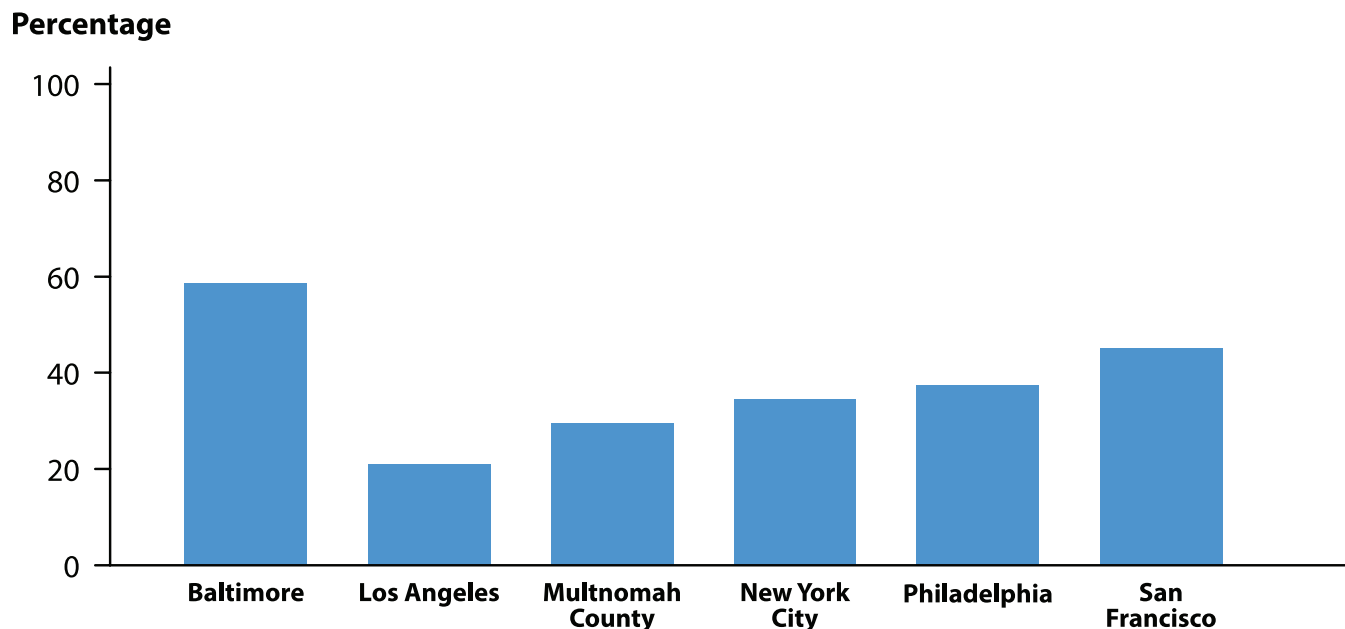


\* MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM).

<sup>†</sup> Results based on data obtained from 26,878 patients tested for gonorrhea and 26,694 patients tested for chlamydia attending STD clinics in 2015 in all SSuN jurisdictions, excluding Minnesota.

**NOTE:** See section A2.2 in the Appendix for SSuN methods.

**Figure X. Primary and Secondary Syphilis and HIV — Proportion of MSM\* Attending STD Clinics† with Primary and Secondary Syphilis Co-infected with HIV by Jurisdiction, STD Surveillance Network (SSuN), 2015**

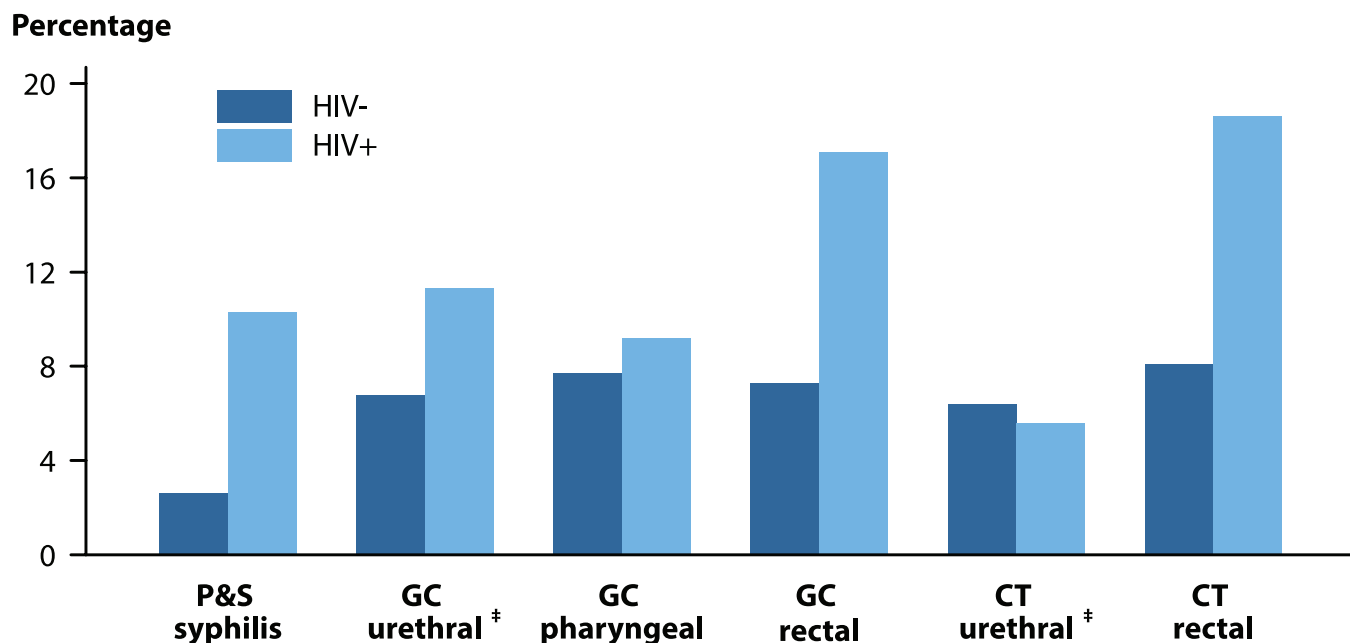


\* MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM).

† Includes STD clinics that reported data on at least 25 patients with a diagnosis of primary and secondary syphilis in 2015.

**NOTE:** See section A2.2 in the Appendix for SSuN methods.

**Figure Y. Proportion of MSM\* Attending STD Clinics with Primary and Secondary Syphilis, Gonorrhea (GC) or Chlamydia (CT) by HIV Status†, STD Surveillance Network (SSuN), 2015**



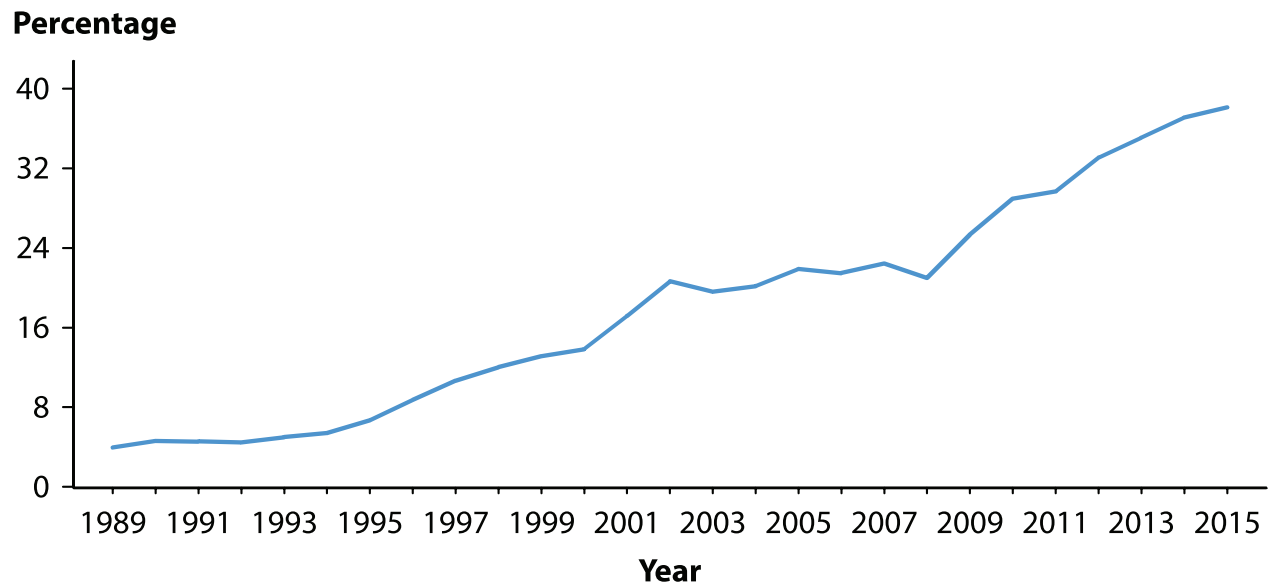
\* MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM).

† Excludes all persons for whom there was no laboratory documentation or self-report of HIV status.

‡ GC urethral and CT urethral include results from both urethral and urine specimens.

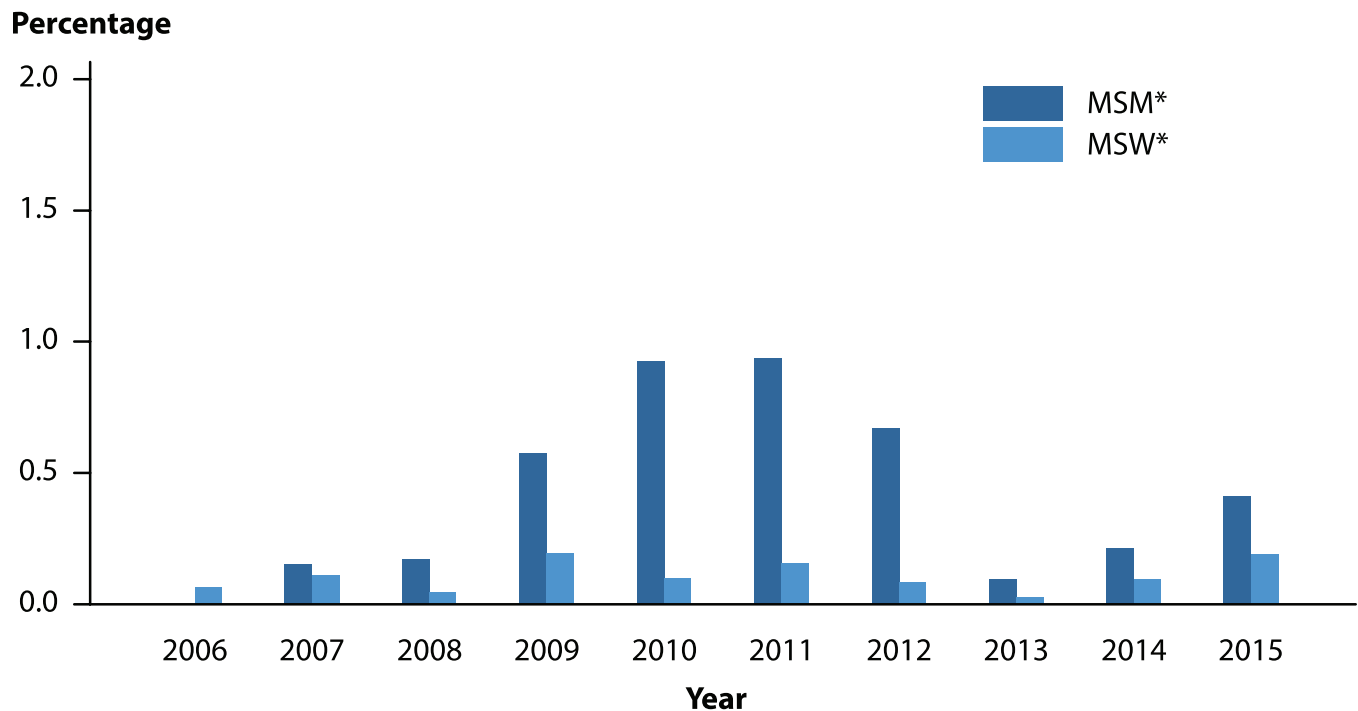
**NOTE:** See section A2.2 in the Appendix for SSuN methods.

**Figure Z. *Neisseria gonorrhoeae* — Percentage of Urethral Isolates Obtained from MSM\* Attending STD Clinics, Gonococcal Isolate Surveillance Project (GISP), 1989–2015**



\* MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM).

**Figure AA. *Neisseria gonorrhoeae* — Percentage of Urethral Isolates with Elevated Ceftriaxone Minimum Inhibitory Concentrations (MICs) ( $\geq 0.125$   $\mu\text{g/ml}$ ) by Reported Sex of Sex Partner, Gonococcal Isolate Surveillance Project (GISP), 2006–2015**



\* MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM); MSW = Men who have sex with women only.



# **TABLES**

# TABLES

**Table 1. Sexually Transmitted Diseases — Reported Cases and Rates of Reported Cases per 100,000 Population, United States, 1941–2015**

| Year* | Syphilis                |       |                       |      |              |       |                                   |       |            |                   |           |      |           |       |           |      |
|-------|-------------------------|-------|-----------------------|------|--------------|-------|-----------------------------------|-------|------------|-------------------|-----------|------|-----------|-------|-----------|------|
|       | All Stages <sup>†</sup> |       | Primary and Secondary |      | Early Latent |       | Late and Late Latent <sup>‡</sup> |       | Congenital |                   | Chlamydia |      | Gonorrhea |       | Chancroid |      |
|       | Cases                   | Rate  | Cases                 | Rate | Cases        | Rate  | Cases                             | Rate  | Cases      | Rate <sup>§</sup> | Cases     | Rate | Cases     | Rate  | Cases     | Rate |
| 1941  | 485,560                 | 368.2 | 68,231                | 51.7 | 109,018      | 82.6  | 202,984                           | 153.9 | 17,600     | 651.1             | NR        | —    | 193,468   | 146.7 | 3,384     | 2.5  |
| 1942  | 479,601                 | 363.4 | 75,312                | 57.0 | 116,245      | 88.0  | 202,064                           | 153.1 | 16,918     | 566.0             | NR        | —    | 212,403   | 160.9 | 5,477     | 4.1  |
| 1943  | 575,593                 | 447.0 | 82,204                | 63.8 | 149,390      | 116.0 | 251,958                           | 195.7 | 16,164     | 520.7             | NR        | —    | 275,070   | 213.6 | 8,354     | 6.4  |
| 1944  | 467,755                 | 367.9 | 78,443                | 61.6 | 123,038      | 96.7  | 202,848                           | 159.6 | 13,578     | 462.0             | NR        | —    | 300,676   | 236.5 | 7,878     | 6.1  |
| 1945  | 359,114                 | 282.3 | 77,007                | 60.5 | 101,719      | 79.9  | 142,187                           | 111.8 | 12,339     | 431.7             | NR        | —    | 287,181   | 225.8 | 5,515     | 4.3  |
| 1946  | 363,647                 | 271.7 | 94,957                | 70.9 | 107,924      | 80.6  | 125,248                           | 93.6  | 12,106     | 354.9             | NR        | —    | 368,020   | 275.0 | 7,091     | 5.2  |
| 1947  | 355,592                 | 252.3 | 93,545                | 66.4 | 104,124      | 73.9  | 122,089                           | 86.6  | 12,200     | 319.6             | NR        | —    | 380,666   | 270.0 | 9,515     | 6.7  |
| 1948  | 314,313                 | 218.2 | 68,174                | 47.3 | 90,598       | 62.9  | 123,312                           | 85.6  | 13,931     | 383.0             | NR        | —    | 345,501   | 239.8 | 7,661     | 5.3  |
| 1949  | 256,463                 | 175.3 | 41,942                | 28.7 | 75,045       | 51.3  | 116,397                           | 79.5  | 13,952     | 382.4             | NR        | —    | 317,950   | 217.3 | 6,707     | 4.6  |
| 1950  | 217,558                 | 146.0 | 23,939                | 16.7 | 59,256       | 39.7  | 113,569                           | 70.2  | 13,377     | 368.3             | NR        | —    | 286,746   | 192.5 | 4,977     | 3.3  |
| 1951  | 174,924                 | 116.1 | 14,485                | 9.6  | 43,316       | 28.7  | 98,311                            | 65.2  | 11,094     | 290.4             | NR        | —    | 254,470   | 168.9 | 4,233     | 2.8  |
| 1952  | 167,762                 | 110.2 | 10,449                | 6.9  | 36,454       | 24.0  | 105,238                           | 69.1  | 8,553      | 218.8             | NR        | —    | 244,957   | 160.8 | 3,738     | 2.5  |
| 1953  | 148,573                 | 95.9  | 8,637                 | 5.6  | 28,295       | 18.3  | 98,870                            | 63.8  | 7,675      | 193.9             | NR        | —    | 238,340   | 153.9 | 3,338     | 2.2  |
| 1954  | 130,697                 | 82.9  | 7,147                 | 4.5  | 23,861       | 15.1  | 89,123                            | 56.5  | 6,676      | 164.0             | NR        | —    | 242,050   | 153.5 | 3,003     | 1.9  |
| 1955  | 122,392                 | 76.2  | 6,454                 | 4.0  | 20,054       | 12.5  | 86,526                            | 53.8  | 5,354      | 130.7             | NR        | —    | 236,197   | 147.0 | 2,649     | 1.7  |
| 1956  | 130,201                 | 78.7  | 6,392                 | 3.9  | 19,783       | 12.0  | 95,097                            | 57.5  | 5,491      | 130.4             | NR        | —    | 224,346   | 135.7 | 2,135     | 1.3  |
| 1957  | 123,758                 | 73.5  | 6,576                 | 3.9  | 17,796       | 10.6  | 91,309                            | 54.2  | 5,288      | 123.0             | NR        | —    | 214,496   | 127.4 | 1,637     | 1.0  |
| 1958  | 113,884                 | 66.4  | 7,176                 | 4.2  | 16,556       | 9.7   | 83,027                            | 48.4  | 4,866      | 114.6             | NR        | —    | 232,386   | 135.6 | 1,595     | 0.9  |
| 1959  | 120,824                 | 69.2  | 9,799                 | 5.6  | 17,025       | 9.8   | 86,740                            | 49.7  | 5,130      | 119.7             | NR        | —    | 240,254   | 137.6 | 1,537     | 0.9  |
| 1960  | 122,538                 | 68.8  | 16,145                | 9.1  | 18,017       | 10.1  | 81,798                            | 45.9  | 4,416      | 103.7             | NR        | —    | 258,933   | 145.4 | 1,680     | 0.9  |
| 1961  | 124,658                 | 68.8  | 19,851                | 11.0 | 19,486       | 10.8  | 79,304                            | 43.8  | 4,163      | 97.5              | NR        | —    | 264,158   | 145.8 | 1,438     | 0.8  |
| 1962  | 126,245                 | 68.7  | 21,067                | 11.5 | 19,585       | 10.7  | 79,533                            | 43.3  | 4,070      | 97.7              | NR        | —    | 263,714   | 143.6 | 1,344     | 0.7  |
| 1963  | 124,137                 | 66.5  | 22,251                | 11.9 | 18,235       | 9.8   | 78,076                            | 41.8  | 4,031      | 98.4              | NR        | —    | 278,289   | 149.0 | 1,220     | 0.7  |
| 1964  | 114,325                 | 60.4  | 22,969                | 12.1 | 17,781       | 9.4   | 68,629                            | 36.3  | 3,516      | 87.3              | NR        | —    | 300,666   | 158.9 | 1,247     | 0.7  |
| 1965  | 112,842                 | 58.9  | 23,338                | 12.2 | 17,458       | 9.1   | 67,317                            | 35.1  | 3,564      | 94.8              | NR        | —    | 324,925   | 169.5 | 982       | 0.5  |
| 1966  | 105,159                 | 54.2  | 21,414                | 11.0 | 15,950       | 8.2   | 63,541                            | 32.7  | 3,170      | 87.9              | NR        | —    | 351,738   | 181.2 | 838       | 0.4  |
| 1967  | 102,581                 | 52.2  | 21,053                | 10.7 | 15,554       | 7.9   | 61,975                            | 31.5  | 2,894      | 82.2              | NR        | —    | 404,836   | 205.9 | 784       | 0.4  |
| 1968  | 96,271                  | 48.4  | 19,019                | 9.6  | 15,150       | 7.6   | 58,564                            | 29.4  | 2,381      | 68.0              | NR        | —    | 464,543   | 233.4 | 845       | 0.4  |
| 1969  | 92,162                  | 45.7  | 19,130                | 9.5  | 15,402       | 7.6   | 54,587                            | 27.1  | 2,074      | 57.6              | NR        | —    | 534,872   | 265.4 | 1,104     | 0.5  |
| 1970  | 91,382                  | 44.8  | 21,982                | 10.8 | 16,311       | 8.0   | 50,348                            | 24.7  | 1,953      | 52.3              | NR        | —    | 600,072   | 294.2 | 1,416     | 0.7  |
| 1971  | 95,997                  | 46.4  | 23,783                | 11.5 | 19,417       | 9.4   | 49,993                            | 24.2  | 2,052      | 57.7              | NR        | —    | 670,268   | 324.1 | 1,320     | 0.6  |
| 1972  | 91,149                  | 43.6  | 24,429                | 11.7 | 20,784       | 9.9   | 43,456                            | 20.8  | 1,758      | 54.0              | NR        | —    | 767,215   | 366.6 | 1,414     | 0.7  |
| 1973  | 87,469                  | 41.4  | 24,825                | 11.7 | 23,584       | 11.2  | 37,054                            | 17.5  | 1,527      | 48.7              | NR        | —    | 842,621   | 398.7 | 1,165     | 0.6  |
| 1974  | 83,771                  | 39.3  | 25,385                | 11.9 | 25,124       | 11.8  | 31,854                            | 14.9  | 1,138      | 36.0              | NR        | —    | 906,121   | 424.7 | 945       | 0.4  |
| 1975  | 80,356                  | 37.3  | 25,561                | 11.9 | 26,569       | 12.3  | 27,096                            | 12.6  | 916        | 29.1              | NR        | —    | 999,937   | 464.1 | 700       | 0.3  |
| 1976  | 71,761                  | 33.0  | 23,731                | 10.9 | 25,363       | 11.7  | 21,905                            | 10.1  | 626        | 19.8              | NR        | —    | 1,001,994 | 460.6 | 628       | 0.3  |
| 1977  | 64,621                  | 29.4  | 20,399                | 9.3  | 21,329       | 9.7   | 22,313                            | 10.2  | 463        | 13.9              | NR        | —    | 1,002,219 | 456.0 | 455       | 0.2  |
| 1978  | 64,875                  | 29.2  | 21,656                | 9.8  | 19,628       | 8.8   | 23,038                            | 10.4  | 434        | 13.0              | NR        | —    | 1,013,436 | 456.3 | 521       | 0.2  |
| 1979  | 67,049                  | 29.9  | 24,874                | 11.1 | 20,459       | 9.1   | 21,301                            | 9.5   | 332        | 9.5               | NR        | —    | 1,004,058 | 447.1 | 840       | 0.4  |
| 1980  | 68,832                  | 30.3  | 27,204                | 12.0 | 20,297       | 8.9   | 20,979                            | 9.2   | 277        | 7.7               | NR        | —    | 1,004,029 | 442.1 | 788       | 0.3  |
| 1981  | 72,799                  | 31.7  | 31,266                | 13.6 | 21,033       | 9.2   | 20,168                            | 8.8   | 287        | 7.9               | NR        | —    | 990,864   | 431.8 | 850       | 0.4  |
| 1982  | 75,579                  | 32.6  | 33,613                | 14.5 | 21,894       | 9.5   | 19,779                            | 8.5   | 259        | 7.0               | NR        | —    | 960,633   | 414.7 | 1,392     | 0.6  |
| 1983  | 74,637                  | 31.9  | 32,698                | 14.0 | 23,738       | 10.2  | 17,896                            | 7.7   | 239        | 6.6               | NR        | —    | 900,435   | 385.1 | 847       | 0.4  |

**Table 1. Sexually Transmitted Diseases — Reported Cases and Rates of Reported Cases per 100,000 Population, United States, 1941–2015 (continued)**

| Year* | Syphilis    |      |                       |      |              |      |                       |      |            |       |           |       |           |       |           |      |
|-------|-------------|------|-----------------------|------|--------------|------|-----------------------|------|------------|-------|-----------|-------|-----------|-------|-----------|------|
|       | All Stages† |      | Primary and Secondary |      | Early Latent |      | Late and Late Latent‡ |      | Congenital |       | Chlamydia |       | Gonorrhea |       | Chancroid |      |
|       | Cases       | Rate | Cases                 | Rate | Cases        | Rate | Cases                 | Rate | Cases      | Rate§ | Cases     | Rate  | Cases     | Rate  | Cases     | Rate |
| 1984  | 69,872      | 29.6 | 28,607                | 12.1 | 23,131       | 9.8  | 17,829                | 7.6  | 305        | 8.3   | 7,594     | 6.5   | 878,556   | 372.5 | 665       | 0.3  |
| 1985  | 67,563      | 28.4 | 27,131                | 11.4 | 21,689       | 9.1  | 18,414                | 7.7  | 329        | 8.7   | 25,848    | 17.4  | 911,419   | 383.0 | 2,067     | 0.9  |
| 1986  | 67,779      | 28.2 | 27,667                | 11.5 | 21,656       | 9.0  | 18,046                | 7.5  | 410        | 10.9  | 58,001    | 35.2  | 892,229   | 371.5 | 3,045     | 1.3  |
| 1987  | 87,286      | 36.0 | 35,585                | 14.7 | 28,233       | 11.7 | 22,988                | 9.5  | 480        | 12.6  | 91,913    | 50.8  | 787,532   | 325.0 | 4,986     | 2.1  |
| 1988  | 104,546     | 42.8 | 40,474                | 16.6 | 35,968       | 14.7 | 27,363                | 11.2 | 741        | 19.0  | 157,854   | 87.1  | 738,160   | 301.9 | 4,891     | 2.0  |
| 1989  | 115,089     | 46.6 | 45,826                | 18.6 | 45,394       | 18.4 | 22,032                | 8.9  | 1,837      | 45.5  | 200,904   | 102.5 | 733,294   | 297.1 | 4,697     | 1.9  |
| 1990  | 135,590     | 54.3 | 50,578                | 20.3 | 55,397       | 22.2 | 25,750                | 10.3 | 3,865      | 92.9  | 323,663   | 160.2 | 690,042   | 276.4 | 4,212     | 1.7  |
| 1991  | 128,719     | 50.9 | 42,950                | 17.0 | 53,855       | 21.3 | 27,490                | 10.9 | 4,424      | 107.6 | 381,228   | 179.7 | 621,918   | 245.8 | 3,476     | 1.4  |
| 1992  | 114,730     | 44.7 | 34,009                | 13.3 | 49,929       | 19.5 | 26,725                | 10.4 | 4,067      | 100.0 | 409,694   | 182.3 | 502,858   | 196.0 | 1,906     | 0.7  |
| 1993  | 102,612     | 39.5 | 26,527                | 10.2 | 41,919       | 16.1 | 30,746                | 11.8 | 3,420      | 85.5  | 405,332   | 178.0 | 444,649   | 171.1 | 1,292     | 0.5  |
| 1994  | 82,713      | 31.4 | 20,641                | 7.8  | 32,017       | 12.2 | 27,603                | 10.5 | 2,452      | 62.0  | 451,785   | 192.5 | 419,602   | 163.9 | 782       | 0.3  |
| 1995  | 69,359      | 26.0 | 16,543                | 6.2  | 26,657       | 10.0 | 24,296                | 9.1  | 1,863      | 47.8  | 478,577   | 187.8 | 392,651   | 147.5 | 607       | 0.2  |
| 1996  | 53,240      | 19.8 | 11,405                | 4.2  | 20,187       | 7.5  | 20,366                | 7.6  | 1,282      | 32.9  | 492,631   | 190.6 | 328,169   | 121.8 | 386       | 0.1  |
| 1997  | 46,716      | 17.1 | 8,556                 | 3.1  | 16,631       | 6.1  | 20,447                | 7.5  | 1,082      | 27.9  | 537,904   | 205.5 | 327,665   | 120.2 | 246       | 0.1  |
| 1998  | 38,289      | 13.9 | 7,007                 | 2.5  | 12,696       | 4.6  | 17,743                | 6.4  | 843        | 21.4  | 614,250   | 231.8 | 356,492   | 129.2 | 189       | 0.1  |
| 1999  | 35,386      | 12.7 | 6,617                 | 2.4  | 11,534       | 4.1  | 16,655                | 6.0  | 580        | 14.6  | 662,647   | 247.2 | 360,813   | 129.3 | 110       | 0.0  |
| 2000  | 31,618      | 11.2 | 5,979                 | 2.1  | 9,465        | 3.4  | 15,594                | 5.5  | 580        | 14.3  | 709,452   | 251.4 | 363,136   | 128.7 | 78        | 0.0  |
| 2001  | 32,286      | 11.3 | 6,103                 | 2.1  | 8,701        | 3.0  | 16,976                | 5.9  | 506        | 12.6  | 783,242   | 274.5 | 361,705   | 126.8 | 38        | 0.0  |
| 2002  | 32,919      | 11.4 | 6,862                 | 2.4  | 8,429        | 2.9  | 17,168                | 6.0  | 460        | 11.4  | 834,555   | 289.4 | 351,852   | 122.0 | 48        | 0.0  |
| 2003  | 34,289      | 11.8 | 7,177                 | 2.5  | 8,361        | 2.9  | 18,319                | 6.3  | 432        | 10.6  | 877,478   | 301.7 | 335,104   | 115.2 | 54        | 0.0  |
| 2004  | 33,423      | 11.4 | 7,980                 | 2.7  | 7,768        | 2.6  | 17,300                | 5.9  | 375        | 9.1   | 929,462   | 316.5 | 330,132   | 112.4 | 30        | 0.0  |
| 2005  | 33,288      | 11.2 | 8,724                 | 2.9  | 8,176        | 2.8  | 16,049                | 5.4  | 339        | 8.2   | 976,445   | 329.4 | 339,593   | 114.6 | 17        | 0.0  |
| 2006  | 36,958      | 12.3 | 9,756                 | 3.3  | 9,186        | 3.1  | 17,644                | 5.9  | 372        | 8.7   | 1,030,911 | 344.3 | 358,366   | 119.7 | 19        | 0.0  |
| 2007  | 40,925      | 13.6 | 11,466                | 3.8  | 10,768       | 3.6  | 18,256                | 6.1  | 435        | 10.1  | 1,108,374 | 367.5 | 355,991   | 118.0 | 23        | 0.0  |
| 2008  | 46,292      | 15.2 | 13,500                | 4.4  | 12,401       | 4.1  | 19,945                | 6.6  | 446        | 10.5  | 1,210,523 | 398.1 | 336,742   | 110.7 | 25        | 0.0  |
| 2009  | 44,832      | 14.6 | 13,997                | 4.6  | 13,066       | 4.3  | 17,338                | 5.6  | 431        | 10.4  | 1,244,180 | 405.3 | 301,174   | 98.1  | 28        | 0.0  |
| 2010  | 45,844      | 14.8 | 13,774                | 4.5  | 13,604       | 4.4  | 18,079                | 5.9  | 387        | 9.7   | 1,307,893 | 423.6 | 309,341   | 100.2 | 24        | 0.0  |
| 2011  | 46,040      | 14.8 | 13,970                | 4.5  | 13,136       | 4.2  | 18,576                | 6.0  | 358        | 9.1   | 1,412,791 | 453.4 | 321,849   | 103.3 | 8         | 0.0  |
| 2012  | 49,915      | 15.9 | 15,667                | 5.0  | 14,503       | 4.6  | 19,411                | 6.2  | 334        | 8.4   | 1,422,976 | 453.3 | 334,826   | 106.7 | 15        | 0.0  |
| 2013  | 56,484      | 17.9 | 17,375                | 5.5  | 16,929       | 5.4  | 21,819                | 6.9  | 361        | 9.2   | 1,401,906 | 443.5 | 333,004   | 105.3 | 10        | 0.0  |
| 2014  | 63,453      | 19.9 | 19,999                | 6.3  | 19,452       | 6.1  | 23,541                | 7.4  | 461        | 11.7  | 1,441,789 | 452.2 | 350,062   | 109.8 | 6         | 0.0  |
| 2015  | 74,702      | 23.4 | 23,872                | 7.5  | 24,173       | 7.6  | 26,170                | 8.2  | 487        | 12.4  | 1,526,658 | 478.8 | 395,216   | 123.9 | 11        | 0.0  |

\* For 1941–1946, data were reported for the federal fiscal year ending June 30 of the year indicated. From 1947 to the present, data were reported for the calendar year ending December 31. For 1941–1958, data for Alaska and Hawaii were not included.

† Includes stage of syphilis not stated.

‡ Late and late latent syphilis includes late latent syphilis, latent syphilis of unknown duration, neurosyphilis, late syphilis with clinical manifestations other than neurosyphilis, and late syphilis with clinical manifestations (including late benign syphilis and cardiovascular syphilis).

§ Rates include all cases of congenitally acquired syphilis per 100,000 live births. As of 1995, cases of congenital syphilis are obtained in hardcopy and electronic format on the basis of case reporting form CDC 73.126.

NR = No report.

**NOTE:** Adjustments to the number of cases reported from state health departments were made for hardcopy forms and for electronic data submissions through June 8, 2016. The number of cases and the rates shown here supersede those published in previous reports. See Section A1.1 in the Appendix for more information. Cases and rates shown in this table exclude the outlying areas of Guam, Puerto Rico, and Virgin Islands. Case definitions have changed over time. See Section C.1 in the Appendix for more information.

**Table 2. Chlamydia — Reported Cases and Rates of Reported Cases by State, Ranked by Rates, United States, 2015**

| Rank* | State              | Cases            | Rate per 100,000 Population |
|-------|--------------------|------------------|-----------------------------|
| 1     | Alaska             | 5,660            | 768.3                       |
| 2     | Louisiana          | 32,325           | 695.2                       |
| 3     | North Carolina     | 64,376           | 647.4                       |
| 4     | New Mexico         | 12,632           | 605.7                       |
| 5     | Mississippi        | 17,371           | 580.2                       |
| 6     | Georgia            | 57,639           | 570.8                       |
| 7     | South Carolina     | 27,538           | 569.9                       |
| 8     | Arkansas           | 16,166           | 545.0                       |
| 9     | Alabama            | 26,359           | 543.6                       |
| 10    | Oklahoma           | 21,025           | 542.2                       |
| 11    | Illinois           | 69,610           | 540.4                       |
| 12    | New York           | 103,615          | 524.7                       |
| 13    | Texas              | 141,158          | 523.6                       |
| 14    | Hawaii             | 7,074            | 498.3                       |
| 15    | Delaware           | 4,605            | 492.2                       |
| 16    | Ohio               | 56,726           | 489.3                       |
| 17    | California         | 189,170          | 487.5                       |
| 18    | Arizona            | 32,387           | 481.1                       |
|       | <b>U.S. TOTAL†</b> | <b>1,526,658</b> | <b>478.8</b>                |
| 19    | Tennessee          | 31,272           | 477.5                       |
| 20    | Missouri           | 28,948           | 477.4                       |
| 21    | Michigan           | 46,486           | 469.1                       |
| 22    | South Dakota       | 3,949            | 462.9                       |
| 23    | Maryland           | 27,450           | 459.3                       |
| 24    | Nevada             | 12,925           | 455.3                       |
| 25    | Florida            | 90,468           | 454.8                       |
| 26    | Colorado           | 23,857           | 445.4                       |
| 27    | Indiana            | 28,886           | 437.9                       |
| 28    | Rhode Island       | 4,575            | 433.6                       |
| 29    | North Dakota       | 3,159            | 427.2                       |
| 30    | Virginia           | 35,349           | 424.5                       |
| 31    | Wisconsin          | 24,381           | 423.5                       |
| 32    | Nebraska           | 7,956            | 422.9                       |
| 33    | Pennsylvania       | 53,460           | 418.1                       |
| 34    | Oregon             | 16,305           | 410.7                       |
| 35    | Montana            | 4,184            | 408.8                       |
| 36    | Washington         | 28,699           | 406.4                       |
| 37    | Kentucky           | 17,444           | 395.2                       |
| 38    | Kansas             | 11,464           | 394.8                       |
| 39    | Minnesota          | 21,243           | 389.3                       |
| 40    | Iowa               | 12,085           | 388.9                       |
| 41    | Connecticut        | 13,126           | 364.9                       |
| 42    | Massachusetts      | 24,100           | 357.3                       |
| 43    | New Jersey         | 31,337           | 350.6                       |
| 44    | Wyoming            | 2,037            | 348.7                       |
| 45    | Idaho              | 5,631            | 344.5                       |
| 46    | Vermont            | 1,901            | 303.4                       |
| 47    | Maine              | 3,965            | 298.1                       |
| 48    | Utah               | 8,633            | 293.3                       |
| 49    | West Virginia      | 4,958            | 268.0                       |
| 50    | New Hampshire      | 3,095            | 233.3                       |

\* States were ranked by rate, then by case count, then in alphabetical order, with rates shown rounded to the nearest tenth.

† Total includes cases reported by the District of Columbia with 7,894 cases and a rate of 1,198.1, but excludes outlying areas (Guam with 881 cases and rate of 547.2, Puerto Rico with 5,295 cases and rate of 149.2, and Virgin Islands with 743 cases and rate of 713.3).

**Table 3. Chlamydia — Reported Cases and Rates of Reported Cases by State/Area and Region in Alphabetical Order, United States and Outlying Areas, 2011–2015**

| State/Area            | Cases            |                  |                  |                  |                  | Rates per 100,000 Population |              |              |              |              |
|-----------------------|------------------|------------------|------------------|------------------|------------------|------------------------------|--------------|--------------|--------------|--------------|
|                       | 2011             | 2012             | 2013             | 2014             | 2015             | 2011                         | 2012         | 2013         | 2014         | 2015         |
| Alabama               | 29,626           | 30,621           | 29,464           | 29,010           | 26,359           | 616.9                        | 635.0        | 609.6        | 598.2        | 543.6        |
| Alaska                | 5,739            | 5,462            | 5,774            | 5,789            | 5,660            | 794.1                        | 746.7        | 785.4        | 785.8        | 768.3        |
| Arizona               | 29,251           | 30,444           | 30,564           | 32,397           | 32,387           | 451.2                        | 464.6        | 461.2        | 481.3        | 481.1        |
| Arkansas              | 16,052           | 16,611           | 15,447           | 15,605           | 16,166           | 546.4                        | 563.3        | 522.0        | 526.1        | 545.0        |
| California            | 166,773          | 167,695          | 167,346          | 176,308          | 189,170          | 442.5                        | 440.8        | 436.6        | 454.4        | 487.5        |
| Colorado              | 21,811           | 21,631           | 20,386           | 21,863           | 23,857           | 426.3                        | 417.0        | 387.0        | 408.2        | 445.4        |
| Connecticut           | 13,649           | 13,065           | 12,775           | 13,382           | 13,126           | 381.2                        | 363.9        | 355.2        | 372.1        | 364.9        |
| Delaware              | 4,508            | 4,438            | 5,213            | 4,473            | 4,605            | 496.9                        | 483.9        | 563.1        | 478.1        | 492.2        |
| District of Columbia  | 6,585            | 6,808            | 6,414            | 5,293            | 7,894            | 1,065.5                      | 1,076.7      | 992.2        | 803.3        | 1,198.1      |
| Florida               | 76,033           | 77,644           | 80,182           | 84,194           | 90,468           | 399.0                        | 401.9        | 410.1        | 423.2        | 454.8        |
| Georgia               | 54,403           | 52,418           | 51,070           | 51,945           | 57,639           | 554.3                        | 528.4        | 511.1        | 514.4        | 570.8        |
| Hawaii                | 6,001            | 6,340            | 6,640            | 6,419            | 7,074            | 436.5                        | 455.4        | 472.9        | 452.2        | 498.3        |
| Idaho                 | 4,699            | 4,550            | 5,428            | 5,442            | 5,631            | 296.5                        | 285.1        | 336.7        | 333.0        | 344.5        |
| Illinois              | 64,939           | 67,701           | 63,797           | 66,536           | 69,610           | 504.6                        | 525.8        | 495.2        | 516.6        | 540.4        |
| Indiana               | 27,801           | 29,505           | 28,023           | 28,519           | 28,886           | 426.6                        | 451.3        | 426.5        | 432.3        | 437.9        |
| Iowa                  | 10,705           | 11,377           | 10,953           | 11,804           | 12,085           | 349.6                        | 370.1        | 354.4        | 379.9        | 388.9        |
| Kansas                | 10,598           | 11,135           | 11,012           | 11,116           | 11,464           | 369.1                        | 385.8        | 380.5        | 382.8        | 394.8        |
| Kentucky              | 16,629           | 17,273           | 17,134           | 17,664           | 17,444           | 380.6                        | 394.3        | 389.8        | 400.2        | 395.2        |
| Louisiana             | 31,614           | 27,353           | 28,739           | 28,955           | 32,325           | 691.0                        | 594.4        | 621.3        | 622.7        | 695.2        |
| Maine                 | 3,094            | 3,413            | 3,438            | 3,530            | 3,965            | 232.9                        | 256.8        | 258.8        | 265.4        | 298.1        |
| Maryland              | 27,212           | 26,534           | 26,723           | 27,424           | 27,450           | 466.9                        | 450.9        | 450.7        | 458.9        | 459.3        |
| Massachusetts         | 22,764           | 23,550           | 23,210           | 21,271           | 24,100           | 345.6                        | 354.3        | 346.8        | 315.3        | 357.3        |
| Michigan              | 49,568           | 47,566           | 44,835           | 44,256           | 46,486           | 501.9                        | 481.3        | 453.1        | 446.6        | 469.1        |
| Minnesota             | 16,902           | 18,056           | 18,742           | 19,907           | 21,243           | 316.2                        | 335.7        | 345.8        | 364.8        | 389.3        |
| Mississippi           | 21,216           | 23,054           | 17,464           | 19,605           | 17,371           | 712.3                        | 772.3        | 583.8        | 654.8        | 580.2        |
| Missouri              | 27,887           | 27,835           | 27,328           | 27,981           | 28,948           | 464.0                        | 462.2        | 452.1        | 461.5        | 477.4        |
| Montana               | 3,406            | 3,827            | 3,818            | 4,193            | 4,184            | 341.2                        | 380.7        | 376.1        | 409.6        | 408.8        |
| Nebraska              | 6,780            | 6,748            | 7,301            | 7,499            | 7,956            | 368.0                        | 363.7        | 390.7        | 398.6        | 422.9        |
| Nevada                | 10,507           | 11,137           | 11,781           | 11,841           | 12,925           | 385.8                        | 403.7        | 422.2        | 417.1        | 455.3        |
| New Hampshire         | 3,010            | 3,072            | 3,119            | 3,586            | 3,095            | 228.3                        | 232.6        | 235.7        | 270.3        | 233.3        |
| New Jersey            | 26,209           | 27,271           | 28,327           | 29,904           | 31,337           | 297.1                        | 307.6        | 318.3        | 334.6        | 350.6        |
| New Mexico            | 11,374           | 11,898           | 12,249           | 11,558           | 12,632           | 546.2                        | 570.5        | 587.4        | 554.2        | 605.7        |
| New York              | 102,763          | 100,546          | 95,803           | 98,814           | 103,615          | 527.9                        | 513.8        | 487.5        | 500.4        | 524.7        |
| North Carolina        | 54,819           | 50,596           | 48,416           | 47,147           | 64,376           | 567.7                        | 518.8        | 491.6        | 474.1        | 647.4        |
| North Dakota          | 2,445            | 2,908            | 2,932            | 3,451            | 3,159            | 357.5                        | 415.6        | 405.3        | 466.7        | 427.2        |
| Ohio                  | 52,653           | 53,141           | 53,121           | 54,858           | 56,726           | 456.1                        | 460.3        | 459.1        | 473.2        | 489.3        |
| Oklahoma              | 14,596           | 16,843           | 18,278           | 20,662           | 21,025           | 385.0                        | 441.5        | 474.7        | 532.8        | 542.2        |
| Oregon                | 13,643           | 13,454           | 14,181           | 15,508           | 16,305           | 352.4                        | 345.0        | 360.8        | 390.6        | 410.7        |
| Pennsylvania          | 52,884           | 54,993           | 52,056           | 50,536           | 53,460           | 415.0                        | 430.9        | 407.5        | 395.2        | 418.1        |
| Rhode Island          | 4,146            | 4,313            | 4,312            | 4,349            | 4,575            | 394.4                        | 410.6        | 410.1        | 412.2        | 433.6        |
| South Carolina        | 28,932           | 27,149           | 25,594           | 28,087           | 27,538           | 618.3                        | 574.7        | 536.0        | 581.2        | 569.9        |
| South Dakota          | 3,409            | 3,924            | 3,927            | 4,166            | 3,949            | 413.7                        | 470.9        | 464.8        | 488.3        | 462.9        |
| Tennessee             | 31,105           | 32,525           | 30,370           | 30,793           | 31,272           | 485.8                        | 503.8        | 467.5        | 470.2        | 477.5        |
| Texas                 | 124,882          | 127,036          | 129,861          | 131,219          | 141,158          | 486.4                        | 487.5        | 491.0        | 486.8        | 523.6        |
| Utah                  | 7,086            | 7,615            | 7,535            | 8,223            | 8,633            | 251.5                        | 266.7        | 259.7        | 279.4        | 293.3        |
| Vermont               | 1,483            | 1,724            | 1,842            | 2,237            | 1,901            | 236.7                        | 275.4        | 294.0        | 357.0        | 303.4        |
| Virginia              | 36,314           | 34,963           | 33,316           | 36,048           | 35,349           | 448.5                        | 427.1        | 403.3        | 432.9        | 424.5        |
| Washington            | 23,280           | 24,596           | 24,950           | 26,577           | 28,699           | 340.8                        | 356.6        | 357.9        | 376.4        | 406.4        |
| West Virginia         | 4,295            | 4,790            | 5,139            | 4,719            | 4,958            | 231.5                        | 258.2        | 277.1        | 255.0        | 268.0        |
| Wisconsin             | 24,619           | 23,726           | 23,572           | 23,154           | 24,381           | 431.0                        | 414.3        | 410.5        | 402.1        | 423.5        |
| Wyoming               | 2,092            | 2,102            | 2,005            | 1,972            | 2,037            | 368.2                        | 364.7        | 344.1        | 337.6        | 348.7        |
| <b>U.S. TOTAL</b>     | <b>1,412,791</b> | <b>1,422,976</b> | <b>1,401,906</b> | <b>1,441,789</b> | <b>1,526,658</b> | <b>453.4</b>                 | <b>453.3</b> | <b>443.5</b> | <b>452.2</b> | <b>478.8</b> |
| Northeast             | 230,002          | 231,947          | 224,882          | 227,609          | 239,174          | 414.3                        | 416.0        | 402.0        | 405.3        | 425.9        |
| Midwest               | 298,306          | 303,622          | 295,543          | 303,247          | 314,893          | 444.2                        | 451.0        | 437.5        | 447.6        | 464.8        |
| South                 | 578,821          | 576,656          | 568,824          | 582,843          | 623,397          | 498.8                        | 491.8        | 480.5        | 486.6        | 520.5        |
| West                  | 305,662          | 310,751          | 312,657          | 328,090          | 349,194          | 419.5                        | 422.3        | 421.1        | 436.4        | 464.4        |
| Guam                  | 1,071            | 1,031            | 937              | 839              | 881              | 671.1                        | 644.7        | 584.2        | 521.1        | 547.2        |
| Puerto Rico           | 5,634            | 6,227            | 5,969            | 4,899            | 5,295            | 152.0                        | 169.8        | 165.1        | 138.1        | 149.2        |
| Virgin Islands        | 820              | 802              | 775              | 791              | 743              | 775.2                        | 761.8        | 739.9        | 759.3        | 713.3        |
| <b>OUTLYING AREAS</b> | <b>7,525</b>     | <b>8,060</b>     | <b>7,681</b>     | <b>6,529</b>     | <b>6,919</b>     | <b>189.4</b>                 | <b>205.0</b> | <b>198.0</b> | <b>171.2</b> | <b>181.4</b> |
| <b>TOTAL</b>          | <b>1,420,316</b> | <b>1,431,036</b> | <b>1,409,587</b> | <b>1,448,318</b> | <b>1,533,577</b> | <b>450.1</b>                 | <b>450.2</b> | <b>440.5</b> | <b>448.9</b> | <b>475.3</b> |

**Table 4. Chlamydia Among Women — Reported Cases and Rates of Reported Cases by State/Area and Region in Alphabetical Order, United States and Outlying Areas, 2011–2015**

| State/Area            | Cases            |                  |                |                  |                  | Rates per 100,000 Population |              |              |              |              |
|-----------------------|------------------|------------------|----------------|------------------|------------------|------------------------------|--------------|--------------|--------------|--------------|
|                       | 2011             | 2012             | 2013           | 2014             | 2015             | 2011                         | 2012         | 2013         | 2014         | 2015         |
| Alabama               | 21,217           | 22,099           | 21,096         | 20,619           | 18,674           | 857.9                        | 889.8        | 847.8        | 825.0        | 747.1        |
| Alaska                | 3,801            | 3,670            | 3,899          | 3,940            | 3,786            | 1,093.7                      | 1,047.9      | 1,115.4      | 1,127.5      | 1,083.5      |
| Arizona               | 21,196           | 22,087           | 21,950         | 22,747           | 22,299           | 650.5                        | 670.4        | 658.9        | 671.5        | 658.2        |
| Arkansas              | 11,921           | 12,247           | 11,334         | 11,625           | 12,088           | 797.3                        | 816.1        | 752.7        | 770.4        | 801.0        |
| California            | 114,657          | 114,396          | 112,460        | 115,339          | 121,387          | 605.3                        | 598.2        | 583.7        | 590.5        | 621.4        |
| Colorado              | 15,751           | 15,476           | 14,336         | 14,906           | 16,151           | 617.8                        | 598.9        | 546.8        | 559.4        | 606.1        |
| Connecticut           | 9,824            | 9,464            | 9,210          | 9,512            | 9,089            | 535.1                        | 514.2        | 500.0        | 516.4        | 493.4        |
| Delaware              | 3,191            | 3,181            | 3,714          | 3,084            | 3,118            | 682.9                        | 672.9        | 777.3        | 638.6        | 645.6        |
| District of Columbia  | 4,357            | 4,426            | 3,992          | 3,709            | 4,632            | 1,337.4                      | 1,328.0      | 1,173.4      | 1,071.1      | 1,337.6      |
| Florida               | 54,262           | 55,628           | 56,688         | 58,800           | 62,048           | 557.3                        | 563.6        | 567.4        | 578.2        | 610.1        |
| Georgia               | 39,829           | 37,456           | 36,559         | 36,871           | 40,302           | 794.6                        | 738.9        | 715.3        | 713.1        | 779.5        |
| Hawaii                | 4,314            | 4,452            | 4,646          | 4,469            | 4,720            | 629.8                        | 644.9        | 669.0        | 637.1        | 672.9        |
| Idaho                 | 3,345            | 3,206            | 3,885          | 3,895            | 3,963            | 422.7                        | 402.2        | 482.6        | 477.3        | 485.7        |
| Illinois              | 46,728           | 48,575           | 45,764         | 46,516           | 47,268           | 712.9                        | 740.9        | 698.1        | 709.1        | 720.6        |
| Indiana               | 20,065           | 21,633           | 20,307         | 20,586           | 20,385           | 606.2                        | 651.8        | 609.0        | 615.0        | 609.0        |
| Iowa                  | 7,647            | 8,194            | 7,895          | 8,385            | 8,372            | 495.0                        | 528.7        | 507.1        | 536.1        | 535.3        |
| Kansas                | 8,158            | 8,440            | 8,323          | 8,276            | 8,325            | 564.4                        | 581.8        | 573.2        | 568.1        | 571.5        |
| Kentucky              | 11,990           | 12,366           | 12,086         | 12,404           | 12,140           | 540.2                        | 556.3        | 541.5        | 553.7        | 541.9        |
| Louisiana             | 23,390           | 20,507           | 21,258         | 21,297           | 23,351           | 1,001.1                      | 872.7        | 900.2        | 896.4        | 982.9        |
| Maine                 | 2,149            | 2,420            | 2,404          | 2,478            | 2,735            | 316.9                        | 356.5        | 354.5        | 365.0        | 402.9        |
| Maryland              | 20,004           | 19,295           | 19,049         | 19,162           | 18,612           | 665.1                        | 635.9        | 623.7        | 622.1        | 604.3        |
| Massachusetts         | 15,744           | 16,319           | 15,851         | 14,000           | 15,588           | 463.3                        | 476.4        | 459.7        | 402.9        | 448.6        |
| Michigan              | 36,367           | 34,510           | 32,056         | 31,470           | 32,425           | 723.0                        | 685.7        | 636.5        | 624.2        | 643.2        |
| Minnesota             | 11,827           | 12,568           | 12,950         | 13,484           | 14,112           | 439.7                        | 464.3        | 474.9        | 491.2        | 514.1        |
| Mississippi           | 15,697           | 16,771           | 12,676         | 14,008           | 12,335           | 1,024.6                      | 1,092.1      | 824.9        | 909.9        | 801.2        |
| Missouri              | 20,097           | 19,745           | 19,303         | 19,549           | 19,926           | 655.4                        | 643.0        | 626.7        | 632.8        | 645.0        |
| Montana               | 2,390            | 2,655            | 2,701          | 2,878            | 2,846            | 480.9                        | 530.8        | 534.5        | 564.9        | 558.6        |
| Nebraska              | 4,783            | 4,628            | 4,945          | 5,110            | 5,409            | 515.7                        | 495.9        | 526.8        | 540.9        | 572.6        |
| Nevada                | 7,215            | 7,628            | 8,183          | 8,039            | 8,743            | 534.9                        | 557.7        | 591.0        | 569.2        | 619.1        |
| New Hampshire         | 2,184            | 2,150            | 2,187          | 2,452            | 2,089            | 327.3                        | 321.6        | 326.5        | 365.2        | 311.2        |
| New Jersey            | 19,886           | 20,231           | 20,771         | 21,556           | 22,274           | 439.9                        | 445.5        | 456.0        | 471.0        | 486.7        |
| New Mexico            | 8,309            | 8,724            | 9,033          | 8,395            | 9,227            | 789.7                        | 828.6        | 858.9        | 797.5        | 876.5        |
| New York              | 70,466           | 68,337           | 64,454         | 65,114           | 66,164           | 702.3                        | 677.9        | 637.2        | 640.6        | 650.9        |
| North Carolina        | 42,992           | 39,140           | 37,146         | 35,494           | 47,178           | 868.1                        | 782.9        | 735.9        | 696.0        | 925.2        |
| North Dakota          | 1,603            | 1,898            | 1,923          | 2,202            | 2,028            | 474.7                        | 551.9        | 544.2        | 610.9        | 562.6        |
| Ohio                  | 38,914           | 38,879           | 38,293         | 39,033           | 39,825           | 658.9                        | 658.8        | 647.8        | 659.4        | 672.8        |
| Oklahoma              | 10,349           | 12,341           | 13,065         | 14,855           | 14,904           | 540.8                        | 641.1        | 672.3        | 758.7        | 761.2        |
| Oregon                | 9,489            | 9,425            | 9,932          | 10,545           | 11,075           | 485.3                        | 478.8        | 500.2        | 525.6        | 552.1        |
| Pennsylvania          | 36,463           | 37,569           | 35,657         | 34,170           | 35,201           | 558.5                        | 575.0        | 545.9        | 523.0        | 538.8        |
| Rhode Island          | 2,984            | 3,091            | 3,044          | 3,037            | 3,064            | 549.5                        | 570.3        | 561.5        | 558.5        | 563.4        |
| South Carolina        | 22,278           | 20,497           | 19,103         | 20,581           | 19,743           | 927.2                        | 844.7        | 779.2        | 828.8        | 795.1        |
| South Dakota          | 2,491            | 2,801            | 2,793          | 2,942            | 2,831            | 606.2                        | 674.9        | 664.2        | 694.1        | 667.9        |
| Tennessee             | 22,200           | 22,732           | 21,057         | 21,203           | 21,112           | 676.3                        | 687.3        | 632.6        | 631.6        | 628.9        |
| Texas                 | 95,326           | 96,405           | 96,923         | 96,959           | 102,141          | 737.1                        | 735.3        | 728.7        | 714.3        | 752.4        |
| Utah                  | 4,821            | 5,149            | 5,050          | 5,414            | 5,704            | 343.9                        | 362.8        | 350.2        | 370.0        | 389.8        |
| Vermont               | 1,106            | 1,296            | 1,319          | 1,613            | 1,352            | 348.3                        | 408.5        | 415.5        | 507.7        | 425.5        |
| Virginia              | 26,283           | 24,670           | 23,167         | 24,754           | 23,859           | 637.9                        | 592.4        | 551.8        | 585.1        | 563.9        |
| Washington            | 16,641           | 17,271           | 17,452         | 18,193           | 19,047           | 486.5                        | 499.8        | 500.2        | 515.1        | 539.3        |
| West Virginia         | 3,092            | 3,405            | 3,624          | 3,356            | 3,449            | 328.8                        | 362.2        | 386.1        | 358.4        | 368.3        |
| Wisconsin             | 17,402           | 16,727           | 16,448         | 16,063           | 16,660           | 605.1                        | 580.1        | 569.0        | 554.3        | 574.9        |
| Wyoming               | 1,357            | 1,492            | 1,387          | 1,352            | 1,387            | 487.4                        | 528.8        | 486.0        | 472.5        | 484.8        |
| <b>U.S. TOTAL</b>     | <b>1,018,552</b> | <b>1,018,272</b> | <b>993,348</b> | <b>1,006,441</b> | <b>1,045,143</b> | <b>643.4</b>                 | <b>638.7</b> | <b>619.0</b> | <b>621.6</b> | <b>645.5</b> |
| Northeast             | 160,806          | 160,877          | 154,897        | 153,932          | 157,556          | 563.8                        | 562.0        | 539.7        | 534.4        | 547.0        |
| Midwest               | 216,082          | 218,598          | 211,000        | 213,616          | 217,566          | 633.7                        | 639.9        | 615.9        | 621.9        | 633.4        |
| South                 | 428,378          | 423,166          | 412,537        | 418,781          | 439,686          | 724.2                        | 708.3        | 684.1        | 685.9        | 720.2        |
| West                  | 213,286          | 215,631          | 214,914        | 220,112          | 230,335          | 583.9                        | 584.6        | 577.5        | 583.6        | 610.7        |
| Guam                  | 783              | 726              | 700            | 595              | 618              | 996.9                        | 921.9        | 885.8        | 749.6        | 778.6        |
| Puerto Rico           | 4,528            | 5,102            | 4,766          | 3,770            | 3,950            | 234.3                        | 267.1        | 252.7        | 204.4        | 214.2        |
| Virgin Islands        | 591              | 592              | 579            | 590              | 563              | 1,051.7                      | 1,056.8      | 1,037.1      | 1,060.7      | 1,012.2      |
| <b>OUTLYING AREAS</b> | <b>5,902</b>     | <b>6,420</b>     | <b>6,045</b>   | <b>4,955</b>     | <b>5,131</b>     | <b>285.5</b>                 | <b>314.0</b> | <b>299.1</b> | <b>250.4</b> | <b>259.3</b> |
| <b>TOTAL</b>          | <b>1,024,454</b> | <b>1,024,692</b> | <b>999,393</b> | <b>1,011,396</b> | <b>1,050,274</b> | <b>638.8</b>                 | <b>634.6</b> | <b>615.0</b> | <b>617.1</b> | <b>640.8</b> |

**NOTE:** Cases reported with unknown sex are not included in this table.

**Table 5. Chlamydia Among Men — Reported Cases and Rates of Reported Cases by State/Area and Region in Alphabetical Order, United States and Outlying Areas, 2011–2015**

| State/Area            | Cases          |                |                |                |                | Rates per 100,000 Population |              |              |              |              |
|-----------------------|----------------|----------------|----------------|----------------|----------------|------------------------------|--------------|--------------|--------------|--------------|
|                       | 2011           | 2012           | 2013           | 2014           | 2015           | 2011                         | 2012         | 2013         | 2014         | 2015         |
| Alabama               | 7,648          | 8,295          | 8,201          | 8,318          | 7,549          | 328.3                        | 354.7        | 349.7        | 354.0        | 321.2        |
| Alaska                | 1,938          | 1,792          | 1,875          | 1,849          | 1,871          | 516.5                        | 470.0        | 486.3        | 477.4        | 483.1        |
| Arizona               | 8,052          | 8,354          | 8,610          | 9,650          | 10,028         | 249.8                        | 256.4        | 261.3        | 288.6        | 299.9        |
| Arkansas              | 4,125          | 4,360          | 4,104          | 3,964          | 4,078          | 285.9                        | 301.0        | 282.3        | 272.0        | 279.8        |
| California            | 51,554         | 52,983         | 54,679         | 60,687         | 67,475         | 275.0                        | 280.1        | 286.8        | 314.9        | 350.2        |
| Colorado              | 6,057          | 6,155          | 6,050          | 6,957          | 7,706          | 235.9                        | 236.4        | 228.6        | 258.5        | 286.3        |
| Connecticut           | 3,825          | 3,524          | 3,481          | 3,757          | 3,926          | 219.2                        | 201.4        | 198.4        | 214.1        | 223.8        |
| Delaware              | 1,317          | 1,257          | 1,499          | 1,389          | 1,487          | 299.4                        | 282.9        | 334.6        | 306.8        | 328.5        |
| District of Columbia  | 2,225          | 2,345          | 2,400          | 1,555          | 3,108          | 761.4                        | 784.2        | 783.7        | 497.4        | 994.2        |
| Florida               | 21,685         | 22,009         | 23,300         | 25,239         | 28,332         | 232.6                        | 233.0        | 243.7        | 259.6        | 291.4        |
| Georgia               | 13,978         | 14,521         | 14,063         | 14,736         | 17,212         | 291.0                        | 299.3        | 288.1        | 299.1        | 349.3        |
| Hawaii                | 1,687          | 1,888          | 1,994          | 1,950          | 2,352          | 244.6                        | 269.0        | 281.0        | 271.6        | 327.5        |
| Idaho                 | 1,347          | 1,344          | 1,528          | 1,547          | 1,663          | 169.7                        | 168.3        | 189.3        | 189.0        | 203.2        |
| Illinois              | 18,083         | 18,977         | 17,943         | 19,908         | 21,966         | 286.4                        | 300.3        | 283.6        | 315.0        | 347.5        |
| Indiana               | 7,681          | 7,850          | 7,708          | 7,921          | 8,492          | 239.5                        | 243.9        | 238.2        | 243.8        | 261.3        |
| Iowa                  | 3,058          | 3,183          | 3,058          | 3,419          | 3,712          | 201.5                        | 208.8        | 199.4        | 221.6        | 240.6        |
| Kansas                | 2,440          | 2,695          | 2,689          | 2,840          | 3,139          | 171.1                        | 187.8        | 186.5        | 196.2        | 216.9        |
| Kentucky              | 4,577          | 4,851          | 4,989          | 5,194          | 5,273          | 212.9                        | 224.8        | 230.6        | 239.0        | 242.6        |
| Louisiana             | 7,568          | 6,846          | 7,481          | 7,655          | 8,974          | 338.1                        | 304.0        | 330.4        | 336.6        | 394.6        |
| Maine                 | 944            | 990            | 1,031          | 1,050          | 1,230          | 145.2                        | 152.2        | 158.6        | 161.2        | 188.9        |
| Maryland              | 7,197          | 7,193          | 7,654          | 8,237          | 8,780          | 255.2                        | 252.4        | 266.2        | 284.4        | 303.1        |
| Massachusetts         | 7,000          | 7,193          | 7,341          | 7,197          | 8,406          | 219.5                        | 223.4        | 226.2        | 220.0        | 257.0        |
| Michigan              | 13,095         | 12,962         | 12,683         | 12,723         | 14,015         | 270.2                        | 267.2        | 261.0        | 261.3        | 287.9        |
| Minnesota             | 5,075          | 5,430          | 5,791          | 6,414          | 7,122          | 191.2                        | 203.2        | 215.0        | 236.5        | 262.6        |
| Mississippi           | 5,519          | 6,281          | 4,788          | 5,588          | 5,018          | 381.5                        | 433.4        | 329.2        | 384.2        | 345.0        |
| Missouri              | 7,790          | 8,090          | 8,025          | 8,432          | 9,022          | 264.6                        | 274.1        | 270.8        | 283.5        | 303.3        |
| Montana               | 1,016          | 1,172          | 1,116          | 1,314          | 1,338          | 202.7                        | 232.1        | 218.9        | 255.6        | 260.2        |
| Nebraska              | 1,987          | 2,093          | 2,196          | 2,357          | 2,531          | 217.1                        | 226.9        | 236.2        | 251.6        | 270.2        |
| Nevada                | 3,290          | 3,508          | 3,590          | 3,786          | 4,152          | 239.3                        | 252.2        | 255.4        | 265.4        | 291.0        |
| New Hampshire         | 826            | 922            | 932            | 1,130          | 1,006          | 126.9                        | 141.4        | 142.6        | 172.4        | 153.5        |
| New Jersey            | 6,231          | 6,958          | 7,476          | 8,272          | 9,025          | 144.9                        | 160.9        | 172.1        | 189.6        | 206.9        |
| New Mexico            | 3,054          | 3,170          | 3,209          | 3,148          | 3,400          | 296.5                        | 307.0        | 310.5        | 304.8        | 329.2        |
| New York              | 32,126         | 32,147         | 31,273         | 33,634         | 37,346         | 340.6                        | 338.8        | 327.9        | 351.0        | 389.8        |
| North Carolina        | 11,585         | 11,354         | 11,254         | 11,638         | 17,195         | 246.3                        | 238.9        | 234.4        | 240.2        | 354.9        |
| North Dakota          | 841            | 1,010          | 1,009          | 1,249          | 1,131          | 242.9                        | 283.9        | 272.7        | 329.5        | 298.4        |
| Ohio                  | 13,731         | 14,262         | 14,828         | 15,825         | 16,901         | 243.5                        | 252.8        | 262.0        | 278.9        | 297.8        |
| Oklahoma              | 3,851          | 4,498          | 5,213          | 5,802          | 6,121          | 205.1                        | 238.0        | 273.3        | 302.2        | 318.8        |
| Oregon                | 4,154          | 4,028          | 4,243          | 4,953          | 5,223          | 216.7                        | 208.6        | 218.2        | 252.2        | 265.9        |
| Pennsylvania          | 16,364         | 17,388         | 16,360         | 16,315         | 18,201         | 263.3                        | 279.1        | 262.1        | 260.9        | 291.0        |
| Rhode Island          | 1,162          | 1,222          | 1,268          | 1,312          | 1,511          | 228.6                        | 240.4        | 248.9        | 256.6        | 295.5        |
| South Carolina        | 6,585          | 6,588          | 6,432          | 7,376          | 7,705          | 289.2                        | 286.8        | 276.9        | 314.0        | 328.0        |
| South Dakota          | 914            | 1,123          | 1,134          | 1,224          | 1,118          | 221.2                        | 268.5        | 267.2        | 285.1        | 260.4        |
| Tennessee             | 8,905          | 9,754          | 9,311          | 9,587          | 10,158         | 285.3                        | 309.8        | 294.0        | 300.3        | 318.2        |
| Texas                 | 29,533         | 30,532         | 31,980         | 34,110         | 38,539         | 231.8                        | 235.8        | 243.2        | 254.9        | 288.0        |
| Utah                  | 2,265          | 2,466          | 2,485          | 2,808          | 2,929          | 160.0                        | 171.7        | 170.3        | 189.8        | 197.9        |
| Vermont               | 377            | 428            | 523            | 622            | 549            | 122.1                        | 138.6        | 169.2        | 201.4        | 177.8        |
| Virginia              | 9,929          | 10,247         | 10,112         | 11,244         | 11,460         | 249.7                        | 254.8        | 248.9        | 274.6        | 279.8        |
| Washington            | 6,639          | 7,325          | 7,498          | 8,384          | 9,651          | 194.7                        | 212.8        | 215.3        | 237.5        | 273.4        |
| West Virginia         | 1,203          | 1,385          | 1,514          | 1,363          | 1,509          | 131.5                        | 151.3        | 165.4        | 149.1        | 165.1        |
| Wisconsin             | 7,203          | 6,999          | 7,114          | 7,077          | 7,703          | 254.0                        | 246.2        | 249.4        | 247.5        | 269.4        |
| Wyoming               | 734            | 610            | 617            | 619            | 643            | 253.3                        | 207.3        | 207.5        | 207.7        | 215.7        |
| <b>U.S. TOTAL</b>     | <b>389,970</b> | <b>402,557</b> | <b>405,652</b> | <b>433,325</b> | <b>478,981</b> | <b>254.4</b>                 | <b>260.6</b> | <b>260.6</b> | <b>276.1</b> | <b>305.2</b> |
| Northeast             | 68,855         | 70,772         | 69,685         | 73,289         | 81,200         | 255.0                        | 260.8        | 255.8        | 268.0        | 296.9        |
| Midwest               | 81,898         | 84,674         | 84,178         | 89,389         | 96,852         | 247.7                        | 255.4        | 252.9        | 267.7        | 290.0        |
| South                 | 147,430        | 152,316        | 154,295        | 162,995        | 182,498        | 259.1                        | 264.8        | 265.7        | 277.6        | 310.8        |
| West                  | 91,787         | 94,795         | 97,494         | 107,652        | 118,431        | 252.6                        | 258.3        | 263.2        | 287.3        | 316.0        |
| Guam                  | 288            | 305            | 234            | 244            | 263            | 355.3                        | 375.8        | 287.6        | 298.9        | 322.2        |
| Puerto Rico           | 1,106          | 1,125          | 1,203          | 1,126          | 1,319          | 62.3                         | 64.0         | 69.6         | 66.1         | 77.4         |
| Virgin Islands        | 229            | 210            | 196            | 201            | 180            | 461.8                        | 426.3        | 400.7        | 414.0        | 370.8        |
| <b>OUTLYING AREAS</b> | <b>1,623</b>   | <b>1,640</b>   | <b>1,633</b>   | <b>1,571</b>   | <b>1,762</b>   | <b>85.2</b>                  | <b>86.9</b>  | <b>87.8</b>  | <b>85.6</b>  | <b>96.0</b>  |
| <b>TOTAL</b>          | <b>391,593</b> | <b>404,197</b> | <b>407,285</b> | <b>434,896</b> | <b>480,743</b> | <b>252.3</b>                 | <b>258.5</b> | <b>258.6</b> | <b>273.9</b> | <b>302.8</b> |

**NOTE:** Cases reported with unknown sex are not included in this table.

**Table 6. Chlamydia — Reported Cases and Rates of Reported Cases in Selected Metropolitan Statistical Areas (MSAs)\* in Alphabetical Order, United States, 2011–2015**

| MSAs                                         | Cases          |                |                |                |                | Rates per 100,000 Population |              |              |              |              |
|----------------------------------------------|----------------|----------------|----------------|----------------|----------------|------------------------------|--------------|--------------|--------------|--------------|
|                                              | 2011           | 2012           | 2013           | 2014           | 2015           | 2011                         | 2012         | 2013         | 2014         | 2015         |
| Atlanta-Sandy Springs-Roswell, GA            | 27,372         | 26,470         | 16,429         | 25,744         | 19,106         | 509.0                        | 485.0        | 297.5        | 458.5        | 340.3        |
| Austin-Round Rock, TX                        | 9,360          | 9,810          | 10,138         | 10,920         | 11,679         | 524.8                        | 534.8        | 538.4        | 561.9        | 601.0        |
| Baltimore-Columbia-Towson, MD                | 14,399         | 13,578         | 13,749         | 14,095         | 14,016         | 527.6                        | 493.2        | 496.2        | 505.9        | 503.1        |
| Birmingham-Hoover, AL                        | 6,834          | 6,868          | 6,552          | 6,309          | 5,839          | 603.6                        | 604.2        | 574.6        | 551.6        | 510.5        |
| Boston-Cambridge-Newton, MA-NH               | 15,703         | 16,339         | 16,127         | 14,264         | 14,378         | 342.0                        | 352.1        | 344.3        | 301.4        | 303.8        |
| Buffalo-Cheektowaga-Niagara Falls, NY        | 5,965          | 6,010          | 5,724          | 5,841          | 5,900          | 526.0                        | 529.9        | 504.7        | 514.0        | 519.2        |
| Charlotte-Concord-Gastonia, NC-SC            | 13,257         | 11,548         | 11,418         | 11,766         | 16,284         | 587.2                        | 502.8        | 488.9        | 494.3        | 684.1        |
| Chicago-Naperville-Elgin, IL-IN-WI           | 49,590         | 51,329         | 47,837         | 51,457         | 54,248         | 521.7                        | 539.0        | 501.6        | 538.6        | 567.8        |
| Cincinnati, OH-KY-IN                         | 10,044         | 10,234         | 10,207         | 10,516         | 11,219         | 473.2                        | 480.8        | 477.5        | 489.2        | 521.9        |
| Cleveland-Elyria, OH                         | 12,348         | 12,339         | 12,126         | 11,363         | 11,312         | 597.0                        | 598.0        | 587.3        | 550.6        | 548.2        |
| Columbus, OH                                 | 9,031          | 8,946          | 9,734          | 10,258         | 11,327         | 469.3                        | 460.2        | 494.8        | 514.3        | 567.9        |
| Dallas-Fort Worth-Arlington, TX              | 32,002         | 31,697         | 30,684         | 30,549         | 35,900         | 486.2                        | 473.0        | 450.5        | 439.3        | 516.2        |
| Denver-Aurora-Lakewood, CO                   | 12,710         | 12,764         | 12,131         | 13,346         | 13,942         | 488.9                        | 482.5        | 449.7        | 484.6        | 506.2        |
| Detroit-Warren-Dearborn, MI                  | 26,237         | 24,229         | 22,567         | 21,012         | 22,238         | 612.2                        | 564.5        | 525.4        | 489.0        | 517.6        |
| Hartford-West Hartford-East Hartford, CT     | 4,837          | 4,562          | 4,311          | 4,713          | 4,689          | 398.7                        | 375.7        | 354.8        | 388.1        | 386.1        |
| Houston-The Woodlands-Sugar Land, TX         | 26,508         | 26,807         | 29,120         | 30,554         | 32,823         | 437.4                        | 434.0        | 461.3        | 470.8        | 505.7        |
| Indianapolis-Carmel-Anderson, IN             | 11,117         | 12,714         | 11,835         | 11,952         | 11,544         | 582.1                        | 659.1        | 605.7        | 606.3        | 585.6        |
| Jacksonville, FL                             | 7,264          | 6,813          | 7,138          | 7,391          | 8,012          | 534.0                        | 494.5        | 511.8        | 520.8        | 564.6        |
| Kansas City, MO-KS                           | 10,038         | 10,152         | 9,513          | 9,866          | 10,240         | 495.3                        | 498.0        | 463.0        | 476.4        | 494.4        |
| Las Vegas-Henderson-Paradise, NV             | 8,337          | 8,587          | 9,286          | 9,485          | 10,049         | 423.2                        | 429.2        | 457.9        | 458.3        | 485.5        |
| Los Angeles-Long Beach-Anaheim, CA           | 58,552         | 60,231         | 59,386         | 64,263         | 68,285         | 452.3                        | 461.4        | 452.2        | 484.6        | 514.9        |
| Louisville-Jefferson County, KY-IN           | 6,483          | 6,658          | 6,384          | 6,751          | 6,735          | 520.6                        | 532.1        | 505.8        | 531.7        | 530.4        |
| Memphis, TN-MS-AR                            | 11,720         | 12,744         | 10,763         | 10,554         | 10,342         | 878.3                        | 949.8        | 802.2        | 785.7        | 769.9        |
| Miami-Fort Lauderdale-West Palm Beach, FL    | 19,561         | 20,933         | 22,821         | 24,599         | 26,746         | 345.0                        | 363.2        | 391.6        | 414.8        | 451.0        |
| Milwaukee-Waukesha-West Allis, WI            | 11,712         | 10,929         | 10,754         | 10,303         | 10,645         | 749.7                        | 697.5        | 685.1        | 655.3        | 677.1        |
| Minneapolis-St. Paul-Bloomington, MN-WI      | 12,143         | 12,144         | 12,227         | 13,589         | 14,709         | 358.5                        | 354.9        | 353.5        | 388.8        | 420.8        |
| Nashville-Davidson-Murfreesboro-Franklin, TN | 6,990          | 7,151          | 7,356          | 7,878          | 8,066          | 411.5                        | 414.1        | 418.5        | 439.5        | 449.9        |
| New Orleans-Metairie, LA                     | 8,124          | 7,118          | 8,134          | 8,595          | 9,291          | 669.8                        | 580.1        | 655.5        | 686.6        | 742.2        |
| New York-Newark-Jersey City, NY-NJ-PA        | 95,088         | 92,763         | 89,211         | 93,515         | 97,835         | 483.0                        | 467.7        | 447.2        | 465.4        | 486.9        |
| Oklahoma City, OK                            | 5,087          | 5,640          | 6,190          | 7,293          | 7,633          | 398.0                        | 435.0        | 469.1        | 545.6        | 571.0        |
| Orlando-Kissimmee-Sanford, FL                | 9,545          | 9,928          | 10,230         | 11,001         | 12,026         | 439.6                        | 446.5        | 451.1        | 473.9        | 518.0        |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD  | 34,799         | 35,513         | 34,741         | 33,376         | 34,910         | 580.7                        | 590.0        | 575.7        | 551.6        | 576.9        |
| Phoenix-Mesa-Scottsdale, AZ                  | 17,746         | 20,358         | 20,164         | 21,576         | 21,795         | 416.3                        | 470.2        | 458.4        | 480.6        | 485.5        |
| Pittsburgh, PA                               | 8,436          | 8,994          | 8,605          | 8,059          | 8,604          | 357.5                        | 381.0        | 364.5        | 342.1        | 365.2        |
| Portland-Vancouver-Hillsboro, OR-WA          | 8,509          | 7,797          | 8,536          | 9,283          | 9,982          | 376.1                        | 340.5        | 368.8        | 395.3        | 425.1        |
| Providence-Warwick, RI-MA                    | 5,559          | 5,941          | 5,828          | 5,695          | 5,907          | 347.4                        | 371.0        | 363.3        | 353.9        | 367.0        |
| Raleigh, NC                                  | 5,693          | 5,373          | 4,966          | 5,126          | 6,911          | 489.3                        | 452.1        | 408.9        | 412.4        | 556.0        |
| Richmond, VA                                 | 7,698          | 7,224          | 6,817          | 7,817          | 7,878          | 631.5                        | 586.4        | 547.2        | 620.4        | 625.2        |
| Riverside-San Bernardino-Ontario, CA         | 20,749         | 20,994         | 19,819         | 19,560         | 20,778         | 482.0                        | 482.6        | 452.4        | 440.4        | 467.8        |
| Sacramento-Roseville-Arden-Arcade, CA        | 10,866         | 9,852          | 9,771          | 9,674          | 10,621         | 499.3                        | 448.5        | 441.0        | 431.0        | 473.2        |
| Salt Lake City, UT                           | 3,767          | 4,041          | 3,947          | 4,423          | 4,751          | 339.9                        | 359.6        | 346.1        | 383.5        | 411.9        |
| San Antonio-New Braunfels, TX                | 13,066         | 13,023         | 13,335         | 11,573         | 14,465         | 595.3                        | 582.9        | 585.5        | 497.0        | 621.2        |
| San Diego-Carlsbad, CA                       | 15,346         | 16,524         | 14,706         | 15,754         | 17,378         | 488.7                        | 520.1        | 458.0        | 482.7        | 532.5        |
| San Francisco-Oakland-Hayward, CA            | 18,745         | 17,171         | 18,254         | 20,377         | 23,519         | 426.9                        | 385.4        | 404.2        | 443.6        | 511.9        |
| San Jose-Sunnyvale-Santa Clara, CA           | 5,965          | 4,676          | 6,717          | 6,278          | 6,898          | 319.8                        | 246.8        | 349.9        | 321.5        | 353.2        |
| Seattle-Tacoma-Bellevue, WA                  | 12,329         | 12,965         | 12,971         | 13,861         | 15,257         | 352.3                        | 365.0        | 359.3        | 377.5        | 415.6        |
| St. Louis, MO-IL                             | 15,517         | 14,843         | 14,783         | 14,711         | 14,961         | 555.7                        | 530.9        | 527.8        | 524.2        | 533.1        |
| Tampa-St. Petersburg-Clearwater, FL          | 12,595         | 12,274         | 12,752         | 12,952         | 13,472         | 445.9                        | 431.7        | 444.2        | 444.2        | 462.1        |
| Virginia Beach-Norfolk-Newport News, VA-NC   | 13,674         | 12,409         | 11,852         | 12,192         | 11,281         | 811.5                        | 730.0        | 694.2        | 710.2        | 657.2        |
| Washington-Arlington-Alexandria, DC-VA-MD-WV | 22,839         | 23,872         | 23,531         | 18,342         | 18,890         | 396.6                        | 407.3        | 395.5        | 304.0        | 313.1        |
| <b>SELECTED MSAs TOTAL</b>                   | <b>811,856</b> | <b>811,879</b> | <b>792,177</b> | <b>820,371</b> | <b>865,316</b> | <b>479.2</b>                 | <b>474.2</b> | <b>458.3</b> | <b>469.1</b> | <b>494.8</b> |

\* MSAs were selected on the basis of the largest population in the 2010 U.S. Census.

**Table 7. Chlamydia Among Women — Reported Cases and Rates of Reported Cases in Selected Metropolitan Statistical Areas (MSAs)\* in Alphabetical Order, United States, 2011–2015**

| MSAs                                         | Cases          |                |                |                |                | Rates per 100,000 Population |              |              |              |              |
|----------------------------------------------|----------------|----------------|----------------|----------------|----------------|------------------------------|--------------|--------------|--------------|--------------|
|                                              | 2011           | 2012           | 2013           | 2014           | 2015           | 2011                         | 2012         | 2013         | 2014         | 2015         |
| Atlanta-Sandy Springs-Roswell, GA            | 19,507         | 18,298         | 11,221         | 17,564         | 12,640         | 707.7                        | 652.7        | 395.0        | 607.2        | 437.0        |
| Austin-Round Rock, TX                        | 6,644          | 6,909          | 6,691          | 7,513          | 7,779          | 746.6                        | 755.2        | 712.3        | 773.7        | 801.1        |
| Baltimore-Columbia-Towson, MD                | 10,668         | 9,933          | 9,848          | 9,780          | 9,453          | 754.3                        | 696.7        | 686.9        | 678.0        | 655.4        |
| Birmingham-Hoover, AL                        | 4,834          | 4,866          | 4,486          | 4,300          | 3,940          | 824.1                        | 826.1        | 759.2        | 724.5        | 663.8        |
| Boston-Cambridge-Newton, MA-NH               | 10,747         | 11,234         | 10,791         | 9,243          | 9,137          | 454.1                        | 469.9        | 447.5        | 379.6        | 375.2        |
| Buffalo-Cheektowaga-Niagara Falls, NY        | 4,370          | 4,317          | 4,024          | 4,077          | 4,035          | 745.7                        | 737.4        | 688.0        | 696.2        | 689.1        |
| Charlotte-Concord-Gastonia, NC-SC            | 10,024         | 8,731          | 8,605          | 8,633          | 11,672         | 864.7                        | 740.1        | 717.0        | 705.1        | 953.3        |
| Chicago-Naperville-Elgin, IL-IN-WI           | 35,360         | 36,701         | 34,216         | 35,696         | 36,547         | 728.0                        | 754.3        | 702.5        | 730.9        | 748.3        |
| Cincinnati, OH-KY-IN                         | 7,763          | 7,750          | 7,527          | 7,724          | 8,050          | 715.9                        | 713.0        | 690.0        | 703.9        | 733.6        |
| Cleveland-Elyria, OH                         | 9,065          | 8,877          | 8,550          | 7,914          | 7,815          | 844.7                        | 829.5        | 799.4        | 740.8        | 731.5        |
| Columbus, OH                                 | 6,266          | 6,280          | 6,749          | 6,895          | 7,704          | 640.2                        | 635.3        | 674.7        | 680.3        | 760.1        |
| Dallas-Fort Worth-Arlington, TX              | 24,221         | 24,018         | 22,744         | 22,213         | 25,902         | 726.5                        | 707.6        | 658.7        | 628.6        | 732.9        |
| Denver-Aurora-Lakewood, CO                   | 9,143          | 9,117          | 8,447          | 9,020          | 9,265          | 700.4                        | 686.4        | 624.1        | 652.7        | 670.4        |
| Detroit-Warren-Dearborn, MI                  | 19,161         | 17,460         | 16,152         | 14,822         | 15,410         | 867.8                        | 789.8        | 730.5        | 670.3        | 696.9        |
| Hartford-West Hartford-East Hartford, CT     | 3,470          | 3,301          | 3,109          | 3,349          | 3,226          | 557.6                        | 529.8        | 499.0        | 538.2        | 518.5        |
| Houston-The Woodlands-Sugar Land, TX         | 20,956         | 20,858         | 22,027         | 22,832         | 23,828         | 688.2                        | 672.3        | 695.0        | 699.6        | 730.1        |
| Indianapolis-Carmel-Anderson, IN             | 7,579          | 8,899          | 8,149          | 8,398          | 7,816          | 776.3                        | 902.5        | 816.1        | 832.9        | 775.2        |
| Jacksonville, FL                             | 5,213          | 4,812          | 5,131          | 5,238          | 5,637          | 746.9                        | 680.7        | 717.4        | 719.3        | 774.1        |
| Kansas City, MO-KS                           | 7,278          | 7,295          | 6,795          | 6,991          | 7,108          | 703.8                        | 701.5        | 649.2        | 662.4        | 673.4        |
| Las Vegas-Henderson-Paradise, NV             | 5,777          | 5,942          | 6,571          | 6,486          | 6,885          | 590.2                        | 597.1        | 650.5        | 627.4        | 666.0        |
| Los Angeles-Long Beach-Anaheim, CA           | 38,802         | 39,470         | 38,456         | 40,401         | 42,385         | 592.0                        | 597.1        | 578.5        | 600.7        | 630.2        |
| Louisville-Jefferson County, KY-IN           | 4,745          | 4,884          | 4,574          | 4,827          | 4,686          | 744.1                        | 762.7        | 708.1        | 742.6        | 721.0        |
| Memphis, TN-MS-AR                            | 8,767          | 9,367          | 7,717          | 7,758          | 7,238          | 1,263.3                      | 1,342.7      | 1,105.5      | 1,109.2      | 1,034.8      |
| Miami-Fort Lauderdale-West Palm Beach, FL    | 13,815         | 14,692         | 15,645         | 16,473         | 17,461         | 473.5                        | 495.4        | 521.9        | 539.6        | 571.9        |
| Milwaukee-Waukesha-West Allis, WI            | 8,397          | 7,760          | 7,463          | 7,183          | 7,242          | 1,047.4                      | 964.7        | 926.6        | 890.0        | 897.3        |
| Minneapolis-St. Paul-Bloomington, MN-WI      | 8,371          | 8,326          | 8,293          | 8,957          | 9,497          | 488.7                        | 481.1        | 474.2        | 507.0        | 537.6        |
| Nashville-Davidson-Murfreesboro-Franklin, TN | 4,942          | 4,928          | 5,084          | 5,278          | 5,322          | 568.7                        | 557.8        | 565.0        | 574.5        | 579.3        |
| New Orleans-Metairie, LA                     | 6,056          | 5,326          | 6,062          | 6,301          | 6,710          | 972.3                        | 843.9        | 948.7        | 975.3        | 1,038.6      |
| New York-Newark-Jersey City, NY-NJ-PA        | 65,988         | 63,588         | 60,539         | 62,097         | 62,905         | 648.2                        | 620.5        | 587.7        | 598.4        | 606.2        |
| Oklahoma City, OK                            | 3,518          | 3,951          | 4,430          | 5,255          | 5,420          | 543.3                        | 601.6        | 662.5        | 775.0        | 799.4        |
| Orlando-Kissimmee-Sanford, FL                | 6,993          | 7,373          | 7,503          | 8,021          | 8,505          | 631.1                        | 649.6        | 648.3        | 675.8        | 716.6        |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD  | 23,928         | 24,166         | 23,532         | 22,317         | 22,967         | 772.0                        | 776.5        | 754.4        | 713.7        | 734.5        |
| Phoenix-Mesa-Scottsdale, AZ                  | 12,696         | 14,396         | 14,206         | 14,841         | 14,607         | 592.8                        | 661.6        | 642.4        | 656.9        | 646.5        |
| Pittsburgh, PA                               | 5,963          | 6,325          | 6,046          | 5,509          | 5,681          | 489.5                        | 519.7        | 497.4        | 454.6        | 468.8        |
| Portland-Vancouver-Hillsboro, OR-WA          | 5,824          | 5,359          | 5,809          | 6,158          | 6,559          | 508.8                        | 462.8        | 496.1        | 518.4        | 552.2        |
| Providence-Warwick, RI-MA                    | 4,022          | 4,256          | 4,124          | 3,945          | 3,989          | 486.9                        | 515.3        | 498.7        | 475.6        | 480.9        |
| Raleigh, NC                                  | 3,951          | 3,691          | 3,490          | 3,502          | 4,685          | 663.4                        | 606.8        | 561.5        | 550.1        | 735.9        |
| Richmond, VA                                 | 5,599          | 5,083          | 4,792          | 5,311          | 5,330          | 889.1                        | 798.4        | 744.7        | 815.9        | 818.8        |
| Riverside-San Bernardino-Ontario, CA         | 15,241         | 15,296         | 14,536         | 13,988         | 14,693         | 704.9                        | 700.5        | 661.1        | 626.6        | 658.2        |
| Sacramento-Roseville-Arden-Arcade, CA        | 7,874          | 7,122          | 6,915          | 6,686          | 7,284          | 709.9                        | 635.9        | 611.8        | 583.6        | 635.8        |
| Salt Lake City, UT                           | 2,517          | 2,679          | 2,541          | 2,873          | 3,067          | 457.0                        | 479.6        | 448.0        | 500.3        | 534.1        |
| San Antonio-New Braunfels, TX                | 9,286          | 9,436          | 9,576          | 8,158          | 10,005         | 832.0                        | 832.1        | 829.5        | 690.9        | 847.4        |
| San Diego-Carlsbad, CA                       | 10,395         | 11,102         | 9,684          | 10,211         | 11,154         | 664.9                        | 702.5        | 606.3        | 628.9        | 687.0        |
| San Francisco-Oakland-Hayward, CA            | 11,733         | 10,391         | 10,845         | 11,509         | 12,508         | 527.7                        | 460.5        | 474.3        | 494.3        | 537.2        |
| San Jose-Sunnyvale-Santa Clara, CA           | 4,187          | 3,260          | 4,530          | 4,100          | 4,328          | 450.7                        | 345.9        | 474.6        | 422.3        | 445.8        |
| Seattle-Tacoma-Bellevue, WA                  | 8,259          | 8,460          | 8,411          | 8,751          | 9,306          | 470.9                        | 474.8        | 465.4        | 476.5        | 506.7        |
| St. Louis, MO-IL                             | 11,077         | 10,351         | 10,364         | 10,271         | 10,158         | 769.0                        | 717.8        | 717.6        | 709.9        | 702.1        |
| Tampa-St. Petersburg-Clearwater, FL          | 8,913          | 8,738          | 8,948          | 9,066          | 9,269          | 612.5                        | 596.5        | 604.2        | 602.5        | 616.0        |
| Virginia Beach-Norfolk-Newport News, VA-NC   | 9,798          | 8,771          | 8,259          | 8,425          | 7,677          | 1,141.0                      | 1,015.2      | 952.5        | 966.9        | 881.1        |
| Washington-Arlington-Alexandria, DC-VA-MD-WV | 15,946         | 16,349         | 15,768         | 12,501         | 12,517         | 540.4                        | 544.5        | 518.1        | 405.0        | 405.5        |
| <b>SELECTED MSAs TOTAL</b>                   | <b>575,649</b> | <b>570,494</b> | <b>549,975</b> | <b>559,361</b> | <b>577,004</b> | <b>665.7</b>                 | <b>653.1</b> | <b>623.8</b> | <b>626.7</b> | <b>646.4</b> |

\* MSAs were selected on the basis of the largest population in the 2010 U.S. Census.

**NOTE:** Cases reported with unknown sex are not included in this table.

**Table 8. Chlamydia Among Men — Reported Cases and Rates of Reported Cases in Selected Metropolitan Statistical Areas (MSAs)\* in Alphabetical Order, United States, 2011–2015**

| MSAs                                         | Cases          |                |                |                |                | Rates per 100,000 Population |              |              |              |              |
|----------------------------------------------|----------------|----------------|----------------|----------------|----------------|------------------------------|--------------|--------------|--------------|--------------|
|                                              | 2011           | 2012           | 2013           | 2014           | 2015           | 2011                         | 2012         | 2013         | 2014         | 2015         |
| Atlanta-Sandy Springs-Roswell, GA            | 7,563          | 7,917          | 5,061          | 7,979          | 6,429          | 288.6                        | 298.3        | 188.7        | 293.2        | 236.2        |
| Austin-Round Rock, TX                        | 2,710          | 2,890          | 2,592          | 3,372          | 3,871          | 303.2                        | 314.3        | 274.7        | 346.8        | 398.1        |
| Baltimore-Columbia-Towson, MD                | 3,723          | 3,608          | 3,889          | 4,294          | 4,514          | 283.2                        | 271.8        | 290.9        | 319.6        | 336.0        |
| Birmingham-Hoover, AL                        | 1,852          | 1,985          | 2,031          | 1,990          | 1,886          | 339.4                        | 362.5        | 369.7        | 361.6        | 342.7        |
| Boston-Cambridge-Newton, MA-NH               | 4,946          | 5,086          | 5,328          | 4,988          | 5,211          | 222.4                        | 226.0        | 234.4        | 217.2        | 226.9        |
| Buffalo-Cheektowaga-Niagara Falls, NY        | 1,595          | 1,693          | 1,700          | 1,764          | 1,865          | 291.1                        | 308.5        | 309.5        | 320.3        | 338.6        |
| Charlotte-Concord-Gastonia, NC-SC            | 3,191          | 2,794          | 2,804          | 3,125          | 4,607          | 290.5                        | 250.2        | 247.0        | 270.4        | 398.6        |
| Chicago-Naperville-Elgin, IL-IN-WI           | 14,110         | 14,518         | 13,553         | 15,679         | 17,517         | 303.6                        | 311.8        | 290.4        | 335.7        | 375.0        |
| Cincinnati, OH-KY-IN                         | 2,279          | 2,482          | 2,676          | 2,787          | 3,168          | 219.5                        | 238.3        | 255.7        | 264.9        | 301.1        |
| Cleveland-Elyria, OH                         | 3,283          | 3,462          | 3,576          | 3,449          | 3,497          | 329.9                        | 348.5        | 359.4        | 346.5        | 351.4        |
| Columbus, OH                                 | 2,762          | 2,666          | 2,985          | 3,363          | 3,623          | 292.2                        | 279.0        | 308.7        | 342.8        | 369.3        |
| Dallas-Fort Worth-Arlington, TX              | 7,778          | 7,669          | 7,916          | 8,313          | 9,941          | 239.5                        | 231.9        | 235.7        | 243.0        | 290.6        |
| Denver-Aurora-Lakewood, CO                   | 3,564          | 3,647          | 3,684          | 4,326          | 4,677          | 275.4                        | 276.9        | 274.1        | 315.2        | 340.8        |
| Detroit-Warren-Dearborn, MI                  | 7,011          | 6,718          | 6,350          | 6,153          | 6,795          | 337.4                        | 322.8        | 304.7        | 295.0        | 325.8        |
| Hartford-West Hartford-East Hartford, CT     | 1,367          | 1,245          | 1,181          | 1,333          | 1,443          | 231.3                        | 210.5        | 199.4        | 225.1        | 243.7        |
| Houston-The Woodlands-Sugar Land, TX         | 5,550          | 5,944          | 7,078          | 7,700          | 8,939          | 184.1                        | 193.3        | 225.1        | 238.6        | 277.0        |
| Indianapolis-Carmel-Anderson, IN             | 3,513          | 3,802          | 3,681          | 3,544          | 3,723          | 376.3                        | 403.2        | 385.3        | 368.0        | 386.6        |
| Jacksonville, FL                             | 2,047          | 2,001          | 1,989          | 2,138          | 2,367          | 309.1                        | 298.2        | 292.7        | 309.4        | 342.6        |
| Kansas City, MO-KS                           | 2,760          | 2,857          | 2,718          | 2,875          | 3,132          | 278.1                        | 286.1        | 269.7        | 283.1        | 308.4        |
| Las Vegas-Henderson-Paradise, NV             | 2,558          | 2,644          | 2,708          | 2,986          | 3,139          | 258.1                        | 262.9        | 266.1        | 288.3        | 303.0        |
| Los Angeles-Long Beach-Anaheim, CA           | 19,577         | 20,633         | 20,831         | 23,766         | 25,764         | 306.3                        | 320.3        | 321.3        | 363.6        | 394.2        |
| Louisville-Jefferson County, KY-IN           | 1,710          | 1,744          | 1,781          | 1,896          | 2,031          | 281.4                        | 285.4        | 289.0        | 305.9        | 327.7        |
| Memphis, TN-MS-AR                            | 2,953          | 3,377          | 3,046          | 2,795          | 3,104          | 461.1                        | 524.3        | 473.2        | 434.1        | 482.1        |
| Miami-Fort Lauderdale-West Palm Beach, FL    | 5,721          | 6,238          | 7,134          | 8,086          | 9,270          | 207.8                        | 223.0        | 252.0        | 281.1        | 322.2        |
| Milwaukee-Waukesha-West Allis, WI            | 3,312          | 3,169          | 3,284          | 3,111          | 3,394          | 435.5                        | 415.5        | 429.7        | 406.6        | 443.6        |
| Minneapolis-St. Paul-Bloomington, MN-WI      | 3,772          | 3,813          | 3,933          | 4,623          | 5,206          | 225.3                        | 225.4        | 229.9        | 267.5        | 301.2        |
| Nashville-Davidson-Murfreesboro-Franklin, TN | 2,048          | 2,185          | 2,271          | 2,598          | 2,744          | 246.8                        | 259.1        | 264.6        | 297.3        | 314.0        |
| New Orleans-Metairie, LA                     | 2,043          | 1,792          | 2,072          | 2,294          | 2,581          | 346.3                        | 300.7        | 344.2        | 378.7        | 426.1        |
| New York-Newark-Jersey City, NY-NJ-PA        | 28,877         | 29,065         | 28,546         | 31,310         | 34,799         | 303.7                        | 303.3        | 295.8        | 322.3        | 358.2        |
| Oklahoma City, OK                            | 1,457          | 1,688          | 1,760          | 2,036          | 2,213          | 231.1                        | 263.8        | 270.4        | 309.1        | 335.9        |
| Orlando-Kissimmee-Sanford, FL                | 2,539          | 2,555          | 2,708          | 2,964          | 3,511          | 238.8                        | 234.7        | 243.9        | 261.2        | 309.5        |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD  | 10,817         | 11,314         | 11,178         | 11,010         | 11,912         | 373.9                        | 389.2        | 383.4        | 376.5        | 407.4        |
| Phoenix-Mesa-Scottsdale, AZ                  | 5,047          | 5,960          | 5,957          | 6,735          | 7,173          | 237.9                        | 276.8        | 272.3        | 302.0        | 321.7        |
| Pittsburgh, PA                               | 2,471          | 2,668          | 2,550          | 2,541          | 2,909          | 216.5                        | 233.3        | 222.6        | 222.1        | 254.3        |
| Portland-Vancouver-Hillsboro, OR-WA          | 2,685          | 2,437          | 2,723          | 3,124          | 3,416          | 240.2                        | 215.3        | 238.1        | 269.2        | 294.4        |
| Providence-Warwick, RI-MA                    | 1,536          | 1,683          | 1,702          | 1,744          | 1,913          | 198.4                        | 217.1        | 218.9        | 223.6        | 245.3        |
| Raleigh, NC                                  | 1,723          | 1,673          | 1,474          | 1,622          | 2,226          | 303.4                        | 288.3        | 248.6        | 267.5        | 367.1        |
| Richmond, VA                                 | 2,053          | 2,129          | 2,011          | 2,503          | 2,540          | 348.4                        | 357.6        | 333.9        | 410.9        | 417.0        |
| Riverside-San Bernardino-Ontario, CA         | 5,412          | 5,683          | 5,271          | 5,542          | 6,070          | 252.6                        | 262.3        | 241.5        | 250.8        | 274.7        |
| Sacramento-Roseville-Arden-Arcade, CA        | 2,960          | 2,712          | 2,846          | 2,976          | 3,322          | 277.4                        | 251.9        | 262.2        | 270.9        | 302.3        |
| Salt Lake City, UT                           | 1,250          | 1,362          | 1,406          | 1,550          | 1,684          | 224.2                        | 241.0        | 245.2        | 267.7        | 290.8        |
| San Antonio-New Braunfels, TX                | 3,780          | 3,587          | 3,757          | 3,412          | 4,459          | 350.4                        | 326.1        | 334.5        | 297.2        | 388.4        |
| San Diego-Carlsbad, CA                       | 4,925          | 5,418          | 5,013          | 5,508          | 6,190          | 312.3                        | 339.3        | 310.6        | 335.9        | 377.5        |
| San Francisco-Oakland-Hayward, CA            | 6,948          | 6,739          | 7,370          | 8,823          | 10,961         | 320.5                        | 306.5        | 330.5        | 389.4        | 483.8        |
| San Jose-Sunnyvale-Santa Clara, CA           | 1,667          | 1,353          | 2,186          | 2,163          | 2,565          | 178.0                        | 142.1        | 226.5        | 220.3        | 261.2        |
| Seattle-Tacoma-Bellevue, WA                  | 4,070          | 4,505          | 4,560          | 5,110          | 5,951          | 233.1                        | 254.5        | 253.0        | 278.5        | 324.3        |
| St. Louis, MO-IL                             | 4,436          | 4,474          | 4,411          | 4,429          | 4,762          | 328.1                        | 330.5        | 325.1        | 325.8        | 350.3        |
| Tampa-St. Petersburg-Clearwater, FL          | 3,657          | 3,532          | 3,752          | 3,835          | 4,195          | 267.0                        | 256.3        | 270.0        | 271.8        | 297.3        |
| Virginia Beach-Norfolk-Newport News, VA-NC   | 3,857          | 3,631          | 3,584          | 3,748          | 3,595          | 466.8                        | 434.3        | 426.5        | 443.4        | 425.3        |
| Washington-Arlington-Alexandria, DC-VA-MD-WV | 6,867          | 7,461          | 7,725          | 5,813          | 6,359          | 244.6                        | 261.1        | 265.8        | 197.2        | 215.8        |
| <b>SELECTED MSAs TOTAL</b>                   | <b>234,332</b> | <b>240,208</b> | <b>240,342</b> | <b>259,825</b> | <b>287,163</b> | <b>282.5</b>                 | <b>286.5</b> | <b>283.8</b> | <b>303.4</b> | <b>335.4</b> |

\* MSAs were selected on the basis of the largest population in the 2010 U.S. Census.

**NOTE:** Cases reported with unknown sex are not included in this table.

**Table 9. Chlamydia — Reported Cases and Rates of Reported Cases in Counties and Independent Cities\* Ranked by Number of Reported Cases, United States, 2015**

| Rank* | County/Independent City    | Cases  | Rate per 100,000 Population | Cumulative Percentage |
|-------|----------------------------|--------|-----------------------------|-----------------------|
| 1     | Los Angeles County, CA     | 56,968 | 563.1                       | 3                     |
| 2     | Cook County, IL            | 39,539 | 753.6                       | 6                     |
| 3     | Harris County, TX          | 25,881 | 582.7                       | 8                     |
| 4     | Maricopa County, AZ        | 20,483 | 501.2                       | 9                     |
| 5     | Philadelphia County, PA    | 19,169 | 1,228.5                     | 10                    |
| 6     | Kings County, NY           | 18,332 | 699.2                       | 11                    |
| 7     | San Diego County, CA       | 17,378 | 532.5                       | 12                    |
| 8     | Bronx County, NY           | 16,540 | 1,150.1                     | 14                    |
| 9     | Dallas County, TX          | 16,350 | 649.2                       | 15                    |
| 10    | Wayne County, MI           | 14,899 | 844.2                       | 16                    |
| 11    | New York County, NY        | 13,841 | 845.9                       | 16                    |
| 12    | Bexar County, TX           | 13,148 | 708.5                       | 17                    |
| 13    | Queens County, NY          | 12,471 | 537.2                       | 18                    |
| 14    | Miami-Dade County, FL      | 11,851 | 445.0                       | 19                    |
| 15    | Orange County, CA          | 11,317 | 359.8                       | 20                    |
| 16    | San Bernardino County, CA  | 11,011 | 521.2                       | 20                    |
| 17    | Clark County, NV           | 10,049 | 485.5                       | 21                    |
| 18    | Riverside County, CA       | 9,767  | 419.3                       | 22                    |
| 19    | Milwaukee County, WI       | 9,663  | 1,010.3                     | 22                    |
| 20    | Tarrant County, TX         | 9,589  | 492.9                       | 23                    |
| 21    | Broward County, FL         | 9,529  | 509.8                       | 24                    |
| 22    | Mecklenburg County, NC     | 9,276  | 916.1                       | 24                    |
| 23    | Franklin County, OH        | 9,193  | 746.6                       | 25                    |
| 24    | Cuyahoga County, OH        | 9,073  | 720.2                       | 25                    |
| 25    | Marion County, IN          | 8,869  | 949.3                       | 26                    |
| 26    | King County, WA            | 8,447  | 406.1                       | 27                    |
| 27    | Sacramento County, CA      | 8,421  | 568.2                       | 27                    |
| 28    | Alameda County, CA         | 8,132  | 504.8                       | 28                    |
| 29    | Shelby County, TN          | 8,054  | 857.9                       | 28                    |
| 30    | Orange County, FL          | 8,002  | 638.6                       | 29                    |
| 31    | Travis County, TX          | 7,951  | 690.7                       | 29                    |
| 32    | San Francisco County, CA   | 7,648  | 897.2                       | 30                    |
| 33    | Hillsborough County, FL    | 7,588  | 576.5                       | 30                    |
| 34    | Hennepin County, MN        | 7,016  | 578.8                       | 31                    |
| 35    | Hamilton County, OH        | 6,834  | 847.2                       | 31                    |
| 36    | Santa Clara County, CA     | 6,733  | 355.4                       | 32                    |
| 37    | Baltimore (City), MD       | 6,728  | 1,080.3                     | 32                    |
| 38    | Duval County, FL           | 6,484  | 722.3                       | 32                    |
| 39    | Prince George's County, MD | 6,153  | 680.3                       | 33                    |
| 40    | Denver County, CO          | 6,106  | 919.8                       | 33                    |
| 41    | Kern County, CA            | 6,081  | 695.3                       | 34                    |
| 42    | Fresno County, CA          | 5,946  | 615.5                       | 34                    |
| 43    | Allegheny County, PA       | 5,854  | 475.4                       | 34                    |
| 44    | Wake County, NC            | 5,771  | 577.9                       | 35                    |
| 45    | Essex County, NJ           | 5,555  | 698.1                       | 35                    |
| 46    | St. Louis County, MO       | 5,517  | 550.7                       | 35                    |
| 47    | Honolulu County, HI        | 5,494  | 553.9                       | 36                    |
| 48    | Pima County, AZ            | 5,480  | 545.5                       | 36                    |
| 49    | Palm Beach County, FL      | 5,366  | 383.9                       | 37                    |
| 50    | Jackson County, MO         | 5,252  | 768.7                       | 37                    |
| 51    | Oklahoma County, OK        | 5,235  | 683.2                       | 37                    |
| 52    | Jefferson County, KY       | 5,141  | 676.4                       | 38                    |
| 53    | Erie County, NY            | 5,063  | 548.6                       | 38                    |
| 54    | Fulton County, GA          | 4,990  | 500.8                       | 38                    |
| 55    | Collin County, TX          | 4,899  | 553.4                       | 39                    |
| 56    | Bernalillo County, NM      | 4,851  | 718.1                       | 39                    |
| 57    | Guilford County, NC        | 4,781  | 933.6                       | 39                    |
| 58    | Monroe County, NY          | 4,735  | 631.5                       | 39                    |
| 59    | Contra Costa County, CA    | 4,697  | 422.6                       | 40                    |
| 60    | El Paso County, TX         | 4,670  | 560.3                       | 40                    |
| 61    | Multnomah County, OR       | 4,646  | 598.2                       | 40                    |
| 62    | Jefferson County, AL       | 4,626  | 700.1                       | 41                    |
| 63    | Pierce County, WA          | 4,617  | 555.0                       | 41                    |
| 64    | Salt Lake County, UT       | 4,586  | 420.1                       | 41                    |
| 65    | Orleans Parish, LA         | 4,418  | 1,149.6                     | 42                    |
| 66    | Davidson County, TN        | 4,403  | 658.8                       | 42                    |
| 67    | Tulsa County, OK           | 4,310  | 684.6                       | 42                    |
| 68    | Pinellas County, FL        | 4,156  | 443.0                       | 42                    |
| 69    | Middlesex County, MA       | 4,152  | 264.4                       | 43                    |
| 70    | St. Louis (City), MO       | 4,042  | 1,273.4                     | 43                    |

\*The top 70 counties and independent cities ranked in descending order by number of cases reported in 2015 then by rate are displayed.

**Table 10. Chlamydia — Reported Cases and Rates of Reported Cases by Age Group and Sex, United States, 2011–2015**

| Age Group    | Cases            |                |                  |              | Rates per 100,000 Population* |              |              |
|--------------|------------------|----------------|------------------|--------------|-------------------------------|--------------|--------------|
|              | Total            | Male           | Female           | Unknown Sex  | Total                         | Male         | Female       |
| 0–4          | 747              | 284            | 458              | 5            | 3.7                           | 2.8          | 4.6          |
| 5–9          | 143              | 24             | 118              | 1            | 0.7                           | 0.2          | 1.2          |
| 10–14        | 15,405           | 1,743          | 13,588           | 74           | 74.4                          | 16.5         | 134.3        |
| 15–19        | 459,029          | 90,764         | 366,818          | 1,447        | 2,120.8                       | 816.3        | 3,485.2      |
| 20–24        | 542,947          | 147,948        | 393,534          | 1,465        | 2,450.8                       | 1,307.8      | 3,630.0      |
| 25–29        | 214,534          | 73,357         | 140,628          | 549          | 1,008.2                       | 681.7        | 1,337.0      |
| 30–34        | 91,787           | 34,971         | 56,562           | 254          | 447.5                         | 340.1        | 553.0        |
| 35–39        | 40,734           | 16,911         | 23,711           | 112          | 207.9                         | 173.2        | 241.1        |
| 40–44        | 21,654           | 10,460         | 11,120           | 74           | 102.9                         | 100.0        | 105.2        |
| 45–54        | 18,136           | 9,910          | 8,182            | 44           | 40.6                          | 45.0         | 36.0         |
| 55–64        | 4,210            | 2,300          | 1,903            | 7            | 11.1                          | 12.5         | 9.7          |
| 65+          | 1,064            | 569            | 486              | 9            | 2.6                           | 3.2          | 2.1          |
| Unknown Age  | 2,401            | 729            | 1,444            | 228          |                               |              |              |
| <b>TOTAL</b> | <b>1,412,791</b> | <b>389,970</b> | <b>1,018,552</b> | <b>4,269</b> | <b>453.4</b>                  | <b>254.4</b> | <b>643.4</b> |
| 0–4          | 774              | 272            | 495              | 7            | 3.9                           | 2.7          | 5.1          |
| 5–9          | 151              | 17             | 134              | 0            | 0.7                           | 0.2          | 1.3          |
| 10–14        | 14,355           | 1,655          | 12,673           | 27           | 69.5                          | 15.7         | 125.5        |
| 15–19        | 433,239          | 86,150         | 346,430          | 659          | 2,028.2                       | 785.8        | 3,331.7      |
| 20–24        | 554,173          | 152,772        | 400,629          | 772          | 2,453.9                       | 1,322.8      | 3,630.9      |
| 25–29        | 224,014          | 77,666         | 146,037          | 311          | 1,046.9                       | 716.2        | 1,383.8      |
| 30–34        | 97,736           | 38,011         | 59,594           | 131          | 467.4                         | 362.2        | 572.1        |
| 35–39        | 43,660           | 18,274         | 25,313           | 73           | 224.0                         | 188.1        | 259.0        |
| 40–44        | 23,882           | 11,596         | 12,245           | 41           | 113.6                         | 110.9        | 115.9        |
| 45–54        | 20,321           | 11,332         | 8,961            | 28           | 45.9                          | 52.0         | 39.9         |
| 55–64        | 4,950            | 2,783          | 2,161            | 6            | 12.8                          | 15.0         | 10.8         |
| 65+          | 1,134            | 602            | 525              | 7            | 2.6                           | 3.2          | 2.2          |
| Unknown Age  | 4,587            | 1,427          | 3,075            | 85           |                               |              |              |
| <b>TOTAL</b> | <b>1,422,976</b> | <b>402,557</b> | <b>1,018,272</b> | <b>2,147</b> | <b>453.3</b>                  | <b>260.6</b> | <b>638.7</b> |
| 0–4          | 681              | 266            | 402              | 13           | 3.4                           | 2.6          | 4.1          |
| 5–9          | 145              | 20             | 123              | 2            | 0.7                           | 0.2          | 1.2          |
| 10–14        | 12,585           | 1,554          | 11,001           | 30           | 60.9                          | 14.7         | 108.9        |
| 15–19        | 395,612          | 78,404         | 316,438          | 770          | 1,869.7                       | 722.9        | 3,068.4      |
| 20–24        | 553,658          | 153,102        | 399,545          | 1,011        | 2,428.8                       | 1,310.9      | 3,594.2      |
| 25–29        | 233,429          | 82,190         | 150,733          | 506          | 1,081.7                       | 749.9        | 1,419.3      |
| 30–34        | 103,675          | 41,017         | 62,414           | 244          | 487.6                         | 384.0        | 589.8        |
| 35–39        | 46,991           | 20,157         | 26,720           | 114          | 239.7                         | 206.0        | 272.1        |
| 40–44        | 24,774           | 12,200         | 12,501           | 73           | 118.8                         | 117.8        | 119.2        |
| 45–54        | 21,511           | 12,180         | 9,299            | 32           | 49.1                          | 56.5         | 41.9         |
| 55–64        | 5,424            | 3,154          | 2,259            | 11           | 13.8                          | 16.6         | 11.1         |
| 65+          | 1,377            | 750            | 616              | 11           | 3.1                           | 3.8          | 2.5          |
| Unknown Age  | 2,044            | 658            | 1,297            | 89           |                               |              |              |
| <b>TOTAL</b> | <b>1,401,906</b> | <b>405,652</b> | <b>993,348</b>   | <b>2,906</b> | <b>443.5</b>                  | <b>260.6</b> | <b>619.0</b> |
| 0–4          | 603              | 200            | 388              | 15           | 3.0                           | 2.0          | 4.0          |
| 5–9          | 181              | 26             | 152              | 3            | 0.9                           | 0.2          | 1.5          |
| 10–14        | 11,406           | 1,342          | 10,041           | 23           | 55.2                          | 12.7         | 99.2         |
| 15–19        | 381,717          | 77,908         | 303,294          | 515          | 1,811.9                       | 722.4        | 2,949.3      |
| 20–24        | 566,385          | 159,804        | 405,876          | 705          | 2,472.0                       | 1,361.3      | 3,632.7      |
| 25–29        | 253,825          | 91,729         | 161,793          | 303          | 1,154.4                       | 821.8        | 1,494.4      |
| 30–34        | 113,208          | 45,990         | 67,060           | 158          | 525.9                         | 425.5        | 625.6        |
| 35–39        | 52,536           | 22,894         | 29,545           | 97           | 263.7                         | 230.3        | 296.0        |
| 40–44        | 27,426           | 13,711         | 13,662           | 53           | 133.2                         | 134.2        | 131.7        |
| 45–54        | 24,773           | 14,318         | 10,424           | 31           | 57.0                          | 66.8         | 47.3         |
| 55–64        | 6,527            | 3,911          | 2,603            | 13           | 16.3                          | 20.2         | 12.5         |
| 65+          | 1,449            | 871            | 570              | 8            | 3.1                           | 4.3          | 2.2          |
| Unknown Age  | 1,753            | 621            | 1,033            | 99           |                               |              |              |
| <b>TOTAL</b> | <b>1,441,789</b> | <b>433,325</b> | <b>1,006,441</b> | <b>2,023</b> | <b>452.2</b>                  | <b>276.1</b> | <b>621.6</b> |
| 0–4          | 518              | 196            | 322              | 0            | 2.6                           | 1.9          | 3.3          |
| 5–9          | 148              | 18             | 130              | 0            | 0.7                           | 0.2          | 1.3          |
| 10–14        | 10,642           | 1,216          | 9,394            | 32           | 51.5                          | 11.5         | 92.8         |
| 15–19        | 391,396          | 82,775         | 307,937          | 684          | 1,857.8                       | 767.6        | 2,994.4      |
| 20–24        | 589,963          | 172,313        | 416,772          | 878          | 2,574.9                       | 1,467.8      | 3,730.3      |
| 25–29        | 280,429          | 104,679        | 175,291          | 459          | 1,275.4                       | 937.9        | 1,619.1      |
| 30–34        | 123,866          | 52,019         | 71,653           | 194          | 575.4                         | 481.3        | 668.4        |
| 35–39        | 59,905           | 27,180         | 32,621           | 104          | 300.7                         | 273.4        | 326.8        |
| 40–44        | 30,379           | 15,210         | 15,118           | 51           | 147.5                         | 148.8        | 145.8        |
| 45–54        | 28,833           | 17,011         | 11,764           | 58           | 66.3                          | 79.4         | 53.4         |
| 55–64        | 7,756            | 4,901          | 2,840            | 15           | 19.4                          | 25.4         | 13.7         |
| 65+          | 1,596            | 1,043          | 546              | 7            | 3.5                           | 5.1          | 2.1          |
| Unknown Age  | 1,227            | 420            | 755              | 52           |                               |              |              |
| <b>TOTAL</b> | <b>1,526,658</b> | <b>478,981</b> | <b>1,045,143</b> | <b>2,534</b> | <b>478.8</b>                  | <b>305.2</b> | <b>645.5</b> |

\* No population data are available for unknown sex and age; therefore, rates are not calculated.

**NOTE:** This table should be used only for age comparisons. Cases in the 0–4 age group may include cases due to perinatal transmission.

**Table 11A. Chlamydia — Reported Cases by Race/Ethnicity, Age Group, and Sex, United States\*, 2015**

| Age Group    | American Indians/<br>Alaska Natives |              |               | Asians        |              |               | Blacks         |                |                | Native Hawaiians/<br>Other Pacific Islanders |            |              |
|--------------|-------------------------------------|--------------|---------------|---------------|--------------|---------------|----------------|----------------|----------------|----------------------------------------------|------------|--------------|
|              | Total†                              | Male         | Female        | Total†        | Male         | Female        | Total†         | Male           | Female         | Total†                                       | Male       | Female       |
| 0–4          | 4                                   | 1            | 3             | 4             | 2            | 2             | 123            | 40             | 83             | 1                                            | 0          | 1            |
| 5–9          | 2                                   | 0            | 2             | 0             | 0            | 0             | 46             | 5              | 41             | 0                                            | 0          | 0            |
| 10–14        | 168                                 | 8            | 160           | 42            | 3            | 39            | 4,215          | 575            | 3,636          | 19                                           | 3          | 16           |
| 15–19        | 4,065                               | 701          | 3,362         | 2,656         | 404          | 2,248         | 125,272        | 32,090         | 93,081         | 709                                          | 109        | 598          |
| 20–24        | 5,833                               | 1,256        | 4,577         | 6,766         | 1,662        | 5,097         | 168,671        | 54,126         | 114,437        | 1,325                                        | 315        | 1,010        |
| 25–29        | 3,435                               | 925          | 2,510         | 4,344         | 1,562        | 2,779         | 75,111         | 30,211         | 44,854         | 703                                          | 211        | 492          |
| 30–34        | 1,663                               | 457          | 1,206         | 2,341         | 920          | 1,418         | 29,763         | 13,857         | 15,877         | 359                                          | 107        | 252          |
| 35–39        | 769                                 | 205          | 563           | 1,298         | 556          | 741           | 13,472         | 7,109          | 6,358          | 152                                          | 53         | 99           |
| 40–44        | 338                                 | 90           | 248           | 756           | 351          | 405           | 6,156          | 3,665          | 2,483          | 53                                           | 21         | 32           |
| 45–54        | 292                                 | 97           | 195           | 672           | 329          | 342           | 5,620          | 3,625          | 1,993          | 49                                           | 19         | 30           |
| 55–64        | 61                                  | 21           | 40            | 183           | 81           | 102           | 1,559          | 1,007          | 549            | 14                                           | 8          | 6            |
| 65+          | 10                                  | 6            | 4             | 41            | 22           | 19            | 232            | 154            | 78             | 0                                            | 0          | 0            |
| Unknown Age  | 12                                  | 4            | 8             | 16            | 2            | 14            | 175            | 70             | 102            | 9                                            | 3          | 5            |
| <b>TOTAL</b> | <b>16,652</b>                       | <b>3,771</b> | <b>12,878</b> | <b>19,119</b> | <b>5,894</b> | <b>13,206</b> | <b>430,415</b> | <b>146,534</b> | <b>283,572</b> | <b>3,393</b>                                 | <b>849</b> | <b>2,541</b> |

| Age Group    | Whites         |                |                | Multirace    |              |              | Hispanics      |               |                | Other/<br>Unknown |                |                |
|--------------|----------------|----------------|----------------|--------------|--------------|--------------|----------------|---------------|----------------|-------------------|----------------|----------------|
|              | Total†         | Male           | Female         | Total†       | Male         | Female       | Total†         | Male          | Female         | Total†            | Male           | Female         |
| 0–4          | 89             | 38             | 51             | 4            | 1            | 3            | 65             | 25            | 40             | 215               | 82             | 133            |
| 5–9          | 20             | 2              | 18             | 1            | 0            | 1            | 29             | 3             | 26             | 46                | 8              | 38             |
| 10–14        | 1,664          | 92             | 1,568          | 73           | 2            | 71           | 1,305          | 150           | 1,154          | 3,039             | 366            | 2,652          |
| 15–19        | 89,407         | 14,240         | 75,106         | 2,316        | 369          | 1,947        | 49,487         | 9,314         | 40,138         | 115,522           | 25,013         | 90,068         |
| 20–24        | 148,222        | 41,176         | 106,961        | 3,007        | 855          | 2,150        | 77,198         | 19,982        | 57,150         | 176,303           | 52,067         | 123,662        |
| 25–29        | 69,337         | 26,103         | 43,176         | 1,304        | 596          | 707          | 39,781         | 13,494        | 26,247         | 84,831            | 30,878         | 53,681         |
| 30–34        | 29,965         | 12,981         | 16,965         | 593          | 360          | 232          | 19,281         | 7,170         | 12,089         | 39,202            | 15,783         | 23,316         |
| 35–39        | 13,944         | 6,650          | 7,280          | 280          | 195          | 84           | 9,579          | 3,764         | 5,807          | 20,057            | 8,420          | 11,570         |
| 40–44        | 7,114          | 3,864          | 3,249          | 163          | 130          | 32           | 4,728          | 2,024         | 2,693          | 10,890            | 4,939          | 5,924          |
| 45–54        | 7,485          | 5,170          | 2,309          | 182          | 148          | 34           | 3,768          | 1,959         | 1,803          | 10,536            | 5,491          | 5,012          |
| 55–64        | 2,192          | 1,685          | 507            | 34           | 27           | 7            | 684            | 367           | 317            | 2,975             | 1,666          | 1,299          |
| 65+          | 448            | 342            | 105            | 8            | 7            | 1            | 111            | 63            | 47             | 735               | 442            | 288            |
| Unknown Age  | 178            | 55             | 120            | 5            | 0            | 5            | 176            | 47            | 126            | 607               | 220            | 345            |
| <b>TOTAL</b> | <b>370,065</b> | <b>112,398</b> | <b>257,415</b> | <b>7,970</b> | <b>2,690</b> | <b>5,274</b> | <b>206,192</b> | <b>58,362</b> | <b>147,637</b> | <b>464,958</b>    | <b>145,375</b> | <b>317,988</b> |

\* Includes 50 states reporting race/ethnicity data in the Office of Management and Budget compliant formats in 2015.

† Total includes cases reported with unknown sex.

**NOTE:** These tables should be used only for race/ethnicity comparisons. See Table 10 for age-specific cases and rates and Tables 3–5 for total and sex-specific cases and rates. Cases in the 0–4 age group may include cases due to perinatal transmission.

**Table 11B. Chlamydia — Rates of Reported Cases per 100,000 Population by Race/Ethnicity, Age Group, and Sex, United States\*, 2015**

| Age Group    | American Indians/<br>Alaska Natives |              |                | Asians       |             |              | Blacks         |              |                | Native Hawaiians/<br>Other Pacific Islanders |              |              |
|--------------|-------------------------------------|--------------|----------------|--------------|-------------|--------------|----------------|--------------|----------------|----------------------------------------------|--------------|--------------|
|              | Total†                              | Male         | Female         | Total†       | Male        | Female       | Total†         | Male         | Female         | Total†                                       | Male         | Female       |
| 0–4          | 2.4                                 | 1.2          | 3.6            | 0.4          | 0.4         | 0.4          | 4.5            | 2.9          | 6.2            | 2.5                                          | 0.0          | 5.1          |
| 5–9          | 1.1                                 | 0.0          | 2.3            | 0.0          | 0.0         | 0.0          | 1.6            | 0.4          | 3.0            | 0.0                                          | 0.0          | 0.0          |
| 10–14        | 94.6                                | 8.8          | 183.6          | 4.2          | 0.6         | 7.9          | 148.9          | 40.1         | 260.6          | 48.1                                         | 14.8         | 82.9         |
| 15–19        | 2,229.6                             | 754.8        | 3,758.4        | 267.9        | 80.6        | 458.9        | 4,200.8        | 2,119.6      | 6,340.3        | 1,770.9                                      | 526.6        | 3,092.0      |
| 20–24        | 2,887.9                             | 1,213.8      | 4,646.5        | 552.1        | 267.2       | 844.6        | 4,936.0        | 3,128.8      | 6,782.5        | 2,759.8                                      | 1,277.4      | 4,325.3      |
| 25–29        | 1,944.5                             | 1,033.3      | 2,880.7        | 309.1        | 228.5       | 385.0        | 2,546.1        | 2,079.7      | 2,995.5        | 1,398.3                                      | 812.6        | 2,023.9      |
| 30–34        | 1,032.3                             | 570.5        | 1,489.0        | 162.3        | 135.6       | 185.6        | 1,088.7        | 1,057.5      | 1,115.3        | 756.1                                        | 437.3        | 1,095.0      |
| 35–39        | 531.7                               | 285.2        | 773.9          | 95.1         | 87.3        | 101.8        | 535.7          | 597.7        | 479.8          | 376.5                                        | 255.6        | 504.3        |
| 40–44        | 232.1                               | 125.6        | 335.1          | 54.9         | 54.6        | 55.2         | 239.1          | 302.7        | 182.1          | 144.5                                        | 113.7        | 175.9        |
| 45–54        | 93.1                                | 63.9         | 120.5          | 29.2         | 30.6        | 27.8         | 106.4          | 146.1        | 71.2           | 72.0                                         | 56.0         | 87.9         |
| 55–64        | 22.7                                | 16.6         | 28.2           | 9.9          | 9.7         | 10.0         | 35.1           | 49.7         | 22.7           | 27.2                                         | 31.8         | 22.9         |
| 65+          | 4.3                                 | 5.8          | 3.1            | 2.2          | 2.7         | 1.8          | 5.8            | 9.7          | 3.3            | 0.0                                          | 0.0          | 0.0          |
| Unknown Age  |                                     |              |                |              |             |              |                |              |                |                                              |              |              |
| <b>TOTAL</b> | <b>709.1</b>                        | <b>325.8</b> | <b>1,081.2</b> | <b>114.1</b> | <b>74.0</b> | <b>150.2</b> | <b>1,097.6</b> | <b>782.0</b> | <b>1,384.8</b> | <b>622.1</b>                                 | <b>308.2</b> | <b>941.3</b> |

| Age Group    | Whites       |              |              | Multirace    |             |              | Hispanics    |              |              |
|--------------|--------------|--------------|--------------|--------------|-------------|--------------|--------------|--------------|--------------|
|              | Total†       | Male         | Female       | Total†       | Male        | Female       | Total†       | Male         | Female       |
| 0–4          | 0.9          | 0.7          | 1.1          | 0.4          | 0.2         | 0.7          | 1.3          | 1.0          | 1.6          |
| 5–9          | 0.2          | 0.0          | 0.4          | 0.1          | 0.0         | 0.2          | 0.6          | 0.1          | 1.0          |
| 10–14        | 15.1         | 1.6          | 29.2         | 9.7          | 0.5         | 19.2         | 26.9         | 6.1          | 48.5         |
| 15–19        | 775.2        | 240.3        | 1,339.1      | 349.4        | 109.9       | 594.9        | 1,067.0      | 391.9        | 1,775.2      |
| 20–24        | 1,174.8      | 637.2        | 1,737.8      | 525.1        | 301.0       | 744.9        | 1,617.9      | 803.7        | 2,500.9      |
| 25–29        | 556.7        | 412.9        | 704.0        | 301.3        | 289.0       | 312.2        | 896.1        | 575.4        | 1,253.3      |
| 30–34        | 244.1        | 209.6        | 279.0        | 159.4        | 205.3       | 117.9        | 435.7        | 310.1        | 572.2        |
| 35–39        | 122.6        | 116.1        | 129.1        | 90.9         | 134.7       | 51.4         | 232.1        | 177.4        | 289.5        |
| 40–44        | 57.9         | 62.6         | 53.1         | 59.0         | 99.8        | 21.9         | 122.7        | 103.6        | 141.8        |
| 45–54        | 26.2         | 36.3         | 16.1         | 37.8         | 64.9        | 13.4         | 59.6         | 61.4         | 57.5         |
| 55–64        | 7.6          | 11.9         | 3.4          | 9.1          | 15.2        | 3.6          | 16.9         | 18.8         | 15.1         |
| 65+          | 1.2          | 2.1          | 0.5          | 2.5          | 4.9         | 0.6          | 3.1          | 4.1          | 2.3          |
| Unknown Age  |              |              |              |              |             |              |              |              |              |
| <b>TOTAL</b> | <b>187.2</b> | <b>115.4</b> | <b>256.7</b> | <b>125.0</b> | <b>85.9</b> | <b>162.7</b> | <b>372.7</b> | <b>208.6</b> | <b>540.1</b> |

\* Includes 50 states reporting race/ethnicity data in the Office of Management and Budget compliant formats in 2015.

† Total includes cases reported with unknown sex.

**NOTE:** These tables should be used only for race/ethnicity comparisons. See Table 10 for age-specific cases and rates and Tables 3–5 for total and sex-specific cases and rates. Cases in the 0–4 age group may include cases due to perinatal transmission. No population data exist for unknown sex, unknown age, or unknown race; therefore rates are not calculated.

**Table 12. Chlamydia Among Women Aged 15–24 Years — Reported Cases and Rates of Reported Cases by Age, United States, 2011–2015**

|      | Age | Cases   | Rate per 100,000 Population |
|------|-----|---------|-----------------------------|
| 2011 | 15  | 25,792  | 1,272.2                     |
|      | 16  | 48,942  | 2,368.5                     |
|      | 17  | 75,143  | 3,569.5                     |
|      | 18  | 104,501 | 4,902.9                     |
|      | 19  | 112,440 | 5,122.9                     |
|      | 20  | 107,958 | 4,804.7                     |
|      | 21  | 95,195  | 4,236.2                     |
|      | 22  | 77,799  | 3,605.2                     |
|      | 23  | 62,339  | 2,953.3                     |
| 2012 | 24  | 50,243  | 2,417.5                     |
|      | 15  | 24,453  | 1,207.2                     |
|      | 16  | 45,041  | 2,212.8                     |
|      | 17  | 69,465  | 3,346.4                     |
|      | 18  | 99,459  | 4,699.5                     |
|      | 19  | 108,012 | 5,036.6                     |
|      | 20  | 104,425 | 4,727.7                     |
|      | 21  | 96,456  | 4,266.0                     |
|      | 22  | 81,292  | 3,593.9                     |
| 2013 | 23  | 65,473  | 3,011.7                     |
|      | 24  | 52,983  | 2,489.8                     |
|      | 15  | 21,680  | 1,070.3                     |
|      | 16  | 40,528  | 1,994.3                     |
|      | 17  | 61,666  | 3,018.5                     |
|      | 18  | 90,330  | 4,332.6                     |
|      | 19  | 102,234 | 4,806.0                     |
|      | 20  | 99,556  | 4,617.4                     |
|      | 21  | 93,713  | 4,219.8                     |
| 2014 | 22  | 81,884  | 3,600.6                     |
|      | 23  | 68,600  | 3,013.5                     |
|      | 24  | 55,792  | 2,548.7                     |
|      | 15  | 20,096  | 987.4                       |
|      | 16  | 38,507  | 1,891.0                     |
|      | 17  | 58,940  | 2,880.9                     |
|      | 18  | 87,040  | 4,224.2                     |
|      | 19  | 98,711  | 4,688.0                     |
|      | 20  | 98,480  | 4,581.9                     |
| 2015 | 21  | 94,204  | 4,323.2                     |
|      | 22  | 82,581  | 3,679.3                     |
|      | 23  | 71,535  | 3,112.0                     |
|      | 24  | 59,076  | 2,567.1                     |
|      | 15  | 19,643  | 965.1                       |
|      | 16  | 37,786  | 1,855.6                     |
|      | 17  | 60,149  | 2,940.0                     |
|      | 18  | 89,481  | 4,342.6                     |
|      | 19  | 100,878 | 4,790.9                     |
|      | 20  | 99,861  | 4,646.2                     |
|      | 21  | 95,927  | 4,402.3                     |
|      | 22  | 84,740  | 3,775.5                     |
|      | 23  | 73,686  | 3,205.5                     |
|      | 24  | 62,558  | 2,718.5                     |

**NOTE:** This table should be used only for age comparisons. Cases reported with unknown sex are not included in this table.

**Table 13. Gonorrhea — Reported Cases and Rates of Reported Cases by State, Ranked by Rates, United States, 2015**

| Rank* | State                         | Cases          | Rate per 100,000 Population |
|-------|-------------------------------|----------------|-----------------------------|
| 1     | Louisiana                     | 10,282         | 221.1                       |
| 2     | North Carolina                | 19,809         | 199.2                       |
| 3     | Mississippi                   | 5,775          | 192.9                       |
| 4     | South Carolina                | 8,206          | 169.8                       |
| 5     | Oklahoma                      | 6,542          | 168.7                       |
| 6     | Arkansas                      | 4,780          | 161.1                       |
| 7     | Georgia                       | 15,982         | 158.3                       |
| 8     | Alaska                        | 1,113          | 151.1                       |
| 9     | Alabama                       | 7,196          | 148.4                       |
| 10    | Missouri                      | 8,942          | 147.5                       |
| 11    | Texas                         | 39,717         | 147.3                       |
| 12    | Ohio                          | 16,564         | 142.9                       |
| 13    | Delaware                      | 1,310          | 140.0                       |
| 14    | California                    | 54,135         | 139.5                       |
| 15    | Illinois                      | 17,130         | 133.0                       |
| 16    | New York                      | 25,561         | 129.4                       |
| 17    | Tennessee                     | 8,386          | 128.0                       |
| 18    | Nevada                        | 3,630          | 127.9                       |
|       | <b>U.S. TOTAL<sup>†</sup></b> | <b>395,216</b> | <b>123.9</b>                |
| 19    | South Dakota                  | 1,048          | 122.8                       |
| 20    | Arizona                       | 8,245          | 122.5                       |
| 21    | Florida                       | 24,125         | 121.3                       |
| 22    | New Mexico                    | 2,489          | 119.3                       |
| 23    | Indiana                       | 7,843          | 118.9                       |
| 24    | Maryland                      | 6,858          | 114.8                       |
| 25    | Kentucky                      | 4,678          | 106.0                       |
| 26    | Michigan                      | 10,330         | 104.2                       |
| 27    | Washington                    | 7,171          | 101.6                       |
| 28    | Pennsylvania                  | 12,791         | 100.0                       |
| 29    | Virginia                      | 8,099          | 97.3                        |
| 30    | North Dakota                  | 684            | 92.5                        |
| 31    | Wisconsin                     | 5,260          | 91.4                        |
| 32    | Nebraska                      | 1,703          | 90.5                        |
| 33    | Kansas                        | 2,536          | 87.3                        |
| 34    | Hawaii                        | 1,239          | 87.3                        |
| 35    | Montana                       | 844            | 82.5                        |
| 36    | Colorado                      | 4,387          | 81.9                        |
| 37    | Oregon                        | 3,232          | 81.4                        |
| 38    | New Jersey                    | 7,228          | 80.9                        |
| 39    | Minnesota                     | 4,097          | 75.1                        |
| 40    | Iowa                          | 2,247          | 72.3                        |
| 41    | Connecticut                   | 2,088          | 58.1                        |
| 42    | Massachusetts                 | 3,817          | 56.6                        |
| 43    | Rhode Island                  | 580            | 55.0                        |
| 44    | Utah                          | 1,562          | 53.1                        |
| 45    | West Virginia                 | 769            | 41.6                        |
| 46    | Maine                         | 417            | 31.4                        |
| 47    | Wyoming                       | 175            | 30.0                        |
| 48    | Idaho                         | 472            | 28.9                        |
| 49    | Vermont                       | 155            | 24.7                        |
| 50    | New Hampshire                 | 245            | 18.5                        |

\* States were ranked by rate, then by case count, then in alphabetical order, with rates shown rounded to the nearest tenth.

<sup>†</sup> Total includes cases reported by the District of Columbia with 2,742 cases and a rate of 416.2, but excludes outlying areas (Guam with 147 cases and rate of 91.3, Puerto Rico with 620 cases and rate of 17.5, and Virgin Islands with 52 cases and rate of 49.9).

**Table 14. Gonorrhea — Reported Cases and Rates of Reported Cases by State/Area and Region in Alphabetical Order, United States and Outlying Areas, 2011–2015**

| State/Area            | Cases          |                |                |                |                | Rates per 100,000 Population |              |              |              |              |
|-----------------------|----------------|----------------|----------------|----------------|----------------|------------------------------|--------------|--------------|--------------|--------------|
|                       | 2011           | 2012           | 2013           | 2014           | 2015           | 2011                         | 2012         | 2013         | 2014         | 2015         |
| Alabama               | 9,132          | 9,270          | 8,377          | 7,677          | 7,196          | 190.1                        | 192.2        | 173.3        | 158.3        | 148.4        |
| Alaska                | 984            | 726            | 1,128          | 1,341          | 1,113          | 136.2                        | 99.3         | 153.4        | 182.0        | 151.1        |
| Arizona               | 4,564          | 5,809          | 6,412          | 7,750          | 8,245          | 70.4                         | 88.6         | 96.8         | 115.1        | 122.5        |
| Arkansas              | 4,687          | 4,307          | 4,007          | 4,539          | 4,780          | 159.5                        | 146.0        | 135.4        | 153.0        | 161.1        |
| California            | 27,516         | 33,579         | 38,166         | 45,408         | 54,135         | 73.0                         | 88.3         | 99.6         | 117.0        | 139.5        |
| Colorado              | 2,363          | 2,822          | 2,820          | 3,170          | 4,387          | 46.2                         | 54.4         | 53.5         | 59.2         | 81.9         |
| Connecticut           | 2,449          | 2,133          | 2,860          | 2,333          | 2,088          | 68.4                         | 59.4         | 79.5         | 64.9         | 58.1         |
| Delaware              | 827            | 899            | 1,390          | 1,279          | 1,310          | 91.2                         | 98.0         | 150.1        | 136.7        | 140.0        |
| District of Columbia  | 2,569          | 2,402          | 2,478          | 1,883          | 2,742          | 415.7                        | 379.9        | 383.3        | 285.8        | 416.2        |
| Florida               | 19,689         | 19,462         | 20,818         | 20,944         | 24,125         | 103.3                        | 100.7        | 106.5        | 105.3        | 121.3        |
| Georgia               | 16,428         | 15,326         | 14,252         | 13,770         | 15,982         | 167.4                        | 154.5        | 142.6        | 136.4        | 158.3        |
| Hawaii                | 685            | 815            | 718            | 1,020          | 1,239          | 49.8                         | 58.5         | 51.1         | 71.9         | 87.3         |
| Idaho                 | 162            | 167            | 211            | 443            | 472            | 10.2                         | 10.5         | 13.1         | 27.1         | 28.9         |
| Illinois              | 17,037         | 18,149         | 16,464         | 15,970         | 17,130         | 132.4                        | 141.0        | 127.8        | 124.0        | 133.0        |
| Indiana               | 6,569          | 7,338          | 7,144          | 7,289          | 7,843          | 100.8                        | 112.2        | 108.7        | 110.5        | 118.9        |
| Iowa                  | 1,920          | 2,006          | 1,472          | 1,641          | 2,247          | 62.7                         | 65.3         | 47.6         | 52.8         | 72.3         |
| Kansas                | 2,209          | 2,228          | 2,161          | 2,568          | 2,536          | 76.9                         | 77.2         | 74.7         | 88.4         | 87.3         |
| Kentucky              | 4,521          | 4,283          | 4,315          | 4,353          | 4,678          | 103.5                        | 97.8         | 98.2         | 98.6         | 106.0        |
| Louisiana             | 9,169          | 8,873          | 8,669          | 9,002          | 10,282         | 200.4                        | 192.8        | 187.4        | 193.6        | 221.1        |
| Maine                 | 272            | 456            | 245            | 237            | 417            | 20.5                         | 34.3         | 18.4         | 17.8         | 31.4         |
| Maryland              | 6,458          | 5,686          | 5,989          | 6,108          | 6,858          | 110.8                        | 96.6         | 101.0        | 102.2        | 114.8        |
| Massachusetts         | 2,353          | 2,628          | 3,106          | 3,817          | 3,817          | 35.7                         | 39.5         | 46.4         | 56.6         | 56.6         |
| Michigan              | 12,901         | 12,584         | 10,569         | 9,688          | 10,330         | 130.6                        | 127.3        | 106.8        | 97.8         | 104.2        |
| Minnesota             | 2,284          | 3,082          | 3,873          | 4,073          | 4,097          | 42.7                         | 57.3         | 71.5         | 74.6         | 75.1         |
| Mississippi           | 5,814          | 6,875          | 5,096          | 5,625          | 5,775          | 195.2                        | 230.3        | 170.4        | 187.9        | 192.9        |
| Missouri              | 7,802          | 7,889          | 7,546          | 7,387          | 8,942          | 129.8                        | 131.0        | 124.8        | 121.8        | 147.5        |
| Montana               | 85             | 108            | 224            | 434            | 844            | 8.5                          | 10.7         | 22.1         | 42.4         | 82.5         |
| Nebraska              | 1,352          | 1,429          | 1,385          | 1,459          | 1,703          | 73.4                         | 77.0         | 74.1         | 77.5         | 90.5         |
| Nevada                | 2,000          | 2,264          | 2,714          | 3,188          | 3,630          | 73.4                         | 82.1         | 97.3         | 112.3        | 127.9        |
| New Hampshire         | 130            | 147            | 121            | 226            | 245            | 9.9                          | 11.1         | 9.1          | 17.0         | 18.5         |
| New Jersey            | 7,348          | 7,486          | 7,014          | 6,636          | 7,228          | 83.3                         | 84.4         | 78.8         | 74.2         | 80.9         |
| New Mexico            | 1,839          | 1,883          | 1,918          | 2,246          | 2,489          | 88.3                         | 90.3         | 92.0         | 107.7        | 119.3        |
| New York              | 20,706         | 22,571         | 19,919         | 20,758         | 25,561         | 106.4                        | 115.3        | 101.4        | 105.1        | 129.4        |
| North Carolina        | 17,454         | 14,318         | 13,666         | 14,415         | 19,809         | 180.8                        | 146.8        | 138.8        | 145.0        | 199.2        |
| North Dakota          | 251            | 335            | 492            | 694            | 684            | 36.7                         | 47.9         | 68.0         | 93.8         | 92.5         |
| Ohio                  | 16,726         | 16,493         | 16,619         | 16,237         | 16,564         | 144.9                        | 142.9        | 143.6        | 140.0        | 142.9        |
| Oklahoma              | 4,215          | 4,441          | 5,303          | 6,137          | 6,542          | 111.2                        | 116.4        | 137.7        | 158.2        | 168.7        |
| Oregon                | 1,489          | 1,464          | 1,729          | 2,320          | 3,232          | 38.5                         | 37.5         | 44.0         | 58.4         | 81.4         |
| Pennsylvania          | 13,770         | 15,390         | 13,874         | 12,710         | 12,791         | 108.1                        | 120.6        | 108.6        | 99.4         | 100.0        |
| Rhode Island          | 360            | 507            | 454            | 590            | 580            | 34.2                         | 48.3         | 43.2         | 55.9         | 55.0         |
| South Carolina        | 8,350          | 7,638          | 7,194          | 8,253          | 8,206          | 178.4                        | 161.7        | 150.7        | 170.8        | 169.8        |
| South Dakota          | 602            | 707            | 784            | 892            | 1,048          | 73.1                         | 84.8         | 92.8         | 104.6        | 122.8        |
| Tennessee             | 7,667          | 9,098          | 7,376          | 7,199          | 8,386          | 119.7                        | 140.9        | 113.5        | 109.9        | 128.0        |
| Texas                 | 30,930         | 32,473         | 33,835         | 35,322         | 39,717         | 120.5                        | 124.6        | 127.9        | 131.0        | 147.3        |
| Utah                  | 277            | 479            | 951            | 1,441          | 1,562          | 9.8                          | 16.8         | 32.8         | 49.0         | 53.1         |
| Vermont               | 48             | 99             | 97             | 84             | 155            | 7.7                          | 15.8         | 15.5         | 13.4         | 24.7         |
| Virginia              | 6,518          | 6,885          | 6,952          | 8,250          | 8,099          | 80.5                         | 84.1         | 84.2         | 99.1         | 97.3         |
| Washington            | 2,737          | 3,238          | 4,369          | 6,221          | 7,171          | 40.1                         | 46.9         | 62.7         | 88.1         | 101.6        |
| West Virginia         | 796            | 831            | 1,063          | 841            | 769            | 42.9                         | 44.8         | 57.3         | 45.5         | 41.6         |
| Wisconsin             | 4,789          | 4,704          | 4,599          | 4,078          | 5,260          | 83.8                         | 82.1         | 80.1         | 70.8         | 91.4         |
| Wyoming               | 46             | 44             | 66             | 116            | 175            | 8.1                          | 7.6          | 11.3         | 19.9         | 30.0         |
| <b>U.S. TOTAL</b>     | <b>321,849</b> | <b>334,826</b> | <b>333,004</b> | <b>350,062</b> | <b>395,216</b> | <b>103.3</b>                 | <b>106.7</b> | <b>105.3</b> | <b>109.8</b> | <b>123.9</b> |
| Northeast             | 47,436         | 51,417         | 47,690         | 47,391         | 52,882         | 85.4                         | 92.2         | 85.2         | 84.4         | 94.2         |
| Midwest               | 74,442         | 76,944         | 73,108         | 71,976         | 78,384         | 110.8                        | 114.3        | 108.2        | 106.2        | 115.7        |
| South                 | 155,224        | 153,067        | 150,780        | 155,597        | 175,256        | 133.8                        | 130.5        | 127.4        | 129.9        | 146.3        |
| West                  | 44,747         | 53,398         | 61,426         | 75,098         | 88,694         | 61.4                         | 72.6         | 82.7         | 99.9         | 118.0        |
| Guam                  | 96             | 92             | 92             | 99             | 147            | 60.2                         | 57.5         | 57.4         | 61.5         | 91.3         |
| Puerto Rico           | 341            | 345            | 356            | 454            | 620            | 9.2                          | 9.4          | 9.8          | 12.8         | 17.5         |
| Virgin Islands        | 139            | 136            | 58             | 84             | 52             | 131.4                        | 129.2        | 55.4         | 80.6         | 49.9         |
| <b>OUTLYING AREAS</b> | <b>576</b>     | <b>573</b>     | <b>506</b>     | <b>637</b>     | <b>819</b>     | <b>14.5</b>                  | <b>14.6</b>  | <b>13.0</b>  | <b>16.7</b>  | <b>21.5</b>  |
| <b>TOTAL</b>          | <b>322,425</b> | <b>335,399</b> | <b>333,510</b> | <b>350,699</b> | <b>396,035</b> | <b>102.2</b>                 | <b>105.5</b> | <b>104.2</b> | <b>108.7</b> | <b>122.7</b> |

**Table 15. Gonorrhea Among Women — Reported Cases and Rates of Reported Cases by State/Area and Region in Alphabetical Order, United States and Outlying Areas, 2011–2015**

| State/Area            | Cases          |                |                |                |                | Rates per 100,000 Population |              |              |              |              |
|-----------------------|----------------|----------------|----------------|----------------|----------------|------------------------------|--------------|--------------|--------------|--------------|
|                       | 2011           | 2012           | 2013           | 2014           | 2015           | 2011                         | 2012         | 2013         | 2014         | 2015         |
| Alabama               | 5,103          | 5,187          | 4,668          | 4,090          | 3,629          | 206.3                        | 208.9        | 187.6        | 163.6        | 145.2        |
| Alaska                | 515            | 385            | 589            | 665            | 567            | 148.2                        | 109.9        | 168.5        | 190.3        | 162.3        |
| Arizona               | 2,212          | 2,827          | 3,102          | 3,564          | 3,505          | 67.9                         | 85.8         | 93.1         | 105.2        | 103.5        |
| Arkansas              | 2,687          | 2,432          | 2,160          | 2,527          | 2,510          | 179.7                        | 162.1        | 143.4        | 167.5        | 166.3        |
| California            | 10,811         | 13,045         | 14,258         | 16,009         | 18,404         | 57.1                         | 68.2         | 74.0         | 82.0         | 94.2         |
| Colorado              | 1,285          | 1,362          | 1,243          | 1,318          | 1,832          | 50.4                         | 52.7         | 47.4         | 49.5         | 68.8         |
| Connecticut           | 1,378          | 1,153          | 1,419          | 1,108          | 851            | 75.1                         | 62.6         | 77.0         | 60.1         | 46.2         |
| Delaware              | 471            | 496            | 763            | 693            | 641            | 100.8                        | 104.9        | 159.7        | 143.5        | 132.7        |
| District of Columbia  | 1,209          | 1,006          | 953            | 858            | 874            | 371.1                        | 301.8        | 280.1        | 247.8        | 252.4        |
| Florida               | 9,999          | 9,570          | 9,718          | 9,228          | 10,078         | 102.7                        | 97.0         | 97.3         | 90.7         | 99.1         |
| Georgia               | 8,589          | 7,921          | 7,060          | 6,552          | 7,322          | 171.4                        | 156.3        | 138.1        | 126.7        | 141.6        |
| Hawaii                | 273            | 299            | 264            | 350            | 446            | 39.9                         | 43.3         | 38.0         | 49.9         | 63.6         |
| Idaho                 | 79             | 63             | 87             | 196            | 197            | 10.0                         | 7.9          | 10.8         | 24.0         | 24.1         |
| Illinois              | 9,500          | 9,837          | 8,574          | 7,559          | 7,698          | 144.9                        | 150.1        | 130.8        | 115.2        | 117.4        |
| Indiana               | 3,690          | 4,139          | 3,796          | 3,819          | 3,984          | 111.5                        | 124.7        | 113.8        | 114.1        | 119.0        |
| Iowa                  | 1,217          | 1,170          | 812            | 862            | 1,122          | 78.8                         | 75.5         | 52.2         | 55.1         | 71.7         |
| Kansas                | 1,360          | 1,339          | 1,222          | 1,464          | 1,262          | 94.1                         | 92.3         | 84.2         | 100.5        | 86.6         |
| Kentucky              | 2,596          | 2,328          | 2,331          | 2,270          | 2,242          | 117.0                        | 104.7        | 104.4        | 101.3        | 100.1        |
| Louisiana             | 5,263          | 5,080          | 4,927          | 5,049          | 5,535          | 225.3                        | 216.2        | 208.6        | 212.5        | 233.0        |
| Maine                 | 122            | 240            | 119            | 98             | 143            | 18.0                         | 35.4         | 17.5         | 14.4         | 21.1         |
| Maryland              | 3,461          | 2,878          | 2,841          | 2,793          | 3,090          | 115.1                        | 94.9         | 93.0         | 90.7         | 100.3        |
| Massachusetts         | 1,083          | 1,076          | 1,168          | 1,215          | 1,027          | 31.9                         | 31.4         | 33.9         | 35.0         | 29.6         |
| Michigan              | 7,599          | 7,194          | 5,865          | 5,129          | 5,191          | 151.1                        | 142.9        | 116.5        | 101.7        | 103.0        |
| Minnesota             | 1,294          | 1,676          | 2,037          | 1,802          | 1,675          | 48.1                         | 61.9         | 74.7         | 65.6         | 61.0         |
| Mississippi           | 3,344          | 3,834          | 2,726          | 2,987          | 3,131          | 218.3                        | 249.7        | 177.4        | 194.0        | 203.4        |
| Missouri              | 4,195          | 4,209          | 3,944          | 3,620          | 4,187          | 136.8                        | 137.1        | 128.0        | 117.2        | 135.5        |
| Montana               | 51             | 58             | 127            | 221            | 462            | 10.3                         | 11.6         | 25.1         | 43.4         | 90.7         |
| Nebraska              | 823            | 784            | 694            | 770            | 870            | 88.7                         | 84.0         | 73.9         | 81.5         | 92.1         |
| Nevada                | 879            | 982            | 1,203          | 1,294          | 1,402          | 65.2                         | 71.8         | 86.9         | 91.6         | 99.3         |
| New Hampshire         | 59             | 61             | 52             | 91             | 65             | 8.8                          | 9.1          | 7.8          | 13.6         | 9.7          |
| New Jersey            | 3,916          | 3,798          | 3,484          | 3,082          | 3,110          | 86.6                         | 83.6         | 76.5         | 67.3         | 68.0         |
| New Mexico            | 925            | 857            | 823            | 961            | 1,087          | 87.9                         | 81.4         | 78.3         | 91.3         | 103.3        |
| New York              | 9,716          | 10,021         | 8,020          | 7,077          | 8,593          | 96.8                         | 99.4         | 79.3         | 69.6         | 84.5         |
| North Carolina        | 10,076         | 8,093          | 7,547          | 7,759          | 10,064         | 203.4                        | 161.9        | 149.5        | 152.2        | 197.4        |
| North Dakota          | 149            | 207            | 301            | 385            | 375            | 44.1                         | 60.2         | 85.2         | 106.8        | 104.0        |
| Ohio                  | 10,009         | 9,706          | 9,176          | 8,735          | 8,466          | 169.5                        | 164.5        | 155.2        | 147.6        | 143.0        |
| Oklahoma              | 2,395          | 2,652          | 3,000          | 3,451          | 3,580          | 125.1                        | 137.8        | 154.4        | 176.3        | 182.8        |
| Oregon                | 602            | 528            | 566            | 786            | 1,158          | 30.8                         | 26.8         | 28.5         | 39.2         | 57.7         |
| Pennsylvania          | 7,687          | 8,360          | 7,206          | 6,164          | 5,889          | 117.7                        | 128.0        | 110.3        | 94.3         | 90.1         |
| Rhode Island          | 167            | 232            | 192            | 218            | 172            | 30.8                         | 42.8         | 35.4         | 40.1         | 31.6         |
| South Carolina        | 4,981          | 4,416          | 4,050          | 4,527          | 4,401          | 207.3                        | 182.0        | 165.2        | 182.3        | 177.2        |
| South Dakota          | 399            | 446            | 464            | 557            | 621            | 97.1                         | 107.5        | 110.3        | 131.4        | 146.5        |
| Tennessee             | 4,112          | 4,721          | 3,617          | 3,419          | 3,809          | 125.3                        | 142.7        | 108.7        | 101.8        | 113.5        |
| Texas                 | 16,476         | 17,151         | 17,206         | 17,253         | 17,843         | 127.4                        | 130.8        | 129.4        | 127.1        | 131.4        |
| Utah                  | 66             | 132            | 373            | 565            | 507            | 4.7                          | 9.3          | 25.9         | 38.6         | 34.7         |
| Vermont               | 24             | 54             | 46             | 35             | 85             | 7.6                          | 17.0         | 14.5         | 11.0         | 26.8         |
| Virginia              | 3,693          | 3,734          | 3,678          | 4,361          | 4,007          | 89.6                         | 89.7         | 87.6         | 103.1        | 94.7         |
| Washington            | 1,066          | 1,230          | 1,704          | 2,504          | 2,797          | 31.2                         | 35.6         | 48.8         | 70.9         | 79.2         |
| West Virginia         | 467            | 438            | 539            | 461            | 365            | 49.7                         | 46.6         | 57.4         | 49.2         | 39.0         |
| Wisconsin             | 2,907          | 2,640          | 2,455          | 2,046          | 2,557          | 101.1                        | 91.6         | 84.9         | 70.6         | 88.2         |
| Wyoming               | 25             | 19             | 39             | 61             | 86             | 9.0                          | 6.7          | 13.7         | 21.3         | 30.1         |
| <b>U.S. TOTAL</b>     | <b>171,005</b> | <b>172,066</b> | <b>163,208</b> | <b>162,608</b> | <b>173,514</b> | <b>108.0</b>                 | <b>107.9</b> | <b>101.7</b> | <b>100.4</b> | <b>107.2</b> |
| Northeast             | 24,152         | 24,995         | 21,706         | 19,088         | 19,935         | 84.7                         | 87.3         | 75.6         | 66.3         | 69.2         |
| Midwest               | 43,142         | 43,347         | 39,340         | 36,748         | 38,008         | 126.5                        | 126.9        | 114.8        | 107.0        | 110.6        |
| South                 | 84,922         | 81,937         | 77,784         | 78,278         | 83,121         | 143.6                        | 137.1        | 129.0        | 128.2        | 136.1        |
| West                  | 18,789         | 21,787         | 24,378         | 28,494         | 32,450         | 51.4                         | 59.1         | 65.5         | 75.6         | 86.0         |
| Guam                  | 44             | 46             | 43             | 47             | 67             | 56.0                         | 58.4         | 54.4         | 59.2         | 84.4         |
| Puerto Rico           | 140            | 157            | 120            | 161            | 259            | 7.2                          | 8.2          | 6.4          | 8.7          | 14.0         |
| Virgin Islands        | 94             | 92             | 41             | 54             | 28             | 167.3                        | 164.2        | 73.4         | 97.1         | 50.3         |
| <b>OUTLYING AREAS</b> | <b>278</b>     | <b>295</b>     | <b>204</b>     | <b>262</b>     | <b>354</b>     | <b>13.4</b>                  | <b>14.4</b>  | <b>10.1</b>  | <b>13.2</b>  | <b>17.9</b>  |
| <b>TOTAL</b>          | <b>171,283</b> | <b>172,361</b> | <b>163,412</b> | <b>162,870</b> | <b>173,868</b> | <b>106.8</b>                 | <b>106.7</b> | <b>100.6</b> | <b>99.4</b>  | <b>106.1</b> |

**NOTE:** Cases reported with unknown sex are not included in this table.

**Table 16. Gonorrhea Among Men — Reported Cases and Rates of Reported Cases by State/Area and Region in Alphabetical Order, United States and Outlying Areas, 2011–2015**

| State/Area            | Cases          |                |                |                |                | Rates per 100,000 Population |              |              |              |              |
|-----------------------|----------------|----------------|----------------|----------------|----------------|------------------------------|--------------|--------------|--------------|--------------|
|                       | 2011           | 2012           | 2013           | 2014           | 2015           | 2011                         | 2012         | 2013         | 2014         | 2015         |
| Alabama               | 3,825          | 4,034          | 3,680          | 3,563          | 3,519          | 164.2                        | 172.5        | 156.9        | 151.6        | 149.7        |
| Alaska                | 469            | 341            | 539            | 676            | 546            | 125.0                        | 89.4         | 139.8        | 174.5        | 141.0        |
| Arizona               | 2,350          | 2,981          | 3,310          | 4,186          | 4,724          | 72.9                         | 91.5         | 100.5        | 125.2        | 141.3        |
| Arkansas              | 1,996          | 1,873          | 1,843          | 2,007          | 2,270          | 138.3                        | 129.3        | 126.8        | 137.7        | 155.8        |
| California            | 16,598         | 20,431         | 23,849         | 29,310         | 35,644         | 88.5                         | 108.0        | 125.1        | 152.1        | 185.0        |
| Colorado              | 1,078          | 1,460          | 1,577          | 1,852          | 2,555          | 42.0                         | 56.1         | 59.6         | 68.8         | 94.9         |
| Connecticut           | 1,071          | 978            | 1,440          | 1,219          | 1,237          | 61.4                         | 55.9         | 82.1         | 69.5         | 70.5         |
| Delaware              | 356            | 403            | 627            | 586            | 669            | 80.9                         | 90.7         | 140.0        | 129.4        | 147.8        |
| District of Columbia  | 1,360          | 1,386          | 1,519          | 1,011          | 1,817          | 465.4                        | 463.5        | 496.0        | 323.4        | 581.3        |
| Florida               | 9,675          | 9,892          | 11,049         | 11,686         | 14,039         | 103.8                        | 104.7        | 115.5        | 120.2        | 144.4        |
| Georgia               | 7,684          | 7,301          | 7,075          | 7,137          | 8,631          | 160.0                        | 150.5        | 144.9        | 144.9        | 175.2        |
| Hawaii                | 412            | 516            | 454            | 669            | 793            | 59.7                         | 73.5         | 64.0         | 93.2         | 110.4        |
| Idaho                 | 83             | 104            | 124            | 247            | 275            | 10.5                         | 13.0         | 15.4         | 30.2         | 33.6         |
| Illinois              | 7,513          | 8,283          | 7,872          | 8,386          | 9,335          | 119.0                        | 131.1        | 124.4        | 132.7        | 147.7        |
| Indiana               | 2,867          | 3,188          | 3,347          | 3,465          | 3,854          | 89.4                         | 99.1         | 103.4        | 106.6        | 118.6        |
| Iowa                  | 703            | 836            | 660            | 779            | 1,122          | 46.3                         | 54.8         | 43.0         | 50.5         | 72.7         |
| Kansas                | 849            | 889            | 939            | 1,104          | 1,274          | 59.5                         | 61.9         | 65.1         | 76.3         | 88.0         |
| Kentucky              | 1,913          | 1,948          | 1,966          | 2,068          | 2,430          | 89.0                         | 90.3         | 90.9         | 95.2         | 111.8        |
| Louisiana             | 3,739          | 3,793          | 3,742          | 3,953          | 4,747          | 167.0                        | 168.4        | 165.3        | 173.8        | 208.8        |
| Maine                 | 150            | 216            | 126            | 137            | 274            | 23.1                         | 33.2         | 19.4         | 21.0         | 42.1         |
| Maryland              | 2,992          | 2,806          | 3,145          | 3,304          | 3,755          | 106.1                        | 98.4         | 109.4        | 114.1        | 129.6        |
| Massachusetts         | 1,269          | 1,551          | 1,932          | 2,590          | 2,768          | 39.8                         | 48.2         | 59.5         | 79.2         | 84.6         |
| Michigan              | 5,281          | 5,372          | 4,694          | 4,551          | 5,129          | 109.0                        | 110.8        | 96.6         | 93.5         | 105.4        |
| Minnesota             | 990            | 1,395          | 1,835          | 2,260          | 2,420          | 37.3                         | 52.2         | 68.1         | 83.3         | 89.2         |
| Mississippi           | 2,470          | 3,039          | 2,370          | 2,637          | 2,638          | 170.8                        | 209.7        | 162.9        | 181.3        | 181.4        |
| Missouri              | 3,607          | 3,680          | 3,602          | 3,767          | 4,755          | 122.5                        | 124.7        | 121.5        | 126.7        | 159.9        |
| Montana               | 34             | 50             | 97             | 213            | 381            | 6.8                          | 9.9          | 19.0         | 41.4         | 74.1         |
| Nebraska              | 528            | 641            | 674            | 686            | 833            | 57.7                         | 69.5         | 72.5         | 73.2         | 88.9         |
| Nevada                | 1,121          | 1,280          | 1,509          | 1,892          | 2,218          | 81.6                         | 92.0         | 107.4        | 132.6        | 155.5        |
| New Hampshire         | 71             | 86             | 69             | 135            | 180            | 10.9                         | 13.2         | 10.6         | 20.6         | 27.5         |
| New Jersey            | 3,400          | 3,673          | 3,514          | 3,544          | 4,108          | 79.1                         | 85.0         | 80.9         | 81.2         | 94.2         |
| New Mexico            | 914            | 1,025          | 1,095          | 1,284          | 1,401          | 88.7                         | 99.3         | 105.9        | 124.3        | 135.6        |
| New York              | 10,977         | 12,529         | 11,844         | 13,624         | 16,893         | 116.4                        | 132.0        | 124.2        | 142.2        | 176.3        |
| North Carolina        | 7,300          | 6,180          | 6,113          | 6,652          | 9,744          | 155.2                        | 130.0        | 127.3        | 137.3        | 201.1        |
| North Dakota          | 101            | 127            | 191            | 309            | 309            | 29.2                         | 35.7         | 51.6         | 81.5         | 81.5         |
| Ohio                  | 6,717          | 6,787          | 7,443          | 7,502          | 8,098          | 119.1                        | 120.3        | 131.5        | 132.2        | 142.7        |
| Oklahoma              | 1,708          | 1,789          | 2,303          | 2,685          | 2,962          | 91.0                         | 94.7         | 120.7        | 139.8        | 154.3        |
| Oregon                | 887            | 936            | 1,163          | 1,532          | 2,073          | 46.3                         | 48.5         | 59.8         | 78.0         | 105.5        |
| Pennsylvania          | 6,078          | 7,025          | 6,659          | 6,543          | 6,892          | 97.8                         | 112.8        | 106.7        | 104.6        | 110.2        |
| Rhode Island          | 193            | 275            | 262            | 372            | 408            | 38.0                         | 54.1         | 51.4         | 72.7         | 79.8         |
| South Carolina        | 3,351          | 3,196          | 3,133          | 3,689          | 3,781          | 147.2                        | 139.1        | 134.9        | 157.0        | 160.9        |
| South Dakota          | 202            | 259            | 320            | 335            | 427            | 48.9                         | 61.9         | 75.4         | 78.0         | 99.5         |
| Tennessee             | 3,555          | 4,368          | 3,758          | 3,778          | 4,577          | 113.9                        | 138.7        | 118.7        | 118.4        | 143.4        |
| Texas                 | 14,448         | 15,286         | 16,410         | 18,035         | 21,792         | 113.4                        | 118.1        | 124.8        | 134.8        | 162.8        |
| Utah                  | 211            | 347            | 578            | 876            | 1,055          | 14.9                         | 24.2         | 39.6         | 59.2         | 71.3         |
| Vermont               | 24             | 45             | 51             | 49             | 70             | 7.8                          | 14.6         | 16.5         | 15.9         | 22.7         |
| Virginia              | 2,814          | 3,145          | 3,272          | 3,879          | 4,085          | 70.8                         | 78.2         | 80.5         | 94.7         | 99.7         |
| Washington            | 1,671          | 2,008          | 2,665          | 3,717          | 4,374          | 49.0                         | 58.3         | 76.5         | 105.3        | 123.9        |
| West Virginia         | 329            | 393            | 524            | 380            | 404            | 36.0                         | 42.9         | 57.2         | 41.6         | 44.2         |
| Wisconsin             | 1,880          | 2,064          | 2,140          | 2,027          | 2,697          | 66.3                         | 72.6         | 75.0         | 70.9         | 94.3         |
| Wyoming               | 21             | 25             | 27             | 55             | 88             | 7.2                          | 8.5          | 9.1          | 18.5         | 29.5         |
| <b>U.S. TOTAL</b>     | <b>149,835</b> | <b>162,235</b> | <b>169,130</b> | <b>186,943</b> | <b>221,070</b> | <b>97.7</b>                  | <b>105.0</b> | <b>108.7</b> | <b>119.1</b> | <b>140.9</b> |
| Northeast             | 23,233         | 26,378         | 25,897         | 28,213         | 32,830         | 86.1                         | 97.2         | 95.1         | 103.2        | 120.0        |
| Midwest               | 31,238         | 33,521         | 33,717         | 35,171         | 40,253         | 94.5                         | 101.1        | 101.3        | 105.3        | 120.5        |
| South                 | 69,515         | 70,832         | 72,529         | 77,050         | 91,860         | 122.2                        | 123.2        | 124.9        | 131.2        | 156.4        |
| West                  | 25,849         | 31,504         | 36,987         | 46,509         | 56,127         | 71.1                         | 85.9         | 99.9         | 124.1        | 149.8        |
| Guam                  | 52             | 46             | 49             | 52             | 80             | 64.2                         | 56.7         | 60.2         | 63.7         | 98.0         |
| Puerto Rico           | 201            | 188            | 236            | 293            | 359            | 11.3                         | 10.7         | 13.6         | 17.2         | 21.1         |
| Virgin Islands        | 45             | 44             | 17             | 30             | 24             | 90.7                         | 89.3         | 34.8         | 61.8         | 49.4         |
| <b>OUTLYING AREAS</b> | <b>298</b>     | <b>278</b>     | <b>302</b>     | <b>375</b>     | <b>463</b>     | <b>15.6</b>                  | <b>14.7</b>  | <b>16.2</b>  | <b>20.4</b>  | <b>25.2</b>  |
| <b>TOTAL</b>          | <b>150,133</b> | <b>162,513</b> | <b>169,432</b> | <b>187,318</b> | <b>221,533</b> | <b>96.7</b>                  | <b>103.9</b> | <b>107.6</b> | <b>118.0</b> | <b>139.5</b> |

**NOTE:** Cases reported with unknown sex are not included in this table.

**Table 17. Gonorrhea — Reported Cases and Rates of Reported Cases in Selected Metropolitan Statistical Areas (MSAs)\* in Alphabetical Order, United States, 2011–2015**

| MSAs                                         | Cases          |                |                |                |                | Rates per 100,000 Population |              |              |              |              |
|----------------------------------------------|----------------|----------------|----------------|----------------|----------------|------------------------------|--------------|--------------|--------------|--------------|
|                                              | 2011           | 2012           | 2013           | 2014           | 2015           | 2011                         | 2012         | 2013         | 2014         | 2015         |
| Atlanta-Sandy Springs-Roswell, GA            | 8,577          | 8,299          | 5,452          | 7,256          | 6,471          | 159.5                        | 152.1        | 98.7         | 129.2        | 115.3        |
| Austin-Round Rock, TX                        | 2,009          | 2,204          | 2,570          | 2,860          | 3,199          | 112.6                        | 120.2        | 136.5        | 147.2        | 164.6        |
| Baltimore-Columbia-Towson, MD                | 3,634          | 2,974          | 3,233          | 3,459          | 4,179          | 133.2                        | 108.0        | 116.7        | 124.2        | 150.0        |
| Birmingham-Hoover, AL                        | 2,550          | 2,340          | 2,130          | 1,957          | 2,088          | 225.2                        | 205.9        | 186.8        | 171.1        | 182.6        |
| Boston-Cambridge-Newton, MA-NH               | 1,671          | 1,995          | 2,372          | 2,716          | 2,487          | 36.4                         | 43.0         | 50.6         | 57.4         | 52.6         |
| Buffalo-Cheektowaga-Niagara Falls, NY        | 1,543          | 2,172          | 1,232          | 1,342          | 1,982          | 136.1                        | 191.5        | 108.6        | 118.1        | 174.4        |
| Charlotte-Concord-Gastonia, NC-SC            | 3,832          | 3,172          | 3,058          | 3,645          | 4,673          | 169.7                        | 138.1        | 130.9        | 153.1        | 196.3        |
| Chicago-Naperville-Elgin, IL-IN-WI           | 13,188         | 14,304         | 12,793         | 12,630         | 13,529         | 138.8                        | 150.2        | 134.1        | 132.2        | 141.6        |
| Cincinnati, OH-KY-IN                         | 3,515          | 3,227          | 3,229          | 3,346          | 3,713          | 165.6                        | 151.6        | 151.1        | 155.7        | 172.7        |
| Cleveland-Elyria, OH                         | 3,930          | 4,203          | 4,155          | 3,802          | 3,428          | 190.0                        | 203.7        | 201.2        | 184.2        | 166.1        |
| Columbus, OH                                 | 3,038          | 2,859          | 3,220          | 3,260          | 3,676          | 157.9                        | 147.1        | 163.7        | 163.4        | 184.3        |
| Dallas-Fort Worth-Arlington, TX              | 8,743          | 7,842          | 8,354          | 9,195          | 11,334         | 132.8                        | 117.0        | 122.7        | 132.2        | 163.0        |
| Denver-Aurora-Lakewood, CO                   | 1,662          | 2,055          | 1,828          | 2,016          | 2,838          | 63.9                         | 77.7         | 67.8         | 73.2         | 103.0        |
| Detroit-Warren-Dearborn, MI                  | 8,924          | 8,062          | 6,564          | 5,311          | 5,494          | 208.2                        | 187.8        | 152.8        | 123.6        | 127.9        |
| Hartford-West Hartford-East Hartford, CT     | 1,036          | 744            | 1,065          | 894            | 726            | 85.4                         | 61.3         | 87.6         | 73.6         | 59.8         |
| Houston-The Woodlands-Sugar Land, TX         | 6,861          | 7,582          | 7,783          | 8,299          | 9,290          | 113.2                        | 122.7        | 123.3        | 127.9        | 143.1        |
| Indianapolis-Carmel-Anderson, IN             | 3,128          | 3,738          | 3,616          | 3,759          | 3,716          | 163.8                        | 193.8        | 185.1        | 190.7        | 188.5        |
| Jacksonville, FL                             | 2,040          | 1,948          | 2,321          | 2,608          | 2,740          | 150.0                        | 141.4        | 166.4        | 183.8        | 193.1        |
| Kansas City, MO-KS                           | 2,913          | 2,919          | 2,696          | 2,642          | 2,943          | 143.7                        | 143.2        | 131.2        | 127.6        | 142.1        |
| Las Vegas-Henderson-Paradise, NV             | 1,740          | 1,968          | 2,256          | 2,653          | 2,975          | 88.3                         | 98.4         | 111.2        | 128.2        | 143.7        |
| Los Angeles-Long Beach-Anaheim, CA           | 11,105         | 13,102         | 14,449         | 17,130         | 19,867         | 85.8                         | 100.4        | 110.0        | 129.2        | 149.8        |
| Louisville-Jefferson County, KY-IN           | 2,400          | 2,040          | 2,063          | 1,962          | 2,187          | 192.7                        | 163.0        | 163.4        | 154.5        | 172.2        |
| Memphis, TN-MS-AR                            | 3,852          | 4,498          | 3,086          | 2,625          | 3,143          | 288.7                        | 335.2        | 230.0        | 195.4        | 234.0        |
| Miami-Fort Lauderdale-West Palm Beach, FL    | 5,352          | 5,291          | 5,801          | 6,128          | 6,905          | 94.4                         | 91.8         | 99.5         | 103.3        | 116.4        |
| Milwaukee-Waukesha-West Allis, WI            | 3,349          | 3,277          | 3,179          | 2,584          | 3,719          | 214.4                        | 209.1        | 202.5        | 164.4        | 236.5        |
| Minneapolis-St. Paul-Bloomington, MN-WI      | 1,889          | 2,534          | 3,188          | 3,341          | 3,289          | 55.8                         | 74.0         | 92.2         | 95.6         | 94.1         |
| Nashville-Davidson-Murfreesboro-Franklin, TN | 1,681          | 1,900          | 1,806          | 1,922          | 2,200          | 99.0                         | 110.0        | 102.7        | 107.2        | 122.7        |
| New Orleans-Metairie, LA                     | 2,099          | 2,198          | 2,448          | 2,667          | 2,929          | 173.1                        | 179.1        | 197.3        | 213.0        | 234.0        |
| New York-Newark-Jersey City, NY-NJ-PA        | 21,153         | 21,310         | 19,319         | 20,054         | 23,721         | 107.4                        | 107.5        | 96.8         | 99.8         | 118.1        |
| Oklahoma City, OK                            | 1,845          | 1,947          | 2,352          | 2,366          | 2,403          | 144.4                        | 150.2        | 178.2        | 177.0        | 179.8        |
| Orlando-Kissimmee-Sanford, FL                | 2,277          | 2,328          | 2,514          | 2,571          | 3,073          | 104.9                        | 104.7        | 110.9        | 110.8        | 132.4        |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD  | 10,123         | 11,026         | 10,557         | 9,618          | 9,724          | 168.9                        | 183.2        | 174.9        | 158.9        | 160.7        |
| Phoenix-Mesa-Scottsdale, AZ                  | 3,340          | 4,526          | 4,918          | 5,944          | 6,495          | 78.3                         | 104.5        | 111.8        | 132.4        | 144.7        |
| Pittsburgh, PA                               | 2,473          | 3,048          | 2,827          | 2,602          | 2,422          | 104.8                        | 129.1        | 119.7        | 110.4        | 102.8        |
| Portland-Vancouver-Hillsboro, OR-WA          | 1,318          | 1,183          | 1,199          | 1,499          | 2,386          | 58.3                         | 51.7         | 51.8         | 63.8         | 101.6        |
| Providence-Warwick, RI-MA                    | 475            | 643            | 593            | 913            | 834            | 29.7                         | 40.2         | 37.0         | 56.7         | 51.8         |
| Raleigh, NC                                  | 1,606          | 1,532          | 1,384          | 1,408          | 2,018          | 138.0                        | 128.9        | 114.0        | 113.3        | 162.4        |
| Richmond, VA                                 | 1,419          | 1,671          | 1,658          | 2,173          | 2,200          | 116.4                        | 135.6        | 133.1        | 172.5        | 174.6        |
| Riverside-San Bernardino-Ontario, CA         | 2,330          | 3,031          | 3,273          | 4,292          | 4,904          | 54.1                         | 69.7         | 74.7         | 96.6         | 110.4        |
| Sacramento-Roseville-Arden-Arcade, CA        | 1,913          | 2,324          | 2,597          | 2,616          | 3,317          | 87.9                         | 105.8        | 117.2        | 116.6        | 147.8        |
| Salt Lake City, UT                           | 197            | 342            | 690            | 1,026          | 1,078          | 17.8                         | 30.4         | 60.5         | 89.0         | 93.5         |
| San Antonio-New Braunfels, TX                | 3,731          | 3,672          | 3,352          | 3,155          | 4,160          | 170.0                        | 164.4        | 147.2        | 135.5        | 178.6        |
| San Diego-Carlsbad, CA                       | 2,173          | 2,620          | 2,825          | 3,420          | 3,691          | 69.2                         | 82.5         | 88.0         | 104.8        | 113.1        |
| San Francisco-Oakland-Hayward, CA            | 5,009          | 5,263          | 5,681          | 7,110          | 9,330          | 114.1                        | 118.1        | 125.8        | 154.8        | 203.1        |
| San Jose-Sunnyvale-Santa Clara, CA           | 680            | 1,020          | 1,145          | 1,552          | 1,857          | 36.5                         | 53.8         | 59.6         | 79.5         | 95.1         |
| Seattle-Tacoma-Bellevue, WA                  | 1,971          | 2,323          | 2,990          | 3,931          | 4,766          | 56.3                         | 65.4         | 82.8         | 107.1        | 129.8        |
| St. Louis, MO-IL                             | 5,014          | 4,810          | 4,492          | 4,346          | 5,257          | 179.6                        | 172.0        | 160.4        | 154.9        | 187.3        |
| Tampa-St. Petersburg-Clearwater, FL          | 3,655          | 3,422          | 3,660          | 3,455          | 3,916          | 129.4                        | 120.4        | 127.5        | 118.5        | 134.3        |
| Virginia Beach-Norfolk-Newport News, VA-NC   | 2,813          | 2,630          | 2,581          | 3,206          | 3,300          | 166.9                        | 154.7        | 151.2        | 186.8        | 192.2        |
| Washington-Arlington-Alexandria, DC-VA-MD-WV | 5,503          | 5,369          | 5,616          | 2,974          | 3,008          | 95.6                         | 91.6         | 94.4         | 49.3         | 49.9         |
| <b>SELECTED MSAs TOTAL</b>                   | <b>197,279</b> | <b>205,487</b> | <b>202,170</b> | <b>212,240</b> | <b>239,580</b> | <b>116.4</b>                 | <b>120.0</b> | <b>117.0</b> | <b>121.4</b> | <b>137.0</b> |

\* MSAs were selected on the basis of the largest population in the 2010 U.S. Census.

**Table 18. Gonorrhea Among Women — Reported Cases and Rates of Reported Cases in Selected Metropolitan Statistical Areas (MSAs)\* in Alphabetical Order, United States, 2011–2015**

| MSAs                                         | Cases         |               |               |               |               | Rates per 100,000 Population |              |              |              |              |
|----------------------------------------------|---------------|---------------|---------------|---------------|---------------|------------------------------|--------------|--------------|--------------|--------------|
|                                              | 2011          | 2012          | 2013          | 2014          | 2015          | 2011                         | 2012         | 2013         | 2014         | 2015         |
| Atlanta-Sandy Springs-Roswell, GA            | 4,141         | 3,907         | 2,458         | 3,030         | 2,578         | 150.2                        | 139.4        | 86.5         | 104.7        | 89.1         |
| Austin-Round Rock, TX                        | 935           | 993           | 1,078         | 1,213         | 1,039         | 105.1                        | 108.5        | 114.8        | 124.9        | 107.0        |
| Baltimore-Columbia-Towson, MD                | 1,941         | 1,527         | 1,542         | 1,608         | 1,964         | 137.2                        | 107.1        | 107.5        | 111.5        | 136.2        |
| Birmingham-Hoover, AL                        | 1,417         | 1,280         | 1,099         | 970           | 999           | 241.6                        | 217.3        | 186.0        | 163.4        | 168.3        |
| Boston-Cambridge-Newton, MA-NH               | 730           | 738           | 828           | 844           | 601           | 30.8                         | 30.9         | 34.3         | 34.7         | 24.7         |
| Buffalo-Cheektowaga-Niagara Falls, NY        | 828           | 1,173         | 594           | 664           | 959           | 141.3                        | 200.4        | 101.6        | 113.4        | 163.8        |
| Charlotte-Concord-Gastonia, NC-SC            | 2,117         | 1,778         | 1,700         | 1,962         | 2,419         | 182.6                        | 150.7        | 141.7        | 160.2        | 197.6        |
| Chicago-Naperville-Elgin, IL-IN-WI           | 7,015         | 7,464         | 6,374         | 5,662         | 5,696         | 144.4                        | 153.4        | 130.9        | 115.9        | 116.6        |
| Cincinnati, OH-KY-IN                         | 2,264         | 2,051         | 1,932         | 1,913         | 2,020         | 208.8                        | 188.7        | 177.1        | 174.3        | 184.1        |
| Cleveland-Elyria, OH                         | 2,371         | 2,426         | 2,328         | 2,021         | 1,745         | 220.9                        | 226.7        | 217.6        | 189.2        | 163.3        |
| Columbus, OH                                 | 1,561         | 1,514         | 1,500         | 1,473         | 1,638         | 159.5                        | 153.2        | 150.0        | 145.3        | 161.6        |
| Dallas-Fort Worth-Arlington, TX              | 4,653         | 4,157         | 3,921         | 4,153         | 4,963         | 139.6                        | 122.5        | 113.6        | 117.5        | 140.4        |
| Denver-Aurora-Lakewood, CO                   | 885           | 965           | 724           | 780           | 1,096         | 67.8                         | 72.7         | 53.5         | 56.4         | 79.3         |
| Detroit-Warren-Dearborn, MI                  | 5,114         | 4,406         | 3,614         | 2,698         | 2,592         | 231.6                        | 199.3        | 163.5        | 122.0        | 117.2        |
| Hartford-West Hartford-East Hartford, CT     | 596           | 422           | 543           | 425           | 310           | 95.8                         | 67.7         | 87.2         | 68.3         | 49.8         |
| Houston-The Woodlands-Sugar Land, TX         | 3,803         | 4,039         | 4,033         | 4,151         | 4,113         | 124.9                        | 130.2        | 127.2        | 127.2        | 126.0        |
| Indianapolis-Carmel-Anderson, IN             | 1,674         | 1,957         | 1,761         | 1,828         | 1,791         | 171.5                        | 198.5        | 176.4        | 181.3        | 177.6        |
| Jacksonville, FL                             | 1,121         | 983           | 1,121         | 1,288         | 1,237         | 160.6                        | 139.1        | 156.7        | 176.9        | 169.9        |
| Kansas City, MO-KS                           | 1,592         | 1,585         | 1,424         | 1,361         | 1,409         | 153.9                        | 152.4        | 136.0        | 128.9        | 133.5        |
| Las Vegas-Henderson-Paradise, NV             | 742           | 847           | 1,015         | 1,039         | 1,129         | 75.8                         | 85.1         | 100.5        | 100.5        | 109.2        |
| Los Angeles-Long Beach-Anaheim, CA           | 3,944         | 4,359         | 4,578         | 5,029         | 5,778         | 60.2                         | 65.9         | 68.9         | 74.8         | 85.9         |
| Louisville-Jefferson County, KY-IN           | 1,375         | 1,096         | 1,079         | 992           | 1,012         | 215.6                        | 171.2        | 167.0        | 152.6        | 155.7        |
| Memphis, TN-MS-AR                            | 2,192         | 2,418         | 1,550         | 1,371         | 1,469         | 315.9                        | 346.6        | 222.0        | 196.0        | 210.0        |
| Miami-Fort Lauderdale-West Palm Beach, FL    | 2,361         | 2,198         | 2,225         | 2,123         | 2,252         | 80.9                         | 74.1         | 74.2         | 69.5         | 73.8         |
| Milwaukee-Waukesha-West Allis, WI            | 1,980         | 1,814         | 1,655         | 1,298         | 1,850         | 247.0                        | 225.5        | 205.5        | 160.8        | 229.2        |
| Minneapolis-St. Paul-Bloomington, MN-WI      | 1,035         | 1,322         | 1,641         | 1,388         | 1,229         | 60.4                         | 76.4         | 93.8         | 78.6         | 69.6         |
| Nashville-Davidson-Murfreesboro-Franklin, TN | 776           | 858           | 838           | 790           | 888           | 89.3                         | 97.1         | 93.1         | 86.0         | 96.7         |
| New Orleans-Metairie, LA                     | 1,131         | 1,186         | 1,317         | 1,339         | 1,423         | 181.6                        | 187.9        | 206.1        | 207.2        | 220.2        |
| New York-Newark-Jersey City, NY-NJ-PA        | 9,826         | 9,157         | 7,615         | 6,544         | 7,349         | 96.5                         | 89.3         | 73.9         | 63.1         | 70.8         |
| Oklahoma City, OK                            | 1,034         | 1,081         | 1,305         | 1,310         | 1,267         | 159.7                        | 164.6        | 195.1        | 193.2        | 186.9        |
| Orlando-Kissimmee-Sanford, FL                | 1,090         | 1,087         | 1,114         | 1,109         | 1,254         | 98.4                         | 95.8         | 96.3         | 93.4         | 105.7        |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD  | 5,361         | 5,581         | 5,052         | 4,461         | 4,277         | 173.0                        | 179.3        | 162.0        | 142.7        | 136.8        |
| Phoenix-Mesa-Scottsdale, AZ                  | 1,568         | 2,118         | 2,318         | 2,658         | 2,708         | 73.2                         | 97.3         | 104.8        | 117.6        | 119.9        |
| Pittsburgh, PA                               | 1,501         | 1,857         | 1,715         | 1,415         | 1,239         | 123.2                        | 152.6        | 141.1        | 116.8        | 102.2        |
| Portland-Vancouver-Hillsboro, OR-WA          | 482           | 393           | 325           | 382           | 764           | 42.1                         | 33.9         | 27.8         | 32.2         | 64.3         |
| Providence-Warwick, RI-MA                    | 232           | 294           | 261           | 325           | 260           | 28.1                         | 35.6         | 31.6         | 39.2         | 31.3         |
| Raleigh, NC                                  | 868           | 807           | 677           | 638           | 857           | 145.7                        | 132.7        | 108.9        | 100.2        | 134.6        |
| Richmond, VA                                 | 797           | 908           | 957           | 1,194         | 1,141         | 126.6                        | 142.6        | 148.7        | 183.4        | 175.3        |
| Riverside-San Bernardino-Ontario, CA         | 1,196         | 1,562         | 1,576         | 1,966         | 2,208         | 55.3                         | 71.5         | 71.7         | 88.1         | 98.9         |
| Sacramento-Roseville-Arden-Arcade, CA        | 990           | 1,212         | 1,323         | 1,246         | 1,538         | 89.3                         | 108.2        | 117.0        | 108.8        | 134.2        |
| Salt Lake City, UT                           | 41            | 88            | 263           | 376           | 325           | 7.4                          | 15.8         | 46.4         | 65.5         | 56.6         |
| San Antonio-New Braunfels, TX                | 1,835         | 1,865         | 1,624         | 1,445         | 1,785         | 164.4                        | 164.5        | 140.7        | 122.4        | 151.2        |
| San Diego-Carlsbad, CA                       | 609           | 847           | 827           | 1,038         | 1,018         | 39.0                         | 53.6         | 51.8         | 63.9         | 62.7         |
| San Francisco-Oakland-Hayward, CA            | 1,531         | 1,493         | 1,491         | 1,836         | 2,101         | 68.9                         | 66.2         | 65.2         | 78.9         | 90.2         |
| San Jose-Sunnyvale-Santa Clara, CA           | 243           | 372           | 446           | 557           | 642           | 26.2                         | 39.5         | 46.7         | 57.4         | 66.1         |
| Seattle-Tacoma-Bellevue, WA                  | 649           | 732           | 988           | 1,412         | 1,662         | 37.0                         | 41.1         | 54.7         | 76.9         | 90.5         |
| St. Louis, MO-IL                             | 2,699         | 2,467         | 2,313         | 2,087         | 2,436         | 187.4                        | 171.1        | 160.2        | 144.3        | 168.4        |
| Tampa-St. Petersburg-Clearwater, FL          | 1,887         | 1,701         | 1,774         | 1,619         | 1,676         | 129.7                        | 116.1        | 119.8        | 107.6        | 111.4        |
| Virginia Beach-Norfolk-Newport News, VA-NC   | 1,563         | 1,402         | 1,341         | 1,711         | 1,701         | 182.0                        | 162.3        | 154.7        | 196.4        | 195.2        |
| Washington-Arlington-Alexandria, DC-VA-MD-WV | 2,709         | 2,355         | 2,278         | 1,163         | 1,064         | 91.8                         | 78.4         | 74.8         | 37.7         | 34.5         |
| <b>SELECTED MSAs TOTAL</b>                   | <b>99,005</b> | <b>98,842</b> | <b>92,055</b> | <b>89,905</b> | <b>95,471</b> | <b>114.5</b>                 | <b>113.1</b> | <b>104.4</b> | <b>100.7</b> | <b>107.0</b> |

\* MSAs were selected on the basis of the largest population in the 2010 U.S. Census.

**NOTE:** Cases reported with unknown sex are not included in this table.

**Table 19. Gonorrhea Among Men — Reported Cases and Rates of Reported Cases in Selected Metropolitan Statistical Areas (MSAs)\* in Alphabetical Order, United States, 2011–2015**

| MSAs                                         | Cases         |                |                |                |                | Rates per 100,000 Population |              |              |              |              |
|----------------------------------------------|---------------|----------------|----------------|----------------|----------------|------------------------------|--------------|--------------|--------------|--------------|
|                                              | 2011          | 2012           | 2013           | 2014           | 2015           | 2011                         | 2012         | 2013         | 2014         | 2015         |
| Atlanta-Sandy Springs-Roswell, GA            | 4,343         | 4,329          | 2,952          | 4,177          | 3,885          | 165.7                        | 163.1        | 110.1        | 153.5        | 142.7        |
| Austin-Round Rock, TX                        | 1,073         | 1,196          | 1,295          | 1,635          | 2,144          | 120.1                        | 130.1        | 137.2        | 168.2        | 220.5        |
| Baltimore-Columbia-Towson, MD                | 1,690         | 1,447          | 1,690          | 1,840          | 2,202          | 128.5                        | 109.0        | 126.4        | 137.0        | 163.9        |
| Birmingham-Hoover, AL                        | 1,094         | 1,057          | 1,029          | 979            | 1,075          | 200.5                        | 193.0        | 187.3        | 177.9        | 195.4        |
| Boston-Cambridge-Newton, MA-NH               | 940           | 1,257          | 1,541          | 1,870          | 1,881          | 42.3                         | 55.9         | 67.8         | 81.4         | 81.9         |
| Buffalo-Cheektowaga-Niagara Falls, NY        | 715           | 999            | 638            | 678            | 1,023          | 130.5                        | 182.1        | 116.2        | 123.1        | 185.7        |
| Charlotte-Concord-Gastonia, NC-SC            | 1,704         | 1,384          | 1,356          | 1,683          | 2,251          | 155.1                        | 123.9        | 119.4        | 145.6        | 194.7        |
| Chicago-Naperville-Elgin, IL-IN-WI           | 6,150         | 6,819          | 6,407          | 6,947          | 7,780          | 132.3                        | 146.4        | 137.3        | 148.7        | 166.6        |
| Cincinnati, OH-KY-IN                         | 1,250         | 1,176          | 1,297          | 1,431          | 1,693          | 120.4                        | 112.9        | 123.9        | 136.0        | 160.9        |
| Cleveland-Elyria, OH                         | 1,559         | 1,777          | 1,827          | 1,781          | 1,683          | 156.7                        | 178.9        | 183.6        | 178.9        | 169.1        |
| Columbus, OH                                 | 1,477         | 1,345          | 1,720          | 1,787          | 2,038          | 156.2                        | 140.8        | 177.9        | 182.2        | 207.8        |
| Dallas-Fort Worth-Arlington, TX              | 4,089         | 3,682          | 4,426          | 5,033          | 6,357          | 125.9                        | 111.4        | 131.8        | 147.1        | 185.9        |
| Denver-Aurora-Lakewood, CO                   | 777           | 1,090          | 1,104          | 1,236          | 1,742          | 60.0                         | 82.8         | 82.1         | 90.1         | 126.9        |
| Detroit-Warren-Dearborn, MI                  | 3,794         | 3,642          | 2,942          | 2,606          | 2,894          | 182.6                        | 175.0        | 141.2        | 125.0        | 138.8        |
| Hartford-West Hartford-East Hartford, CT     | 440           | 322            | 522            | 466            | 416            | 74.5                         | 54.5         | 88.1         | 78.7         | 70.3         |
| Houston-The Woodlands-Sugar Land, TX         | 3,055         | 3,543          | 3,749          | 4,146          | 5,167          | 101.3                        | 115.2        | 119.3        | 128.5        | 160.1        |
| Indianapolis-Carmel-Anderson, IN             | 1,447         | 1,772          | 1,854          | 1,927          | 1,920          | 155.0                        | 187.9        | 194.0        | 200.1        | 199.4        |
| Jacksonville, FL                             | 919           | 965            | 1,198          | 1,316          | 1,501          | 138.8                        | 143.8        | 176.3        | 190.5        | 217.2        |
| Kansas City, MO-KS                           | 1,321         | 1,334          | 1,272          | 1,281          | 1,534          | 133.1                        | 133.6        | 126.2        | 126.1        | 151.0        |
| Las Vegas-Henderson-Paradise, NV             | 998           | 1,119          | 1,239          | 1,612          | 1,837          | 100.7                        | 111.3        | 121.8        | 155.6        | 177.3        |
| Los Angeles-Long Beach-Anaheim, CA           | 7,124         | 8,712          | 9,849          | 12,071         | 14,066         | 111.5                        | 135.2        | 151.9        | 184.7        | 215.2        |
| Louisville-Jefferson County, KY-IN           | 1,020         | 940            | 969            | 961            | 1,170          | 167.9                        | 153.8        | 157.2        | 155.1        | 188.8        |
| Memphis, TN-MS-AR                            | 1,660         | 2,080          | 1,536          | 1,254          | 1,674          | 259.2                        | 323.0        | 238.6        | 194.8        | 260.0        |
| Miami-Fort Lauderdale-West Palm Beach, FL    | 2,987         | 3,093          | 3,564          | 3,999          | 4,651          | 108.5                        | 110.6        | 125.9        | 139.0        | 161.7        |
| Milwaukee-Waukesha-West Allis, WI            | 1,368         | 1,463          | 1,521          | 1,281          | 1,864          | 179.9                        | 191.8        | 199.0        | 167.4        | 243.6        |
| Minneapolis-St. Paul-Bloomington, MN-WI      | 854           | 1,209          | 1,546          | 1,942          | 2,058          | 51.0                         | 71.5         | 90.4         | 112.4        | 119.1        |
| Nashville-Davidson-Murfreesboro-Franklin, TN | 905           | 1,034          | 968            | 1,130          | 1,312          | 109.1                        | 122.6        | 112.8        | 129.3        | 150.1        |
| New Orleans-Metairie, LA                     | 962           | 1,012          | 1,131          | 1,328          | 1,506          | 163.0                        | 169.8        | 187.9        | 219.2        | 248.6        |
| New York-Newark-Jersey City, NY-NJ-PA        | 11,291        | 12,124         | 11,639         | 13,448         | 16,290         | 118.7                        | 126.5        | 120.6        | 138.4        | 167.7        |
| Oklahoma City, OK                            | 775           | 866            | 1,047          | 1,056          | 1,136          | 122.9                        | 135.3        | 160.8        | 160.3        | 172.4        |
| Orlando-Kissimmee-Sanford, FL                | 1,186         | 1,241          | 1,399          | 1,461          | 1,818          | 111.5                        | 114.0        | 126.0        | 128.8        | 160.2        |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD  | 4,756         | 5,439          | 5,501          | 5,152          | 5,439          | 164.4                        | 187.1        | 188.7        | 176.2        | 186.0        |
| Phoenix-Mesa-Scottsdale, AZ                  | 1,770         | 2,407          | 2,600          | 3,286          | 3,780          | 83.4                         | 111.8        | 118.9        | 147.4        | 169.5        |
| Pittsburgh, PA                               | 971           | 1,191          | 1,110          | 1,187          | 1,182          | 85.1                         | 104.1        | 96.9         | 103.7        | 103.3        |
| Portland-Vancouver-Hillsboro, OR-WA          | 836           | 790            | 874            | 1,116          | 1,621          | 74.8                         | 69.8         | 76.4         | 96.2         | 139.7        |
| Providence-Warwick, RI-MA                    | 243           | 349            | 331            | 587            | 572            | 31.4                         | 45.0         | 42.6         | 75.3         | 73.3         |
| Raleigh, NC                                  | 735           | 724            | 707            | 770            | 1,161          | 129.4                        | 124.8        | 119.2        | 127.0        | 191.5        |
| Richmond, VA                                 | 617           | 761            | 701            | 978            | 1,058          | 104.7                        | 127.8        | 116.4        | 160.6        | 173.7        |
| Riverside-San Bernardino-Ontario, CA         | 1,126         | 1,467          | 1,695          | 2,321          | 2,692          | 52.5                         | 67.7         | 77.7         | 105.0        | 121.8        |
| Sacramento-Roseville-Arden-Arcade, CA        | 917           | 1,104          | 1,271          | 1,362          | 1,771          | 85.9                         | 102.6        | 117.1        | 124.0        | 161.2        |
| Salt Lake City, UT                           | 156           | 254            | 427            | 650            | 753            | 28.0                         | 44.9         | 74.5         | 112.3        | 130.0        |
| San Antonio-New Braunfels, TX                | 1,896         | 1,807          | 1,728          | 1,710          | 2,375          | 175.8                        | 164.3        | 153.9        | 149.0        | 206.9        |
| San Diego-Carlsbad, CA                       | 1,552         | 1,766          | 1,995          | 2,354          | 2,668          | 98.4                         | 110.6        | 123.6        | 143.5        | 162.7        |
| San Francisco-Oakland-Hayward, CA            | 3,454         | 3,746          | 4,167          | 5,261          | 7,201          | 159.4                        | 170.4        | 186.9        | 232.2        | 317.8        |
| San Jose-Sunnyvale-Santa Clara, CA           | 430           | 626            | 699            | 995            | 1,212          | 45.9                         | 65.8         | 72.4         | 101.3        | 123.4        |
| Seattle-Tacoma-Bellevue, WA                  | 1,322         | 1,591          | 2,002          | 2,519          | 3,104          | 75.7                         | 89.9         | 111.1        | 137.3        | 169.2        |
| St. Louis, MO-IL                             | 2,315         | 2,340          | 2,178          | 2,256          | 2,802          | 171.2                        | 172.8        | 160.5        | 166.0        | 206.1        |
| Tampa-St. Petersburg-Clearwater, FL          | 1,761         | 1,721          | 1,871          | 1,823          | 2,240          | 128.6                        | 124.9        | 134.6        | 129.2        | 158.8        |
| Virginia Beach-Norfolk-Newport News, VA-NC   | 1,248         | 1,226          | 1,239          | 1,489          | 1,595          | 151.0                        | 146.7        | 147.5        | 176.2        | 188.7        |
| Washington-Arlington-Alexandria, DC-VA-MD-WV | 2,791         | 3,001          | 3,330          | 1,811          | 1,943          | 99.4                         | 105.0        | 114.6        | 61.4         | 65.9         |
| <b>SELECTED MSAs TOTAL</b>                   | <b>97,863</b> | <b>106,339</b> | <b>109,653</b> | <b>121,989</b> | <b>143,737</b> | <b>118.0</b>                 | <b>126.8</b> | <b>129.5</b> | <b>142.5</b> | <b>167.9</b> |

\* MSAs were selected on the basis of the largest population in the 2010 U.S. Census.

**NOTE:** Cases reported with unknown sex are not included in this table.

**Table 20. Gonorrhea — Reported Cases and Rates of Reported Cases in Counties and Independent Cities\* Ranked by Number of Reported Cases, United States, 2015**

| Rank* | County/Independent City     | Cases  | Rate per 100,000 Population | Cumulative Percentage |
|-------|-----------------------------|--------|-----------------------------|-----------------------|
| 1     | Los Angeles County, CA      | 17,563 | 173.6                       | 4                     |
| 2     | Cook County, IL             | 11,082 | 211.2                       | 7                     |
| 3     | Harris County, TX           | 7,707  | 173.5                       | 9                     |
| 4     | Philadelphia County, PA     | 6,260  | 401.2                       | 10                    |
| 5     | Maricopa County, AZ         | 6,192  | 151.5                       | 12                    |
| 6     | New York County, NY         | 5,486  | 335.3                       | 13                    |
| 7     | Dallas County, TX           | 5,410  | 214.8                       | 15                    |
| 8     | Kings County, NY            | 4,972  | 189.6                       | 16                    |
| 9     | San Francisco County, CA    | 4,470  | 524.4                       | 17                    |
| 10    | Wayne County, MI            | 4,217  | 239.0                       | 18                    |
| 11    | Bexar County, TX            | 3,933  | 211.9                       | 19                    |
| 12    | San Diego County, CA        | 3,691  | 113.1                       | 20                    |
| 13    | Milwaukee County, WI        | 3,602  | 376.6                       | 21                    |
| 14    | Bronx County, NY            | 3,589  | 249.6                       | 22                    |
| 15    | Franklin County, OH         | 3,217  | 261.2                       | 23                    |
| 16    | Marion County, IN           | 3,215  | 344.1                       | 23                    |
| 17    | Tarrant County, TX          | 3,092  | 158.9                       | 24                    |
| 18    | Broward County, FL          | 3,036  | 162.4                       | 25                    |
| 19    | Cuyahoga County, OH         | 3,028  | 240.4                       | 26                    |
| 20    | Clark County, NV            | 2,975  | 143.7                       | 27                    |
| 21    | Mecklenburg County, NC      | 2,950  | 291.3                       | 27                    |
| 22    | King County, WA             | 2,915  | 140.1                       | 28                    |
| 23    | Sacramento County, CA       | 2,869  | 193.6                       | 29                    |
| 24    | Alameda County, CA          | 2,842  | 176.4                       | 29                    |
| 25    | San Bernardino County, CA   | 2,743  | 129.8                       | 30                    |
| 26    | Hamilton County, OH         | 2,712  | 336.2                       | 31                    |
| 27    | Miami-Dade County, FL       | 2,593  | 97.4                        | 31                    |
| 28    | Shelby County, TN           | 2,560  | 272.7                       | 32                    |
| 29    | Baltimore (City), MD        | 2,503  | 401.9                       | 33                    |
| 30    | Queens County, NY           | 2,487  | 107.1                       | 33                    |
| 31    | Travis County, TX           | 2,459  | 213.6                       | 34                    |
| 32    | Duval County, FL            | 2,326  | 259.1                       | 35                    |
| 33    | Orange County, CA           | 2,304  | 73.2                        | 35                    |
| 34    | Fulton County, GA           | 2,244  | 225.2                       | 36                    |
| 35    | Orange County, FL           | 2,196  | 175.3                       | 36                    |
| 36    | Riverside County, CA        | 2,161  | 92.8                        | 37                    |
| 37    | Hillsborough County, FL     | 2,056  | 156.2                       | 37                    |
| 38    | St. Louis County, MO        | 2,030  | 202.6                       | 38                    |
| 39    | Hennepin County, MN         | 2,008  | 165.7                       | 38                    |
| 40    | St. Louis (City), MO        | 1,964  | 618.7                       | 39                    |
| 41    | Allegheny County, PA        | 1,946  | 158.1                       | 39                    |
| 42    | Jefferson County, KY        | 1,886  | 248.1                       | 40                    |
| 43    | Jackson County, MO          | 1,882  | 275.5                       | 40                    |
| 44    | Oklahoma County, OK         | 1,846  | 240.9                       | 41                    |
| 45    | Guilford County, NC         | 1,839  | 359.1                       | 41                    |
| 46    | Essex County, NJ            | 1,820  | 228.7                       | 42                    |
| 47    | Monroe County, NY           | 1,782  | 237.6                       | 42                    |
| 48    | Santa Clara County, CA      | 1,781  | 94.0                        | 43                    |
| 49    | Jefferson County, AL        | 1,767  | 267.4                       | 43                    |
| 50    | Fresno County, CA           | 1,763  | 182.5                       | 44                    |
| 51    | Erie County, NY             | 1,720  | 186.4                       | 44                    |
| 52    | Wake County, NC             | 1,690  | 169.2                       | 44                    |
| 53    | Orleans Parish, LA          | 1,668  | 434.0                       | 45                    |
| 54    | Tulsa County, OK            | 1,595  | 253.3                       | 45                    |
| 55    | Multnomah County, OR        | 1,557  | 200.5                       | 46                    |
| 56    | Kern County, CA             | 1,548  | 177.0                       | 46                    |
| 57    | Collin County, TX           | 1,548  | 174.9                       | 46                    |
| 58    | Denver County, CO           | 1,526  | 229.9                       | 47                    |
| 59    | Davidson County, TN         | 1,512  | 226.2                       | 47                    |
| 60    | Pinellas County, FL         | 1,436  | 153.1                       | 48                    |
| 61    | Pierce County, WA           | 1,354  | 162.8                       | 48                    |
| 62    | Contra Costa County, CA     | 1,318  | 118.6                       | 48                    |
| 63    | Prince George's County, MD  | 1,282  | 141.7                       | 49                    |
| 64    | Palm Beach County, FL       | 1,276  | 91.3                        | 49                    |
| 65    | East Baton Rouge Parish, LA | 1,256  | 281.6                       | 49                    |
| 66    | San Joaquin County, CA      | 1,245  | 174.0                       | 49                    |
| 67    | Cumberland County, NC       | 1,242  | 380.6                       | 50                    |
| 68    | Pulaski County, AR          | 1,234  | 314.2                       | 50                    |
| 69    | Forsyth County, NC          | 1,215  | 332.6                       | 50                    |
| 70    | DeKalb County, GA           | 1,210  | 167.6                       | 51                    |

\*The top 70 counties and independent cities ranked in descending order by number of cases reported in 2015 then by rate are displayed.

**Table 21. Gonorrhea — Reported Cases and Rates of Reported Cases by Age Group and Sex, United States, 2011–2015**

| Age Group    | Cases          |                |                |              | Rates per 100,000 Population* |              |              |
|--------------|----------------|----------------|----------------|--------------|-------------------------------|--------------|--------------|
|              | Total          | Male           | Female         | Unknown Sex  | Total                         | Male         | Female       |
| 0–4          | 182            | 43             | 136            | 3            | 0.9                           | 0.4          | 1.4          |
| 5–9          | 82             | 15             | 66             | 1            | 0.4                           | 0.1          | 0.7          |
| 10–14        | 3,223          | 548            | 2,648          | 27           | 15.6                          | 5.2          | 26.2         |
| 15–19        | 88,139         | 28,102         | 59,747         | 290          | 407.2                         | 252.7        | 567.7        |
| 20–24        | 111,730        | 49,633         | 61,756         | 341          | 504.3                         | 438.7        | 569.6        |
| 25–29        | 53,245         | 28,288         | 24,821         | 136          | 250.2                         | 262.9        | 236.0        |
| 30–34        | 27,157         | 16,044         | 11,044         | 69           | 132.4                         | 156.0        | 108.0        |
| 35–39        | 14,109         | 8,972          | 5,096          | 41           | 72.0                          | 91.9         | 51.8         |
| 40–44        | 9,686          | 6,955          | 2,708          | 23           | 46.1                          | 66.5         | 25.6         |
| 45–54        | 10,473         | 8,222          | 2,222          | 29           | 23.4                          | 37.3         | 9.8          |
| 55–64        | 2,747          | 2,270          | 471            | 6            | 7.2                           | 12.4         | 2.4          |
| 65+          | 587            | 485            | 99             | 3            | 1.4                           | 2.7          | 0.4          |
| Unknown Age  | 489            | 258            | 191            | 40           |                               |              |              |
| <b>TOTAL</b> | <b>321,849</b> | <b>149,835</b> | <b>171,005</b> | <b>1,009</b> | <b>103.3</b>                  | <b>97.7</b>  | <b>108.0</b> |
| 0–4          | 198            | 72             | 122            | 4            | 1.0                           | 0.7          | 1.2          |
| 5–9          | 68             | 16             | 52             | 0            | 0.3                           | 0.2          | 0.5          |
| 10–14        | 3,136          | 573            | 2,559          | 4            | 15.2                          | 5.4          | 25.3         |
| 15–19        | 81,548         | 26,578         | 54,852         | 118          | 381.8                         | 242.4        | 527.5        |
| 20–24        | 115,224        | 52,351         | 62,711         | 162          | 510.2                         | 453.3        | 568.4        |
| 25–29        | 58,441         | 31,631         | 26,722         | 88           | 273.1                         | 291.7        | 253.2        |
| 30–34        | 31,420         | 18,936         | 12,436         | 48           | 150.3                         | 180.4        | 119.4        |
| 35–39        | 16,193         | 10,493         | 5,670          | 30           | 83.1                          | 108.0        | 58.0         |
| 40–44        | 10,965         | 7,858          | 3,089          | 18           | 52.1                          | 75.1         | 29.2         |
| 45–54        | 12,383         | 9,773          | 2,594          | 16           | 28.0                          | 44.8         | 11.5         |
| 55–64        | 3,230          | 2,642          | 586            | 2            | 8.4                           | 14.2         | 2.9          |
| 65+          | 644            | 537            | 105            | 2            | 1.5                           | 2.9          | 0.4          |
| Unknown Age  | 1,376          | 775            | 568            | 33           |                               |              |              |
| <b>TOTAL</b> | <b>334,826</b> | <b>162,235</b> | <b>172,066</b> | <b>525</b>   | <b>106.7</b>                  | <b>105.0</b> | <b>107.9</b> |
| 0–4          | 172            | 60             | 111            | 1            | 0.9                           | 0.6          | 1.1          |
| 5–9          | 75             | 11             | 64             | 0            | 0.4                           | 0.1          | 0.6          |
| 10–14        | 2,637          | 508            | 2,122          | 7            | 12.8                          | 4.8          | 21.0         |
| 15–19        | 72,092         | 24,212         | 47,749         | 131          | 340.7                         | 223.2        | 463.0        |
| 20–24        | 113,035        | 53,055         | 59,760         | 220          | 495.9                         | 454.3        | 537.6        |
| 25–29        | 62,102         | 34,718         | 27,266         | 118          | 287.8                         | 316.8        | 256.7        |
| 30–34        | 34,065         | 20,855         | 13,143         | 67           | 160.2                         | 195.2        | 124.2        |
| 35–39        | 18,034         | 11,850         | 6,145          | 39           | 92.0                          | 121.1        | 62.6         |
| 40–44        | 11,817         | 8,590          | 3,192          | 35           | 56.7                          | 82.9         | 30.4         |
| 45–54        | 13,823         | 11,087         | 2,714          | 22           | 31.6                          | 51.4         | 12.2         |
| 55–64        | 3,802          | 3,176          | 621            | 5            | 9.7                           | 16.8         | 3.1          |
| 65+          | 825            | 696            | 128            | 1            | 1.8                           | 3.6          | 0.5          |
| Unknown Age  | 525            | 312            | 193            | 20           |                               |              |              |
| <b>TOTAL</b> | <b>333,004</b> | <b>169,130</b> | <b>163,208</b> | <b>666</b>   | <b>105.3</b>                  | <b>108.7</b> | <b>101.7</b> |
| 0–4          | 154            | 47             | 105            | 2            | 0.8                           | 0.5          | 1.1          |
| 5–9          | 53             | 7              | 46             | 0            | 0.3                           | 0.1          | 0.5          |
| 10–14        | 2,450          | 440            | 2,005          | 5            | 11.9                          | 4.2          | 19.8         |
| 15–19        | 68,468         | 23,981         | 44,399         | 88           | 325.0                         | 222.4        | 431.7        |
| 20–24        | 116,200        | 56,714         | 59,329         | 157          | 507.2                         | 483.1        | 531.0        |
| 25–29        | 69,587         | 40,602         | 28,899         | 86           | 316.5                         | 363.8        | 266.9        |
| 30–34        | 38,393         | 24,349         | 13,988         | 56           | 178.3                         | 225.3        | 130.5        |
| 35–39        | 20,803         | 14,129         | 6,654          | 20           | 104.4                         | 142.1        | 66.7         |
| 40–44        | 12,687         | 9,349          | 3,320          | 18           | 61.6                          | 91.5         | 32.0         |
| 45–54        | 15,322         | 12,388         | 2,917          | 17           | 35.3                          | 57.8         | 13.2         |
| 55–64        | 4,549          | 3,859          | 680            | 10           | 11.4                          | 20.0         | 3.3          |
| 65+          | 911            | 790            | 121            | 0            | 2.0                           | 3.9          | 0.5          |
| Unknown Age  | 485            | 288            | 145            | 52           |                               |              |              |
| <b>TOTAL</b> | <b>350,062</b> | <b>186,943</b> | <b>162,608</b> | <b>511</b>   | <b>109.8</b>                  | <b>119.1</b> | <b>100.4</b> |
| 0–4          | 148            | 47             | 98             | 3            | 0.7                           | 0.5          | 1.0          |
| 5–9          | 78             | 11             | 66             | 1            | 0.4                           | 0.1          | 0.7          |
| 10–14        | 2,312          | 385            | 1,923          | 4            | 11.2                          | 3.6          | 19.0         |
| 15–19        | 72,001         | 26,401         | 45,477         | 123          | 341.8                         | 244.8        | 442.2        |
| 20–24        | 124,592        | 63,289         | 61,105         | 198          | 543.8                         | 539.1        | 546.9        |
| 25–29        | 82,867         | 50,089         | 32,662         | 116          | 376.9                         | 448.8        | 301.7        |
| 30–34        | 45,681         | 29,751         | 15,867         | 63           | 212.2                         | 275.2        | 148.0        |
| 35–39        | 26,137         | 18,198         | 7,897          | 42           | 131.2                         | 183.1        | 79.1         |
| 40–44        | 15,042         | 11,116         | 3,898          | 28           | 73.0                          | 108.8        | 37.6         |
| 45–54        | 18,779         | 15,379         | 3,375          | 25           | 43.2                          | 71.8         | 15.3         |
| 55–64        | 6,035          | 5,175          | 849            | 11           | 15.1                          | 26.8         | 4.1          |
| 65+          | 1,191          | 1,032          | 158            | 1            | 2.6                           | 5.1          | 0.6          |
| Unknown Age  | 353            | 197            | 139            | 17           |                               |              |              |
| <b>TOTAL</b> | <b>395,216</b> | <b>221,070</b> | <b>173,514</b> | <b>632</b>   | <b>123.9</b>                  | <b>140.9</b> | <b>107.2</b> |

\* No population data are available for unknown sex and age; therefore, rates are not calculated.

**NOTE:** This table should be used only for age comparisons. Cases in the 0–4 age group may include cases due to perinatal transmission.

**Table 22A. Gonorrhea — Reported Cases by Race/Ethnicity, Age Group, and Sex, United States\*, 2015**

| Age Group    | American Indians/<br>Alaska Natives |              |              | Asians       |              |              | Blacks         |               |               | Native Hawaiians/<br>Other Pacific Islanders |            |            |
|--------------|-------------------------------------|--------------|--------------|--------------|--------------|--------------|----------------|---------------|---------------|----------------------------------------------|------------|------------|
|              | Total†                              | Male         | Female       | Total†       | Male         | Female       | Total†         | Male          | Female        | Total†                                       | Male       | Female     |
| 0–4          | 3                                   | 1            | 2            | 2            | 1            | 1            | 42             | 8             | 34            | 0                                            | 0          | 0          |
| 5–9          | 3                                   | 0            | 3            | 0            | 0            | 0            | 23             | 3             | 20            | 0                                            | 0          | 0          |
| 10–14        | 33                                  | 3            | 30           | 7            | 1            | 6            | 1,226          | 230           | 996           | 6                                            | 1          | 5          |
| 15–19        | 718                                 | 209          | 508          | 373          | 172          | 201          | 36,338         | 13,593        | 22,716        | 114                                          | 38         | 76         |
| 20–24        | 1,326                               | 481          | 845          | 1,014        | 667          | 346          | 58,840         | 29,089        | 29,704        | 202                                          | 103        | 99         |
| 25–29        | 1,109                               | 467          | 642          | 903          | 699          | 203          | 33,802         | 20,555        | 13,226        | 152                                          | 106        | 46         |
| 30–34        | 648                                 | 261          | 387          | 624          | 478          | 146          | 15,932         | 10,739        | 5,183         | 97                                           | 61         | 36         |
| 35–39        | 309                                 | 132          | 177          | 365          | 282          | 81           | 8,456          | 6,158         | 2,292         | 49                                           | 34         | 15         |
| 40–44        | 172                                 | 70           | 102          | 247          | 200          | 47           | 4,488          | 3,501         | 982           | 23                                           | 16         | 6          |
| 45–54        | 150                                 | 84           | 66           | 232          | 195          | 37           | 5,311          | 4,538         | 772           | 17                                           | 14         | 3          |
| 55–64        | 43                                  | 31           | 12           | 56           | 37           | 19           | 1,825          | 1,648         | 176           | 6                                            | 5          | 1          |
| 65+          | 12                                  | 10           | 2            | 17           | 14           | 3            | 278            | 256           | 22            | 3                                            | 2          | 1          |
| Unknown Age  | 2                                   | 1            | 1            | 4            | 2            | 2            | 69             | 38            | 30            | 2                                            | 2          | 0          |
| <b>TOTAL</b> | <b>4,528</b>                        | <b>1,750</b> | <b>2,777</b> | <b>3,844</b> | <b>2,748</b> | <b>1,092</b> | <b>166,630</b> | <b>90,356</b> | <b>76,153</b> | <b>671</b>                                   | <b>382</b> | <b>288</b> |

| Age Group    | Whites        |               |               | Multirace    |              |              | Hispanics     |               |               | Other/<br>Unknown |               |               |
|--------------|---------------|---------------|---------------|--------------|--------------|--------------|---------------|---------------|---------------|-------------------|---------------|---------------|
|              | Total†        | Male          | Female        | Total†       | Male         | Female       | Total†        | Male          | Female        | Total†            | Male          | Female        |
| 0–4          | 30            | 11            | 19            | 2            | 1            | 1            | 15            | 5             | 10            | 51                | 19            | 29            |
| 5–9          | 18            | 4             | 14            | 0            | 0            | 0            | 7             | 2             | 5             | 27                | 2             | 24            |
| 10–14        | 270           | 22            | 247           | 17           | 1            | 16           | 190           | 34            | 155           | 529               | 90            | 437           |
| 15–19        | 10,886        | 3,234         | 7,648         | 585          | 131          | 454          | 6,986         | 2,643         | 4,331         | 15,551            | 6,224         | 9,262         |
| 20–24        | 23,443        | 11,381        | 12,051        | 976          | 483          | 491          | 13,622        | 7,587         | 6,009         | 24,441            | 13,078        | 11,265        |
| 25–29        | 19,426        | 10,978        | 8,436         | 695          | 463          | 229          | 10,107        | 6,633         | 3,465         | 16,030            | 9,705         | 6,264         |
| 30–34        | 12,498        | 7,648         | 4,846         | 372          | 287          | 83           | 5,905         | 4,078         | 1,814         | 9,254             | 5,917         | 3,308         |
| 35–39        | 7,308         | 4,906         | 2,396         | 225          | 195          | 30           | 3,424         | 2,483         | 937           | 5,803             | 3,832         | 1,952         |
| 40–44        | 4,497         | 3,260         | 1,235         | 123          | 109          | 14           | 1,850         | 1,388         | 459           | 3,531             | 2,469         | 1,047         |
| 45–54        | 6,360         | 5,276         | 1,082         | 167          | 160          | 7            | 1,908         | 1,558         | 347           | 4,485             | 3,426         | 1,043         |
| 55–64        | 2,102         | 1,828         | 273           | 23           | 23           | 0            | 406           | 319           | 87            | 1,523             | 1,239         | 277           |
| 65+          | 445           | 390           | 55            | 5            | 5            | 0            | 52            | 38            | 14            | 370               | 308           | 61            |
| Unknown Age  | 57            | 28            | 29            | 0            | 0            | 0            | 41            | 26            | 15            | 163               | 90            | 57            |
| <b>TOTAL</b> | <b>87,340</b> | <b>48,966</b> | <b>38,331</b> | <b>3,190</b> | <b>1,858</b> | <b>1,325</b> | <b>44,513</b> | <b>26,794</b> | <b>17,648</b> | <b>81,758</b>     | <b>46,399</b> | <b>35,026</b> |

\* Includes 50 states reporting race/ethnicity data in the Office of Management and Budget compliant formats in 2015.

† Total includes cases reported with unknown sex.

**NOTE:** These tables should be used only for race/ethnicity comparisons. See Table 21 for age-specific cases and rates and Tables 14–16 for total and sex-specific cases and rates. Cases in the 0–4 age group may include cases due to perinatal transmission.

**Table 22B. Gonorrhea — Rates of Reported Cases per 100,000 Population by Race/Ethnicity, Age Group, and Sex, United States\*, 2015**

| Age Group    | American Indians/<br>Alaska Natives |              |              | Asians      |             |             | Blacks       |              |              | Native Hawaiians/<br>Other Pacific Islanders |              |              |
|--------------|-------------------------------------|--------------|--------------|-------------|-------------|-------------|--------------|--------------|--------------|----------------------------------------------|--------------|--------------|
|              | Total†                              | Male         | Female       | Total†      | Male        | Female      | Total†       | Male         | Female       | Total†                                       | Male         | Female       |
| 0–4          | 1.8                                 | 1.2          | 2.4          | 0.2         | 0.2         | 0.2         | 1.5          | 0.6          | 2.5          | 0.0                                          | 0.0          | 0.0          |
| 5–9          | 1.7                                 | 0.0          | 3.4          | 0.0         | 0.0         | 0.0         | 0.8          | 0.2          | 1.4          | 0.0                                          | 0.0          | 0.0          |
| 10–14        | 18.6                                | 3.3          | 34.4         | 0.7         | 0.2         | 1.2         | 43.3         | 16.0         | 71.4         | 15.2                                         | 4.9          | 25.9         |
| 15–19        | 393.8                               | 225.0        | 567.9        | 37.6        | 34.3        | 41.0        | 1,218.5      | 897.8        | 1,547.3      | 284.7                                        | 183.6        | 393.0        |
| 20–24        | 656.5                               | 464.8        | 857.8        | 82.7        | 107.2       | 57.3        | 1,721.9      | 1,681.5      | 1,760.5      | 420.7                                        | 417.7        | 424.0        |
| 25–29        | 627.8                               | 521.7        | 736.8        | 64.3        | 102.2       | 28.1        | 1,145.8      | 1,415.0      | 883.3        | 302.3                                        | 408.2        | 189.2        |
| 30–34        | 402.2                               | 325.8        | 477.8        | 43.3        | 70.5        | 19.1        | 582.8        | 819.6        | 364.1        | 204.3                                        | 249.3        | 156.4        |
| 35–39        | 213.6                               | 183.6        | 243.3        | 26.7        | 44.3        | 11.1        | 336.3        | 517.7        | 173.0        | 121.4                                        | 163.9        | 76.4         |
| 40–44        | 118.1                               | 97.7         | 137.8        | 17.9        | 31.1        | 6.4         | 174.3        | 289.1        | 72.0         | 62.7                                         | 86.6         | 33.0         |
| 45–54        | 47.8                                | 55.3         | 40.8         | 10.1        | 18.2        | 3.0         | 100.5        | 182.9        | 27.6         | 25.0                                         | 41.3         | 8.8          |
| 55–64        | 16.0                                | 24.5         | 8.5          | 3.0         | 4.4         | 1.9         | 41.1         | 81.3         | 7.3          | 11.7                                         | 19.8         | 3.8          |
| 65+          | 5.2                                 | 9.6          | 1.6          | 0.9         | 1.7         | 0.3         | 7.0          | 16.1         | 0.9          | 7.1                                          | 10.1         | 4.4          |
| Unknown Age  |                                     |              |              |             |             |             |              |              |              |                                              |              |              |
| <b>TOTAL</b> | <b>192.8</b>                        | <b>151.2</b> | <b>233.2</b> | <b>22.9</b> | <b>34.5</b> | <b>12.4</b> | <b>424.9</b> | <b>482.2</b> | <b>371.9</b> | <b>123.0</b>                                 | <b>138.7</b> | <b>106.7</b> |

| Age Group    | Whites      |             |             | Multirace   |             |             | Hispanics   |             |             |
|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|              | Total†      | Male        | Female      | Total†      | Male        | Female      | Total†      | Male        | Female      |
| 0–4          | 0.3         | 0.2         | 0.4         | 0.2         | 0.2         | 0.2         | 0.3         | 0.2         | 0.4         |
| 5–9          | 0.2         | 0.1         | 0.3         | 0.0         | 0.0         | 0.0         | 0.1         | 0.1         | 0.2         |
| 10–14        | 2.5         | 0.4         | 4.6         | 2.3         | 0.3         | 4.3         | 3.9         | 1.4         | 6.5         |
| 15–19        | 94.4        | 54.6        | 136.4       | 88.2        | 39.0        | 138.7       | 150.6       | 111.2       | 191.5       |
| 20–24        | 185.8       | 176.1       | 195.8       | 170.4       | 170.0       | 170.1       | 285.5       | 305.1       | 263.0       |
| 25–29        | 156.0       | 173.6       | 137.6       | 160.6       | 224.5       | 101.1       | 227.7       | 282.8       | 165.5       |
| 30–34        | 101.8       | 123.5       | 79.7        | 100.0       | 163.7       | 42.2        | 133.4       | 176.4       | 85.9        |
| 35–39        | 64.3        | 85.6        | 42.5        | 73.0        | 134.7       | 18.4        | 83.0        | 117.0       | 46.7        |
| 40–44        | 36.6        | 52.8        | 20.2        | 44.5        | 83.7        | 9.6         | 48.0        | 71.0        | 24.2        |
| 45–54        | 22.2        | 37.1        | 7.5         | 34.7        | 70.1        | 2.8         | 30.2        | 48.8        | 11.1        |
| 55–64        | 7.3         | 12.9        | 1.8         | 6.2         | 12.9        | 0.0         | 10.0        | 16.3        | 4.2         |
| 65+          | 1.2         | 2.4         | 0.3         | 1.5         | 3.5         | 0.0         | 1.5         | 2.5         | 0.7         |
| Unknown Age  |             |             |             |             |             |             |             |             |             |
| <b>TOTAL</b> | <b>44.2</b> | <b>50.3</b> | <b>38.2</b> | <b>50.0</b> | <b>59.3</b> | <b>40.9</b> | <b>80.5</b> | <b>95.8</b> | <b>64.6</b> |

\* Includes 50 states reporting race/ethnicity data in the Office of Management and Budget compliant formats in 2015.

† Total includes cases reported with unknown sex.

**NOTE:** These tables should be used only for race/ethnicity comparisons. See Table 21 for age-specific cases and rates and Tables 14–16 for total and sex-specific cases and rates. Cases in the 0–4 age group may include cases due to perinatal transmission. No population data exist for unknown sex, unknown age, or unknown race; therefore rates are not calculated.

**Table 23. Gonorrhea Among Women Aged 15–24 Years — Reported Cases and Rates of Reported Cases by Age, United States, 2011–2015**

|      | Age | Cases  | Rate per 100,000 Population |
|------|-----|--------|-----------------------------|
| 2011 | 15  | 4,466  | 220.3                       |
|      | 16  | 8,128  | 393.4                       |
|      | 17  | 12,308 | 584.7                       |
|      | 18  | 16,973 | 796.3                       |
|      | 19  | 17,872 | 814.3                       |
|      | 20  | 16,865 | 750.6                       |
|      | 21  | 14,559 | 647.9                       |
|      | 22  | 12,202 | 565.4                       |
|      | 23  | 9,861  | 467.2                       |
| 2012 | 24  | 8,269  | 397.9                       |
|      | 15  | 4,241  | 209.4                       |
|      | 16  | 7,316  | 359.4                       |
|      | 17  | 11,006 | 530.2                       |
|      | 18  | 15,580 | 736.2                       |
|      | 19  | 16,709 | 779.1                       |
|      | 20  | 15,849 | 717.5                       |
|      | 21  | 15,029 | 664.7                       |
|      | 22  | 12,800 | 565.9                       |
| 2013 | 23  | 10,449 | 480.6                       |
|      | 24  | 8,584  | 403.4                       |
|      | 15  | 3,776  | 186.4                       |
|      | 16  | 6,503  | 320.0                       |
|      | 17  | 9,374  | 458.8                       |
|      | 18  | 13,393 | 642.4                       |
|      | 19  | 14,703 | 691.2                       |
|      | 20  | 14,420 | 668.8                       |
|      | 21  | 13,394 | 603.1                       |
| 2014 | 22  | 12,272 | 539.6                       |
|      | 23  | 10,819 | 475.3                       |
|      | 24  | 8,855  | 404.5                       |
|      | 15  | 3,487  | 171.3                       |
|      | 16  | 6,188  | 303.9                       |
|      | 17  | 8,830  | 431.6                       |
|      | 18  | 12,196 | 591.9                       |
|      | 19  | 13,698 | 650.5                       |
|      | 20  | 13,801 | 642.1                       |
| 2015 | 21  | 13,324 | 611.5                       |
|      | 22  | 12,031 | 536.0                       |
|      | 23  | 10,746 | 467.5                       |
|      | 24  | 9,427  | 409.6                       |
|      | 15  | 3,477  | 170.8                       |
|      | 16  | 6,090  | 299.1                       |
|      | 17  | 9,117  | 445.6                       |
|      | 18  | 12,769 | 619.7                       |
|      | 19  | 14,024 | 666.0                       |
|      | 20  | 13,835 | 643.7                       |
|      | 21  | 13,331 | 611.8                       |
|      | 22  | 12,597 | 561.2                       |
|      | 23  | 11,271 | 490.3                       |
|      | 24  | 10,071 | 437.6                       |

**NOTE:** This table should be used only for age comparisons. Cases reported with unknown sex are not included in this table.

**Table 24. All Stages of Syphilis\* — Reported Cases and Rates of Reported Cases by State/Area and Region in Alphabetical Order, United States and Outlying Areas, 2011–2015**

| State/Area            | Cases         |               |               |               |               | Rates per 100,000 Population |             |             |             |             |
|-----------------------|---------------|---------------|---------------|---------------|---------------|------------------------------|-------------|-------------|-------------|-------------|
|                       | 2011          | 2012          | 2013          | 2014          | 2015          | 2011                         | 2012        | 2013        | 2014        | 2015        |
| Alabama               | 758           | 705           | 679           | 475           | 657           | 15.8                         | 14.6        | 14.0        | 9.8         | 13.5        |
| Alaska                | 11            | 34            | 35            | 45            | 24            | 1.5                          | 4.6         | 4.8         | 6.1         | 3.3         |
| Arizona               | 907           | 787           | 962           | 1,459         | 1,496         | 14.0                         | 12.0        | 14.5        | 21.7        | 22.2        |
| Arkansas              | 464           | 468           | 527           | 390           | 500           | 15.8                         | 15.9        | 17.8        | 13.1        | 16.9        |
| California            | 6,782         | 8,016         | 9,973         | 11,443        | 14,450        | 18.0                         | 21.1        | 26.0        | 29.5        | 37.2        |
| Colorado              | 367           | 503           | 475           | 355           | 553           | 7.2                          | 9.7         | 9.0         | 6.6         | 10.3        |
| Connecticut           | 189           | 121           | 133           | 169           | 220           | 5.3                          | 3.4         | 3.7         | 4.7         | 6.1         |
| Delaware              | 124           | 106           | 146           | 110           | 110           | 13.7                         | 11.6        | 15.8        | 11.8        | 11.8        |
| District of Columbia  | 552           | 589           | 609           | 281           | 322           | 89.3                         | 93.1        | 94.2        | 42.6        | 48.9        |
| Florida               | 4,143         | 4,483         | 5,022         | 6,103         | 7,132         | 21.7                         | 23.2        | 25.7        | 30.7        | 35.9        |
| Georgia               | 1,895         | 2,434         | 2,990         | 3,384         | 4,156         | 19.3                         | 24.5        | 29.9        | 33.5        | 41.2        |
| Hawaii                | 32            | 43            | 87            | 106           | 163           | 2.3                          | 3.1         | 6.2         | 7.5         | 11.5        |
| Idaho                 | 42            | 54            | 42            | 46            | 102           | 2.6                          | 3.4         | 2.6         | 2.8         | 6.2         |
| Illinois              | 2,426         | 2,424         | 2,661         | 2,796         | 3,289         | 18.9                         | 18.8        | 20.7        | 21.7        | 25.5        |
| Indiana               | 468           | 531           | 543           | 475           | 699           | 7.2                          | 8.1         | 8.3         | 7.2         | 10.6        |
| Iowa                  | 70            | 143           | 226           | 239           | 232           | 2.3                          | 4.7         | 7.3         | 7.7         | 7.5         |
| Kansas                | 76            | 129           | 196           | 200           | 240           | 2.6                          | 4.5         | 6.8         | 6.9         | 8.3         |
| Kentucky              | 335           | 390           | 395           | 447           | 433           | 7.7                          | 8.9         | 9.0         | 10.1        | 9.8         |
| Louisiana             | 2,043         | 1,780         | 2,006         | 2,173         | 2,465         | 44.7                         | 38.7        | 43.4        | 46.7        | 53.0        |
| Maine                 | 24            | 22            | 21            | 23            | 38            | 1.8                          | 1.7         | 1.6         | 1.7         | 2.9         |
| Maryland              | 1,278         | 1,243         | 1,361         | 1,475         | 1,870         | 21.9                         | 21.1        | 23.0        | 24.7        | 31.3        |
| Massachusetts         | 770           | 806           | 990           | 813           | 1,263         | 11.7                         | 12.1        | 14.8        | 12.1        | 18.7        |
| Michigan              | 764           | 786           | 1,068         | 1,095         | 1,089         | 7.7                          | 8.0         | 10.8        | 11.0        | 11.0        |
| Minnesota             | 367           | 335           | 541           | 631           | 653           | 6.9                          | 6.2         | 10.0        | 11.6        | 12.0        |
| Mississippi           | 748           | 456           | 293           | 642           | 760           | 25.1                         | 15.3        | 9.8         | 21.4        | 25.4        |
| Missouri              | 414           | 426           | 609           | 771           | 777           | 6.9                          | 7.1         | 10.1        | 12.7        | 12.8        |
| Montana               | 9             | 3             | 8             | 9             | 20            | 0.9                          | 0.3         | 0.8         | 0.9         | 2.0         |
| Nebraska              | 36            | 35            | 95            | 96            | 81            | 2.0                          | 1.9         | 5.1         | 5.1         | 4.3         |
| Nevada                | 430           | 445           | 523           | 893           | 915           | 15.8                         | 16.1        | 18.7        | 31.5        | 32.2        |
| New Hampshire         | 33            | 65            | 79            | 79            | 84            | 2.5                          | 4.9         | 6.0         | 6.0         | 6.3         |
| New Jersey            | 971           | 883           | 968           | 1,172         | 1,306         | 11.0                         | 10.0        | 10.9        | 13.1        | 14.6        |
| New Mexico            | 212           | 234           | 247           | 283           | 332           | 10.2                         | 11.2        | 11.8        | 13.6        | 15.9        |
| New York              | 4,786         | 5,312         | 6,173         | 7,129         | 7,795         | 24.6                         | 27.1        | 31.4        | 36.1        | 39.5        |
| North Carolina        | 1,255         | 1,037         | 1,153         | 1,998         | 2,741         | 13.0                         | 10.6        | 11.7        | 20.1        | 27.6        |
| North Dakota          | 5             | 14            | 25            | 51            | 42            | 0.7                          | 2.0         | 3.5         | 6.9         | 5.7         |
| Ohio                  | 954           | 1,141         | 1,096         | 1,229         | 1,348         | 8.3                          | 9.9         | 9.5         | 10.6        | 11.6        |
| Oklahoma              | 270           | 256           | 383           | 414           | 521           | 7.1                          | 6.7         | 9.9         | 10.7        | 13.4        |
| Oregon                | 252           | 424           | 527           | 582           | 783           | 6.5                          | 10.9        | 13.4        | 14.7        | 19.7        |
| Pennsylvania          | 1,125         | 1,349         | 1,486         | 1,523         | 1,788         | 8.8                          | 10.6        | 11.6        | 11.9        | 14.0        |
| Rhode Island          | 84            | 93            | 94            | 160           | 163           | 8.0                          | 8.9         | 8.9         | 15.2        | 15.4        |
| South Carolina        | 639           | 624           | 753           | 750           | 834           | 13.7                         | 13.2        | 15.8        | 15.5        | 17.3        |
| South Dakota          | 14            | 29            | 61            | 95            | 71            | 1.7                          | 3.5         | 7.2         | 11.1        | 8.3         |
| Tennessee             | 1,025         | 1,068         | 980           | 977           | 1,241         | 16.0                         | 16.5        | 15.1        | 14.9        | 18.9        |
| Texas                 | 6,161         | 7,057         | 7,044         | 7,804         | 8,247         | 24.0                         | 27.1        | 26.6        | 28.9        | 30.6        |
| Utah                  | 64            | 101           | 172           | 149           | 169           | 2.3                          | 3.5         | 5.9         | 5.1         | 5.7         |
| Vermont               | 10            | 12            | 10            | 12            | 15            | 1.6                          | 1.9         | 1.6         | 1.9         | 2.4         |
| Virginia              | 726           | 906           | 1,001         | 702           | 1,023         | 9.0                          | 11.1        | 12.1        | 8.4         | 12.3        |
| Washington            | 712           | 709           | 711           | 854           | 1,109         | 10.4                         | 10.3        | 10.2        | 12.1        | 15.7        |
| West Virginia         | 9             | 24            | 39            | 55            | 109           | 0.5                          | 1.3         | 2.1         | 3.0         | 5.9         |
| Wisconsin             | 203           | 268           | 257           | 285           | 262           | 3.6                          | 4.7         | 4.5         | 5.0         | 4.6         |
| Wyoming               | 6             | 12            | 9             | 6             | 10            | 1.1                          | 2.1         | 1.5         | 1.0         | 1.7         |
| <b>U.S. TOTAL</b>     | <b>46,040</b> | <b>49,915</b> | <b>56,484</b> | <b>63,453</b> | <b>74,702</b> | <b>14.8</b>                  | <b>15.9</b> | <b>17.9</b> | <b>19.9</b> | <b>23.4</b> |
| Northeast             | 7,992         | 8,663         | 9,954         | 11,080        | 12,672        | 14.4                         | 15.5        | 17.8        | 19.7        | 22.6        |
| Midwest               | 5,797         | 6,261         | 7,378         | 7,963         | 8,783         | 8.6                          | 9.3         | 10.9        | 11.8        | 13.0        |
| South                 | 22,425        | 23,626        | 25,381        | 28,180        | 33,121        | 19.3                         | 20.1        | 21.4        | 23.5        | 27.7        |
| West                  | 9,826         | 11,365        | 13,771        | 16,230        | 20,126        | 13.5                         | 15.4        | 18.5        | 21.6        | 26.8        |
| Guam                  | 26            | 27            | 24            | 13            | 21            | 16.3                         | 16.9        | 15.0        | 8.1         | 13.0        |
| Puerto Rico           | 671           | 704           | 811           | 960           | 1,267         | 18.1                         | 19.2        | 22.4        | 27.1        | 35.7        |
| Virgin Islands        | 7             | 2             | 9             | 6             | 25            | 6.6                          | 1.9         | 8.6         | 5.8         | 24.0        |
| <b>OUTLYING AREAS</b> | <b>704</b>    | <b>733</b>    | <b>844</b>    | <b>979</b>    | <b>1,313</b>  | <b>17.7</b>                  | <b>18.6</b> | <b>21.8</b> | <b>25.7</b> | <b>34.4</b> |
| <b>TOTAL</b>          | <b>46,744</b> | <b>50,648</b> | <b>57,328</b> | <b>64,432</b> | <b>76,015</b> | <b>14.8</b>                  | <b>15.9</b> | <b>17.9</b> | <b>20.0</b> | <b>23.6</b> |

\* See Section A1.9 in the Appendix for definition.

**Table 25. All Stages of Syphilis\* — Reported Cases and Rates of Reported Cases in Selected Metropolitan Statistical Areas (MSAs)<sup>†</sup> in Alphabetical Order, United States, 2011–2015**

| MSAs                                         | Cases         |               |               |               |               | Rates per 100,000 Population |             |             |             |             |
|----------------------------------------------|---------------|---------------|---------------|---------------|---------------|------------------------------|-------------|-------------|-------------|-------------|
|                                              | 2011          | 2012          | 2013          | 2014          | 2015          | 2011                         | 2012        | 2013        | 2014        | 2015        |
| Atlanta-Sandy Springs-Roswell, GA            | 1,549         | 1,822         | 2,257         | 2,669         | 3,105         | 28.8                         | 33.4        | 40.9        | 47.5        | 55.3        |
| Austin-Round Rock, TX                        | 425           | 478           | 500           | 680           | 622           | 23.8                         | 26.1        | 26.6        | 35.0        | 32.0        |
| Baltimore-Columbia-Towson, MD                | 710           | 726           | 732           | 815           | 1,005         | 26.0                         | 26.4        | 26.4        | 29.3        | 36.1        |
| Birmingham-Hoover, AL                        | 276           | 226           | 236           | 157           | 197           | 24.4                         | 19.9        | 20.7        | 13.7        | 17.2        |
| Boston-Cambridge-Newton, MA-NH               | 607           | 570           | 758           | 596           | 811           | 13.2                         | 12.3        | 16.2        | 12.6        | 17.1        |
| Buffalo-Cheektowaga-Niagara Falls, NY        | 48            | 70            | 115           | 130           | 180           | 4.2                          | 6.2         | 10.1        | 11.4        | 15.8        |
| Charlotte-Concord-Gastonia, NC-SC            | 372           | 310           | 360           | 530           | 731           | 16.5                         | 13.5        | 15.4        | 22.3        | 30.7        |
| Chicago-Naperville-Elgin, IL-IN-WI           | 2,266         | 2,269         | 2,499         | 2,559         | 3,059         | 23.8                         | 23.8        | 26.2        | 26.8        | 32.0        |
| Cincinnati, OH-KY-IN                         | 436           | 529           | 437           | 381           | 319           | 20.5                         | 24.9        | 20.4        | 17.7        | 14.8        |
| Cleveland-Elyria, OH                         | 151           | 140           | 111           | 199           | 229           | 7.3                          | 6.8         | 5.4         | 9.6         | 11.1        |
| Columbus, OH                                 | 237           | 316           | 342           | 441           | 517           | 12.3                         | 16.3        | 17.4        | 22.1        | 25.9        |
| Dallas-Fort Worth-Arlington, TX              | 1,816         | 2,141         | 2,093         | 2,231         | 2,260         | 27.6                         | 32.0        | 30.7        | 32.1        | 32.5        |
| Denver-Aurora-Lakewood, CO                   | 319           | 434           | 382           | 298           | 426           | 12.3                         | 16.4        | 14.2        | 10.8        | 15.5        |
| Detroit-Warren-Dearborn, MI                  | 522           | 607           | 830           | 791           | 773           | 12.2                         | 14.1        | 19.3        | 18.4        | 18.0        |
| Hartford-West Hartford-East Hartford, CT     | 55            | 21            | 43            | 52            | 84            | 4.5                          | 1.7         | 3.5         | 4.3         | 6.9         |
| Houston-The Woodlands-Sugar Land, TX         | 1,870         | 2,246         | 1,891         | 2,316         | 2,568         | 30.9                         | 36.4        | 30.0        | 35.7        | 39.6        |
| Indianapolis-Carmel-Anderson, IN             | 270           | 336           | 340           | 285           | 408           | 14.1                         | 17.4        | 17.4        | 14.5        | 20.7        |
| Jacksonville, FL                             | 188           | 177           | 189           | 270           | 435           | 13.8                         | 12.8        | 13.6        | 19.0        | 30.7        |
| Kansas City, MO-KS                           | 141           | 164           | 320           | 406           | 365           | 7.0                          | 8.0         | 15.6        | 19.6        | 17.6        |
| Las Vegas-Henderson-Paradise, NV             | 402           | 403           | 438           | 830           | 826           | 20.4                         | 20.1        | 21.6        | 40.1        | 39.9        |
| Los Angeles-Long Beach-Anaheim, CA           | 3,247         | 3,540         | 4,537         | 4,738         | 5,812         | 25.1                         | 27.1        | 34.6        | 35.7        | 43.8        |
| Louisville-Jefferson County, KY-IN           | 186           | 201           | 210           | 239           | 270           | 14.9                         | 16.1        | 16.6        | 18.8        | 21.3        |
| Memphis, TN-MS-AR                            | 587           | 591           | 578           | 475           | 575           | 44.0                         | 44.0        | 43.1        | 35.4        | 42.8        |
| Miami-Fort Lauderdale-West Palm Beach, FL    | 2,315         | 2,591         | 2,740         | 3,313         | 3,635         | 40.8                         | 45.0        | 47.0        | 55.9        | 61.3        |
| Milwaukee-Waukesha-West Allis, WI            | 117           | 159           | 153           | 184           | 147           | 7.5                          | 10.1        | 9.7         | 11.7        | 9.3         |
| Minneapolis-St. Paul-Bloomington, MN-WI      | 326           | 313           | 487           | 585           | 592           | 9.6                          | 9.1         | 14.1        | 16.7        | 16.9        |
| Nashville-Davidson-Murfreesboro-Franklin, TN | 229           | 271           | 239           | 305           | 359           | 13.5                         | 15.7        | 13.6        | 17.0        | 20.0        |
| New Orleans-Metairie, LA                     | 668           | 547           | 634           | 723           | 757           | 55.1                         | 44.6        | 51.1        | 57.8        | 60.5        |
| New York-Newark-Jersey City, NY-NJ-PA        | 5,303         | 5,670         | 6,506         | 7,476         | 8,166         | 26.9                         | 28.6        | 32.6        | 37.2        | 40.6        |
| Oklahoma City, OK                            | 114           | 148           | 213           | 231           | 264           | 8.9                          | 11.4        | 16.1        | 17.3        | 19.7        |
| Orlando-Kissimmee-Sanford, FL                | 485           | 499           | 631           | 782           | 915           | 22.3                         | 22.4        | 27.8        | 33.7        | 39.4        |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD  | 1,029         | 1,119         | 1,333         | 1,273         | 1,393         | 17.2                         | 18.6        | 22.1        | 21.0        | 23.0        |
| Phoenix-Mesa-Scottsdale, AZ                  | 676           | 624           | 713           | 1,065         | 1,125         | 15.9                         | 14.4        | 16.2        | 23.7        | 25.1        |
| Pittsburgh, PA                               | 92            | 128           | 95            | 154           | 273           | 3.9                          | 5.4         | 4.0         | 6.5         | 11.6        |
| Portland-Vancouver-Hillsboro, OR-WA          | 220           | 410           | 475           | 470           | 587           | 9.7                          | 17.9        | 20.5        | 20.0        | 25.0        |
| Providence-Warwick, RI-MA                    | 111           | 125           | 138           | 204           | 230           | 6.9                          | 7.8         | 8.6         | 12.7        | 14.3        |
| Raleigh, NC                                  | 151           | 150           | 179           | 315           | 409           | 13.0                         | 12.6        | 14.7        | 25.3        | 32.9        |
| Richmond, VA                                 | 154           | 194           | 204           | 145           | 207           | 12.6                         | 15.7        | 16.4        | 11.5        | 16.4        |
| Riverside-San Bernardino-Ontario, CA         | 527           | 775           | 803           | 950           | 1,165         | 12.2                         | 17.8        | 18.3        | 21.4        | 26.2        |
| Sacramento-Roseville-Arden-Arcade, CA        | 258           | 249           | 289           | 371           | 607           | 11.9                         | 11.3        | 13.0        | 16.5        | 27.0        |
| Salt Lake City, UT                           | 48            | 74            | 136           | 109           | 122           | 4.3                          | 6.6         | 11.9        | 9.5         | 10.6        |
| San Antonio-New Braunfels, TX                | 736           | 983           | 1,167         | 1,017         | 988           | 33.5                         | 44.0        | 51.2        | 43.7        | 42.4        |
| San Diego-Carlsbad, CA                       | 609           | 717           | 792           | 987           | 1,208         | 19.4                         | 22.6        | 24.7        | 30.2        | 37.0        |
| San Francisco-Oakland-Hayward, CA            | 1,271         | 1,595         | 1,892         | 2,106         | 2,352         | 28.9                         | 35.8        | 41.9        | 45.8        | 51.2        |
| San Jose-Sunnyvale-Santa Clara, CA           | 159           | 233           | 276           | 304           | 359           | 8.5                          | 12.3        | 14.4        | 15.6        | 18.4        |
| Seattle-Tacoma-Bellevue, WA                  | 589           | 559           | 539           | 590           | 759           | 16.8                         | 15.7        | 14.9        | 16.1        | 20.7        |
| St. Louis, MO-IL                             | 271           | 280           | 338           | 412           | 417           | 9.7                          | 10.0        | 12.1        | 14.7        | 14.9        |
| Tampa-St. Petersburg-Clearwater, FL          | 516           | 582           | 632           | 806           | 956           | 18.3                         | 20.5        | 22.0        | 27.6        | 32.8        |
| Virginia Beach-Norfolk-Newport News, VA-NC   | 212           | 296           | 302           | 220           | 375           | 12.6                         | 17.4        | 17.7        | 12.8        | 21.8        |
| Washington-Arlington-Alexandria, DC-VA-MD-WV | 1,316         | 1,374         | 1,543         | 811           | 1,057         | 22.9                         | 23.4        | 25.9        | 13.4        | 17.5        |
| <b>SELECTED MSAs TOTAL</b>                   | <b>35,182</b> | <b>38,982</b> | <b>43,647</b> | <b>47,996</b> | <b>55,001</b> | <b>20.8</b>                  | <b>22.8</b> | <b>25.3</b> | <b>27.4</b> | <b>31.4</b> |

\* See Section A1.9 in the Appendix for definition.

<sup>†</sup> MSAs were selected on the basis of the largest population in the 2010 U.S. Census.

**Table 26. Primary and Secondary Syphilis — Reported Cases and Rates of Reported Cases by State, Ranked by Rates, United States, 2015**

| Rank* | State              | Cases         | Rate per 100,000 Population |
|-------|--------------------|---------------|-----------------------------|
| 1     | Louisiana          | 696           | 15.0                        |
| 2     | Georgia            | 1,413         | 14.0                        |
| 3     | California         | 4,908         | 12.6                        |
| 4     | North Carolina     | 1,196         | 12.0                        |
| 5     | Nevada             | 335           | 11.8                        |
| 6     | Florida            | 2,083         | 10.5                        |
| 7     | New York           | 2,006         | 10.2                        |
| 8     | Arizona            | 589           | 8.7                         |
| 9     | Oregon             | 345           | 8.7                         |
| 10    | Maryland           | 509           | 8.5                         |
| 11    | Illinois           | 1,085         | 8.4                         |
|       | <b>U.S. TOTAL†</b> | <b>23,872</b> | <b>7.5</b>                  |
| 12    | Mississippi        | 219           | 7.3                         |
| 13    | Rhode Island       | 77            | 7.3                         |
| 14    | Hawaii             | 91            | 6.4                         |
| 15    | Washington         | 445           | 6.3                         |
| 16    | Texas              | 1,680         | 6.2                         |
| 17    | Massachusetts      | 418           | 6.2                         |
| 18    | South Carolina     | 294           | 6.1                         |
| 19    | Alabama            | 280           | 5.8                         |
| 20    | New Mexico         | 118           | 5.7                         |
| 21    | Oklahoma           | 209           | 5.4                         |
| 22    | Tennessee          | 349           | 5.3                         |
| 23    | Pennsylvania       | 655           | 5.1                         |
| 24    | Missouri           | 307           | 5.1                         |
| 25    | Ohio               | 560           | 4.8                         |
| 26    | Colorado           | 245           | 4.6                         |
| 27    | South Dakota       | 39            | 4.6                         |
| 28    | Arkansas           | 134           | 4.5                         |
| 29    | Minnesota          | 246           | 4.5                         |
| 30    | Delaware           | 41            | 4.4                         |
| 31    | Indiana            | 285           | 4.3                         |
| 32    | New Jersey         | 372           | 4.2                         |
| 33    | Michigan           | 403           | 4.1                         |
| 34    | Virginia           | 334           | 4.0                         |
| 35    | Idaho              | 57            | 3.5                         |
| 36    | Kentucky           | 145           | 3.3                         |
| 37    | New Hampshire      | 40            | 3.0                         |
| 38    | Kansas             | 87            | 3.0                         |
| 39    | West Virginia      | 52            | 2.8                         |
| 40    | Connecticut        | 92            | 2.6                         |
| 41    | Iowa               | 75            | 2.4                         |
| 42    | Nebraska           | 45            | 2.4                         |
| 43    | Utah               | 65            | 2.2                         |
| 44    | Maine              | 28            | 2.1                         |
| 45    | North Dakota       | 11            | 1.5                         |
| 46    | Vermont            | 9             | 1.4                         |
| 47    | Wisconsin          | 79            | 1.4                         |
| 48    | Montana            | 13            | 1.3                         |
| 49    | Alaska             | 8             | 1.1                         |
| 50    | Wyoming            | 5             | 0.9                         |

\* States were ranked by rate, then by case count, then in alphabetical order, with rates shown rounded to the nearest tenth.

† Total includes cases reported by the District of Columbia with 95 cases and a rate of 14.4, but excludes outlying areas (Guam with 2 cases and rate of 1.2, Puerto Rico with 531 cases and rate of 15.0, and Virgin Islands with 8 cases and rate of 7.7).

**Table 27. Primary and Secondary Syphilis — Reported Cases and Rates of Reported Cases by State/Area and Region in Alphabetical Order, United States and Outlying Areas, 2011–2015**

| State/Area            | Cases         |               |               |               |               | Rates per 100,000 Population |            |             |             |             |
|-----------------------|---------------|---------------|---------------|---------------|---------------|------------------------------|------------|-------------|-------------|-------------|
|                       | 2011          | 2012          | 2013          | 2014          | 2015          | 2011                         | 2012       | 2013        | 2014        | 2015        |
| Alabama               | 228           | 216           | 183           | 161           | 280           | 4.7                          | 4.5        | 3.8         | 3.3         | 5.8         |
| Alaska                | 5             | 11            | 23            | 15            | 8             | 0.7                          | 1.5        | 3.1         | 2.0         | 1.1         |
| Arizona               | 274           | 202           | 287           | 577           | 589           | 4.2                          | 3.1        | 4.3         | 8.6         | 8.7         |
| Arkansas              | 182           | 173           | 177           | 121           | 134           | 6.2                          | 5.9        | 6.0         | 4.1         | 4.5         |
| California            | 2,443         | 2,953         | 3,532         | 3,835         | 4,908         | 6.5                          | 7.8        | 9.2         | 9.9         | 12.6        |
| Colorado              | 133           | 208           | 163           | 186           | 245           | 2.6                          | 4.0        | 3.1         | 3.5         | 4.6         |
| Connecticut           | 65            | 55            | 56            | 86            | 92            | 1.8                          | 1.5        | 1.6         | 2.4         | 2.6         |
| Delaware              | 27            | 38            | 52            | 47            | 41            | 3.0                          | 4.1        | 5.6         | 5.0         | 4.4         |
| District of Columbia  | 165           | 165           | 168           | 116           | 95            | 26.7                         | 26.1       | 26.0        | 17.6        | 14.4        |
| Florida               | 1,257         | 1,369         | 1,513         | 1,740         | 2,083         | 6.6                          | 7.1        | 7.7         | 8.7         | 10.5        |
| Georgia               | 678           | 937           | 1,017         | 1,234         | 1,413         | 6.9                          | 9.4        | 10.2        | 12.2        | 14.0        |
| Hawaii                | 14            | 23            | 46            | 68            | 91            | 1.0                          | 1.7        | 3.3         | 4.8         | 6.4         |
| Idaho                 | 13            | 26            | 15            | 12            | 57            | 0.8                          | 1.6        | 0.9         | 0.7         | 3.5         |
| Illinois              | 881           | 804           | 798           | 863           | 1,085         | 6.8                          | 6.2        | 6.2         | 6.7         | 8.4         |
| Indiana               | 173           | 224           | 215           | 168           | 285           | 2.7                          | 3.4        | 3.3         | 2.5         | 4.3         |
| Iowa                  | 20            | 70            | 106           | 72            | 75            | 0.7                          | 2.3        | 3.4         | 2.3         | 2.4         |
| Kansas                | 24            | 24            | 51            | 60            | 87            | 0.8                          | 0.8        | 1.8         | 2.1         | 3.0         |
| Kentucky              | 129           | 150           | 122           | 158           | 145           | 3.0                          | 3.4        | 2.8         | 3.6         | 3.3         |
| Louisiana             | 447           | 339           | 423           | 575           | 696           | 9.8                          | 7.4        | 9.1         | 12.4        | 15.0        |
| Maine                 | 12            | 17            | 10            | 16            | 28            | 0.9                          | 1.3        | 0.8         | 1.2         | 2.1         |
| Maryland              | 452           | 431           | 456           | 449           | 509           | 7.8                          | 7.3        | 7.7         | 7.5         | 8.5         |
| Massachusetts         | 266           | 316           | 360           | 301           | 418           | 4.0                          | 4.8        | 5.4         | 4.5         | 6.2         |
| Michigan              | 286           | 295           | 487           | 421           | 403           | 2.9                          | 3.0        | 4.9         | 4.2         | 4.1         |
| Minnesota             | 139           | 118           | 193           | 257           | 246           | 2.6                          | 2.2        | 3.6         | 4.7         | 4.5         |
| Mississippi           | 191           | 150           | 78            | 189           | 219           | 6.4                          | 5.0        | 2.6         | 6.3         | 7.3         |
| Missouri              | 136           | 157           | 251           | 352           | 307           | 2.3                          | 2.6        | 4.2         | 5.8         | 5.1         |
| Montana               | 7             | 2             | 5             | 8             | 13            | 0.7                          | 0.2        | 0.5         | 0.8         | 1.3         |
| Nebraska              | 10            | 8             | 41            | 50            | 45            | 0.5                          | 0.4        | 2.2         | 2.7         | 2.4         |
| Nevada                | 136           | 113           | 205           | 357           | 335           | 5.0                          | 4.1        | 7.3         | 12.6        | 11.8        |
| New Hampshire         | 18            | 36            | 28            | 36            | 40            | 1.4                          | 2.7        | 2.1         | 2.7         | 3.0         |
| New Jersey            | 232           | 229           | 233           | 297           | 372           | 2.6                          | 2.6        | 2.6         | 3.3         | 4.2         |
| New Mexico            | 71            | 101           | 78            | 126           | 118           | 3.4                          | 4.8        | 3.7         | 6.0         | 5.7         |
| New York              | 1,083         | 1,224         | 1,459         | 1,727         | 2,006         | 5.6                          | 6.3        | 7.4         | 8.7         | 10.2        |
| North Carolina        | 431           | 347           | 404           | 733           | 1,196         | 4.5                          | 3.6        | 4.1         | 7.4         | 12.0        |
| North Dakota          | 1             | 4             | 12            | 13            | 11            | 0.1                          | 0.6        | 1.7         | 1.8         | 1.5         |
| Ohio                  | 440           | 425           | 436           | 568           | 560           | 3.8                          | 3.7        | 3.8         | 4.9         | 4.8         |
| Oklahoma              | 84            | 83            | 118           | 151           | 209           | 2.2                          | 2.2        | 3.1         | 3.9         | 5.4         |
| Oregon                | 97            | 212           | 267           | 272           | 345           | 2.5                          | 5.4        | 6.8         | 6.9         | 8.7         |
| Pennsylvania          | 373           | 494           | 471           | 532           | 655           | 2.9                          | 3.9        | 3.7         | 4.2         | 5.1         |
| Rhode Island          | 46            | 44            | 45            | 71            | 77            | 4.4                          | 4.2        | 4.3         | 6.7         | 7.3         |
| South Carolina        | 221           | 225           | 271           | 250           | 294           | 4.7                          | 4.8        | 5.7         | 5.2         | 6.1         |
| South Dakota          | 0             | 18            | 44            | 53            | 39            | 0.0                          | 2.2        | 5.2         | 6.2         | 4.6         |
| Tennessee             | 278           | 266           | 214           | 237           | 349           | 4.3                          | 4.1        | 3.3         | 3.6         | 5.3         |
| Texas                 | 1,169         | 1,627         | 1,475         | 1,636         | 1,680         | 4.6                          | 6.2        | 5.6         | 6.1         | 6.2         |
| Utah                  | 14            | 42            | 74            | 47            | 65            | 0.5                          | 1.5        | 2.6         | 1.6         | 2.2         |
| Vermont               | 9             | 6             | 3             | 5             | 9             | 1.4                          | 1.0        | 0.5         | 0.8         | 1.4         |
| Virginia              | 213           | 285           | 315           | 289           | 334           | 2.6                          | 3.5        | 3.8         | 3.5         | 4.0         |
| Washington            | 328           | 302           | 284           | 344           | 445           | 4.8                          | 4.4        | 4.1         | 4.9         | 6.3         |
| West Virginia         | 4             | 8             | 15            | 28            | 52            | 0.2                          | 0.4        | 0.8         | 1.5         | 2.8         |
| Wisconsin             | 65            | 91            | 95            | 86            | 79            | 1.1                          | 1.6        | 1.7         | 1.5         | 1.4         |
| Wyoming               | 0             | 4             | 1             | 4             | 5             | 0.0                          | 0.7        | 0.2         | 0.7         | 0.9         |
| <b>U.S. TOTAL</b>     | <b>13,970</b> | <b>15,667</b> | <b>17,375</b> | <b>19,999</b> | <b>23,872</b> | <b>4.5</b>                   | <b>5.0</b> | <b>5.5</b>  | <b>6.3</b>  | <b>7.5</b>  |
| Northeast             | 2,104         | 2,421         | 2,665         | 3,071         | 3,697         | 3.8                          | 4.3        | 4.8         | 5.5         | 6.6         |
| Midwest               | 2,175         | 2,238         | 2,729         | 2,963         | 3,222         | 3.2                          | 3.3        | 4.0         | 4.4         | 4.8         |
| South                 | 6,156         | 6,809         | 7,001         | 8,114         | 9,729         | 5.3                          | 5.8        | 5.9         | 6.8         | 8.1         |
| West                  | 3,535         | 4,199         | 4,980         | 5,851         | 7,224         | 4.9                          | 5.7        | 6.7         | 7.8         | 9.6         |
| Guam                  | 5             | 6             | 6             | 7             | 2             | 3.1                          | 3.8        | 3.7         | 4.3         | 1.2         |
| Puerto Rico           | 254           | 306           | 385           | 484           | 531           | 6.9                          | 8.3        | 10.6        | 13.6        | 15.0        |
| Virgin Islands        | 0             | 0             | 2             | 2             | 8             | 0.0                          | 0.0        | 1.9         | 1.9         | 7.7         |
| <b>OUTLYING AREAS</b> | <b>259</b>    | <b>312</b>    | <b>393</b>    | <b>493</b>    | <b>541</b>    | <b>6.5</b>                   | <b>7.9</b> | <b>10.1</b> | <b>12.9</b> | <b>14.2</b> |
| <b>TOTAL</b>          | <b>14,229</b> | <b>15,979</b> | <b>17,768</b> | <b>20,492</b> | <b>24,413</b> | <b>4.5</b>                   | <b>5.0</b> | <b>5.6</b>  | <b>6.4</b>  | <b>7.6</b>  |

**Table 28. Primary and Secondary Syphilis Among Women — Reported Cases and Rates of Reported Cases by State/Area and Region in Alphabetical Order, United States and Outlying Areas, 2011–2015**

| State/Area            | Cases        |              |              |              |              | Rates per 100,000 Population |            |            |            |            |
|-----------------------|--------------|--------------|--------------|--------------|--------------|------------------------------|------------|------------|------------|------------|
|                       | 2011         | 2012         | 2013         | 2014         | 2015         | 2011                         | 2012       | 2013       | 2014       | 2015       |
| Alabama               | 54           | 38           | 22           | 17           | 37           | 2.2                          | 1.5        | 0.9        | 0.7        | 1.5        |
| Alaska                | 1            | 1            | 2            | 1            | 1            | 0.3                          | 0.3        | 0.6        | 0.3        | 0.3        |
| Arizona               | 15           | 16           | 27           | 50           | 47           | 0.5                          | 0.5        | 0.8        | 1.5        | 1.4        |
| Arkansas              | 76           | 49           | 44           | 23           | 26           | 5.1                          | 3.3        | 2.9        | 1.5        | 1.7        |
| California            | 103          | 116          | 210          | 318          | 476          | 0.5                          | 0.6        | 1.1        | 1.6        | 2.4        |
| Colorado              | 4            | 3            | 4            | 6            | 6            | 0.2                          | 0.1        | 0.2        | 0.2        | 0.2        |
| Connecticut           | 5            | 9            | 8            | 7            | 15           | 0.3                          | 0.5        | 0.4        | 0.4        | 0.8        |
| Delaware              | 1            | 2            | 3            | 2            | 2            | 0.2                          | 0.4        | 0.6        | 0.4        | 0.4        |
| District of Columbia  | 7            | 6            | 19           | 5            | 6            | 2.1                          | 1.8        | 5.6        | 1.4        | 1.7        |
| Florida               | 134          | 134          | 137          | 137          | 210          | 1.4                          | 1.4        | 1.4        | 1.3        | 2.1        |
| Georgia               | 58           | 66           | 87           | 96           | 94           | 1.2                          | 1.3        | 1.7        | 1.9        | 1.8        |
| Hawaii                | 0            | 2            | 0            | 2            | 1            | 0.0                          | 0.3        | 0.0        | 0.3        | 0.1        |
| Idaho                 | 1            | 2            | 0            | 0            | 9            | 0.1                          | 0.3        | 0.0        | 0.0        | 1.1        |
| Illinois              | 81           | 73           | 66           | 81           | 84           | 1.2                          | 1.1        | 1.0        | 1.2        | 1.3        |
| Indiana               | 13           | 22           | 18           | 11           | 28           | 0.4                          | 0.7        | 0.5        | 0.3        | 0.8        |
| Iowa                  | 5            | 7            | 10           | 6            | 5            | 0.3                          | 0.5        | 0.6        | 0.4        | 0.3        |
| Kansas                | 0            | 2            | 4            | 14           | 17           | 0.0                          | 0.1        | 0.3        | 1.0        | 1.2        |
| Kentucky              | 19           | 13           | 17           | 22           | 23           | 0.9                          | 0.6        | 0.8        | 1.0        | 1.0        |
| Louisiana             | 179          | 127          | 115          | 132          | 189          | 7.7                          | 5.4        | 4.9        | 5.6        | 8.0        |
| Maine                 | 0            | 2            | 1            | 3            | 6            | 0.0                          | 0.3        | 0.1        | 0.4        | 0.9        |
| Maryland              | 49           | 45           | 61           | 49           | 58           | 1.6                          | 1.5        | 2.0        | 1.6        | 1.9        |
| Massachusetts         | 23           | 15           | 17           | 23           | 25           | 0.7                          | 0.4        | 0.5        | 0.7        | 0.7        |
| Michigan              | 26           | 30           | 29           | 31           | 34           | 0.5                          | 0.6        | 0.6        | 0.6        | 0.7        |
| Minnesota             | 5            | 7            | 12           | 21           | 39           | 0.2                          | 0.3        | 0.4        | 0.8        | 1.4        |
| Mississippi           | 45           | 34           | 19           | 17           | 32           | 2.9                          | 2.2        | 1.2        | 1.1        | 2.1        |
| Missouri              | 6            | 12           | 19           | 34           | 54           | 0.2                          | 0.4        | 0.6        | 1.1        | 1.7        |
| Montana               | 1            | 0            | 1            | 2            | 1            | 0.2                          | 0.0        | 0.2        | 0.4        | 0.2        |
| Nebraska              | 1            | 1            | 4            | 4            | 3            | 0.1                          | 0.1        | 0.4        | 0.4        | 0.3        |
| Nevada                | 7            | 4            | 14           | 23           | 23           | 0.5                          | 0.3        | 1.0        | 1.6        | 1.6        |
| New Hampshire         | 1            | 0            | 1            | 4            | 3            | 0.1                          | 0.0        | 0.1        | 0.6        | 0.4        |
| New Jersey            | 13           | 19           | 13           | 16           | 26           | 0.3                          | 0.4        | 0.3        | 0.3        | 0.6        |
| New Mexico            | 2            | 9            | 20           | 14           | 11           | 0.2                          | 0.9        | 1.9        | 1.3        | 1.0        |
| New York              | 37           | 45           | 44           | 49           | 59           | 0.4                          | 0.4        | 0.4        | 0.5        | 0.6        |
| North Carolina        | 31           | 37           | 36           | 68           | 112          | 0.6                          | 0.7        | 0.7        | 1.3        | 2.2        |
| North Dakota          | 0            | 0            | 1            | 5            | 0            | 0.0                          | 0.0        | 0.3        | 1.4        | 0.0        |
| Ohio                  | 107          | 85           | 63           | 76           | 68           | 1.8                          | 1.4        | 1.1        | 1.3        | 1.1        |
| Oklahoma              | 12           | 6            | 13           | 15           | 21           | 0.6                          | 0.3        | 0.7        | 0.8        | 1.1        |
| Oregon                | 0            | 6            | 12           | 22           | 35           | 0.0                          | 0.3        | 0.6        | 1.1        | 1.7        |
| Pennsylvania          | 34           | 34           | 26           | 47           | 52           | 0.5                          | 0.5        | 0.4        | 0.7        | 0.8        |
| Rhode Island          | 3            | 1            | 1            | 5            | 4            | 0.6                          | 0.2        | 0.2        | 0.9        | 0.7        |
| South Carolina        | 24           | 34           | 39           | 23           | 37           | 1.0                          | 1.4        | 1.6        | 0.9        | 1.5        |
| South Dakota          | 0            | 1            | 15           | 34           | 7            | 0.0                          | 0.2        | 3.6        | 8.0        | 1.7        |
| Tennessee             | 34           | 31           | 22           | 34           | 23           | 1.0                          | 0.9        | 0.7        | 1.0        | 0.7        |
| Texas                 | 255          | 269          | 179          | 242          | 230          | 2.0                          | 2.1        | 1.3        | 1.8        | 1.7        |
| Utah                  | 0            | 0            | 2            | 1            | 2            | 0.0                          | 0.0        | 0.1        | 0.1        | 0.1        |
| Vermont               | 0            | 0            | 0            | 0            | 0            | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Virginia              | 18           | 21           | 17           | 17           | 17           | 0.4                          | 0.5        | 0.4        | 0.4        | 0.4        |
| Washington            | 6            | 9            | 13           | 18           | 30           | 0.2                          | 0.3        | 0.4        | 0.5        | 0.8        |
| West Virginia         | 0            | 2            | 4            | 6            | 9            | 0.0                          | 0.2        | 0.4        | 0.6        | 1.0        |
| Wisconsin             | 5            | 11           | 9            | 7            | 0            | 0.2                          | 0.4        | 0.3        | 0.2        | 0.0        |
| Wyoming               | 0            | 0            | 0            | 0            | 1            | 0.0                          | 0.0        | 0.0        | 0.0        | 0.3        |
| <b>U.S. TOTAL</b>     | <b>1,501</b> | <b>1,458</b> | <b>1,500</b> | <b>1,840</b> | <b>2,298</b> | <b>0.9</b>                   | <b>0.9</b> | <b>0.9</b> | <b>1.1</b> | <b>1.4</b> |
| Northeast             | 116          | 125          | 111          | 154          | 190          | 0.4                          | 0.4        | 0.4        | 0.5        | 0.7        |
| Midwest               | 249          | 251          | 250          | 324          | 339          | 0.7                          | 0.7        | 0.7        | 0.9        | 1.0        |
| South                 | 996          | 914          | 834          | 905          | 1,126        | 1.7                          | 1.5        | 1.4        | 1.5        | 1.8        |
| West                  | 140          | 168          | 305          | 457          | 643          | 0.4                          | 0.5        | 0.8        | 1.2        | 1.7        |
| Guam                  | 2            | 1            | 5            | 2            | 0            | 2.5                          | 1.3        | 6.3        | 2.5        | 0.0        |
| Puerto Rico           | 17           | 20           | 35           | 30           | 70           | 0.9                          | 1.0        | 1.9        | 1.6        | 3.8        |
| Virgin Islands        | 0            | 0            | 1            | 1            | 4            | 0.0                          | 0.0        | 1.8        | 1.8        | 7.2        |
| <b>OUTLYING AREAS</b> | <b>19</b>    | <b>21</b>    | <b>41</b>    | <b>33</b>    | <b>74</b>    | <b>0.9</b>                   | <b>1.0</b> | <b>2.0</b> | <b>1.7</b> | <b>3.7</b> |
| <b>TOTAL</b>          | <b>1,520</b> | <b>1,479</b> | <b>1,541</b> | <b>1,873</b> | <b>2,372</b> | <b>0.9</b>                   | <b>0.9</b> | <b>0.9</b> | <b>1.1</b> | <b>1.4</b> |

**NOTE:** Cases reported with unknown sex are not included in this table.

**Table 29. Primary and Secondary Syphilis Among Men — Reported Cases and Rates of Reported Cases by State/Area and Region in Alphabetical Order, United States and Outlying Areas, 2011–2015**

| State/Area            | Cases         |               |               |               |               | Rates per 100,000 Population |             |             |             |             |
|-----------------------|---------------|---------------|---------------|---------------|---------------|------------------------------|-------------|-------------|-------------|-------------|
|                       | 2011          | 2012          | 2013          | 2014          | 2015          | 2011                         | 2012        | 2013        | 2014        | 2015        |
| Alabama               | 174           | 178           | 161           | 144           | 243           | 7.5                          | 7.6         | 6.9         | 6.1         | 10.3        |
| Alaska                | 4             | 10            | 21            | 14            | 7             | 1.1                          | 2.6         | 5.4         | 3.6         | 1.8         |
| Arizona               | 257           | 186           | 260           | 527           | 542           | 8.0                          | 5.7         | 7.9         | 15.8        | 16.2        |
| Arkansas              | 106           | 124           | 133           | 98            | 108           | 7.3                          | 8.6         | 9.1         | 6.7         | 7.4         |
| California            | 2,327         | 2,823         | 3,319         | 3,515         | 4,430         | 12.4                         | 14.9        | 17.4        | 18.2        | 23.0        |
| Colorado              | 129           | 205           | 159           | 180           | 239           | 5.0                          | 7.9         | 6.0         | 6.7         | 8.9         |
| Connecticut           | 60            | 46            | 48            | 79            | 77            | 3.4                          | 2.6         | 2.7         | 4.5         | 4.4         |
| Delaware              | 26            | 36            | 49            | 45            | 39            | 5.9                          | 8.1         | 10.9        | 9.9         | 8.6         |
| District of Columbia  | 158           | 159           | 149           | 106           | 83            | 54.1                         | 53.2        | 48.7        | 33.9        | 26.6        |
| Florida               | 1,123         | 1,235         | 1,376         | 1,602         | 1,873         | 12.0                         | 13.1        | 14.4        | 16.5        | 19.3        |
| Georgia               | 620           | 870           | 930           | 1,138         | 1,319         | 12.9                         | 17.9        | 19.1        | 23.1        | 26.8        |
| Hawaii                | 14            | 21            | 46            | 66            | 90            | 2.0                          | 3.0         | 6.5         | 9.2         | 12.5        |
| Idaho                 | 12            | 24            | 15            | 12            | 48            | 1.5                          | 3.0         | 1.9         | 1.5         | 5.9         |
| Illinois              | 800           | 731           | 731           | 782           | 1,001         | 12.7                         | 11.6        | 11.6        | 12.4        | 15.8        |
| Indiana               | 160           | 202           | 197           | 157           | 257           | 5.0                          | 6.3         | 6.1         | 4.8         | 7.9         |
| Iowa                  | 15            | 63            | 96            | 66            | 70            | 1.0                          | 4.1         | 6.3         | 4.3         | 4.5         |
| Kansas                | 24            | 22            | 47            | 46            | 70            | 1.7                          | 1.5         | 3.3         | 3.2         | 4.8         |
| Kentucky              | 110           | 137           | 105           | 136           | 122           | 5.1                          | 6.3         | 4.9         | 6.3         | 5.6         |
| Louisiana             | 268           | 212           | 308           | 443           | 507           | 12.0                         | 9.4         | 13.6        | 19.5        | 22.3        |
| Maine                 | 12            | 15            | 9             | 13            | 22            | 1.8                          | 2.3         | 1.4         | 2.0         | 3.4         |
| Maryland              | 403           | 386           | 395           | 400           | 451           | 14.3                         | 13.5        | 13.7        | 13.8        | 15.6        |
| Massachusetts         | 243           | 301           | 343           | 277           | 391           | 7.6                          | 9.3         | 10.6        | 8.5         | 12.0        |
| Michigan              | 260           | 265           | 458           | 390           | 369           | 5.4                          | 5.5         | 9.4         | 8.0         | 7.6         |
| Minnesota             | 134           | 111           | 178           | 235           | 207           | 5.0                          | 4.2         | 6.6         | 8.7         | 7.6         |
| Mississippi           | 146           | 116           | 59            | 172           | 187           | 10.1                         | 8.0         | 4.1         | 11.8        | 12.9        |
| Missouri              | 130           | 145           | 232           | 318           | 253           | 4.4                          | 4.9         | 7.8         | 10.7        | 8.5         |
| Montana               | 6             | 2             | 4             | 6             | 12            | 1.2                          | 0.4         | 0.8         | 1.2         | 2.3         |
| Nebraska              | 9             | 7             | 37            | 46            | 42            | 1.0                          | 0.8         | 4.0         | 4.9         | 4.5         |
| Nevada                | 129           | 109           | 191           | 334           | 312           | 9.4                          | 7.8         | 13.6        | 23.4        | 21.9        |
| New Hampshire         | 17            | 36            | 27            | 32            | 37            | 2.6                          | 5.5         | 4.1         | 4.9         | 5.6         |
| New Jersey            | 219           | 210           | 220           | 281           | 346           | 5.1                          | 4.9         | 5.1         | 6.4         | 7.9         |
| New Mexico            | 69            | 92            | 58            | 112           | 107           | 6.7                          | 8.9         | 5.6         | 10.8        | 10.4        |
| New York              | 1,045         | 1,175         | 1,408         | 1,675         | 1,933         | 11.1                         | 12.4        | 14.8        | 17.5        | 20.2        |
| North Carolina        | 400           | 310           | 368           | 665           | 1,084         | 8.5                          | 6.5         | 7.7         | 13.7        | 22.4        |
| North Dakota          | 1             | 4             | 11            | 8             | 11            | 0.3                          | 1.1         | 3.0         | 2.1         | 2.9         |
| Ohio                  | 333           | 340           | 373           | 492           | 492           | 5.9                          | 6.0         | 6.6         | 8.7         | 8.7         |
| Oklahoma              | 72            | 77            | 105           | 136           | 188           | 3.8                          | 4.1         | 5.5         | 7.1         | 9.8         |
| Oregon                | 97            | 206           | 255           | 250           | 310           | 5.1                          | 10.7        | 13.1        | 12.7        | 15.8        |
| Pennsylvania          | 339           | 460           | 445           | 485           | 602           | 5.5                          | 7.4         | 7.1         | 7.8         | 9.6         |
| Rhode Island          | 43            | 43            | 44            | 66            | 73            | 8.5                          | 8.5         | 8.6         | 12.9        | 14.3        |
| South Carolina        | 197           | 191           | 232           | 227           | 257           | 8.7                          | 8.3         | 10.0        | 9.7         | 10.9        |
| South Dakota          | 0             | 17            | 29            | 19            | 32            | 0.0                          | 4.1         | 6.8         | 4.4         | 7.5         |
| Tennessee             | 244           | 235           | 192           | 203           | 326           | 7.8                          | 7.5         | 6.1         | 6.4         | 10.2        |
| Texas                 | 914           | 1,358         | 1,296         | 1,394         | 1,450         | 7.2                          | 10.5        | 9.9         | 10.4        | 10.8        |
| Utah                  | 14            | 42            | 72            | 46            | 63            | 1.0                          | 2.9         | 4.9         | 3.1         | 4.3         |
| Vermont               | 9             | 6             | 3             | 5             | 9             | 2.9                          | 1.9         | 1.0         | 1.6         | 2.9         |
| Virginia              | 195           | 264           | 298           | 272           | 316           | 4.9                          | 6.6         | 7.3         | 6.6         | 7.7         |
| Washington            | 322           | 293           | 271           | 326           | 414           | 9.4                          | 8.5         | 7.8         | 9.2         | 11.7        |
| West Virginia         | 4             | 6             | 11            | 22            | 43            | 0.4                          | 0.7         | 1.2         | 2.4         | 4.7         |
| Wisconsin             | 60            | 80            | 86            | 79            | 79            | 2.1                          | 2.8         | 3.0         | 2.8         | 2.8         |
| Wyoming               | 0             | 4             | 1             | 4             | 4             | 0.0                          | 1.4         | 0.3         | 1.3         | 1.3         |
| <b>U.S. TOTAL</b>     | <b>12,453</b> | <b>14,190</b> | <b>15,861</b> | <b>18,146</b> | <b>21,547</b> | <b>8.1</b>                   | <b>9.2</b>  | <b>10.2</b> | <b>11.6</b> | <b>13.7</b> |
| Northeast             | 1,987         | 2,292         | 2,547         | 2,913         | 3,490         | 7.4                          | 8.4         | 9.3         | 10.7        | 12.8        |
| Midwest               | 1,926         | 1,987         | 2,475         | 2,638         | 2,883         | 5.8                          | 6.0         | 7.4         | 7.9         | 8.6         |
| South                 | 5,160         | 5,894         | 6,167         | 7,203         | 8,596         | 9.1                          | 10.2        | 10.6        | 12.3        | 14.6        |
| West                  | 3,380         | 4,017         | 4,672         | 5,392         | 6,578         | 9.3                          | 10.9        | 12.6        | 14.4        | 17.6        |
| Guam                  | 3             | 5             | 1             | 5             | 2             | 3.7                          | 6.2         | 1.2         | 6.1         | 2.5         |
| Puerto Rico           | 237           | 286           | 350           | 454           | 461           | 13.4                         | 16.3        | 20.2        | 26.6        | 27.0        |
| Virgin Islands        | 0             | 0             | 1             | 1             | 4             | 0.0                          | 0.0         | 2.0         | 2.1         | 8.2         |
| <b>OUTLYING AREAS</b> | <b>240</b>    | <b>291</b>    | <b>352</b>    | <b>460</b>    | <b>467</b>    | <b>12.6</b>                  | <b>15.4</b> | <b>18.9</b> | <b>25.1</b> | <b>25.5</b> |
| <b>TOTAL</b>          | <b>12,693</b> | <b>14,481</b> | <b>16,213</b> | <b>18,606</b> | <b>22,014</b> | <b>8.2</b>                   | <b>9.3</b>  | <b>10.3</b> | <b>11.7</b> | <b>13.9</b> |

**NOTE:** Cases reported with unknown sex are not included in this table.

**Table 30. Primary and Secondary Syphilis — Reported Cases and Rates of Reported Cases in Selected Metropolitan Statistical Areas (MSAs)\* in Alphabetical Order, United States, 2011–2015**

| MSAs                                         | Cases         |               |               |               |               | Rates per 100,000 Population |            |            |            |            |
|----------------------------------------------|---------------|---------------|---------------|---------------|---------------|------------------------------|------------|------------|------------|------------|
|                                              | 2011          | 2012          | 2013          | 2014          | 2015          | 2011                         | 2012       | 2013       | 2014       | 2015       |
| Atlanta-Sandy Springs-Roswell, GA            | 581           | 745           | 789           | 996           | 1,097         | 10.8                         | 13.7       | 14.3       | 17.7       | 19.5       |
| Austin-Round Rock, TX                        | 114           | 154           | 145           | 227           | 203           | 6.4                          | 8.4        | 7.7        | 11.7       | 10.4       |
| Baltimore-Columbia-Towson, MD                | 308           | 307           | 288           | 282           | 343           | 11.3                         | 11.2       | 10.4       | 10.1       | 12.3       |
| Birmingham-Hoover, AL                        | 89            | 73            | 69            | 58            | 74            | 7.9                          | 6.4        | 6.1        | 5.1        | 6.5        |
| Boston-Cambridge-Newton, MA-NH               | 191           | 204           | 268           | 227           | 271           | 4.2                          | 4.4        | 5.7        | 4.8        | 5.7        |
| Buffalo-Cheektowaga-Niagara Falls, NY        | 14            | 27            | 38            | 49            | 92            | 1.2                          | 2.4        | 3.4        | 4.3        | 8.1        |
| Charlotte-Concord-Gastonia, NC-SC            | 152           | 116           | 134           | 220           | 333           | 6.7                          | 5.1        | 5.7        | 9.2        | 14.0       |
| Chicago-Naperville-Elgin, IL-IN-WI           | 853           | 759           | 763           | 811           | 1,047         | 9.0                          | 8.0        | 8.0        | 8.5        | 11.0       |
| Cincinnati, OH-KY-IN                         | 228           | 166           | 166           | 153           | 93            | 10.7                         | 7.8        | 7.8        | 7.1        | 4.3        |
| Cleveland-Elyria, OH                         | 55            | 44            | 32            | 80            | 72            | 2.7                          | 2.1        | 1.5        | 3.9        | 3.5        |
| Columbus, OH                                 | 122           | 159           | 167           | 250           | 274           | 6.3                          | 8.2        | 8.5        | 12.5       | 13.7       |
| Dallas-Fort Worth-Arlington, TX              | 317           | 391           | 445           | 508           | 476           | 4.8                          | 5.8        | 6.5        | 7.3        | 6.8        |
| Denver-Aurora-Lakewood, CO                   | 116           | 183           | 135           | 153           | 192           | 4.5                          | 6.9        | 5.0        | 5.6        | 7.0        |
| Detroit-Warren-Dearborn, MI                  | 203           | 235           | 394           | 317           | 284           | 4.7                          | 5.5        | 9.2        | 7.4        | 6.6        |
| Hartford-West Hartford-East Hartford, CT     | 15            | 9             | 14            | 26            | 44            | 1.2                          | 0.7        | 1.2        | 2.1        | 3.6        |
| Houston-The Woodlands-Sugar Land, TX         | 322           | 537           | 363           | 414           | 439           | 5.3                          | 8.7        | 5.7        | 6.4        | 6.8        |
| Indianapolis-Carmel-Anderson, IN             | 91            | 150           | 146           | 109           | 172           | 4.8                          | 7.8        | 7.5        | 5.5        | 8.7        |
| Jacksonville, FL                             | 47            | 44            | 40            | 69            | 91            | 3.5                          | 3.2        | 2.9        | 4.9        | 6.4        |
| Kansas City, MO-KS                           | 57            | 65            | 155           | 220           | 191           | 2.8                          | 3.2        | 7.5        | 10.6       | 9.2        |
| Las Vegas-Henderson-Paradise, NV             | 126           | 97            | 164           | 318           | 305           | 6.4                          | 4.8        | 8.1        | 15.4       | 14.7       |
| Los Angeles-Long Beach-Anaheim, CA           | 876           | 1,049         | 1,299         | 1,407         | 1,832         | 6.8                          | 8.0        | 9.9        | 10.6       | 13.8       |
| Louisville-Jefferson County, KY-IN           | 92            | 81            | 71            | 83            | 87            | 7.4                          | 6.5        | 5.6        | 6.5        | 6.9        |
| Memphis, TN-MS-AR                            | 120           | 110           | 105           | 94            | 121           | 9.0                          | 8.2        | 7.8        | 7.0        | 9.0        |
| Miami-Fort Lauderdale-West Palm Beach, FL    | 630           | 705           | 762           | 821           | 884           | 11.1                         | 12.2       | 13.1       | 13.8       | 14.9       |
| Milwaukee-Waukesha-West Allis, WI            | 35            | 43            | 54            | 52            | 39            | 2.2                          | 2.7        | 3.4        | 3.3        | 2.5        |
| Minneapolis-St. Paul-Bloomington, MN-WI      | 127           | 116           | 181           | 243           | 228           | 3.7                          | 3.4        | 5.2        | 7.0        | 6.5        |
| Nashville-Davidson-Murfreesboro-Franklin, TN | 85            | 88            | 57            | 74            | 116           | 5.0                          | 5.1        | 3.2        | 4.1        | 6.5        |
| New Orleans-Metairie, LA                     | 101           | 66            | 103           | 221           | 218           | 8.3                          | 5.4        | 8.3        | 17.7       | 17.4       |
| New York-Newark-Jersey City, NY-NJ-PA        | 1,169         | 1,315         | 1,491         | 1,721         | 2,037         | 5.9                          | 6.6        | 7.5        | 8.6        | 10.1       |
| Oklahoma City, OK                            | 39            | 54            | 78            | 91            | 113           | 3.1                          | 4.2        | 5.9        | 6.8        | 8.5        |
| Orlando-Kissimmee-Sanford, FL                | 174           | 168           | 201           | 239           | 299           | 8.0                          | 7.6        | 8.9        | 10.3       | 12.9       |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD  | 302           | 369           | 396           | 446           | 458           | 5.0                          | 6.1        | 6.6        | 7.4        | 7.6        |
| Phoenix-Mesa-Scottsdale, AZ                  | 213           | 162           | 219           | 416           | 452           | 5.0                          | 3.7        | 5.0        | 9.3        | 10.1       |
| Pittsburgh, PA                               | 49            | 61            | 39            | 78            | 150           | 2.1                          | 2.6        | 1.7        | 3.3        | 6.4        |
| Portland-Vancouver-Hillsboro, OR-WA          | 90            | 209           | 240           | 206           | 261           | 4.0                          | 9.1        | 10.4       | 8.8        | 11.1       |
| Providence-Warwick, RI-MA                    | 55            | 58            | 65            | 93            | 111           | 3.4                          | 3.6        | 4.1        | 5.8        | 6.9        |
| Raleigh, NC                                  | 47            | 56            | 70            | 129           | 168           | 4.0                          | 4.7        | 5.8        | 10.4       | 13.5       |
| Richmond, VA                                 | 50            | 64            | 70            | 68            | 73            | 4.1                          | 5.2        | 5.6        | 5.4        | 5.8        |
| Riverside-San Bernardino-Ontario, CA         | 182           | 166           | 203           | 288           | 341           | 4.2                          | 3.8        | 4.6        | 6.5        | 7.7        |
| Sacramento-Roseville-Arden-Arcade, CA        | 131           | 151           | 147           | 162           | 265           | 6.0                          | 6.9        | 6.6        | 7.2        | 11.8       |
| Salt Lake City, UT                           | 9             | 34            | 65            | 39            | 49            | 0.8                          | 3.0        | 5.7        | 3.4        | 4.2        |
| San Antonio-New Braunfels, TX                | 188           | 329           | 310           | 247           | 237           | 8.6                          | 14.7       | 13.6       | 10.6       | 10.2       |
| San Diego-Carlsbad, CA                       | 293           | 331           | 333           | 371           | 493           | 9.3                          | 10.4       | 10.4       | 11.4       | 15.1       |
| San Francisco-Oakland-Hayward, CA            | 626           | 744           | 814           | 767           | 830           | 14.3                         | 16.7       | 18.0       | 16.7       | 18.1       |
| San Jose-Sunnyvale-Santa Clara, CA           | 68            | 105           | 146           | 120           | 134           | 3.6                          | 5.5        | 7.6        | 6.1        | 6.9        |
| Seattle-Tacoma-Bellevue, WA                  | 276           | 248           | 211           | 235           | 311           | 7.9                          | 7.0        | 5.8        | 6.4        | 8.5        |
| St. Louis, MO-IL                             | 92            | 95            | 108           | 153           | 112           | 3.3                          | 3.4        | 3.9        | 5.5        | 4.0        |
| Tampa-St. Petersburg-Clearwater, FL          | 199           | 230           | 226           | 320           | 393           | 7.0                          | 8.1        | 7.9        | 11.0       | 13.5       |
| Virginia Beach-Norfolk-Newport News, VA-NC   | 64            | 106           | 102           | 85            | 117           | 3.8                          | 6.2        | 6.0        | 5.0        | 6.8        |
| Washington-Arlington-Alexandria, DC-VA-MD-WV | 360           | 358           | 418           | 226           | 230           | 6.3                          | 6.1        | 7.0        | 3.7        | 3.8        |
| <b>SELECTED MSAs TOTAL</b>                   | <b>10,743</b> | <b>12,136</b> | <b>13,299</b> | <b>14,982</b> | <b>17,252</b> | <b>6.3</b>                   | <b>7.1</b> | <b>7.7</b> | <b>8.6</b> | <b>9.9</b> |

\* MSAs were selected on the basis of the largest population in the 2010 U.S. Census.

**Table 31. Primary and Secondary Syphilis Among Women — Reported Cases and Rates of Reported Cases in Selected Metropolitan Statistical Areas (MSAs)\* in Alphabetical Order, United States, 2011–2015**

| MSAs                                         | Cases      |            |            |              |              | Rates per 100,000 Population |            |            |            |            |
|----------------------------------------------|------------|------------|------------|--------------|--------------|------------------------------|------------|------------|------------|------------|
|                                              | 2011       | 2012       | 2013       | 2014         | 2015         | 2011                         | 2012       | 2013       | 2014       | 2015       |
| Atlanta-Sandy Springs-Roswell, GA            | 40         | 33         | 52         | 58           | 61           | 1.5                          | 1.2        | 1.8        | 2.0        | 2.1        |
| Austin-Round Rock, TX                        | 12         | 8          | 6          | 14           | 16           | 1.3                          | 0.9        | 0.6        | 1.4        | 1.6        |
| Baltimore-Columbia-Towson, MD                | 39         | 39         | 46         | 42           | 49           | 2.8                          | 2.7        | 3.2        | 2.9        | 3.4        |
| Birmingham-Hoover, AL                        | 10         | 7          | 5          | 5            | 8            | 1.7                          | 1.2        | 0.8        | 0.8        | 1.3        |
| Boston-Cambridge-Newton, MA-NH               | 14         | 5          | 10         | 14           | 13           | 0.6                          | 0.2        | 0.4        | 0.6        | 0.5        |
| Buffalo-Cheektowaga-Niagara Falls, NY        | 2          | 1          | 2          | 1            | 0            | 0.3                          | 0.2        | 0.3        | 0.2        | 0.0        |
| Charlotte-Concord-Gastonia, NC-SC            | 14         | 15         | 6          | 6            | 16           | 1.2                          | 1.3        | 0.5        | 0.5        | 1.3        |
| Chicago-Naperville-Elgin, IL-IN-WI           | 77         | 77         | 65         | 76           | 86           | 1.6                          | 1.6        | 1.3        | 1.6        | 1.8        |
| Cincinnati, OH-KY-IN                         | 99         | 63         | 31         | 33           | 21           | 9.1                          | 5.8        | 2.8        | 3.0        | 1.9        |
| Cleveland-Elyria, OH                         | 3          | 5          | 2          | 5            | 1            | 0.3                          | 0.5        | 0.2        | 0.5        | 0.1        |
| Columbus, OH                                 | 10         | 14         | 18         | 34           | 27           | 1.0                          | 1.4        | 1.8        | 3.4        | 2.7        |
| Dallas-Fort Worth-Arlington, TX              | 63         | 56         | 41         | 63           | 56           | 1.9                          | 1.6        | 1.2        | 1.8        | 1.6        |
| Denver-Aurora-Lakewood, CO                   | 1          | 3          | 3          | 4            | 6            | 0.1                          | 0.2        | 0.2        | 0.3        | 0.4        |
| Detroit-Warren-Dearborn, MI                  | 20         | 27         | 25         | 23           | 26           | 0.9                          | 1.2        | 1.1        | 1.0        | 1.2        |
| Hartford-West Hartford-East Hartford, CT     | 2          | 3          | 0          | 2            | 9            | 0.3                          | 0.5        | 0.0        | 0.3        | 1.4        |
| Houston-The Woodlands-Sugar Land, TX         | 69         | 97         | 59         | 64           | 58           | 2.3                          | 3.1        | 1.9        | 2.0        | 1.8        |
| Indianapolis-Carmel-Anderson, IN             | 5          | 10         | 9          | 5            | 12           | 0.5                          | 1.0        | 0.9        | 0.5        | 1.2        |
| Jacksonville, FL                             | 11         | 4          | 5          | 9            | 8            | 1.6                          | 0.6        | 0.7        | 1.2        | 1.1        |
| Kansas City, MO-KS                           | 4          | 1          | 9          | 23           | 41           | 0.4                          | 0.1        | 0.9        | 2.2        | 3.9        |
| Las Vegas-Henderson-Paradise, NV             | 4          | 2          | 6          | 17           | 17           | 0.4                          | 0.2        | 0.6        | 1.6        | 1.6        |
| Los Angeles-Long Beach-Anaheim, CA           | 16         | 26         | 50         | 67           | 108          | 0.2                          | 0.4        | 0.8        | 1.0        | 1.6        |
| Louisville-Jefferson County, KY-IN           | 7          | 9          | 11         | 14           | 10           | 1.1                          | 1.4        | 1.7        | 2.2        | 1.5        |
| Memphis, TN-MS-AR                            | 22         | 22         | 17         | 22           | 13           | 3.2                          | 3.2        | 2.4        | 3.1        | 1.9        |
| Miami-Fort Lauderdale-West Palm Beach, FL    | 47         | 63         | 65         | 44           | 75           | 1.6                          | 2.1        | 2.2        | 1.4        | 2.5        |
| Milwaukee-Waukesha-West Allis, WI            | 5          | 5          | 5          | 6            | 0            | 0.6                          | 0.6        | 0.6        | 0.7        | 0.0        |
| Minneapolis-St. Paul-Bloomington, MN-WI      | 5          | 7          | 9          | 19           | 37           | 0.3                          | 0.4        | 0.5        | 1.1        | 2.1        |
| Nashville-Davidson-Murfreesboro-Franklin, TN | 3          | 1          | 4          | 5            | 4            | 0.3                          | 0.1        | 0.4        | 0.5        | 0.4        |
| New Orleans-Metairie, LA                     | 17         | 9          | 10         | 18           | 29           | 2.7                          | 1.4        | 1.6        | 2.8        | 4.5        |
| New York-Newark-Jersey City, NY-NJ-PA        | 39         | 57         | 46         | 52           | 69           | 0.4                          | 0.6        | 0.4        | 0.5        | 0.7        |
| Oklahoma City, OK                            | 6          | 1          | 5          | 7            | 14           | 0.9                          | 0.2        | 0.7        | 1.0        | 2.1        |
| Orlando-Kissimmee-Sanford, FL                | 10         | 15         | 9          | 8            | 14           | 0.9                          | 1.3        | 0.8        | 0.7        | 1.2        |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD  | 28         | 30         | 24         | 39           | 43           | 0.9                          | 1.0        | 0.8        | 1.2        | 1.4        |
| Phoenix-Mesa-Scottsdale, AZ                  | 9          | 14         | 22         | 42           | 39           | 0.4                          | 0.6        | 1.0        | 1.9        | 1.7        |
| Pittsburgh, PA                               | 4          | 5          | 2          | 6            | 11           | 0.3                          | 0.4        | 0.2        | 0.5        | 0.9        |
| Portland-Vancouver-Hillsboro, OR-WA          | 0          | 9          | 9          | 9            | 19           | 0.0                          | 0.8        | 0.8        | 0.8        | 1.6        |
| Providence-Warwick, RI-MA                    | 3          | 1          | 3          | 8            | 8            | 0.4                          | 0.1        | 0.4        | 1.0        | 1.0        |
| Raleigh, NC                                  | 1          | 5          | 9          | 6            | 13           | 0.2                          | 0.8        | 1.4        | 0.9        | 2.0        |
| Richmond, VA                                 | 10         | 10         | 4          | 2            | 4            | 1.6                          | 1.6        | 0.6        | 0.3        | 0.6        |
| Riverside-San Bernardino-Ontario, CA         | 8          | 3          | 7          | 15           | 17           | 0.4                          | 0.1        | 0.3        | 0.7        | 0.8        |
| Sacramento-Roseville-Arden-Arcade, CA        | 7          | 5          | 10         | 11           | 26           | 0.6                          | 0.4        | 0.9        | 1.0        | 2.3        |
| Salt Lake City, UT                           | 0          | 0          | 1          | 1            | 1            | 0.0                          | 0.0        | 0.2        | 0.2        | 0.2        |
| San Antonio-New Braunfels, TX                | 39         | 59         | 44         | 47           | 43           | 3.5                          | 5.2        | 3.8        | 4.0        | 3.6        |
| San Diego-Carlsbad, CA                       | 13         | 12         | 10         | 20           | 17           | 0.8                          | 0.8        | 0.6        | 1.2        | 1.0        |
| San Francisco-Oakland-Hayward, CA            | 27         | 28         | 40         | 34           | 46           | 1.2                          | 1.2        | 1.7        | 1.5        | 2.0        |
| San Jose-Sunnyvale-Santa Clara, CA           | 4          | 3          | 9          | 12           | 10           | 0.4                          | 0.3        | 0.9        | 1.2        | 1.0        |
| Seattle-Tacoma-Bellevue, WA                  | 3          | 6          | 10         | 10           | 6            | 0.2                          | 0.3        | 0.6        | 0.5        | 0.3        |
| St. Louis, MO-IL                             | 3          | 9          | 6          | 17           | 14           | 0.2                          | 0.6        | 0.4        | 1.2        | 1.0        |
| Tampa-St. Petersburg-Clearwater, FL          | 26         | 29         | 31         | 41           | 44           | 1.8                          | 2.0        | 2.1        | 2.7        | 2.9        |
| Virginia Beach-Norfolk-Newport News, VA-NC   | 7          | 5          | 5          | 8            | 5            | 0.8                          | 0.6        | 0.6        | 0.9        | 0.6        |
| Washington-Arlington-Alexandria, DC-VA-MD-WV | 16         | 15         | 35         | 7            | 10           | 0.5                          | 0.5        | 1.2        | 0.2        | 0.3        |
| <b>SELECTED MSAs TOTAL</b>                   | <b>884</b> | <b>933</b> | <b>912</b> | <b>1,095</b> | <b>1,280</b> | <b>1.0</b>                   | <b>1.1</b> | <b>1.0</b> | <b>1.2</b> | <b>1.4</b> |

\* MSAs were selected on the basis of the largest population in the 2010 U.S. Census.

**NOTE:** Cases reported with unknown sex are not included in this table.

**Table 32. Primary and Secondary Syphilis Among Men — Reported Cases and Rates of Reported Cases in Selected Metropolitan Statistical Areas (MSAs)\* in Alphabetical Order, United States, 2011–2015**

| MSAs                                         | Cases        |               |               |               |               | Rates per 100,000 Population |             |             |             |             |
|----------------------------------------------|--------------|---------------|---------------|---------------|---------------|------------------------------|-------------|-------------|-------------|-------------|
|                                              | 2011         | 2012          | 2013          | 2014          | 2015          | 2011                         | 2012        | 2013        | 2014        | 2015        |
| Atlanta-Sandy Springs-Roswell, GA            | 541          | 712           | 737           | 938           | 1,036         | 20.6                         | 26.8        | 27.5        | 34.5        | 38.1        |
| Austin-Round Rock, TX                        | 102          | 146           | 139           | 213           | 187           | 11.4                         | 15.9        | 14.7        | 21.9        | 19.2        |
| Baltimore-Columbia-Towson, MD                | 269          | 268           | 242           | 240           | 294           | 20.5                         | 20.2        | 18.1        | 17.9        | 21.9        |
| Birmingham-Hoover, AL                        | 79           | 66            | 64            | 53            | 66            | 14.5                         | 12.1        | 11.6        | 9.6         | 12.0        |
| Boston-Cambridge-Newton, MA-NH               | 177          | 199           | 258           | 213           | 257           | 8.0                          | 8.8         | 11.4        | 9.3         | 11.2        |
| Buffalo-Cheektowaga-Niagara Falls, NY        | 12           | 26            | 36            | 48            | 92            | 2.2                          | 4.7         | 6.6         | 8.7         | 16.7        |
| Charlotte-Concord-Gastonia, NC-SC            | 138          | 101           | 128           | 214           | 317           | 12.6                         | 9.0         | 11.3        | 18.5        | 27.4        |
| Chicago-Naperville-Elgin, IL-IN-WI           | 776          | 682           | 697           | 735           | 961           | 16.7                         | 14.6        | 14.9        | 15.7        | 20.6        |
| Cincinnati, OH-KY-IN                         | 129          | 103           | 135           | 120           | 72            | 12.4                         | 9.9         | 12.9        | 11.4        | 6.8         |
| Cleveland-Elyria, OH                         | 52           | 39            | 30            | 75            | 71            | 5.2                          | 3.9         | 3.0         | 7.5         | 7.1         |
| Columbus, OH                                 | 112          | 145           | 149           | 216           | 247           | 11.8                         | 15.2        | 15.4        | 22.0        | 25.2        |
| Dallas-Fort Worth-Arlington, TX              | 254          | 335           | 404           | 445           | 420           | 7.8                          | 10.1        | 12.0        | 13.0        | 12.3        |
| Denver-Aurora-Lakewood, CO                   | 115          | 180           | 132           | 149           | 186           | 8.9                          | 13.7        | 9.8         | 10.9        | 13.6        |
| Detroit-Warren-Dearborn, MI                  | 183          | 208           | 369           | 294           | 258           | 8.8                          | 10.0        | 17.7        | 14.1        | 12.4        |
| Hartford-West Hartford-East Hartford, CT     | 13           | 6             | 14            | 24            | 35            | 2.2                          | 1.0         | 2.4         | 4.1         | 5.9         |
| Houston-The Woodlands-Sugar Land, TX         | 253          | 440           | 304           | 350           | 381           | 8.4                          | 14.3        | 9.7         | 10.8        | 11.8        |
| Indianapolis-Carmel-Anderson, IN             | 86           | 140           | 137           | 104           | 160           | 9.2                          | 14.8        | 14.3        | 10.8        | 16.6        |
| Jacksonville, FL                             | 36           | 40            | 35            | 60            | 83            | 5.4                          | 6.0         | 5.2         | 8.7         | 12.0        |
| Kansas City, MO-KS                           | 53           | 64            | 146           | 197           | 150           | 5.3                          | 6.4         | 14.5        | 19.4        | 14.8        |
| Las Vegas-Henderson-Paradise, NV             | 122          | 95            | 158           | 301           | 288           | 12.3                         | 9.4         | 15.5        | 29.1        | 27.8        |
| Los Angeles-Long Beach-Anaheim, CA           | 858          | 1,019         | 1,248         | 1,340         | 1,724         | 13.4                         | 15.8        | 19.2        | 20.5        | 26.4        |
| Louisville-Jefferson County, KY-IN           | 85           | 72            | 60            | 69            | 77            | 14.0                         | 11.8        | 9.7         | 11.1        | 12.4        |
| Memphis, TN-MS-AR                            | 98           | 88            | 88            | 72            | 108           | 15.3                         | 13.7        | 13.7        | 11.2        | 16.8        |
| Miami-Fort Lauderdale-West Palm Beach, FL    | 583          | 642           | 697           | 777           | 809           | 21.2                         | 23.0        | 24.6        | 27.0        | 28.1        |
| Milwaukee-Waukesha-West Allis, WI            | 30           | 38            | 49            | 46            | 39            | 3.9                          | 5.0         | 6.4         | 6.0         | 5.1         |
| Minneapolis-St. Paul-Bloomington, MN-WI      | 122          | 109           | 169           | 223           | 191           | 7.3                          | 6.4         | 9.9         | 12.9        | 11.1        |
| Nashville-Davidson-Murfreesboro-Franklin, TN | 82           | 87            | 53            | 69            | 112           | 9.9                          | 10.3        | 6.2         | 7.9         | 12.8        |
| New Orleans-Metairie, LA                     | 84           | 57            | 93            | 203           | 189           | 14.2                         | 9.6         | 15.4        | 33.5        | 31.2        |
| New York-Newark-Jersey City, NY-NJ-PA        | 1,129        | 1,254         | 1,438         | 1,666         | 1,954         | 11.9                         | 13.1        | 14.9        | 17.1        | 20.1        |
| Oklahoma City, OK                            | 33           | 53            | 73            | 84            | 99            | 5.2                          | 8.3         | 11.2        | 12.8        | 15.0        |
| Orlando-Kissimmee-Sanford, FL                | 164          | 153           | 192           | 231           | 285           | 15.4                         | 14.1        | 17.3        | 20.4        | 25.1        |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD  | 274          | 339           | 372           | 407           | 415           | 9.5                          | 11.7        | 12.8        | 13.9        | 14.2        |
| Phoenix-Mesa-Scottsdale, AZ                  | 202          | 148           | 197           | 374           | 413           | 9.5                          | 6.9         | 9.0         | 16.8        | 18.5        |
| Pittsburgh, PA                               | 45           | 56            | 37            | 72            | 139           | 3.9                          | 4.9         | 3.2         | 6.3         | 12.1        |
| Portland-Vancouver-Hillsboro, OR-WA          | 90           | 200           | 231           | 197           | 242           | 8.0                          | 17.7        | 20.2        | 17.0        | 20.9        |
| Providence-Warwick, RI-MA                    | 52           | 57            | 62            | 84            | 103           | 6.7                          | 7.4         | 8.0         | 10.8        | 13.2        |
| Raleigh, NC                                  | 46           | 51            | 61            | 123           | 155           | 8.1                          | 8.8         | 10.3        | 20.3        | 25.6        |
| Richmond, VA                                 | 40           | 54            | 66            | 66            | 69            | 6.8                          | 9.1         | 11.0        | 10.8        | 11.3        |
| Riverside-San Bernardino-Ontario, CA         | 171          | 163           | 196           | 273           | 324           | 8.0                          | 7.5         | 9.0         | 12.4        | 14.7        |
| Sacramento-Roseville-Arden-Arcade, CA        | 122          | 144           | 137           | 151           | 239           | 11.4                         | 13.4        | 12.6        | 13.7        | 21.8        |
| Salt Lake City, UT                           | 9            | 34            | 64            | 38            | 48            | 1.6                          | 6.0         | 11.2        | 6.6         | 8.3         |
| San Antonio-New Braunfels, TX                | 149          | 270           | 266           | 200           | 194           | 13.8                         | 24.5        | 23.7        | 17.4        | 16.9        |
| San Diego-Carlsbad, CA                       | 279          | 318           | 323           | 351           | 476           | 17.7                         | 19.9        | 20.0        | 21.4        | 29.0        |
| San Francisco-Oakland-Hayward, CA            | 596          | 713           | 773           | 731           | 783           | 27.5                         | 32.4        | 34.7        | 32.3        | 34.6        |
| San Jose-Sunnyvale-Santa Clara, CA           | 64           | 102           | 137           | 108           | 124           | 6.8                          | 10.7        | 14.2        | 11.0        | 12.6        |
| Seattle-Tacoma-Bellevue, WA                  | 273          | 242           | 201           | 225           | 305           | 15.6                         | 13.7        | 11.2        | 12.3        | 16.6        |
| St. Louis, MO-IL                             | 89           | 86            | 102           | 136           | 98            | 6.6                          | 6.4         | 7.5         | 10.0        | 7.2         |
| Tampa-St. Petersburg-Clearwater, FL          | 173          | 201           | 195           | 278           | 349           | 12.6                         | 14.6        | 14.0        | 19.7        | 24.7        |
| Virginia Beach-Norfolk-Newport News, VA-NC   | 57           | 101           | 97            | 77            | 112           | 6.9                          | 12.1        | 11.5        | 9.1         | 13.2        |
| Washington-Arlington-Alexandria, DC-VA-MD-WV | 344          | 343           | 383           | 219           | 219           | 12.3                         | 12.0        | 13.2        | 7.4         | 7.4         |
| <b>SELECTED MSAs TOTAL</b>                   | <b>9,845</b> | <b>11,189</b> | <b>12,374</b> | <b>13,879</b> | <b>15,955</b> | <b>11.9</b>                  | <b>13.3</b> | <b>14.6</b> | <b>16.2</b> | <b>18.6</b> |

\* MSAs were selected on the basis of the largest population in the 2010 U.S. Census.

**NOTE:** Cases reported with unknown sex are not included in this table.

**Table 33. Primary and Secondary Syphilis — Reported Cases and Rates of Reported Cases in Counties and Independent Cities\* Ranked by Number of Reported Cases, United States, 2015**

| Rank* | County/Independent City     | Cases | Rate per 100,000 Population | Cumulative Percentage |
|-------|-----------------------------|-------|-----------------------------|-----------------------|
| 1     | Los Angeles County, CA      | 1,577 | 15.6                        | 6                     |
| 2     | Cook County, IL             | 915   | 17.4                        | 10                    |
| 3     | New York County, NY         | 544   | 33.2                        | 12                    |
| 4     | San Francisco County, CA    | 516   | 60.5                        | 14                    |
| 5     | San Diego County, CA        | 493   | 15.1                        | 16                    |
| 6     | Miami-Dade County, FL       | 492   | 18.5                        | 19                    |
| 7     | Fulton County, GA           | 450   | 45.2                        | 20                    |
| 8     | Maricopa County, AZ         | 445   | 10.9                        | 22                    |
| 9     | Kings County, NY            | 389   | 14.8                        | 24                    |
| 10    | Harris County, TX           | 377   | 8.5                         | 25                    |
| 11    | Bronx County, NY            | 347   | 24.1                        | 27                    |
| 12    | Philadelphia County, PA     | 314   | 20.1                        | 28                    |
| 13    | DeKalb County, GA           | 309   | 42.8                        | 30                    |
| 14    | Clark County, NV            | 305   | 14.7                        | 31                    |
| 15    | Broward County, FL          | 291   | 15.6                        | 32                    |
| 16    | Mecklenburg County, NC      | 266   | 26.3                        | 33                    |
| 17    | Fresno County, CA           | 263   | 27.2                        | 34                    |
| 18    | Dallas County, TX           | 258   | 10.2                        | 35                    |
| 19    | Franklin County, OH         | 255   | 20.7                        | 36                    |
| 20    | Orange County, CA           | 255   | 8.1                         | 37                    |
| 21    | King County, WA             | 248   | 11.9                        | 38                    |
| 22    | Orange County, FL           | 238   | 19.0                        | 39                    |
| 23    | Sacramento County, CA       | 226   | 15.2                        | 40                    |
| 24    | Bexar County, TX            | 223   | 12.0                        | 41                    |
| 25    | Hillsborough County, FL     | 222   | 16.9                        | 42                    |
| 26    | Baltimore (City), MD        | 212   | 34.0                        | 43                    |
| 27    | Riverside County, CA        | 209   | 9.0                         | 44                    |
| 28    | Queens County, NY           | 207   | 8.9                         | 45                    |
| 29    | Travis County, TX           | 175   | 15.2                        | 46                    |
| 30    | Wayne County, MI            | 170   | 9.6                         | 46                    |
| 31    | Tarrant County, TX          | 165   | 8.5                         | 47                    |
| 32    | Kern County, CA             | 161   | 18.4                        | 48                    |
| 33    | Alameda County, CA          | 159   | 9.9                         | 48                    |
| 34    | Hennepin County, MN         | 158   | 13.0                        | 49                    |
| 35    | Multnomah County, OR        | 157   | 20.2                        | 50                    |
| 36    | Jackson County, MO          | 154   | 22.5                        | 50                    |
| 37    | Marion County, IN           | 153   | 16.4                        | 51                    |
| 38    | Wake County, NC             | 153   | 15.3                        | 52                    |
| 39    | Pinellas County, FL         | 150   | 16.0                        | 52                    |
| 40    | Orleans Parish, LA          | 146   | 38.0                        | 53                    |
| 41    | San Bernardino County, CA   | 132   | 6.2                         | 53                    |
| 42    | Santa Clara County, CA      | 130   | 6.9                         | 54                    |
| 43    | San Joaquin County, CA      | 129   | 18.0                        | 55                    |
| 44    | Allegheny County, PA        | 129   | 10.5                        | 55                    |
| 45    | Guilford County, NC         | 121   | 23.6                        | 56                    |
| 46    | Denver County, CO           | 117   | 17.6                        | 56                    |
| 47    | East Baton Rouge Parish, LA | 111   | 24.9                        | 57                    |
| 48    | Pima County, AZ             | 111   | 11.1                        | 57                    |
| 49    | Shelby County, TN           | 102   | 10.9                        | 57                    |
| 50    | Palm Beach County, FL       | 101   | 7.2                         | 58                    |
| 51    | Gwinnett County, GA         | 98    | 11.2                        | 58                    |
| 52    | Oklahoma County, OK         | 93    | 12.1                        | 59                    |
| 53    | Durham County, NC           | 89    | 30.2                        | 59                    |
| 54    | Davidson County, TN         | 89    | 13.3                        | 59                    |
| 55    | Suffolk County, MA          | 88    | 11.5                        | 60                    |
| 56    | Richland County, SC         | 87    | 21.7                        | 60                    |
| 57    | Erie County, NY             | 86    | 9.3                         | 60                    |
| 58    | Contra Costa County, CA     | 84    | 7.6                         | 61                    |
| 59    | Caddo Parish, LA            | 82    | 32.5                        | 61                    |
| 60    | Cobb County, GA             | 82    | 11.2                        | 62                    |
| 61    | Duval County, FL            | 82    | 9.1                         | 62                    |
| 62    | Honolulu County, HI         | 82    | 8.3                         | 62                    |
| 63    | Prince George's County, MD  | 81    | 9.0                         | 63                    |
| 64    | Cumberland County, NC       | 80    | 24.5                        | 63                    |
| 65    | Jefferson County, KY        | 79    | 10.4                        | 63                    |
| 66    | Hamilton County, OH         | 79    | 9.8                         | 64                    |
| 67    | Baltimore County, MD        | 79    | 9.6                         | 64                    |
| 68    | Suffolk County, NY          | 79    | 5.3                         | 64                    |
| 69    | Hudson County, NJ           | 77    | 11.5                        | 65                    |
| 70    | Nassau County, NY           | 72    | 5.3                         | 65                    |

\*The top 70 counties and independent cities ranked in descending order by number of cases reported in 2015 then by rate are displayed.

**Table 34. Primary and Secondary Syphilis — Reported Cases and Rates of Reported Cases by Age Group and Sex, United States, 2011–2015**

| Age Group    | Cases         |               |              |             | Rates per 100,000 Population* |             |            |
|--------------|---------------|---------------|--------------|-------------|-------------------------------|-------------|------------|
|              | Total         | Male          | Female       | Unknown Sex | Total                         | Male        | Female     |
| 0–4          | 9             | 5             | 4            | 0           | 0.0                           | 0.0         | 0.0        |
| 5–9          | 1             | 1             | 0            | 0           | 0.0                           | 0.0         | 0.0        |
| 10–14        | 15            | 6             | 9            | 0           | 0.1                           | 0.1         | 0.1        |
| 15–19        | 864           | 606           | 258          | 0           | 4.0                           | 5.5         | 2.5        |
| 20–24        | 2,987         | 2,582         | 403          | 2           | 13.5                          | 22.8        | 3.7        |
| 25–29        | 2,546         | 2,277         | 268          | 1           | 12.0                          | 21.2        | 2.5        |
| 30–34        | 1,846         | 1,657         | 187          | 2           | 9.0                           | 16.1        | 1.8        |
| 35–39        | 1,382         | 1,265         | 115          | 2           | 7.1                           | 13.0        | 1.2        |
| 40–44        | 1,503         | 1,408         | 91           | 4           | 7.1                           | 13.5        | 0.9        |
| 45–54        | 2,123         | 1,999         | 120          | 4           | 4.7                           | 9.1         | 0.5        |
| 55–64        | 554           | 510           | 43           | 1           | 1.5                           | 2.8         | 0.2        |
| 65+          | 138           | 135           | 3            | 0           | 0.3                           | 0.8         | 0.0        |
| Unknown Age  | 2             | 2             | 0            | 0           |                               |             |            |
| <b>TOTAL</b> | <b>13,970</b> | <b>12,453</b> | <b>1,501</b> | <b>16</b>   | <b>4.5</b>                    | <b>8.1</b>  | <b>0.9</b> |
| 0–4          | 1             | 1             | 0            | 0           | 0.0                           | 0.0         | 0.0        |
| 5–9          | 0             | 0             | 0            | 0           | 0.0                           | 0.0         | 0.0        |
| 10–14        | 9             | 5             | 4            | 0           | 0.0                           | 0.0         | 0.0        |
| 15–19        | 880           | 640           | 238          | 2           | 4.1                           | 5.8         | 2.3        |
| 20–24        | 3,280         | 2,859         | 418          | 3           | 14.5                          | 24.8        | 3.8        |
| 25–29        | 2,911         | 2,641         | 266          | 4           | 13.6                          | 24.4        | 2.5        |
| 30–34        | 2,209         | 2,023         | 182          | 4           | 10.6                          | 19.3        | 1.7        |
| 35–39        | 1,563         | 1,443         | 120          | 0           | 8.0                           | 14.9        | 1.2        |
| 40–44        | 1,618         | 1,544         | 70           | 4           | 7.7                           | 14.8        | 0.7        |
| 45–54        | 2,439         | 2,310         | 128          | 1           | 5.5                           | 10.6        | 0.6        |
| 55–64        | 614           | 586           | 27           | 1           | 1.6                           | 3.2         | 0.1        |
| 65+          | 123           | 121           | 2            | 0           | 0.3                           | 0.6         | 0.0        |
| Unknown Age  | 20            | 17            | 3            | 0           |                               |             |            |
| <b>TOTAL</b> | <b>15,667</b> | <b>14,190</b> | <b>1,458</b> | <b>19</b>   | <b>5.0</b>                    | <b>9.2</b>  | <b>0.9</b> |
| 0–4          | 5             | 2             | 3            | 0           | 0.0                           | 0.0         | 0.0        |
| 5–9          | 0             | 0             | 0            | 0           | 0.0                           | 0.0         | 0.0        |
| 10–14        | 23            | 14            | 9            | 0           | 0.1                           | 0.1         | 0.1        |
| 15–19        | 900           | 700           | 200          | 0           | 4.3                           | 6.5         | 1.9        |
| 20–24        | 3,642         | 3,204         | 435          | 3           | 16.0                          | 27.4        | 3.9        |
| 25–29        | 3,329         | 3,037         | 286          | 6           | 15.4                          | 27.7        | 2.7        |
| 30–34        | 2,447         | 2,272         | 172          | 3           | 11.5                          | 21.3        | 1.6        |
| 35–39        | 1,800         | 1,674         | 125          | 1           | 9.2                           | 17.1        | 1.3        |
| 40–44        | 1,693         | 1,587         | 105          | 1           | 8.1                           | 15.3        | 1.0        |
| 45–54        | 2,614         | 2,495         | 119          | 0           | 6.0                           | 11.6        | 0.5        |
| 55–64        | 750           | 716           | 34           | 0           | 1.9                           | 3.8         | 0.2        |
| 65+          | 162           | 152           | 10           | 0           | 0.4                           | 0.8         | 0.0        |
| Unknown Age  | 10            | 8             | 2            | 0           |                               |             |            |
| <b>TOTAL</b> | <b>17,375</b> | <b>15,861</b> | <b>1,500</b> | <b>14</b>   | <b>5.5</b>                    | <b>10.2</b> | <b>0.9</b> |
| 0–4          | 0             | 0             | 0            | 0           | 0.0                           | 0.0         | 0.0        |
| 5–9          | 0             | 0             | 0            | 0           | 0.0                           | 0.0         | 0.0        |
| 10–14        | 12            | 4             | 8            | 0           | 0.1                           | 0.0         | 0.1        |
| 15–19        | 1,023         | 761           | 262          | 0           | 4.9                           | 7.1         | 2.5        |
| 20–24        | 4,137         | 3,632         | 503          | 2           | 18.1                          | 30.9        | 4.5        |
| 25–29        | 4,092         | 3,727         | 361          | 4           | 18.6                          | 33.4        | 3.3        |
| 30–34        | 2,887         | 2,635         | 248          | 4           | 13.4                          | 24.4        | 2.3        |
| 35–39        | 2,045         | 1,868         | 177          | 0           | 10.3                          | 18.8        | 1.8        |
| 40–44        | 1,758         | 1,654         | 103          | 1           | 8.5                           | 16.2        | 1.0        |
| 45–54        | 2,966         | 2,830         | 135          | 1           | 6.8                           | 13.2        | 0.6        |
| 55–64        | 897           | 860           | 36           | 1           | 2.2                           | 4.5         | 0.2        |
| 65+          | 176           | 169           | 7            | 0           | 0.4                           | 0.8         | 0.0        |
| Unknown Age  | 6             | 6             | 0            | 0           |                               |             |            |
| <b>TOTAL</b> | <b>19,999</b> | <b>18,146</b> | <b>1,840</b> | <b>13</b>   | <b>6.3</b>                    | <b>11.6</b> | <b>1.1</b> |
| 0–4          | 2             | 0             | 1            | 1           | 0.0                           | 0.0         | 0.0        |
| 5–9          | 1             | 0             | 1            | 0           | 0.0                           | 0.0         | 0.0        |
| 10–14        | 9             | 1             | 8            | 0           | 0.0                           | 0.0         | 0.1        |
| 15–19        | 1,148         | 865           | 283          | 0           | 5.4                           | 8.0         | 2.8        |
| 20–24        | 4,766         | 4,186         | 573          | 7           | 20.8                          | 35.7        | 5.1        |
| 25–29        | 5,168         | 4,671         | 491          | 6           | 23.5                          | 41.8        | 4.5        |
| 30–34        | 3,549         | 3,234         | 311          | 4           | 16.5                          | 29.9        | 2.9        |
| 35–39        | 2,482         | 2,249         | 229          | 4           | 12.5                          | 22.6        | 2.3        |
| 40–44        | 1,897         | 1,744         | 152          | 1           | 9.2                           | 17.1        | 1.5        |
| 45–54        | 3,488         | 3,294         | 190          | 4           | 8.0                           | 15.4        | 0.9        |
| 55–64        | 1,153         | 1,099         | 54           | 0           | 2.9                           | 5.7         | 0.3        |
| 65+          | 207           | 202           | 5            | 0           | 0.4                           | 1.0         | 0.0        |
| Unknown Age  | 2             | 2             | 0            | 0           |                               |             |            |
| <b>TOTAL</b> | <b>23,872</b> | <b>21,547</b> | <b>2,298</b> | <b>27</b>   | <b>7.5</b>                    | <b>13.7</b> | <b>1.4</b> |

\* No population data are available for unknown sex and age; therefore, rates are not calculated.

**NOTE:** This table should be used only for age comparisons.

**Table 35A. Primary and Secondary Syphilis — Reported Cases by Race/Ethnicity, Age Group, and Sex, United States\*, 2015**

| Age Group    | American Indians/<br>Alaska Natives |            |           | Asians     |            |           | Blacks       |              |              | Native Hawaiians/<br>Other Pacific Islanders |           |          |
|--------------|-------------------------------------|------------|-----------|------------|------------|-----------|--------------|--------------|--------------|----------------------------------------------|-----------|----------|
|              | Total†                              | Male       | Female    | Total†     | Male       | Female    | Total†       | Male         | Female       | Total†                                       | Male      | Female   |
| 0–4          | 0                                   | 0          | 0         | 0          | 0          | 0         | 1            | 0            | 1            | 0                                            | 0         | 0        |
| 5–9          | 0                                   | 0          | 0         | 0          | 0          | 0         | 1            | 0            | 1            | 0                                            | 0         | 0        |
| 10–14        | 0                                   | 0          | 0         | 0          | 0          | 0         | 4            | 0            | 4            | 0                                            | 0         | 0        |
| 15–19        | 9                                   | 6          | 3         | 21         | 18         | 3         | 568          | 386          | 182          | 0                                            | 0         | 0        |
| 20–24        | 26                                  | 22         | 4         | 85         | 80         | 5         | 2,235        | 1,903        | 330          | 17                                           | 14        | 3        |
| 25–29        | 27                                  | 23         | 4         | 115        | 107        | 8         | 2,153        | 1,933        | 219          | 10                                           | 10        | 0        |
| 30–34        | 22                                  | 16         | 6         | 74         | 72         | 2         | 1,207        | 1,082        | 124          | 9                                            | 9         | 0        |
| 35–39        | 16                                  | 10         | 6         | 50         | 45         | 4         | 751          | 665          | 85           | 7                                            | 6         | 1        |
| 40–44        | 10                                  | 9          | 1         | 57         | 56         | 1         | 517          | 459          | 58           | 2                                            | 2         | 0        |
| 45–54        | 17                                  | 16         | 1         | 79         | 75         | 4         | 722          | 659          | 62           | 8                                            | 8         | 0        |
| 55–64        | 1                                   | 1          | 0         | 12         | 12         | 0         | 214          | 189          | 25           | 1                                            | 1         | 0        |
| 65+          | 1                                   | 1          | 0         | 1          | 1          | 0         | 28           | 25           | 3            | 0                                            | 0         | 0        |
| Unknown Age  | 0                                   | 0          | 0         | 0          | 0          | 0         | 0            | 0            | 0            | 0                                            | 0         | 0        |
| <b>TOTAL</b> | <b>129</b>                          | <b>104</b> | <b>25</b> | <b>494</b> | <b>466</b> | <b>27</b> | <b>8,401</b> | <b>7,301</b> | <b>1,094</b> | <b>54</b>                                    | <b>50</b> | <b>4</b> |

| Age Group    | Whites       |              |            | Multirace  |            |           | Hispanics    |              |            | Other/<br>Unknown |              |            |
|--------------|--------------|--------------|------------|------------|------------|-----------|--------------|--------------|------------|-------------------|--------------|------------|
|              | Total†       | Male         | Female     | Total†     | Male       | Female    | Total†       | Male         | Female     | Total†            | Male         | Female     |
| 0–4          | 0            | 0            | 0          | 0          | 0          | 0         | 0            | 0            | 0          | 0                 | 0            | 0          |
| 5–9          | 0            | 0            | 0          | 0          | 0          | 0         | 0            | 0            | 0          | 0                 | 0            | 0          |
| 10–14        | 1            | 0            | 1          | 1          | 0          | 1         | 2            | 0            | 2          | 1                 | 1            | 0          |
| 15–19        | 193          | 152          | 41         | 13         | 8          | 5         | 263          | 231          | 32         | 72                | 57           | 15         |
| 20–24        | 1,042        | 926          | 116        | 61         | 58         | 3         | 1,007        | 919          | 86         | 267               | 242          | 24         |
| 25–29        | 1,345        | 1,208        | 137        | 84         | 79         | 5         | 1,117        | 1,026        | 88         | 280               | 251          | 29         |
| 30–34        | 1,137        | 1,027        | 110        | 75         | 74         | 1         | 789          | 740          | 47         | 211               | 192          | 19         |
| 35–39        | 863          | 782          | 81         | 40         | 38         | 2         | 611          | 574          | 36         | 130               | 115          | 14         |
| 40–44        | 766          | 709          | 56         | 18         | 18         | 0         | 398          | 370          | 28         | 117               | 109          | 8          |
| 45–54        | 1,755        | 1,686        | 68         | 43         | 40         | 3         | 625          | 584          | 39         | 220               | 207          | 13         |
| 55–64        | 691          | 676          | 15         | 12         | 12         | 0         | 137          | 127          | 10         | 71                | 68           | 3          |
| 65+          | 125          | 125          | 0          | 1          | 1          | 0         | 33           | 31           | 2          | 15                | 15           | 0          |
| Unknown Age  | 0            | 0            | 0          | 0          | 0          | 0         | 2            | 2            | 0          | 0                 | 0            | 0          |
| <b>TOTAL</b> | <b>7,918</b> | <b>7,291</b> | <b>625</b> | <b>348</b> | <b>328</b> | <b>20</b> | <b>4,984</b> | <b>4,604</b> | <b>370</b> | <b>1,384</b>      | <b>1,257</b> | <b>125</b> |

\* Includes 49 states reporting race/ethnicity data in the Office of Management and Budget compliant formats in 2015.

† Total includes cases reported with unknown sex.

**NOTE:** These tables should be used only for race/ethnicity comparisons. See Table 34 for age-specific cases and rates and Tables 27–29 for total and sex-specific cases and rates.

**Table 35B. Primary and Secondary Syphilis — Rates of Reported Cases per 100,000 Population by Race/Ethnicity, Age Group, and Sex, United States\*, 2015**

| Age Group    | American Indians/<br>Alaska Natives |            |            | Asians     |            |            | Blacks      |             |            | Native Hawaiians/<br>Other Pacific Islanders |             |            |
|--------------|-------------------------------------|------------|------------|------------|------------|------------|-------------|-------------|------------|----------------------------------------------|-------------|------------|
|              | Total†                              | Male       | Female     | Total†     | Male       | Female     | Total†      | Male        | Female     | Total†                                       | Male        | Female     |
| 0–4          | 0.0                                 | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0         | 0.1        | 0.0                                          | 0.0         | 0.0        |
| 5–9          | 0.0                                 | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0         | 0.1        | 0.0                                          | 0.0         | 0.0        |
| 10–14        | 0.0                                 | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.1         | 0.0         | 0.3        | 0.0                                          | 0.0         | 0.0        |
| 15–19        | 5.0                                 | 6.6        | 3.4        | 2.1        | 3.6        | 0.6        | 19.1        | 25.5        | 12.4       | 0.0                                          | 0.0         | 0.0        |
| 20–24        | 13.1                                | 21.6       | 4.1        | 7.0        | 12.9       | 0.8        | 65.5        | 110.1       | 19.6       | 37.6                                         | 60.3        | 13.6       |
| 25–29        | 15.5                                | 26.1       | 4.7        | 8.2        | 15.7       | 1.1        | 73.1        | 133.2       | 14.6       | 20.9                                         | 40.5        | 0.0        |
| 30–34        | 13.9                                | 20.3       | 7.5        | 5.2        | 10.7       | 0.3        | 44.2        | 82.7        | 8.7        | 20.0                                         | 38.9        | 0.0        |
| 35–39        | 11.2                                | 14.1       | 8.4        | 3.7        | 7.1        | 0.6        | 29.9        | 56.0        | 6.4        | 18.2                                         | 30.4        | 5.3        |
| 40–44        | 6.9                                 | 12.7       | 1.4        | 4.2        | 8.7        | 0.1        | 20.1        | 37.9        | 4.3        | 5.7                                          | 11.3        | 0.0        |
| 45–54        | 5.5                                 | 10.7       | 0.6        | 3.4        | 7.0        | 0.3        | 13.7        | 26.6        | 2.2        | 12.2                                         | 24.5        | 0.0        |
| 55–64        | 0.4                                 | 0.8        | 0.0        | 0.6        | 1.4        | 0.0        | 4.8         | 9.3         | 1.0        | 2.0                                          | 4.1         | 0.0        |
| 65+          | 0.4                                 | 1.0        | 0.0        | 0.1        | 0.1        | 0.0        | 0.7         | 1.6         | 0.1        | 0.0                                          | 0.0         | 0.0        |
| Unknown Age  |                                     |            |            |            |            |            |             |             |            |                                              |             |            |
| <b>TOTAL</b> | <b>5.6</b>                          | <b>9.1</b> | <b>2.1</b> | <b>3.0</b> | <b>5.9</b> | <b>0.3</b> | <b>21.4</b> | <b>39.0</b> | <b>5.3</b> | <b>10.4</b>                                  | <b>19.1</b> | <b>1.6</b> |

| Age Group    | Whites     |            |            | Multirace  |             |            | Hispanics  |             |            |
|--------------|------------|------------|------------|------------|-------------|------------|------------|-------------|------------|
|              | Total†     | Male       | Female     | Total†     | Male        | Female     | Total†     | Male        | Female     |
| 0–4          | 0.0        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0        | 0.0        | 0.0         | 0.0        |
| 5–9          | 0.0        | 0.0        | 0.0        | 0.0        | 0.0         | 0.0        | 0.0        | 0.0         | 0.0        |
| 10–14        | 0.0        | 0.0        | 0.0        | 0.1        | 0.0         | 0.3        | 0.0        | 0.0         | 0.1        |
| 15–19        | 1.7        | 2.6        | 0.7        | 2.0        | 2.4         | 1.5        | 5.7        | 9.8         | 1.4        |
| 20–24        | 8.4        | 14.5       | 1.9        | 10.8       | 20.6        | 1.1        | 21.3       | 37.2        | 3.8        |
| 25–29        | 10.9       | 19.4       | 2.3        | 19.6       | 38.7        | 2.2        | 25.3       | 44.1        | 4.2        |
| 30–34        | 9.4        | 16.8       | 1.8        | 20.3       | 42.6        | 0.5        | 18.0       | 32.2        | 2.2        |
| 35–39        | 7.7        | 13.9       | 1.5        | 13.1       | 26.5        | 1.2        | 14.9       | 27.3        | 1.8        |
| 40–44        | 6.3        | 11.6       | 0.9        | 6.6        | 13.9        | 0.0        | 10.4       | 19.1        | 1.5        |
| 45–54        | 6.2        | 12.0       | 0.5        | 9.0        | 17.6        | 1.2        | 9.9        | 18.4        | 1.3        |
| 55–64        | 2.4        | 4.8        | 0.1        | 3.2        | 6.8         | 0.0        | 3.4        | 6.5         | 0.5        |
| 65+          | 0.3        | 0.8        | 0.0        | 0.3        | 0.7         | 0.0        | 0.9        | 2.0         | 0.1        |
| Unknown Age  |            |            |            |            |             |            |            |             |            |
| <b>TOTAL</b> | <b>4.1</b> | <b>7.6</b> | <b>0.6</b> | <b>5.5</b> | <b>10.6</b> | <b>0.6</b> | <b>9.1</b> | <b>16.6</b> | <b>1.4</b> |

\* Includes 49 states reporting race/ethnicity data in the Office of Management and Budget compliant formats in 2015.

† Total includes cases reported with unknown sex.

**NOTE:** These tables should be used only for race/ethnicity comparisons. See Table 34 for age-specific cases and rates and Tables 27–29 for total and sex-specific cases and rates. No population data exist for unknown sex, unknown age, or unknown race; therefore rates are not calculated.

**Table 36. Early Latent Syphilis — Reported Cases and Rates of Reported Cases by State/Area and Region in Alphabetical Order, United States and Outlying Areas, 2011–2015**

| State/Area            | Cases         |               |               |               |               | Rates per 100,000 Population |            |            |            |             |
|-----------------------|---------------|---------------|---------------|---------------|---------------|------------------------------|------------|------------|------------|-------------|
|                       | 2011          | 2012          | 2013          | 2014          | 2015          | 2011                         | 2012       | 2013       | 2014       | 2015        |
| Alabama               | 268           | 237           | 202           | 144           | 177           | 5.6                          | 4.9        | 4.2        | 3.0        | 3.6         |
| Alaska                | 3             | 8             | 8             | 25            | 13            | 0.4                          | 1.1        | 1.1        | 3.4        | 1.8         |
| Arizona               | 187           | 147           | 207           | 311           | 361           | 2.9                          | 2.2        | 3.1        | 4.6        | 5.4         |
| Arkansas              | 167           | 152           | 163           | 152           | 216           | 5.7                          | 5.2        | 5.5        | 5.1        | 7.3         |
| California            | 2,030         | 2,519         | 2,844         | 3,396         | 4,435         | 5.4                          | 6.6        | 7.4        | 8.8        | 11.4        |
| Colorado              | 154           | 194           | 195           | 164           | 212           | 3.0                          | 3.7        | 3.7        | 3.1        | 4.0         |
| Connecticut           | 57            | 52            | 55            | 62            | 97            | 1.6                          | 1.4        | 1.5        | 1.7        | 2.7         |
| Delaware              | 49            | 38            | 30            | 33            | 47            | 5.4                          | 4.1        | 3.2        | 3.5        | 5.0         |
| District of Columbia  | 222           | 244           | 243           | 142           | 200           | 35.9                         | 38.6       | 37.6       | 21.6       | 30.4        |
| Florida               | 1,212         | 1,384         | 1,540         | 1,886         | 2,288         | 6.4                          | 7.2        | 7.9        | 9.5        | 11.5        |
| Georgia               | 436           | 639           | 863           | 1,078         | 1,477         | 4.4                          | 6.4        | 8.6        | 10.7       | 14.6        |
| Hawaii                | 5             | 9             | 22            | 25            | 56            | 0.4                          | 0.6        | 1.6        | 1.8        | 3.9         |
| Idaho                 | 11            | 21            | 6             | 12            | 24            | 0.7                          | 1.3        | 0.4        | 0.7        | 1.5         |
| Illinois              | 581           | 690           | 809           | 819           | 889           | 4.5                          | 5.4        | 6.3        | 6.4        | 6.9         |
| Indiana               | 95            | 148           | 157           | 129           | 220           | 1.5                          | 2.3        | 2.4        | 2.0        | 3.3         |
| Iowa                  | 11            | 15            | 63            | 82            | 69            | 0.4                          | 0.5        | 2.0        | 2.6        | 2.2         |
| Kansas                | 34            | 54            | 84            | 92            | 153           | 1.2                          | 1.9        | 2.9        | 3.2        | 5.3         |
| Kentucky              | 109           | 139           | 167           | 169           | 164           | 2.5                          | 3.2        | 3.8        | 3.8        | 3.7         |
| Louisiana             | 488           | 343           | 276           | 372           | 439           | 10.7                         | 7.5        | 6.0        | 8.0        | 9.4         |
| Maine                 | 8             | 2             | 6             | 7             | 10            | 0.6                          | 0.2        | 0.5        | 0.5        | 0.8         |
| Maryland              | 332           | 361           | 387           | 529           | 594           | 5.7                          | 6.1        | 6.5        | 8.9        | 9.9         |
| Massachusetts         | 233           | 231           | 350           | 282           | 355           | 3.5                          | 3.5        | 5.2        | 4.2        | 5.3         |
| Michigan              | 132           | 150           | 204           | 243           | 282           | 1.3                          | 1.5        | 2.1        | 2.5        | 2.8         |
| Minnesota             | 121           | 96            | 139           | 159           | 185           | 2.3                          | 1.8        | 2.6        | 2.9        | 3.4         |
| Mississippi           | 313           | 253           | 184           | 336           | 405           | 10.5                         | 8.5        | 6.2        | 11.2       | 13.5        |
| Missouri              | 124           | 135           | 220           | 240           | 247           | 2.1                          | 2.2        | 3.6        | 4.0        | 4.1         |
| Montana               | 1             | 0             | 2             | 1             | 5             | 0.1                          | 0.0        | 0.2        | 0.1        | 0.5         |
| Nebraska              | 3             | 8             | 14            | 19            | 5             | 0.2                          | 0.4        | 0.7        | 1.0        | 0.3         |
| Nevada                | 166           | 214           | 232           | 389           | 439           | 6.1                          | 7.8        | 8.3        | 13.7       | 15.5        |
| New Hampshire         | 5             | 9             | 21            | 22            | 16            | 0.4                          | 0.7        | 1.6        | 1.7        | 1.2         |
| New Jersey            | 452           | 410           | 539           | 612           | 714           | 5.1                          | 4.6        | 6.1        | 6.8        | 8.0         |
| New Mexico            | 56            | 68            | 67            | 76            | 71            | 2.7                          | 3.3        | 3.2        | 3.6        | 3.4         |
| New York              | 1,254         | 1,413         | 1,945         | 2,307         | 2,802         | 6.4                          | 7.2        | 9.9        | 11.7       | 14.2        |
| North Carolina        | 333           | 244           | 236           | 468           | 753           | 3.4                          | 2.5        | 2.4        | 4.7        | 7.6         |
| North Dakota          | 1             | 0             | 2             | 22            | 17            | 0.1                          | 0.0        | 0.3        | 3.0        | 2.3         |
| Ohio                  | 160           | 171           | 211           | 265           | 326           | 1.4                          | 1.5        | 1.8        | 2.3        | 2.8         |
| Oklahoma              | 145           | 146           | 237           | 198           | 222           | 3.8                          | 3.8        | 6.2        | 5.1        | 5.7         |
| Oregon                | 63            | 94            | 127           | 149           | 214           | 1.6                          | 2.4        | 3.2        | 3.8        | 5.4         |
| Pennsylvania          | 412           | 484           | 581           | 641           | 770           | 3.2                          | 3.8        | 4.5        | 5.0        | 6.0         |
| Rhode Island          | 20            | 24            | 22            | 49            | 38            | 1.9                          | 2.3        | 2.1        | 4.6        | 3.6         |
| South Carolina        | 345           | 336           | 415           | 467           | 496           | 7.4                          | 7.1        | 8.7        | 9.7        | 10.3        |
| South Dakota          | 0             | 3             | 5             | 23            | 11            | 0.0                          | 0.4        | 0.6        | 2.7        | 1.3         |
| Tennessee             | 256           | 255           | 267           | 236           | 312           | 4.0                          | 3.9        | 4.1        | 3.6        | 4.8         |
| Texas                 | 1,581         | 1,767         | 1,902         | 1,984         | 2,471         | 6.2                          | 6.8        | 7.2        | 7.4        | 9.2         |
| Utah                  | 8             | 8             | 47            | 41            | 31            | 0.3                          | 0.3        | 1.6        | 1.4        | 1.1         |
| Vermont               | 1             | 6             | 2             | 7             | 6             | 0.2                          | 1.0        | 0.3        | 1.1        | 1.0         |
| Virginia              | 289           | 303           | 354           | 274           | 410           | 3.6                          | 3.7        | 4.3        | 3.3        | 4.9         |
| Washington            | 146           | 181           | 204           | 198           | 293           | 2.1                          | 2.6        | 2.9        | 2.8        | 4.1         |
| West Virginia         | 0             | 10            | 10            | 23            | 40            | 0.0                          | 0.5        | 0.5        | 1.2        | 2.2         |
| Wisconsin             | 57            | 86            | 62            | 91            | 95            | 1.0                          | 1.5        | 1.1        | 1.6        | 1.7         |
| Wyoming               | 0             | 2             | 1             | 1             | 1             | 0.0                          | 0.3        | 0.2        | 0.2        | 0.2         |
| <b>U.S. TOTAL</b>     | <b>13,136</b> | <b>14,503</b> | <b>16,929</b> | <b>19,452</b> | <b>24,173</b> | <b>4.2</b>                   | <b>4.6</b> | <b>5.4</b> | <b>6.1</b> | <b>7.6</b>  |
| Northeast             | 2,442         | 2,631         | 3,521         | 3,989         | 4,808         | 4.4                          | 4.7        | 6.3        | 7.1        | 8.6         |
| Midwest               | 1,319         | 1,556         | 1,970         | 2,184         | 2,499         | 2.0                          | 2.3        | 2.9        | 3.2        | 3.7         |
| South                 | 6,545         | 6,851         | 7,476         | 8,491         | 10,711        | 5.6                          | 5.8        | 6.3        | 7.1        | 8.9         |
| West                  | 2,830         | 3,465         | 3,962         | 4,788         | 6,155         | 3.9                          | 4.7        | 5.3        | 6.4        | 8.2         |
| Guam                  | 4             | 1             | 3             | 1             | 2             | 2.5                          | 0.6        | 1.9        | 0.6        | 1.2         |
| Puerto Rico           | 211           | 222           | 270           | 375           | 565           | 5.7                          | 6.1        | 7.5        | 10.6       | 15.9        |
| Virgin Islands        | 0             | 0             | 2             | 0             | 7             | 0.0                          | 0.0        | 1.9        | 0.0        | 6.7         |
| <b>OUTLYING AREAS</b> | <b>215</b>    | <b>223</b>    | <b>275</b>    | <b>376</b>    | <b>574</b>    | <b>5.4</b>                   | <b>5.7</b> | <b>7.1</b> | <b>9.9</b> | <b>15.1</b> |
| <b>TOTAL</b>          | <b>13,351</b> | <b>14,726</b> | <b>17,204</b> | <b>19,828</b> | <b>24,747</b> | <b>4.2</b>                   | <b>4.6</b> | <b>5.4</b> | <b>6.1</b> | <b>7.7</b>  |

**Table 37. Early Latent Syphilis — Reported Cases and Rates of Reported Cases in Selected Metropolitan Statistical Areas (MSAs)\* in Alphabetical Order, United States, 2011–2015**

| MSAs                                         | Cases        |               |               |               |               | Rates per 100,000 Population |            |            |            |             |
|----------------------------------------------|--------------|---------------|---------------|---------------|---------------|------------------------------|------------|------------|------------|-------------|
|                                              | 2011         | 2012          | 2013          | 2014          | 2015          | 2011                         | 2012       | 2013       | 2014       | 2015        |
| Atlanta-Sandy Springs-Roswell, GA            | 352          | 491           | 672           | 863           | 1,067         | 6.5                          | 9.0        | 12.2       | 15.4       | 19.0        |
| Austin-Round Rock, TX                        | 137          | 170           | 220           | 207           | 242           | 7.7                          | 9.3        | 11.7       | 10.7       | 12.5        |
| Baltimore-Columbia-Towson, MD                | 198          | 206           | 216           | 296           | 344           | 7.3                          | 7.5        | 7.8        | 10.6       | 12.3        |
| Birmingham-Hoover, AL                        | 90           | 74            | 71            | 46            | 60            | 7.9                          | 6.5        | 6.2        | 4.0        | 5.2         |
| Boston-Cambridge-Newton, MA-NH               | 176          | 158           | 278           | 208           | 235           | 3.8                          | 3.4        | 5.9        | 4.4        | 5.0         |
| Buffalo-Cheektowaga-Niagara Falls, NY        | 7            | 11            | 15            | 19            | 37            | 0.6                          | 1.0        | 1.3        | 1.7        | 3.3         |
| Charlotte-Concord-Gastonia, NC-SC            | 103          | 70            | 74            | 129           | 206           | 4.6                          | 3.0        | 3.2        | 5.4        | 8.7         |
| Chicago-Naperville-Elgin, IL-IN-WI           | 531          | 630           | 751           | 734           | 814           | 5.6                          | 6.6        | 7.9        | 7.7        | 8.5         |
| Cincinnati, OH-KY-IN                         | 67           | 78            | 70            | 98            | 92            | 3.2                          | 3.7        | 3.3        | 4.6        | 4.3         |
| Cleveland-Elyria, OH                         | 25           | 13            | 14            | 31            | 37            | 1.2                          | 0.6        | 0.7        | 1.5        | 1.8         |
| Columbus, OH                                 | 37           | 49            | 71            | 82            | 130           | 1.9                          | 2.5        | 3.6        | 4.1        | 6.5         |
| Dallas-Fort Worth-Arlington, TX              | 500          | 604           | 550           | 644           | 932           | 7.6                          | 9.0        | 8.1        | 9.3        | 13.4        |
| Denver-Aurora-Lakewood, CO                   | 139          | 177           | 166           | 145           | 175           | 5.3                          | 6.7        | 6.2        | 5.3        | 6.4         |
| Detroit-Warren-Dearborn, MI                  | 82           | 113           | 152           | 163           | 206           | 1.9                          | 2.6        | 3.5        | 3.8        | 4.8         |
| Hartford-West Hartford-East Hartford, CT     | 18           | 9             | 19            | 16            | 31            | 1.5                          | 0.7        | 1.6        | 1.3        | 2.6         |
| Houston-The Woodlands-Sugar Land, TX         | 351          | 419           | 348           | 444           | 522           | 5.8                          | 6.8        | 5.5        | 6.8        | 8.0         |
| Indianapolis-Carmel-Anderson, IN             | 66           | 102           | 104           | 91            | 143           | 3.5                          | 5.3        | 5.3        | 4.6        | 7.3         |
| Jacksonville, FL                             | 50           | 57            | 73            | 69            | 162           | 3.7                          | 4.1        | 5.2        | 4.9        | 11.4        |
| Kansas City, MO-KS                           | 40           | 61            | 111           | 132           | 133           | 2.0                          | 3.0        | 5.4        | 6.4        | 6.4         |
| Las Vegas-Henderson-Paradise, NV             | 162          | 207           | 218           | 375           | 413           | 8.2                          | 10.3       | 10.8       | 18.1       | 20.0        |
| Los Angeles-Long Beach-Anaheim, CA           | 1,132        | 1,393         | 1,520         | 1,619         | 2,052         | 8.7                          | 10.7       | 11.6       | 12.2       | 15.5        |
| Louisville-Jefferson County, KY-IN           | 41           | 72            | 85            | 82            | 90            | 3.3                          | 5.8        | 6.7        | 6.5        | 7.1         |
| Memphis, TN-MS-AR                            | 180          | 188           | 188           | 143           | 195           | 13.5                         | 14.0       | 14.0       | 10.6       | 14.5        |
| Miami-Fort Lauderdale-West Palm Beach, FL    | 682          | 831           | 885           | 1,094         | 1,220         | 12.0                         | 14.4       | 15.2       | 18.4       | 20.6        |
| Milwaukee-Waukesha-West Allis, WI            | 33           | 57            | 43            | 69            | 66            | 2.1                          | 3.6        | 2.7        | 4.4        | 4.2         |
| Minneapolis-St. Paul-Bloomington, MN-WI      | 112          | 91            | 131           | 155           | 170           | 3.3                          | 2.7        | 3.8        | 4.4        | 4.9         |
| Nashville-Davidson-Murfreesboro-Franklin, TN | 37           | 50            | 62            | 83            | 82            | 2.2                          | 2.9        | 3.5        | 4.6        | 4.6         |
| New Orleans-Metairie, LA                     | 109          | 90            | 81            | 122           | 171           | 9.0                          | 7.3        | 6.5        | 9.7        | 13.7        |
| New York-Newark-Jersey City, NY-NJ-PA        | 1,569        | 1,668         | 2,299         | 2,681         | 3,210         | 8.0                          | 8.4        | 11.5       | 13.3       | 16.0        |
| Oklahoma City, OK                            | 65           | 79            | 124           | 107           | 114           | 5.1                          | 6.1        | 9.4        | 8.0        | 8.5         |
| Orlando-Kissimmee-Sanford, FL                | 142          | 136           | 175           | 180           | 266           | 6.5                          | 6.1        | 7.7        | 7.8        | 11.5        |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD  | 398          | 408           | 497           | 512           | 616           | 6.6                          | 6.8        | 8.2        | 8.5        | 10.2        |
| Phoenix-Mesa-Scottsdale, AZ                  | 153          | 120           | 150           | 240           | 268           | 3.6                          | 2.8        | 3.4        | 5.3        | 6.0         |
| Pittsburgh, PA                               | 30           | 46            | 45            | 63            | 111           | 1.3                          | 1.9        | 1.9        | 2.7        | 4.7         |
| Portland-Vancouver-Hillsboro, OR-WA          | 58           | 101           | 117           | 124           | 170           | 2.6                          | 4.4        | 5.1        | 5.3        | 7.2         |
| Providence-Warwick, RI-MA                    | 26           | 35            | 28            | 64            | 48            | 1.6                          | 2.2        | 1.7        | 4.0        | 3.0         |
| Raleigh, NC                                  | 35           | 31            | 41            | 77            | 115           | 3.0                          | 2.6        | 3.4        | 6.2        | 9.3         |
| Richmond, VA                                 | 68           | 78            | 75            | 68            | 98            | 5.6                          | 6.3        | 6.0        | 5.4        | 7.8         |
| Riverside-San Bernardino-Ontario, CA         | 144          | 138           | 159           | 223           | 311           | 3.3                          | 3.2        | 3.6        | 5.0        | 7.0         |
| Sacramento-Roseville-Arden-Arcade, CA        | 51           | 38            | 33            | 74            | 137           | 2.3                          | 1.7        | 1.5        | 3.3        | 6.1         |
| Salt Lake City, UT                           | 7            | 7             | 37            | 31            | 23            | 0.6                          | 0.6        | 3.2        | 2.7        | 2.0         |
| San Antonio-New Braunfels, TX                | 252          | 269           | 381           | 308           | 258           | 11.5                         | 12.0       | 16.7       | 13.2       | 11.1        |
| San Diego-Carlsbad, CA                       | 162          | 236           | 211           | 299           | 343           | 5.2                          | 7.4        | 6.6        | 9.2        | 10.5        |
| San Francisco-Oakland-Hayward, CA            | 396          | 528           | 656           | 839           | 964           | 9.0                          | 11.9       | 14.5       | 18.3       | 21.0        |
| San Jose-Sunnyvale-Santa Clara, CA           | 35           | 44            | 60            | 58            | 96            | 1.9                          | 2.3        | 3.1        | 3.0        | 4.9         |
| Seattle-Tacoma-Bellevue, WA                  | 134          | 142           | 167           | 143           | 221           | 3.8                          | 4.0        | 4.6        | 3.9        | 6.0         |
| St. Louis, MO-IL                             | 84           | 89            | 125           | 139           | 138           | 3.0                          | 3.2        | 4.5        | 5.0        | 4.9         |
| Tampa-St. Petersburg-Clearwater, FL          | 139          | 176           | 176           | 227           | 258           | 4.9                          | 6.2        | 6.1        | 7.8        | 8.8         |
| Virginia Beach-Norfolk-Newport News, VA-NC   | 108          | 90            | 112           | 90            | 167           | 6.4                          | 5.3        | 6.6        | 5.2        | 9.7         |
| Washington-Arlington-Alexandria, DC-VA-MD-WV | 403          | 497           | 520           | 286           | 320           | 7.0                          | 8.5        | 8.7        | 4.7        | 5.3         |
| <b>SELECTED MSAs TOTAL</b>                   | <b>9,916</b> | <b>11,427</b> | <b>13,376</b> | <b>14,992</b> | <b>18,279</b> | <b>5.9</b>                   | <b>6.7</b> | <b>7.7</b> | <b>8.6</b> | <b>10.5</b> |

\* MSAs were selected on the basis of the largest population in the 2010 U.S. Census.

**Table 38. Late and Late Latent Syphilis\* — Reported Cases and Rates of Reported Cases by State/ Area and Region in Alphabetical Order, United States and Outlying Areas, 2011–2015**

| State/Area            | Cases         |               |               |               |               | Rates per 100,000 Population |            |            |            |            |
|-----------------------|---------------|---------------|---------------|---------------|---------------|------------------------------|------------|------------|------------|------------|
|                       | 2011          | 2012          | 2013          | 2014          | 2015          | 2011                         | 2012       | 2013       | 2014       | 2015       |
| Alabama               | 252           | 248           | 292           | 167           | 197           | 5.2                          | 5.1        | 6.0        | 3.4        | 4.1        |
| Alaska                | 3             | 14            | 3             | 5             | 3             | 0.4                          | 1.9        | 0.4        | 0.7        | 0.4        |
| Arizona               | 431           | 424           | 455           | 558           | 532           | 6.6                          | 6.5        | 6.9        | 8.3        | 7.9        |
| Arkansas              | 100           | 132           | 175           | 110           | 145           | 3.4                          | 4.5        | 5.9        | 3.7        | 4.9        |
| California            | 2,269         | 2,509         | 3,539         | 4,110         | 4,966         | 6.0                          | 6.6        | 9.2        | 10.6       | 12.8       |
| Colorado              | 80            | 101           | 117           | 5             | 96            | 1.6                          | 1.9        | 2.2        | 0.1        | 1.8        |
| Connecticut           | 67            | 14            | 22            | 21            | 30            | 1.9                          | 0.4        | 0.6        | 0.6        | 0.8        |
| Delaware              | 48            | 29            | 63            | 30            | 21            | 5.3                          | 3.2        | 6.8        | 3.2        | 2.2        |
| District of Columbia  | 164           | 180           | 196           | 23            | 26            | 26.5                         | 28.5       | 30.3       | 3.5        | 3.9        |
| Florida               | 1,641         | 1,693         | 1,934         | 2,429         | 2,723         | 8.6                          | 8.8        | 9.9        | 12.2       | 13.7       |
| Georgia               | 771           | 842           | 1,090         | 1,055         | 1,245         | 7.9                          | 8.5        | 10.9       | 10.4       | 12.3       |
| Hawaii                | 13            | 11            | 19            | 13            | 14            | 0.9                          | 0.8        | 1.4        | 0.9        | 1.0        |
| Idaho                 | 18            | 6             | 21            | 22            | 21            | 1.1                          | 0.4        | 1.3        | 1.3        | 1.3        |
| Illinois              | 946           | 902           | 1,031         | 1,087         | 1,285         | 7.4                          | 7.0        | 8.0        | 8.4        | 10.0       |
| Indiana               | 200           | 159           | 171           | 170           | 189           | 3.1                          | 2.4        | 2.6        | 2.6        | 2.9        |
| Iowa                  | 39            | 58            | 57            | 84            | 88            | 1.3                          | 1.9        | 1.8        | 2.7        | 2.8        |
| Kansas                | 18            | 51            | 61            | 48            | 0             | 0.6                          | 1.8        | 2.1        | 1.7        | 0.0        |
| Kentucky              | 95            | 99            | 102           | 117           | 123           | 2.2                          | 2.3        | 2.3        | 2.7        | 2.8        |
| Louisiana             | 1,090         | 1,065         | 1,267         | 1,180         | 1,277         | 23.8                         | 23.1       | 27.4       | 25.4       | 27.5       |
| Maine                 | 4             | 3             | 5             | 0             | 0             | 0.3                          | 0.2        | 0.4        | 0.0        | 0.0        |
| Maryland              | 470           | 439           | 504           | 481           | 749           | 8.1                          | 7.5        | 8.5        | 8.0        | 12.5       |
| Massachusetts         | 271           | 258           | 276           | 227           | 486           | 4.1                          | 3.9        | 4.1        | 3.4        | 7.2        |
| Michigan              | 338           | 334           | 368           | 416           | 393           | 3.4                          | 3.4        | 3.7        | 4.2        | 4.0        |
| Minnesota             | 107           | 120           | 209           | 215           | 220           | 2.0                          | 2.2        | 3.9        | 3.9        | 4.0        |
| Mississippi           | 238           | 53            | 31            | 116           | 136           | 8.0                          | 1.8        | 1.0        | 3.9        | 4.5        |
| Missouri              | 153           | 133           | 135           | 178           | 220           | 2.5                          | 2.2        | 2.2        | 2.9        | 3.6        |
| Montana               | 1             | 1             | 1             | 0             | 2             | 0.1                          | 0.1        | 0.1        | 0.0        | 0.2        |
| Nebraska              | 23            | 18            | 40            | 26            | 31            | 1.2                          | 1.0        | 2.1        | 1.4        | 1.6        |
| Nevada                | 125           | 117           | 84            | 142           | 133           | 4.6                          | 4.2        | 3.0        | 5.0        | 4.7        |
| New Hampshire         | 10            | 19            | 30            | 21            | 28            | 0.8                          | 1.4        | 2.3        | 1.6        | 2.1        |
| New Jersey            | 282           | 243           | 196           | 263           | 220           | 3.2                          | 2.7        | 2.2        | 2.9        | 2.5        |
| New Mexico            | 85            | 64            | 100           | 80            | 141           | 4.1                          | 3.1        | 4.8        | 3.8        | 6.8        |
| New York              | 2,436         | 2,667         | 2,758         | 3,073         | 2,975         | 12.5                         | 13.6       | 14.0       | 15.6       | 15.1       |
| North Carolina        | 485           | 444           | 509           | 791           | 783           | 5.0                          | 4.6        | 5.2        | 8.0        | 7.9        |
| North Dakota          | 3             | 10            | 11            | 16            | 14            | 0.4                          | 1.4        | 1.5        | 2.2        | 1.9        |
| Ohio                  | 341           | 526           | 431           | 381           | 445           | 3.0                          | 4.6        | 3.7        | 3.3        | 3.8        |
| Oklahoma              | 39            | 27            | 28            | 59            | 83            | 1.0                          | 0.7        | 0.7        | 1.5        | 2.1        |
| Oregon                | 92            | 117           | 133           | 159           | 218           | 2.4                          | 3.0        | 3.4        | 4.0        | 5.5        |
| Pennsylvania          | 335           | 365           | 431           | 346           | 356           | 2.6                          | 2.9        | 3.4        | 2.7        | 2.8        |
| Rhode Island          | 18            | 25            | 27            | 40            | 48            | 1.7                          | 2.4        | 2.6        | 3.8        | 4.5        |
| South Carolina        | 73            | 56            | 66            | 28            | 41            | 1.6                          | 1.2        | 1.4        | 0.6        | 0.8        |
| South Dakota          | 14            | 8             | 12            | 16            | 21            | 1.7                          | 1.0        | 1.4        | 1.9        | 2.5        |
| Tennessee             | 483           | 545           | 497           | 502           | 575           | 7.5                          | 8.4        | 7.7        | 7.7        | 8.8        |
| Texas                 | 3,312         | 3,585         | 3,593         | 4,110         | 4,047         | 12.9                         | 13.8       | 13.6       | 15.2       | 15.0       |
| Utah                  | 42            | 51            | 51            | 61            | 73            | 1.5                          | 1.8        | 1.8        | 2.1        | 2.5        |
| Vermont               | 0             | 0             | 5             | 0             | 0             | 0.0                          | 0.0        | 0.8        | 0.0        | 0.0        |
| Virginia              | 224           | 317           | 329           | 137           | 276           | 2.8                          | 3.9        | 4.0        | 1.6        | 3.3        |
| Washington            | 236           | 226           | 223           | 310           | 366           | 3.5                          | 3.3        | 3.2        | 4.4        | 5.2        |
| West Virginia         | 5             | 6             | 14            | 4             | 17            | 0.3                          | 0.3        | 0.8        | 0.2        | 0.9        |
| Wisconsin             | 80            | 91            | 100           | 108           | 88            | 1.4                          | 1.6        | 1.7        | 1.9        | 1.5        |
| Wyoming               | 6             | 6             | 7             | 1             | 4             | 1.1                          | 1.0        | 1.2        | 0.2        | 0.7        |
| <b>U.S. TOTAL</b>     | <b>18,576</b> | <b>19,411</b> | <b>21,819</b> | <b>23,541</b> | <b>26,170</b> | <b>6.0</b>                   | <b>6.2</b> | <b>6.9</b> | <b>7.4</b> | <b>8.2</b> |
| Northeast             | 3,423         | 3,594         | 3,750         | 3,991         | 4,143         | 6.2                          | 6.4        | 6.7        | 7.1        | 7.4        |
| Midwest               | 2,262         | 2,410         | 2,626         | 2,745         | 2,994         | 3.4                          | 3.6        | 3.9        | 4.1        | 4.4        |
| South                 | 9,490         | 9,760         | 10,690        | 11,339        | 12,464        | 8.2                          | 8.3        | 9.0        | 9.5        | 10.4       |
| West                  | 3,401         | 3,647         | 4,753         | 5,466         | 6,569         | 4.7                          | 5.0        | 6.4        | 7.3        | 8.7        |
| Guam                  | 17            | 20            | 14            | 5             | 16            | 10.7                         | 12.5       | 8.7        | 3.1        | 9.9        |
| Puerto Rico           | 204           | 175           | 154           | 101           | 166           | 5.5                          | 4.8        | 4.3        | 2.8        | 4.7        |
| Virgin Islands        | 7             | 2             | 5             | 4             | 10            | 6.6                          | 1.9        | 4.8        | 3.8        | 9.6        |
| <b>OUTLYING AREAS</b> | <b>228</b>    | <b>197</b>    | <b>173</b>    | <b>110</b>    | <b>192</b>    | <b>5.7</b>                   | <b>5.0</b> | <b>4.5</b> | <b>2.9</b> | <b>5.0</b> |
| <b>TOTAL</b>          | <b>18,804</b> | <b>19,608</b> | <b>21,992</b> | <b>23,651</b> | <b>26,362</b> | <b>6.0</b>                   | <b>6.2</b> | <b>6.9</b> | <b>7.3</b> | <b>8.2</b> |

\* Late and late latent syphilis includes late latent syphilis, latent syphilis of unknown duration, and late syphilis with clinical manifestations (including late benign syphilis and cardiovascular syphilis).

**Table 39. Late and Late Latent Syphilis\* — Reported Cases and Rates of Reported Cases in Selected Metropolitan Statistical Areas (MSAs)<sup>†</sup> in Alphabetical Order, United States, 2011–2015**

| MSAs                                         | Cases         |               |               |               |               | Rates per 100,000 Population |            |            |             |             |
|----------------------------------------------|---------------|---------------|---------------|---------------|---------------|------------------------------|------------|------------|-------------|-------------|
|                                              | 2011          | 2012          | 2013          | 2014          | 2015          | 2011                         | 2012       | 2013       | 2014        | 2015        |
| Atlanta-Sandy Springs-Roswell, GA            | 611           | 573           | 782           | 804           | 926           | 11.4                         | 10.5       | 14.2       | 14.3        | 16.5        |
| Austin-Round Rock, TX                        | 168           | 154           | 134           | 246           | 175           | 9.4                          | 8.4        | 7.1        | 12.7        | 9.0         |
| Baltimore-Columbia-Towson, MD                | 196           | 203           | 218           | 225           | 306           | 7.2                          | 7.4        | 7.9        | 8.1         | 11.0        |
| Birmingham-Hoover, AL                        | 95            | 79            | 96            | 53            | 62            | 8.4                          | 7.0        | 8.4        | 4.6         | 5.4         |
| Boston-Cambridge-Newton, MA-NH               | 240           | 207           | 211           | 158           | 303           | 5.2                          | 4.5        | 4.5        | 3.3         | 6.4         |
| Buffalo-Cheektowaga-Niagara Falls, NY        | 27            | 32            | 62            | 62            | 51            | 2.4                          | 2.8        | 5.5        | 5.5         | 4.5         |
| Charlotte-Concord-Gastonia, NC-SC            | 116           | 122           | 151           | 180           | 190           | 5.1                          | 5.3        | 6.5        | 7.6         | 8.0         |
| Chicago-Naperville-Elgin, IL-IN-WI           | 866           | 853           | 963           | 988           | 1,169         | 9.1                          | 9.0        | 10.1       | 10.3        | 12.2        |
| Cincinnati, OH-KY-IN                         | 131           | 275           | 191           | 124           | 129           | 6.2                          | 12.9       | 8.9        | 5.8         | 6.0         |
| Cleveland-Elyria, OH                         | 70            | 82            | 64            | 88            | 120           | 3.4                          | 4.0        | 3.1        | 4.3         | 5.8         |
| Columbus, OH                                 | 76            | 101           | 98            | 101           | 105           | 3.9                          | 5.2        | 5.0        | 5.1         | 5.3         |
| Dallas-Fort Worth-Arlington, TX              | 982           | 1,132         | 1,081         | 1,065         | 837           | 14.9                         | 16.9       | 15.9       | 15.3        | 12.0        |
| Denver-Aurora-Lakewood, CO                   | 64            | 74            | 81            | 0             | 59            | 2.5                          | 2.8        | 3.0        | 0.0         | 2.1         |
| Detroit-Warren-Dearborn, MI                  | 229           | 252           | 277           | 299           | 274           | 5.3                          | 5.9        | 6.4        | 7.0         | 6.4         |
| Hartford-West Hartford-East Hartford, CT     | 22            | 3             | 10            | 10            | 8             | 1.8                          | 0.2        | 0.8        | 0.8         | 0.7         |
| Houston-The Woodlands-Sugar Land, TX         | 1,166         | 1,265         | 1,154         | 1,430         | 1,592         | 19.2                         | 20.5       | 18.3       | 22.0        | 24.5        |
| Indianapolis-Carmel-Anderson, IN             | 113           | 84            | 90            | 83            | 93            | 5.9                          | 4.4        | 4.6        | 4.2         | 4.7         |
| Jacksonville, FL                             | 89            | 73            | 75            | 128           | 179           | 6.5                          | 5.3        | 5.4        | 9.0         | 12.6        |
| Kansas City, MO-KS                           | 44            | 38            | 54            | 54            | 40            | 2.2                          | 1.9        | 2.6        | 2.6         | 1.9         |
| Las Vegas-Henderson-Paradise, NV             | 111           | 98            | 54            | 133           | 102           | 5.6                          | 4.9        | 2.7        | 6.4         | 4.9         |
| Los Angeles-Long Beach-Anaheim, CA           | 1,222         | 1,091         | 1,705         | 1,678         | 1,901         | 9.4                          | 8.4        | 13.0       | 12.7        | 14.3        |
| Louisville-Jefferson County, KY-IN           | 51            | 48            | 52            | 70            | 92            | 4.1                          | 3.8        | 4.1        | 5.5         | 7.2         |
| Memphis, TN-MS-AR                            | 279           | 291           | 283           | 236           | 256           | 20.9                         | 21.7       | 21.1       | 17.6        | 19.1        |
| Miami-Fort Lauderdale-West Palm Beach, FL    | 984           | 1,032         | 1,075         | 1,370         | 1,519         | 17.4                         | 17.9       | 18.4       | 23.1        | 25.6        |
| Milwaukee-Waukesha-West Allis, WI            | 49            | 59            | 56            | 63            | 42            | 3.1                          | 3.8        | 3.6        | 4.0         | 2.7         |
| Minneapolis-St. Paul-Bloomington, MN-WI      | 87            | 105           | 175           | 187           | 192           | 2.6                          | 3.1        | 5.1        | 5.4         | 5.5         |
| Nashville-Davidson-Murfreesboro-Franklin, TN | 107           | 133           | 120           | 148           | 161           | 6.3                          | 7.7        | 6.8        | 8.3         | 9.0         |
| New Orleans-Metairie, LA                     | 457           | 386           | 442           | 370           | 362           | 37.7                         | 31.5       | 35.6       | 29.6        | 28.9        |
| New York-Newark-Jersey City, NY-NJ-PA        | 2,550         | 2,679         | 2,707         | 3,052         | 2,909         | 13.0                         | 13.5       | 13.6       | 15.2        | 14.5        |
| Oklahoma City, OK                            | 10            | 15            | 11            | 31            | 32            | 0.8                          | 1.2        | 0.8        | 2.3         | 2.4         |
| Orlando-Kissimmee-Sanford, FL                | 166           | 192           | 250           | 362           | 343           | 7.6                          | 8.6        | 11.0       | 15.6        | 14.8        |
| Philadelphia-Camden-Wilmington, PA-NJ-DE-MD  | 325           | 338           | 439           | 311           | 314           | 5.4                          | 5.6        | 7.3        | 5.1         | 5.2         |
| Phoenix-Mesa-Scottsdale, AZ                  | 299           | 332           | 335           | 397           | 393           | 7.0                          | 7.7        | 7.6        | 8.8         | 8.8         |
| Pittsburgh, PA                               | 13            | 21            | 11            | 13            | 11            | 0.6                          | 0.9        | 0.5        | 0.6         | 0.5         |
| Portland-Vancouver-Hillsboro, OR-WA          | 72            | 99            | 118           | 140           | 154           | 3.2                          | 4.3        | 5.1        | 6.0         | 6.6         |
| Providence-Warwick, RI-MA                    | 30            | 32            | 45            | 47            | 71            | 1.9                          | 2.0        | 2.8        | 2.9         | 4.4         |
| Raleigh, NC                                  | 68            | 63            | 68            | 109           | 124           | 5.8                          | 5.3        | 5.6        | 8.8         | 10.0        |
| Richmond, VA                                 | 36            | 51            | 58            | 9             | 36            | 3.0                          | 4.1        | 4.7        | 0.7         | 2.9         |
| Riverside-San Bernardino-Ontario, CA         | 201           | 465           | 433           | 432           | 508           | 4.7                          | 10.7       | 9.9        | 9.7         | 11.4        |
| Sacramento-Roseville-Arden-Arcade, CA        | 69            | 59            | 107           | 134           | 203           | 3.2                          | 2.7        | 4.8        | 6.0         | 9.0         |
| Salt Lake City, UT                           | 32            | 33            | 34            | 39            | 50            | 2.9                          | 2.9        | 3.0        | 3.4         | 4.3         |
| San Antonio-New Braunfels, TX                | 286           | 366           | 457           | 448           | 483           | 13.0                         | 16.4       | 20.1       | 19.2        | 20.7        |
| San Diego-Carlsbad, CA                       | 154           | 144           | 245           | 310           | 366           | 4.9                          | 4.5        | 7.6        | 9.5         | 11.2        |
| San Francisco-Oakland-Hayward, CA            | 244           | 321           | 421           | 497           | 550           | 5.6                          | 7.2        | 9.3        | 10.8        | 12.0        |
| San Jose-Sunnyvale-Santa Clara, CA           | 54            | 84            | 69            | 125           | 128           | 2.9                          | 4.4        | 3.6        | 6.4         | 6.6         |
| Seattle-Tacoma-Bellevue, WA                  | 177           | 169           | 161           | 211           | 224           | 5.1                          | 4.8        | 4.5        | 5.7         | 6.1         |
| St. Louis, MO-IL                             | 94            | 95            | 104           | 119           | 165           | 3.4                          | 3.4        | 3.7        | 4.2         | 5.9         |
| Tampa-St. Petersburg-Clearwater, FL          | 175           | 171           | 227           | 254           | 297           | 6.2                          | 6.0        | 7.9        | 8.7         | 10.2        |
| Virginia Beach-Norfolk-Newport News, VA-NC   | 40            | 100           | 86            | 45            | 90            | 2.4                          | 5.9        | 5.0        | 2.6         | 5.2         |
| Washington-Arlington-Alexandria, DC-VA-MD-WV | 536           | 517           | 599           | 295           | 500           | 9.3                          | 8.8        | 10.1       | 4.9         | 8.3         |
| <b>SELECTED MSAs TOTAL</b>                   | <b>14,283</b> | <b>15,191</b> | <b>16,739</b> | <b>17,733</b> | <b>19,196</b> | <b>8.4</b>                   | <b>8.9</b> | <b>9.7</b> | <b>10.1</b> | <b>11.0</b> |

\* Late and late latent syphilis includes late latent syphilis, latent syphilis of unknown duration, and late syphilis with clinical manifestations (including late benign syphilis and cardiovascular syphilis).

<sup>†</sup> MSAs were selected on the basis of the largest population in the 2010 U.S. Census.

**Table 40. Congenital Syphilis — Reported Cases and Rates of Reported Cases by State<sup>†</sup>, Ranked by Rates, United States, 2015**

| Rank* | State <sup>†</sup>            | Cases      | Rate per 100,000 Live Births |
|-------|-------------------------------|------------|------------------------------|
| 1     | Louisiana                     | 53         | 83.9                         |
| 2     | California                    | 141        | 28.5                         |
| 3     | Maryland                      | 18         | 25.0                         |
| 4     | Nevada                        | 8          | 22.8                         |
| 5     | Illinois                      | 30         | 19.1                         |
| 6     | Florida                       | 38         | 17.6                         |
| 7     | Arizona                       | 14         | 16.4                         |
| 8     | Georgia                       | 21         | 16.3                         |
| 9     | Oregon                        | 6          | 13.3                         |
| 10    | Arkansas                      | 5          | 13.2                         |
| 11    | Oklahoma                      | 7          | 13.1                         |
| 12    | Texas                         | 49         | 12.7                         |
|       | <b>U.S. TOTAL<sup>‡</sup></b> | <b>487</b> | <b>12.4</b>                  |
| 13    | Ohio                          | 17         | 12.2                         |
| 14    | Hawaii                        | 2          | 10.5                         |
| 15    | Michigan                      | 11         | 9.7                          |
| 16    | Delaware                      | 1          | 9.2                          |
|       | <b>HP 2020 TARGET</b>         |            | <b>9.1</b>                   |
| 17    | New Mexico                    | 2          | 7.6                          |
| 18    | North Carolina                | 9          | 7.6                          |
| 19    | Tennessee                     | 5          | 6.3                          |
| 20    | Indiana                       | 5          | 6.0                          |
| 21    | Washington                    | 5          | 5.8                          |
| 22    | Massachusetts                 | 4          | 5.6                          |
| 23    | South Carolina                | 3          | 5.3                          |
| 24    | Alabama                       | 3          | 5.2                          |
| 25    | New York                      | 12         | 5.1                          |
| 26    | Pennsylvania                  | 7          | 5.0                          |
| 27    | Missouri                      | 3          | 4.0                          |
| 28    | Virginia                      | 3          | 2.9                          |
| 29    | Minnesota                     | 2          | 2.9                          |
| 30    | Connecticut                   | 1          | 2.8                          |
| 31    | Kentucky                      | 1          | 1.8                          |
|       | Alaska                        | 0          | 0.0                          |
|       | Colorado                      | 0          | 0.0                          |
|       | Idaho                         | 0          | 0.0                          |
|       | Iowa                          | 0          | 0.0                          |
|       | Kansas                        | 0          | 0.0                          |
|       | Maine                         | 0          | 0.0                          |
|       | Mississippi                   | 0          | 0.0                          |
|       | Montana                       | 0          | 0.0                          |
|       | Nebraska                      | 0          | 0.0                          |
|       | New Hampshire                 | 0          | 0.0                          |
|       | New Jersey                    | 0          | 0.0                          |
|       | North Dakota                  | 0          | 0.0                          |
|       | Rhode Island                  | 0          | 0.0                          |
|       | South Dakota                  | 0          | 0.0                          |
|       | Utah                          | 0          | 0.0                          |
|       | Vermont                       | 0          | 0.0                          |
|       | West Virginia                 | 0          | 0.0                          |
|       | Wisconsin                     | 0          | 0.0                          |
|       | Wyoming                       | 0          | 0.0                          |

\* States were ranked by rate, then by case count, then in alphabetical order, with rates shown rounded to the nearest tenth.

<sup>†</sup> Mother's state of residence was used to assign case.

<sup>‡</sup> Total includes cases reported by the District of Columbia, with 1 case, but excludes outlying areas (Guam with 1 case, Puerto Rico with 5 cases, and Virgin Islands with 0 cases).

**Table 41. Congenital Syphilis — Reported Cases and Rates of Reported Cases by Year of Birth, by State/Area\* and Region in Alphabetical Order, United States and Outlying Areas, 2011–2015**

| State/Area*           | Cases      |            |            |            |            | Rates per 100,000 Population |            |            |             |             |
|-----------------------|------------|------------|------------|------------|------------|------------------------------|------------|------------|-------------|-------------|
|                       | 2011       | 2012       | 2013       | 2014       | 2015       | 2011                         | 2012       | 2013       | 2014        | 2015        |
| Alabama               | 10         | 4          | 2          | 3          | 3          | 16.8                         | 6.8        | 3.4        | 5.2         | 5.2         |
| Alaska                | 0          | 1          | 1          | 0          | 0          | 0.0                          | 8.9        | 8.7        | 0.0         | 0.0         |
| Arizona               | 15         | 14         | 13         | 13         | 14         | 17.5                         | 16.2       | 15.2       | 15.2        | 16.4        |
| Arkansas              | 15         | 11         | 12         | 7          | 5          | 38.7                         | 28.7       | 31.7       | 18.5        | 13.2        |
| California            | 40         | 35         | 58         | 102        | 141        | 8.0                          | 6.9        | 11.7       | 20.6        | 28.5        |
| Colorado              | 0          | 0          | 0          | 0          | 0          | 0.0                          | 0.0        | 0.0        | 0.0         | 0.0         |
| Connecticut           | 0          | 0          | 0          | 0          | 1          | 0.0                          | 0.0        | 0.0        | 0.0         | 2.8         |
| Delaware              | 0          | 1          | 1          | 0          | 1          | 0.0                          | 9.1        | 9.2        | 0.0         | 9.2         |
| District of Columbia  | 1          | 0          | 2          | 0          | 1          | 10.8                         | 0.0        | 21.5       | 0.0         | 10.8        |
| Florida               | 33         | 37         | 35         | 48         | 38         | 15.5                         | 17.4       | 16.2       | 22.3        | 17.6        |
| Georgia               | 10         | 16         | 20         | 17         | 21         | 7.6                          | 12.3       | 15.5       | 13.2        | 16.3        |
| Hawaii                | 0          | 0          | 0          | 0          | 2          | 0.0                          | 0.0        | 0.0        | 0.0         | 10.5        |
| Idaho                 | 0          | 1          | 0          | 0          | 0          | 0.0                          | 4.4        | 0.0        | 0.0         | 0.0         |
| Illinois              | 18         | 28         | 23         | 27         | 30         | 11.2                         | 17.6       | 14.7       | 17.2        | 19.1        |
| Indiana               | 0          | 0          | 0          | 8          | 5          | 0.0                          | 0.0        | 0.0        | 9.6         | 6.0         |
| Iowa                  | 0          | 0          | 0          | 1          | 0          | 0.0                          | 0.0        | 0.0        | 2.6         | 0.0         |
| Kansas                | 0          | 0          | 0          | 0          | 0          | 0.0                          | 0.0        | 0.0        | 0.0         | 0.0         |
| Kentucky              | 2          | 2          | 4          | 3          | 1          | 3.6                          | 3.6        | 7.2        | 5.4         | 1.8         |
| Louisiana             | 18         | 33         | 40         | 46         | 53         | 29.1                         | 52.7       | 63.3       | 72.8        | 83.9        |
| Maine                 | 0          | 0          | 0          | 0          | 0          | 0.0                          | 0.0        | 0.0        | 0.0         | 0.0         |
| Maryland              | 24         | 12         | 14         | 16         | 18         | 32.8                         | 16.5       | 19.5       | 22.2        | 25.0        |
| Massachusetts         | 0          | 1          | 4          | 3          | 4          | 0.0                          | 1.4        | 5.6        | 4.2         | 5.6         |
| Michigan              | 8          | 7          | 9          | 15         | 11         | 7.0                          | 6.2        | 7.9        | 13.2        | 9.7         |
| Minnesota             | 0          | 1          | 0          | 0          | 2          | 0.0                          | 1.5        | 0.0        | 0.0         | 2.9         |
| Mississippi           | 6          | 0          | 0          | 1          | 0          | 15.1                         | 0.0        | 0.0        | 2.6         | 0.0         |
| Missouri              | 1          | 1          | 3          | 1          | 3          | 1.3                          | 1.3        | 4.0        | 1.3         | 4.0         |
| Montana               | 0          | 0          | 0          | 0          | 0          | 0.0                          | 0.0        | 0.0        | 0.0         | 0.0         |
| Nebraska              | 0          | 1          | 0          | 1          | 0          | 0.0                          | 3.9        | 0.0        | 3.8         | 0.0         |
| Nevada                | 3          | 1          | 2          | 5          | 8          | 8.5                          | 2.9        | 5.7        | 14.3        | 22.8        |
| New Hampshire         | 0          | 1          | 0          | 0          | 0          | 0.0                          | 8.1        | 0.0        | 0.0         | 0.0         |
| New Jersey            | 5          | 1          | 0          | 0          | 0          | 4.7                          | 1.0        | 0.0        | 0.0         | 0.0         |
| New Mexico            | 0          | 1          | 2          | 1          | 2          | 0.0                          | 3.7        | 7.6        | 3.8         | 7.6         |
| New York              | 13         | 8          | 11         | 22         | 12         | 5.4                          | 3.3        | 4.6        | 9.3         | 5.1         |
| North Carolina        | 6          | 2          | 4          | 6          | 9          | 5.0                          | 1.7        | 3.4        | 5.0         | 7.6         |
| North Dakota          | 0          | 0          | 0          | 0          | 0          | 0.0                          | 0.0        | 0.0        | 0.0         | 0.0         |
| Ohio                  | 13         | 19         | 18         | 15         | 17         | 9.4                          | 13.7       | 13.0       | 10.8        | 12.2        |
| Oklahoma              | 2          | 0          | 0          | 6          | 7          | 3.8                          | 0.0        | 0.0        | 11.2        | 13.1        |
| Oregon                | 0          | 1          | 0          | 2          | 6          | 0.0                          | 2.2        | 0.0        | 4.4         | 13.3        |
| Pennsylvania          | 5          | 6          | 3          | 4          | 7          | 3.5                          | 4.2        | 2.1        | 2.8         | 5.0         |
| Rhode Island          | 0          | 0          | 0          | 0          | 0          | 0.0                          | 0.0        | 0.0        | 0.0         | 0.0         |
| South Carolina        | 0          | 7          | 1          | 5          | 3          | 0.0                          | 12.2       | 1.8        | 8.8         | 5.3         |
| South Dakota          | 0          | 0          | 0          | 3          | 0          | 0.0                          | 0.0        | 0.0        | 24.5        | 0.0         |
| Tennessee             | 8          | 2          | 2          | 2          | 5          | 10.1                         | 2.5        | 2.5        | 2.5         | 6.3         |
| Texas                 | 99         | 78         | 74         | 74         | 49         | 26.2                         | 20.4       | 19.1       | 19.1        | 12.7        |
| Utah                  | 0          | 0          | 0          | 0          | 0          | 0.0                          | 0.0        | 0.0        | 0.0         | 0.0         |
| Vermont               | 0          | 0          | 0          | 0          | 0          | 0.0                          | 0.0        | 0.0        | 0.0         | 0.0         |
| Virginia              | 0          | 1          | 3          | 2          | 3          | 0.0                          | 1.0        | 2.9        | 2.0         | 2.9         |
| Washington            | 2          | 0          | 0          | 2          | 5          | 2.3                          | 0.0        | 0.0        | 2.3         | 5.8         |
| West Virginia         | 0          | 0          | 0          | 0          | 0          | 0.0                          | 0.0        | 0.0        | 0.0         | 0.0         |
| Wisconsin             | 1          | 0          | 0          | 0          | 0          | 1.5                          | 0.0        | 0.0        | 0.0         | 0.0         |
| Wyoming               | 0          | 0          | 0          | 0          | 0          | 0.0                          | 0.0        | 0.0        | 0.0         | 0.0         |
| <b>U.S. TOTAL</b>     | <b>358</b> | <b>334</b> | <b>361</b> | <b>461</b> | <b>487</b> | <b>9.1</b>                   | <b>8.4</b> | <b>9.2</b> | <b>11.7</b> | <b>12.4</b> |
| Northeast             | 23         | 17         | 18         | 29         | 24         | 3.6                          | 2.7        | 2.9        | 4.6         | 3.8         |
| Midwest               | 41         | 57         | 53         | 71         | 68         | 4.9                          | 6.8        | 6.4        | 8.5         | 8.2         |
| South                 | 234        | 206        | 214        | 236        | 217        | 15.5                         | 13.7       | 14.2       | 15.6        | 14.4        |
| West                  | 60         | 54         | 76         | 125        | 178        | 6.2                          | 5.5        | 7.9        | 13.0        | 18.5        |
| Guam                  | 0          | 0          | 1          | 0          | 1          | 0.0                          | 0.0        | 30.4       | 0.0         | 30.4        |
| Puerto Rico           | 2          | 1          | 2          | 0          | 5          | 4.9                          | 2.6        | 5.5        | 0.0         | 13.7        |
| Virgin Islands        | 0          | 0          | 0          | 0          | 0          | 0.0                          | 0.0        | 0.0        | 0.0         | 0.0         |
| <b>OUTLYING AREAS</b> | <b>2</b>   | <b>1</b>   | <b>3</b>   | <b>0</b>   | <b>6</b>   | <b>4.4</b>                   | <b>2.3</b> | <b>7.3</b> | <b>0.0</b>  | <b>14.6</b> |
| <b>TOTAL</b>          | <b>360</b> | <b>335</b> | <b>364</b> | <b>461</b> | <b>493</b> | <b>9.0</b>                   | <b>8.4</b> | <b>9.2</b> | <b>11.6</b> | <b>12.4</b> |

\* Mother's state of residence was used to assign case.

**Table 42. Congenital Syphilis — Reported Cases and Rates of Reported Cases per 100,000 Live Births by Year of Birth and Race/Ethnicity of Mother, United States, 2011–2015**

| Year of Birth | Whites |       | Blacks |       | Hispanics |       | Asians/<br>Pacific<br>Islanders |       | American<br>Indians/<br>Alaska Natives |       | Other |       | Unknown |       | Total |       |
|---------------|--------|-------|--------|-------|-----------|-------|---------------------------------|-------|----------------------------------------|-------|-------|-------|---------|-------|-------|-------|
|               | Cases  | Rates | Cases  | Rates | Cases     | Rates | Cases                           | Rates | Cases                                  | Rates | Cases | Rates | Cases   | Rates | Cases | Rates |
| 2011          | 50     | 2.3   | 211    | 35.9  | 73        | 8.0   | 14                              | 5.7   | 2                                      | 5.0   | 3     | NA    | 5       | NA    | 358   | 9.1   |
| 2012          | 50     | 2.3   | 189    | 32.1  | 80        | 8.8   | 6                               | 2.3   | 2                                      | 5.1   | 3     | NA    | 4       | NA    | 334   | 8.4   |
| 2013          | 62     | 2.9   | 185    | 31.4  | 93        | 10.3  | 9                               | 3.5   | 5                                      | 12.8  | 3     | NA    | 4       | NA    | 361   | 9.2   |
| 2014          | 79     | 3.7   | 227    | 38.6  | 112       | 12.4  | 18                              | 7.0   | 5                                      | 12.8  | 9     | NA    | 11      | NA    | 461   | 11.7  |
| 2015          | 95     | 4.4   | 207    | 35.2  | 140       | 15.5  | 15                              | 5.9   | 4                                      | 10.3  | 7     | NA    | 19      | NA    | 487   | 12.4  |

NA = Not applicable.

**Table 43. Chancroid — Reported Cases and Rates of Reported Cases by State/Area in Alphabetical Order, United States and Outlying Areas, 2011–2015**

| State/Area            | Cases    |           |           |          |           | Rates per 100,000 Population |            |            |            |            |
|-----------------------|----------|-----------|-----------|----------|-----------|------------------------------|------------|------------|------------|------------|
|                       | 2011     | 2012      | 2013      | 2014     | 2015      | 2011                         | 2012       | 2013       | 2014       | 2015       |
| Alabama               | 0        | 1         | 1         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Alaska                | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Arizona               | 1        | 0         | 0         | 0        | 1         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Arkansas              | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| California            | 1        | 7         | 6         | 4        | 2         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Colorado              | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Connecticut           | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Delaware              | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| District of Columbia  | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Florida               | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Georgia               | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Hawaii                | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Idaho                 | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Illinois              | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Indiana               | 0        | 1         | 0         | 0        | 1         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Iowa                  | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Kansas                | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Kentucky              | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Louisiana             | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Maine                 | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Maryland              | 0        | 1         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Massachusetts         | 2        | 1         | 2         | 1        | 3         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Michigan              | 1        | 2         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Minnesota             | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Mississippi           | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Missouri              | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Montana               | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Nebraska              | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Nevada                | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| New Hampshire         | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| New Jersey            | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| New Mexico            | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| New York              | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| North Carolina        | 0        | 1         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| North Dakota          | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Ohio                  | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Oklahoma              | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Oregon                | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Pennsylvania          | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Rhode Island          | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| South Carolina        | 2        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| South Dakota          | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Tennessee             | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Texas                 | 1        | 0         | 1         | 1        | 2         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Utah                  | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Vermont               | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Virginia              | 0        | 1         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Washington            | 0        | 0         | 0         | 0        | 1         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| West Virginia         | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Wisconsin             | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Wyoming               | 0        | 0         | 0         | 0        | 1         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.2        |
| <b>U.S. TOTAL</b>     | <b>8</b> | <b>15</b> | <b>10</b> | <b>6</b> | <b>11</b> | <b>0.0</b>                   | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> |
| Guam                  | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Puerto Rico           | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| Virgin Islands        | 0        | 0         | 0         | 0        | 0         | 0.0                          | 0.0        | 0.0        | 0.0        | 0.0        |
| <b>OUTLYING AREAS</b> | <b>0</b> | <b>0</b>  | <b>0</b>  | <b>0</b> | <b>0</b>  | <b>0.0</b>                   | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> |
| <b>TOTAL</b>          | <b>8</b> | <b>15</b> | <b>10</b> | <b>6</b> | <b>11</b> | <b>0.0</b>                   | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> | <b>0.0</b> |

**Table 44. Selected STDs and Complications — Initial Visits to Physicians’ Offices, National Disease and Therapeutic Index, United States, 1966–2014**

| Year | Genital Herpes<br>Simplex Virus<br>Infections | Genital Warts | <i>Trichomonas vaginalis</i><br>Infections* | Other<br>Vaginal<br>Infections* | Pelvic<br>Inflammatory<br>Disease† |
|------|-----------------------------------------------|---------------|---------------------------------------------|---------------------------------|------------------------------------|
| 1966 | 19,000                                        | 56,000        | 579,000                                     | 1,155,000                       | NA                                 |
| 1967 | 15,000                                        | 72,000        | 515,000                                     | 1,277,000                       | NA                                 |
| 1968 | 16,000                                        | 87,000        | 463,000                                     | 1,460,000                       | NA                                 |
| 1969 | 15,000                                        | 61,000        | 421,000                                     | 1,390,000                       | NA                                 |
| 1970 | 17,000                                        | 119,000       | 529,000                                     | 1,500,000                       | NA                                 |
| 1971 | 49,000                                        | 128,000       | 484,000                                     | 1,281,000                       | NA                                 |
| 1972 | 26,000                                        | 165,000       | 574,000                                     | 1,810,000                       | NA                                 |
| 1973 | 51,000                                        | 198,000       | 466,000                                     | 1,858,000                       | NA                                 |
| 1974 | 75,000                                        | 202,000       | 427,000                                     | 1,907,000                       | NA                                 |
| 1975 | 36,000                                        | 181,000       | 500,000                                     | 1,919,000                       | NA                                 |
| 1976 | 57,000                                        | 217,000       | 473,000                                     | 1,690,000                       | NA                                 |
| 1977 | 116,000                                       | 221,000       | 324,000                                     | 1,713,000                       | NA                                 |
| 1978 | 76,000                                        | 269,000       | 329,000                                     | 2,149,000                       | NA                                 |
| 1979 | 83,000                                        | 200,000       | 363,000                                     | 1,662,000                       | NA                                 |
| 1980 | 57,000                                        | 218,000       | 358,000                                     | 1,670,000                       | 423,000                            |
| 1981 | 133,000                                       | 191,000       | 369,000                                     | 1,742,000                       | 283,000                            |
| 1982 | 134,000                                       | 256,000       | 268,000                                     | 1,859,000                       | 374,000                            |
| 1983 | 106,000                                       | 203,000       | 424,000                                     | 1,932,000                       | 424,000                            |
| 1984 | 157,000                                       | 224,000       | 381,000                                     | 2,450,000                       | 381,000                            |
| 1985 | 124,000                                       | 263,000       | 291,000                                     | 2,728,000                       | 425,000                            |
| 1986 | 136,000                                       | 275,000       | 338,000                                     | 3,118,000                       | 457,000                            |
| 1987 | 102,000                                       | 351,000       | 293,000                                     | 3,087,000                       | 403,000                            |
| 1988 | 163,000                                       | 290,000       | 191,000                                     | 3,583,000                       | 431,000                            |
| 1989 | 148,000                                       | 220,000       | 165,000                                     | 3,374,000                       | 413,000                            |
| 1990 | 172,000                                       | 275,000       | 213,000                                     | 4,474,000                       | 358,000                            |
| 1991 | 235,000                                       | 282,000       | 198,000                                     | 3,822,000                       | 377,000                            |
| 1992 | 139,000                                       | 218,000       | 182,000                                     | 3,428,000                       | 335,000                            |
| 1993 | 172,000                                       | 167,000       | 207,000                                     | 3,755,000                       | 407,000                            |
| 1994 | 142,000                                       | 239,000       | 199,000                                     | 4,123,000                       | 332,000                            |
| 1995 | 160,000                                       | 253,000       | 141,000                                     | 3,927,000                       | 262,000                            |
| 1996 | 208,000                                       | 191,000       | 245,000                                     | 3,472,000                       | 286,000                            |
| 1997 | 176,000                                       | 145,000       | 176,000                                     | 3,100,000                       | 260,000                            |
| 1998 | 188,000                                       | 211,000       | 164,000                                     | 3,200,000                       | 233,000                            |
| 1999 | 224,000                                       | 240,000       | 171,000                                     | 3,077,000                       | 250,000                            |
| 2000 | 179,000                                       | 220,000       | 222,000                                     | 3,470,000                       | 254,000                            |
| 2001 | 157,000                                       | 233,000       | 210,000                                     | 3,365,000                       | 244,000                            |
| 2002 | 216,000                                       | 266,000       | 150,000                                     | 3,315,000                       | 197,000                            |
| 2003 | 203,000                                       | 264,000       | 179,000                                     | 3,516,000                       | 123,000                            |
| 2004 | 269,000                                       | 316,000       | 221,000                                     | 3,602,000                       | 132,000                            |
| 2005 | 266,000                                       | 357,000       | 165,000                                     | 4,071,000                       | 176,000                            |
| 2006 | 371,000                                       | 422,000       | 200,000                                     | 3,891,000                       | 106,000                            |
| 2007 | 317,000                                       | 312,000       | 205,000                                     | 3,723,000                       | 146,000                            |
| 2008 | 292,000                                       | 385,000       | 204,000                                     | 3,571,000                       | 104,000                            |
| 2009 | 306,000                                       | 357,000       | 216,000                                     | 3,063,000                       | 100,000                            |
| 2010 | 232,000                                       | 376,000       | 149,000                                     | 3,192,000                       | 113,000                            |
| 2011 | 227,000                                       | 453,000       | 168,000                                     | 3,102,000                       | 90,000                             |
| 2012 | 228,000                                       | 353,000       | 219,000                                     | 3,452,000                       | 106,000                            |
| 2013 | 306,000                                       | 404,000       | 225,000                                     | 3,278,000                       | 88,000                             |
| 2014 | 299,000                                       | 465,000       | 155,000                                     | 3,419,000                       | 51,000                             |

\* Women only.

† Women aged 15–44 years only.

NA = Not available.

**NOTE:** Standard errors for estimates under 100,000 are not available. The relative standard errors for estimates 100,000–299,999 are from 19% to 23%; 300,000–599,999 are from 16% to 19%; 600,000–999,999 are from 13% to 16%; and 1,000,000–5,000,000 are from 7% to 13%.

**SOURCE:** National Disease and Therapeutic Index, IMS Health, Integrated Promotional Services. IMS Health report, 1966–2014. The 2015 data were not obtained in time to include them in this report. See Section A2.5 in the Appendix for more information.

# APPENDIX

# APPENDIX

# A. Interpreting STD Surveillance Data

*Sexually Transmitted Disease Surveillance 2015* presents surveillance information derived from the official statistics for the reported occurrence of nationally notifiable sexually transmitted diseases (STDs) in the United States, test positivity and prevalence data from numerous prevalence monitoring initiatives, sentinel surveillance, and national health care services surveys.

## A1. Nationally Notifiable STD Surveillance

Nationally notifiable STD surveillance data are collected and compiled from reports sent by the STD control programs and health departments in all 50 states, the District of Columbia, selected cities, U.S. dependencies and possessions, and independent nations in free association with the United States to the Division of STD Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Centers for Disease Control and Prevention (CDC). Included among the dependencies, possessions, and independent nations are Guam, Puerto Rico, and the Virgin Islands. These entities are identified as “outlying areas” of the United States in selected figures and tables.

### A1.1 Reporting Formats

STD morbidity data presented in this report are compiled from a combination of data reported on standardized hard copy reporting forms and electronic data received through the National Electronic Telecommunications System for Surveillance (NETSS).

#### Summary Report Forms

The following hard copy forms were used to report national STD morbidity data:

1. FORM CDC 73.998: *Monthly Surveillance Report of Early Syphilis*. This monthly hard copy reporting form was used during 1984–2002 to report summary data for primary and secondary syphilis and early latent syphilis by county and state.
2. FORM CDC 73.688: *Sexually Transmitted Disease Morbidity Report*. This quarterly hard copy reporting form was used during 1963–2002 to report summary data for all stages of syphilis, congenital syphilis, gonorrhea, chancroid, chlamydia, and other STDs by sex and source of report (private versus public) for all 50 states, the District of Columbia, 64 selected cities (including San Juan, Puerto Rico), and outlying areas of the United States.

Note: Chlamydial infection became a nationally notifiable condition in 1996, and the form was modified to support reporting of chlamydia that year. Congenital syphilis was dropped from this aggregate form in 1995 and replaced by the case-specific CDC 73.126 form described later in this section.

3. FORM CDC 73.2638: *Report of Civilian Cases of Primary & Secondary Syphilis, Gonorrhea, and Chlamydia by Reporting Source, Sex, Race/Ethnicity, and Age Group*. This annual hard copy form was used during 1981–2002 to report summary data for P&S syphilis, gonorrhea, and chlamydia by age, race, sex, and source (public versus private) for all 50 states, seven large cities (Baltimore, Chicago, New York City, Los Angeles, Philadelphia, San Francisco, and the District of Columbia), and outlying areas of the United States.

Note: Chlamydial infection became a nationally notifiable condition in 1995, and the form was modified to support reporting of chlamydia that year.

4. FORM CDC 73.126: *Congenital Syphilis (CS) Case Investigation and Reporting*. This case-specific hard copy form was first used in 1983 and continues to be used to report detailed case-specific data for congenital syphilis in some areas.

## National Electronic Telecommunications System for Surveillance

Notifiable STD data reported electronically through the National Electronic Telecommunications System for Surveillance (NETSS) make up the nationally notifiable disease information published in CDC’s *Morbidity and Mortality Weekly Report*.

As of December 31, 2003, all 50 states and the District of Columbia had converted from summary hard copy reporting to electronic submission of line-listed (i.e., case-specific) STD data through NETSS (41 reporting areas submitted congenital syphilis surveillance data through NETSS in 2015). Puerto Rico converted to electronic reporting in 2006 for all STDs excluding congenital syphilis. Guam and the Virgin Islands continue to report STD data through summary hard copy forms. Surveillance data and updates sent to CDC through NETSS and on hard copy forms through June 8, 2016, are included in this report. The data presented in the figures and tables in this report supersede those in all earlier publications.

## A1.2 Population Denominators and Rate Calculations

### 2000–2015 Rates and Population

For those figures and tables presenting race using the 1997 OMB race standards, non-bridged-race data provided directly by the U.S. Census Bureau were used to calculate race. The latest available year for population estimates at the time this report was written was 2014. Thus, 2014 population estimates were used to calculate 2015 rates. Once published, the 2015 population estimates will be used to calculate rates in the upcoming 2016 STD Surveillance Report.

Population estimates for Puerto Rico were obtained from the U.S. Census Bureau Web site at: <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>.

Population estimates for Guam and the Virgin Islands were obtained from the U.S. Census Bureau International Programs Web site at: <https://www.census.gov/population/international/data/idb/informationGateway.php>.

The 2015 rates by age and sex for Guam and the Virgin Islands were calculated using 2010 population estimates available at: <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>.

Because of the use of the updated population data, rates for 2000–2014 may be different from those presented in previous STD surveillance reports.

Several figures throughout this report depict state- or county-specific rates of reported cases of STDs. Rates were grouped and displayed by quartiles in Figures 3, 4, 15, 16, 34, B, C, D, H, I, J, K, L, M, N, and O. Rates were grouped and displayed in 4 categories – zero cases and tertiles – in Figure 35 and Figure D.

### 1990–1999 Rates and Population

The population counts for 1990 through 1999 incorporated the bridged single-race estimates of the April 1, 2000, U.S. resident population. These files were prepared by the U.S. Census Bureau with support from the National Cancer Institute.

### 1981–1989 Rates and Population

Rates were calculated by using U.S. Census Bureau population estimates for 1981 through 1989.<sup>1,2</sup>

### 1941–1980 Rates and Population

Rates for 1941 through 1980 were based on population estimates from the U.S. Census Bureau and are currently maintained by CDC's Division of STD Prevention.

## 1941–2015 Congenital Syphilis Rates and Live Births

The congenital syphilis data in Table 1 of this report represent the number of congenital syphilis cases per 100,000 live births for all years during 1941–2015. Previous publications presented congenital syphilis rates per 100,000 population during 1941–1994 and rates for cases diagnosed at younger than 1 year of age per 100,000 live births during 1995–2005. To allow for trends in congenital syphilis rates to be compared for the period 1941 through 2015, live births now are used as the denominator for congenital syphilis, and case counts are no longer limited to those diagnosed within the first year of life. Congenital syphilis morbidity is assigned by year of birth. Rates of congenital syphilis for 1963 through 1988 were calculated by using published live birth data.<sup>3</sup> Congenital syphilis rates for 1989 through 2013 were calculated by using live birth data based on information coded by the states and provided to the NCHS through the Vital Statistics Cooperative Program. Rates for 2014 and 2015 were calculated by using live birth data for 2013.

## A1.3 Reporting Practices

Although most state and local STD programs generally adhere to the national notifiable STD case definitions collaboratively developed by the Council of State and Territorial Epidemiologists and CDC, differences in policies and systems for collecting surveillance data may exist. Thus, comparisons of case numbers and rates between jurisdictions should be interpreted with caution. However, because case definitions and surveillance activities within a given area remain relatively stable over time, trends should be minimally affected by these differences.

## A1.4 Reporting of Surveillance Data by Metropolitan Statistical Area

*Sexually Transmitted Disease Surveillance 2015* continues the presentation of STD incidence data and rates for the 50 metropolitan statistical areas (MSAs) with the largest populations according to 2010 census data. STD surveillance reports published before 2005 presented data by selected cities; these data were derived from county data, which were used to estimate city-specific disease rates. Because county data were used to estimate city-specific morbidity and because current STD project areas' reporting practices do not support direct identification of city-specific morbidity reports, MSAs were chosen as a geographic unit smaller than a state or territory for presentation of STD morbidity data.

MSAs are defined by the OMB to provide nationally consistent definitions for collecting, tabulating, and

publishing federal statistics for a set of geographic areas.<sup>4</sup> An MSA is associated with at least one urbanized area that has a population of at least 50,000. The MSA comprises the central county or counties containing the central county, plus adjacent, outlying counties that have a high degree of social and economic integration with the central county as measured through commuting. The title of an MSA includes the name of the principal city with the largest 2010 census population. If there are multiple principal cities, the names of the second largest and third largest principal cities appear in the title in order of descending population size.

The MSA concept has been used as a statistical representation of the social and economic links between urban cores and outlying, integrated areas. However, MSAs do not equate to an urban-rural classification; all counties included in MSAs and many other counties contain both urban and rural territory and populations. STD programs that treat all parts of an MSA as if they were as urban as the densely settled core ignore the rural conditions that may exist in some parts of the area. In short, MSAs are not intended to be a general purpose geographic framework for nonstatistical activities or for use in program funding formulas.

For more information on the MSA definitions used in this report, go to: <https://www.census.gov/population/metro/data/metrodef.html>.

## A1.5 Reporting of Data for Race/Ethnicity

In April 2008, the NETSS record layout was updated to conform to the OMB's current government-wide standard for race/ethnicity data. The OMB standards were first issued in 1997.<sup>5</sup> Beginning with the publication of *Sexually Transmitted Disease Surveillance 2012*, the race/ethnicity data are presented according to the current standard categories: American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian/Other Pacific Islander, White and Multirace. For this report, jurisdictions are considered to be OMB compliant for a condition if  $\geq 97\%$  of cases for that condition are reported using current OMB standards. As of reporting year 2015, 1 jurisdiction (the District of Columbia) was not compliant with the current OMB race/ethnicity standards when reporting chlamydia and gonorrhea. Only two jurisdictions (Utah and the District of Columbia) were not compliant with the current OMB race/ethnicity standards when reporting primary and secondary syphilis.

For chlamydia and gonorrhea figures showing trends for 2011–2015, data are included for all jurisdictions except six not consistently reporting race/ethnicity data according to the current standard categories for the five consecutive

years (Alaska, Maryland, Michigan, New York, North Carolina and the District of Columbia). For primary and secondary syphilis figures showing trends for 2011–2015, data are included for all jurisdictions except six not consistently reporting race/ethnicity data according to the current standard categories for the five consecutive years (Alaska, Maryland, New York, North Carolina, Utah, and the District of Columbia).

## A1.6 Management of Unknown, Missing, or Invalid Data for Age Group, Race/Ethnicity, and Sex

The percentage of unknown, missing, or invalid data for age group, race/ethnicity, and sex varies from year to year, state to state, and by disease for reported STDs (Table A1).

Prior to the publication of *Sexually Transmitted Disease Surveillance 2010*, when the percentage of unknown, missing, or invalid values for age group, race/ethnicity, and sex exceeded 50% for any state, the state's incidence and population data were excluded from the tables that presented data stratified by one or more of these variables. For the states for which 50% or more of their data were valid for age group, race/ethnicity, and sex, the values for unknown, missing, or invalid data were redistributed on the basis of the state's distribution of known age group, race/ethnicity, and sex data. Beginning with the publication of *Sexually Transmitted Disease Surveillance 2010*, redistribution methodology is not applied to any of the data. The counts presented in this report are summations of all valid data reported in reporting year 2015.

As a result, rate data that are stratified by one or more of these variables reflect rates based on reported data only.

## A1.7 Classification of STD Morbidity Reporting Sources

Before 1996, states classified the source of case reports as either private source (including private physicians, hospitals, and institutions) or public source (primarily STD clinics). As states began reporting morbidity data electronically in 1996, the classification categories for source of case reports expanded to include the following data sources: STD clinics, HIV counseling and testing sites, drug treatment clinics, family planning clinics, prenatal/obstetrics clinics, tuberculosis clinics, private physicians/health maintenance organizations (HMOs), hospitals (inpatient), emergency rooms, correctional facilities, laboratories, blood banks, the National Job Training Program (NJTP), school-based clinics, mental health providers, the military, the Indian Health Service, and other unspecified sources. Figures 7, 8, 21, and 22 display trends in the proportion of cases reported in 2015 categorized by reporting source. Categories displayed vary

across these figures and include the five most commonly reported sources for the population included in the figure, along with trends for all other reporting sources combined into the “All Other” category, and trends in the proportion of cases with unknown reporting source.

## A1.8 Interpreting Chlamydia Case Reporting

Trends in rates of reported cases of chlamydia are influenced by changes in incidence of infection, as well as changes in diagnostic, screening, and reporting practices. As chlamydial infections are usually asymptomatic, the number of infections identified and reported can increase as more people are screened even when incidence is flat or decreasing. Expanded use of more sensitive diagnostic tests (e.g., nucleic acid amplification tests, [NAATs]) can also increase the number of infections identified and reported independent of increases in incidence. Although chlamydia has been a nationally notifiable condition since 1994, it was not until 2000 that all 50 states and the District of Columbia required reporting of chlamydia cases. National case rates prior to 2000 reflect incomplete reporting. Additionally, increasing use of electronic laboratory reporting has likely increased the proportion of diagnosed cases that are reported. Consequently, an increasing chlamydia case rate may reflect increases in incidence of infection, screening coverage, and use of more sensitive tests, as well as more complete reporting. Likewise, decreases in chlamydia case rates may suggest decreases in incidence of infection or screening coverage.

## A1.9 Syphilis Morbidity Reporting

The category of “total syphilis” or “all stages of syphilis” includes primary syphilis, secondary syphilis, early latent syphilis, late latent syphilis, and late syphilis with clinical manifestations (including late benign syphilis and cardiovascular syphilis), and congenital syphilis.

Although neurosyphilis can occur at almost any stage of syphilis, during 1996–2005 it was classified and reported as one of several mutually exclusive stages of syphilis. Beginning in 2005, neurosyphilis was no longer classified or reported as a distinct stage of syphilis.

## A1.10 Congenital Syphilis Morbidity Reporting

In 1988, the surveillance case definition for congenital syphilis was changed. This case definition has greater sensitivity than the former definition.<sup>6</sup> In addition, many state and local STD programs have greatly enhanced active case finding for congenital syphilis since 1988. For these reasons, as well as because of increasing morbidity, the number of reported cases increased dramatically during 1989–1991. All reporting areas had implemented the

new case definition for reporting congenital syphilis by January 1, 1992. In addition to changing the case definition for congenital syphilis, CDC introduced a new data collection form (CDC 73.126) in 1990 (revised February 2013). Since 1995, the data collected on this form have been used for reporting congenital syphilis cases and associated rates. This form is used to collect individual case information, which allows more thorough analysis of case characteristics. For the purpose of analyzing race/ethnicity, cases are classified by the race/ethnicity of the mother. Similarly, since 1995, congenital syphilis cases are reported by state and city of residence of the mother.

Congenital syphilis reporting may be delayed as a result of case investigation and validation. Cases for previous years are added to CDC’s surveillance databases throughout the year. Congenital syphilis data reported after publication of the current annual STD surveillance report will appear in subsequent reports and are assigned by the case patient’s year of birth.

## A2. Other Sources of Surveillance Data

### A2.1 National Job Training Program

Chlamydia and gonorrhea prevalence was calculated for men and women entering the National Job Training Program (NJTP). To increase the stability of the estimates, chlamydia or gonorrhea prevalence data are presented when valid test results for 100 or more students per year are available for the population subgroup and state. The majority of NJTP’s chlamydia screening tests are conducted by a single national contract laboratory, which provides these data to CDC. Gonorrhea screening tests for male and female students in many training centers are conducted by local laboratories; these data are not available to CDC. Test results for students at centers that submit specimens to the national contract laboratory are included only if the number of gonorrhea tests submitted is greater than 90% of the number of chlamydia tests submitted from the same center for the same period. Prevalence data for state-specific figures were published with permission from the Department of Labor. Prevalence data are presented in figures L, M, N, and O.

### A2.2 STD Surveillance Network

In 2005, CDC established the STD Surveillance Network (SSuN) as a collaborative network of state, county and/or city health departments following protocols to conduct sentinel and enhanced STD surveillance activities. The purpose of SSuN is to improve the capacity of national, state and local STD programs to detect, monitor, and respond to trends in STDs through enhanced collection, reporting, analysis, visualization, and interpretation of disease information.

Cycle 3 (2013–2018) of SSuN provides funding to 10 jurisdictions to conduct two core STD surveillance activities including; (1) sentinel facility component providing clinical and demographic information on a full census of patients attending categorical STD clinics and women aged 15–44 years presenting for care in reproductive health settings, and, (2) population component conducting enhanced health department look-back, provider and patient investigations on a probability sample of all persons diagnosed and reported with gonorrhea. Funded areas for both core activities in SSuN Cycle 3 include Baltimore City [Maryland], California, Florida, Massachusetts, Minnesota, Multnomah County [Oregon], Philadelphia City [Pennsylvania], New York City [New York], San Francisco County [California] and Washington State.

In both the facility and population components of SSuN Cycle 3, unique patients can be anonymously identified using non-identifying IDs to provide longitudinal information. In the facility component, the primary unit of analysis is the patient visit, which is merged with multiple laboratory, diagnostic and treatment observations. In the population component, the primary unit analysis is a reported episode of gonorrhea for a unique person merged with multiple laboratory observations, health department disease registry history, provider-based clinical information and patient demographic and behavioral interview data. For analysis in the population component, cases in the probability sample are weighted to reflect study design and to adjust for non-response by demographic category of the patient. Weighted analyses provides estimates of case and person characteristics representative of all reported cases in the collaborating jurisdictions.

Gay, bisexual, and other men who have sex with men (collectively referred to as MSM) are defined in all SSuN data collection activities as men who either reported having sex with another man in the preceding 2–3 months, report current history of male sex partners, and/or those who reported that they considered themselves gay/homosexual or bisexual. Men who have sex with women (MSW) are defined as men who reported having sex with women only, or who did not report the sex of their sex partners but reported that they considered themselves to be straight/heterosexual.

Data points presented in this report for 2015 from the facility component SSuN (Figures 9, 24, 49, W, X, and Y) are based on STD clinic data from 9 SSuN jurisdictions (Baltimore City [Maryland], California, Florida, Massachusetts, Multnomah County [Oregon], New York City [New York], Philadelphia City [Pennsylvania], San Francisco County [California] and Washington State). Data presented in the report from the population component of SSuN include Figure 23, which presents data collected June through December 2015 showing the proportion of cases attributable to MSM, MSW, and women for 7

jurisdictions (Baltimore City [Maryland], California, Florida, New York City [New York], Philadelphia City [Pennsylvania], San Francisco County [California] and Washington State).

## A2.3 Gonococcal Isolate Surveillance Project

Data on antimicrobial susceptibility in *Neisseria gonorrhoeae* were collected through the Gonococcal Isolate Surveillance Project (GISP), a sentinel system of selected STD clinics located at 25–30 GISP sentinel sites and 4–5 regional laboratories in the United States. For more details on findings from GISP, go to: <https://www.cdc.gov/std/GISP>.

For 2015, the antimicrobial agents tested by GISP were ceftriaxone, cefixime, azithromycin, ciprofloxacin, penicillin, tetracycline, and gentamicin.

The antimicrobial susceptibility criteria used in GISP for 2015 are as follows:

- Ceftriaxone, minimum inhibitory concentration (MIC)  $\geq 0.5$   $\mu\text{g/ml}$  (decreased susceptibility)\*
- Ceftriaxone, MIC  $\geq 0.125$   $\mu\text{g/ml}$  (elevated MICs)\*
- Cefixime, MIC  $\geq 0.5$   $\mu\text{g/ml}$  (decreased susceptibility)\*
- Cefixime, MIC  $\geq 0.25$   $\mu\text{g/ml}$  (elevated MICs)\*
- Azithromycin, MIC  $\geq 2.0$   $\mu\text{g/ml}$  (decreased susceptibility)\*
- Ciprofloxacin, MIC  $\geq 1.0$   $\mu\text{g/ml}$  (resistance)
- Ciprofloxacin, MIC 0.125–0.5  $\mu\text{g/ml}$  (intermediate resistance)
- Penicillin, MIC  $\geq 2.0$   $\mu\text{g/ml}$  (resistance)
- Tetracycline, MIC  $\geq 2.0$   $\mu\text{g/ml}$  (resistance)
- Gentamicin (MIC values correlated with susceptibility and resistance have not been established).

The majority of these criteria are also recommended by the Clinical and Laboratory Standards Institute (CLSI).<sup>7</sup>

\* The CLSI criteria for decreased susceptibility and resistance to ceftriaxone, cefixime, gentamicin, and azithromycin and for susceptibility to azithromycin have not been established for *N. gonorrhoeae*.

## A2.4 National Health and Nutrition Examination Survey

The National Health and Nutrition Examination Survey (NHANES) is a series of cross-sectional surveys designed to provide national statistics on the health and nutritional status of the general household population in the United States. Data are collected through household interviews,

standardized physical examinations, and the collection of biological samples in special mobile examination centers. In 1999, NHANES became a continuous survey with data released every 2 years. The sampling plan of the survey is a stratified, multistage, probability cluster design that selects a sample representative of the U.S. civilian, non-institutionalized population. For more information, see: <https://www.cdc.gov/nchs/nhanes.htm>.

## A2.5 National Disease and Therapeutic Index

The information on the number of initial visits to private physicians' offices for STDs was based on analysis of data from the National Disease and Therapeutic Index (NDTI) (machine-readable files or summary statistics for 1966 through 2014; the 2015 NDTI data were not obtained in time to include them in this report). NDTI is a probability sample survey of private physicians' clinical management practices. For more information on this database, contact IMS Health, e-mail: [ServiceCenter@us.imshealth.com](mailto:ServiceCenter@us.imshealth.com); Telephone: (800) 523-5334.

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- <sup>1</sup> U.S. Census Bureau. United States population estimates by age, sex and race: 1980–1988. In: Current population reports [Series P-25, No. 1045]. Washington, DC: U.S. Government Printing Office; 1990.
  - <sup>2</sup> U.S. Census Bureau. United States population estimates by age, sex and race: 1989. In: Current population reports [Series P-25, No. 1057]. Washington, DC: U.S. Government Printing Office; 1990.
  - <sup>3</sup> Centers for Disease Control and Prevention. Vital statistics of the United States 1988. vol.1 - natality. Hyattsville (MD): U.S. Department of Health and Human Services; 1990.
  - <sup>4</sup> Office of Management and Budget. Standards for defining metropolitan and micropolitan statistical areas. Federal Register. 2000;65(249):82228-38.
  - <sup>5</sup> Office of Management and Budget. Revisions to the Standards for Classification of Federal Data on Race and Ethnicity. Federal Register Notice. October 30, 1997.
  - <sup>6</sup> Kaufman RE, Jones OG, Blount JH, et al. Questionnaire survey of reported early congenital syphilis: problems in diagnosis, prevention, and treatment. Sex Transm Dis. 1977;4:135-9.
  - <sup>7</sup> Clinical and Laboratory Standards Institute. Performance standards for antimicrobial susceptibility testing; twenty-fifth informational supplement. M100-S25, 35(3). Wayne (PA): Clinical and Laboratory Standards Institute; 2015.

**Table A1. Selected STDs — Percentage of Unknown, Missing, or Invalid Values for Selected Variables by State and by Nationally Notifiable STD, 2015**

| State                | Primary and Secondary Syphilis    |                        |                        |                                | Gonorrhea                         |                        |                        | Chlamydia                         |                        |                        |
|----------------------|-----------------------------------|------------------------|------------------------|--------------------------------|-----------------------------------|------------------------|------------------------|-----------------------------------|------------------------|------------------------|
|                      | Percentage Unknown Race/Ethnicity | Percentage Unknown Age | Percentage Unknown Sex | Percentage Unknown Sex Partner | Percentage Unknown Race/Ethnicity | Percentage Unknown Age | Percentage Unknown Sex | Percentage Unknown Race/Ethnicity | Percentage Unknown Age | Percentage Unknown Sex |
| Alabama              | 0.4                               | 0.0                    | 0.0                    | 26.1                           | 23.0                              | 0.0                    | 0.7                    | 29.5                              | 0.0                    | 0.5                    |
| Alaska*              | 0.0                               | 0.0                    | 0.0                    | 12.5                           | 0.1                               | 0.0                    | 0.0                    | 9.4                               | 0.1                    | 0.1                    |
| Arizona              | 1.0                               | 0.0                    | 0.0                    | 4.1                            | 18.2                              | 0.0                    | 0.2                    | 29.2                              | 0.0                    | 0.2                    |
| Arkansas             | 1.5                               | 0.0                    | 0.0                    | 8.2                            | 0.8                               | 0.0                    | 0.0                    | 0.9                               | 0.0                    | 0.0                    |
| California           | 6.6                               | 0.0                    | 0.0                    | 17.9                           | 23.5                              | 0.3                    | 0.2                    | 39.4                              | 0.3                    | 0.2                    |
| Colorado             | 2.9                               | 0.0                    | 0.0                    | 7.8                            | 23.9                              | 0.0                    | 0.0                    | 39.9                              | 0.0                    | 0.0                    |
| Connecticut          | 0.0                               | 0.0                    | 0.0                    | 23.9                           | 34.9                              | 0.1                    | 0.0                    | 64.2                              | 0.1                    | 0.8                    |
| Delaware             | 7.3                               | 0.0                    | 0.0                    | 95.1                           | 3.4                               | 0.0                    | 0.0                    | 5.8                               | 0.0                    | 0.0                    |
| District of Columbia | 100.0                             | 0.0                    | 6.3                    | 100.0                          | 100.0                             | 0.5                    | 1.9                    | 100.0                             | 0.6                    | 2.0                    |
| Florida              | 3.9                               | 0.0                    | 0.0                    | 10.0                           | 7.9                               | 0.0                    | 0.0                    | 16.2                              | 0.0                    | 0.1                    |
| Georgia              | 2.3                               | 0.0                    | 0.0                    | 29.7                           | 25.9                              | 0.1                    | 0.2                    | 38.8                              | 0.1                    | 0.2                    |
| Hawaii               | 8.8                               | 0.0                    | 0.0                    | 24.2                           | 40.7                              | 0.6                    | 0.0                    | 48.5                              | 0.1                    | 0.0                    |
| Idaho                | 3.5                               | 0.0                    | 0.0                    | 3.5                            | 27.1                              | 0.0                    | 0.0                    | 36.0                              | 0.0                    | 0.1                    |
| Illinois             | 1.0                               | 0.0                    | 0.0                    | 25.0                           | 14.9                              | 0.0                    | 0.6                    | 19.4                              | 0.0                    | 0.5                    |
| Indiana              | 0.7                               | 0.0                    | 0.0                    | 2.5                            | 5.1                               | 0.0                    | 0.1                    | 9.2                               | 0.0                    | 0.0                    |
| Iowa                 | 2.7                               | 0.0                    | 0.0                    | 10.7                           | 5.1                               | 0.0                    | 0.1                    | 5.6                               | 0.0                    | 0.0                    |
| Kansas               | 0.0                               | 0.0                    | 0.0                    | 5.7                            | 22.2                              | 0.0                    | 0.0                    | 42.0                              | 0.0                    | 0.0                    |
| Kentucky             | 0.0                               | 0.0                    | 0.0                    | 12.4                           | 22.9                              | 0.0                    | 0.1                    | 30.6                              | 0.1                    | 0.2                    |
| Louisiana            | 2.2                               | 0.0                    | 0.0                    | 14.2                           | 9.0                               | 0.0                    | 0.0                    | 9.3                               | 0.0                    | 0.0                    |
| Maine                | 17.9                              | 0.0                    | 0.0                    | 21.4                           | 21.8                              | 0.2                    | 0.0                    | 42.1                              | 0.2                    | 0.0                    |
| Maryland             | 7.1                               | 0.0                    | 0.0                    | 15.7                           | 24.4                              | 0.0                    | 0.2                    | 40.9                              | 0.0                    | 0.2                    |
| Massachusetts        | 10.8                              | 0.0                    | 0.5                    | 12.0                           | 33.3                              | 0.3                    | 0.6                    | 57.6                              | 0.1                    | 0.4                    |
| Michigan             | 0.0                               | 0.0                    | 0.0                    | 8.4                            | 27.8                              | 0.1                    | 0.1                    | 33.7                              | 0.1                    | 0.1                    |
| Minnesota            | 2.8                               | 0.0                    | 0.0                    | 4.5                            | 18.1                              | 0.0                    | 0.0                    | 26.5                              | 0.0                    | 0.0                    |
| Mississippi          | 4.1                               | 0.0                    | 0.0                    | 2.7                            | 16.6                              | 0.1                    | 0.1                    | 22.1                              | 0.1                    | 0.1                    |
| Missouri             | 0.3                               | 0.0                    | 0.0                    | 6.5                            | 8.7                               | 0.0                    | 0.0                    | 14.4                              | 0.0                    | 0.0                    |
| Montana              | 0.0                               | 0.0                    | 0.0                    | 7.7                            | 3.3                               | 0.2                    | 0.1                    | 3.2                               | 0.2                    | 0.0                    |
| Nebraska             | 4.4                               | 0.0                    | 0.0                    | 33.3                           | 14.1                              | 0.1                    | 0.0                    | 28.9                              | 0.0                    | 0.2                    |
| Nevada               | 1.8                               | 0.0                    | 0.0                    | 16.4                           | 36.7                              | 0.0                    | 0.3                    | 40.8                              | 0.0                    | 0.2                    |
| New Hampshire        | 2.5                               | 0.0                    | 0.0                    | 12.5                           | 14.7                              | 0.0                    | 0.0                    | 26.5                              | 0.0                    | 0.0                    |
| New Jersey           | 2.4                               | 0.0                    | 0.0                    | 26.9                           | 34.2                              | 0.6                    | 0.1                    | 48.7                              | 0.4                    | 0.1                    |
| New Mexico           | 21.2                              | 0.0                    | 0.0                    | 6.8                            | 19.4                              | 0.0                    | 0.0                    | 25.7                              | 0.0                    | 0.0                    |
| New York             | 5.4                               | 0.0                    | 0.7                    | 29.1                           | 24.6                              | 0.1                    | 0.3                    | 38.2                              | 0.1                    | 0.1                    |
| North Carolina       | 0.1                               | 0.0                    | 0.0                    | 8.9                            | 13.6                              | 0.0                    | 0.0                    | 18.5                              | 0.0                    | 0.0                    |
| North Dakota         | 0.0                               | 0.0                    | 0.0                    | 0.0                            | 7.9                               | 0.0                    | 0.0                    | 12.4                              | 0.0                    | 0.0                    |
| Ohio                 | 0.0                               | 0.0                    | 0.0                    | 8.2                            | 22.0                              | 0.1                    | 0.0                    | 28.2                              | 0.1                    | 0.0                    |
| Oklahoma             | 0.0                               | 0.0                    | 0.0                    | 1.0                            | 9.8                               | 0.0                    | 0.0                    | 13.6                              | 0.0                    | 0.0                    |
| Oregon               | 7.8                               | 0.0                    | 0.0                    | 24.9                           | 12.2                              | 0.0                    | 0.0                    | 28.1                              | 0.0                    | 0.0                    |
| Pennsylvania         | 6.1                               | 0.0                    | 0.2                    | 9.9                            | 22.7                              | 0.0                    | 0.1                    | 32.8                              | 0.0                    | 0.1                    |
| Rhode Island         | 10.4                              | 0.0                    | 0.0                    | 7.8                            | 9.7                               | 0.0                    | 0.0                    | 19.8                              | 0.0                    | 0.0                    |
| South Carolina       | 4.4                               | 0.0                    | 0.0                    | 5.1                            | 25.7                              | 0.1                    | 0.3                    | 33.0                              | 0.1                    | 0.3                    |
| South Dakota         | 0.0                               | 0.0                    | 0.0                    | 15.4                           | 2.0                               | 0.0                    | 0.0                    | 11.6                              | 0.0                    | 0.0                    |
| Tennessee            | 0.3                               | 0.0                    | 0.0                    | 4.6                            | 1.0                               | 0.0                    | 0.0                    | 1.7                               | 0.0                    | 0.0                    |
| Texas                | 1.1                               | 0.0                    | 0.0                    | 3.4                            | 15.6                              | 0.0                    | 0.2                    | 20.8                              | 0.1                    | 0.3                    |
| Utah                 | 6.2                               | 0.0                    | 0.0                    | 20.0                           | 8.7                               | 0.1                    | 0.0                    | 8.9                               | 0.0                    | 0.0                    |
| Vermont*             | 0.0                               | 0.0                    | 0.0                    | 0.0                            | 0.0                               | 0.0                    | 0.0                    | 1.9                               | 0.0                    | 0.0                    |
| Virginia             | 2.4                               | 0.0                    | 0.3                    | 6.3                            | 17.7                              | 0.1                    | 0.1                    | 27.7                              | 0.1                    | 0.1                    |
| Washington           | 2.5                               | 0.0                    | 0.2                    | 3.8                            | 11.8                              | 0.0                    | 0.0                    | 20.2                              | 0.1                    | 0.0                    |
| West Virginia        | 0.0                               | 0.0                    | 0.0                    | 1.9                            | 12.4                              | 0.0                    | 0.0                    | 22.3                              | 0.0                    | 0.0                    |
| Wisconsin            | 81.0                              | 0.0                    | 0.0                    | 65.8                           | 92.5                              | 0.0                    | 0.1                    | 88.6                              | 0.0                    | 0.1                    |
| Wyoming*             | 0.0                               | 0.0                    | 0.0                    | 100.0                          | 23.4                              | 0.0                    | 0.6                    | 30.4                              | 0.0                    | 0.3                    |
| <b>U.S. TOTAL</b>    | <b>4.4</b>                        | <b>0.0</b>             | <b>0.1</b>             | <b>15.5</b>                    | <b>19.8</b>                       | <b>0.1</b>             | <b>0.2</b>             | <b>29.3</b>                       | <b>0.1</b>             | <b>0.2</b>             |

\* Percentages for primary and secondary syphilis are based on less than 10 cases.

**NOTE:** Unknown includes cases reported with unknown, missing, or invalid data values, and for race/ethnicity includes cases reported in non-OMB compliant categories.

**Table A2. Reported Cases of STDs by Reporting Source and Sex, United States, 2015**

| Disease                                    | Non-STD Clinic |         |           | STD Clinic |        |         | Total             |                     |                    |
|--------------------------------------------|----------------|---------|-----------|------------|--------|---------|-------------------|---------------------|--------------------|
|                                            | Male           | Female  | Total*    | Male       | Female | Total*  | Male <sup>†</sup> | Female <sup>†</sup> | Total <sup>‡</sup> |
| Chlamydia                                  | 345,634        | 849,592 | 1,196,977 | 61,882     | 47,336 | 109,423 | 478,981           | 1,045,143           | 1,526,658          |
| Gonorrhea                                  | 155,997        | 136,982 | 293,392   | 33,390     | 13,518 | 46,947  | 221,070           | 173,514             | 395,216            |
| Primary Syphilis                           | 4,953          | 427     | 5,384     | 1,639      | 87     | 1,726   | 7,134             | 560                 | 7,700              |
| Secondary Syphilis                         | 10,559         | 1,356   | 11,926    | 2,794      | 270    | 3,067   | 14,413            | 1,738               | 16,172             |
| Early Latent Syphilis                      | 15,539         | 2,511   | 18,082    | 3,486      | 471    | 3,959   | 20,901            | 3,233               | 24,173             |
| Late and Late Latent Syphilis <sup>§</sup> | 13,220         | 5,219   | 18,464    | 2,159      | 631    | 2,790   | 19,048            | 7,092               | 26,170             |
| Chancroid                                  | 4              | 3       | 7         | 1          | 0      | 1       | 6                 | 5                   | 11                 |

\* Total includes cases reported with unknown sex.

<sup>†</sup> Total includes cases reported with unknown reporting source.

<sup>‡</sup> Total includes cases reported with unknown sex and reporting source.

<sup>§</sup> Late and late latent syphilis includes late latent syphilis and late syphilis with clinical manifestations (including late benign syphilis and cardiovascular syphilis).

# B. National Objectives and Goals

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## B1. Healthy People 2020 Objectives

For three decades, Healthy People has provided a comprehensive set of national 10-year health promotion and disease prevention objectives aimed at improving the health of all Americans.<sup>1</sup> It is grounded in the principle that establishing objectives and providing benchmarks to track and monitor progress over time can motivate, guide, and focus action.

*Healthy People 2020* (HP2020) continues in the tradition of its ambitious, yet achievable, 10-year agenda for improving the Nation's health. HP2020 is the result of a multiyear process that reflects input from a diverse group of individuals and organizations. HP2020 is organized into 42 topic areas, with more than 1,200 measures designed to drive action that will support its four overarching goals:

- Attain high-quality, longer lives free of preventable disease, disability, injury, and premature death.
- Achieve health equity, eliminate disparities, and improve the health of all groups.
- Create social and physical environments that promote good health for all.
- Promote quality of life, healthy development, and healthy behaviors across all life stages.

The topic area, Sexually Transmitted Diseases, contains objectives and measures related to STDs. Baselines, HP2020 targets, and annual progress toward the targets are reported in Table B1. The year 2020 targets for the diseases addressed in this report are as follows: primary and secondary (P&S) syphilis (males), 6.8 cases per 100,000 males; P&S syphilis (females), 1.4 cases per 100,000 females; congenital syphilis, 9.1 cases per 100,000 live births; gonorrhea (females aged 15–44 years), 257.0 cases per 100,000 females and gonorrhea (males aged 15–44 years), 198.0 cases per 100,000 males. The majority of the STD-related HP2020 targets were set using a standard percentage improvement with a standard default of a “10 percent improvement over the baseline.”

## B2. Government Performance and Results Act of 1993

The Government Performance and Results Act (GPRA) of 1993 was enacted by Congress to increase confidence in the capability of the federal government to increase the effectiveness and accountability of federal programs, to improve service delivery, to provide federal agencies a uniform tool for internal management, and to help Congress make decisions.

GPRA requires each agency to have a performance plan with long-term outcomes and annual, measurable performance goals and to report on these plans annually, comparing results with annual goals. There are two GPRA goals for STD: reducing pelvic inflammatory disease (PID) and eliminating congenital syphilis. Each of these goals has specific measures of progress, which are outlined in Table B2.

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<sup>1</sup> U.S. Department of Health and Human Services. Healthy People 2020 Web site. [Accessed on 8/12/2016] <https://www.healthypeople.gov/2020/default>.

**Table B1. Healthy People 2020 (HP 2020) Sexually Transmitted Diseases Objectives**

|   | HP2020 Objectives                                                                                                                                                                                                    | Baseline Year | Baseline | 2013  | 2014  | 2015  | 2020 Target |
|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------|-------|-------|-------|-------------|
| 1 | <b>Reduce the proportion of adolescents and young adults with <i>Chlamydia trachomatis</i> infections</b>                                                                                                            |               |          |       |       |       |             |
|   | a. Among females aged 15 to 24 years attending family planning clinics                                                                                                                                               | 2008          | 7.4%     | N/A   | N/A   | 8.6%  | 6.7%        |
|   | b. Among females aged 24 years and under enrolled in a National Job Training Program                                                                                                                                 | 2008          | 12.8%    | 11.7% | 12.8% | 12.7% | 11.5%       |
|   | c. Among males aged 24 years and under enrolled in a National Job Training Program                                                                                                                                   | 2008          | 7.0%     | 7.4%  | 7.0%  | 7.5%  | 6.3%        |
| 2 | <b>Increase the proportion of sexually active females aged 24 years and under enrolled in Medicaid plans who are screened for genital <i>Chlamydia</i> infections during the measurement year</b>                    |               |          |       |       |       |             |
|   | a. Females aged 16 to 20 years                                                                                                                                                                                       | 2008          | 52.7%    | 53.1% | 52.3% | N/A   | 70.9%       |
|   | b. Females aged 21 to 24 years                                                                                                                                                                                       | 2008          | 59.4%    | 64.1% | 62.0% | N/A   | 80.0%       |
| 3 | <b>Increase the proportion of sexually active females aged 24 years and under enrolled in commercial health insurance plans who are screened for genital <i>Chlamydia</i> infections during the measurement year</b> |               |          |       |       |       |             |
|   | a. Females aged 16 to 20 years                                                                                                                                                                                       | 2008          | 40.1%    | 42.4% | 42.7% | N/A   | 61.3%       |
|   | b. Females aged 21 to 24 years                                                                                                                                                                                       | 2008          | 43.5%    | 51.2% | 52.1% | N/A   | 74.6%       |
| 4 | <b>Reduce the proportion of females aged 15 to 44 years who have ever required treatment for pelvic inflammatory disease (PID)</b>                                                                                   | 2006–2010     | 4.2%     | 3.6%* | N/A   | N/A   | 3.8%        |
| 5 | <b>Reduce gonorrhea rates</b>                                                                                                                                                                                        |               |          |       |       |       |             |
|   | a. Females aged 15 to 44 years                                                                                                                                                                                       | 2008          | 279.9    | 250.6 | 248.1 | 263.4 | 251.9       |
|   | b. Males aged 15 to 44 years                                                                                                                                                                                         | 2008          | 216.5    | 239.4 | 262.8 | 307.6 | 194.8       |
| 6 | <b>Reduce sustained domestic transmission of primary and secondary syphilis</b>                                                                                                                                      |               |          |       |       |       |             |
|   | a. Among females                                                                                                                                                                                                     | 2008          | 1.4      | 0.9   | 1.1   | 1.4   | 1.3         |
|   | b. Among males                                                                                                                                                                                                       | 2008          | 7.4      | 10.3  | 11.6  | 13.7  | 6.7         |
| 7 | <b>Reduce congenital syphilis</b>                                                                                                                                                                                    | 2008          | 10.7     | 8.7   | 11.6  | 12.4  | 9.6         |
| 8 | <b>Reduce the proportion of young adults with genital herpes infection due to herpes simplex type 2</b>                                                                                                              | 2005–2008     | 10.5%    | 8.5%† | 8.3%‡ | N/A   | 9.5%        |

| HP2020 Objective | Data Source                                                                                                |
|------------------|------------------------------------------------------------------------------------------------------------|
| 1a               | STD Surveillance Network (SSuN), CDC                                                                       |
| 1b, 1c           | National Job Training Program (NJTP)                                                                       |
| 2a, 2b           | Healthcare Effectiveness Data and Information Set (HEDIS), National Committee for Quality Assurance (NCQA) |
| 3a, 3b           | Healthcare Effectiveness Data and Information Set (HEDIS), National Committee for Quality Assurance (NCQA) |
| 4                | National Survey of Family Growth (NSFG), CDC                                                               |
| 5a, 5b           | National Notifiable Disease Surveillance System (NNDSS), CDC                                               |
| 6a, 6b           | National Notifiable Disease Surveillance System (NNDSS), CDC                                               |
| 7                | National Notifiable Disease Surveillance System (NNDSS), CDC                                               |
| 8                | National Health and Nutrition Examination Survey (NHANES), CDC                                             |

**NOTE:** Data presented in this table reflect data reported to HP2020 in current and prior years. Data for years prior to 2015 may not match estimates presented in other sections of this report. More information about HP2020 is available at: <https://www.healthypeople.gov/>

\*2011–2013

†2009–2012

‡2011–2012

**Table B2. Government Performance and Results Act (GPRA) Sexually Transmitted Diseases Goals, Measures, and Target**

| GPRA Goals                                                                                                                                        | Actual            |        |       | Target |
|---------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------|-------|--------|
|                                                                                                                                                   | 2013              | 2014   | 2015  | 2016   |
| <b>Goal 1: Reduction in PID (as measured by initial visits to physicians in women 15–44 years of age)</b>                                         | 88,000            | 98,800 | N/A   | 97,066 |
| a. Proportion of high-risk women aged 16-20 infected with chlamydia*                                                                              | 13.3%             | 13.9%  | 13.4% | 11.7%  |
| b. Proportion of high-risk women aged 21-24 infected with chlamydia*                                                                              | 9.4% <sup>†</sup> | 7.3%   | 8.5%  | 8.3%   |
| c. Rate of gonorrhea/100,000 population in women aged 16-20                                                                                       | 551.9             | 523.9  | 537.0 | 558.6  |
| d. Rate of gonorrhea/100,000 population in women aged 21-24                                                                                       | 513.8             | 508.1  | 523.9 | 511.8  |
| e. Black: white ratio of gonorrhea in women aged 16-24                                                                                            | 11:1              | 10:3   | 9:5   | 10:1   |
| f. Proportion of sexually active females aged 16-20 years enrolled in Medicaid who are screened for chlamydia infections                          | 53.0%             | 52.3%  | N/A   | 62.5%  |
| g. Proportion of sexually active females aged 21-24 years enrolled in Medicaid who are screened for chlamydia infections                          | 64.1%             | 62.0%  | N/A   | 66.0%  |
| h. Proportion of sexually active females aged 16-20 years enrolled in commercial health insurance plans who are screened for chlamydia infections | 42.3%             | 42.7%  | N/A   | 43.5%  |
| i. Proportion of sexually active females aged 21-24 years enrolled in commercial health insurance plans who are screened for chlamydia infections | 51.2%             | 52.1%  | N/A   | 52.7%  |
| <b>Goal 2: Elimination of Congenital Syphilis</b>                                                                                                 |                   |        |       |        |
| a. Incidence of P&S syphilis/100,000 population in women aged 15–44                                                                               | 2.1               | 2.6    | 3.2   | 0.8    |
| b. Incidence of congenital syphilis/100,000 live births                                                                                           | 8.7               | 11.5   | 12.4  | 6.2    |
| c. Proportion of pregnant women that are screened for syphilis at least one month before delivery                                                 | 85.1%             | N/A    | 84.0% | 85.1%  |

| GPRA Goals     | Data Source                                                                                                |
|----------------|------------------------------------------------------------------------------------------------------------|
| 1              | National Disease and Therapeutic Index (IMS Health)                                                        |
| 1a, 1b         | National Job Training Program (NJTP)                                                                       |
| 1c, 1d, 1e     | National Notifiable Disease Surveillance System (NNDSS), CDC                                               |
| 1f, 1g, 1h, 1i | Healthcare Effectiveness Data and Information Set (HEDIS), National Committee for Quality Assurance (NCQA) |
| 2a, 2b         | National Notifiable Disease Surveillance System (NNDSS), CDC                                               |
| 2c             | MarketScan Commercial Claims and Encounters Database, Truven Health Analytics                              |

**NOTE:** Data presented in this table reflect data reported to GPRA in current and prior years. Data for years prior to 2015 may not match estimates presented in other sections of this report.

\* Median state-specific chlamydia prevalence/positivity among states with >100 females in this age group entering the National Job Training Program.

<sup>†</sup> In FY 2013 CDC improved the calculation of these data to increase the stability of estimate over time. Data for 2010 and later years reflect this improved calculation method.

GPRA = Government Performance and Results Act; PID = pelvic inflammatory disease; P&S = primary and secondary.

# C. STD Surveillance Case Definitions

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## C1. CASE DEFINITIONS FOR NATIONALLY NOTIFIABLE INFECTIOUS DISEASES

The Council of State and Territorial Epidemiologists (CSTE) recommends that state health departments report cases of selected diseases to CDC's National Notifiable Diseases Surveillance System (NNDSS). Case definitions are periodically revised using CSTE's Position Statements and provide uniform criteria of nationally notifiable conditions for reporting purposes. The most current surveillance case definitions for nationally notifiable STDs are listed below. Please see the NNDSS website (<https://wwwn.cdc.gov/nndss/case-definitions.html>) for historical case definitions.

### C1.1 Chancroid (Revised 9/96)

#### **Clinical description**

A sexually transmitted disease characterized by painful genital ulceration and inflammatory inguinal adenopathy. The disease is caused by infection with *Haemophilus ducreyi*.

#### **Laboratory criteria for diagnosis**

- Isolation of *H. ducreyi* from a clinical specimen

#### **Case classification**

*Probable*: a clinically compatible case with both a) no evidence of *Treponema pallidum* infection by darkfield microscopic examination of ulcer exudate or by a serologic test for syphilis performed  $\geq 7$  days after onset of ulcers and b) either a clinical presentation of the ulcer(s) not typical of disease caused by herpes simplex virus (HSV) or a culture negative for HSV.

*Confirmed*: a clinically compatible case that is laboratory confirmed.

### C1.2 *Chlamydia trachomatis* Infection (Revised 6/09)

#### **Clinical description**

Infection with *Chlamydia trachomatis* may result in urethritis, epididymitis, cervicitis, acute salpingitis, or other syndromes when sexually transmitted; however, the infection is often asymptomatic in women. Perinatal infections may result in inclusion conjunctivitis and pneumonia in newborns. Other syndromes caused by *C. trachomatis* include lymphogranuloma venereum (see Lymphogranuloma Venereum) and trachoma.

#### **Laboratory criteria for diagnosis**

- Isolation of *C. trachomatis* by culture or
- Demonstration of *C. trachomatis* in a clinical specimen by detection of antigen or nucleic acid

#### **Case classification**

*Confirmed*: a case that is laboratory confirmed.

## C1.3 Gonorrhea (Effective 1/14)

### ***Clinical description***

A sexually transmitted infection commonly manifested by urethritis, cervicitis, proctitis, salpingitis, or pharyngitis. Infection may be asymptomatic.

### ***Laboratory criteria for diagnosis***

- Observation of gram-negative intracellular diplococci in a urethral smear obtained from a male or an endocervical smear obtained from a female, or
- Isolation of typical gram-negative, oxidase-positive diplococci by culture (presumptive *Neisseria gonorrhoeae*) from a clinical specimen, or
- Demonstration of *N. gonorrhoeae* in a clinical specimen by detection of antigen or nucleic acid

### ***Case classification***

*Probable:* demonstration of gram-negative intracellular diplococci in a urethral smear obtained from a male or an endocervical smear obtained from a female.

*Confirmed:* a person with laboratory isolation of typical gram-negative, oxidase-positive diplococci by culture (presumptive *Neisseria gonorrhoeae*) from a clinical specimen, or demonstration of *N. gonorrhoeae* in a clinical specimen by detection of antigen or detection of nucleic acid via nucleic acid amplification (e.g., PCR) or hybridization with a nucleic acid probe.

## C1.4 Syphilis (Effective 1/14)

Syphilis is a complex sexually transmitted disease that has a highly variable clinical course. Adherence to the following surveillance case definitions will facilitate understanding the epidemiology of this disease across the U.S.

### **Syphilis, primary (Effective 1/14)**

### ***Clinical description***

A stage of infection with *Treponema pallidum* characterized by one or more ulcerative lesions (e.g. chancre), which might differ considerably in clinical appearance.

### ***Laboratory criteria for diagnosis***

Demonstration of *T. pallidum* in clinical specimens by darkfield microscopy, or by polymerase chain reaction (PCR) or equivalent direct molecular methods.

### ***Case classification***

*Probable:* a case that meets the clinical description of primary syphilis with a reactive serologic test (nontreponemal: Venereal Disease Research Laboratory [VDRL], rapid plasma reagin [RPR], or equivalent serologic methods; treponemal: fluorescent treponemal antibody absorbed [FTA-ABS], *T. pallidum* particle agglutination [TP-PA], enzyme immunoassay [EIA], chemiluminescence immunoassay [CIA], or equivalent serologic methods). These treponemal tests supersede older testing technologies, including microhemagglutination assay for antibody to *T. pallidum* [MHA-TP].

*Confirmed:* a case that meets the clinical description of primary syphilis that is laboratory confirmed.

## **Syphilis, secondary (Effective 1/14)**

### ***Clinical description***

A stage of infection caused by *T. pallidum* characterized by localized or diffuse mucocutaneous lesions (e.g., rash – such as non-pruritic macular, maculopapular, papular, or pustular lesions), often with generalized lymphadenopathy. Other symptoms can include mucous patches, condyloma lata, and alopecia. The primary ulcerative lesion may still be present. Because of the wide array of symptoms possibly indicating secondary syphilis, serologic tests for syphilis and a thorough sexual history and physical examination are crucial to determining if a case should be classified as secondary syphilis.

### ***Laboratory criteria for diagnosis***

Demonstration of *T. pallidum* in clinical specimens by darkfield microscopy, or by polymerase chain reaction (PCR) or equivalent direct molecular methods.

### ***Case classification***

*Probable*: a case that meets the clinical description of secondary syphilis with a nontreponemal (VDRL, RPR, or equivalent serologic methods) titer  $\geq 4$  and a reactive treponemal test (FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods).

*Confirmed*: a case that meets the clinical description of secondary syphilis (with at least one sign or symptom) that is laboratory confirmed.

## **Syphilis, early latent (Effective 1/14)**

### ***Clinical description***

A subcategory of latent syphilis (a stage of infection caused by *T. pallidum* in which organisms persist in the body of the infected person without causing symptoms or signs) when initial infection has occurred within the previous 12 months.

### ***Case classification***

*Probable*: A person with no clinical signs or symptoms of syphilis who has one of the following:

- No past diagnosis of syphilis, and a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods), and a reactive treponemal test (e.g., FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods), or
- A current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer

AND evidence of having acquired the infection within the previous 12 months based on one or more of the following criteria:

- Documented seroconversion or fourfold or greater increase in titer of a nontreponemal test during the previous 12 months
- Documented seroconversion of a treponemal test during the previous 12 months
- A history of symptoms consistent with primary or secondary syphilis during the previous 12 months
- A history of sexual exposure to a partner within the previous 12 months who had primary, secondary, or early latent syphilis (documented independently as duration  $<12$  months)
- Only sexual contact was within the last 12 months (sexual debut).

There is no confirmed case classification for early latent syphilis.

## **Syphilis, late latent (Effective 1/14)**

### ***Clinical description***

A subcategory of latent syphilis (a stage of infection caused by *T. pallidum* in which organisms persist in the body of the infected person without causing symptoms or signs) when initial infection has occurred  $>12$  months previously.

## ***Case classification***

*Probable:* a person with no clinical signs or symptoms of syphilis who has one of the following:

- No past diagnosis of syphilis, and a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods), and a reactive treponemal test (e.g., FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods), or
- A past history of syphilis therapy and a current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer.

AND who has no evidence of having acquired the disease within the preceding 12 months (see Syphilis, early latent).

There is no confirmed case classification for late latent syphilis.

## **Neurosyphilis (Effective 1/14)**

Neurosyphilis can occur at any stage of syphilis. If the patient has neurologic manifestations of syphilis, the case should be reported with the appropriate stage of infection (as if neurologic manifestations were not present) and neurologic manifestations should be noted in the case report data. If no other stage is appropriate, the case should be staged as “late, with clinical manifestations”.

Neurosyphilis can apply to all stages of infection of syphilis listed, including: primary syphilis, secondary syphilis, early latent syphilis, late latent syphilis, and late syphilis with clinical manifestations.

## ***Clinical description***

Infection of the central nervous system with *T. pallidum*, as evidenced by manifestations including syphilitic meningitis, meningovascular syphilis, optical involvement including interstitial keratitis and uveitis, general paresis, including dementia, and tabes dorsalis.

## ***Laboratory criteria for diagnosis***

- A reactive VDRL in cerebrospinal fluid (CSF) and either (1) a reactive treponemal serologic test for syphilis (e.g., FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods) or (2) a reactive nontreponemal serologic test for syphilis (VDRL, RPR, or equivalent serologic method).

## ***Case classification***

*Probable:* syphilis of any stage with a negative VDRL test in CSF specimen and either (1) a reactive treponemal serologic test for syphilis (e.g., FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods) or (2) a reactive non-treponemal serologic test for syphilis (VDRL, RPR, or equivalent serologic method), and both of the following:

- Elevated CSF protein (>50 mg/dL<sup>2</sup>) or leukocyte count (>5 white blood cells/cubic millimeter CSF) in the absence of other known causes of these abnormalities, and
- Clinical symptoms or signs consistent with neurosyphilis without other known causes for these clinical abnormalities.

*Confirmed:* syphilis of any stage that meets the laboratory criteria for neurosyphilis.

## **Syphilis, late with clinical manifestations (including late benign syphilis and cardiovascular syphilis) (Effective 1/14)**

## ***Clinical description***

Clinical manifestations of late syphilis may include inflammatory lesions of the cardiovascular system (e.g., aortitis, coronary vessel disease), skin (e.g., gummatous lesions) bone (e.g., osteitis) or other tissue. Rarely, other structures (e.g., the upper and lower respiratory tracts, mouth, eye, abdominal organs, reproductive organs, lymph nodes, and skeletal muscle) may be involved. Late syphilis usually becomes clinically manifest only after a period of 15–30 years of untreated infection. If only neurologic manifestations of syphilis (e.g., tabes dorsalis, dementia) are present and infection occurred more than 12 months ago, the case should be reported as “late syphilis”.

## ***Laboratory criteria for diagnosis***

Demonstration of *T. pallidum* in late lesions by special stains (although organisms are rarely visualized in late lesions), or equivalent methods, or by polymerase chain reaction (PCR) or equivalent direct molecular methods.

## ***Case classification***

*Probable*: characteristic abnormalities or lesions of the cardiovascular system (e.g., aortitis, coronary vessel disease), skin (e.g., gummatous lesions), bone (e.g., osteitis), or other tissue and a reactive treponemal test (e.g., FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods), in the absence of other known causes of these abnormalities. CSF abnormalities and clinical symptoms or signs consistent with neurologic manifestations of syphilis might be present.

*Confirmed*: a case that meets the clinical description of late syphilis that is laboratory confirmed.

## **Syphilis, Congenital (Revised 1/15)**

### ***Clinical description***

A condition caused by infection in utero with *Treponema pallidum*. A wide spectrum of severity exists, from inapparent infection to severe cases that are clinically apparent at birth. An infant or child (aged less than 2 years) may have signs such as hepatosplenomegaly, rash, condyloma lata, snuffles, jaundice (nonviral hepatitis), pseudoparalysis, anemia, or edema (nephrotic syndrome and/or malnutrition). An older child may have stigmata (e.g., interstitial keratitis, nerve deafness, anterior bowing of shins, frontal bossing, mulberry molars, Hutchinson teeth, saddle nose, rhagades, or Clutton joints).

### ***Laboratory criteria for diagnosis***

- Demonstration of *T. pallidum* by darkfield microscopy of lesions, body fluids, or neonatal nasal discharge, or
- Polymerase chain reaction (PCR) or other equivalent direct molecular methods of lesions, placenta, umbilical cord, or autopsy material, or
- Immunohistochemistry (IHC), or special stains (e.g., silver staining) of specimens from lesions, neonatal nasal discharge, placenta, umbilical cord, or autopsy material.

### ***Case classification***

*Probable*: a condition affecting an infant whose mother had untreated or inadequately treated\* syphilis at delivery, regardless of signs in the infant, or an infant or child who has a reactive non-treponemal test for syphilis (Venereal Disease Research Laboratory [VDRL], rapid plasma reagin [RPR], or equivalent serologic methods) AND any one of the following:

- Any evidence of congenital syphilis on physical examination (see Clinical description)
- Any evidence of congenital syphilis on radiographs of long bones
- A reactive cerebrospinal fluid (CSF) venereal disease research laboratory (VDRL) test
- In a nontraumatic lumbar puncture, an elevated CSF leukocyte (white blood cell, WBC) count or protein (without other cause):

Suggested parameters for abnormal CSF WBC and protein values:

- During the first 30 days of life, a CSF WBC count of >15 WBC/mm<sup>3</sup> or a CSF protein >120 mg/dL.
- After the first 30 days of life, a CSF WBC count of >5 WBC/mm<sup>3</sup> or a CSF protein >40 mg/dL, regardless of CSF serology.
- The treating clinician should be consulted to interpret the CSF values for the specific patient.

*Confirmed*: a case that is laboratory confirmed.

\* Adequate treatment is defined as completion of a penicillin-based regimen, in accordance with CDC treatment guidelines, appropriate for stage of infection, initiated 30 or more days before delivery.

## **Syphilitic Stillbirth**

### ***Clinical case definition***

A fetal death that occurs after a 20-week gestation or in which the fetus weighs greater than 500 g and the mother had untreated or inadequately treated\* syphilis at delivery.

### ***Comment***

Congenital and acquired syphilis may be difficult to distinguish when a child is seropositive after infancy. Signs of congenital syphilis may not be obvious, and stigmata may not yet have developed. Abnormal values for CSF VDRL, WBC cell count, and protein may be found in either congenital or acquired syphilis. Findings on radiographs of long bones may help because radiographic changes in the metaphysis and epiphysis are considered classic signs of congenitally acquired syphilis. While maternal antibodies can complicate interpretation of serologic tests in an infant, reactive tests past 18 months of age are considered to reflect the status of the child. The decision may ultimately be based on maternal history and clinical judgment. In a young child, the possibility of sexual abuse should be considered as a cause of acquired rather than congenital syphilis, depending on the clinical picture. For reporting purposes, congenital syphilis includes cases of congenitally acquired syphilis among infants and children as well as syphilitic stillbirths.

\* Adequate treatment is defined as completion of a penicillin-based regimen, in accordance with CDC treatment guidelines, appropriate for stage of infection, initiated 30 or more days before delivery.

## **C2. CASE DEFINITIONS FOR NON-NOTIFIABLE INFECTIOUS DISEASES**

Although the conditions below are not currently nationally notifiable, they may be reportable in some jurisdictions. To provide uniform criteria for those jurisdictions, case definitions are provided by CSTE. Case definitions are periodically revised. The most current surveillance case definitions for non-notifiable STDs are listed below. Please see the NNDSS website (<https://wwwn.cdc.gov/nndss/case-definitions.html>) for historical case definitions.

### **C2.1 Genital Herpes (Herpes Simplex Virus) (Revised 9/96)**

#### ***Clinical description***

A condition characterized by visible, painful genital or anal lesions.

#### ***Laboratory criteria for diagnosis***

- Isolation of herpes simplex virus from cervix, urethra, or anogenital lesion, or
- Demonstration of virus by antigen detection technique in clinical specimens from cervix, urethra, or anogenital lesion, or
- Demonstration of multinucleated giant cells on a Tzanck smear of scrapings from an anogenital lesion.

#### ***Case classification***

*Probable:* a clinically compatible case (in which primary and secondary syphilis have been excluded by appropriate serologic tests and darkfield microscopy, when available) with either a diagnosis of genital herpes based on clinical presentation (without laboratory confirmation) or a history of one or more previous episodes of similar genital lesions.

*Confirmed:* a clinically compatible case that is laboratory confirmed.

#### ***Comment***

Genital herpes should be reported only once per patient. The first diagnosis for a patient with no previous diagnosis should be reported.

## C2.2 Genital Warts (Revised 9/96)

### ***Clinical description***

An infection characterized by the presence of visible, exophytic (raised) growths on the internal or external genitalia, perineum, or perianal region.

### ***Laboratory criteria for diagnosis***

- Histopathologic changes characteristic of human papillomavirus infection in specimens obtained by biopsy or exfoliative cytology or
- Demonstration of virus by antigen or nucleic acid detection in a lesion biopsy.

### ***Case classification***

*Probable*: a clinically compatible case without histopathologic diagnosis and without microscopic or serologic evidence that the growth is the result of secondary syphilis.

*Confirmed*: a clinically compatible case that is laboratory confirmed.

### ***Comment***

Genital warts should be reported only once per patient. The first diagnosis for a patient with no previous diagnosis should be reported.

## C2.3 Granuloma Inguinale

### ***Clinical description***

A slowly progressive ulcerative disease of the skin and lymphatics of the genital and perianal area caused by infection with *Calymmatobacterium granulomatis*. A clinically compatible case would have one or more painless or minimally painful granulomatous lesions in the anogenital area.

### ***Laboratory criteria for diagnosis***

Demonstration of intracytoplasmic Donovan bodies in Wright or Giemsa-stained smears or biopsies of granulation tissue.

### ***Case classification***

*Confirmed*: a clinically compatible case that is laboratory confirmed.

## C2.4 Lymphogranuloma Venereum

### ***Clinical description***

Infection with L1, L2, or, L3 serovars of *Chlamydia trachomatis* may result in a disease characterized by genital lesions, suppurative regional lymphadenopathy, or hemorrhagic proctitis. The infection is usually sexually transmitted.

### ***Laboratory criteria for diagnosis***

Isolation of *C. trachomatis*, serotype L1, L2, or L3 from clinical specimen, or

- Demonstration by immunofluorescence of inclusion bodies in leukocytes of an inguinal lymph node (bubo) aspirate, or
- Positive microimmunofluorescent serologic test for a lymphogranuloma venereum strain of *C. trachomatis*.

## **Case classification**

*Probable*: a clinically compatible case with one or more tender fluctuant inguinal lymph nodes or characteristic proctogenital lesions with supportive laboratory findings of a single *C. trachomatis* complement fixation titer of >64.

*Confirmed*: a clinically compatible case that is laboratory confirmed.

## **C2.5 Mucopurulent Cervicitis (Revised 9/96)**

### **Clinical description**

Cervical inflammation that is not the result of infection with *Neisseria gonorrhoeae* or *Trichomonas vaginalis*. Cervical inflammation is defined by the presence of one of the following criteria:

- Mucopurulent secretion (from the endocervix) that is yellow or green when viewed on a white, cotton-tipped swab (positive swab test)
- Induced endocervical bleeding (bleeding when the first swab is placed in the endocervix).

### **Laboratory criteria for diagnosis**

No evidence of *N. gonorrhoeae* by culture, Gram stain, or antigen or nucleic acid detection, and no evidence of *T. vaginalis* on wet mount.

## **Case classification**

*Confirmed*: a clinically compatible case in a female who does not have either gonorrhea or trichomoniasis.

### **Comment**

Mucopurulent cervicitis (MPC) is a clinical diagnosis of exclusion. The syndrome may result from infection with any of several agents (see *Chlamydia trachomatis*). If gonorrhea, trichomoniasis, and chlamydia are excluded, a clinically compatible illness should be classified as MPC. An illness in a female that meets the case definition of MPC and *C. trachomatis* infection should be classified as chlamydia.

## **C2.6 Nongonococcal Urethritis (Revised 9/96)**

### **Clinical description**

Urethral inflammation that is not the result of infection with *Neisseria gonorrhoeae*. Urethral inflammation may be diagnosed by the presence of one of the following criteria:

- A visible abnormal urethral discharge, or
- A positive leukocyte esterase test from a male aged <60 years who does not have a history of kidney disease or bladder infection, prostate enlargement, urogenital anatomic anomaly, or recent urinary tract instrumentation, or
- Microscopic evidence of urethritis ( $\geq 5$  white blood cells per high-power field) on a Gram stain of a urethral smear.

### **Laboratory criteria for diagnosis**

No evidence of *N. gonorrhoeae* infection by culture, Gram stain, or antigen or nucleic acid detection.

## **Case classification**

*Confirmed*: a clinically compatible case in a male in whom gonorrhea is not found, either by culture, Gram stain, or antigen or nucleic acid detection.

## **Comment**

Nongonococcal urethritis (NGU) is a clinical diagnosis of exclusion. The syndrome may result from infection with any of several agents (see *Chlamydia trachomatis*). If gonorrhea and chlamydia are excluded, a clinically compatible illness should be classified as NGU. An illness in a male that meets the case definition of NGU and *C. trachomatis* infection should be classified as chlamydia.

## **C2.7 Pelvic Inflammatory Disease (Revised 9/96)**

### ***Clinical case definition***

A clinical syndrome resulting from the ascending spread of microorganisms from the vagina and endocervix to the endometrium, fallopian tubes, and/or contiguous structures. In a female who has lower abdominal pain and who has not been diagnosed as having an established cause other than pelvic inflammatory disease (PID) (e.g., ectopic pregnancy, acute appendicitis, and functional pain), all the following clinical criteria must be present:

- Lower abdominal tenderness, and
- Tenderness with motion of the cervix, and
- Adnexal tenderness.

In addition to the preceding criteria, at least one of the following findings must also be present:

- Meets the surveillance case definition of *C. trachomatis* infection or gonorrhea
- Temperature >100.4 F (>38.0 C)
- Leukocytosis >10,000 white blood cells/mm<sup>3</sup>
- Purulent material in the peritoneal cavity obtained by culdocentesis or laparoscopy
- Pelvic abscess or inflammatory complex detected by bimanual examination or by sonography
- Patient is a sexual contact of a person known to have gonorrhea, chlamydia, or nongonococcal urethritis.

### ***Case classification***

*Confirmed:* a case that meets the clinical case definition.

## **Comment**

For reporting purposes, a clinician's report of PID should be counted as a case.

# Contributors

We gratefully acknowledge the contributions of state STD project directors, STD program managers, state and territorial epidemiologists, and laboratory directors. The persons listed were in the positions shown as of August 24, 2016.

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