

Sexually Transmitted Infections

(Chlamydia, Gonorrhea and Syphilis)

Definition: This chapter provides information on three of the more than 25 diseases spread primarily through sexual activity: chlamydia (ICD-9 code 099.5), gonorrhea (ICD-9 code 098), and syphilis (ICD-9 codes 090-091). These diseases are caused by bacteria: *Chlamydia trachomatis*, *Neisseria gonorrhoeae*, and *Treponema pallidum*, respectively. Unless otherwise noted, data in this report include cases of disease that have been reported to the Washington State Department of Health. (See [Technical Note](#).) For syphilis, cases include those with primary or secondary disease, the two most infectious stages of syphilis. Symptoms of these diseases vary both by disease and individual affected and range from no symptoms, to mild to moderate symptoms such as discharge from the vagina or penis and painful urination, to causing serious complications such as infertility in women or harm to a developing fetus.

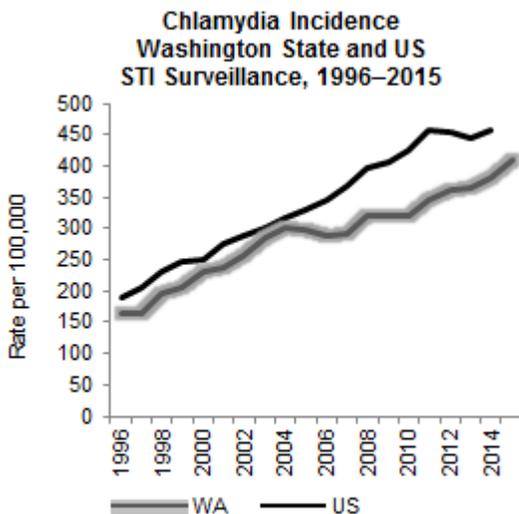
This is a data update of the *Health of Washington State* chapter on [Sexually Transmitted Infections](#) published in 2013.

Expansion of screening activities, more sensitive test technologies, and increased use of laboratory reporting for case finding may have contributed to the rate increases in the past decade.

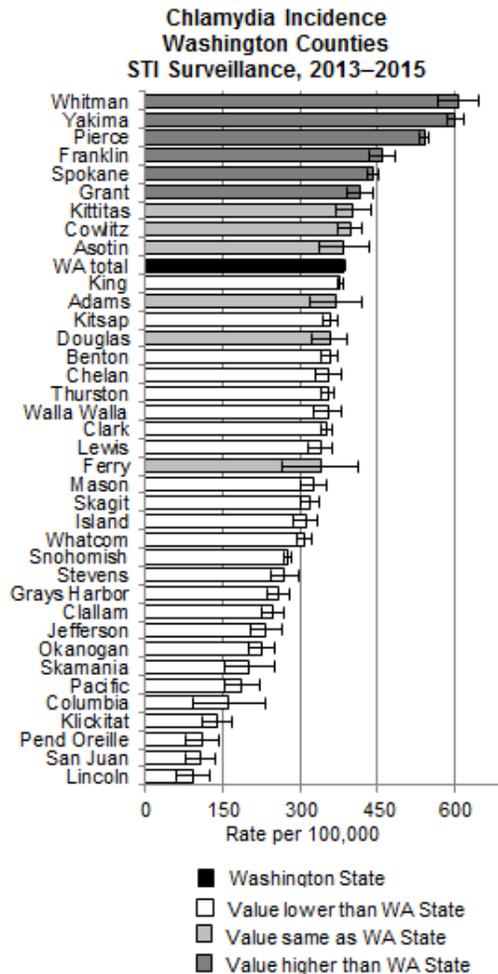
Chlamydia

Time Trends

Healthcare providers in Washington State have been required to report cases of chlamydial infection since 1987, seven years before all states were required to report cases nationally to the CDC. The reported incidence rate of chlamydia in Washington reached a low of 166 per 100,000 in 1997. Since that time, incidence rates increased sharply before leveling off in 2004 through 2007. Rates then increased sharply to the 2015 incidence rate of 410 per 100,000.



Geographic Variation

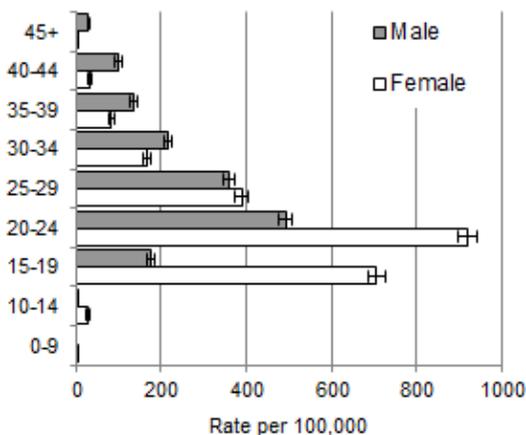


Chlamydial infection is widely spread among all sexually active residents of Washington. Providers reported cases from all 39 Washington counties during 2013–2015, though too few cases were reported from Garfield and Wahkiakum counties to calculate stable rates. Based on the average annual incidence rate for 2013–2015, Whitman County had the greatest burden of disease (606 per 100,000) and Yakima County had a similarly high incidence rate (601 per 100,000). Pierce, Franklin, Spokane and Grant counties also had higher incidence rates than the overall state rate.

Age and Gender

Many more reports of chlamydial infection are received from providers for women than men; therefore, men and women have very different reported chlamydia incidence rates. Chlamydia screening initiatives target younger women who access care in family planning and reproductive health settings. Providers do not routinely screen men in these settings unless they accompany their female partners to the healthcare visit. Thus, a large portion of male partners of infected women remain unscreened, undiagnosed or untreated. This contributes to ongoing chlamydia transmission and re-infection. Given the disparities in screening between men and women, it is likely that the true incidence of chlamydial infection among men is similar to the rate among women for all age groups. The highest incidence rates for females and males occur among those ages 20–24.

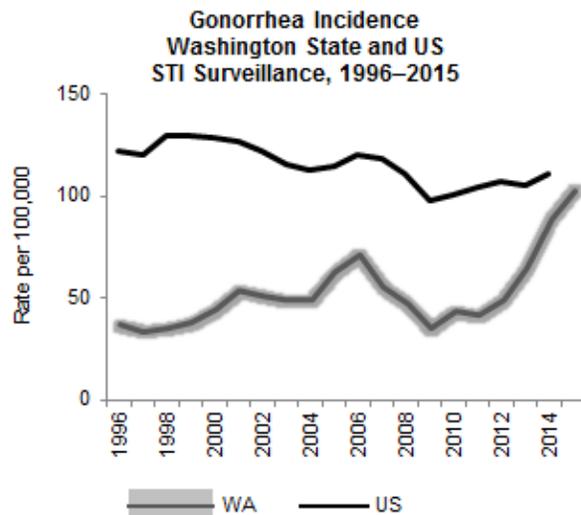
**Chlamydia Incidence
Age and Gender
STI Surveillance, 2013–2015**



Gonorrhea

Time Trends

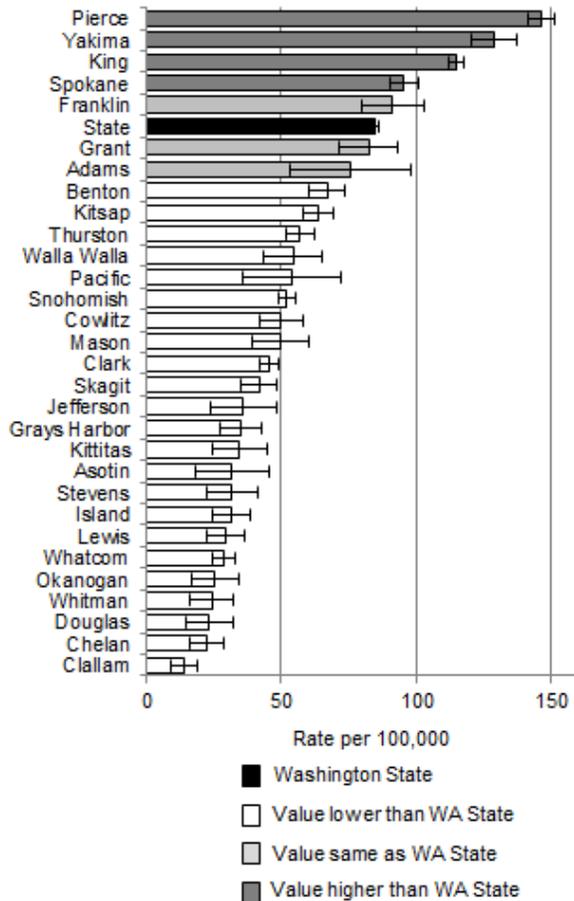
Gonorrhea incidence declined steeply both nationally and in Washington during the middle of the 1990s. Since 1997, gonorrhea incidence among Washington residents sharply increased through 2006. This pattern is consistent with trends seen elsewhere on the U.S. West Coast.¹ The rate of new cases decreased steadily through 2009 perhaps in response to widespread implementation of improved treatment resulting in decreased transmission of the disease. The rate of gonorrhea has since sharply increased through 2015 to 103 cases of gonorrhea per 100,000.



Geographic Variation

Gonorrhea cases have historically been concentrated in urban areas in Washington. For 2013–2015 combined, Pierce, Yakima, King and Spokane had higher incidence rates than the overall state rate. Nine counties had too few cases for calculating reliable rates, and the remaining counties had incidence rates similar to or lower than the statewide average incidence rate of 85 cases per 100,000.

**Gonorrhea Incidence
Washington Counties
STI Surveillance, 2013–2015**



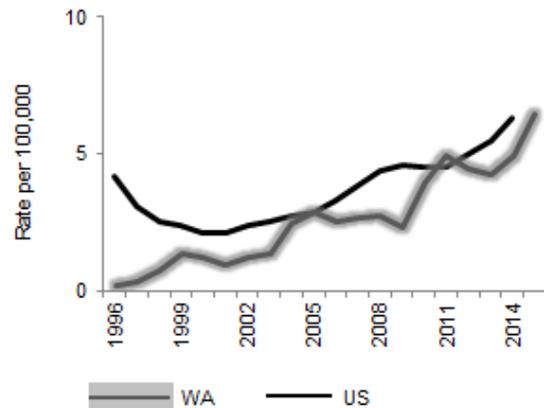
The number of gonorrhea cases reported among males is higher than among females. In 2015, about 1.6 cases among males were reported for every female case. For men, gonorrhea rates peak at ages 25–29 where for women, gonorrhea rates peak at ages 20–24. The large differences in rates between men and women ages 25 and older occur because of the high incidence of gonorrhea among MSM.

Syphilis

Time Trends

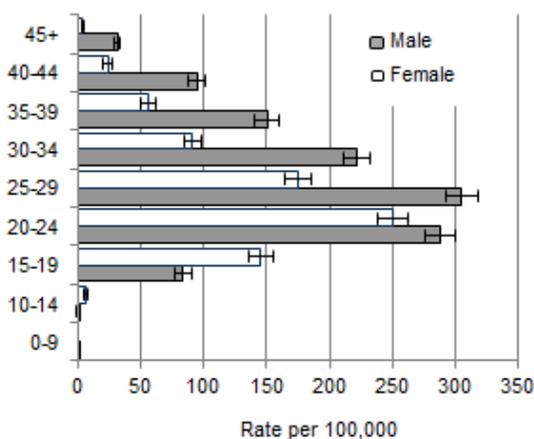
Starting in 1997, infectious syphilis reemerged in Washington primarily among urban MSM. A sharp increase in incidence rates of primary and secondary syphilis has been observed since that time.

**Primary & Secondary Syphilis
Washington State and US
STI Surveillance 1996–2015**



Age and Gender

**Gonorrhea Incidence
Age and Gender
STI Surveillance, 2013–2015**



In 2015, there were 452 cases of primary and secondary syphilis reported in Washington for an incidence rate of 6.5 cases per 100,000.

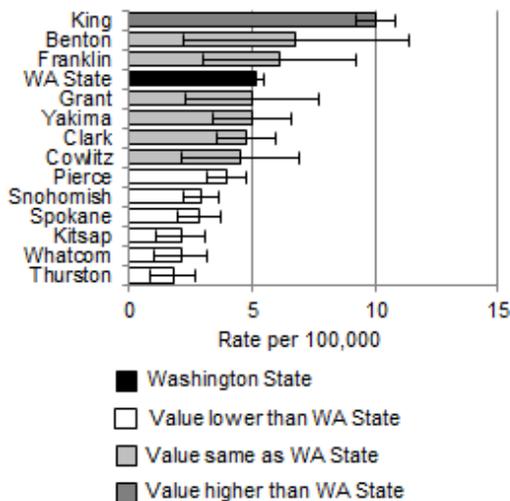
In 2000, national primary and secondary syphilis incidence rates fell to their lowest rate (2.1 cases per 100,000) since reporting began in 1941. Because of these dramatic reductions in disease, the CDC launched the National Syphilis Elimination Project. Despite much work to reduce transmission in selected high-incidence populations nationwide, syphilis continues to be of particular concern in the southern United States and among urban MSM populations.

Geographic Variation

Primary and secondary syphilis transmission is mainly an urban phenomenon affecting MSM populations in King County or those who travel to

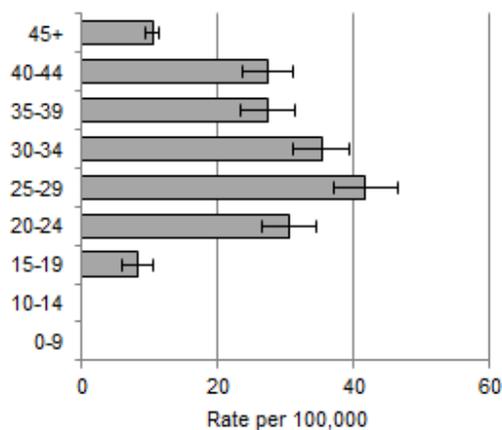
King County to find sex partners. King County reported 56% of all cases in 2013–2015 and had an incidence rate of 10 primary and secondary stage syphilis cases per 100,000. This was considerably higher than the statewide rate of 5.2 cases per 100,000 that year. Twelve additional counties reported sufficient cases to calculate stable rates for this period. Six of these twelve other counties have rates lower than the overall statewide rate.

**Primary & Secondary Syphilis Incidence
Washington Counties
STI Surveillance, 2013–2015**



Age and Gender

**Primary & Secondary Syphilis Incidence
Males, Age
STI Surveillance, 2013–2015**



There were too few females with syphilis in Washington from 2013–2015 to reliably calculate incidence rates for different age groups. Male case rates by age are distributed

in a pattern characteristic of STIs among MSM, with the highest rates among those 25–29 years old (41.7 cases per 100,000).

Chlamydia, Gonorrhea, Syphilis

Economic Factors and Education

Providers are not required to report the income level and educational attainment of patients diagnosed with STIs. However, chlamydia rates diagnosed during 2004–2006 were higher in census tracts with a lower proportion of people with at least a high school diploma. Census tracts with lower median household incomes also had higher rates of chlamydia than those with higher median incomes.² (See [Technical Notes](#).) Similar associations nationally show relationships of poverty, lower educational attainment and unemployment with higher STI rates.³

Race and Hispanic Origin

Washington’s rates of chlamydia and gonorrhea by race and Hispanic origin are not reliable due to missing data. In 2015, 21% of case reports did not identify the race of the patient, and 27% were missing information about Hispanic origin.

National data suggest disparities in rates of chlamydia and gonorrhea by race and Hispanic origin. In 2014, all groups except Asians and Pacific Islanders combined had higher rates of chlamydia and gonorrhea than did non-Hispanic whites. Nationally, rates are highest among non-Hispanic blacks who have reported rates over seven times higher for chlamydia and 6.2 times higher for gonorrhea than the rates among non-Hispanic whites.⁴

Data on race and ethnicity are more complete for primary and secondary syphilis due to the routine public health investigation and partner services activities. In 2015, 59% of reported primary and secondary syphilis in Washington was among non-Hispanic white residents. However, as is true nationally rates for Washington’s non-Hispanic black residents are higher than rates for residents of other races or Hispanic ethnicity. During 2013–2015, combined, Washington’s non-Hispanic black residents had a rate of 13.3 cases per 100,000 compared to a rate of 4.4 per 100,000 for non-Hispanic white residents.

Data Sources

STI State Surveillance Data: Washington State Department of Health Public Health Issues Management System – Sexually Transmitted Diseases (PHIMS-STD) 1996-2015.

Infertility Prevention Project Data: Washington State Department of Health IPP database and Region X Infertility Prevention Project Ahlers & Associates database, 1988-2011.

Sexually Transmitted Disease Surveillance 2014: Centers for Disease Control and Prevention.

Washington State population counts: 2000 and 2010 U.S. Census and 2000–2014 intercensal and 2011 post-censal estimates, Washington State Office of Financial Management, Forecasting Division (OFM), released January 7, 2015.

For More Information

Washington State Department of Health, Infectious Disease Office, Assessment Unit, (360) 236-3455
<http://www.doh.wa.gov/YouandYourFamily/IllnessandDisease/SexuallyTransmittedDisease.aspx>

U.S. Centers for Disease Control and Prevention, Division of STD Prevention, <http://www.cdc.gov/STD/default.htm>

Henry J Kaiser Family Foundation:
<http://www.kaisernetwork.org/index.cfm>

American Social Health Association:
<http://www.ashaSTD.org/>

Technical Notes

WAC 246-101 requires healthcare providers and laboratories to report cases of chlamydia, gonorrhea, and syphilis to local health jurisdictions. The Washington State Department of Health receives these reports from local health and compiles them into a confidential STI case registry. Not all cases of disease are reported, primarily because not everyone experiences symptoms or seeks medical care. About 70% of women infected with chlamydia have few or no symptoms; symptoms are often mild or absent in men. Approximately 50% of women do not experience symptoms of gonorrhea and early stages of syphilis can also be asymptomatic. Data for this report are based on cases diagnosed through December 31, 2015 and reported to the department as of May 17, 2016. An individual person may be diagnosed and reported with STIs more than once over time and thus multiple episodes of disease in an individual person could be counted in a given time period.

The Infertility Prevention Project is a collaborative initiative between the U.S. Centers for Disease Control and Prevention and the Office of Population Affairs, providing funds to screen for chlamydial and gonorrhea infection in all categorical sexually transmitted disease clinics and 95%

of family planning clinics throughout Washington. For additional information see: <http://www.cdc.gov/STD/infertility/ipp-archive.htm>

A census tract is a small unit of geography defined by the US Census to provide a useful statistical subdivision of a county. Census tracts vary in size, but usually contain about 4000 persons and are designed to be homogenous as to the characteristics of the population residing in the area. For additional information see: <http://www.census.gov/>

Acknowledgments

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Endnotes

¹ Centers for Disease Control and Prevention. Increase in Gonorrhea – Eight Western States, 2000–2005. *MMWR Morb Mortal Wkly Rep.* 2007;59(10):222-225.

² Unpublished data, Washington State Department of Health, Infectious Disease Office, Assessment Unit; 2016.

³ Hogben M, Leichter JS. Social Determinants and Sexually Transmitted Disease Disparities. *Sex Transm Dis.* 2008;35(12):S13-S18.

⁴ Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2014.* Atlanta, GA: U.S. Department of Health and Human Services; 2015.