

Sexually Transmitted Diseases in California

2016 Executive Summary

The California Sexually Transmitted Disease (STD) Annual Report is prepared to provide the most recent data on the burden of reportable bacterial STDs among Californians. This resource is intended to inform state and local public health program STD control interventions for reducing the impact of STDs in collaboration with clinical, community, and governmental partners.

In 2016, the burden of notifiable bacterial STDs in California (chlamydia, gonorrhea, and syphilis) continued to be substantial and increasing when compared against 2015 and the prior five years.¹ In this summary, we describe differences in STD burden over time, geography, and demographic characteristics to inform the design and implementation of state and local interventions to reduce STD and HIV transmission and improve sexual and reproductive health.

California was ranked first among all states in 2016 based on Centers for Disease Control and Prevention (CDC) data for the total number of cases for chlamydia, gonorrhea, syphilis, and congenital syphilis.²

OVERALL SUMMARY

In 2016, bacterial STDs in California (chlamydia, gonorrhea, and syphilis) significantly increased. Important disparities persisted, with the highest rates found among young people, African-Americans, and gay, bisexual and other men who have sex with men (MSM). These vulnerable populations are at higher risk for related serious health outcomes such as HIV infection, infertility, ocular and neurosyphilis, and multi-drug resistant gonorrhea. Exposure to syphilis in pregnancy can lead to still birth and deformities from congenital syphilis.

Chlamydia (CT) remains the most common reportable disease in California and is at the highest level since mandated reporting began in 1990 with a 5% increase in cases compared with 2015. Although CT increases since 2012 were similar across California regions, the sharpest increases by 2016 were observed for San Francisco. Across California, the highest rates were among young women who are at risk for serious reproductive health outcomes such as pelvic inflammatory disease and infertility. The ongoing increase in male rates (8%) contrasted with small increases in female rates (1%). Disproportionally higher rates among African-American adolescents and young adult women persisted across regions, and were 3 to 5 times higher compared with white young women.

¹ Tables: [All STDs Summary, Data Tables, 2016:](https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-All-STDs-Tables.pdf)

<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-All-STDs-Tables.pdf>

Slides: [All STDs Summary, Slides, 2016:](https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-All-STDs.pptx)

<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-All-STDs.pptx>

² [2016 CDC STD Surveillance:](http://www.cdc.gov/std/stats/) <http://www.cdc.gov/std/stats/>

Gonorrhea (GC) cases continued to increase sharply across all regions of the state, with an overall 19% increase in cases compared with 2015. San Francisco continued to have significantly higher rates and sharper increases compared to other regions. Between 2015 and 2016, male rates increased 21% while female rates increased 13%. Rates were highest for both genders among those under age 30. Racial disparities persisted with rates among African-Americans over four times higher than among whites. Observed rates of decreased susceptibility to antibiotics used in current gonorrhea treatments remained low.

Early syphilis (ES) cases (primary, secondary, and early latent) continued to increase across all regions of California with an overall 19% increase compared with 2015 cases; San Francisco continued to have significantly higher ES rates compared to other regions. Although MSM accounted for 85% of male cases (among those with known gender of sex partner), the number of cases among females of reproductive age also continued to rise, increasing by 50% compared with 2015. Racial disparities continued with African-American male rates being over twice as high as among white males.

The number of infants born with congenital syphilis (CS) increased for the fourth consecutive year and by 43% over 2015 cases. There were 207 CS cases including 12 stillbirths in 2016. The burden of CS cases of this magnitude was last observed in 1995-1996.

KEY FINDINGS

Chlamydia (CT) remains the most frequently reported disease in California.³

- There were 198,503 CT cases reported in 2016 (504.4 per 100,000 population), a 5% increase in cases over 2015 and 17% increase since 2012.
- There were 14 counties with chlamydia rates higher than the overall state rate (504.4): San Francisco (939.4), Kern (714.1), Fresno (656.3), Los Angeles (578.5), Kings (576.9), San Diego (573.3), Butte (573.0), Sacramento (566.5), Tulare (562.3), Humboldt (551.9), Solano (547.6), San Bernardino (536.9), Santa Barbara (514.8), and San Joaquin (514.4).
- Female CT rates were 1.7 times the male CT rates.
- Although there was a one-year decline in 2013, female CT rates have slowly increasing since then, with a 1% increase between 2015 and 2016.
- Female CT rates continued to be highest among adolescent and young adults ages 15-24 years.
- After several years of declining CT rates among adolescent females (ages 15-19 years), 2016 is the second year of increases and higher by 2% compared with 2015.

³ Tables: [Chlamydia Data Tables, 2016:](https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Chlamydia-Tables.pdf)

<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Chlamydia-Tables.pdf>

Slides: [Chlamydia Slides, 2016:](https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Chlamydia.pptx)

<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Chlamydia.pptx>

- Adolescent African-American female CT rates remained high and were four times the rate among white adolescents females. However, rates for adolescent African-American females continued to decline since 2012, and represented an 8% decrease in 2016 compared to 2015.
- Male CT rates have continued to increase statewide, by 8% since 2015 and 33% since 2012. Male rates were highest among those 20-29 years of age. Regionally, San Francisco reported the highest male CT rates in 2016, with increases of 7% since 2015. Rates in San Francisco have nearly doubled since 2012.
- Prevalence monitoring data from selected clinical settings indicated that juvenile detention facilities continued to have the highest rates of CT infection as compared with family planning and managed care clinical settings. In 2016, reported female chlamydia positivity from juvenile detention facilities varied by county from 7.9% (San Mateo) to 19.9% (Riverside).
- Observed differences by gender may reflect more frequent use of reproductive healthcare services by females. Increases in chlamydia among males may reflect either increases in transmission or screening, particularly rectal screening among MSM.
- **Programmatic priorities for chlamydia prevention based on the trends in chlamydia include increasing screening of young females to prevent reproductive health complications, and screening of MSM for rectal infections that may increase the risk of HIV transmission.**⁴

Gonorrhea (GC) rates continued to increase sharply across all regions of the state.⁵

- There were 64,677 GC cases (164.3 per 100,000 population) reported in 2016, a 19% increase in cases over 2015 and a near doubling since 2012.
- Increases in GC cases and rates of at least 10-20% and higher were found across almost all counties. There were nine counties with gonorrhea rates higher than the overall state rate (164.3): San Francisco (606.1), Lake (311.7), Los Angeles (218.6), Kern (202.9), Fresno (202.2), Sacramento (190.4), Humboldt (187.4), Alameda (186.7), and Mendocino (185.4).
- GC male cases rose significantly by 22% since 2015 and more than doubled since 2012. Men who have sex with men accounted for 63% of the state's male gonorrhea cases (with known gender of sex partner). Reasons for these increases are not yet clear, and may include increased transmission as well as increased oral and rectal screening of MSM. Nearly half of MSM GC cases were associated with either oral or rectal sites of infection and were therefore, at higher risk of HIV acquisition.

⁴ Programmatic priorities are in-line with national recommendations and standard STD prevention strategies.

⁵ Tables: [Gonorrhea Data Tables, 2016:](https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Gonorrhea-Tables.pdf)

<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Gonorrhea-Tables.pdf>

Slides: [Gonorrhea Slides, 2016:](https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Gonorrhea.pptx)

<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Gonorrhea.pptx>

- Among MSM GC cases whose HIV status was known, 34% were HIV-positive. Among interviewed MSM GC cases who were HIV-negative, 36% reported receiving HIV Pre-exposure Prophylaxis medication (PrEP). Ongoing assurance of HIV testing for GC cases can facilitate opportunities for PrEP and ultimately reduce HIV transmission in the community.
- There were increases in female cases of 14%. The highest GC rates for females were among ages 20-24 years and for males were among ages 25-29 years.
- Disparities in GC rates by race/ethnicity persisted, with African-American GC rates over four times those of white rates. Ongoing increases were observed in African-American male GC rates (12% increase since 2015 and 74% increase since 2012).
- Adherence to CDC-recommended dual therapy for gonorrhea treatment (ceftriaxone and azithromycin) was 84% among GC cases in 2016.
- Gonococcal Isolate Surveillance Project monitoring of trends in antibiotic susceptibility indicated that there was a consistent decline from 2010 to 2015 in the proportion of gonococcal isolates with decreased susceptibility to recommended cephalosporin therapy. However, in 2016, of the 868 isolates analyzed, one isolate (0.1%) exhibited decreased susceptibility to ceftriaxone or cefixime compared to 0 isolates in 2015. Additionally, 32 isolates (3.7%) exhibited decreased susceptibility to azithromycin (which is part of recommended gonorrhea dual therapy with ceftriaxone), compared to 1.1% of isolates with decreased susceptibility to azithromycin in 2015.
- **Programmatic priorities for gonorrhea prevention include screening of young females to prevent reproductive health complications, and screening of MSM for rectal and throat infections that may increase the risk of HIV transmission. High rates of gonorrhea among MSM provide opportunities for linkage to HIV care for HIV co-infected cases and linkage to HIV PrEP for HIV-negative cases. Healthcare provider adherence to recommended dual treatment regimens is essential to prevent the emergence of gonococcal antimicrobial resistance.⁶**

Early syphilis (ES), which includes primary, secondary, and early latent stages, continued to increase in 2016 in all regions of the state.⁷

- There were 11,222 ES cases reported in 2016 (28.5 per 100,000 population). This represents a 19% increase in cases over 2015 and a two-fold increase since 2012.
- There were six counties with early syphilis rates higher than the overall state rate (28.5): San Francisco (131.9), Fresno (64.7), San Joaquin (58.2), Kern (42.1), Los Angeles (39.3), and San Diego (29.9).

⁶ Programmatic priorities are in-line with national recommendations and standard STD prevention strategies.

⁷ Tables: [Syphilis Data Tables, 2016:](https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Syphilis-AllStages-Tables.pdf)

<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Syphilis-AllStages-Tables.pdf>

Slides: [Syphilis Slides, 2016:](https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Syphilis-AllStages.pptx)

<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Syphilis-AllStages.pptx>

- Men who have sex with men accounted for 85% of early syphilis cases in males (with known gender of sex partners).
- Among MSM ES cases with known HIV status, 56% were HIV-positive. The proportion of HIV-negative MSM ES cases reporting HIV PrEP increased from 17% in 2015 to 26% in 2016 in California local health jurisdictions (excluding Los Angeles and San Francisco).
- Early syphilis rates among HIV-positive MSM was more than ten-fold higher (2507.3 per 100,000) than HIV-negative MSM (232.1), and higher than heterosexual males (10.9) and females (3.2).
- Early syphilis rates were highest among those 25-34 years of age.
- The number of early syphilis cases among females of reproductive age increased by 50% compared with 2015. From 2012 to 2016, the annual number of reported early syphilis cases among females of reproductive age increased more than five-fold from 207 cases to 1,145, continuing a rise from the historic low in 2002.
- Disparities in ES rates by race/ethnicity persist: ES male rates were twice as high among African-American males compared with white males. Disparities by race were highest for ages 20-24 years with African American male ES rates four times higher than for white male ES cases.
- Potential increases in ocular syphilis, a serious manifestation of syphilis, were noted nationally and in California in early 2015.⁸ Since then, analysis of California case data from 2014-2016 indicated that less than 1% of all syphilis cases had symptoms associated with ocular syphilis.⁹ Additionally, the proportion of all syphilis cases that were associated with neurosyphilis during 2012-2016 remained about 3%.
- **Programmatic priorities for syphilis prevention include increasing screening for MSM, improving linkage to HIV care for HIV co-infected cases and linkage to HIV PrEP for HIV-negative cases, and improving timely treatment and partner services are provided especially to females of reproductive age.**¹⁰

Congenital syphilis (CS) increased for the fourth consecutive year.¹¹

- In 2016, there were 207 cases (42.4 per 100,000 live births), a 43% increase in cases since 2015 and six-fold higher when compared with the 33 CS cases in 2012. This is the

⁸ Woolston S, Cohen SE, Fanfair RN et al. [A Cluster of Ocular Syphilis Cases — Seattle, Washington, and San Francisco, California, 2014–2015. Morbid Mortal Wkly Rpt 2015; 64\(40\);1150-1.](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6440a6.htm)

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6440a6.htm>

⁹ Oliver SE, Aubin M, Atwell L, Matthias J, Cope A, Mobley V, Goode A, Minnerly S, Stoltey J, Bauer HM, Hennessy RR, DiOrio D, Fanfair RN, Peterman TA, Markowitz L. Ocular Syphilis - Eight Jurisdictions, United States, 2014-2015. MMWR Morb Mortal Wkly Rep. 2016 Nov 4;65(43):1185-1188.

¹⁰ Programmatic priorities are in-line with national recommendations and standard STD prevention strategies.

¹¹ Tables: [Congenital Syphilis Data Tables, 2016:](https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Syphilis-Congenital-Tables.pdf)

<https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Syphilis-Congenital-Tables.pdf>

Slides: [Congenital Syphilis Slides, 2016:](https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Syphilis-Congenital.pptx)

[https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH Document Library/STD-Data-Syphilis-Congenital.pptx](https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-Syphilis-Congenital.pptx)

highest number of cases since 1996, over 20 years ago. Syphilitic stillbirths also increased, from one case in 2012 to 12 cases in 2016.

- According to the Centers for Disease Control and Prevention, the congenital syphilis incidence rate in California in 2015 was the second highest incidence rate in the United States. Twenty-six (of 61) local health jurisdictions reported at least one case of congenital syphilis in 2016. Counties with the highest number of cases include Fresno, Kern, and Los Angeles.
- CS cases were predominantly Hispanic (100) and reflected the demographic profile of California births; however, the highest CS rate was among African-Americans (130.6 per 100,000 births) which was three times the rate for Hispanics (43.4) and four times the rate for Whites (32.0).
- Factors associated with recent CS cases included lack of or late prenatal care, inadequate treatment, poverty, and substance abuse.
- **Effective CS prevention strategies focus on syphilis screening and adequate/timely treatment of women at risk for pregnancy.**¹²

Guidance for Navigating the 2016 STD Annual Report

The 2016 STD Annual Report is designed to enable access to data in a variety of formats. The 2016 Annual Report is comprised of the Executive Summary, Technical Notes, STD tables, and graph slides, and is organized by “All STDs” and “specific STDs” on the [STD Data page](https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/STD-Data.aspx) (<https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/STD-Data.aspx>). The Annual Report includes 2016 and trend data on STD and related services collected through case-based reporting as well as enhanced surveillance, prevalence monitoring, health care programs, and laboratory surveys.

¹² Programmatic priorities are in-line with national recommendations and standard STD prevention strategies.