Sexually Transmitted Diseases in California
2020 Executive Summary

The California Sexually Transmitted Disease (STD) Annual Report provides the most recent data on the burden of reportable bacterial sexually transmitted infections (STI) among Californians. This resource is intended to inform state and local public health STD control programs to reduce the impact of STIs in collaboration with clinical, community, and other governmental partners.

In 2020, the COVID-19 pandemic had a dramatic impact on communicable disease surveillance and the reporting of notifiable bacterial STIs in California (chlamydia, gonorrhea, and syphilis).[1] Throughout 2020, many healthcare providers temporarily closed and/or limited in-person visits, which contributed to reductions in routine STI screening, likely leading to a reduction in diagnoses and subsequent reporting. Many local health jurisdictions also experienced key staff redirections to support the COVID-19 pandemic efforts, leading to difficulties in maintaining standard STD control activities like syphilis case investigations and partner services. While there were decreases in the number of reported chlamydia, gonorrhea, and adult syphilis cases in 2020, there were increases in congenital syphilis for the eighth consecutive year, as well as increases in STI burden among some subpopulations - such as females with gonorrhea. In this summary, we describe the STI burden in California over time and geography to inform the design and implementation of state and local interventions to reduce STI and HIV transmission and improve sexual and reproductive health.

Based on 2020 U.S. Centers for Disease Control and Prevention (CDC) data, California had the highest number of reported chlamydia, gonorrhea, and adult (primary and secondary) syphilis cases, as well as the second most congenital syphilis cases of all states.[2]

OVERALL SUMMARY

In 2020, morbidity due to bacterial STIs in California (chlamydia, gonorrhea, and syphilis) remained stable or decreased compared to bacterial STI morbidity in California in 2019. Striking disparities in STI burden persisted, with the highest STI rates continuing to occur in young people, Black/African Americans, and gay, bisexual, and other men who have sex with men (MSM). These disparities are particularly important because people at higher risk for STIs may also be at risk for related adverse health outcomes such as HIV infection, infertility, ocular, otic, and

[1] Tables: STD Data All Tables, 2020, Table All-1: https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/2020-STD-Data-All-STDs-Tables.xlsx
Slides: All STDs Summary, Slides, 2020: https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/2020-STD-Annual-Report-Graph-Set.pptx

[2] 2020 CDC STD Surveillance: https://www.cdc.gov/std/statistics/2020

neurosyphilis, and multi-drug resistant gonorrhea, among others. Further, exposure to syphilis in utero can lead to congenital syphilis which can cause stillbirth or other severe illness in infants.

Chlamydia (CT) remains the most common reportable STI in California. Although CT rates were relatively stable throughout California until 2013, by 2019 they were 1.4 times higher than in 2013, before they decreased due to COVID-19 in 2020. In 2020, across California, the highest rates of CT were among young females, who are at risk of serious reproductive health outcomes such as pelvic inflammatory disease and infertility from CT. The CT rate among both males and females decreased by approximately 25% from 2019 to 2020. Statewide, disproportionally higher CT rates were reported among Black/African American adolescents and young adult females. The CT rates in these populations were approximately 2.5 and 4.5 times higher when compared to their respective state averages.

Gonorrhea (GC) cases decreased across all regions in California; 3.5 percent fewer cases were reported in 2020 compared with 2019. San Francisco continued to have notably higher rates of GC compared to other parts of the state, however in 2020, San Francisco GC rates decreased 26.4 percent. Statewide, between 2019 and 2020, the GC rate among females increased 2.2 percent, compared to a 6.5 percent decrease among males. Among females, GC rates were highest among people under 30 years of age. Among males, rates were highest among people who were 20-34 years old. Racial disparities in GC burden persisted with GC rates among Black/African Americans 13.6 times higher than among Asians/Pacific Islanders, the lowest rate in the state. Among isolates tested in the Gonococcal Isolate Surveillance Project (GISP), there were none that triggered alerts for ceftriaxone or cefixime. However, the proportion of isolates with an alert value for azithromycin has increased from 0.1 percent in 2012 to 9.3 percent in 2020. These alert values are determined by CDC and indicate that an isolate may have decreased susceptibility to a given antibiotic.

Early syphilis (ES) cases (primary, secondary, and early non-primary non-secondary) decreased in most regions of California. Overall, there was an 8.9 percent decrease in ES cases in 2020 compared to 2019. San Francisco continued to have significantly higher ES rates than other regions. MSM accounted for 55.1 percent of all ES cases in California. The number of ES cases among females of reproductive age (ages 15-44) was relatively stable from 2019 to 2020. Racial disparities in ES rates persist in CA, the ES rate among Black/African Americans was nearly three times higher than among Hispanic/Latino Californians, the next highest ES rate in California in 2020.

Congenital syphilis (CS) was the only reportable STI that increased in frequency in 2020. The number of infants born with CS in California increased for the eighth consecutive year: by 15 percent compared to 2019. There were 483 CS cases including 31 stillbirths or neonatal deaths in 2020. This is the highest number of CS cases to be reported in California since 1992 when 522 were reported.

KEY FINDINGS

Chlamydia (CT) remains the most frequently reported STI in California.[3]

- There were 177,266 CT cases reported in 2020 (445.6 per 100,000 population), 25.4 percent fewer than were reported in 2019.
- There were 14 counties with higher chlamydia rates than the overall state rate (445.6 cases / 100,000 persons): Kings (652.7), San Francisco (638.2), Tulare (606.5), Kern (579.0), Butte (544.2), San Diego (542.7), Fresno (539.2), Los Angeles (517.2), Solano (505.5), San Bernardino (481.1), San Joaquin (463.6), Sacramento (462.7), Stanislaus (454.9), and Merced (453.0).
- The female CT rate was 1.6 times the male CT rate.
- After increasing steadily since 2015, female CT rates decreased statewide, a 24.8 percent decrease in 2020 compared with CT rates in 2019.
- Female CT rates were highest among adolescents as well as young adults 20-24 years old.
- CT rates among adolescent Black/African American females remained high and were 1.6 times higher than the statewide rate of CT.
- After increasing since 2015, male CT rates decreased statewide, a 26.6 percent decrease in CT rates among males in 2020 compared to 2019. Male rates were highest among 20 to 29-year-olds.
- Observed differences in CT rates 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 chlamydia trends include increasing screening of young females to prevent reproductive health complications, and screening of MSM, including for rectal infections, which can increase the risk of HIV transmission.**[4]

Gonorrhea (GC) rates decreased across most of the state.[5]

[3] Tables: Chlamydia Data Tables, 2020: https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/2020-STD-Data-Chlamydia-Tables.xlsx
Slides: Chlamydia Slides, 2020: https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/2020-STD-Data-Chlamydia-Slides.pptx

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

[5] Tables: Gonorrhea Data Tables, 2020: https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/2020-STD-Data-Gonorrhea-Tables.xlsx

- There were 77,823 GC cases (195.6 per 100,000 population) reported in 2020, a 3.5 percent decrease in cases compared to 2019.
- There were 15 counties with higher gonorrhea rates than the overall state rate (195.6 cases / 100,000 persons): San Francisco (457.3), Sacramento (286.3), Los Angeles (253.7), Yuba (242.8), Fresno (238.7), Inyo (233.3), Merced (232.1), Stanislaus (226.8), Solano (224.9), Kern (215.7), Butte (212.7), Shasta (208.8), Alameda (207.4), Kings (203.6), and San Bernardino (195.9).
- The number of GC cases in males decreased by 6.5 percent since 2019. Among cases randomly sampled for enhanced gonorrhea surveillance in 2019, MSM accounted for 60.6 percent of male gonorrhea cases (among those that reported the gender(s) of their sex partner(s)). Reasons for these increases are not yet clear but may include increased transmission as well as increases in the frequency of pharyngeal and rectal screening among MSM. Over half of the reported MSM GC cases were associated with only pharyngeal or rectal sites of infection and would have been missed if relying solely on urine-based screening.
- Among GC cases randomly sampled for enhanced interviews in 2019, 30 percent of MSM with known HIV status were HIV-positive. Among interviewed MSM GC cases who were HIV-negative, 49 percent reported having received HIV Pre-exposure Prophylaxis medication (PrEP). Ongoing HIV testing for GC cases can facilitate opportunities for HIV PrEP, if the case is HIV-negative, or linkage to care if HIV-positive. These efforts may ultimately reduce HIV transmission in these communities.
- The number of female GC cases increased by 2.2 percent in 2020 compared with 2019, one of the only subgroups with an increase in reported STIs amidst the COVID-19 pandemic. The highest age-specific GC rate among females was in those who were 20-29 years old.
- Disparities in GC rates by race/ethnicity continued in California; the rate of GC among Black/African Americans was 2.8 times higher than the statewide GC rate.
- GISP monitoring of trends in antibiotic susceptibility indicated that there was a decline in the proportion of gonococcal isolates with an alert value for cephalosporins in 2020. In 2020, among the 885 isolates tested, none had an alert value for ceftriaxone or cefixime but 86 (9.3 percent) had an alert value for azithromycin. The proportion of GISP isolates with an alert value for azithromycin has increased since 2012.
- **Programmatic priorities for gonorrhea prevention include screening of young females to prevent reproductive health complications, screening of MSM for rectal and throat infections that may increase the risk of HIV transmission, preventing disseminated gonococcal infection (DGI), and ensuring timely and adequate treatment of all gonorrhea infections. High rates of gonorrhea among MSM provide opportunities for linkage to HIV care for HIV coinfected cases and linkage to HIV PrEP for HIV-negative cases.**

Slides: Gonorrhea Slides, 2020: https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/2020-STD-Data-Gonorrhea-Slides.pptx

- **Healthcare provider adherence to recommended treatment regimen is essential to prevent the emergence of gonococcal antimicrobial resistance.**[6]

Early syphilis (ES), which includes primary, secondary, and early non-primary non-secondary stages, decreased in 2020 in most of the state.[7]

- There were 15,136 ES cases (38.0 per 100,000) reported to CDPH in 2020, an 8.7 percent decrease in the number of ES cases reported to CDPH compared to 2019.
- There were 13 counties with early syphilis rates that were higher than the overall state rate (38.0 cases / 100,000 population): San Francisco (125.2), Yuba (94.8), Shasta (65.8), Butte (65.4), Sutter (60.3), Lake (59.6), Los Angeles (53.0), Tehama (44.4), San Joaquin (42.0), Stanislaus (40.8), Riverside (40.5), Sacramento (39.8), and Kern (38.4).
- Men who have sex with men accounted for 55 percent of all early syphilis cases.
- Among MSM ES cases with known HIV status, 54.3 percent were HIV-positive. The proportion of HIV-negative MSM ES cases who reported receiving HIV PrEP remained stable in 2020 at 43.9 percent in the California Project Area. The CPA includes all of California except for Los Angeles and San Francisco Counties.
- In 2020, the rate of ES among MSM living with HIV (3320.8 per 100,000) was nearly eight times higher than the rate of ES among HIV-negative MSM (428.1), and more than 150 times higher than both heterosexual males (21.2) and females (14.1).
- Among both males and females, early syphilis rates were the highest among Californians who were 25-34 years old.
- There were 2,457 ES cases among females of reproductive age (15-44 years old) reported to CDPH in 2020, on par with the number of cases of ES among females 15-44 years old in 2019 (2,482 cases) and a 101.6 percent increase since 2016.
- Disparities in ES rates by race/ethnicity remain: ES rates were roughly three times higher among Black/African American males (129.1 per 100,000) and females (36.6) compared to the statewide ES rate for males (62.1) and females (14.1).
- 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 indicates that about one percent of all syphilis cases have had symptoms associated with

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

[7] Tables: Syphilis Data Tables, 2020: https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/2020-STD-Data-Syphilis-All-Stages-Tables.xlsx
Slides: Syphilis Slides, 2020: https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/2020-STD-Data-Syphilis-All-Stages-Slides.pptx

[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

ocular syphilis.[9] Additionally, the proportion of all syphilis cases that were associated with neurosyphilis from 2010-2020 remained about 2-3 percent.

- **Programmatic priorities for syphilis include increasing screening in settings that serve high priority populations (HIV care, community-based organizations serving MSM, emergency departments, jails, drug treatment programs, and mobile outreach programs serving people experiencing homelessness), improving linkage to HIV care or HIV PrEP for syphilis cases depending on their HIV status, and ensuring timely, adequate treatment and partner services are provided and available.**[10]

Congenital syphilis (CS) increased for the seventh consecutive year.[11]

- In 2020, there were 483 cases of congenital syphilis (114.9 per 100,000 live births), an 8.3 percent increase in the number of cases since 2019 and a 125.7 percent increase since 2016. This was the largest number of CS cases reported in California since 1992. After rising from one syphilitic stillbirth or neonatal death in 2012 to 43 in 2019, the number of reported syphilitic stillbirths/neonatal deaths decreased to 31 in 2020.
- According to the U.S. Centers for Disease Control and Prevention, California had the sixth highest congenital syphilis rate of all U.S. states in 2020. Thirty-nine (63.9%) of California's 61 local health jurisdictions reported at least one case of congenital syphilis in 2020. Los Angeles, San Bernardino, Kern, Fresno, San Joaquin, and Riverside counties had the most congenital syphilis cases in the state.
- Although most mothers of CS cases reported Hispanic (227) ethnicity, the highest CS rate was among Black/African American Californians (416.2 per 100,000 live births) which was nearly four times the CS rate for Hispanic (117.1) and white (117.6) people in California.
- Risk factors associated with CS in California included lack of or late prenatal care, inadequate treatment, poverty, and substance use.
- **Programmatic priorities for congenital syphilis prevention include syphilis testing, treatment, and contact tracing among pregnant people and people who can become pregnant, including among people experiencing homelessness, those with disparities in access to care, and people who are incarcerated. Other priorities include policies that support implementation of routine, opt-out screening for syphilis and linkages to HIV care or HIV PrEP in settings which serve people at high risk for syphilis who may not otherwise be accessing care are critical to mitigating congenital syphilis in**

[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, 2020: https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/2020-STD-Data-Syphilis-Congenital-Tables.xlsx

Slides: Congenital Syphilis Slides, 2020: https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH Document Library/2020-STD-Data-Syphilis-Congenital-Slides.pptx

California. These settings include but are not limited to emergency departments, jails, drug treatment programs, and mobile outreach programs serving people experiencing homelessness. Efforts to assess what social determinants of health may be driving syphilis increases, and what opportunities there might be for working with other sectors—such as housing, behavioral health, prenatal care, and correctional health—to prevent congenital syphilis are essential.[12]

Guidance for Navigating the 2020 STD Annual Report

The 2020 STD Annual Report is designed to enable access to data in a variety of formats. It is comprised of the Executive Summary, Technical Notes, STI tables, and graph slides. Information 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). The Annual Report includes 2020 as well as multi-year trend data on STIs and related services collected through case-based reporting as well as enhanced surveillance and prevalence monitoring. All of the data released in the 2020 STD Annual report supersedes previously published data and complies with data de-identification criteria as set forth in the California Department of Health Care Services Data De-identification Guidelines (DDG) document (https://www.dhcs.ca.gov/dataandstats/Documents/DHCS-DDG-V2.0-120116.pdf).

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