Sexually Transmitted Infections in California
2022 Executive Summary

OVERALL SUMMARY

In this summary we describe sexually transmitted infections (STI) over time and space in California. The report is intended to inform the design and implementation of interventions intended to reduce STI and HIV transmission and improve sexual and reproductive health in the state of California.

In May 2022, California saw the emergence of a new viral condition that is primarily transmitted through sexual or close contact: mpox. Mpox data are available online at www.cdph.ca.gov/Programs/CID/DCDC/Pages/Mpox-Data.aspx and are updated regularly. This report describes bacterial STI in California that are reportable per Title 17: gonorrhea, chlamydia, and syphilis (all stages, including congenital).[1]

In 2022, chlamydia, total syphilis, and congenital syphilis (CS) continued to increase while gonorrhea morbidity decreased in the state compared to 2021.[2] Striking disparities in STI rates persist throughout the state, with the highest rates among Black/African Americans; men who have sex with men (MSM); and young people (15-24 years of age). People with bacterial STIs are at higher risk for related adverse health outcomes such as HIV infection, infertility, ocular, otic, and neurosyphilis, and multi-drug resistant gonorrhea, among others.

In 2022, Chlamydia was the most common reportable STI in California. From 2021 to 2022, the number of cases of chlamydia increased 0.5 percent among females and 4.1 percent among males. The highest rates of chlamydia were among females 15-34 years of age, who are at risk of serious reproductive health outcomes such as pelvic inflammatory disease and infertility from chlamydia. The chlamydia rate in the Black/African American population in California was 2.4 times higher than the next highest racial/ethnic subgroup, Hispanic/Latino Californians. Statewide, disproportionately more chlamydia occurred among Black/African American females younger than 34 years of age compared to other race/ethnicities and age groups.

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[1] Chancroid is also reportable per Title 17 but is only described online in the linked tables.

[2] Tables: STD Data All Tables, 2022, Table All-1: www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-All-STDs-Tables_2022.xlsx
Slides: All STDs Summary, Slides, 2022: www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/STD-Data-All-Slides_2022.pptx

Syphilis and CS remain urgent public health concerns in California. Inadequately treated syphilis in pregnant people can be transmitted to the fetus and cause CS. Up to 40 percent of infants born to people with untreated syphilis may be stillborn or die. Infants with CS who are born to birthing parents with no or inadequate syphilis treatment may have premature birth, low birth weight, meningitis, neurologic problems (including blindness and deafness), anemia, bone deformities, enlarged liver or spleen, jaundice, and skin rashes.

Syphilis infections are classified into different stages based on symptoms and/or evidence of when the infection was acquired: 1) total early syphilis (TES) is used to define infections that have been acquired in the previous year and includes stages of primary, secondary, and early non-primary non-secondary syphilis and 2) unknown duration or late syphilis (UDLS) infections which are acquired more than one year prior to identification, or the time of infection is unknown. Cumulatively, all stages of syphilis are known as total syphilis. As syphilis morbidity and screening have increased, more UDLS infections have been identified. It is also more common for TES to be misclassified as UDLS due to missing or unknown symptomology, or missing information that would indicate the infection was acquired within the past 12 months.

With the recent increases in UDLS that have occurred nationwide due to both increases in syphilis screening and misclassification of TES as UDLS, it is important to understand the volume of morbidity due to total syphilis in California. Because TES cases are also more likely to be interviewed than UDLS cases, and they are more likely to have subsequently elicited epidemiologic data, relatively more is known about the subpopulations impacted by TES. Further, because people with TES are also more likely to transmit syphilis to their sexual partners than people with UDLS, people with TES are of acute interest for intervention to prevent transmission. Anyone with syphilis (TES or UDLS) is at risk of sequelae due to the disease and can be cured.

The number of total syphilis cases increased in California by 6.8 percent from 2021 to 2022. In that time, the number of UDLS cases increased by 18.6 percent, while the number of TES cases decreased by 2.4 percent. These opposing trends for UDLS and TES may be due to a combination of increased screening, and subsequent increases in the detection of UDLS cases, and true decreases in the number of TES cases due to increased screening and effective interventions by local health departments and healthcare partners. Because the number of syphilis cases in California is large, many people with UDLS have not been interviewed, were unable to be contacted, and therefore unable to have the adequacy of their syphilis treatment verified. On the other hand, because they are more infectious, people with TES are prioritized for intervention and are more often interviewed and have their adequate syphilis treatment verified. The absence of patient interviews among many UDLS cases remains a barrier to better understanding syphilis in California and nationwide.

MSM continued to account for most TES cases in California; they made up 52 percent of all TES cases in the state. San Francisco continued to have significantly higher TES rates than other jurisdictions. Racial disparities in TES rates persisted in CA; the TES rate among Black/African Americans in 2022 was nearly 2.5 times higher than the statewide rate. Transgender women were at increased risk for TES compared to other gender identities.

In 2022, the number of infants born with CS in California increased for the tenth consecutive year, increasing by 16.3 percent compared to 2021. In 2022 there were 615 CS cases, including 49 infant stillbirths and 10 neonatal deaths. This was the most CS cases reported in California since 1991, when 651 were reported.

The number of gonorrhea cases decreased 11.6 percent from 2021 to 2022 throughout California. Statewide, between 2021 and 2022, the number of gonorrhea cases in males decreased 6.5 percent, compared to a 21.2 percent decrease among females. San Francisco continued to have nearly twice the rate of gonorrhea compared to the next highest gonorrhea morbidity jurisdiction, The City of Long Beach. Among females, gonorrhea rates were highest in the 20-to-24-year-old age group. Among males, rates were highest among the 25-34-year-old age group. Racial disparities in gonorrhea burden persisted, with gonorrhea rates among Black/African Americans being 2.3 times higher than the statewide rate and 3.5 times higher than the next highest group, Hispanic/Latino Californians.

Based on 2022 U.S. Centers for Disease Control and Prevention (CDC) data, California had the 22nd highest chlamydia rate (per 100,000 population), 18th highest gonorrhea rate, and 11th highest rate of congenital syphilis (per 100,000 live births).

KEY FINDINGS

Chlamydia remains the most frequently reported STI in California.

- There were 193,907 chlamydia cases reported in 2022 (496.8 per 100,000 population), 1.5 percent more than in 2021.
- There were 14 local health jurisdictions with higher chlamydia rates than the overall state rate (496.8 cases / 100,000 persons): San Francisco (776.6), Kings (682.6), Long Beach (670.1), Kern (639.1), Fresno (629.1), Tulare (615.4), San Bernardino (606.3), Madera (594.1), Los Angeles (584.4), San Diego (554.3), San Joaquin (532.5), Sacramento (521.6), Monterey (509.8), and Butte (505.0) counties.
- The rate of chlamydia among women was 1.5 times the rate of chlamydia among men.
- After decreasing in 2020, there was a very small (0.03 percent) increase in the number of chlamydia cases statewide from 2021 to 2022 among women.
- Both male and female chlamydia rates were highest among the 20-24-year-old age group
- After decreasing from 2019 to 2020, the number of cases of chlamydia in males increased 3.5 percent statewide in 2022 compared to 2021.Observed differences in chlamydia rates by gender may reflect true disparities in the burden of chlamydia or more frequent use of reproductive healthcare services (including more frequent screening for chlamydia) by females. Changes in chlamydia rates among males may similarly reflect changes in either transmission or screening, specifically increases in chlamydia rectal screening among MSM.
- **Programmatic priorities for chlamydia prevention include expanding doxycycline postexposure prophylaxis (doxyPEP) access, increasing screening of young cisgender women to prevent reproductive health complications, and screening of MSM, especially for rectal infections that increase the risk of HIV transmission.**

Gonorrhea rates decreased throughout most of California.

- There were 80,317 gonorrhea cases (205.8 per 100,000 population) reported in 2022, an 11.6 percent decrease in the number of cases reported compared to 2021.
- There were nine local health jurisdictions with higher gonorrhea rates than the overall state rate (205.8 cases / 100,000 persons): San Francisco (628.7), Long Beach (371.6), Los Angeles (289.1), Berkeley (288.3), Fresno (241.6), San Diego (236.5), Sacramento (228.0), Alameda (221.1), and Lake (213.7) counties.
- The number of gonorrhea cases in males decreased by 6.5 percent since 2021.

- Among cases randomly sampled for enhanced gonorrhea surveillance through the CDC STI Surveillance Network (SSuN) project in 2022
    - MSM accounted for 65.4 percent of male gonorrhea cases (among people who reported the gender(s) of their sex partner(s)). More than half of the reported MSM gonorrhea cases were associated with only pharyngeal or rectal sites of infection and may not have been otherwise identified by urine-based screening.
    - 24.5 percent of MSM gonorrhea cases with known HIV status were HIV-positive.
    - Among interviewed MSM gonorrhea cases who were HIV-negative, 70.1 percent reported having received HIV pre-exposure prophylaxis medication (PrEP). Providing HIV testing to persons with gonorrhea 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 among MSM.
- The number of gonorrhea cases in females decreased by 21.2 percent in 2022 compared with 2021. The highest age-specific gonorrhea rate among females was in people who were 20-29 years old.
- Disparities in gonorrhea rates by race/ethnicity continued in California; the rate of gonorrhea among Black/African Americans was 2.3 times higher than the statewide gonorrhea rate.
- **Programmatic priorities for gonorrhea prevention include expansion of doxyPEP access, screening young cisgender women to prevent reproductive health complications, screening 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 gonococcal infections while enabling responsible antimicrobial stewardship. Routine gonorrhea screening among MSM provide opportunities for linkage to HIV care for HIV coinfected cases and linkage to HIV PrEP for HIV-negative cases.**
- **Monitoring gonorrhea antimicrobial resistance in California.**
    - **Healthcare provider adherence to recommended treatment regimens[3] are essential to the prevention of the emergence of gonococcal antimicrobial resistance.**

Total syphilis, which includes primary, secondary, early non-primary non-secondary, and unknown duration / late-stage syphilis, increased in 2022 in more than half of California's Counties

[3] www.cdc.gov/std/treatment-guidelines/default.htm

- There were 32,794 total syphilis cases (84.0 per 100,000) reported to CDPH in 2022, a 6.8 percent increase in the number of total syphilis cases reported to CDPH compared to 2021. All syphilis cases, regardless of classification/stage, are of public health concern.

There were 16,723 **total early syphilis (syphilis acquired in the last year / primary, secondary, early non-primary non-secondary stages)** cases (42.8 per 100,000) reported to CDPH in 2022, a 2.4 percent decrease in the number of TES cases reported to CDPH compared to 2021.

- There were 18 local health jurisdictions with TES rates that were higher than the overall state rate (42.8 cases / 100,000 population): San Francisco (138.7), Siskiyou (89.7), Lake (87.5), Long Beach (86.6), Yuba (83.6), Del Norte (78.9), Stanislaus (67.6), Los Angeles (61.4), Butte (51.2), Berkeley (49.7), Fresno (48.5), Sutter (48.5), Sacramento (47.7), Kern (46.7), Santa Cruz (45.3), Shasta (44.9), Trinity (43.8), and Tehama (43.2).
    - Many of these jurisdictions are in Northern California. The rise in total early syphilis in this region has coincided with a substantial increase in congenital syphilis there since 2019.
- TES rates were highest in Californians 25-34 years old of any gender identity.
- MSM accounted for 52 percent of all TES cases.
- Among MSM TES cases whose HIV status was known at the time of investigation, 49.3 percent were HIV-positive.
- Transgender women were at increased risk for TES in 2022 (423.2 cases / 100,000 persons), a rate nearly five times higher than cisgender men (80.5), 14 times higher than transgender men (29.2) and almost 22 times higher than cisgender women (19.5).
- There were 3,103 TES cases among females of reproductive 15-44 years old reported to CDPH in 2022, a 4.5 percent decrease from 2021, but a 40.4 percent increase since 2018.
- Racial/ethnic disparities in TES rates persist in California: in 2022 they were 2.3 times higher among Black/African American males (151.8 per 100,000) and 2.8 times higher among Black/African American females (53.4) compared to the statewide TES rate for males (67.0) and females (18.8).

There were 16,071 **unknown duration / late syphilis (UDLS)** cases (41.2 per 100,000 reported to CDPH in 2022, an 18.6% increase in the number of UDLS cases reported to CDPH compared to 2021. This increase in UDLS contributed to the overall increase in total syphilis in California, even though TES decreased 2.4 percent.

- There were 15 local health jurisdictions with UDLS rates that were higher than the overall state rate (41.2 cases / 100,000 population): Kern (148.0), Madera (113.1), Tulare (99.6), Kings (70.7), San Bernardino (68.2), Long Beach (67.0), San Francisco (66.4), Lake (60.8), Yuba (59.4), San Joaquin (57.4), Merced (55.3), Sutter (53.5), Fresno (52.6), Los Angeles (49.5), and Butte (42.0).
- Total syphilis, including TES and UDLS, is a major priority in California.
    - Most birthing parents of CS cases are diagnosed with UDLS, which requires three doses of benzathine penicillin G administered one week apart.[4]
    - Some UDLS cases are also likely TES cases that are misclassified.
    - While people with TES are at increased risk of transmitting syphilis to a sexual partner, anyone infected with syphilis (TES or UDLS) is at risk of severe sequelae due to the disease.
- **Programmatic priorities for syphilis include expanding doxyPEP access, increasing screening in settings that serve high priority populations (HIV care, community-based organizations serving MSM and gender diverse populations, 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 accessible to all Californians.**

Congenital syphilis (CS) increased for the tenth consecutive year.

- In 2022 there were 615 cases of CS in California (146.5 cases per 100,000 live births), a 16.3 percent increase in the number of cases since 2021 and a 960 percent increase since 2013. This was the most CS cases reported in California since 1991.
- There were 59 stillbirths/neonatal deaths due to CS among the 615 CS cases in 2022.
- For every 683 live births in California, there was one case of CS; nearly 1 in 10 CS cases resulted in a fatal outcome (stillbirth or neonatal death).
- Forty-two (68.9 percent) of California's 61 local health jurisdictions reported at least one case of congenital syphilis in 2022. Los Angeles, San Bernardino, Kern, Riverside, Fresno, San Diego, and Orange counties had the most congenital syphilis cases in the state.
- Although most birthing parents of CS cases reported Hispanic ethnicity (335 (54.5 percent)), the highest rate of CS was among American Indian/Alaska

[4] www.cdc.gov/std/treatment-guidelines/default.htm

Native Californians (941.3 per 100,000 live births) which was more than six times the statewide CS rate (146.5 cases per 100,000 live births).
    - For every 106 American Indian/Alaska Native live births in California in 2022 there was one CS case
    - For every 578 Hispanic live births in California in 2022 there was one CS case
- Most CS cases meet surveillance criteria due to inadequate treatment of the birthing parent either before or during pregnancy, as opposed to the infant having signs of CS infection at birth.
- Birthing parent risk factors for CS include a lack of or late prenatal care, or any of the following factors in the twelve months preceding syphilis diagnosis: substance use (especially methamphetamine), having experienced homelessness, a previous history of syphilis, or incarceration.
- **Programmatic priorities for congenital syphilis prevention include syphilis testing, treatment, and contact tracing among pregnant people and people who can become pregnant, with a specific focus on reaching people experiencing homelessness, people who are incarcerated, and other populations with obstacles to obtaining health care.**
- **Efforts to identify opportunities to engage other sectors that improve health outcomes and enable access to health care—such as housing, behavioral health, prenatal care, and correctional health—to prevent congenital syphilis are essential.**

Guidance for Navigating the STI Annual Report

The 2022 STI Annual Report offers STI surveillance data in a variety of formats. It is comprised of the Executive Summary, Technical Notes, STI tables, and a set of slides. Information is organized by “all STIs” and “specific STIs” on the STI Data page [www.cdph.ca.gov/Programs/CID/DCDC/Pages/STD-Data.aspx]. This report includes 2022 as well as previous years’ STI data. The data in this report supersedes previously published data and complies with California Department of Health Care Services Data De-identification Guidelines (DDG) (www.dhcs.ca.gov/dataandstats/Documents/DHCS-DDG-V2.0-120116.pdf).