2022 Sexually Transmitted Infections Annual Report

February 2024

COLORADO
Department of Public
Health & Environment

Colorado 2022 Sexually Transmitted Infections Annual Report

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Acknowledgements

This Sexually Transmitted Infections Annual Report was produced by the STI/HIV/VH Office Colorado Department of Public Health & Environment.

Statement on Structural Inequity

The Colorado Department of Public Health and Environment acknowledges that generations-long social, economic and environmental inequities result in adverse health outcomes. They affect communities differently and have a greater influence on health outcomes than either individual choices or one's ability to access health care. Reducing health inequities through policies, practices and organizational systems can help improve opportunities for all Coloradans.

CDPHE aspires to present data humbly, recognizing statistics and numbers never tell the complete story. The goal is to work collaboratively with individuals and communities to learn and share their stories to build a collective understanding. Knowing that people have different lived experiences and have inequitable opportunities to achieve optimal health, we commit to pair data and stories to inform programs and systems change to improve health for all (Adapted from the Denver Public Health, Health Equity Data Commitment and Principles).

Executive Summary

The 2022 Sexually Transmitted Infection Annual Report is descriptive and its purpose is to present the data in multiple ways for use by local public health agencies, healthcare professionals, non-profit organizations and the public. It is intended to be a resource to aid in prevention planning, funding applications, reports, and presentations. It presents statistics and trends for reportable sexually transmitted infections (STIs) in Colorado. These include chlamydia, gonorrhea and syphilis. STIs are one of the most commonly reported conditions in Colorado and are among the world's most common diseases. There were STIs reported in Colorado in 2022 - 26,649 cases of chlamydia, 8,784 cases of gonorrhea, and 3,100 cases of syphilis of all stages. This year has seen the first decrease in gonorrhea, and the first decrease in chlamydia since the COVID-related decrease in Colorado. However, syphilis rates and cases have significantly increased since 2021, reaching historic highs each year. For national trends in 2022, please reference the CDC 2022 STD Surveillance Report.

This report describes trends in reportable STIs in Colorado by person, place, and time. STI surveillance data are used to detect outbreaks, prioritize resources, develop and tailor interventions, and evaluate the effectiveness of interventions. Some of the reasons for preventing and controlling STIs include high rates of complications and adverse health outcomes. STIs also can facilitate the transmission of HIV and are closely related to other comorbidities such as substance use and mental illness. STIs can also serve as a marker to identify health-related inequities that exist in Colorado communities.

Chlamydia

In 2022, Colorado reported 456.4 cases of chlamydia per 100,000 people, a slight decrease (0.8%) from 2021. This rate is a significant decrease (11.0%) from 2018 and a significant increase (18.0%) from 2013. The majority of chlamydia cases are among females, 62.1%, and highest rates were among 20-24 year old females in 2022; and Non-HIspanic Black/African Americans (1,126.7 per 100,000).

Gonorrhea

There were 150.4 cases of gonorrhea per 100,000 people reported in Colorado in 2022.The 2022 rate is a significant decrease (17.5%) compared to last year (182.3) and a 4.0% decrease compared to 2018. Males accounted for 63.8% of cases, and the ratio of male to female rates was more than double from all 5-year age groups above 30 years old. Most cases (58.7%) were reported from ages 20-34.

Syphilis

There were 53.1 cases of syphilis (all stages) per 100,000 reported in Colorado in 2022, a significant increase (33.8%) from 2021 (39.7) and a significant increase (179.5%) from 2018 (19.0). Males accounted for 68.7% of cases. However, the proportion of females diagnosed with syphilis has been increasing over the past several years (13.8% in 2018 to 31.3% in 2022).

The highest rates of primary and secondary syphilis, as well as non-primary, non-secondary latent syphilis, were among 30-34 year olds, however this varied across sex, with the male rate triple the female rate across stages. This is different from previous years, when the highest rates have been among 25-29 year olds. Also different this year, the second highest rate was among 35-39 year olds, a group that was typically behind all age groups from 20-34. There were 49.7 cases of congenital syphilis per 100,000 live births in 2022 and 69.2 cases of syphilis per 100,000 among women of reproductive age (WRA), which is a 57.3% increase in the rate of this demographic since 2021.

Data Sources and Methods

Under Colorado law updated in May 2017, health care providers and laboratories must report all diagnosed cases of chlamydia and gonorrhea to the Colorado Department of Public Health and Environment (CDPHE) within four days and all syphilis cases within one workday.[1] These case reports are entered into the statewide STI reporting database. Case reports entered into this database are the primary data source for diagnosed cases of STIs in Colorado. Chlamydia, gonorrhea and syphilis cases most often require laboratory confirmation; all laboratories submit STI reports to CDPHE, and all major laboratories report STIs electronically via secure data networks.

Colorado's STI reporting system, Patient Reporting Investigating Surveillance Manager (PRISM), is an event-based relational database. This system allows for electronic disease reporting for the vast majority of reports and helps to reduce reporting delays due to a small minority of reporting still using a paper-based process. This has led to an improvement in the speed of partner management and treatment activities. Case information is updated as provider reports are received and interviews with patients are completed. Additionally, STI related reports are now geocoded, providing assurance that cases are attributed to the right jurisdiction for official reporting purposes and allowing for more accurate calculation of rates at a geographic level.

The National Electronic Telecommunications System for Surveillance (NETSS)[2] is a mechanism for state and local health jurisdictions to transmit surveillance data weekly and the finalized year-end data to the Centers for Disease Control and Prevention (CDC). This year-end data is the primary source of the official STI numbers in this report.

Rates of reported cases in this report were calculated based on cases diagnosed in the calendar year per 100,000 persons. The 2022 disease rates for all Colorado counties are calculated by dividing the number of cases diagnosed for that county in 2022 by the 2022 total population for each county estimated by the Colorado State Demography Office and multiplying by 100,000.

Age and sex-specific rates of reported cases are presented in this report. The counts presented are summations of all valid data reported in the 2022 reporting year. Rates based on a small number of cases are often statistically unreliable especially for counties with small populations or where rates are calculated for age, sex or race/ethnicity with small cell sizes.

Guidelines for Accurate Use of Data

The following guidelines are provided to ensure an accurate understanding of the use, interpretation and limitations of the data presented in this report. These guidelines can help prevent data misuse and increase understanding of the accuracy and correct use of the STI data. These guidelines may be considered when reviewing data from any source.

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[1] CDPHE, DCEED, Colorado Revised Statutes § 6 CCR 1009-1, Rules and Regulations Pertaining to Epidemic and Communicable Disease Control (Promulgated by The State Board of Health). https://www.colorado.gov/pacific/cdphe/regulations-adopted-board-health-division. Effective May 2017.
[2] https://www.cdc.gov/nndss/netss.html

1. Data in this report are primarily reported for new cases of STIs diagnosed in 2022. They are not for unique persons diagnosed with disease, e.g. a person may have more than one occurrence of disease in a single year.
2. Data in this report are based on cases reported to the Surveillance & Case Ascertainment Program, Office of STI/HIV/VH. These data represent occurrences of disease among persons seeking and receiving care for STIs.
3. Small changes in numbers from year to year can appear dramatic if the actual number of cases is small. For example, if two cases of gonorrhea are counted in a county in one year and three cases are counted the next year, this is an increase of 50%. While this may sound significant, a change of one case does not represent a meaningful increase in the burden of disease. Although disease rates were calculated for counties reporting fewer than five cases, rates based on low case counts are considered statistically unreliable. Caution is recommended in interpreting trends or comparing across counties.
4. Data are presented for all reported cases and are known not to be 100% complete. Factors that impact the completeness and accuracy of STI data include:
   a. Level of STI screening by health care providers
   b. Individual test-seeking behavior (awareness of illness often depends on whether an individual is symptomatic or not)
   c. Sensitivity of diagnostic tests
   d. Compliance with case reporting
   e. Completeness of case reporting
   f. Timeliness of case reporting
   g. COVID-19 related delays in supply shortages or reporting
5. Increases and decreases in STI rates can be due to actual changes in disease occurrence and/or changes in one or more of the above factors.
6. CDPHE does not maintain statistics for other, non-reportable STIs, e.g. herpes, HPV, genital warts, but does maintain statistics for HIV, Hepatitis B, and Hepatitis C, which are reported separately and not included here.
7. Early syphilis comprises of primary and secondary syphilis, which is symptomatic, and non-primary, non-secondary latent[3] syphilis, which is asymptomatic. Syphilis infectivity varies based on its presentation; while primary and secondary syphilis is considered to be highly infective, non-primary, non-secondary latent syphilis is not. For this reason, public health programming may base interventions and evaluation methods on primary and secondary syphilis infection rate alone. That said, given the morbidity of both primary and secondary and non-primary, non-secondary latent syphilis, we have included information on both presentations.

Limitations

Due to the increasing number of STIs in Colorado, the percent of unknown race/ethnicity increased from 2012 to 2017. This was most evident in chlamydia where the percent of unknown race/ethnicity went from 28.1% in 2012 to 50.2% in 2017. There was a slight reduction in percent of unknown race/ethnicity in 2020 (35.7%) and a larger reduction through 2022 (21.2% in 2021, 24.1% in 2022). Gonorrhea also showed an increase in unknown race/ethnicity from 13.9% in 2012 to 35.3% in 2017, with a decrease in 2018 and 2019, followed by an increase in 2020 and a decrease to 13.3% in 2021 and

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[3] In 2017, CDC updated the case definition and naming convention for early latent syphilis to start January 1, 2018. What was referred to as early latent syphilis in the past is referred to as non-primary, non-secondary latent syphilis in this report.

2022. In primary and secondary syphilis, the percent of unknown race/ethnicity went from 9.8% to 1.0% from 2013 to 2022. Non-primary, non-secondary latent syphilis follows the same pattern as chlamydia and gonorrhea where the percent of unknown race/ethnicity was 5.1% in 2013, increased to 6.4% in 2017 and decreased in 2021 to 0.6%, however increased to 1.5% in 2022. Among the Hispanic population, there are a significant proportion of cases with an unknown race - 18.4% in chlamydia, 15.1% in gonorrhea, 14.5% in primary and secondary syphilis, 12.4% in non-primary, non-secondary latent syphilis, which are all increases from last year. For figures displaying race/ethnicity, these and all other racial groups in the Hispanic ethnicity are combined. Race/ethnicity data for chlamydia and gonorrhea is primarily derived from labs, which often do not report race/ethnicity and results in less data completeness. Procedures were put in place to help with race/ethnicity data ascertainment. For 2022, decreases across all STIs to below 30% unknown race/ethnicity allows race/ethnicity graphics to be included in this report for 2022 data only. However, due to the proportion of cases having unknown race/ethnicity being over 30% for both chlamydia and gonorrhea in the previous years, annual rate trends by this variable are not displayed.

This is the second year the Hispanic ethnicity is broken up by race in the tables. In all STIs, the highest rate among the Hispanic category is among Hispanic Asian/Pacific Islanders and Hispanic Blacks; however, across all STIs, these groups also make up 1% or less of all cases. Population size varies greatly across races in the Hispanic ethnicity, which has a large impact on rates for each race and the overall Hispanic rate. Among Hispanics (who represent 22.5% of the total population in 2022), the Asian/Pacific Islander population of 15,745 is 0.3% of the total population, the Black population of 35,825 is 0.6% of the total population, the Indigenous/Native American population of 61,077 is 1.0% of the total population, the White population of 1,150,955 is 19.7% of the total population, and the Multi-Race population of 51,525 is 0.9% of the total population. As mentioned above, the Hispanic Other/Unknown population represents 10% or more of the total number of cases across all STIs; however, population data for this group is not available and rates cannot be calculated in the Tables. All Hispanic race groups are still combined for overall Hispanic counts and rates shown in the Figures.

Anyone with questions about how these data should be interpreted is encouraged to contact the STI/HIV/VH Data Analytics, Program Evaluation, and SURRG Program at (303) 692-2700.

Chlamydia

In 2022, there were 26,649 reported cases of chlamydia, the most commonly reported STI in Colorado and the U.S. This corresponds to a statewide rate of 456.4 cases per 100,000 people, which is a slight decrease of 0.8% since 2021. **Figure C.1** shows annual case counts and rates of chlamydia in Colorado from 2013 to 2022.The rate was increasing steadily, by an average of 5%, each year followed by a slight increase in 2019, and a significant decrease of 13.1% in 2020, likely due to testing barriers caused by the COVID-19 pandemic. The decrease seen in 2022 is the first decrease since 2020. While the 1 year decrease is insignificant, the 5 year decrease of 11.0% since 2017 is significant. Although cases have declined over recent years, the 2022 rate is significantly higher (18.0%) than the rate in 2013.

Nationally, there were 1,649,416 cases of chlamydia reported in 2022 (495.0 per 100,000) - a slight decrease in the 2021 rate of 495.5 per 100,000 but an increase of about 5,000 cases. Similar to Colorado, rates are still lower than they were prior to the COVID-19 pandemic and may still be due to screening barriers. Compared to 2021, rates increased 1.8% among males and decreased 1.2% among females, with the highest decrease of 7.0% being among 20-24 year old females.[4]

Figure C.1: Reported Chlamydia Cases and Rates of Reported Cases, Colorado, 2013-2022

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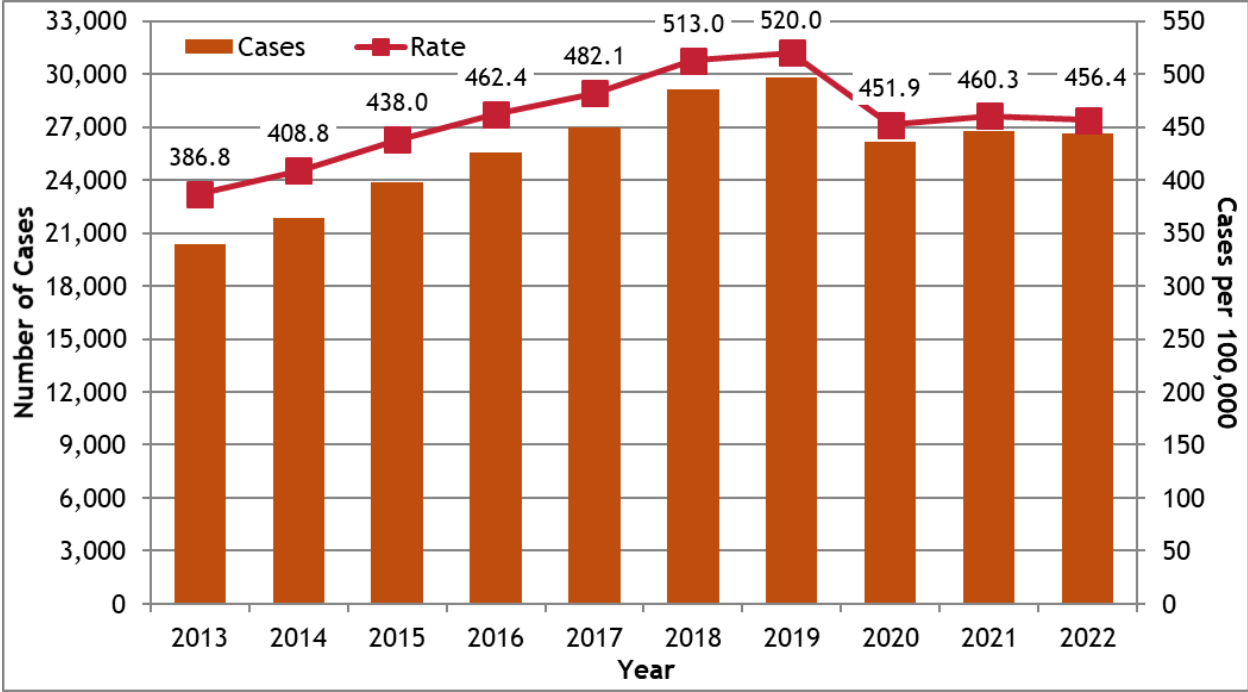
[4]Center for Disease Control and Prevention. 2024. "National Overview of STIs, 2022." Sexually Transmitted Infections Surveillance, 2022. https://www.cdc.gov/std/statistics/2022/overview.htm

In Colorado, rates per 100,000 varied significantly by sex and age. **Figure C.2** shows age and sex counts and rates for chlamydia diagnoses in 2022 reported in Colorado. Females accounted for 62.1% (16,540) of all cases and had an overall rate of 568.8, which is 1.7 times the overall male rate of 343.9 (see **Table 1** in the appendix).

The mean age at diagnosis was 26.4, with a range from 0 to 98 years. Among females, the mean age was 24.9 and the mean age among males was 29.0. Rates were above 1,000 cases per 100,000 people for 15-29 year olds, with the highest overall rate of 2,375.0 per 100,000 among 20-24 year olds. The rate among females in this age group was 3,371.7, which is 2.3 times the rate of 1,456.7 among males. The highest male rate seen in this age group is lower than the second and third highest rates among 15-19 and 25-29 year old females, respectively. The highest discrepancy was seen among 10-14 year olds, where the female rate of 2,244.4 was 5 times the male rate of 642.8. Nationally, the highest male and female rates in 2022 were among 20-24 year olds (3,532.3 per 100,000 females; 1,571.2 per 100,000 males), and 15-24 year olds accounted for 57.7% of all cases[4].

Figure C.2: Reported Chlamydia Cases and Rates of Reported Cases by Sex and Age Group, Colorado, 2022
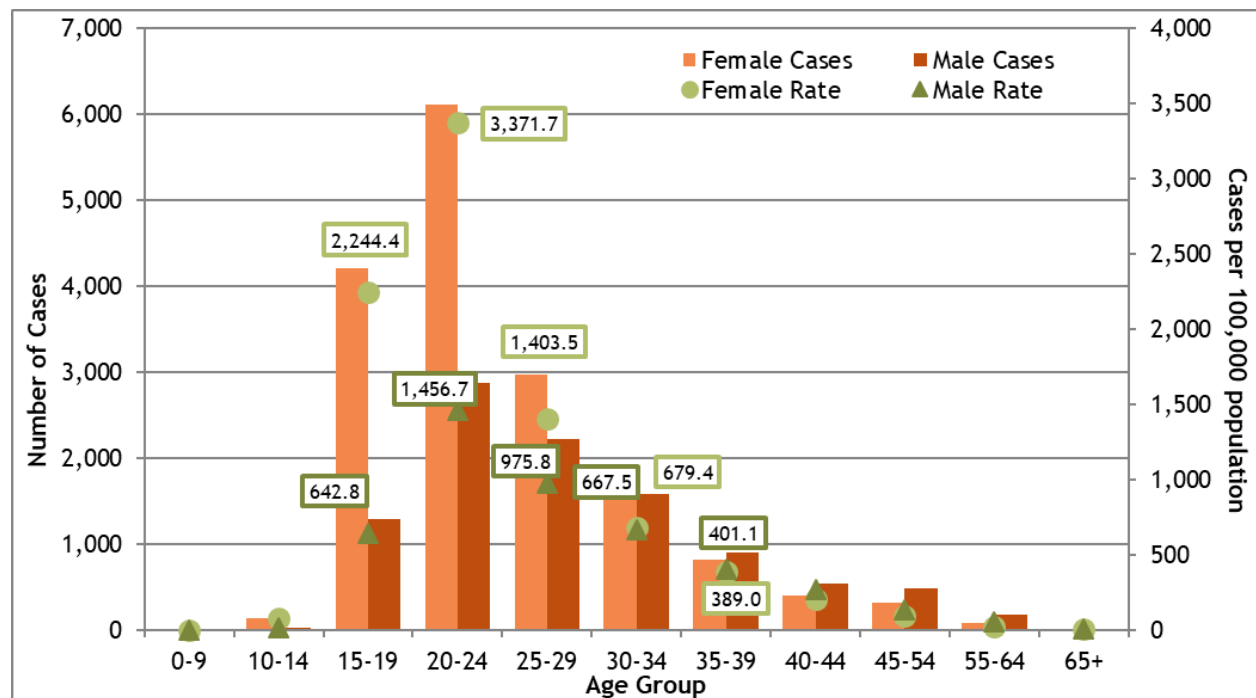
The marked difference in case rates by sex may be attributed to screening efforts which target females in reproductive health settings. To a lesser degree, this difference may also reflect the natural history of chlamydia infections. Males are less susceptible to infection, are more likely to be asymptomatic compared to females, and are less likely to access health services and receive routine screening.[5] The

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[5] Maraynes, M. E., Chao, J. H., Agoritsas, K., Sinert, R., & Zehtabchi, S. (2017). Screening for asymptomatic chlamydia and gonorrhea in adolescent males in an urban pediatric emergency department. World Journal of Clinical Pediatrics, 6(3), 154-160. http://doi.org/10.5409/wjcp.v6.i3.154

result of these factors is the burden of chlamydia infections among males remains largely undiagnosed, untreated and unreported.[6]

Figure C.3 shows cases and rates of chlamydia cases by race/ethnicity and sex. Racial and ethnic minorities continued to be disproportionately impacted by STIs. The highest male and female rates of chlamydia were among Non-Hispanic Black/African Americans (1,256.2 for females, 1,014.8 for males), who represented 4.1% of the population and 10.2% of all cases. Hispanics were 22.5% of the population and represented the most (34.6%) of cases. In contrast, Non-Hispanic Whites represented 66.5% of the population and 28.2% of cases, but had the lowest rate of 193.6 per 100,000. Similar to Colorado, in 2022 the highest national rates were among black females (US: 1,288.2 per 100,000) and black males (US: 921.9 per 100,000).[7]

The second highest rate of 1,126.7 per 100,000 was among Non-Hispanic Black/African Americans, who represented 4.1% of the population but 10.2% of cases. This rate is closely followed by Hispanics, who had an overall rate of 700.9; however, this rate was brought up by the high rate of 908.2 per 100,000 among Hispanic Asian/Pacific Islanders. The high rate in this group was largely impacted by small population size (15,745 - which is 0.3% of the total population and 1.2% of the Hispanic Population), leading to the low case count to lead to a rate more than double the rate of all other races within the Hispanic population. Please see **Table 1** in the appendix for more details.

Figure C.3: Rates of Chlamydia Cases by Race/Ethnicity and Sex, Colorado, 2022

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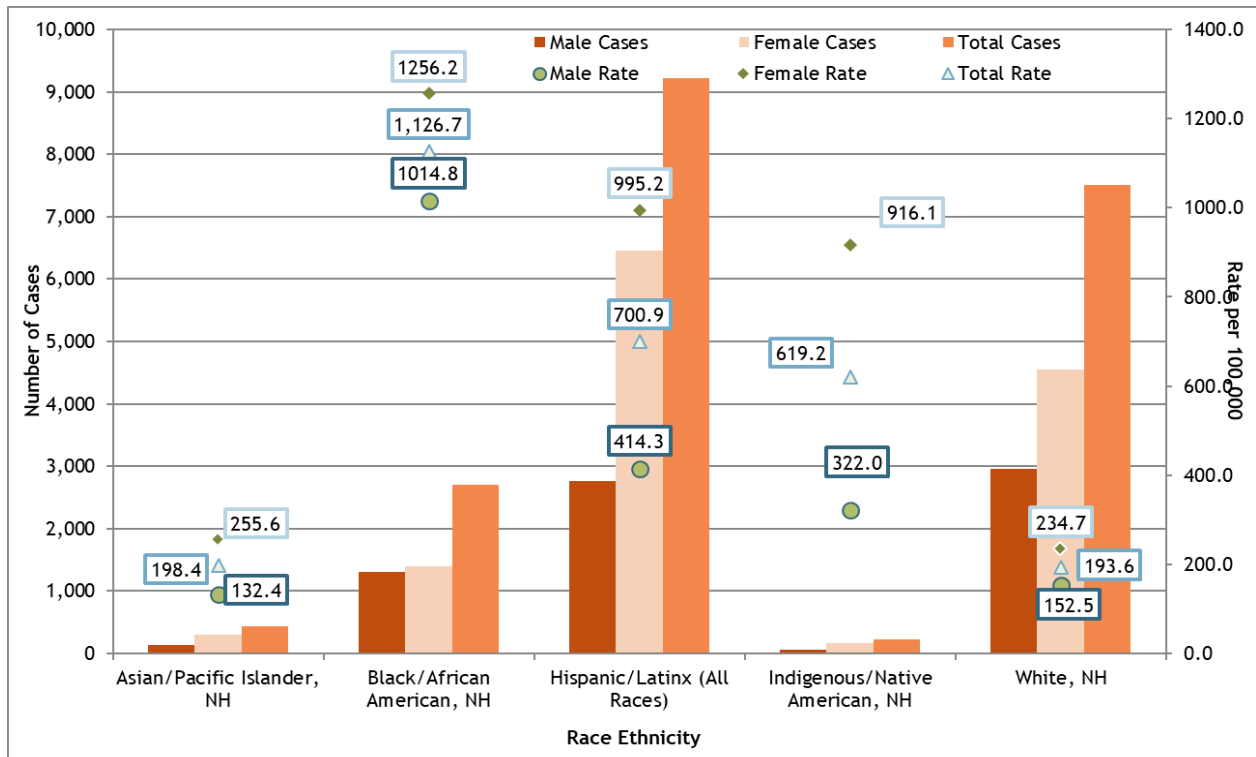
[6] Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2018. Atlanta: U.S. Department of Health and Human Services; 2021. https://www.cdc.gov/std/stats18/chlamydia.htm

[7] Centers for Disease Control and Prevention. 2024. "Table 8. Chlamydia — Rates of Reported Cases* by Race/Hispanic Ethnicity, Age Group, and Sex, United States, 2022." Sexually Transmitted Infections Surveillance, 2022. https://www.cdc.gov/std/statistics/2022/tables/8.htm

Figures C.4 and C.5 show the geographical distribution and rankings of chlamydia rates in Colorado at the county level. Denver County represented almost a quarter (24.0%) of cases, followed by El Paso and Arapahoe, which represented 13.5% and 13.3% of all cases, respectively. The highest rate was in San Juan, which represented less than 1% of cases, due to the small population size (see **Table 2** in the appendix).

Figure C.4: Rates of Reported Chlamydia Cases by County Map, Colorado, 2022
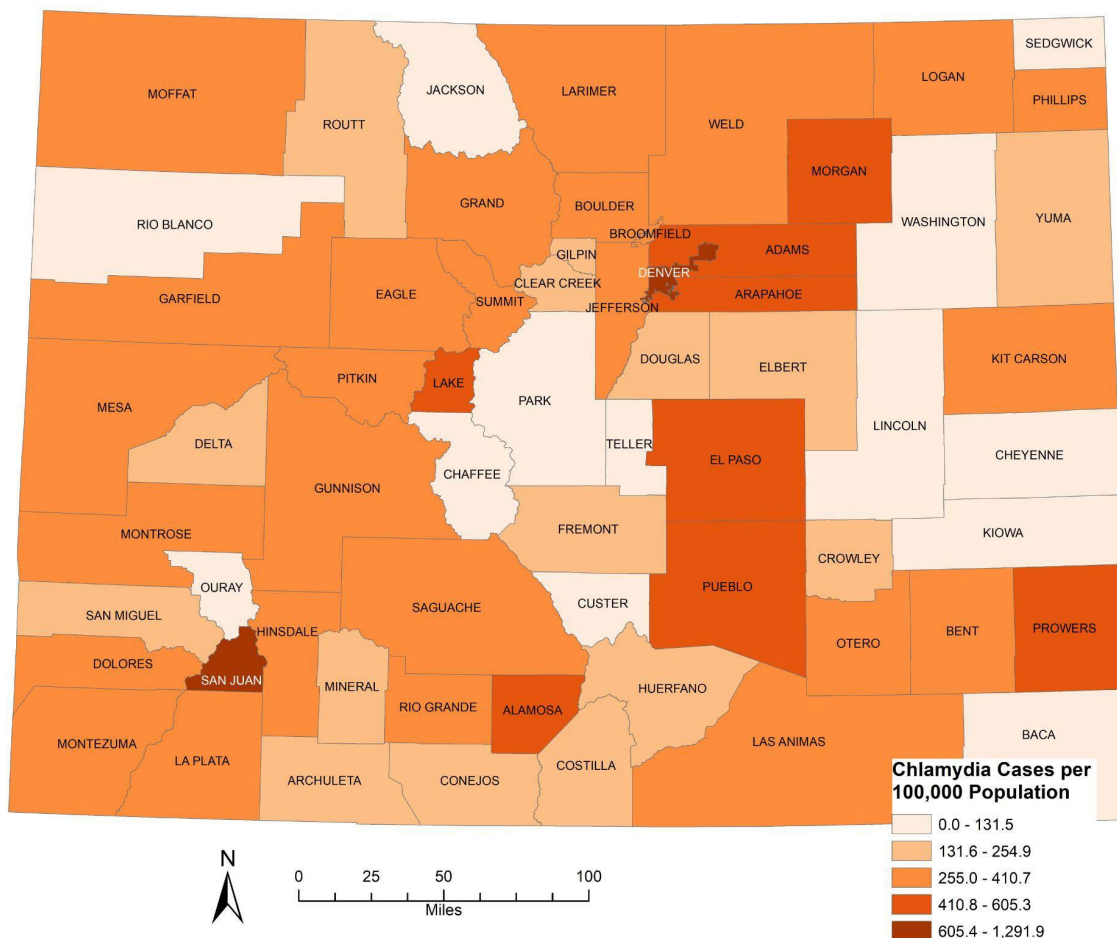
As population varies greatly between counties, high rates do not necessarily mean high case counts. For further details, see **Figure C.5** and **Table 2**.

Figure C.5 shows chlamydia rate rankings by county for 2022. While the San Juan and Lake are above the state average, these counties represented less than 1% of cases combined (48 cases total), and their high rates are due to small population sizes. Denver, Adams, and Pueblo, which represented 12.2%, 2.9%, and 9.0% of the population, respectively, had the next highest rates. All counties except Jackson and Sedgwick had at least one case reported.

Figure C.5: Rates of Reported Chlamydia Cases by County Chart, Colorado, 2022

County	Cases per 100,000
SAN JUAN	1,265.8
DENVER	898.9
ADAMS	591.9
PUEBLO	584.5
ALAMOSA	567.7
ARAPAHOE	541.1
LAKE	517.4
EL PASO	484.7
State of Colorado	456.4
PROWERS	438.5
MORGAN	433.4
SUMMIT	405.4
OTERO	398.9
SAGUACHE	393.1
RIO GRANDE	388.1
HINSDALE	384.6
WELD	374.7
GARFIELD	364.6
MONTEZUMA	362.6
MESA	358.9
LAS ANIMAS	335.2
LARIMER	326.9
LOGAN	322.2
BOULDER	321.9
EAGLE	316.5
MOFFAT	311.6
LA PLATA	309.3
JEFFERSON	299.9
BENT	296.2
GUNNISON	284.1
KIT CARSON	272.6
DOLORES	270.1
PHILLIPS	269.8
MONTROSE	267.2
GRAND	266.6
BROOMFIELD	262.7
PITKIN	261.4
YUMA	252.2
COSTILLA	220.6
FREMONT	217.9
MINERAL	216.7
CROWLEY	213.6
DELTA	212.1
DOUGLAS	187.5
CLEAR CREEK	181.4
ELBERT	172.5
CONEJOS	171.3
ROUTT	163.8
SAN MIGUEL	162.6
ARCHULETA	157.3
HUERFANO	155.0
GILPIN	152.6
PARK	128.5
LINCOLN	126.9
WASHINGTON	124.1
BACA	116.3
CHEYENNE	115.7
TELLER	108.6
CHAFFEE	103.6
OURAY	98.1
RIO BLANCO	76.1
CUSTER	74.8
KIOWA	69.7

Gonorrhea

While Gonorrhea remained the second most commonly reported STI in Colorado in 2022, rates declined for the first time in the last 10 years. **Figure G.1** shows cases diagnosed each year and the rate per 100,000 from 2013 to 2022, where rates significantly increased each year except for a smaller increase from 2019 to 2020. There was a significant decrease of 17.5% in the 2022 rate compared to 2021, an insignificant decrease (4.0%) compared to 2018, and a significant increase (181.2%) since 2013.

Similar trends are seen nationally, with 41 states reporting decreases since 2021. Nationally, decreases were seen across all age groups, genders, and most racial/ethnic groups/ Rates have also been higher among men since 2013.[4]

Figure G.1: Reported Gonorrhea Cases and Rates of Reported Cases, Colorado, 2013-2022
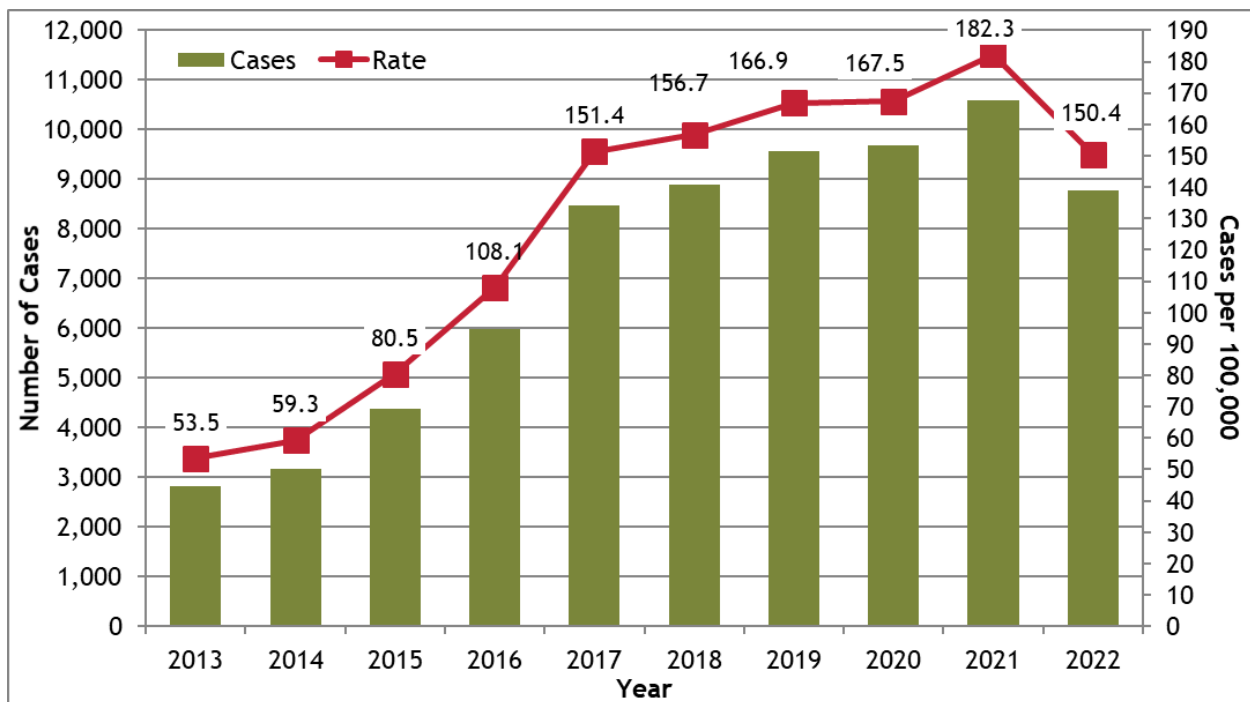
Figure G.2 shows sex and age rates for gonorrhea reported in 2022. Males accounted for 63.8% of all cases, and the male rate of 191.2 was 1.7 times the female rate of 109.3. The mean age was 31.6 and ranged from 5 to 98. Among females, the mean age was 26.5 (ranging from 5 to 98) and among males it was 32.6 (ranging from 6 to 84).

Males had higher rates than females in all age groups above 15-19 year olds, and the ratio of male to female rates is more than double across all age groups above 29 year olds. The highest rates of 483.2 to 498.5 were among 20-34 year olds males, and the highest female rate of 455.7 was among 20-24 year olds.

Figure G.2: Reported Gonorrhea Cases and Rates of Reported Cases by Sex and Age Group, Colorado, 2022
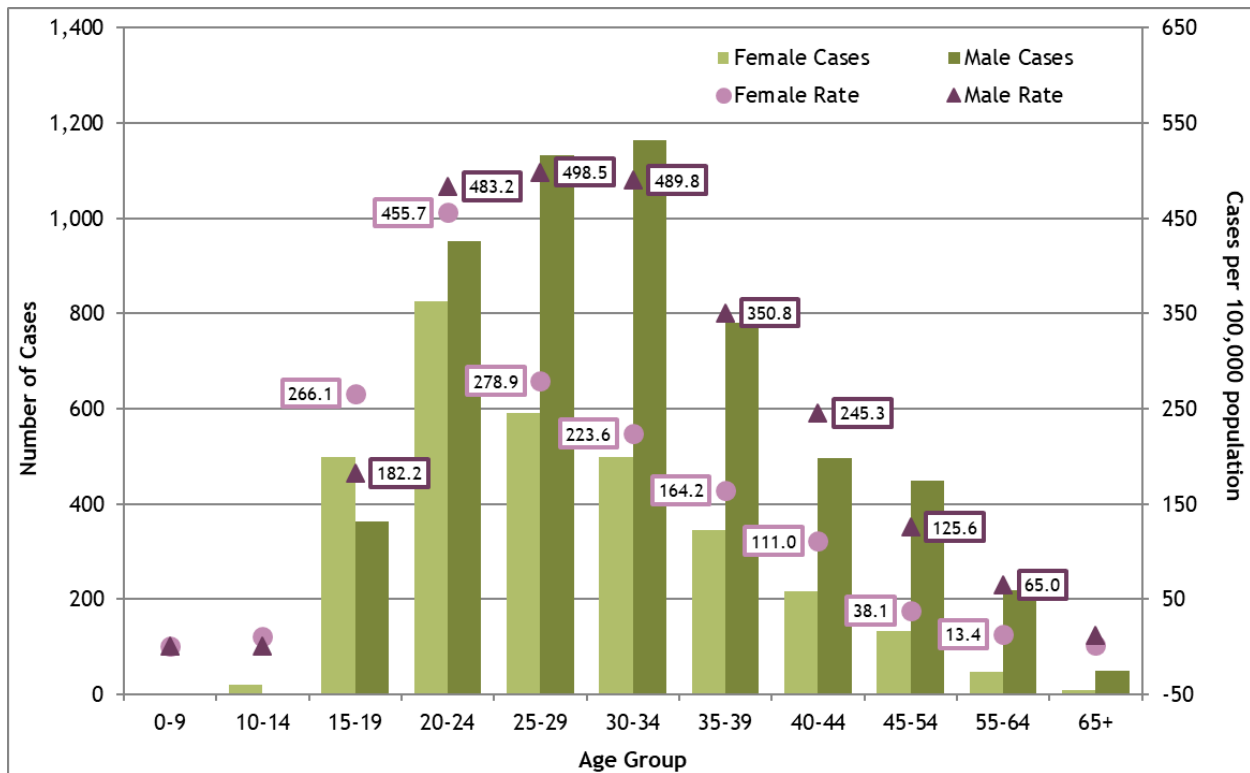
Figure G.3 shows cases and rates of gonorrhea cases by race/ethnicity and sex. As seen with chlamydia, racial and ethnic minorities continued to be disproportionately affected by STIs. In 2022, the highest rates across sexes were among Non-HIspanic Black/African American males and females (803.8 and 418.7 per 100,000) followed by Hispanics of all races (overall rate of 215.8 per 100,000), who represented 32.3% of all cases (15.0% from Hispanic Whites). Within the Hispanic population, the highest rate was among Hispanic Asian/Pacific Islanders, but this population only represented 0.4% of all cases and the high rate is due to the small population size. Please see the discussion of racial/ethnic breakdowns in the chlamydia section. Non-Hispanic Whites were 34.2% of cases but had the third lowest rate of 77.5 per 100,000. The only groups with rates lower than Non-Hispanic Whites were Non-Hispanic AAsian/Pacific Islanders and Non-Hispanic multi-race, who made up a total of 6% of the population. In the United States, the highest rates were also among black males (736.3 per 100,000) and females (445.2 per 100,000).[8] Please see **Table 1** in the appendix for more details on demographic breakdowns in Colorado.

Figure G.3: Rates of Reported Gonorrhea Cases by Race/Ethnicity and Sex, Colorado, 2022

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[8]Centers for Disease Control and Prevention. 2024. "Table 17. Gonorrhea — Rates of Reported Cases* by Race/Hispanic Ethnicity, Age Group, and Sex, United States, 2022 - Table 17. Gonorrhea." Sexually Transmitted Infections Surveillance, 2022. https://www.cdc.gov/std/statistics/2022/tables/17.htm

Figures **G.4** and **G.5** describe the geographical distribution of gonorrhea rates in Colorado at the county level. In 2022, ten counties did not report any gonorrhea cases, and 31.4% of all cases were in Denver County, which represented 12.2% of the population, followed by Arapahoe (13.7% of cases) and El Paso (12.2% of cases). The highest rates were in Denver, Pueblo, Alamosa, and Adams counties; however, the rate is largely impacted by the small population of Alamosa, which only had 32 cases.

Figure G.4: Rates of Reported Gonorrhea Cases by County Map, Colorado, 2022
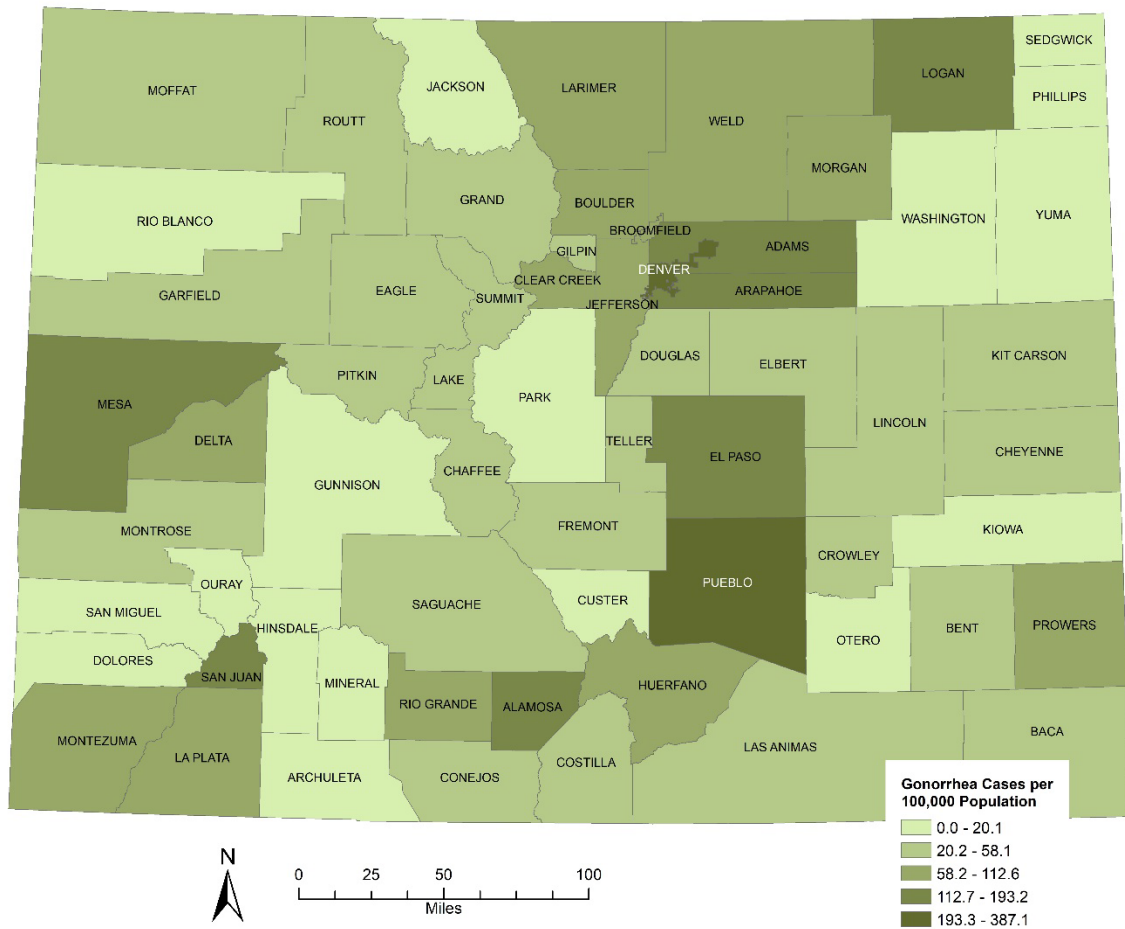
High rates do not necessarily mean high case counts; for further details, see **Figure G.5** and **Table 2.**

Figure G.5: Rates of Reported Gonorrhea Cases by County Chart, Colorado, 2022

County	Cases per 100,000
DENVER	387.2
PUEBLO	284.6
ALAMOSA	193.2
ADAMS	186.5
ARAPAHOE	182.8
LOGAN	173.1
State of Colorado	150.4
EL PASO	144.9
SAN JUAN	126.6
MESA	124.9
MORGAN	112.6
JEFFERSON	108.7
WELD	93.4
BROOMFIELD	86.7
HUERFANO	84.6
LA PLATA	83.1
BOULDER	78.8
DELTA	76.0
MONTEZUMA	75.9
PROWERS	75.5
LARIMER	72.8
RIO GRANDE	70.6
CLEAR CREEK	64.0
BACA	58.2
CHEYENNE	57.9
LINCOLN	54.4
ELBERT	50.3
SAGUACHE	45.4
MONTROSE	43.4
KIT CARSON	43.0
EAGLE	39.8
DOUGLAS	39.1
GRAND	38.1
BENT	37.0
ROUTT	36.0
PITKIN	35.6
CROWLEY	35.6
LAS ANIMAS	34.9
CHAFFEE	34.5
GILPIN	33.9
GARFIELD	33.7
MOFFAT	30.4
COSTILLA	27.6
LAKE	27.2
CONEJOS	26.3
SUMMIT	26.2
TELLER	24.2
FREMONT	24.1
YUMA	20.2
PARK	16.8
OTERO	16.4
RIO BLANCO	15.2
ARCHULETA	14.3
SAN MIGUEL	12.5
GUNNISON	11.6

Antimicrobial Resistant Gonorrhea (ARGC)

Since 2016, CDPHE has participated in the CDC funded Epidemiology and Laboratory Capacity (ELC) Grant: Strengthening the US Response to Resistant Gonorrhea (SURRG) in partnership with the Public Health Institute at Denver Health. The SURRG project began with three goals: enhance domestic gonorrhea surveillance and infrastructure, build capacity for rapid detection and response to resistant gonorrhea through increased culturing and local antibiotic susceptibility testing, and rapid field investigation to stop the spread of resistant infections. The project also aims to gain a better understanding of the epidemiological factors contributing to resistant gonorrhea. SURRG jurisdictions collect and analyze data to help guide national recommendations for the public health response to resistant gonorrhea.[9] In December 2020, CDC gonorrhea treatment guidelines changed to eliminate dual treatment of azithromycin and ceftriaxone in uncomplicated gonorrhea cases. Treatment guidelines for gonorrhea infections are now weight-based and include a single dose of 500mg or 1g intramuscular ceftriaxone treatment.[10]

Antimicrobial susceptibility testing (AST) is performed locally through Etests on gonorrhea specimens collected from SURRG partnered clinics within the Public Health Institute at Denver Health in the Denver Metro Area. Reduced susceptibility (RS) is defined as azithromycin minimum inhibitory concentrations (MICs) ≥2 µg/mL (AZM-RS), ceftriaxone MICs ≥0.125 µg/mL (CRO-RS), or cefixime MICs ≥0.25 µg/mL (CFX-RS).[11] The MIC breakpoints for SURRG were based on Clinical and Laboratory Standards Institute (CLSI) criteria; however, breakpoints for ceftriaxone and cefixime are lower than the CLSI breakpoints and were selected to allow for detection of emerging resistance. Additionally, SURRG isolates receive AST testing at the Utah Antimicrobial Regional Laboratory Network Lab for six unique antimicrobial agents.

Due to the change in treatment guidelines, in December of 2020, AST by Etest for AZM halted for local Colorado SURRG in August of 2021. For CO-SURRG specimens collected between January 1, 2022 - December 31, 2022, AST by ETest was done on 569 culture-positive gonorrhea isolates for CRO, and CFX. One isolate was identified as having reduced susceptibility to CFX in 2022. No isolates were identified as having reduced susceptibility to CRO in 2022. Cultures were collected from both genital and extragenital samples. Genital culture testing sites include urethral for all genders and endocervical samples from females. Extragenital culture testing sites include pharyngeal and rectal samples from all genders, when exposure is identified.

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[9] https://www.cdc.gov/std/gonorrhea/arg/carb.htm

[10] St. Cyr S, Barbee L, Workowski KA, et al. Update to CDC's Treatment Guidelines for Gonococcal Infection, 2020. MMWR Morb Mortal Wkly Rep 2020;69:1911–1916. DOI: http://dx.doi.org/10.15585/mmwr.mm6950a6external icon

[11] Schlanger K, Learner ER, Pham CD, et al. Strengthening the U.S. Response to Resistant Gonorrhea (SURRG): An overview of a multi-site program to enhance local response capacity for antibiotic-resistant Neisseria gonorrhoeae [published online August 31, 2021].

In **Figure ARGC.1**, the CO-SURRG population is taken at a glance. The test months for this profile range from January through December of 2022. Azithyromycin reduced susceptibility testing was not included in this profile as it was discontinued by CO-SURRG in August 2021. The highest number of isolates in 2022 came from those who self-identified as male (87.8%) and those who identified as Hispanic, all races (40.2%).

Figure ARGC.1: CO-SURRG Population at a Glance, Denver, Colorado, 2022

SURRG 2022 Overview Table

Self-Reported Gender Identity	% of Total
Male	87.8%
Female	9.6%
Male to Female	0.2%
Female to Male	0.6%
Other	1.8%

Test Site	% of Total
Pharyngeal	22.3%
Rectal	25.1%
Genital	52.4%
Other	0.2%

Self-Reported Race/Ethnicity	% of Total
NH Black/ African American	20.8%
Hispanic, All Races	40.2%
NH White	33.2%
Multirace/Other/Unknown	5.8%

In **Figure ARGC.2**, all gonorrhea isolates that received susceptibility testing in 2022 are distributed per month with the number of susceptible isolates are shown in light green and the number of isolates with reduced susceptibility are shown in dark green. The percent of isolates showing AZM-RS in positive cultures is indicated by the red line. In 2022 only one isolate was reported with reduced susceptibility to Cefixime which occurred in May. No isolates had reduced susceptibility to ceftriaxone via Etest.

Figure ARGC.2: Gonorrhea Isolates with RS by Month, CO-SURRG, 2022
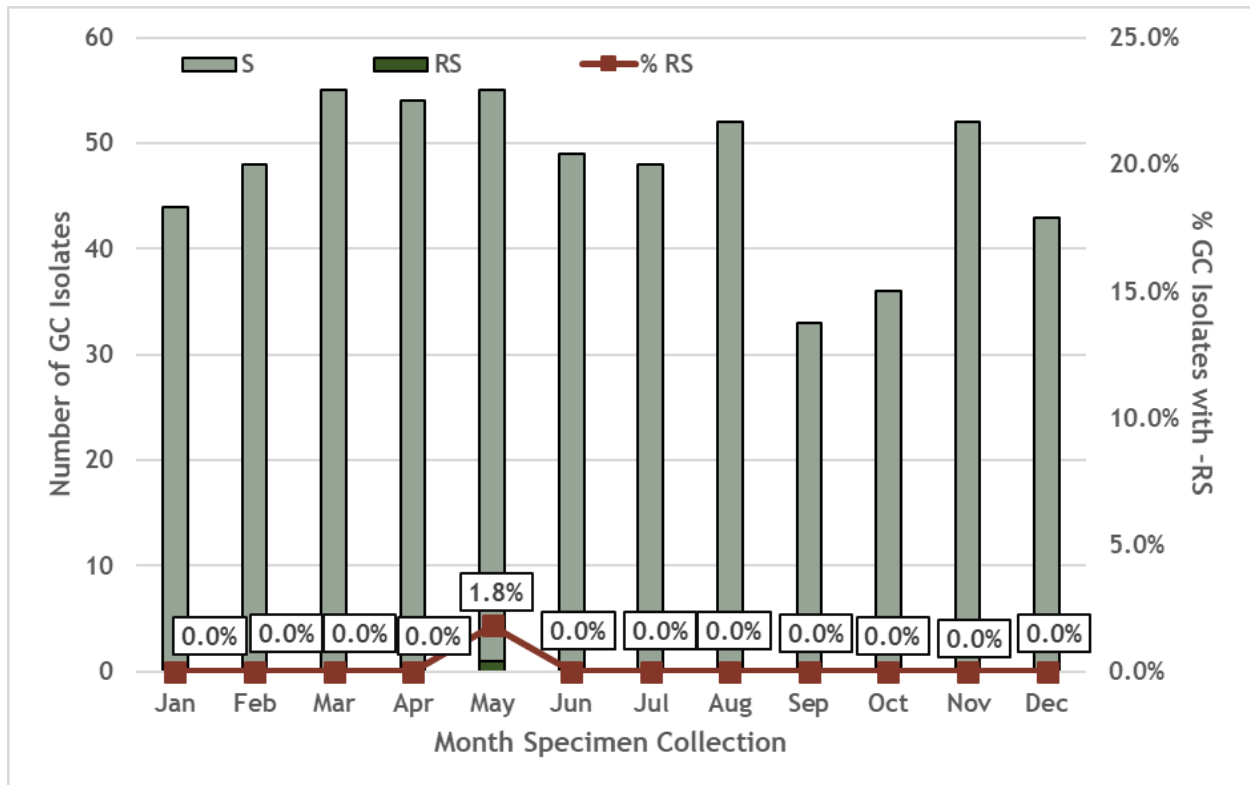
By month there was a range of isolates tested with 0% RS across the board except for May with positive isolates reaching a high of 55 isolates in both March and May while the fewest number of CO-SURRG positive isolates occurred in September.

With increased gonorrhea rates in the US, the importance of extragenital gonorrhea testing has risen. CO-SURRG testing protocol mandates culture collection for all sites of exposure including extragenital sites (pharyngeal and rectal).

As seen in **Figure ARGC.3**, only genital testing resulted in any reduced susceptibility with 0.3% of all positive CO_SURRG genital isolates. Genital testing was also the most abundant site for gonorrhea antimicrobial susceptibility testing in 2022 followed by rectal and pharyngeal isolates.

Figure ARGC.3: Percent Gonorrhea Isolates with RS by Specimen Source in CO-SURRG, 2022
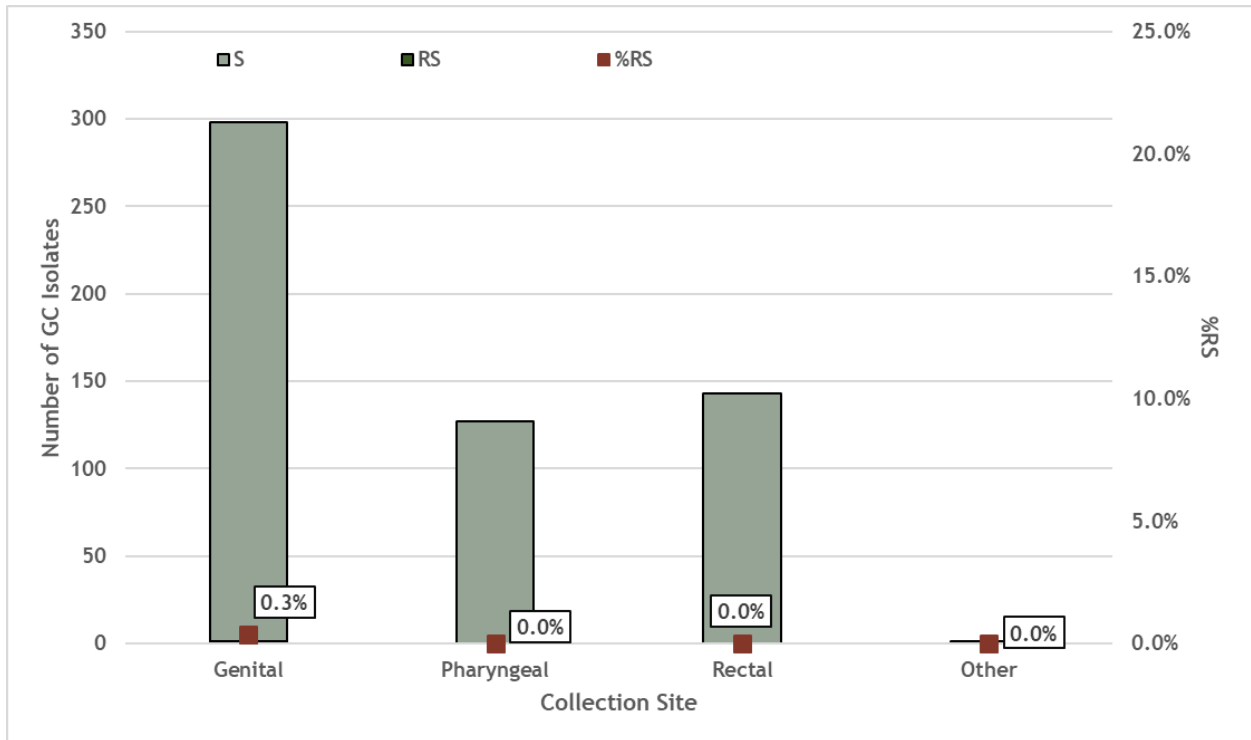
In **Figure ARGC.4**, the percent of individuals identified to have gonorrhea isolates with RS are categorized by gender and sexual identities. Of the individuals who were identified as MSM or MSM/W, 0.3% had gonorrhea isolates with reduced susceptibility. All other self-reported gender and sexual identity groups did not have any reduced susceptibility for 2022.

Figure ARGC.4: Percent RS in Individuals with Gonorrhea Isolates that Underwent AST by Self-Reported Gender and Sexual Identity, CO-SURRG, 2022
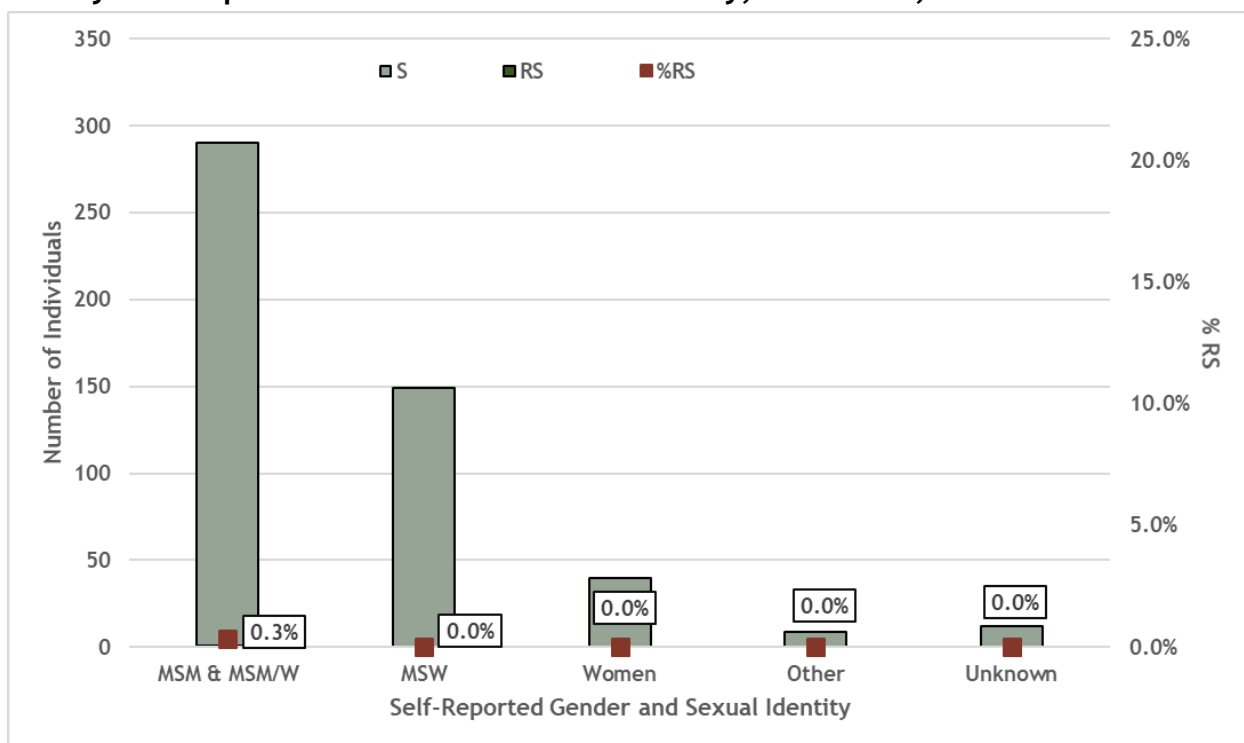
Sexual identity is created from self-reported gender identity and self-reported gender of sex partners. Unknown cases may include men with unknown gender of sex partners and transgender/nonbinary individuals.

Gender identity is self-reported and sexual identity is determined through gender identity and reported gender of sex partners. In 2022, CO-SURRG patients that identified as male accounted for 88.4% of the CO-SURRG patients. Women only accounted for 9.8% of the CO-SURRG population in 2022 which is lower than the 12.5% seen in 2021. The true burden of ARGC on women in Denver continued to be unknown in 2022.

Of those self-reporting gender identity as "Male" in 2022, men who have sex with men (MSM) were the largest portion of individuals tested at the six CO-SURRG sites (49.5%); this differed from 2021 where MSM were only 36% of the CO-SURRG population. Historically, men who have sex with men (MSM) and men who have sex with men and women (MSM/W) have accounted for the largest proportion of the population.

Figure ARGC.5 depicts the CO-SURRG population by reported race and ethnicity in 2022. Among all racial/ethnic groups, those who identified as Hispanic (all races) had the highest percentage of individuals identified to have gonorrhoeae isolates in the CO-SURRG population (40.2%). Those who identified as Non-Hispanic White had the second highest percent of individuals with gonorrhea isolates (33.2%). Those who identify as Non-Hispanic Black had the lowest proportion of individuals with gonorrhea isolates at 20.8%.

Figure ARGC.5: Percent RS by Race/Ethnicity in Individuals with Gonorrhea Isolates that Underwent AST, CO-SURRG, 2022
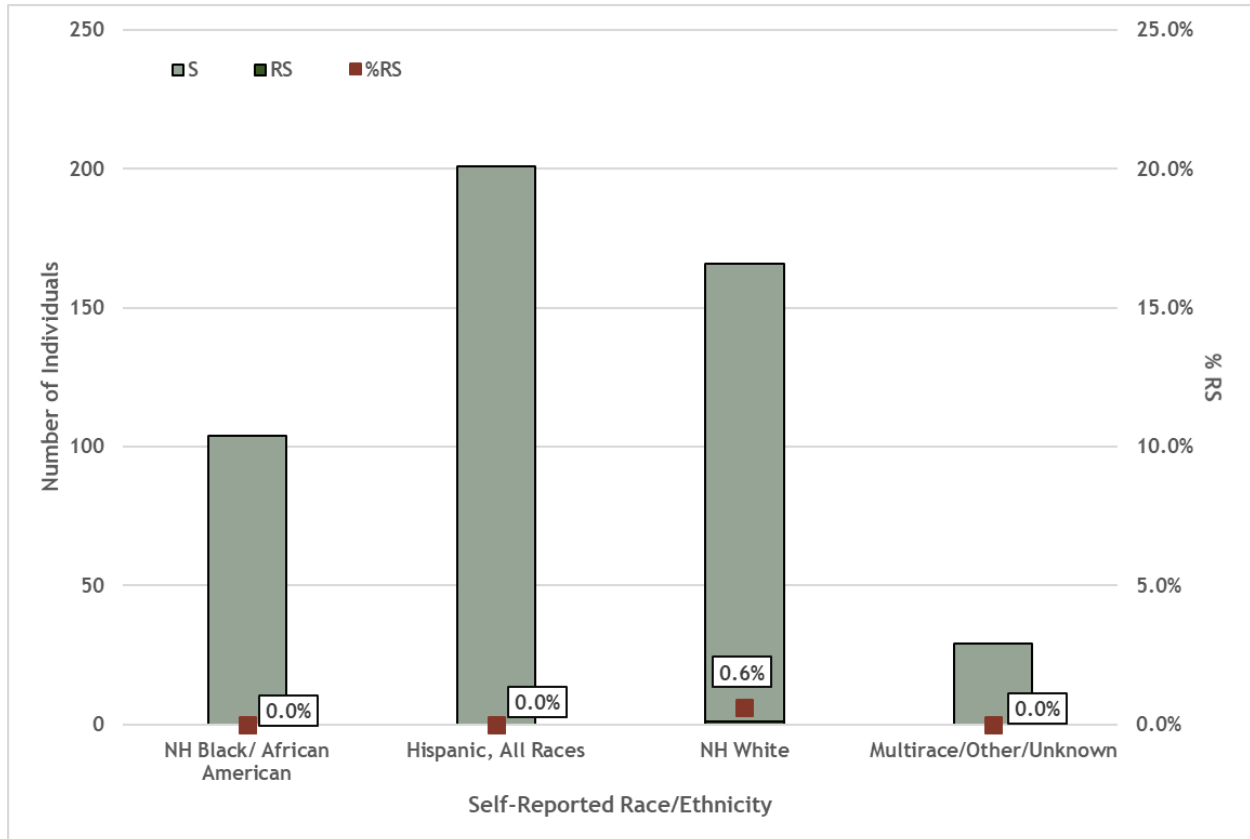
NH: Non-Hispanic. Multirace/Other/Unknown includes Non-Hispanic Asian/Pacific Islanders, and Indigenous/Alaskan Native due to small numbers, in total only accounting for 5.8% of the Colorado SURRG population in 2022

The SURRG project conducts susceptibility testing for isolates not only at the state level, but also regionally through the Antibiotic Resistance Laboratory Network (ARLN). The Utah ARLN is used for CO-SURRG isolates. Sample susceptibility conducted at the regional level includes additional AST testing for azithromycin MICs, ceftriaxone MICs, cefixime MICs, penicillin MICs, tetracycline MICs, and gentamicin MICs through the use of agar dilution. Reduced susceptibility (RS) at the ARLN is defined as azithromycin MICs ≥2 μg/mL (AZM-RS), ceftriaxone MICs ≥0.125 μg/mL (CRO-RS), cefixime MICs ≥0.25 μg/mL (CFX-RS), penicillin MICs ≥2 μg/mL (PCN-RS), tetracycline MICs ≥2 μg/mL (TET-RS), or

gentamicin MICs ≥32 µg/mL (GEN-RS).[12] These values are returned to CDPHE and ensure accuracy for testing at the local level. Agar dilution susceptibility testing is performed year-round at the Utah ARLN on all gonorrhea isolates that receive initial susceptibility testing at Denver Health.

Figure ARGC.6 illustrates the CO-SURRG population isolates which were tested via agar dilution for susceptibility at the regional level from January 2022 to December 2022. The most resistance to antimicrobials occurred with isolates that were resistant to tetracyclines with 51.7% of isolates showing resistance to tetracyclines in December of 2022. Isolates showed no reduced susceptibility to ceftriaxone or cefixime at the regional level in 2022.

Figure ARGC.6: Percent RS in Individuals with Gonorrhea Isolates that Underwent Agar Dilution Regional AST, CO-SURRG, 2022
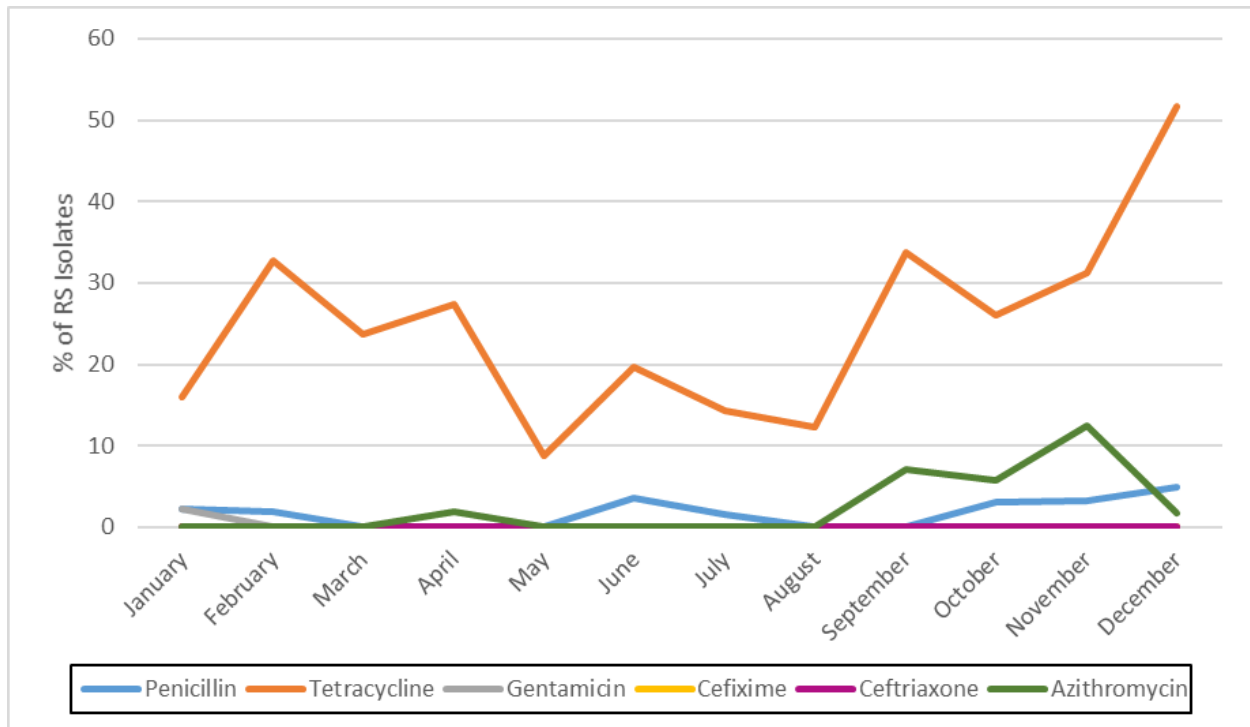
Data includes persons with one or more gonorrhea isolates that underwent additional reduced susceptibility testing for penicillin, tetracycline, gentamicin, cefixime, ceftriaxone, and azithromycin.

[12] Wendel, Karen A., Kerry Mauk, Lori Amsterdam, Candice McNeil, John Pfister, Victoria Mobley, Christie Mettenbrink, et al. 2021. "Enhancing Gonococcal Antimicrobial Resistance Surveillance in Cisgender Women, Strengthening the US Response to Resistant Gonorrhea, 2018 to 2019." *Sexually Transmitted Diseases* 48, no. 12S (December): S104-S110. 10.1097/OLQ.0000000000001554.

As gonorrhea continues to change, the treatment guidelines also continue to be updated. A recent timeline of treatment recommendations is available on the CDC website and the CDC continues to monitor gonorrhea resistance to other drugs such as those found in **Figure ARGC.6**.[13]

Primary and Secondary Syphilis

Figure PS.1 shows the annual rates of primary and secondary syphilis in Colorado from 2013-2022. There were 918 cases (rate of 15.7 per 100,000) of primary and secondary syphilis, the most infectious stages of syphilis, diagnosed and reported in 2022, corresponding to a historic high for Colorado. This rate is a significant increase of 18.4% since 2021, a 164.9% increase since 2018, and a 408.4% increase since 2013. Across the United States, rates have also increased each year since 2001, with 56,016 cases (17.7 per 100,000) reported in 2022, a 9.3% increase in rate since 2021.[4]

Almost three quarters (74.7%) of all cases were among men and 31.5% of all cases were among men who have sex with men (MSM), and this proportion has continued to decrease since 2020 when 50.1% of cases were among MSM. Among MSM, 33.8% of cases reported to be living with HIV, and 14.1% of all cases were living with HIV (the percent of syphilis cases that were reported among people previously diagnosed with HIV or diagnosed with HIV at the same time as the syphilis diagnosis). These trends are similar to the trends seen nationwide, where 35.8% of cases were among MSM and 38.2% of whom were also living with HIV. In the US, MSM accounted for 45.1% of all male cases, and cases among this demographic increased by 4.0% since 2021. However, rates among women and men who have sex with women have also increased since 2021, indicating increases in heterosexual transmission.[4]

Figure PS.1: Reported Primary & Secondary Syphilis Cases and Rates of Reported Cases, Colorado, 2013-2022

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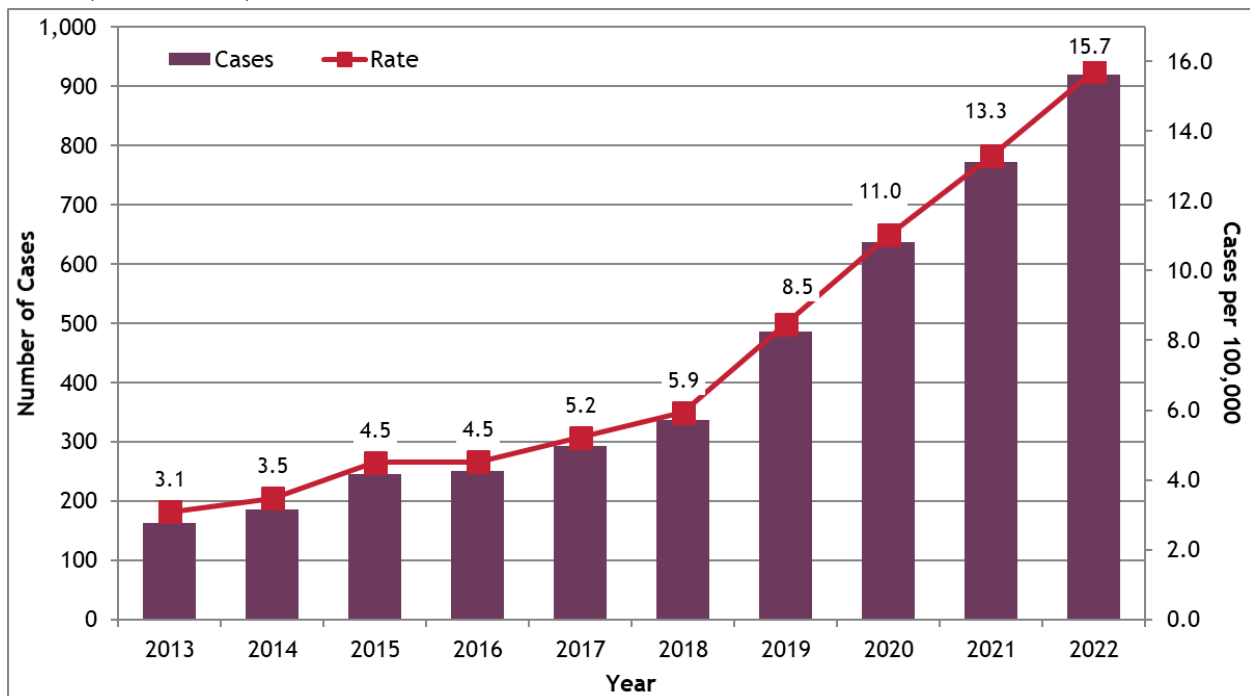
[13] Centers for Disease Control and Prevention. (2022, December 28). *Basic Information about ARG - STD information from CDC*. Centers for Disease Control and Prevention. Retrieved June 1, 2023, from https://www.cdc.gov/std/gonorrhea/drug-resistant/basic.htm

Figure PS.2 shows age and sex case counts for primary and secondary syphilis diagnosed and reported in 2022. The mean age at diagnosis was 37.1 with a range of 15 to 80 years of age, and the overall male rate was 2.9 times the overall female rate.

Males represented 74.7% of all cases in 2022, and the most cases among males were from 30-34 (18.5%) and 25-29 (17.8%) year olds, who also had the highest rates overall (53.8 and 53.5 per 100,000). In contrast, the highest rate among females (22.9) was among 35-39 year olds, but this rate is lower than the male rate in all age groups from 20 to 54 year olds. Nationally, rates increased across all age groups and across men and women. In 2022, the highest national rates were also among 25-29 and 30-34 year old males (67.8 and 70.5 per 100,000, respectively), and the highest female rate of 24.1 was seen among the same age groups. [14]

Figure PS.2: Reported Primary & Secondary Syphilis Cases and Rates of Reported Cases by Sex and Age Group, Colorado, 2022
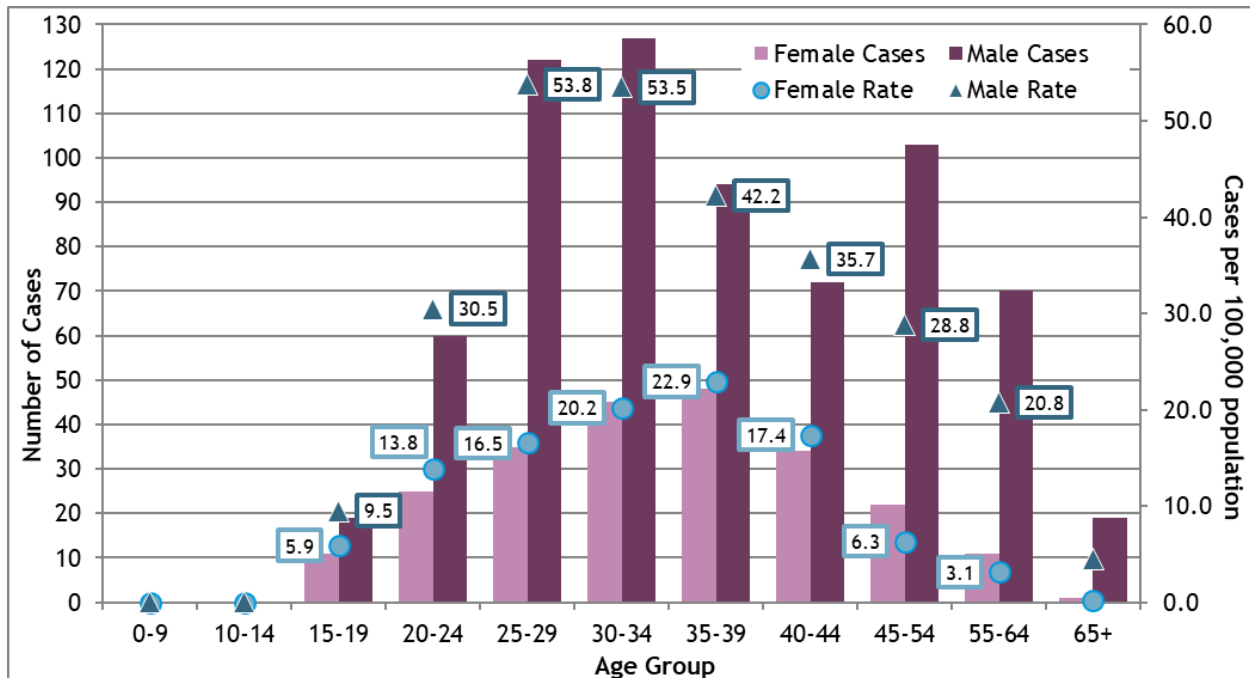
Note: these rates use small numbers and should be interpreted with caution.

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[14] Centers for Disease Control and Prevention. 2024. "Reported Cases and Rates of Reported Cases by Age Group and Sex, 2018–2022 - Table 25. Primary and Secondary Syphilis — Reported Cases and Rates of Reported Cases by Age Group and Sex, 2018–2022." Sexually Transmitted Infections Surveillance, 2022. https://www.cdc.gov/std/statistics/2022/tables/25.htm

Figure PS.3 and Figure PS.4 below depict age group case counts and rates for primary and secondary syphilis. Since numbers from one year are small, the five-year average rate in Figure PS.4 helps to stabilize the rate and thus produces a more accurate representation of the distribution. Similar to last year, the highest rate in 2022 was among 30-34 year olds who had a rate of 37.4 per 100,000. In contrast, the highest rate seen in the 5-year average was among 25-29 year olds (28.5 per 100,000).

Figure PS.3: Reported Primary and Secondary Syphilis Cases and Rates of Reported Cases by Age Group, Colorado, 2022
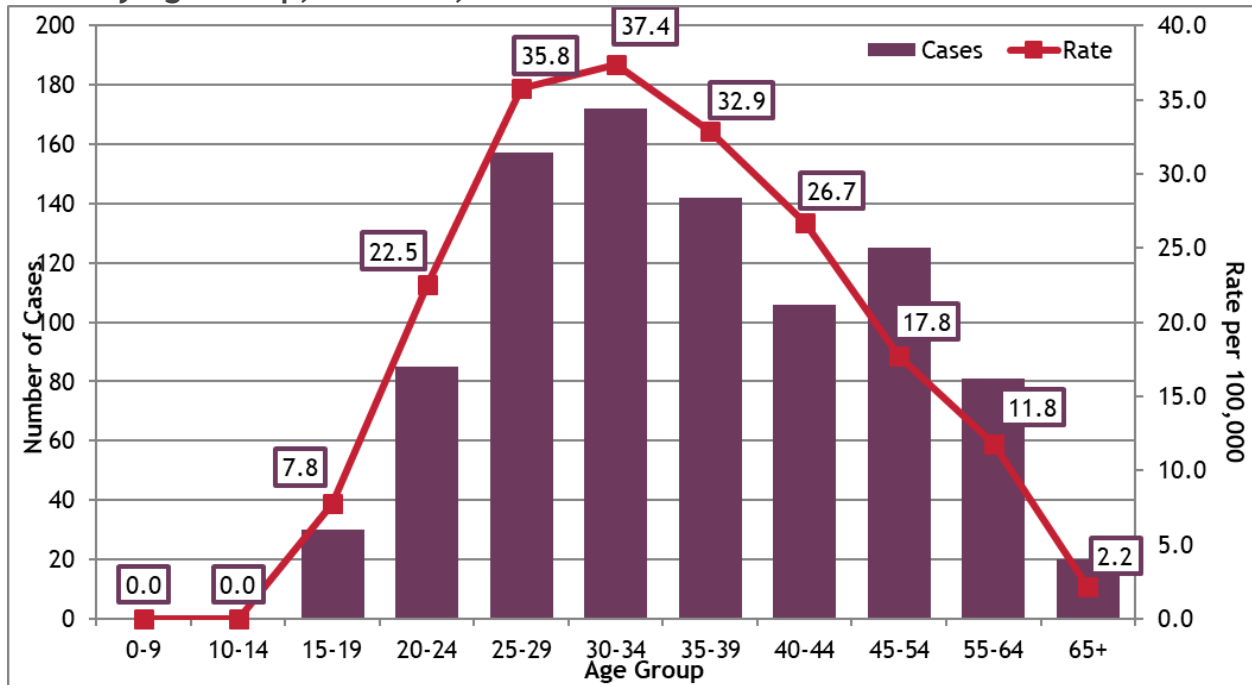
Note: these rates use small numbers and should be interpreted with caution.

Figure PS.4: Reported Primary & Secondary Syphilis Cases and Rates of Reported
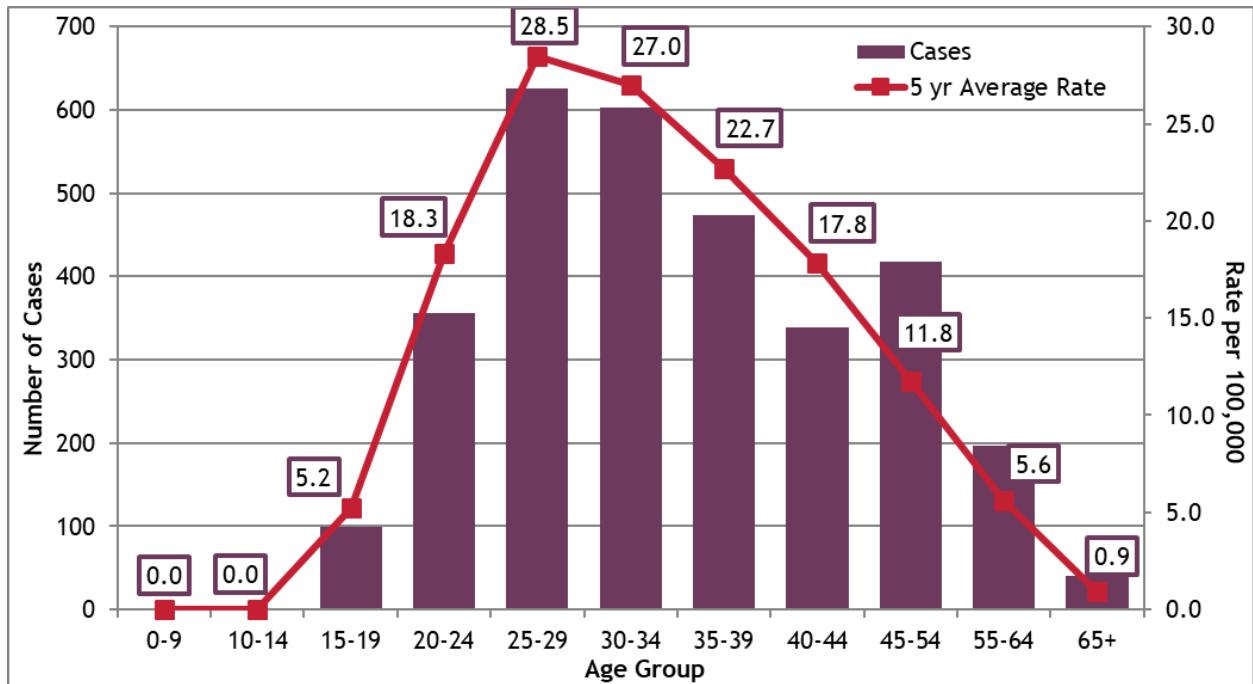
More stable than the one-year rate from Figure PS.3.

Figure PS.5 shows cases and rates of primary and secondary syphilis cases by race/ethnicity and sex. In 2022, the highest overall and male rates were among Non-Hispanic Black/African Americans (48.3 per 100,000 & 72.2 per 100,000, respectively), while the highest female rate was among Non-Hispanic Indigenous/Native Americans (32.7 per 100,000); however, the rate is largely influenced by the small population of this group (<1% of total population). Although they had the second lowest rate, Non-Hispanic Whites accounted for 46.2%. Hispanics of all races accounted for 36.9% of all cases and had the third highest overall rate. In 2022 the highest national rates were also among American Indian/Alaska Native males (74.7 per 100,000) followed by Black/African American males (70.9 per 100,000).[15]

Among Hispanics in Colorado, who had an overall rate of 25.8 per 100,000 (an increase from 19.7 per 100,000 in 2021) and accounted for 36.9% of all cases, the highest rates were among Asian/Pacific Islanders and Black/African Americans; however, these groups only accounted for a total of 14 cases (1.5% of all cases), and the high rates are influenced by small population sizes in these groups (see **Table 1** in the appendix for Hispanic breakdowns).

Figure PS.5: Rates of Reported Primary & Secondary Syphilis Cases by Race/Ethnicity and Sex, Colorado, 2022
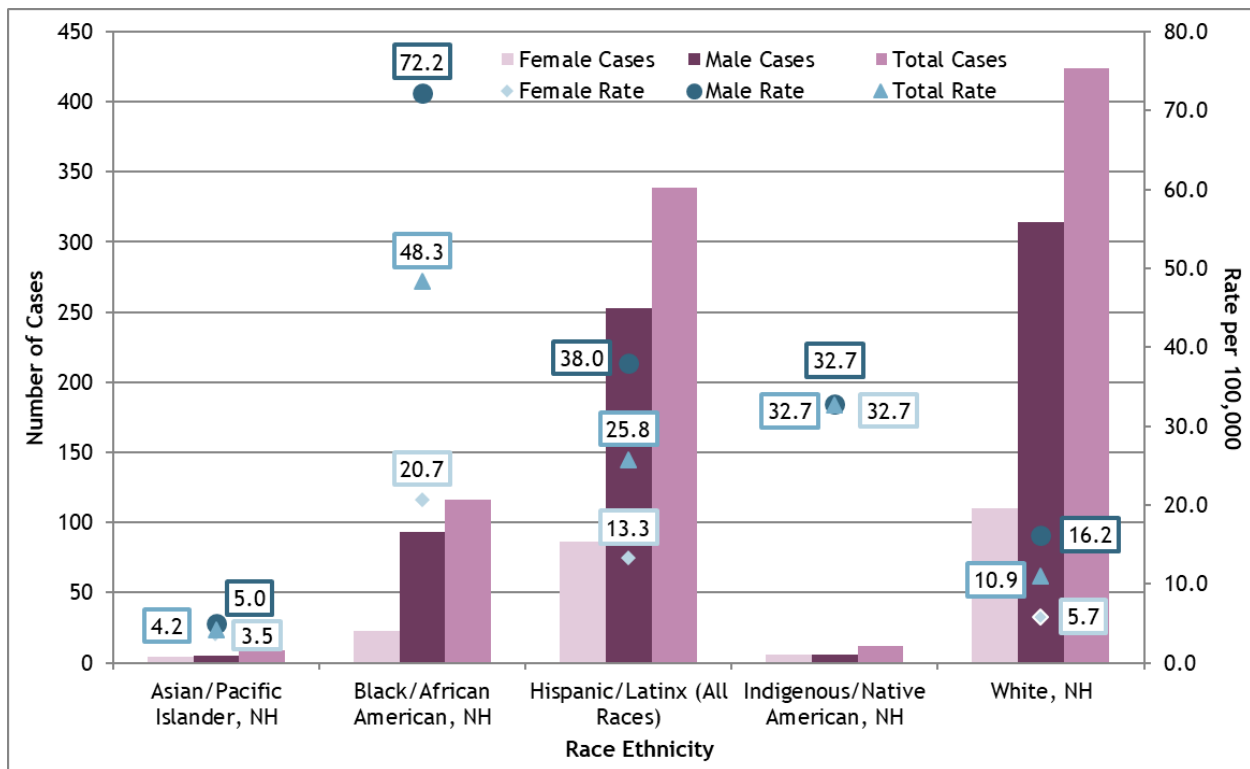
Note: these rates use small numbers and should be interpreted with caution.
NH: Non-Hispanic.

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[15] Centers for Disease Control and Prevention. 2024. "Table 27. Primary and Secondary Syphilis — Rates of Reported Cases* by Race/Hispanic Ethnicity, Age Group, and Sex, United States, 2022." Sexually Transmitted Infections Surveillance, 2022. https://www.cdc.gov/std/statistics/2022/tables/27.htm

Figure PS.6 shows the five-year trends in rates for Non-Hispanic Black/African Americans, Non-Hispanic Whites, and Hispanics of all races. Other races were not displayed due to small numbers (13 or fewer cases in 2022). Rates among all races were increasing from 2018-2021, with Non-Hispanic Black/African Americans seeing the sharpest increases each year (27.6% from 2020 to 2021) since 2018. From 2021 to 2022, rates among NH Black/African Americans decreased, while rates among all other races increased through 2022.

Figure PS.6: Rates of Reported Primary & Secondary Syphilis Cases by Race/Ethnicity, Colorado, 2018-2022
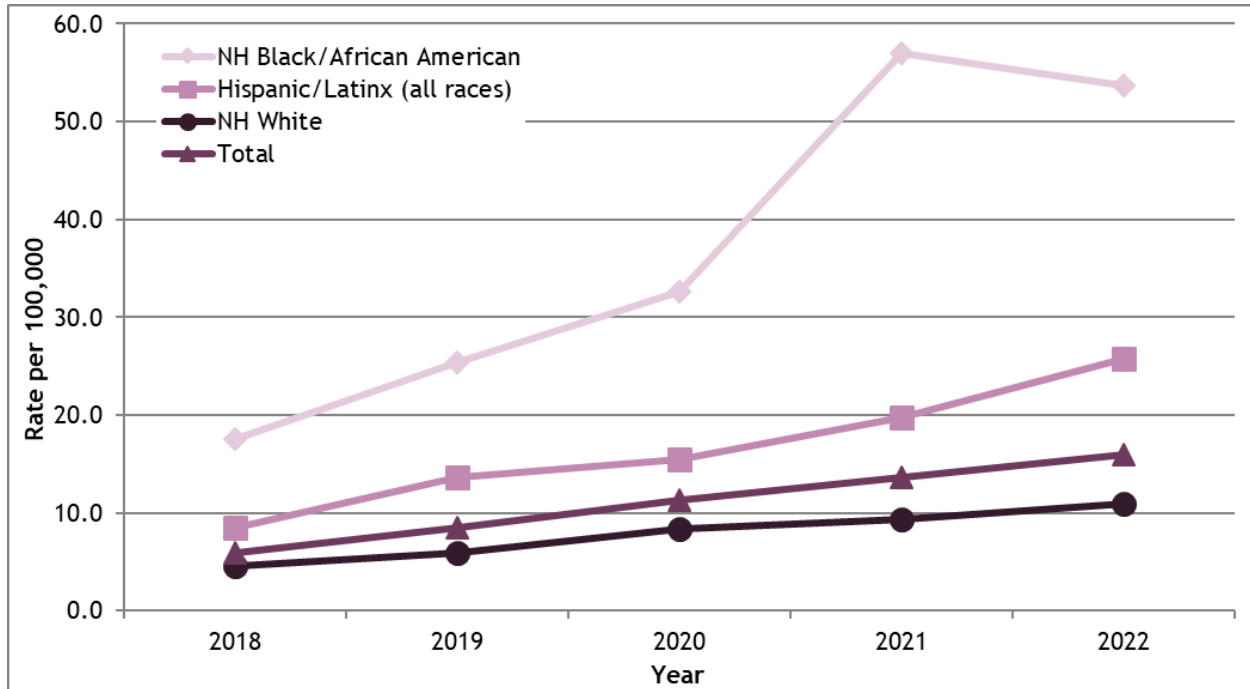
Note: these rates use small numbers and should be interpreted with caution.
NH: Non-Hispanic

Figures PS.7 and PS.8 describe the geographical distribution of primary and secondary syphilis cases and rates in Colorado at the county level. At least one case was reported in 36 of 64 counties in 2022, with 31.8% of cases in Denver County, 10.8% in Adams county, and 10.1% in El Paso county.

Figure PS.7: Rates of Reported Primary & Secondary Syphilis Cases by County Map, Colorado, 2022
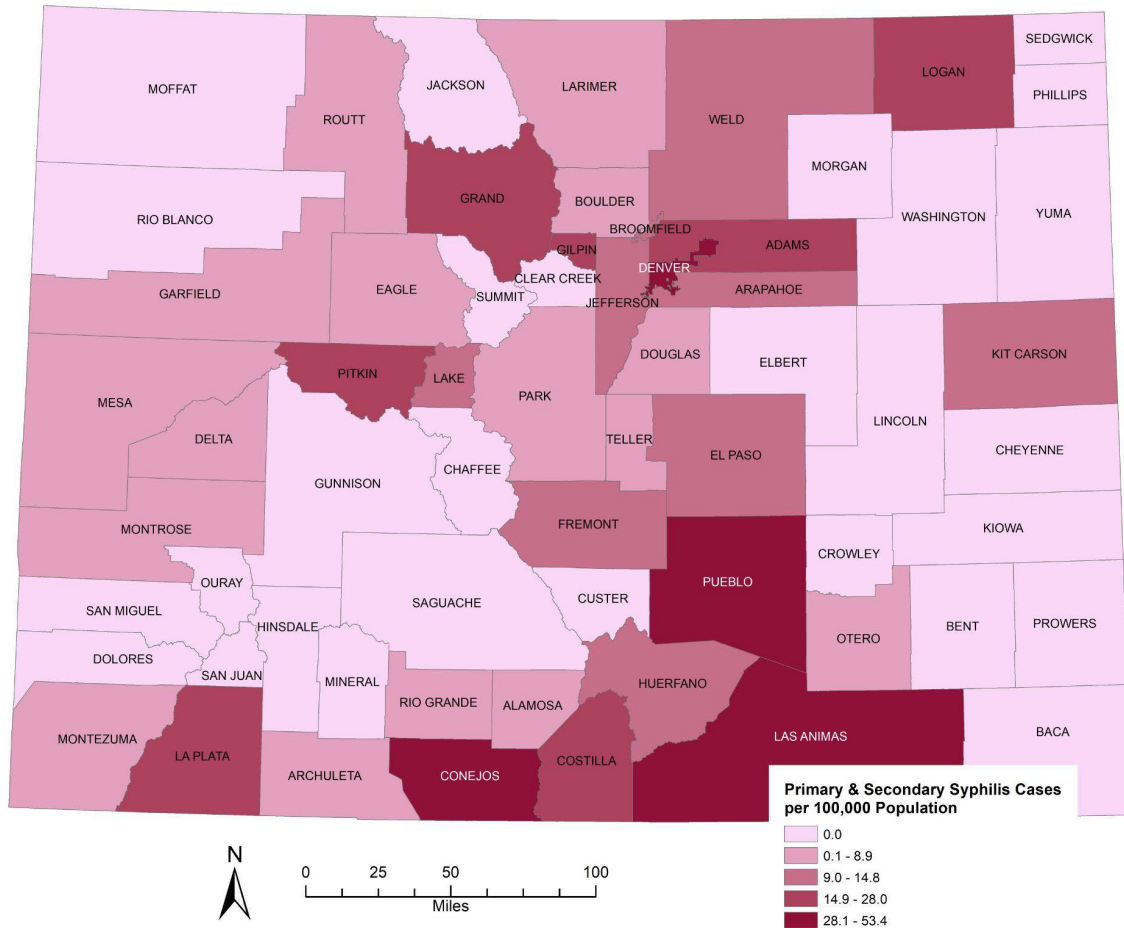
High rates do not necessarily mean high case counts; for further details, see Figure PS.8 and Table 2.

As shown in **Figure PS.8**, the three highest rates were in Conejos, Pueblo, and Las Animas counties in 2022; however, Conejos and Las Animas represented a combined total of 10 cases, and high rates are due to small population sizes. Similarly, among counties above the state average, Costilla, Logan, Grand and Pitkin all had less than 5 cases but had higher rates due to small populations. Use caution when interpreting some rates as high rates may correspond to small cases numbers in counties with small populations. See **Table 2** in the appendix for more details.

Figure PS.8: Rates of Reported Primary & Secondary Syphilis Cases by County Chart, Colorado, 2022
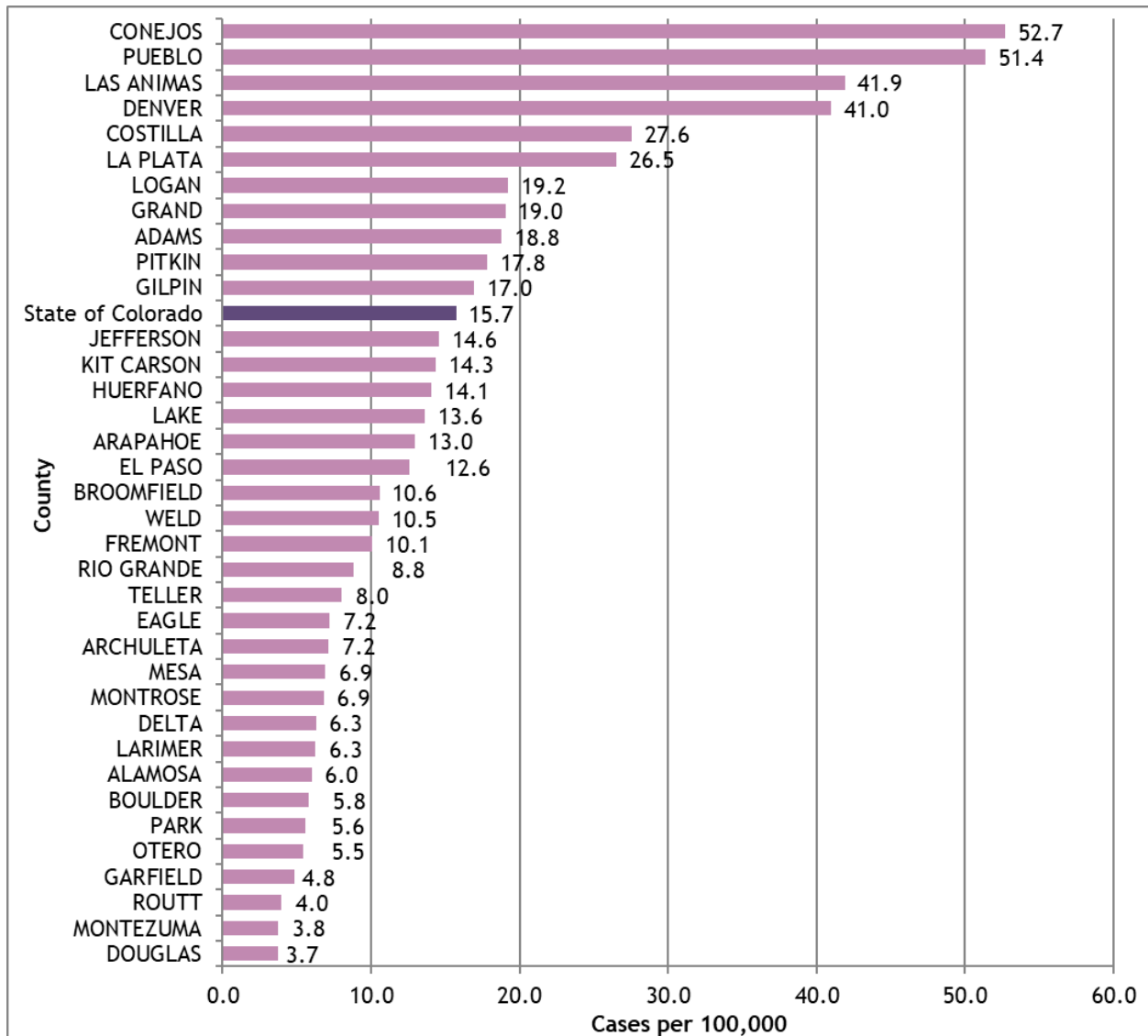
Note: these rates use small numbers and should be interpreted with caution. For details see **Table 2.**

Figure PS.9 shows the percent of primary and secondary syphilis cases that were also living with HIV (both previously diagnosed with HIV or diagnosed with HIV at the same time as the syphilis diagnoses) from 2018-2022. The five-year average rate of primary and secondary syphilis cases living with HIV was 18.6% (586 of 3,150 cases).

While primary and secondary syphilis cases have increased each year, the percent of cases living with HIV has decreased each year since 2018, from 26.1% to 14.1%. Although the percentage has decreased since 2021, there were 4 more cases living with HIV in 2022 than in 2021.

Figure PS.9: Reported Primary & Secondary Syphilis Cases and Percent Living with HIV by Year of Diagnosis, Colorado, 2018-2022
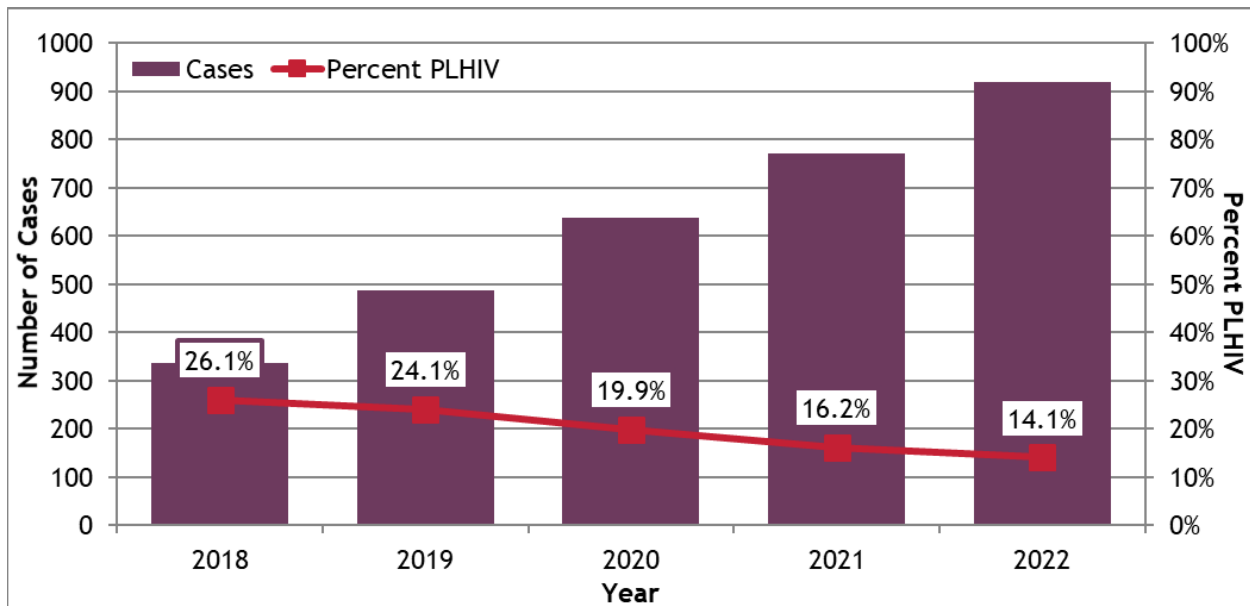
PLHIV = People Living with HIV

Non-Primary, Non-Secondary Latent Syphilis

Non-primary, non-secondary latent syphilis is latent syphilis (no visible signs or symptoms, previously referred to as early latent syphilis) in which transmission occurred within the past 12 months. There were 606 cases diagnosed and reported in Colorado in 2022, with a rate of 10.4 per 100,000. As shown in **Figure EL.1**, this is a significant increase of 16.2% compared to 2021, a 62.8% increase since 2018 and a 180.5% increase since 2013. In 2022, increases at the national level exceeded those in Colorado. There were 87,571 cases diagnosed and reported to the CDC in 2022 (26.3 per 100,000), which is a 28.2% increase in cases (68,261) and a 27.8% increase in rate since 2021. Cases and rates have increased significantly over the past couple of years compared to 2018 to 2020, when cases ranged from 40,000 to 47,000 and rates ranged from 12.3 to 14.4 per 100,000.[16]

Males represented 76.9% of reported non-primary, non-secondary latent syphilis cases, which is lower than last year when they represented 84.6% of cases. Non-Hispanic Whites represented 39.1% and Hispanics represented 40.6% (with 25.4% of all cases from Hispanic Whites, 12.4% from Hispanics with an unknown race, and Hispanics of other races accounting for the remaining 2.8% of all cases). Men who have sex with men (MSM) accounted for 42.6% (258 cases) in 2021, and 125 (48.4%) of these men were also living with HIV. People living with HIV (both previously diagnosed with HIV or diagnosed at the same time as the syphilis diagnosis) accounted for 25.4% (154) cases in 2022.

Figure EL.1: Reported Non-Primary, Non-Secondary Latent Syphilis Cases and Rates of Reported Cases, Colorado, 2013-2022

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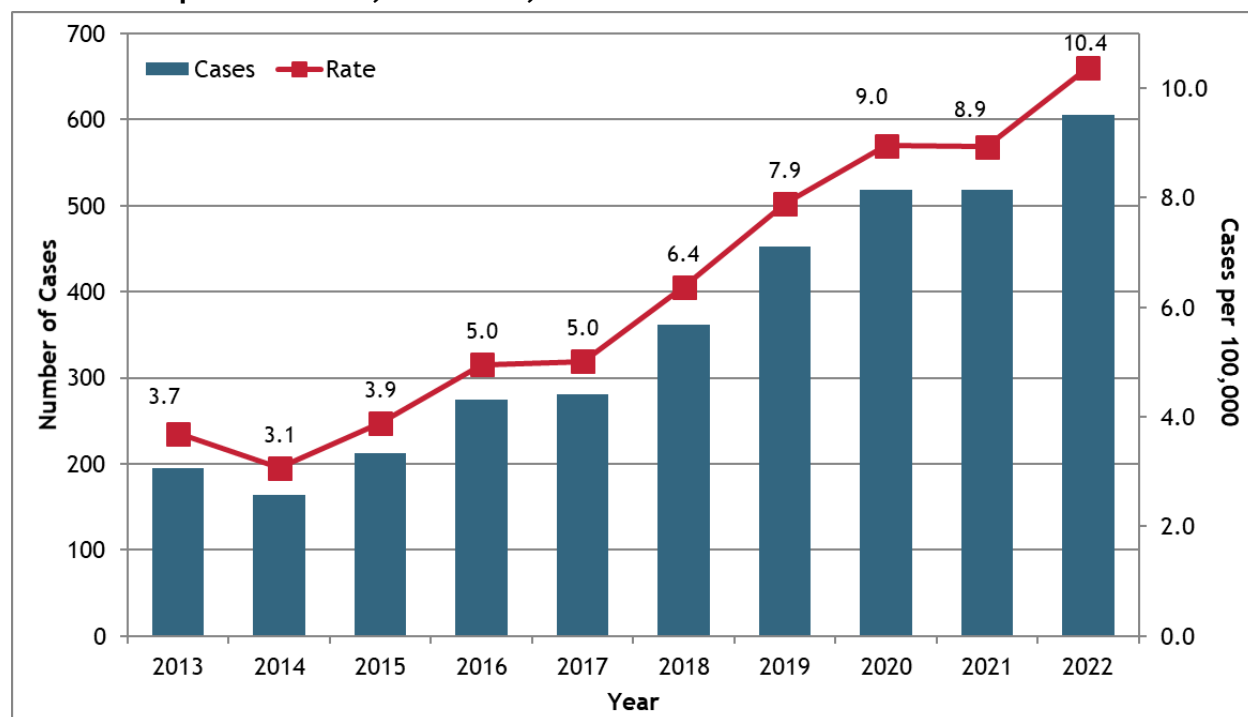
[16] Centers for Disease Control and Prevention. 2024. "Table 30. Unknown Duration or Late Syphilis — Reported Cases and Rates of Reported Cases by State/Territory and Region in Alphabetical Order, United States, 2018–2022." Sexually Transmitted Infections Surveillance, 2022. https://www.cdc.gov/std/statistics/2022/tables/30.htm

Figure EL.2 shows age and sex case counts for non-primary, non-secondary latent syphilis diagnoses in 2022. The mean age at diagnosis was 37.1 (31.2 for females, 38.9 for males), with a range of 16 to 82 years of age, and males represented 76.9% of all cases and an overall rate that was 3.1 times the overall female rate.

For all age groups above 29 year olds, the male rate was more than triple the female rate, and most male cases were among 30-34 (25.8%) and 35-39 (15.2%) year olds. These groups also had the highest rates of 50.5 and 31.9 per 100,000, respectively. The highest female rate of 15.3 per 100,000 was among 30-34 year olds, and this rate is lower than the male rate across all age groups from 25-54.

Figure EL.2: Reported Non-Primary, Non-Secondary Latent Syphilis Cases and Rates of Reported Cases by Sex and Age Group, Colorado, 2022
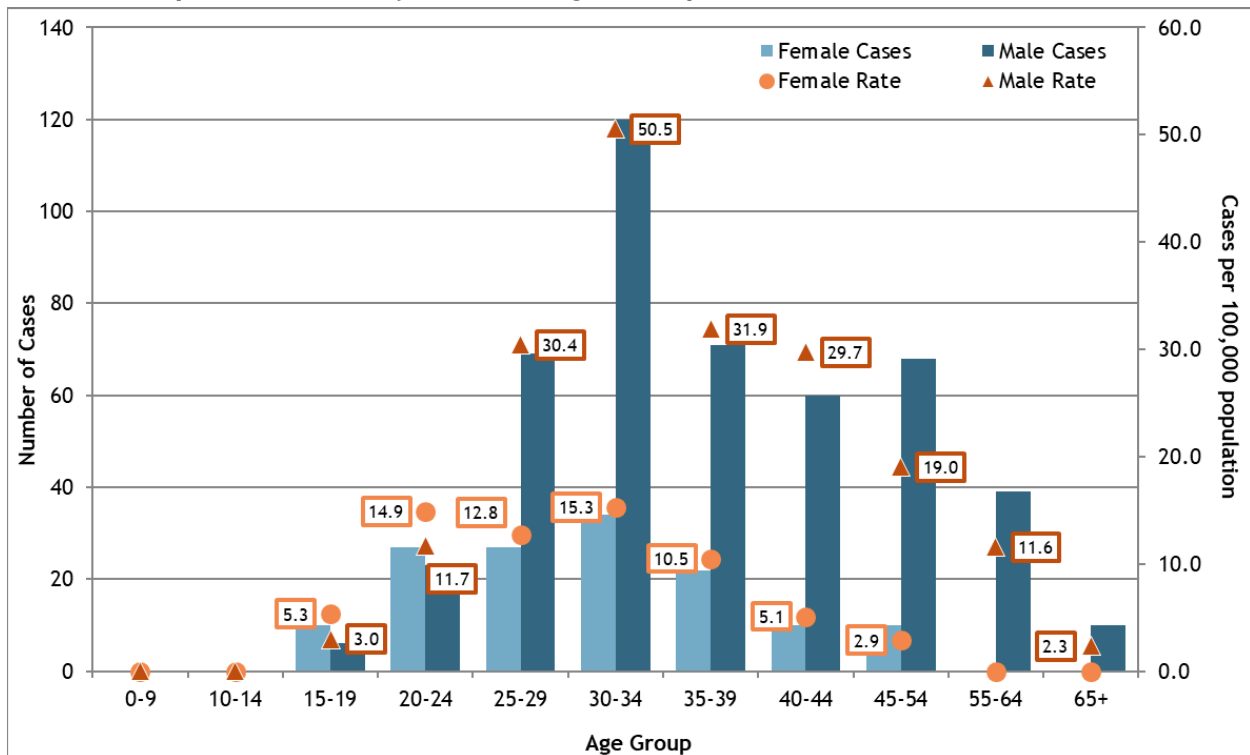
Note: these rates use small numbers and should be interpreted with caution.

Figures **EL.3** and **EL.4** below depict age group case counts and rates for non-primary, non-secondary latent syphilis for 2022 and five-year averages. This five-year average rate in **Figure EL.4** helps to stabilize the rate and thus produces a more accurate representation of the rate. As seen with primary and secondary syphilis, the highest rate in 2022 was among 30-34 year olds, while the highest 5 year average rate from 2018-2022 was among 25-29 year olds, which was also the case last year.

Figure EL.3: Reported Non-Primary, Non-Secondary Latent Syphilis Cases and Rates of Reported Cases by Age Group, Colorado, 2022
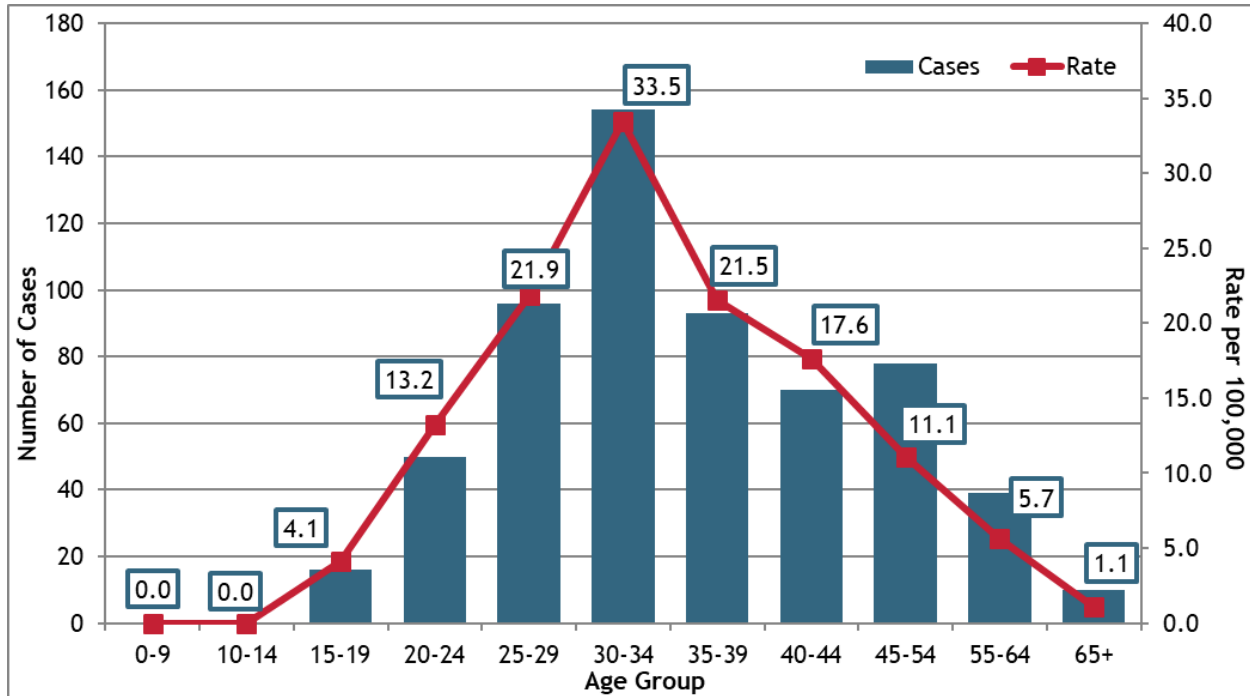
Note: these rates use small numbers and should be interpreted with caution.

Figure EL.4: Reported Non-Primary, Non-Secondary Latent Syphilis Cases and
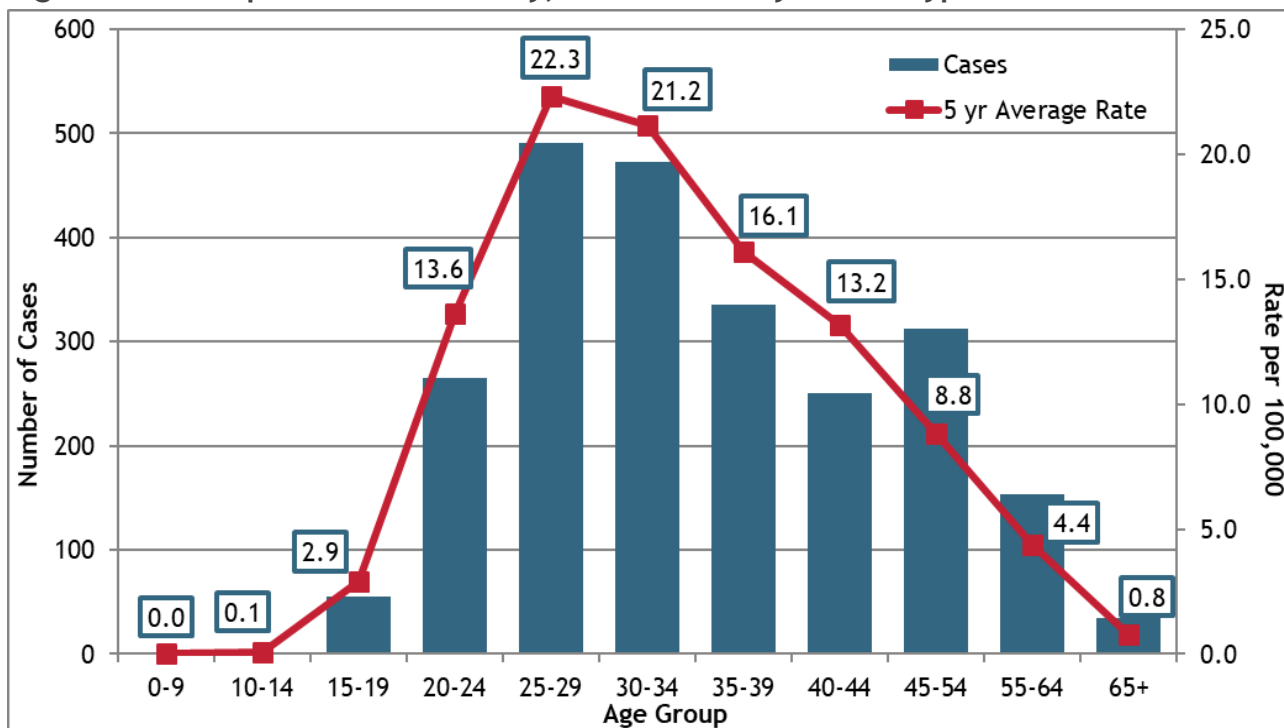
More stable than the one-year rate from Figure EL.3.

Figure EL.5 shows the rates of non-primary, non-secondary latent syphilis cases by sex and race/ethnicity. Non-Hispanic Black/African Americans had the highest rates across sexes, with males having the highest rate of 52.0 per 100,000 and females having a rate of 16.2 per 100,000, which is below the male rate in all race groups except NH Asian/Pacific Islanders and Non-Hispanic Whites. Across all races/ethnicities, males had higher rates than females, with rates ranging from 3 to 6 times the female rate in all groups except NH Indigenous/Native Americans, where the ratio was 1:1.

Despite not having one of the highest rates, Hispanics accounted for 41.1% of cases (64 from females, 182 from males) and NH Whites accounted for 39.6% of cases (46 from females, 191 from males). Among Hispanics, the highest rates were among Black/African Americans (19.5) and Whites (13.4), with Hispanic White accounted for 25.4% of all cases (see **Tables 1 and 6** in the appendix for Hispanic race breakdowns).

Figure EL.5: Rates of Non-Primary, Non-Secondary Latent Syphilis Cases by Race/Ethnicity and Sex, Colorado, 2022
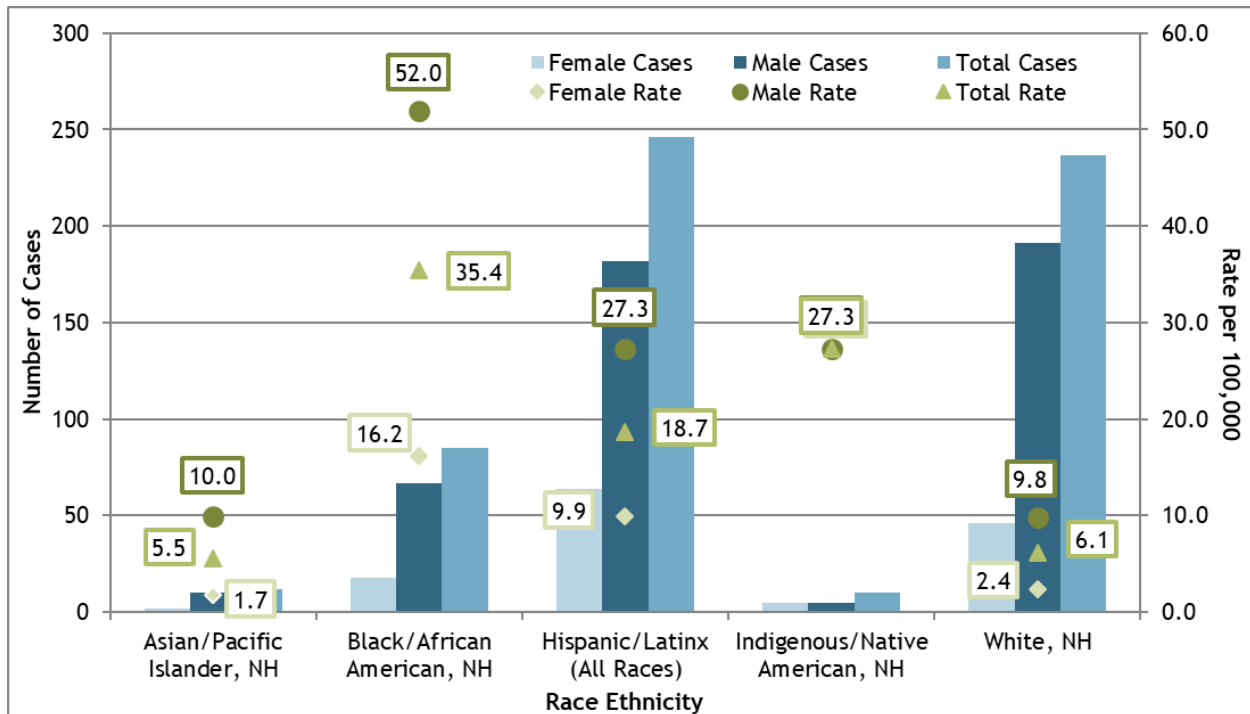
Note: these rates use small numbers and should be interpreted with caution.
NH: Non-Hispanic.

As shown in **Figure EL.6**, the rate of non-primary, non-secondary latent syphilis has been sharply increasing among the NH Black/African American population since 2018. The rate of 35.4 per 100,000 seen in 2022 is a 14.4% increase since 2021, and a 223.9% increase since 2018. The second highest ranking population, the Hispanic/Latinx population, also saw a rise in rates from 2018-2019 which leveled off through 2020 and have been slightly increasing each year, with the 2022 rate of 18.7 per 100,000 being a 22.2% increase since 2021. The Non-Hispanic White population was slightly increasing from 2018 to 2020 but has decreased by about 1% each year since then.

Figure EL.6: Rates of Non-Primary, Non-Secondary Latent Syphilis Cases by Race/Ethnicity, Colorado, 2018-2022
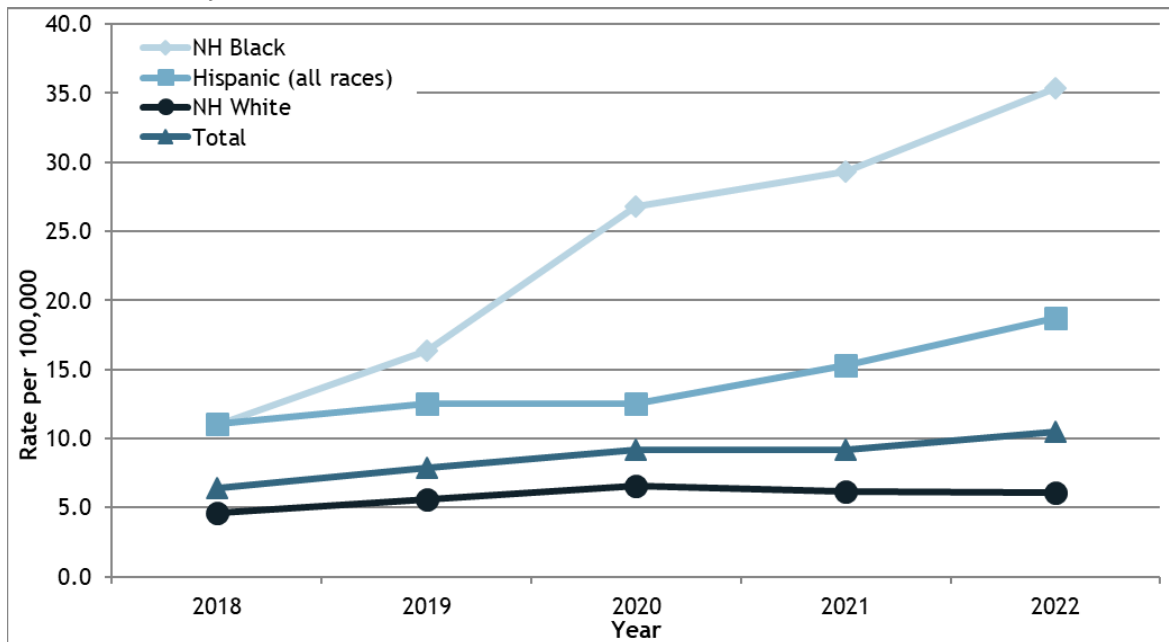
NH: Non-Hispanic.

Figures **EL.7** and **EL.8** describe the geographical distribution of non-primary, non-secondary latent syphilis rates in Colorado at the county level. The map shows non-primary, non-secondary latent syphilis cases have been diagnosed in residents of 33 of 64 counties, with the most cases (39.6%) in Denver County, followed by Arapahoe (11.7%) and Adams (10.8%) counties.

Figure EL.7: Rates of Non-Primary, Non-Secondary Latent Syphilis Cases by County Map, Colorado, 2022
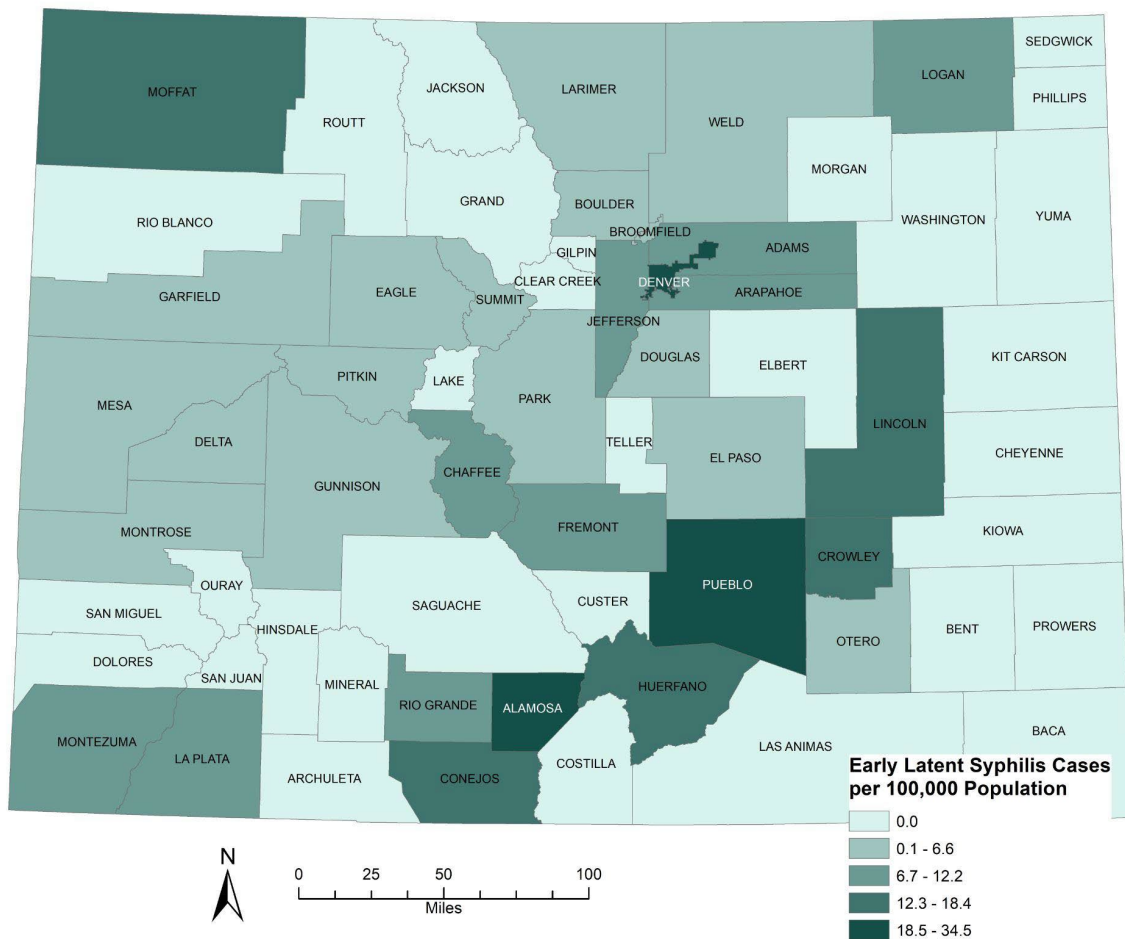
High rates do not necessarily mean high case counts; for further details, see **Figure EL.8** and **Table 2.**

In 2022, Denver, Alamosa, and Pueblo counties had the highest rates of non-primary, non-secondary latent syphilis; however, Alamosa only had 5 cases (less than 1% of cases) and the high rate is due to smaller population size. Similarly, counties such as Lincoln, Crowley, Moffat, Huerfano, and Conejos had rates above the state average according to **Figure EL.8**, only one or two cases were reported in each county. Use caution when interpreting some of these rates as the county may have a small population and small case numbers. See **Table 2** in the appendix for more details.

Figure EL.8: Rates of Non-Primary, Non-Secondary Latent Syphilis Cases by County Chart, Colorado, 2022
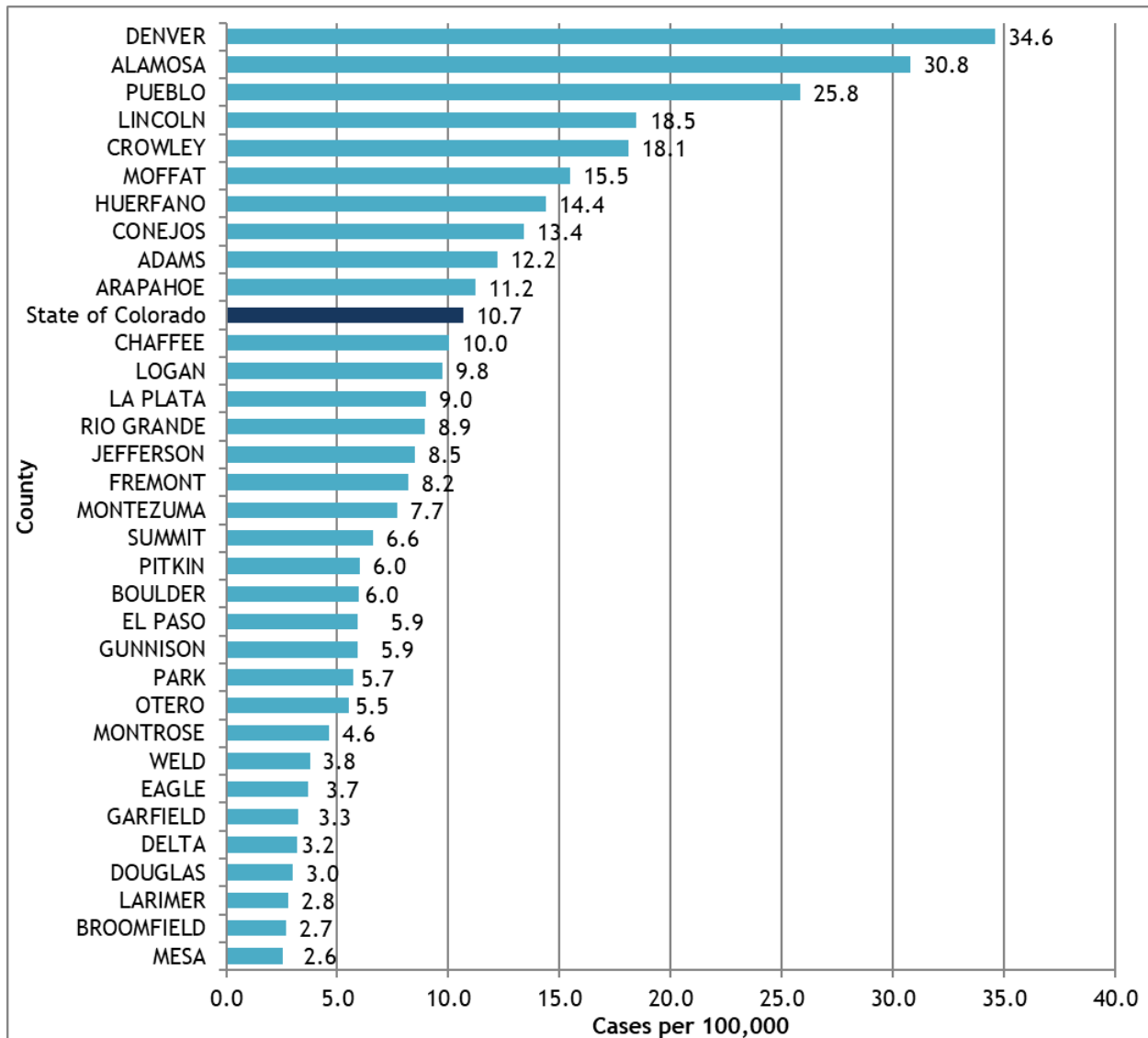
Note: these rates use small numbers and should be interpreted with caution. For details, see **Table 2.**

Figure EL.9 shows the percent of non-primary, non-secondary latent syphilis cases who were living with HIV (both previously diagnosed with HIV or diagnosed with HIV at the same time as the syphilis diagnosis), from 2018-2022. The five-year average rate for non-primary, non-secondary latent syphilis living with HIV from 2018-2022 is 31.4% (772 of 2,458 cases), which is higher than the five-year average rate of 18.6% of primary and secondary syphilis cases. As seen with primary and secondary syphilis, cases have increased each year while the percent of cases living with HIV has decreased from 43.9% to 25.4%.

Figure EL.9: Non-Primary, Non-Secondary Latent Syphilis Reported Cases and Percent Living with HIV by Year of Diagnosis, Colorado, 2018-2022
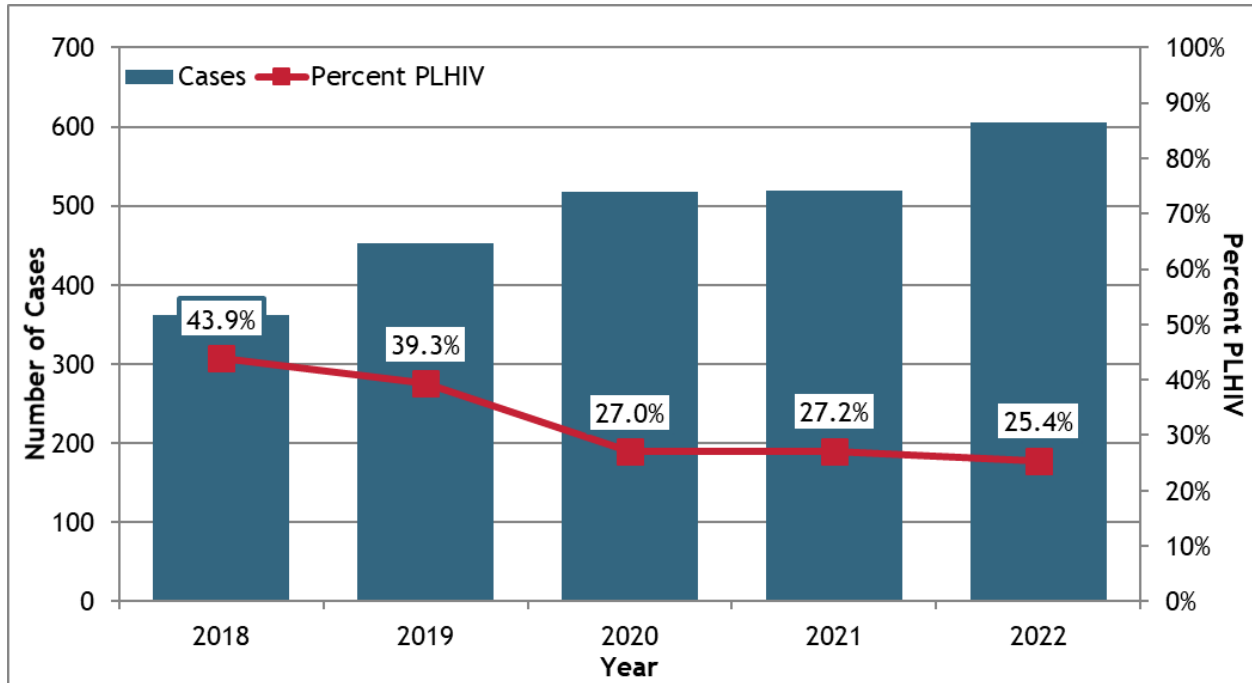
PLHIV = People Living with HIV

Congenital Syphilis

All congenital syphilis reports that meet the current case definition for "probable" or "confirmed" are considered congenital syphilis cases. There were 31 cases of congenital syphilis reported in Colorado in 2022, corresponding to a rate of 49.7 cases per 100,000 live births[17], about the same as the rate in the previous year. The 2022 rate is a 37.7% increase from 2020 (35.8) and a 346.5% increase from 2018 (11.1). Rates and cases have been increasing each year since 2018, as shown in **Figure CS.1**, with the highest single-year increase of 104.48% from 2019-2020.

National rates also continue to increase significantly, with 3,755 cases (rate of 102.5 per 100,000) of congenital syphilis, with 282 related stillbirths and infant deaths, reported in 2022. This rate is a 30.6% increase since 2021 and the highest rate in 31 years. Increases were seen across 39 states and the District of Columbia since 2021, and 47 states reported at least one case.[4]

Figure CS.1: Reported Congenital Syphilis Cases and Rates of Reported Cases, Colorado, 2018-2022

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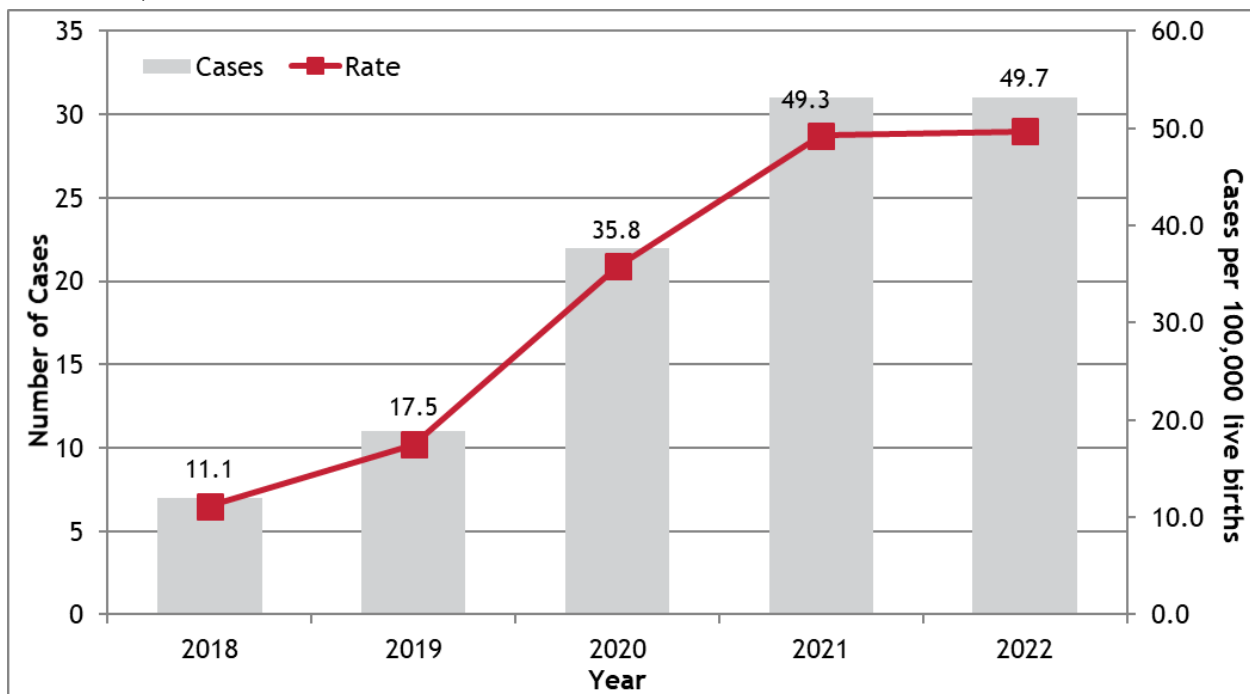
[17] Live birth data from the Colorado Health Information Dataset (COHID) managed by CDPHE.
http://www.cohid.dphe.state.co.us/

Syphilis Among Women of Reproductive Age

While congenital syphilis rates were stable from 2020 to 2021, rates of syphilis among women of reproductive age (15-44-year-old females at birth) significantly increased by 57.7% since 2021. Case numbers among this cohort were stable from 2013-2015, doubled in 2016, and have increased each year since, with all increases since 2018 being statistically significant and the sharpest increase of 87.9% from 2020 to 2021. In 2022, there were 836 cases of syphilis reported among WRA, which is a rate of 69.2 per 100,000, a 517.1% and 2,997.2% increase over 5 and 10 years, respectively. Nationally, rates among women of reproductive age increased 17.2% since 2021, and in 46% of counties rates among this demographic were higher than the national Healthy People 2030 goal of 4.6 per 100,000 for reducing syphilis among women.[4]

Figure CS.2: Reported Syphilis Cases Among Women of Reproductive Age and Rates of Reported Cases, Colorado, 2013-2022
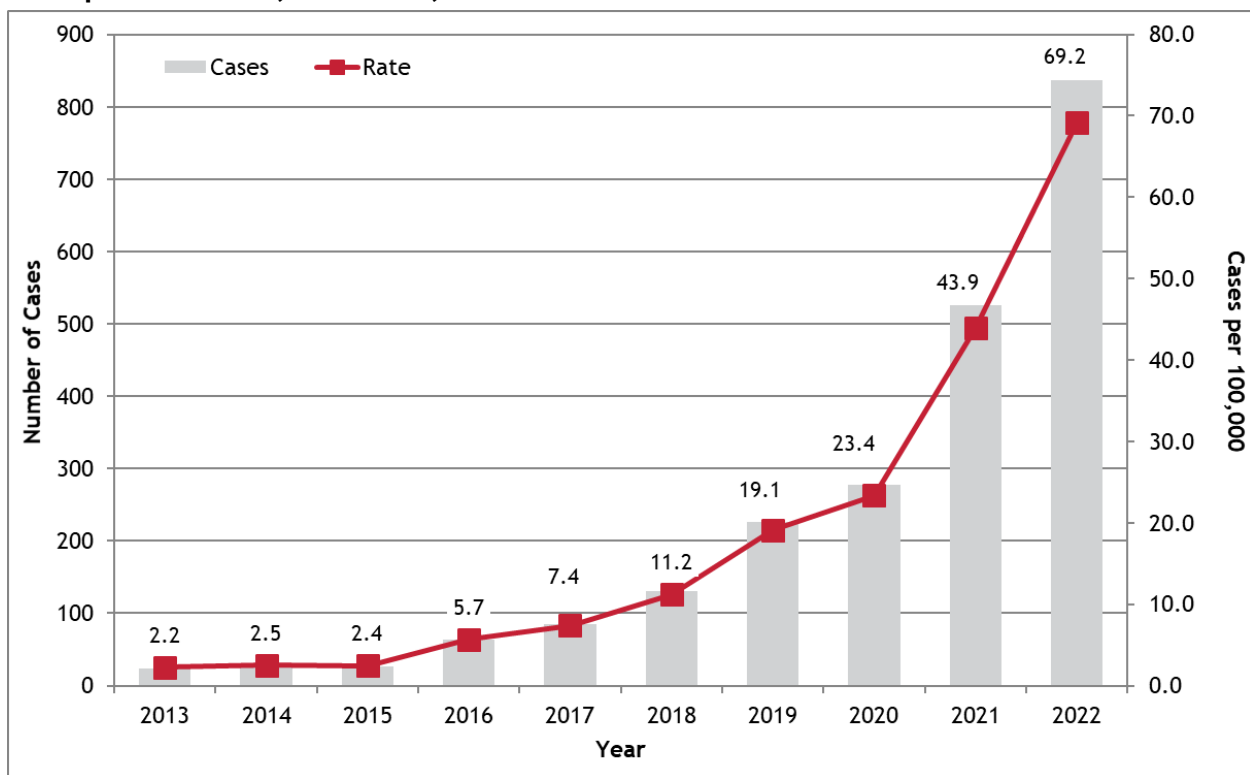
Figures CS.3 and **CS.4** show age group case counts and rates for syphilis among WRA diagnosed in 2022 and five-year averages, respectively. In 2022, the mean age at diagnosis was 31.3 with a range of 15 to 44 years of age. Unlike last year, when the highest rate of 62.0 per 100,000 was reported among 25-29 year olds, in 2022 the highest rates of 88.0 and 84.5 per 100,000 were reported among 30-34 year olds and 35-39 year olds, respectively. The group that had the highest rate in 2021, 25-29 year olds, had the third highest rate this year of 82.7 per 100,000 (still above the 2021 rate). All 5-year age groups from 20-39 had higher rates in 2022 than the highest rate in 2021.

Figure CS.3: Reported Syphilis Cases Among Women of Reproductive Age and Rates of Reported Cases by Age Group, Colorado, 2022
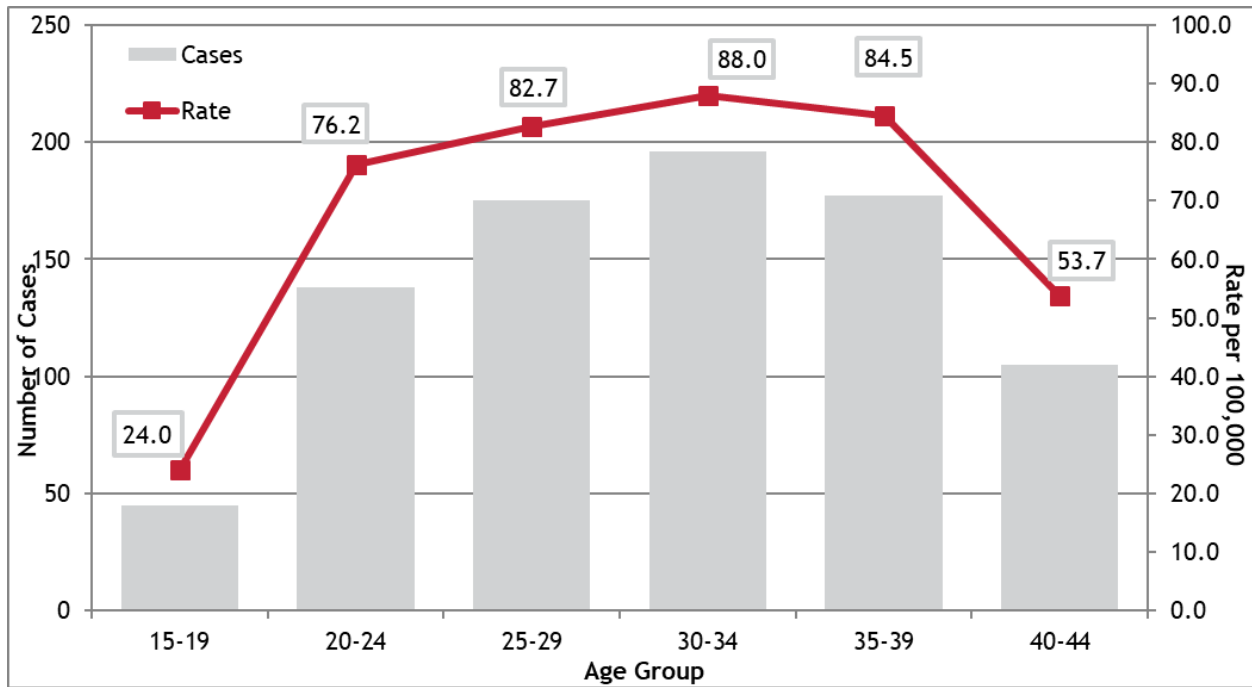
Note: these rates use small numbers and should be interpreted with caution.

Figure CS.4 depicts age group case counts and rates for syphilis among women of reproductive age diagnosed from 2018-2022. This five-year average rate helps to stabilize the rate and thus produces a more accurate representation of the condition. The trends are similar to the trends seen in 2021, with the highest average rate among 25-29 year olds, and all age groups from 20-34 having rates above 35-39, which changed in 2022 (see **Figure CS.3**).

Figure CS.4: Reported Syphilis Cases Among Women of Reproductive Age and Rates of Reported Cases by Age Group, Colorado, 2018-2022
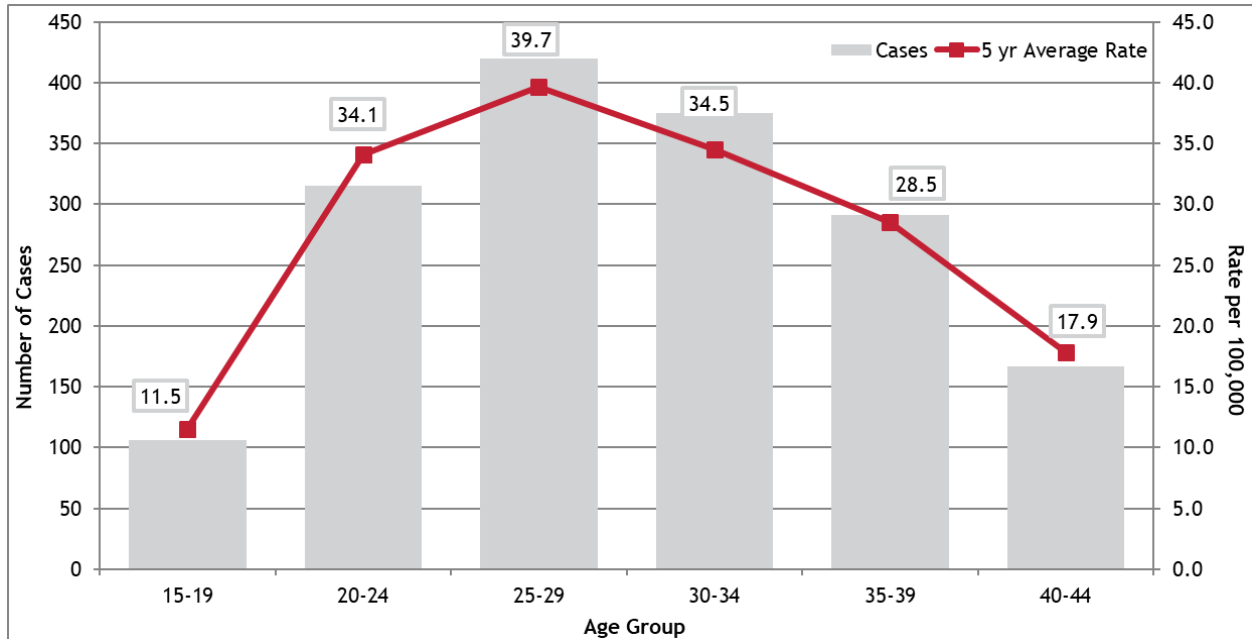
More stable than the one-year rate from **Figure CS.3.**

Figure CS.5 shows that the highest rate of syphilis among WRA in 2022 was seen among NH Indigenous/Native Americans; however, this group only accounted for 2% of cases (see **Table 7** in the appendix). Hispanics of all races and Non-Hispanic Blacks had the next highest rates of 129.6 and 125.4 per 100,000, respectively. Hispanics accounted for the most cases (47.0% - an increase from 40.9% in 2021), with almost all of those coming from Hispanic White (24.8% of total cases) and Hispanic Other/Unknown (18.9% of all cases). Non-Hispanic Whites accounted for 38.9% of cases, however they had the second lowest rate (43.0 per 100,000) due to a larger population size.

Figure CS.5: Reported Syphilis Cases Among Women of Reproductive Age and Rates of Reported Cases by Race/Ethnicity, Colorado, 2022
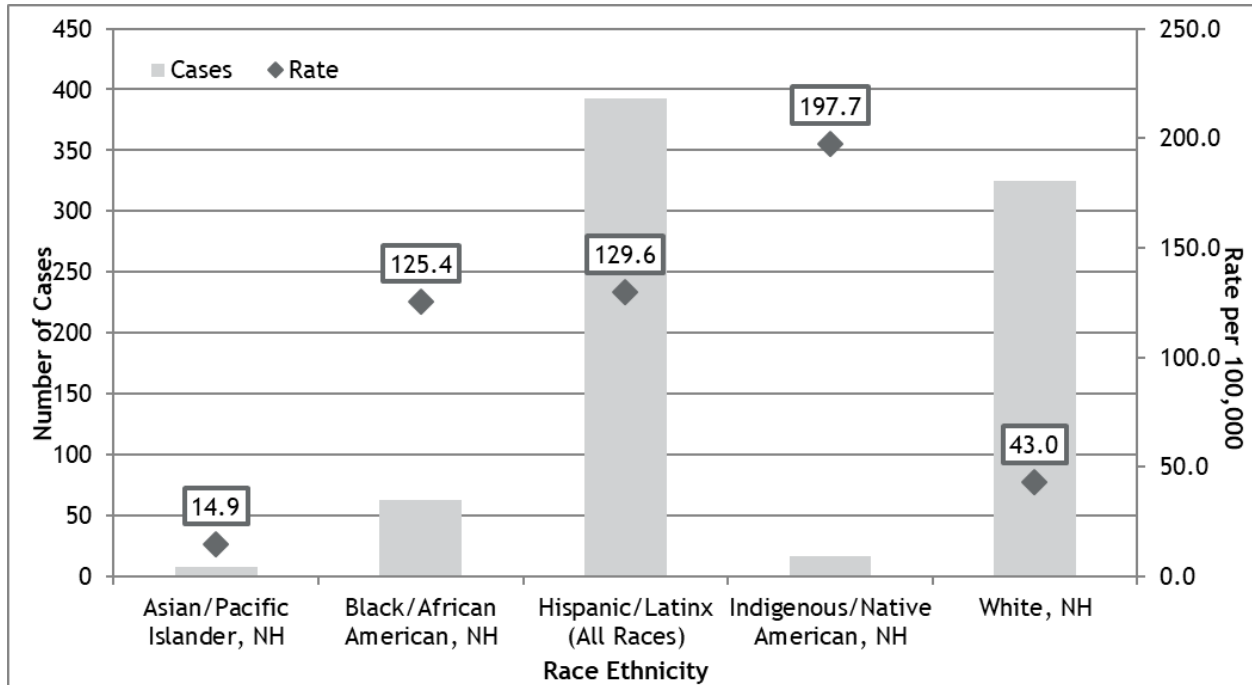
Note: these rates use small numbers and should be interpreted with caution.

NH: Non-Hispanic.

Figure CS.6 displays the five-year trend in rates for NH Black/African Americans, Hispanics/Latinx of all races, and NH Whites, with other races not being displayed. All races had sharp increases of over 80% from 2020 to 2021, with the highest being 115.9% among NH Black/African Americans, whose rates decreased by 11.2% in 2022. Hispanics saw their sharpest rise from 2021 to 2022, an increase of 80.1%, leaving them with a rate slightly higher than the rate of NH Black/African Americans for the first time in this time period. The Hispanic rate of 129.7 per 100,000 is 689.4% higher than the rate of this group in 2018 (16.4 per 100,000).

Figure CS.6: Rates of Reported Syphilis Cases Among Women of Reproductive Age by Race/Ethnicity, Colorado, 2018-2022
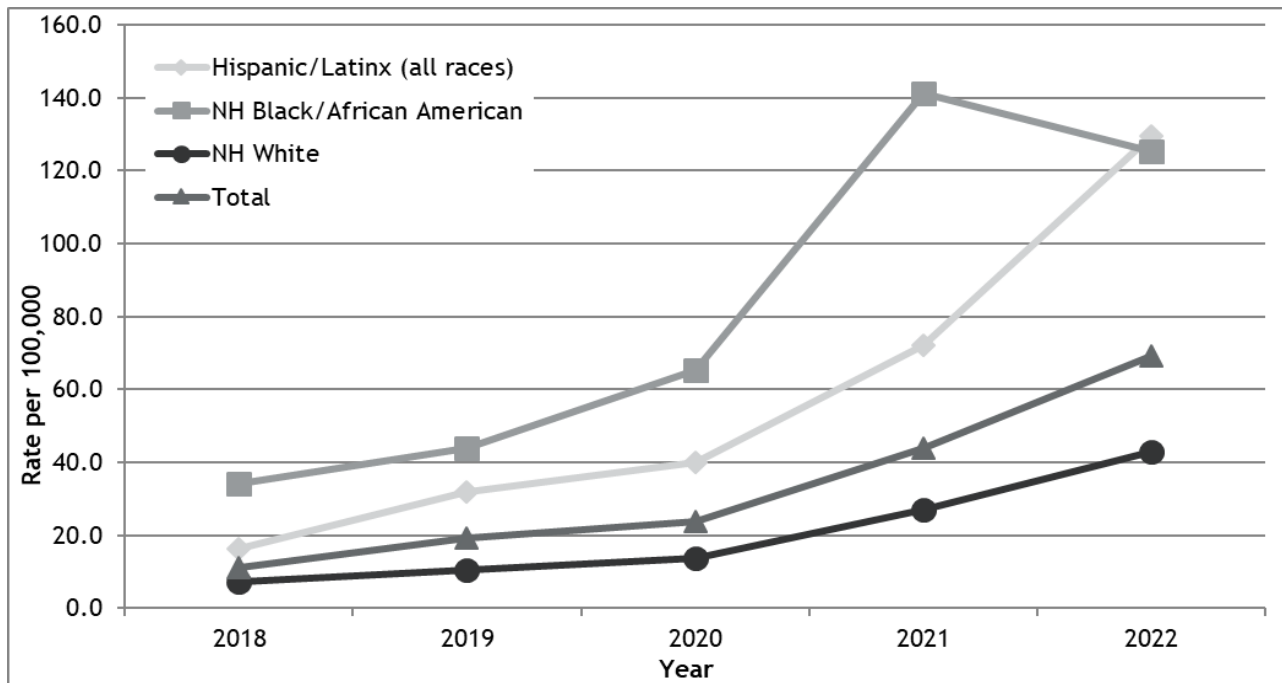
Note: these rates use small numbers and should be interpreted with caution.
NH: Non-Hispanic.

Figures CS.7 and **CS.8** describe the geographical distribution of syphilis rates among WRA in Colorado at the county level. There was at least one diagnosis in 33 of 64 counties in 2022, with more than half of cases diagnosed in Denver (26.2%) and Pueblo (26.0%) counties.

Figure CS.7: Rates of Reported Syphilis Cases Among Women of Reproductive Age by County Map, Colorado, 2022

High rates do not necessarily mean high case counts; for further details, see **Figure CS.8** and **Table 7.**

Pueblo had the highest rate of syphilis among WRA in 2022, and Pueblo and Denver are the only large counties with rates above the state rate. All other counties above the state average had high rates due to small population size, with each county having less than 10 cases. These rates are not reliable due to a small number of live births in these counties.

Figure CS.8: Rates of Reported Syphilis Cases Among Women of Reproductive Age by County Chart, Colorado, 2022
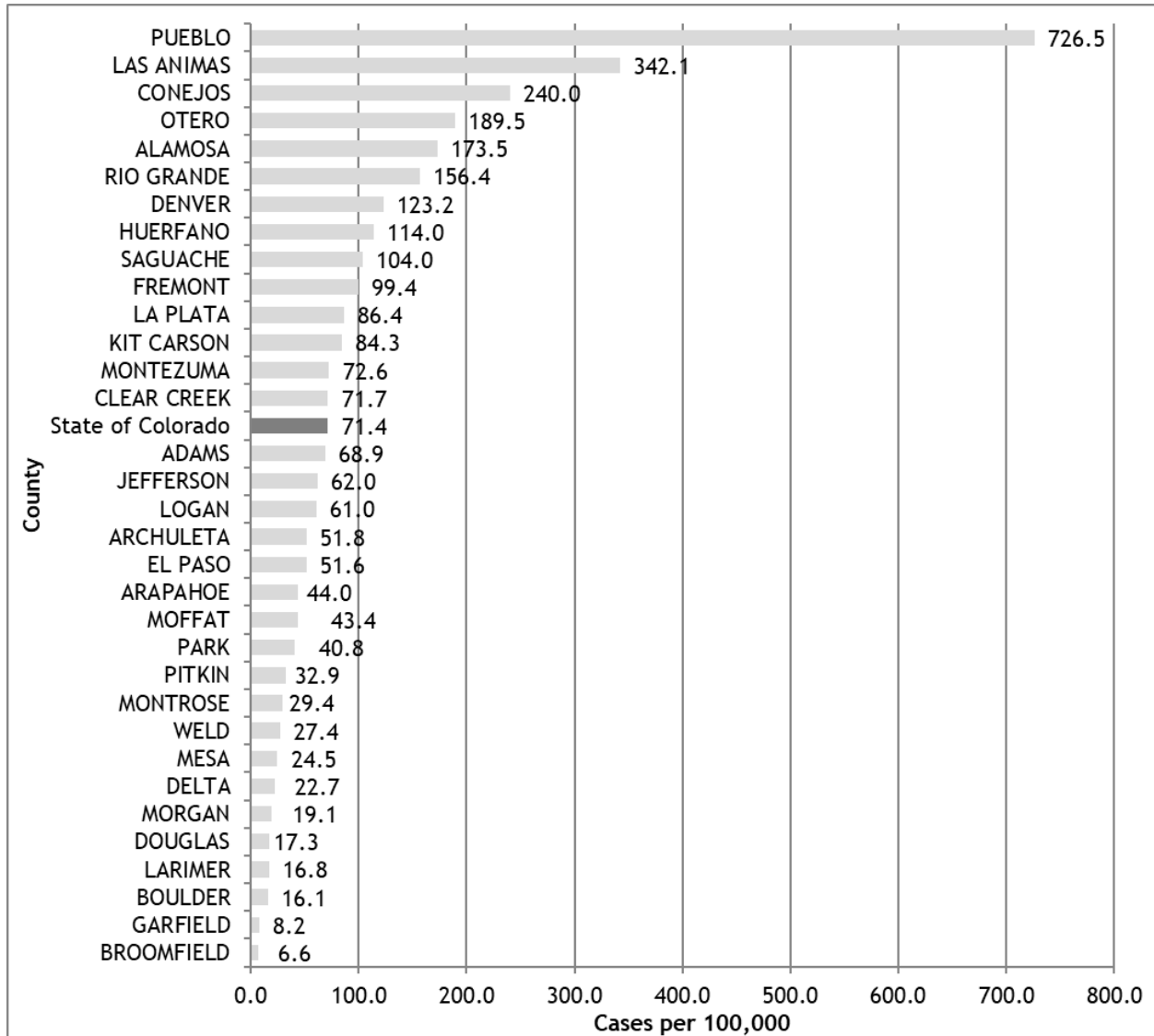
Note: these rates use small numbers and should be interpreted with caution. For details, see **Table 7.**

Figure CS.9 shows the percent of syphilis cases among WRA who were reported pregnant to CDPHE from 2018-2022. From 2018 to 2022, the average rate of pregnancy among syphilis cases in WRA was 18.0%, and aside from an increase from 2019 to 2020, rates have declined each year. In 2022, 109 (13.0% of total cases) women were pregnant at the time of their syphilis diagnoses, which is a 35.3% decrease in the percent of total cases, although there were 3 more cases than in 2021.

Figure CS.9: Reported Syphilis Cases Among Women of Reproductive Age and Percent Pregnant by Year of Diagnosis, Colorado, 2018-2022
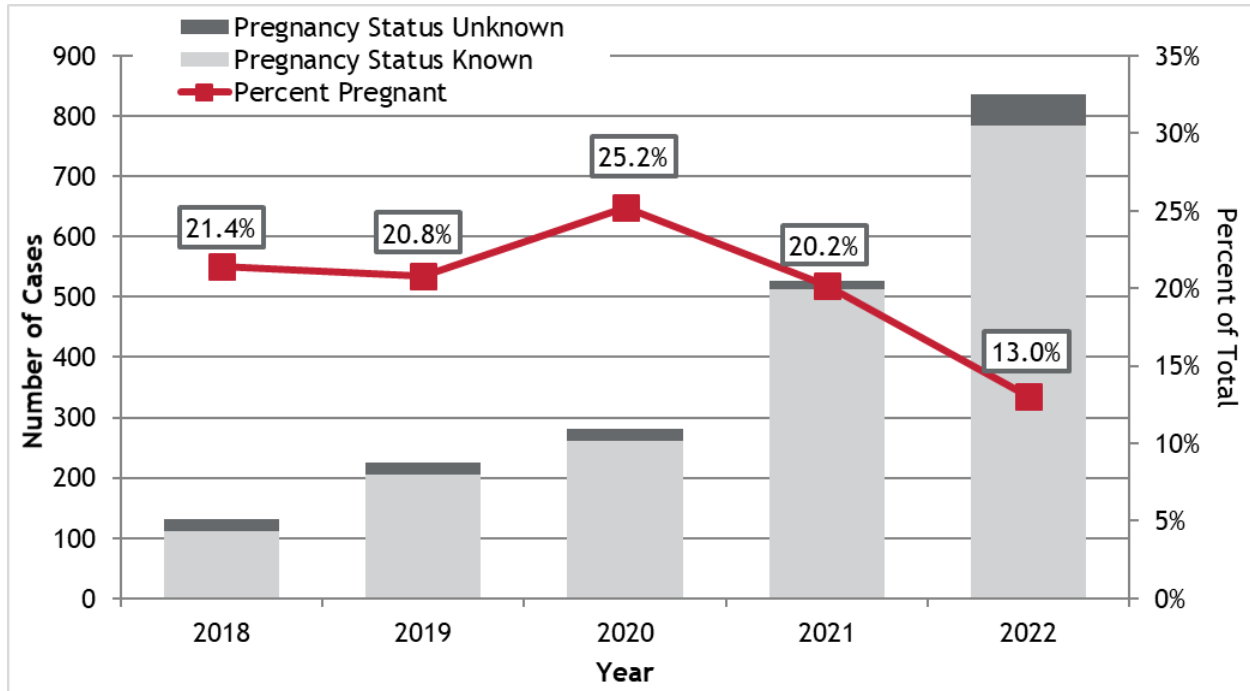
Data Tables

Table 1: Reported Chlamydia, Gonorrhea and Early Syphilis Cases and Rates of Reported Cases by Demographic Characteristics, 2022

	Population ^	% Pop	Chlamydia			Gonorrhea			Primary & Secondary Syphilis			Early Latent Syphilis		
			Cases	%	Rate†	Cases	%	Rate†	Cases	%	Rate†	Cases	%	Rate†
Total	5,838,662	100.0	26,649	100.0	456.4	8,784	100.0	150.4	918	100.0	15.7	606	100.0	10.4
Gender														
Female	2,907,538	49.8	16,540	62.1	568.9	3,179	36.2	109.3	232	25.3	8.0	140	23.1	4.8
Male	2,931,124	50.2	10,104	37.9	344.7	5,605	63.8	191.2	686	74.7	23.4	466	76.9	15.9
Unknown	---		5	0.0	---	0	0.0	---	0	0.0	---	0	0.0	---
Race/Ethnicity														
Hispanic (all races)	1,315,127	22.52	9,218	34.6	700.9	2,838	32.3	215.8	339	36.9	25.8	246	40.6	18.7
Hispanic Asian/PI	15,745	0.27	143	0.5	908.2	34	0.4	215.9	5	0.5	31.8	1	0.2	6.4
Hispanic Black	35,825	0.61	164	0.6	457.8	75	0.9	209.4	9	1.0	25.1	7	1.2	19.5
Hispanic Indigenous/Native	61,077	1.05	116	0.4	189.9	63	0.7	103.1	7	0.8	11.5	7	1.2	11.5
Hispanic White	1,150,955	19.71	3,821	14.3	332.0	1,314	15.0	114.2	183	19.9	15.9	154	25.4	13.4
Hispanic Multi-Race	51,525	0.88	63	0.2	122.3	30	0	58.2	2	0.2	3.9	2	0.3	3.9
Hispanic Other/Unknown	---		4,911	18.4	---	1,322	15.1	---	133	14.5	---	75	12.4	---
Non-Hispanic (NH)														
NH Asian/PI	216,284	3.7	429	1.6	198.4	110	1.3	50.9	9	1.0	4.2	12	2.0	5.5
NH Black/African American	240,176	4.1	2,706	10.2	1126.7	1,502	17.1	625.4	116	12.6	48.3	85	14.0	35.4
NH Indigenous/Native American	36,663	0.6	227	0.9	619.2	76	0.9	207.3	12	1.3	32.7	10	1.7	27.3
NH White	3,881,326	66.5	7,515	28.2	193.6	3,007	34.2	77.5	424	46.2	10.9	237	39.1	6.1
NH Multi-Race	149,086	2.6	144	0.5	96.6	99	1.1	66.4	9	1.0	6.0	7	1.2	4.7
NH Other/Unknown	---		6,410	24.1	---	1,152	13.1	---	9	1.0	---	9	1.5	---
Age Group														
0 to 9	657,815	11.3	8	0.0	1.2	2	0.0	0.3	0	0.0	0.0	0	0.0	0.0
10 to 14	367,153	6.3	168	0.6	45.8	21	0.2	5.7	0	0.0	0.0	0	0.0	0.0
15 to 19	386,944	6.6	5,487	20.6	1418.0	862	9.8	222.8	30	3.3	7.8	16	2.6	4.1
20 to 24	377,845	6.5	8,974	33.7	2375.0	1,776	20.2	470.0	85	9.3	22.5	50	8.3	13.2
25 to 29	438,426	7.5	5,183	19.4	1182.2	1,721	19.6	392.5	157	17.1	35.8	96	15.8	21.9
30 to 34	460,140	7.9	3,099	11.6	673.5	1,661	18.9	361.0	172	18.7	37.4	154	25.4	33.5
35 to 39	432,145	7.4	1,708	6.4	395.2	1,125	12.8	260.3	142	15.5	32.9	93	15.3	21.5
40 to 44	397,332	6.8	927	3.5	233.3	712	8.1	179.2	106	11.5	26.7	70	11.6	17.6
45 to 54	704,187	12.1	790	3.0	112.2	581	6.6	82.5	125	13.6	17.8	78	12.9	11.1
55 to 64	688,848	11.8	258	1.0	37.5	266	3.0	38.6	81	8.8	11.8	39	6.4	5.7
65+	927,830	15.9	47	0.2	5.1	57	0.6	6.1	20	2.2	2.2	10	1.7	1.1

^ 2022 estimate from Colorado State Demography Office
† Rate per 100,000

Table 2: Reported Chlamydia, Gonorrhea and Early Syphilis Cases and Rate of Reported Cases with Ranking by County & Health Statistics Region (HSR), 2022

	2022 Population	Chlamydia				Gonorrhea				Primary & Secondary Syphilis				Early Latent Syphilis			
		Cases	Rate	County Rank*	HSR Rank^	Cases	Rate	County Rank*	HSR Rank^	Cases	Rate	County Rank*	HSR Rank^	Cases	Rate	County Rank*	HSR Rank^
Region 1:	71,574	237	331.1	---	10	71	99.2	---	8	4	5.6	---	17	2	2.8	---	17
Logan	20,792	67	322.2	22	---	36	173.1	6	---	4	19.2	7	---	2	9.6	12	---
Morgan	29,300	127	433.4	10	---	33	112.6	10	---	0	0.0	34	---	0	0.0	31	---
Phillips	4,448	12	269.8	32	---	0	0.0	55	---	0	0.0	34	---	0	0.0	31	---
Sedgwick	2,289		0.0	63	---	0	0.0	55	---	0	0.0	34	---	0	0.0	31	---
Washington	4,834	6	124.1	54	---	0	0.0	55	---	0	0.0	34	---	0	0.0	31	---
Yuma	9,911	25	252.2	37	---	2	20.2	48	---	0	0.0	34	---	0	0.0	31	---
Region 2: Larimer	366,807	1,199	326.9	21	11	267	72.8	20	12	23	6.3	25	16	10	2.7	28	18
Region 3: Douglas	376,033	705	187.5	43	19	147	39.1	31	17	14	3.7	33	19	11	2.9	27	16
Region 4: El Paso	740,531	3,589	484.7	8	5	1,073	144.9	7	5	93	12.6	17	8	42	5.7	20	9
Region 5:	42,032	76	180.8	---	20	21	50.0	---	14	1	2.4	---	20	1	2.4	---	20
Cheyenne	1,728	2	115.7	56	---	1	57.9	24	---	0	0.0	34	---	0	0.0	31	---
Elbert	27,819	48	172.5	45	---	14	50.3	26	---	0	0.0	34	---	0	0.0	31	---
Kit Carson	6,969	19	272.6	30	---	3	43.0	29	---	1	14.3	13	---	0	0.0	31	---
Lincoln	5,516	7	126.9	53	---	3	54.4	25	---	0	0.0	34	---	1	18.1	4	---
Region 6:	67,465	217	321.6	---	12	29	43.0	---	16	8	11.9	---	9	3	4.4	---	11
Baca	3,439	4	116.3	55	---	2	8.0	23	---	0	0.0	34	---	0	0.0	31	---
Bent	5,402	16	296.2	28	---	2	4.0	33	---	0	0.0	34	---	0	0.0	31	---
Crowley	5,617	12	213.6	41	---	2	3.0	36	---	0	0.0	34	---	1	17.8	5	---
Huerfano	7,096	11	155.0	50	---	6	4.0	14	---	1	14.1	14	---	1	14.1	7	---
Kiowa	1,435	1	69.7	62	---	0	0.0	55	---	0	0.0	34	---	0	0.0	31	---
Las Animas	14,319	48	335.2	20	---	5	19.0	37	---	6	41.9	3	---	0	0.0	31	---
Otero	18,299	73	398.9	12	---	3	14.0	50	---	1	5.5	29	---	1	5.5	22	---
Prowers	11,858	52	438.5	9	---	9	19.0	18	---	0	0.0	34	---	0	0.0	31	---
Region 7: Pueblo	169,379	990	584.5	4	3	482	284.6	2	2	87	51.4	2	1	43	25.4	3	2
Region 8:	46,649	187	400.9	---	6	46	98.6	---	9	7	15.0	---	5	7	15.0	---	3
Alamosa	16,559	94	567.7	5	---	32	193.2	3	---	1	6.0	26	---	5	30.2	2	---
Conejos	7,591	13	171.3	46	---	2	26.3	44	---	4	52.7	1	---	1	13.2	8	---
Costilla	3,626	8	220.6	38	---	1	27.6	42	---	1	27.6	5	---	0	0.0	31	---
Mineral	923	2	216.7	40	---	0	0.0	55	---	0	0.0	34	---	0	0.0	31	---

	Population	Count	Rate	Rank	Rank	Count	Rate	Rank	Rank	Count	Rate	Rank	Rank	Count	Rate	Rank	Rank
Rio Grande	11,336	44	388.1	14	---	8	70.6	21	---	1	8.8	21	---	1	8.8	13	---
Saguache	6,614	26	393.1	13	---	3	45.4	27	---	0	0.0	34	---	0	0.0	31	---
Region 9:	**100,056**	**309**	**308.8**	**---**	**14**	**70**	**70.0**	**---**	**13**	**17**	**17.0**	**---**	**4**	**7**	**7.0**	**---**	**8**
Archuleta	13,985	22	157.3	49	---	2	14.3	52	---	1	7.2	23	---	0	0.0	31	---
Dolores	2,221	6	270.1	31	---	0	0.0	55	---	0	0.0	34	---	0	0.0	31	---
La Plata	56,586	175	309.3	26	---	47	83.1	15	---	15	26.5	6	---	5	8.8	13	---
Montezuma	26,474	96	362.6	18	---	20	75.5	19	---	1	3.8	32	---	2	7.6	16	---
San Juan	790	10	1265.8	1	---	1	126.6	8	---	0	0.0	34	---	0	0.0	31	---
Region 10:	**106,490**	**254**	**238.5**	**---**	**16**	**46**	**43.2**	**---**	**15**	**5**	**4.7**	**---**	**18**	**4**	**3.8**	**---**	**14**
Delta	31,593	67	212.1	42	---	24	76.0	17	---	2	6.3	25	---	1	3.2	26	---
Gunnison	17,246	49	284.1	29	---	2	11.6	54	---	0	0.0	34	---	1	5.8	19	---
Hinsdale	780	3	384.6	15	---	0	0.0	55	---	0	0.0	34	---	0	0.0	31	---
Montrose	43,783	117	267.2	33	---	19	43.4	28	---	3	6.9	24	---	2	4.6	23	---
Ouray	5,095	5	98.1	59	---	0	0.0	55	---	0	0.0	34	---	0	0.0	31	---
San Miguel	7,993	13	162.6	48	---	1	12.5	53	---	0	0.0	34	---	0	0.0	31	---
Region 11:	**46,077**	**87**	**188.8**	**---**	**18**	**14**	**30.4**	**---**	**19**	**1**	**2.2**	**---**	**21**	**2**	**4.3**	**---**	**12**
Jackson	1,325	0	0.0	63	---	0	0.0	55	---	0	0.0	34	---	0	0.0	31	---
Moffat	13,159	41	311.6	25	---	4	30.4	41	---	0	0.0	34	---	2	15.2	6	---
Rio Blanco	6,570	5	76.1	60	---	1	15.2	51	---	0	0.0	34	---	0	0.0	31	---
Routt	25,023	41	163.8	47	---	9	36.0	34	---	1	4.0	31	---	0	0.0	31	---
Region 12:	**180,734**	**612**	**338.6**	**---**	**9**	**63**	**34.9**	**---**	**18**	**13**	**7.2**	**---**	**12**	**7**	**3.9**	**---**	**13**
Eagle	55,300	175	316.5	24	---	22	39.8	30	---	4	7.2	23	---	2	3.6	25	---
Garfield	62,258	227	364.6	17	---	21	33.7	40	---	3	4.8	30	---	2	3.2	26	---
Grand	15,756	42	266.6	34	---	6	38.1	32	---	3	19.0	8	---	0	0.0	31	---
Pitkin	16,834	44	261.4	36	---	6	35.6	35	---	3	17.8	10	---	1	5.9	18	---
Summit	30,586	124	405.4	11	---	8	26.2	45	---	0	0.0	34	---	2	6.5	17	---
Region 13:	**82,517**	**171**	**207.2**	**---**	**17**	**21**	**25.4**	**---**	**21**	**6**	**7.3**	**---**	**11**	**6**	**7.3**	**---**	**7**
Chaffee	20,265	21	103.6	58	---	7	34.5	38	---	0	0.0	34	---	2	9.9	11	---
Custer	5,351	4	74.8	61	---	0	0.0	55	---	0	0.0	34	---	0	0.0	31	---
Fremont	49,557	108	217.9	39	---	12	24.2	46	---	5	10.1	20	---	4	8.1	15	---
Lake	7,344	38	517.4	7	---	2	27.2	43	---	1	13.6	15	---	0	0.0	31	---
Region 14: Adams	**527,481**	**3,122**	**591.9**	**3**	**2**	**984**	**186.5**	**4**	**3**	**99**	**18.8**	**9**	**3**	**63**	**11.9**	**9**	**4**
Region 15: Arapahoe	**656,018**	**3,550**	**541.1**	**6**	**4**	**1,199**	**182.8**	**5**	**4**	**85**	**13.0**	**16**	**7**	**71**	**10.8**	**10**	**5**
Region 16:	**403,522**	**1,254**	**310.8**	**---**	**13**	**324**	**80.3**	**---**	**11**	**27**	**6.7**	**---**	**15**	**21**	**5.2**	**---**	**10**
Boulder	327,400	1,054	321.9	23	---	258	78.8	16	---	19	5.8	27	---	19	5.8	19	---
Broomfield	76,122	200	262.7	35	---	66	86.7	13	---	8	10.5	19	---	2	2.6	29	---
Region 17:	**58,029**	**76**	**131.0**	**---**	**21**	**17**	**29.3**	**---**	**20**	**4**	**6.9**	**---**	**14**	**1**	**1.7**	**---**	**21**
Clear Creek	9,374	17	181.4	44	---	6	64.0	22	---	0	0.0	34	---	0	0.0	31	---

Gilpin	5,899	9	152.6	51	---	2	33.9	39	---	1	17.0	11	---	0	0.0	31	---
Park	17,898	23	128.5	52	---	3	16.8	49	---	1	5.6	28	---	1	5.6	21	---
Teller	24,858	27	108.6	57	---	6	24.1	47	---	2	8.0	22	---	0	0.0	31	---
Region 18: Weld	**350,193**	**1,312**	**374.7**	**16**	**7**	**327**	**93.4**	**12**	**10**	**37**	**10.6**	**18**	**10**	**13**	**3.7**	**24**	**15**
Region 19: Mesa	**158,534**	**569**	**358.9**	**19**	**8**	**198**	**124.9**	**9**	**6**	**11**	**6.9**	**24**	**13**	**4**	**2.5**	**30**	**19**
Region 20: Denver	**712,628**	**6,406**	**898.9**	**2**	**1**	**2,759**	**387.2**	**1**	**1**	**292**	**41.0**	**4**	**2**	**240**	**33.7**	**1**	**1**
Region 21: Jefferson	**575,913**	**1,727**	**299.9**	**27**	**15**	**626**	**108.7**	**11**	**7**	**84**	**14.6**	**12**	**6**	**48**	**8.3**	**14**	**6**
Unknown	---	---	---	---	---	0	---	---	---	0	---		---	0	---		---
STATEWIDE TOTAL	**5,838,662**	**26,649**	**456.4**	---	---	**8,784**	**150.4**	---	---	**918**	**15.7**	---	---	**606**	**10.4**	---	---

* Counties ranked by STI incidence rate per 100,000 population

^ Health Statistics Regions ranked by STI incidence rate per 100,000 population

**Population estimate from the CO State Demography Office released October 2023.

All STD surveillance data reported to the Colorado Department of Public Health and Environment for the year of 2022.

Table 3: Reported Chlamydia Cases and Rates of Reported Cases by Demographic Characteristics and Sex, 2022

	Chlamydia											
	Female				Male				Total			
	2022 Population ^	Cases	%	Rate†	2022 Population ^	Cases	%	Rate†	2022 Population ^	Cases	%	Rate†
Total	2,907,538	16,540	100.0	568.9	2,931,124	10,104	100.0	344.7	5,838,662	26,644	100.0	456.3
Race/Ethnicity												
Hispanic (all races)	648,938	6,458	39	2,746	666,189	2,760	27	414.3	1,315,127	9,218	34.6	700.9
Hispanic Asian/PI	7,749	108	0.7	1393.7	7,996	35	0.3	437.7	15,745	143	0.5	908.2
Hispanic Black	17,835	78	0.5	437.3	17,990	86	0.9	478.0	35,825	164	0.6	457.8
Hispanic Indigenous/Native	30,020	81	0.5	269.8	31,057	35	0.3	112.7	61,077	116	0.4	189.9
Hispanic White	567,791	2,638	15.9	464.6	583,164	1,183	11.7	202.9	1,150,955	3,821	14.3	332.0
Hispanic Multi-Race	25,543	46	0.3	180.1	25,982	17	0.2	65.4	51,525	63	0.2	122.3
Hispanic Other/Unknown	---	3,507	21.2	---	---	1,404	13.9	---	---	4,911	18.4	---
Non-Hispanic (NH)												
NH Asian/PI	115,818	296	1.8	255.6	100,466	133	1.3	132.4	216,284	429	1.6	198.4
NH Black/African American	111,288	1,398	8.5	1,256.2	128,888	1,308	12.9	1014.8	240,176	2,706	10.2	1,126.7
NH Indigenous/Native American	18,338	168	1.0	916.1	18,325	59	0.6	322.0	36,663	227	0.9	619.2
NH White	1,938,398	4,550	27.5	234.7	1,942,928	2,963	29.3	152.5	3,881,326	7,515	28.2	193.6
NH Multi race	74,758	90	0.5	120.4	74,328	54	0.5	72.7	149,086	144	0.5	96.6
NH Other/Unknown	---	3,580	21.6	---	---	2,827	28.0	---	---	6,410	24.1	---
Age Group												
0 to 9	322,440	5	0.0	1.6	335,375	3	0.0	0.9	657,815	8	0.0	1.2
10 to 14	178,312	139	0.8	78.0	188,841	29	0.3	15.4	367,153	168	0.6	45.8
15 to 19	187,178	4,202	25.4	2,244.9	199,766	1,284	12.7	642.8	386,944	5,487	20.6	1,418.0
20 to 24	181,035	6,104	36.9	3,371.7	196,810	2,867	28.4	1,456.7	377,845	8,974	33.7	2,375.0
25 to 29	211,544	2,969	18.0	1,403.5	226,882	2,214	21.9	975.8	438,426	5,183	19.5	1,182.2
30 to 34	222,702	1,513	9.1	679.4	237,438	1,585	15.7	667.5	460,140	3,099	11.6	673.5
35 to 39	209,494	815	4.9	389.0	222,648	893	8.8	401.1	432,142	1,708	6.4	395.2
40 to 44	195,529	393	2.4	201.0	201,803	534	5.3	264.6	397,332	927	3.5	233.3
45 to 54	346,715	313	1.9	90.3	357,472	477	4.7	133.4	704,187	790	3.0	112.2
55 to 64	351,932	75	0.5	21.3	336,916	183	1.8	54.3	688,848	258	1.0	37.5
65+	500,657	12	0.1	2.4	427,173	35	0.3	8.2	927,830	47	0.2	5.1

^ 2022 estimate from Colorado State Demography Office
† Rate per 100,000

Table 4: Reported Gonorrhea Cases and Rates of Reported Cases by Demographic Characteristics and Sex, 2022

	Gonorrhea											
	Female				Male				Total			
	2022 Population ^	Cases	%	Rate†	2022 Population ^	Cases	%	Rate†	2022 Population ^	Cases	%	Rate†
Total	2,907,538	3,179	100.0	109.3	2,931,124	5,605	100.0	191.2	5,838,662	8,784	100.0	150.4
Race/Ethnicity												
Hispanic (all races)	648,938	1,195	37.6	184.1	666,189	1,643	29.3	246.6	1,315,127	2,838	32.3	215.8
Hispanic Asian/PI	7,749	15	0.5	193.6	7,996	19	0.3	237.6	15,745	34	0.4	215.9
Hispanic Black/African American	17,835	22	0.7	123.4	17,990	53	0.9	294.6	35,825	75	0.9	209.4
Hispanic Indigenous/Native American	30,020	31	1.0	103.3	31,057	32	0.6	103.0	61,077	63	0.7	103.1
Hispanic White	567,791	510	16.0	89.8	583,164	804	14.3	137.9	1,150,955	1,314	15.0	114.2
Hispanic Multi-race	25,543	11	0.3	43.1	25,982	19	0.3	73.1	51,525	30	0.3	58.2
Hispanic Other/Unknown	---	606	19.1	---	---	716	12.8	---	---	1,322	15.1	---
Non-Hispanic (NH)												
NH Asian/PI	115,818	38	1.2	32.8	100,466	72	1.3	71.7	216,284	110	1.3	50.9
NH Black/African American	111,288	466	14.7	418.7	128,888	1,036	18.5	803.8	240,176	1,502	17.1	625.4
NH Indigenous/Native American	18,338	38	1.2	207.2	18,325	38	0.7	207.4	36,663	76	0.9	207.3
NH White	1,938,398	1,091	34.3	56.3	1,942,928	1,916	34.2	98.6	3,881,326	3,007	34.2	77.5
NH Multi race	74,758	40	1.3	53.5	74,328	59	1.1	79.4	149,086	99	1.1	66.4
NH Other/Unknown	---	311	9.8	---	---	841	15.0	---	---	1,152	13.1	---
Age Group												
0 to 9	322,440	1	0.0	0.3	335,375	1	0.0	0.3	657,815	2	0.0	0.3
10 to 14	178,312	19	0.6	10.7	188,841	2	0.0	1.1	367,153	21	0.2	5.7
15 to 19	187,178	498	15.7	266.1	199,766	364	6.5	182.2	386,944	862	9.8	222.8
20 to 24	181,035	825	26.0	455.7	196,810	951	17.0	483.2	377,845	1,776	20.2	470.0
25 to 29	211,544	590	18.6	278.9	226,882	1,131	20.2	498.5	438,426	1,721	19.6	392.5
30 to 34	222,702	498	15.7	223.6	237,438	1,163	20.7	489.8	460,140	1,661	18.9	361.0
35 to 39	209,494	344	10.8	164.2	222,648	781	13.9	350.8	432,142	1,125	12.8	260.3
40 to 44	195,529	217	6.8	111.0	201,803	495	8.8	245.3	397,332	712	8.1	179.2
45 to 54	346,715	132	4.2	38.1	357,472	449	8.0	125.6	704,187	581	6.6	82.5
55 to 64	351,932	47	1.5	13.4	336,916	219	3.9	65.0	688,848	266	3.0	38.6
65+	500,657	8	0.3	1.6	427,173	49	0.9	11.5	927,830	57	0.6	6.1
Unknown	---		0.0	---	---		0.0	---	---	0	0.0	---

^ 2022 estimate from Colorado State Demography Office

† Rate per 100,000

Table 5: Reported Primary and Secondary Syphilis Cases and Rates of Reported Cases by Demographic Characteristics and Sex, 2022

	Primary & Secondary Syphilis											
	Female				Male				Total			
	2022 Population ^	Cases	%	Rate†	2022 Population ^	Cases	%	Rate†	2022 Population ^	Cases	%	Rate†
Total	2,907,538	232	100.0	8.0	2,931,124	686	100.0	23.4	5,838,662	918	100.0	15.7
Race/Ethnicity												
Hispanic (all races)	648,938	86	37.1	13.3	666,189	253	36.9	38.0	1,315,127	339	36.9	25.8
Hispanic Asian/PI	7,749	4	1.7	51.6	7,996	1	0.1	12.5	15,745	5	0.5	31.8
Hispanic Black/African American	17,835	3	1.3	16.8	17,990	6	0.9	33.4	35,825	9	1.0	25.1
Hispanic Indigenous/Native American	30,020	2	0.9	6.7	31,057	5	0.7	16.1	61,077	7	0.8	11.5
Hispanic White	567,791	46	19.8	8.1	583,164	137	20.0	23.5	1,150,955	183	19.9	15.9
Hispanic Multi-race	25,543	0	0.0	0.0	25,982	2	0.3	7.7	51,525	2	0.2	3.9
Hispanic Other/Unknown	---	31	13.4	---	---	102	14.9	---	---	133	14.5	---
Non-Hispanic (NH)												
NH Asian/PI	115,818	4	1.7	3.5	100,466	5	0.7	5.0	216,284	9	1.0	4.2
NH Black/African American	111,288	23	9.9	20.7	128,888	93	13.6	72.2	240,176	116	12.6	48.3
NH Indigenous/Native American	18,338	6	2.6	32.7	18,325	6	0.9	32.7	36,663	12	1.3	32.7
NH White	1,938,398	110	47.4	5.7	1,942,928	314	45.8	16.2	3,881,326	424	46.2	10.9
NH Multi race	74,758	2	0.9	2.7	74,328	7	1.0	9.4	149,086	9	1.0	6.0
NH Other/Unknown	---	1	0.4	---	---	8	1.2	---	---	9	1.0	---
Age Group												
0 to 9	322,440	0	0.0	0.0	335,375	0	0.0	0.0	657,815	0	0.0	0.0
10 to 14	178,312	0	0.0	0.0	188,841	0	0.0	0.0	367,153	0	0.0	0.0
15 to 19	187,178	11	4.7	5.9	199,766	19	2.8	9.5	386,944	30	3.3	7.8
20 to 24	181,035	25	10.8	13.8	196,810	60	8.7	30.5	377,845	85	9.3	22.5
25 to 29	211,544	35	15.1	16.5	226,882	122	17.8	53.8	438,426	157	17.1	35.8
30 to 34	222,702	45	19.4	20.2	237,438	127	18.5	53.5	460,140	172	18.7	37.4
35 to 39	209,494	48	20.7	22.9	222,648	94	13.7	42.2	432,142	142	15.5	32.9
40 to 44	195,529	34	14.7	17.4	201,803	72	10.5	35.7	397,332	106	11.5	26.7
45 to 54	346,715	22	9.5	6.3	357,472	103	15.0	28.8	704,187	125	13.6	17.8
55 to 64	351,932	11	4.7	3.1	336,916	70	10.2	20.8	688,848	81	8.8	11.8
65+	500,657	1	0.4	0.2	427,173	19	2.8	4.4	927,830	20	2.2	2.2
Unknown	---		0.0	---	---		0.0	---	---	0	0.0	---

^ 2022 estimate from Colorado State Demography Office

† Rate per 100,000

Table 6: Reported Non-Primary, Non-Secondary Latent Syphilis Cases and Rates of Reported Cases by Demographic Characteristics and Sex, 2022

	Early Latent Syphilis											
	Female				Male				Total			
	2022 Population ^	Cases	%	Rate†	2022 Population ^	Cases	%	Rate†	2022 Population ^	Cases	%	Rate†
Total	2,907,538	140	100.0	4.8	2,931,124	466	100.0	15.9	5,838,662	606	100.0	10.4
Race/Ethnicity												
Hispanic (all races)	648,938	64	45.7	9.9	666,189	182	39.1	27.3	1,315,127	246	40.6	18.7
Hispanic Asian/PI	7,749	0	0.0	0.0	7,996	1	0.2	12.5	15,745	1	0.2	6.4
Hispanic Black/African American	17,835	2	1.4	11.2	17,990	5	1.1	27.8	35,825	7	1.2	19.5
Hispanic Indigenous/Native American	30,020	2	1.4	6.7	31,057	5	1.1	16.1	61,077	7	1.2	11.5
Hispanic White	567,791	37	26.4	6.5	583,164	117	25.1	20.1	1,150,955	154	25.4	13.4
Hispanic Multi-race	25,543	1	0.7	3.9	25,982	1	0.2	3.8	51,525	2	0.3	3.9
Hispanic Other/Unknown	---	22	15.7	---	---	53	11.4	---	---	75	12.4	---
Non-Hispanic (NH)												
NH Asian/PI	115,818	2	1.4	1.7	100,466	10	2.1	10.0	216,284	12	2.0	5.5
NH Black/African American	111,288	18	12.9	16.2	128,888	67	14.4	52.0	240,176	85	14.0	35.4
NH Indigenous/Native American	18,338	5	3.6	27.3	18,325	5	1.1	27.3	36,663	10	1.7	27.3
NH White	1,938,398	46	32.9	2.4	1,942,928	191	41.0	9.8	3,881,326	237	39.1	6.1
NH Multi race	74,758	4	2.9	5.4	74,328	3	0.6	4.0	149,086	7	1.2	4.7
NH Other/Unknown	---	1	0.7	---	---	8	1.7	---	0	9	1.5	---
Age Group												
0 to 9	322,440	0	0.0	0.0	335,375	0	0.0	0.0	657,815	0	0.0	0.0
10 to 14	178,312	0	0.0	0.0	188,841	0	0.0	0.0	367,153	0	0.0	0.0
15 to 19	187,178	10	7.1	5.3	199,766	6	1.3	3.0	386,944	16	2.6	4.1
20 to 24	181,035	27	19.3	14.9	196,810	23	4.9	11.7	377,845	50	8.3	13.2
25 to 29	211,544	27	19.3	12.8	226,882	69	14.8	30.4	438,426	96	15.8	21.9
30 to 34	222,702	34	24.3	15.3	237,438	120	25.8	50.5	460,140	154	25.4	33.5
35 to 39	209,494	22	15.7	10.5	222,648	71	15.2	31.9	432,142	93	15.3	21.5
40 to 44	195,529	10	7.1	5.1	201,803	60	12.9	29.7	397,332	70	11.6	17.6
45 to 54	346,715	10	7.1	2.9	357,472	68	14.6	19.0	704,187	78	12.9	11.1
55 to 64	351,932	0	0.0	0.0	336,916	39	8.4	11.6	688,848	39	6.4	5.7
65+	500,657	0	0.0	0.0	427,173	10	2.1	2.3	927,830	10	1.7	1.1
Unknown	---		0.0	---	---		0.0	---	---	0	0.0	---

^ 2022 estimate from Colorado State Demography Office

† Rate per 100,000

Table 7: Reported Congenital Syphilis Cases and Syphilis Cases Among Women of Reproductive Age and Rates of Reported Cases by Demographic Characteristics, 2022

	Syphilis							
	Congenital Syphilis				Syphilis Among Women of Reproductive Age			
	2022 Live Births*	Cases	%	Rate†	2022 WRA Population	Cases	%	Rate†
Total	62,356	31	100.0	49.7	1,207,482	836	100.0	69.2
Gender								
Male	32,005	19	61.3	59.4	---	---	---	---
Female	30,348	12	38.7	39.5	1,207,482	836	100.0	69.2
Race/Ethnicity								
Hispanic (all races)	18,941	15	48.4	79.2	303,133	393	47.0	129.6
Hispanic Asian/PI	146	0	0.0	0.0	3,391	5	0.6	147.4
Hispanic Black/African American	337	3	9.7	890.2	8,501	9	1.1	105.9
Hispanic Indigenous/Native American	230	1	3.2	434.8	12796	10	1.2	78.1
Hispanic White	14,735	9	29.0	61.1	266,218	207	24.8	77.8
Hispanic Multi-race	526	0	0.0	0.0	12,227	4	0.5	32.7
Hispanic Other/Unknown	2,967	5	---	---	---	158	18.9	---
Non-Hispanic (NH)								
NH Asian/PI	2650	0	0.0	0.0	53,656	8	1.0	14.9
NH Black/African American	2931	3	9.7	102.4	50,255	63	7.5	125.4
NH Indigenous/Native American	322	1	3.2	310.6	8,601	17	2.0	197.7
NH White	34722	11	35.5	31.7	755,914	325	38.9	43.0
NH Multi race	1688.0	0	0.0	0.0	35923.0	21	0.0	58.5
NH Other/Unknown	423.0	1	3.2	236.4	---	9	1.1	---
Age Group								
15 to 19	---	---	---	---	187,178	45	5.4	24.0
20 to 24	---	---	---	---	181,035	138	16.5	76.2
25 to 29	---	---	---	---	211,544	175	20.9	82.7
30 to 34	---	---	---	---	222,702	196	23.4	88.0
35 to 39	---	---	---	---	209,494	177	21.2	84.5
40 to 44	---	---	---	---	195,529	105	12.6	53.7
Pregnancy Status								
Pregnant	---	---	---	---	---	109	13.0	---
Not Pregnant	---	---	---	---	---	675	80.7	---
Unknown	---	---	---	---	---	52	6.2	---

County of Residence								
Adams	6,850	2	6.5	29.2	114,535	77	9.2	67.2
Arapahoe	7,669	0	0.0	0.0	137,134	58	6.9	42.3
Denver	8,042	7	22.6	87.0	183,232	219	26.2	119.5
El Paso	9,077	1	3.2	11.0	154,381	76	9.1	49.2
Pueblo	1,703	11	35.5	645.9	30,485	217	26.0	711.8
Weld	4,751	1	3.2	21.0	74,474	20	2.4	26.9
Other Urban Counties‡	16,822	2	6.5	11.9	377,347	104	12.4	27.6
Rural Counties	7,442	7	22.6	94.1	135,894	65	7.8	47.8

* Live birth data from COHID accessed 11.16.23. Race/Ethnicity and age based on maternal race/ethnicity

^ 2022 estimate from Colorado State Demography Office

† Rate per 100,000

‡ Includes Boulder, Broomfield, Douglas, Jefferson Larimer, and Mesa counties

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