2019 Sexually Transmitted Infections Annual Report

July 2021

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Colorado 2019 Sexually Transmitted Infections Annual Report

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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 2019 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 the most commonly reported conditions in Colorado and are among the world's most common diseases, with an annual incidence exceeded only by diarrheal diseases and malaria. In 2019, 40,827 cases of chlamydia (29,820), gonorrhea (9,573) and syphilis of all stages (1,434) were newly reported in Colorado. This year has seen the highest reported cases of all three health conditions described in this report in Colorado. These trends mirror increases at the national level. For more information on national STI trends, please reference the CDC 2019 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 2019, Colorado reported 517.4 cases of chlamydia per 100,000, a 1.2% increase from 2018 and a 18.3% increase from 2015. The majority of chlamydia cases are among women, 62.9%, and 66.9% of cases among women were between 15 and 24 years of age in 2019.

Gonorrhea

For gonorrhea in 2019, there were 166.1 cases per 100,000, a 6.0% increase from 2018 and a 106.6% increase from 2015. Males represent a higher proportion of gonorrhea cases (59.4%) when compared to females, and 42.6% of all cases were among those 20-29 years of age.

Syphilis

There were 24.9 cases of syphilis (all stages) per 100,000 in 2019, a 23.6% increase from 2018 and a 144.5% increase from 2015. Males accounted for 82.5% of cases. However, the proportion of women diagnosed with syphilis has been increasing the past several years (5.9% in 2015 to 17.5% in 2019).

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 2019 disease rates for all Colorado counties are calculated by dividing the number of cases diagnosed for that county in 2019 by the 2019 total population for each county estimated by the Colorado State Demography Office and multiplying by 100,000. Race/ethnicity categories are in line with the U.S. Census Bureau.

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 2019 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

[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://wwwn.cdc.gov/nndss/netss.html

understanding of the accuracy and correct use of the STI data. These guidelines may be considered when reviewing data from any source.

1. Data in this report are primarily reported for new cases of STIs diagnosed in 2019. 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 STI/HIV Surveillance, Data, and Analytics Program, Division of Disease Control and Environmental Epidemiology. 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
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 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. For congenital syphilis, CDPHE previously reported only confirmed cases, and not probable cases. After review CDPHE will be reporting both confirmed and probable cases. Data in this report reflect corrected figures from prior years.

[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.

Limitations

Due to the increasing number of STIs in Colorado, the percent of unknown race/ethnicity increased from 201 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. Gonorrhea also showed an increase in unknown race/ethnicity from 13.9% in 2012 to 35.3% in 2017. All stages of syphilis, however, have seen a decrease in unknown race/ethnicity from 10.1% in 2013 to 8.2% in 2017. When looking specifically at primary and secondary syphilis the percent went from 9.8% to 7.2% in the same time period. 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 and increased to 6.4% in 2017. 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 and 2019 saw a reduction of unknown data in chlamydia (35.6%), gonorrhea (22.4%), and syphilis (3.3%). Due to the proportion of cases having unknown race/ethnicity being over 30% for both chlamydia and gonorrhea in the previous years, trends of the rates by this variable are not displayed.

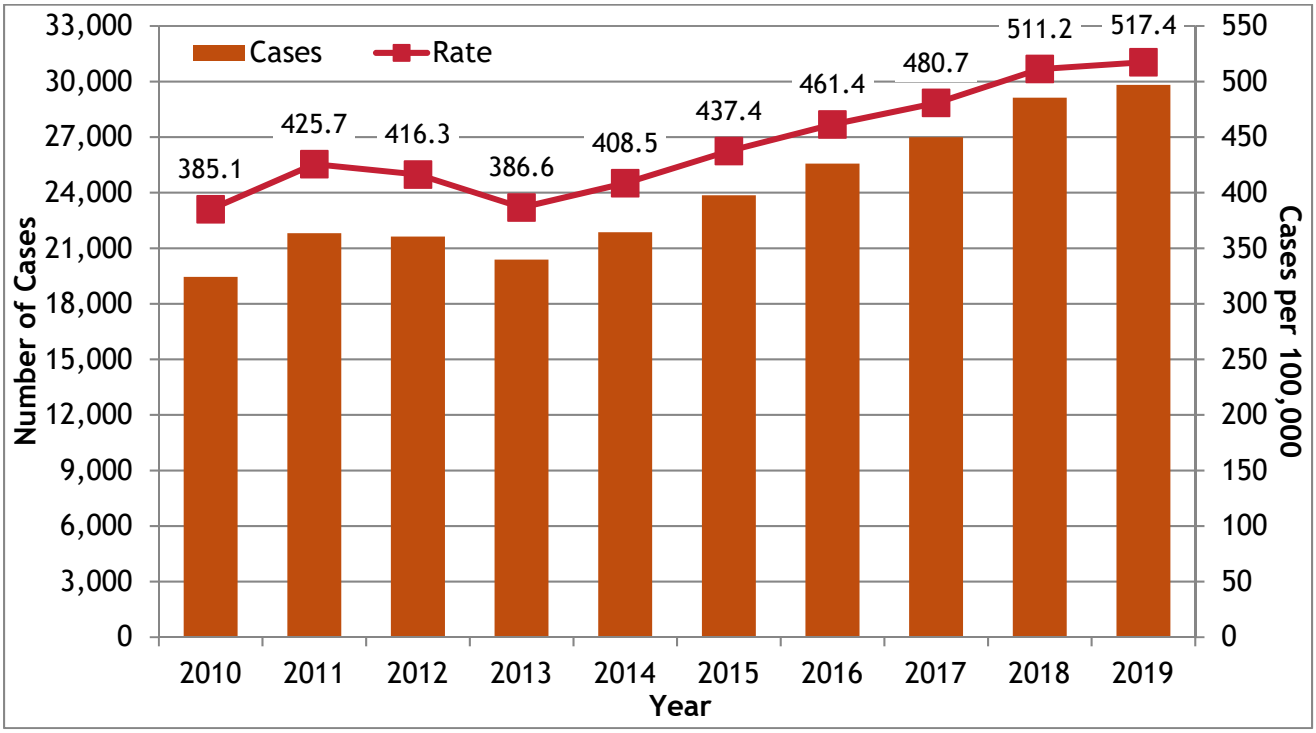
Also due to the increasing number of STIs in Colorado, follow-up and interviews were limited in 2019 to new HIV and syphilis diagnoses. This results in less data completeness for chlamydia and gonorrhea cases especially for data relating to previous HIV diagnoses and risk behavior information.

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

Chlamydia

Chlamydia remained the most commonly reported STI in Colorado. In 2019, there were 29,820 cases diagnosed and reported for a statewide rate of 517.4 per 100,000. This is an all-time high for reported cases and rate of reported cases of chlamydia in Colorado. **Figure C.1** shows annual case counts and rates of chlamydia in Colorado from 2010 to 2019. Cases and rates have increased steadily from 2010 to 2019, with a dip in 2013. The rate of chlamydia increased 1.2% from 2018 to 2019 and 18.3% from 2015 to 2019. A similar trend was seen for the nation in 2019. In 2019, 1,808,703 cases of chlamydia were diagnosed and reported to CDC for a rate of 552.8 per 100,000. This corresponds with an increase in the rate by 15.5% compared to 2015 (478.8 per 100,000).[4]

Figure C.1: Reported Chlamydia Cases and Rates of Reported Cases, Colorado, 2010-2019



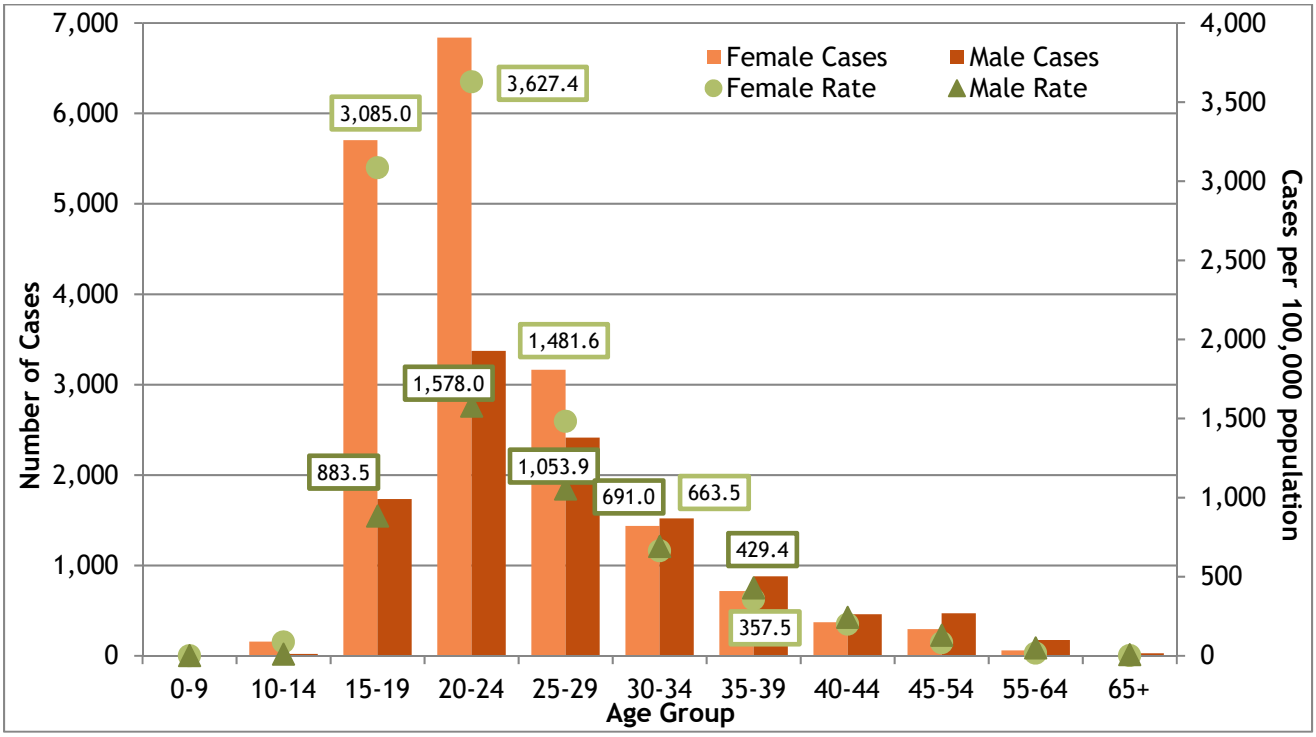
Rates per 100,000 varied significantly by sex and age. The chlamydia rate was nearly two times greater among females, 651.0 per 100,000, than males, 383.9 per 100,000 in 2019 (**Table 1** in the appendix). Rates were highest among adolescents and young adults for both males and females.

Figure C.2 shows age and sex case counts and rates for chlamydia diagnosed in 2019. The mean age at diagnosis was 25.5, with a range of 0 to 82 years of age. Females accounted for nearly two-thirds (62.8%) of the chlamydia cases. Among 15-19 year olds, the chlamydia rate for females, 3,085.0 per 100,000, was nearly four times greater than the rate for males, 883.5 per 100,000.

[4] Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2019*. Atlanta: U.S. Department of Health and Human Services; 2021. http://www.cdc.gov/std/stats.

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

Figure C.2: Reported Chlamydia Cases and Rates of Reported Cases by Sex and Age Group, Colorado, 2019



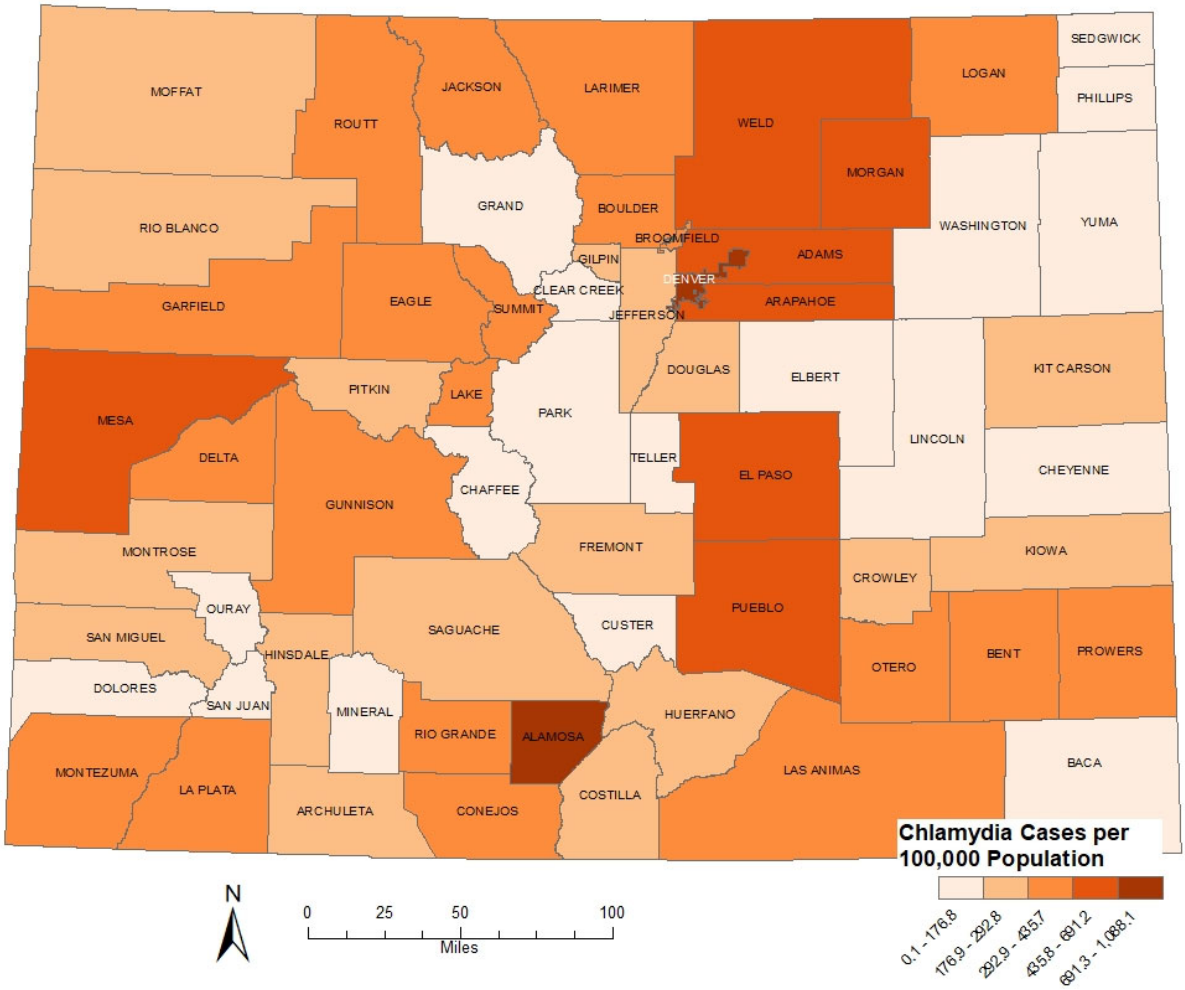
Racial and ethnic minorities continued to be disproportionately affected by STIs. Non-Hispanic Black/African Americans represented 4.9% of Colorado's population, but represented 11.7% of reported chlamydia cases in 2019. Please note, race/ethnicity data is not complete (see limitations section). Therefore, the racial and ethnicity data should be interpreted with caution (**Table 1** in the appendix).

Figure C.3 shows the geographical distribution of chlamydia rates in Colorado at the county level. **Figure C.4** shows chlamydia rates by county for 2019. Denver, Alamosa, and Pueblo counties had the three highest rates of reported chlamydia cases and accounted for 30.9% of chlamydia cases in 2019. As shown in both **Figure C.3** and **Figure C.4,** chlamydia cases were largely concentrated in Denver County. In 2019, every county had at least one reported chlamydia case.

[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

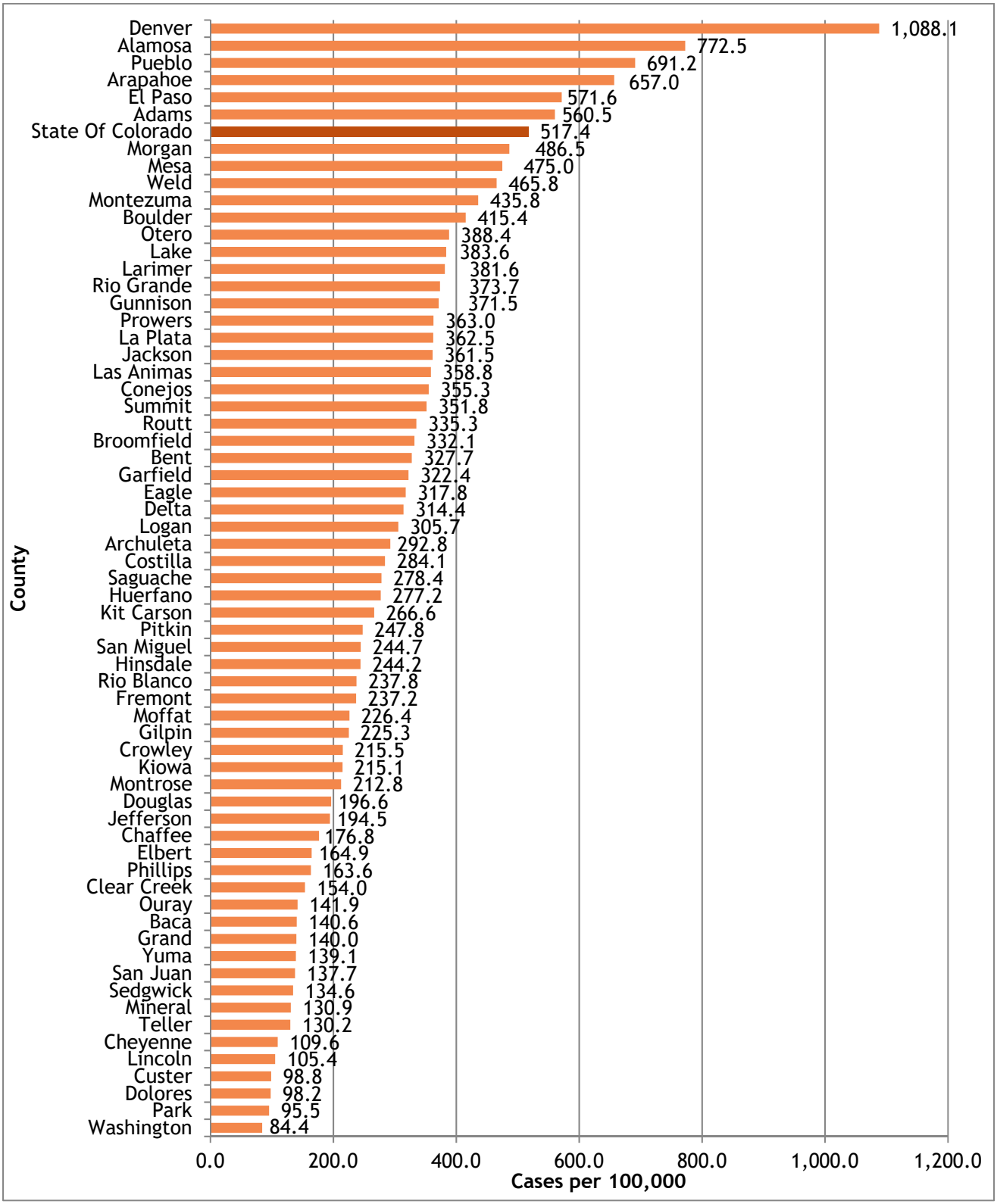
[6] Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2018. Atlanta: U.S. Department of Health and Human Services; 2021. https://www.cdc.gov/std/stats18/chlamydia.htm

Figure C.3: Rates of Reported Chlamydia Cases by County Map, Colorado, 2019



High rates do not necessarily mean high case counts; for further details, see Figure C.4 and Table 2.

Figure C.4: Rates of Reported Chlamydia Cases by County Chart, Colorado, 2019

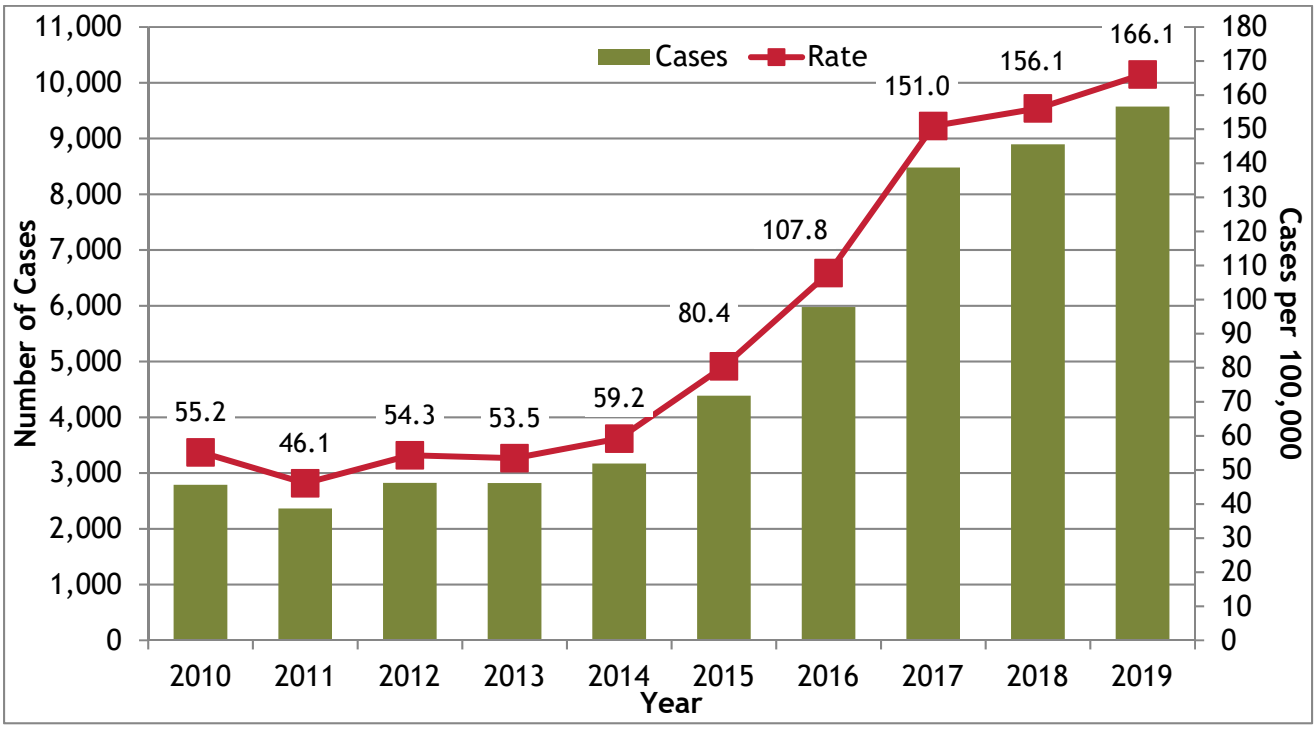


Gonorrhea

Gonorrhea remained the second most commonly reported STI in Colorado with 9,573 cases reported in 2019, yielding a rate of 166.1 per 100,000. This rate increased 6.0% from 2018 and 106.6% from 2015 as shown in **Figure G.1**. Like chlamydia, this is also a historic high for Colorado. In the United States in 2019, 616,392 gonorrhea cases were diagnosed and reported to the CDC, which is more than a 50% increase from 2015. The rate of diagnosis was 186.6 per 100,000. This is an increase of 53.2% in the 2019 rate compared to 2015 (121.8 per 100,000).[7]

Figure G.1 shows cases diagnosed each year and the rate per 100,000 from 2010 to 2019. Over this ten-year period, overall gonorrhea rates remained relatively consistent from 2010 through 2014. This was followed by a sharp increase beginning in 2015 and continuing through 2019.

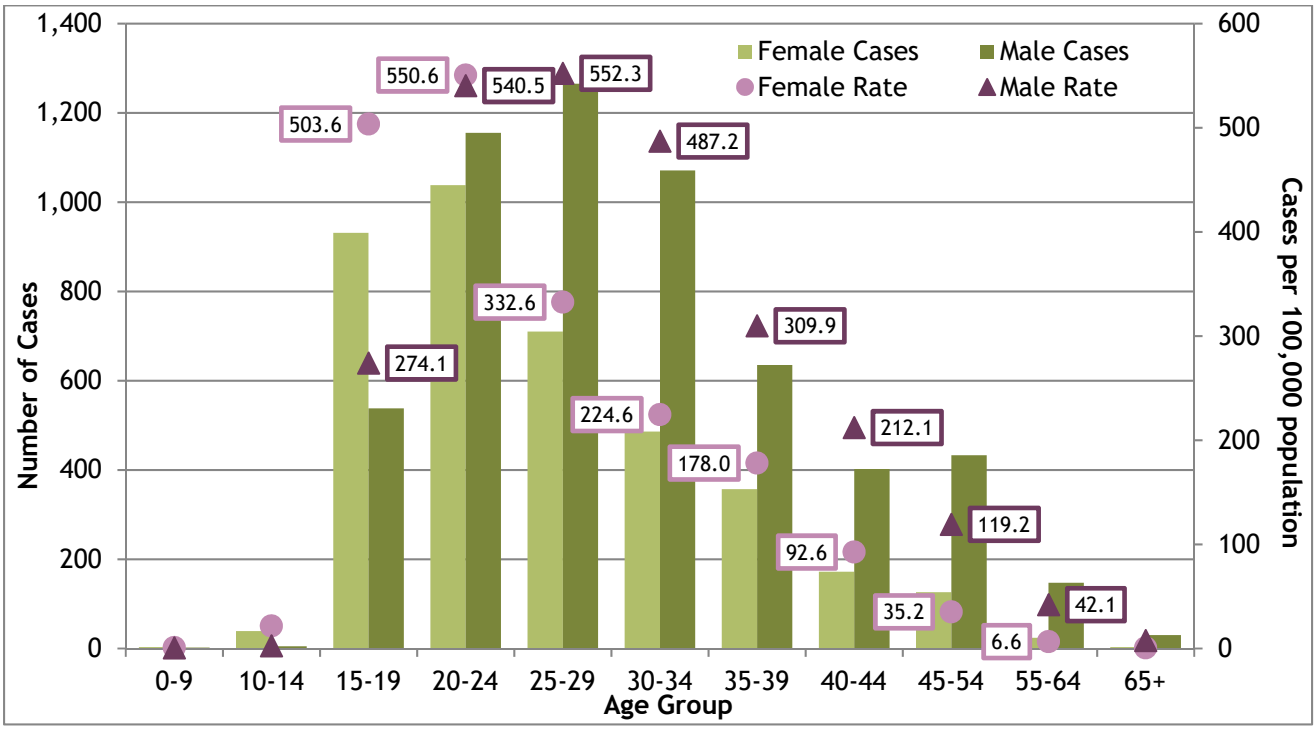
Figure G.1: Reported Gonorrhea Cases and Rates of Reported Cases, Colorado, 2010-2019



[7] Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2019*. Atlanta: U.S. Department of Health and Human Services; 2021. http://www.cdc.gov/std/stats.

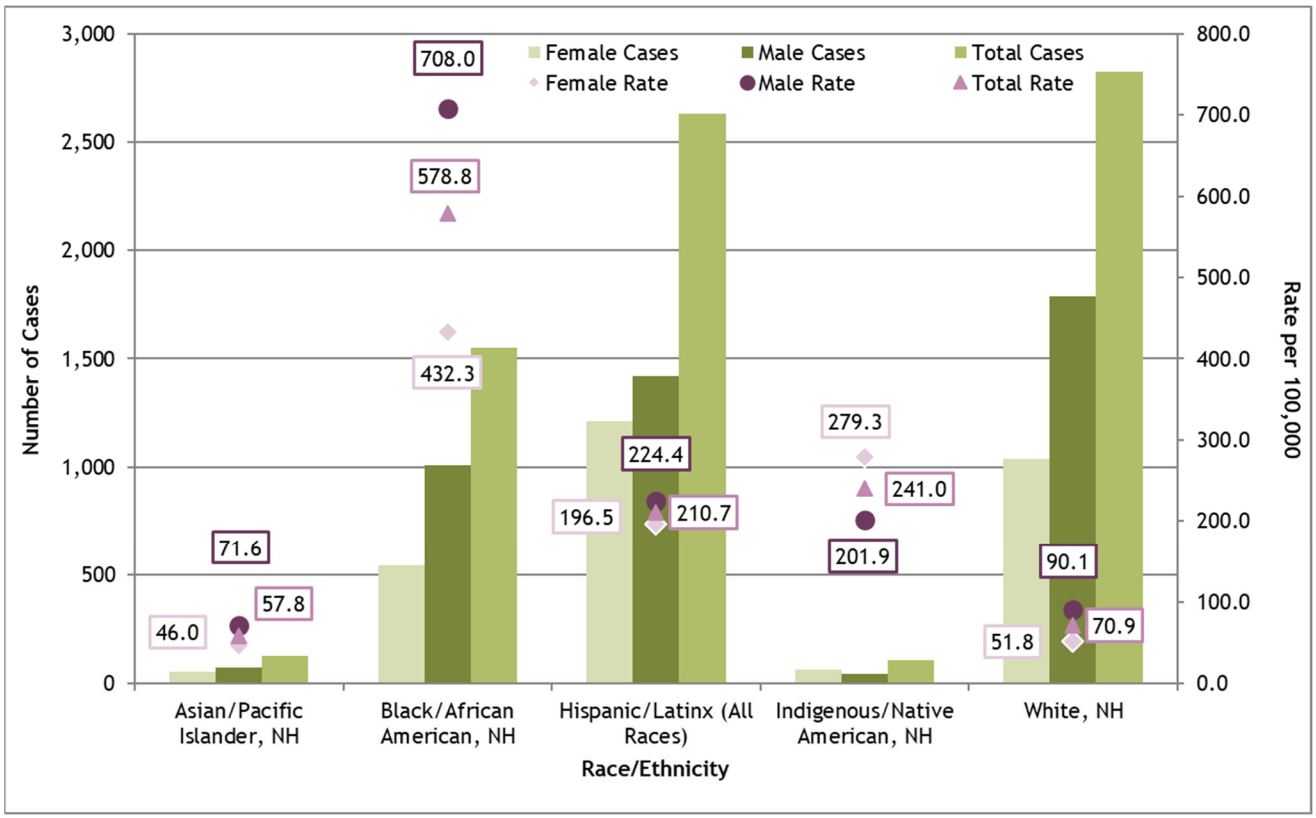
Figure G.2 shows age and sex case counts for gonorrhea diagnosed in 2019. The mean age at diagnosis was 29.5 with a range of 3 to 81 years of age. Males accounted for 59.4% of total cases and rates by sex and age were typically higher for males. However, among 15-19 year olds, the gonorrhea rate for females, 503.6 per 100,000, was almost two times greater than the rate for males, 274.1 per 100,000.

Figure G.2: Reported Gonorrhea Cases and Rates of Reported Cases by Sex and Age Group, Colorado, 2019



As seen with chlamydia, Non-Hispanic Black/African Americans were disproportionately affected by gonorrhea in 2019. They represented 4.6% of Colorado's population, but represented 16.2% of reported gonorrhea cases. **Figure G.3** shows that the highest rate of gonorrhea was seen among Non-Hispanic Black/African American males, 708.0 per 100,000 in 2019. The next highest rate was among Non-Hispanic Black/African American females, 432.3 per 100,000. Although Non-Hispanic Whites accounted for the largest proportion of gonorrhea cases, 29.5%, their overall rate per 100,000 was only higher than Non-Hispanic Asian/Pacific Islanders (70.9 and 57.8 per 100,000, respectively) in 2019.

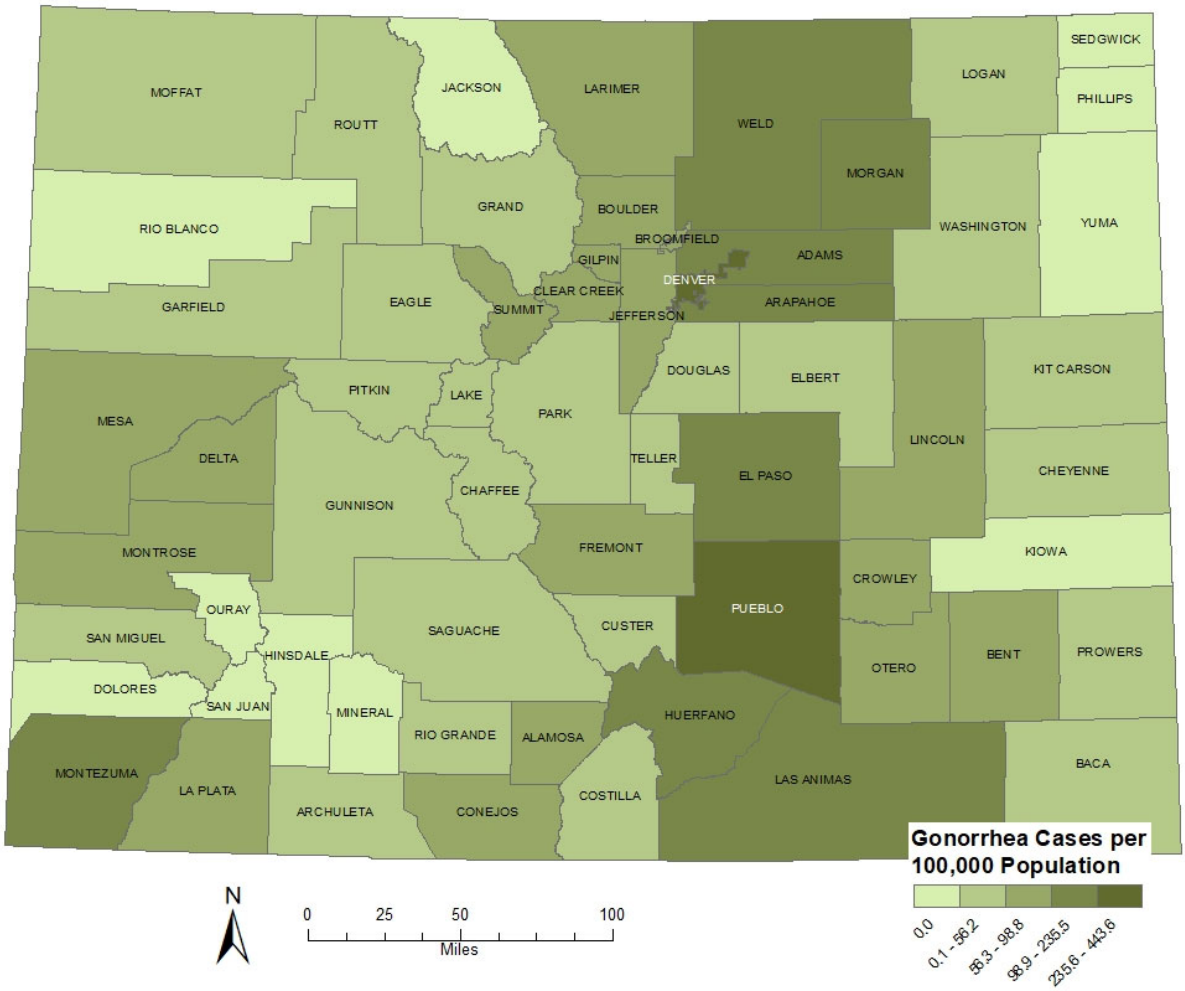
Figure G.3: Rates of Reported Gonorrhea Cases by Race/Ethnicity and Sex, Colorado, 2019



NH: Non-Hispanic.

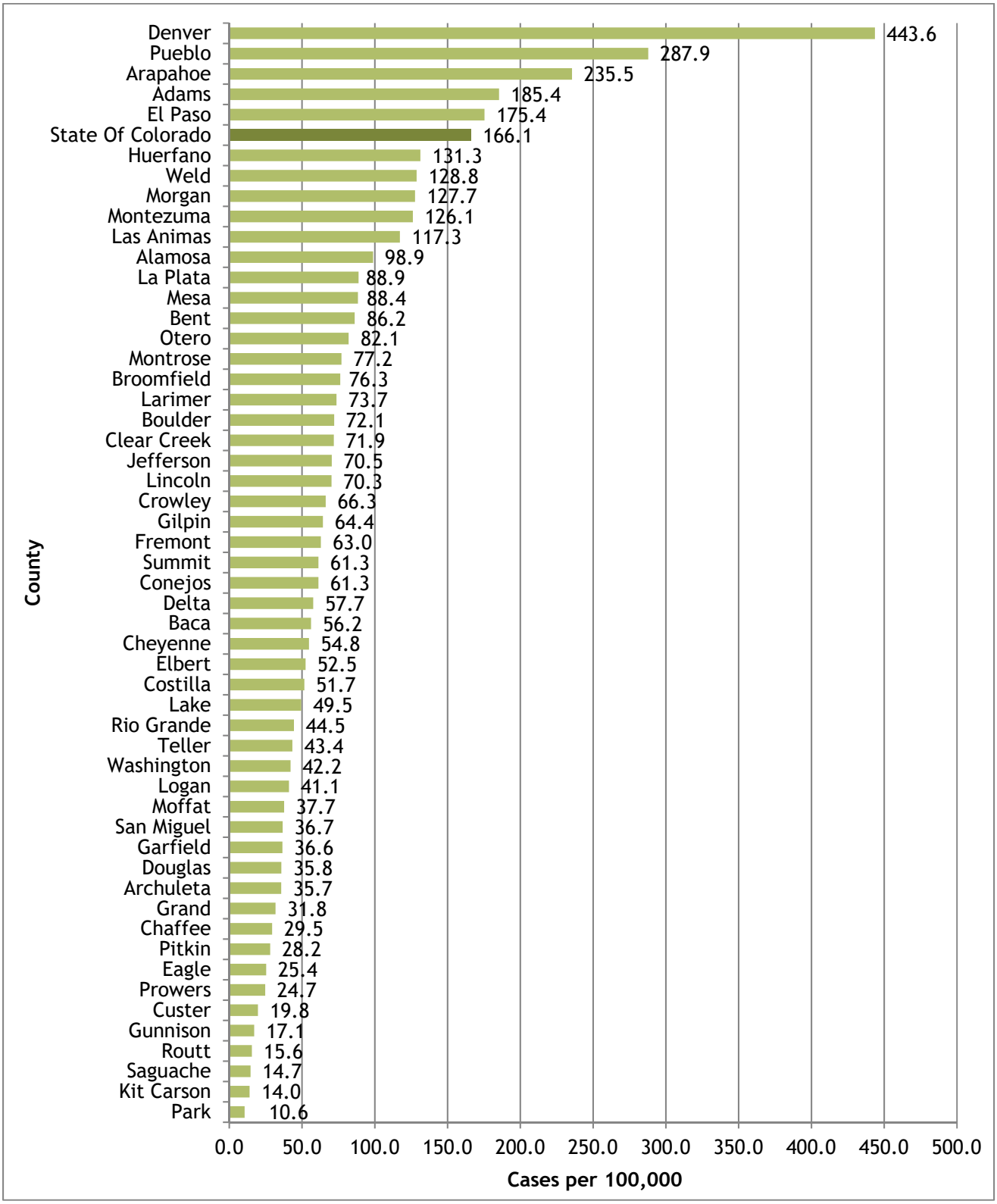
Figure G.4 and **Figure G.5** on the following pages describe the geographical distribution of gonorrhea rates in Colorado at the county level. The map shows gonorrhea cases were not as widespread as chlamydia. Eleven counties did not report any gonorrhea cases in 2019. All of these counties are rural. A large proportion, 63.2%, of all cases was reported in just three counties; Denver, El Paso, and Arapahoe, with Denver County accounting for 33.8% of reported cases. Denver, Pueblo, and Arapahoe had the highest rates of gonorrhea.

Figure G.4: Rates of Reported Gonorrhea Cases by County Map, Colorado, 2019



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, 2019

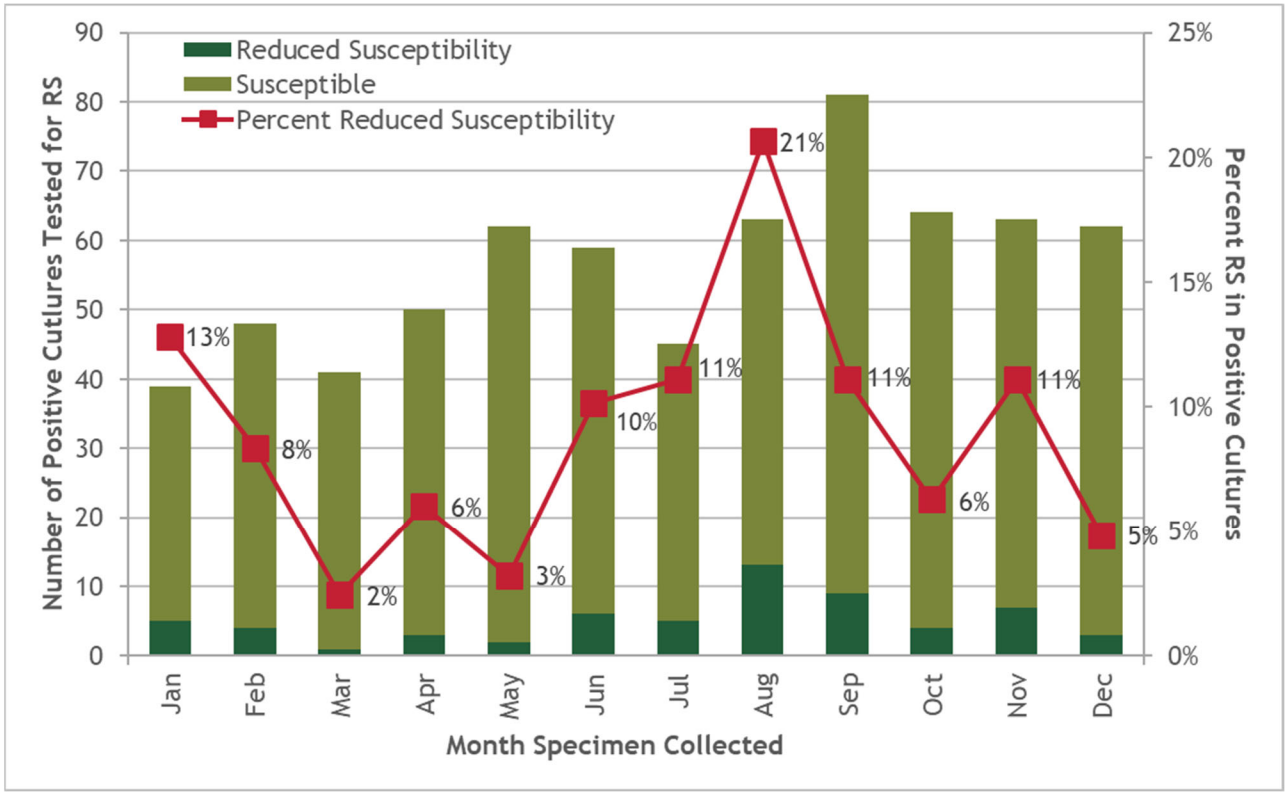


Antimicrobial Resistant Gonorrhea

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 Denver Public Health and Denver Health and Hospital Authority. The goals of SURRG are to 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, with emphasis on extragenital testing. Rapid detection and response to resistant strains help to limit the spread and prevent possible treatment failures. Reduced susceptibility (RS) is defined as a gonorrhea isolate with elevated minimum inhibitory concentration (MIC) measured from antibiotic susceptibility testing on culture plates. There are three antibiotics tested at the local level: azithromycin (AZM), ceftriaxone (CRO), and cefixime (CFX). Reduced susceptibility in local antibiotics tested are MIC ≥ 2.0 µg/mL for azithromycin (AZM-RS), ≥ 0.125 µg/mL for ceftriaxone (CRO-RS), and ≥ 0.25 µg/mL for cefixime (CFX-RS).

In 2019, 677 culture positive gonorrhea isolates from six Denver Health sites: Denver Metro Health Clinic, Denver Health Eastside Early Intervention Services (EIS) Clinic, Denver Health HIV/Infectious Disease (ID) Clinic, Denver Health Eastside Women's Clinic, Denver Health Inpatient Hospital, and Southwest Urgent Care Clinic, underwent antibiotic susceptibility testing for AZM, CRO, and CFX. 65 isolates (9.13%) showed reduced susceptibility to AZM or CRO (62 and 3, respectively). There were no isolates that showed reduced susceptibility to CFX. Cultures were collected from both genital and extragenital samples. Genital testing sites include urethral, endocervical, and vaginal samples from all genders. Extragenital testing sites include pharyngeal and rectal samples from all genders. In **Figure ARGC.1** on the next page, the ratio of isolates with AZM-RS, distributed per month, is shown with the percentage of AZM-RS in positive cultures in red. A low of 3% of isolates having AZM-RS occurred in March and May and a high of 21% occurred in August. It should be noted that 2 isolates with reduced susceptibility to CRO occurred in March and 1 isolate with reduced susceptibility to CRO occurred in September. Due to small numbers they are not included in the following figures.

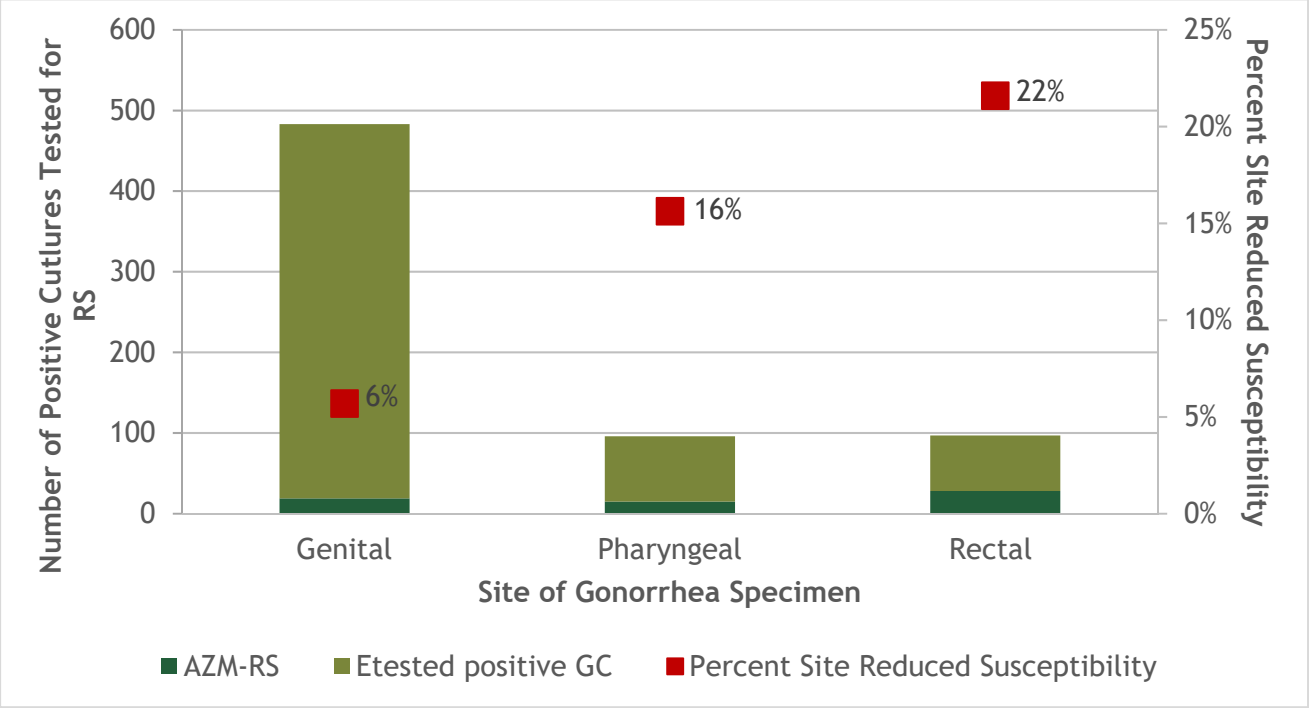
Figure ARGC.1: Gonorrhea Isolates with AZM-RS by Month, SURRG, Denver, Colorado, 2019.



Total positive cultures per month are positive gonorrhea isolates e-tested at Denver Health Labs from six clinic locations in the Colorado SURRG jurisdiction.

With increased gonorrhea rates in the US, the importance of extragenital gonorrhea testing has risen. As seen in **Figure ARGC.2**, 22% of rectal and 16% of pharyngeal gonorrhea isolates e-tested in the Colorado SURRG jurisdiction showed reduced susceptibility to AZM in 2019. Genital testing is the most abundant site for gonorrhea testing in 2019, with 6% of isolates showing reduced susceptibility to AZM. The three isolates that had reduced susceptibility to CRO occurred in pharyngeal, rectal, and urethral samples.

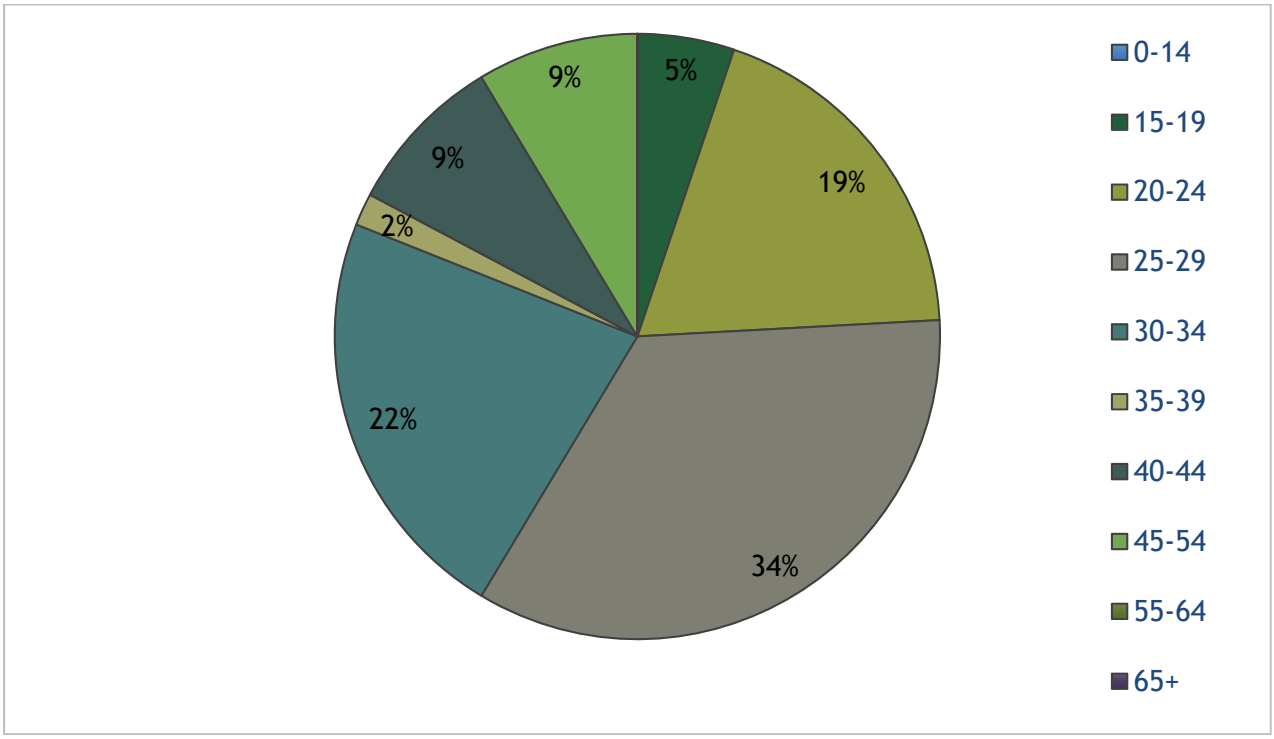
Figure ARGC.2: Percent Gonorrhea Isolates with AZM-RS by Specimen Source in Colorado SURRG, 2019.



Genital site data includes urethral, endocervical, and vaginal testing sites. Extragenital site testing shown here only includes pharyngeal and rectal samples.

Figure ARGC.3 depicts the age group distribution of individuals identified to have one or more reduced susceptibility gonorrhea isolates at time of diagnosis in the Colorado SURRG sites in 2019. The mean age at specimen collection date is 29.8 years of age with a range of 17 to 52 years of age. 34% of individuals with reduced susceptibility isolates occur in 25 to 29 years of age, following the trend of age distribution in statewide gonorrhea cases in Colorado, with the highest case count from 15 to 34 years of age. The three individuals with isolates identified to have CRO-RS occurred between the ages of 25 to 34.

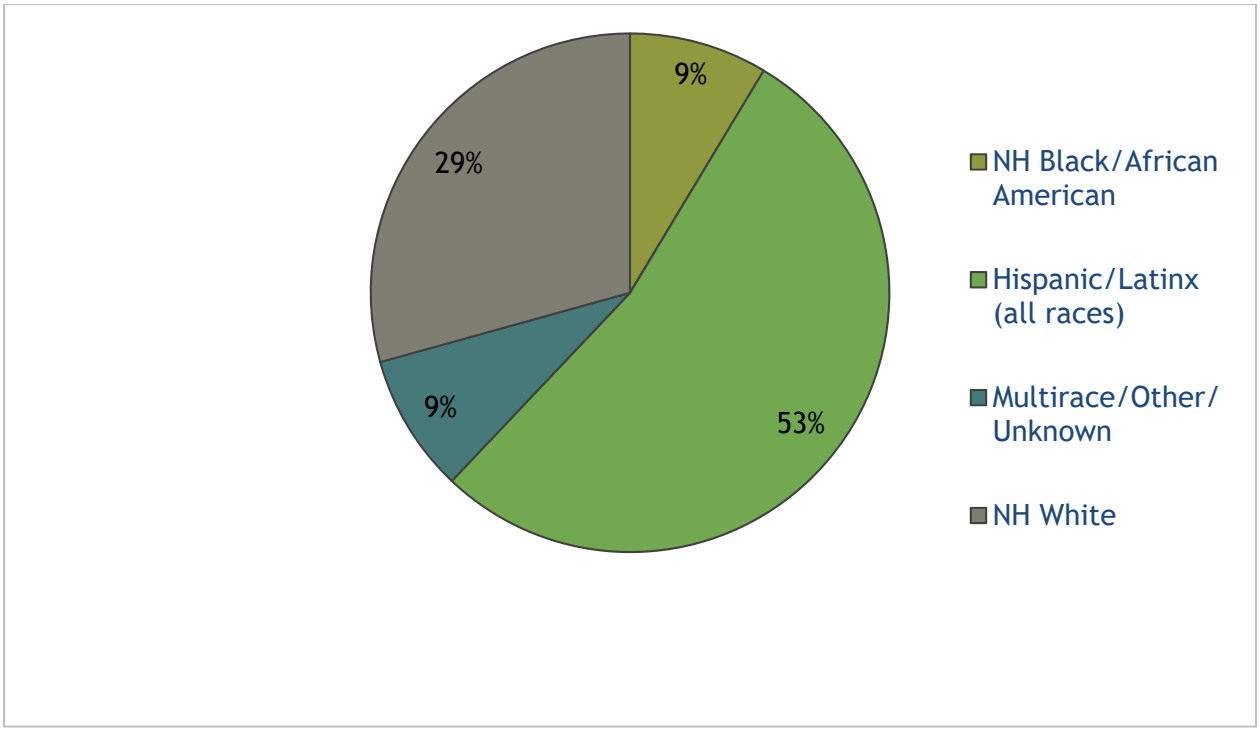
Figure ARGC.3: Age Distribution in Individuals with AZM-RS Gonorrhea Isolates, SURRG, Denver, Colorado, 2019.



Individual data includes persons diagnosed with one or more gonorrhea isolates with reduced susceptibility to AZM. There were 7 multisite infections in the same individuals in 2019.

As seen in **Figure ARGC.4**, a large portion of individuals with isolates identified to have reduced susceptibility to AZM were Hispanic/Latinx of all races, making up 53%. Although Non-Hispanic Whites accounted for the largest proportion of gonorrhea cases in Colorado, Non-Hispanic White made up 29% of individuals with isolates identified to have AZM-RS in 2019. Non-Hispanic Black accounted for 9% of individuals with isolates identified to have reduced susceptibility. With different rates of testing in each population, it is unknown if this is the true burden of antimicrobial resistant gonorrhea (ARGC) among race/ethnicity groups.

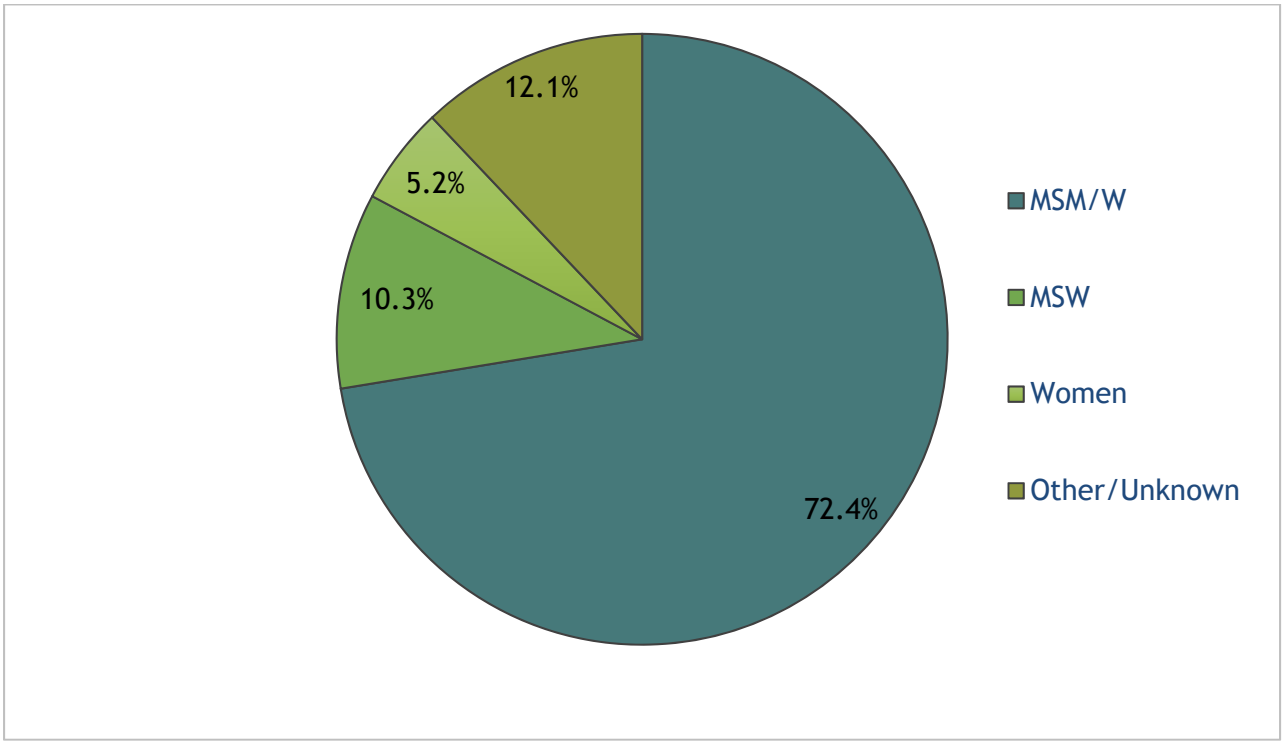
Figure ARGC.4: Distribution of Race/Ethnicity in Individuals with AZM-RS Gonorrhea Isolates, SURRG, Denver, Colorado, 2019.



NH: Non-Hispanic. Multirace/Other/Unknown includes Non-Hispanic Asian/Pacific Islanders, and Indigenous/Alaskan Native due to small numbers.
Individual data includes persons diagnosed with one or more gonorrhea isolates with reduced susceptibility to AZM. There were 7 multisite infections in the same individuals in 2019.

Men who have sex with Men (MSM) and Men who have sex with Men and Women (MSM/W) make up the majority of individuals with isolates with AZM-RS in the Denver Metro Area. As seen in **Figure ARGC.5**, 72% of the individuals with isolates identified to have AZM-RS were MSM and MSM/W in 2019. However, due to changes in protocol, women are not tested as frequently for antibiotic RS, so it is unknown if this distribution is a true representation of the burden of ARGC in Denver.

Figure ARGC.5: Percentage of Self-Reported Sexual Identity in Individuals with Gonorrhea Isolates with AZM-RS, SURRG, Denver, Colorado, 2019.



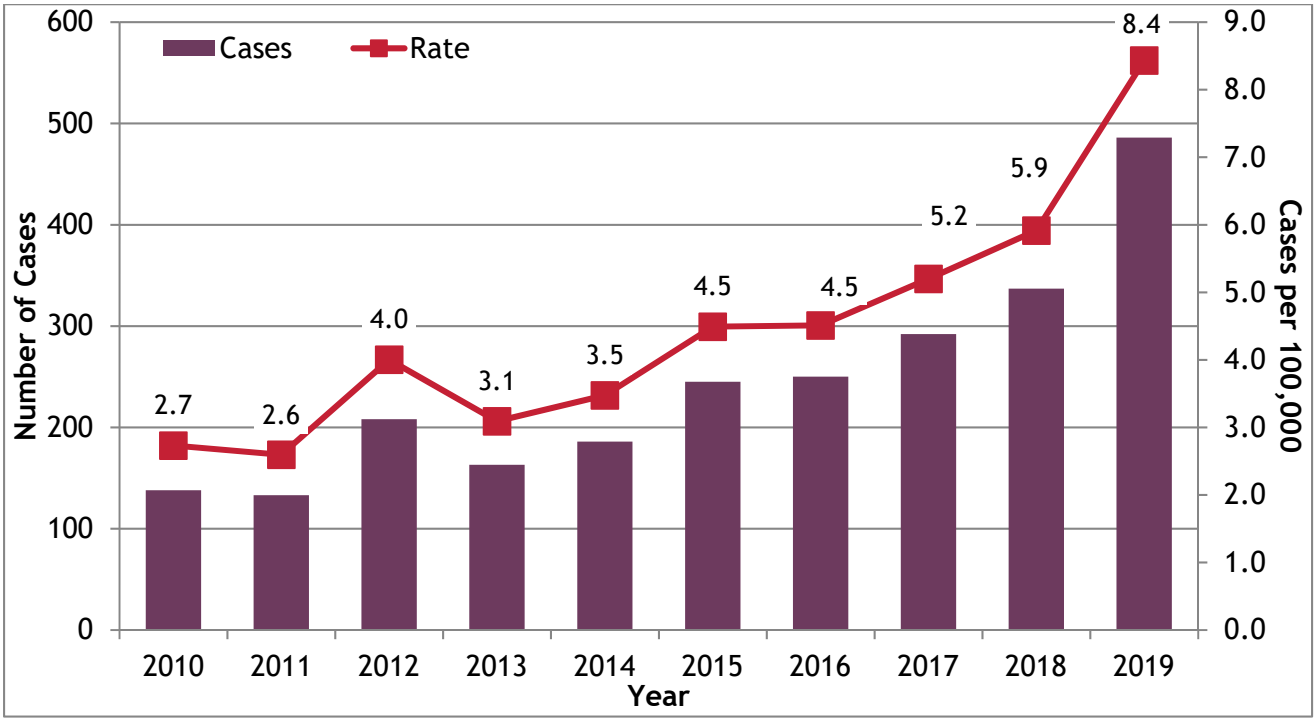
Individual data includes persons diagnosed with one or more gonorrhea isolates with reduced susceptibility to AZM. There were 7 multisite infections in the same individuals in 2019.

Primary and Secondary Syphilis

There were 486 cases of primary and secondary syphilis diagnosed and reported in Colorado in 2019, and the rate was 8.4 per 100,000. This is an increase in the rate of 42.5% from 2018 and 87.7% from 2015 as shown in **Figure PS.1**. Again, this is a historic high for Colorado. Similar to trends seen in Colorado, from 2015 to 2019, the U.S. reported a 58.7% increase in the rate of primary and secondary syphilis cases. This corresponds with 38,992 cases (11.9 per 100,000) of primary and secondary syphilis reported for 2019 compared to 23,872 cases (7.5 per 100,000) in 2015 for the total United States.[8]

The reported cases in Colorado were primarily among men (87.2%). A majority of all cases were among Non-Hispanic White males, representing 42.2%. Additionally, 57.4% of all cases were among men who have sex with men (MSM). In 2019, 24.1% of primary and secondary syphilis diagnoses were co-infected with HIV; i.e. the percent of syphilis cases that were reported among people living with HIV (both previously diagnosed with HIV or diagnosed with HIV at the same time as the syphilis diagnosis), and 33.0% of those who reported MSM risk were co-infected with HIV. Comparatively in the United States, 41.6% of primary and secondary syphilis diagnoses who reported MSM risk were co-infected with HIV in 2018.[9]

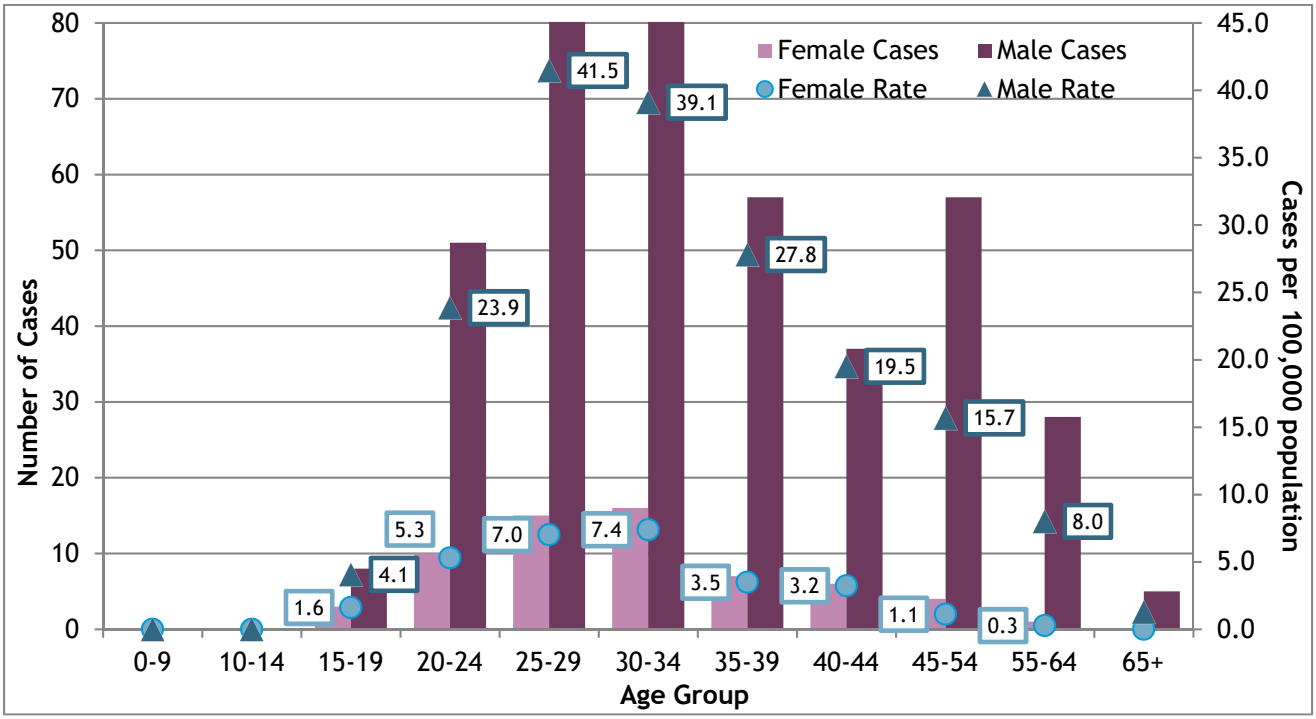
Figure PS.1: Reported Primary & Secondary Syphilis Cases and Rates of Reported Cases, Colorado, 2010-2019



[8] Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2019*. Atlanta: U.S. Department of Health and Human Services; 2021. http://www.cdc.gov/std/stats.
[9] Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2019*. Atlanta: U.S. Department of Health and Human Services; 2021. http://www.cdc.gov/std/stats.

Figure PS.2 shows age and sex case counts for primary and secondary syphilis diagnosed and reported in 2019. The mean age at diagnosis was 35.4 with a range of 16 to 75 years of age. The highest rates were reported among 25-29 year old males whose rate was 41.5 cases per 100,000. In 2019, 19.5% of the cases occurred among 25-29 year old males followed by 30-34 year old males at 17.7% of all reported primary and secondary syphilis cases.

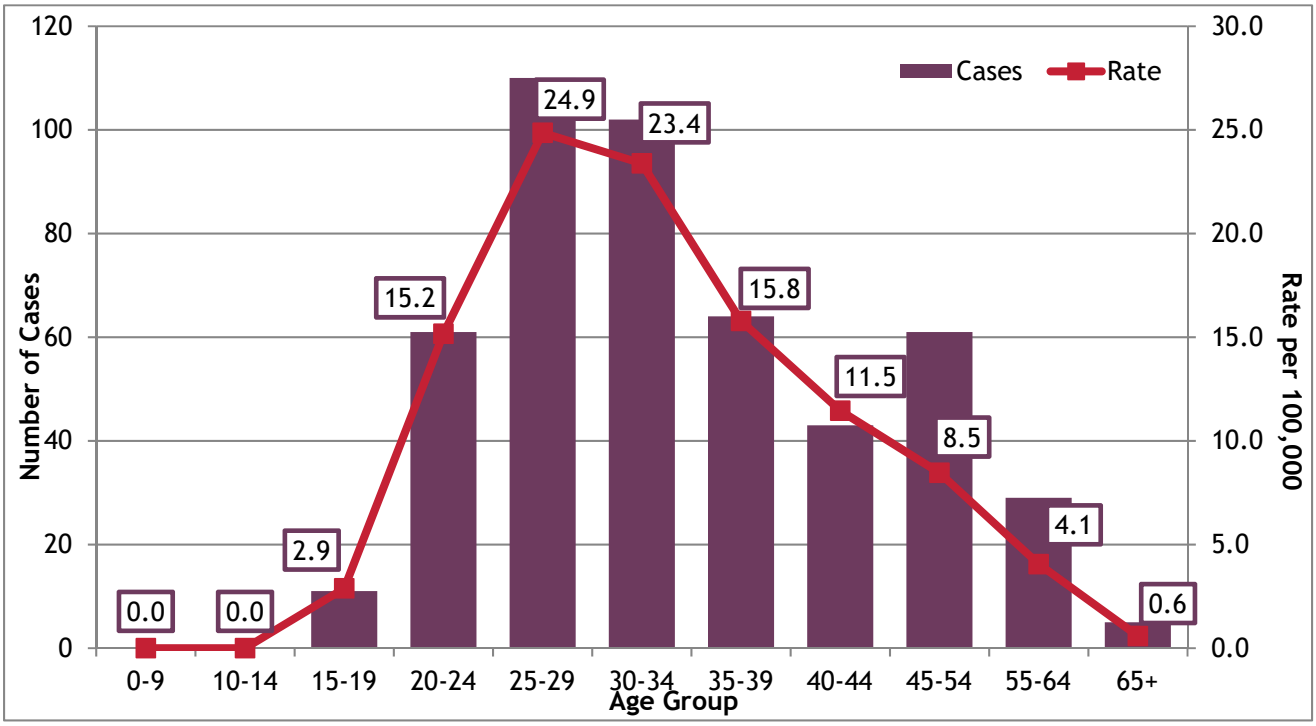
Figure PS.2: Reported Primary & Secondary Syphilis Cases and Rates of Reported Cases by Sex and Age Group, Colorado, 2019



Caution: these rates use small numbers and should be interpreted with caution.

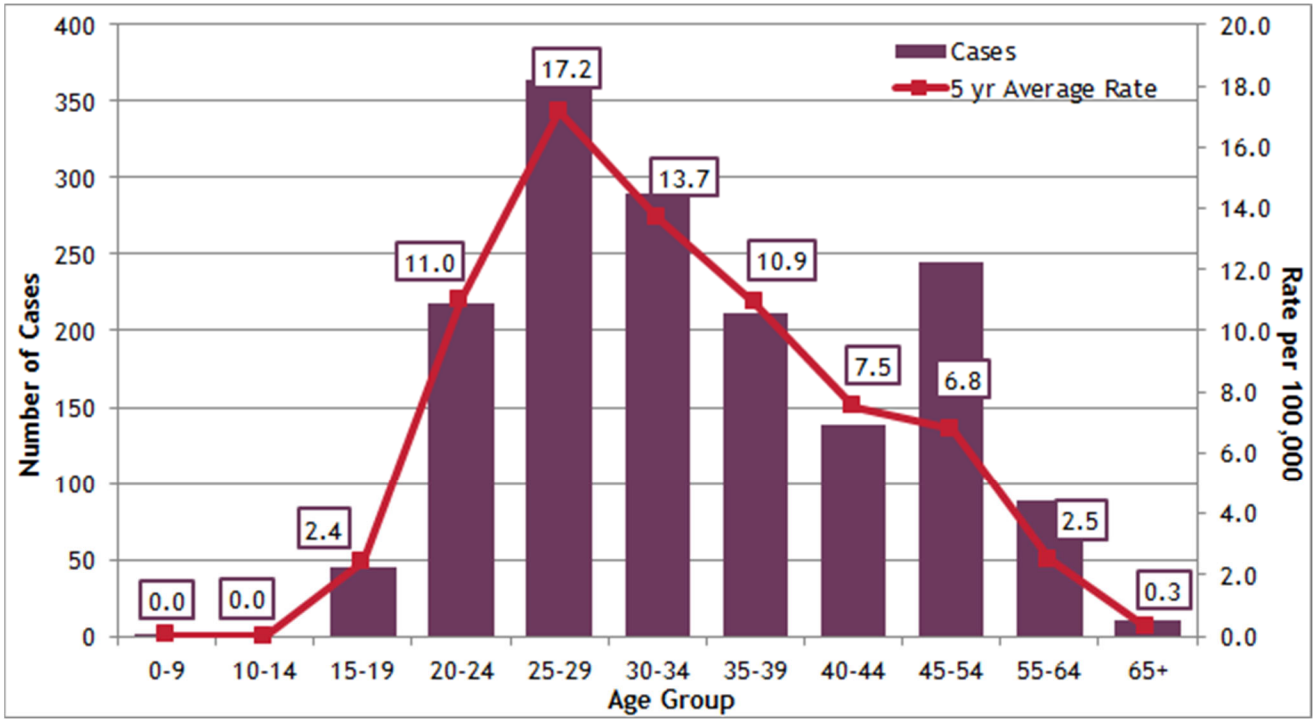
Figure PS.3 and **Figure PS.4** below depict age group case counts and rates for primary and secondary syphilis. Since numbers from one year are small, the five-year average rate in **Figure PS.4** helps to stabilize the rate and thus produces a more accurate representation of the distribution.

Figure PS.3: Reported Primary and Secondary Syphilis Cases and Rates of Reported Cases by Age Group, Colorado, 2019



Caution: these rates use small numbers and should be interpreted with caution.

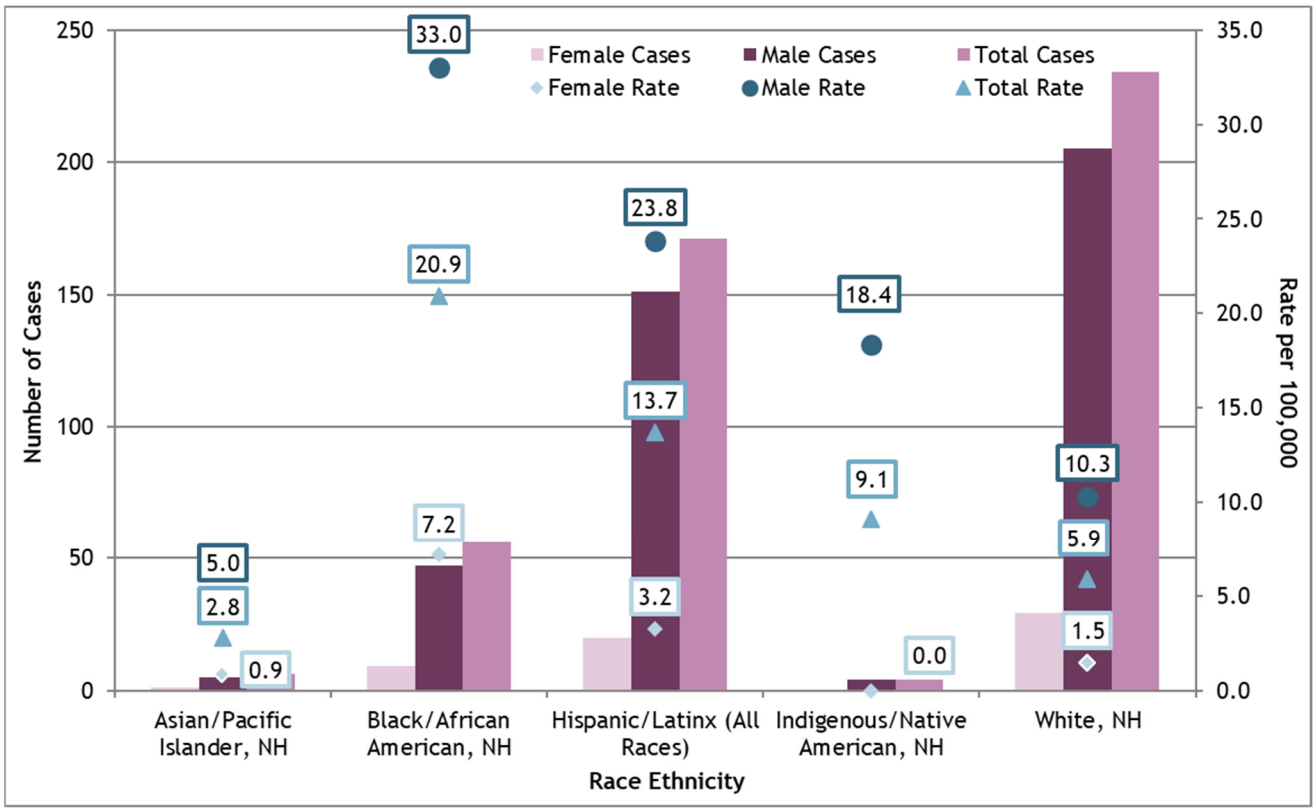
Figure PS.4: Reported Primary & Secondary Syphilis Cases and Rates of Reported Cases by Age Group, Colorado, 2015-2019



More stable than the one-year rate from Figure PS.3

Figure PS.5 shows that the highest rate of primary and secondary syphilis was seen among Non-Hispanic Black/African Americans, 20.9 per 100,000 in 2019. The next highest rate was among Hispanics/Latinx of all races - 13.7 per 100,000. Although Non-Hispanic Whites accounted for the majority of the primary and secondary syphilis cases, 48.1%, their rate per 100,000 was only higher than Non-Hispanic Asian/Pacific Islanders (5.9 and 2.8 per 100,000, respectively) in 2019.

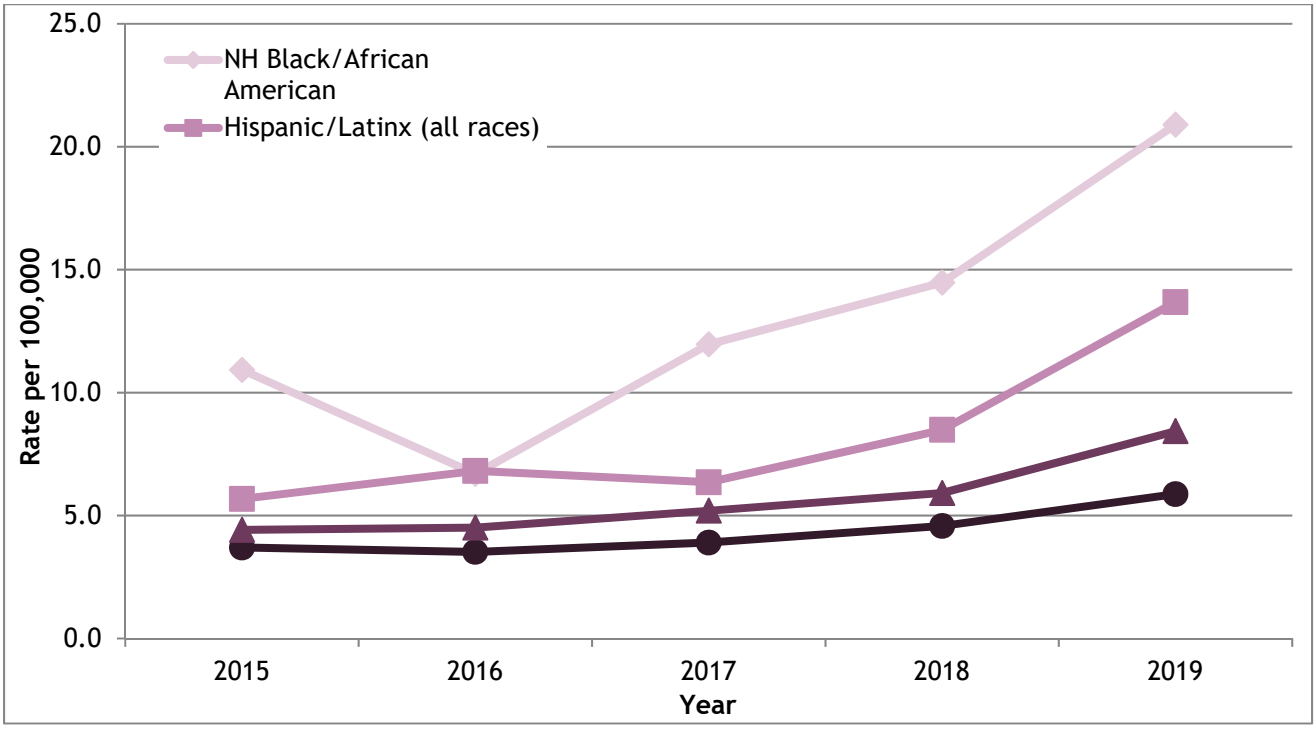
Figure PS.5: Rates of Reported Primary & Secondary Syphilis Cases by Race/Ethnicity and Sex, Colorado, 2019



Caution: these rates use small numbers and should be interpreted with caution.
NH: Non-Hispanic.

Figure PS.6 shows the five-year trend in rates for Non-Hispanic Whites, Non-Hispanic Black/African Americans and Hispanics/Latinx of all races. Other races were not displayed due to small numbers (less than 20 cases per year). All three showed an increasing trend from 2017-2019. The rate for Non-Hispanic Black/African Americans saw the sharpest increase.

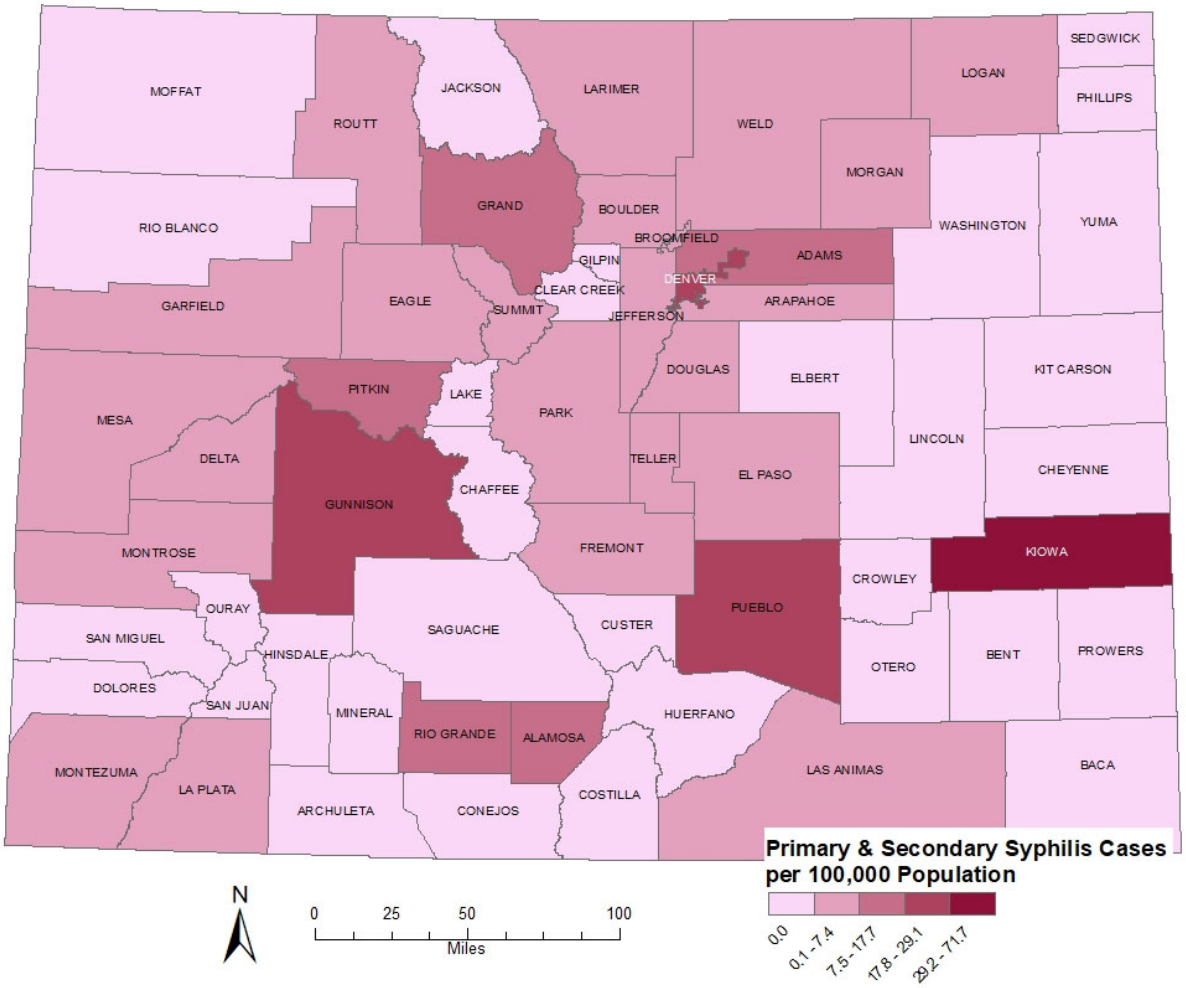
Figure PS.6: Rates of Reported Primary & Secondary Syphilis Cases by Race/Ethnicity, Colorado, 2015-2019



Caution: these rates use small numbers and should be interpreted with caution.
NH: Non-Hispanic

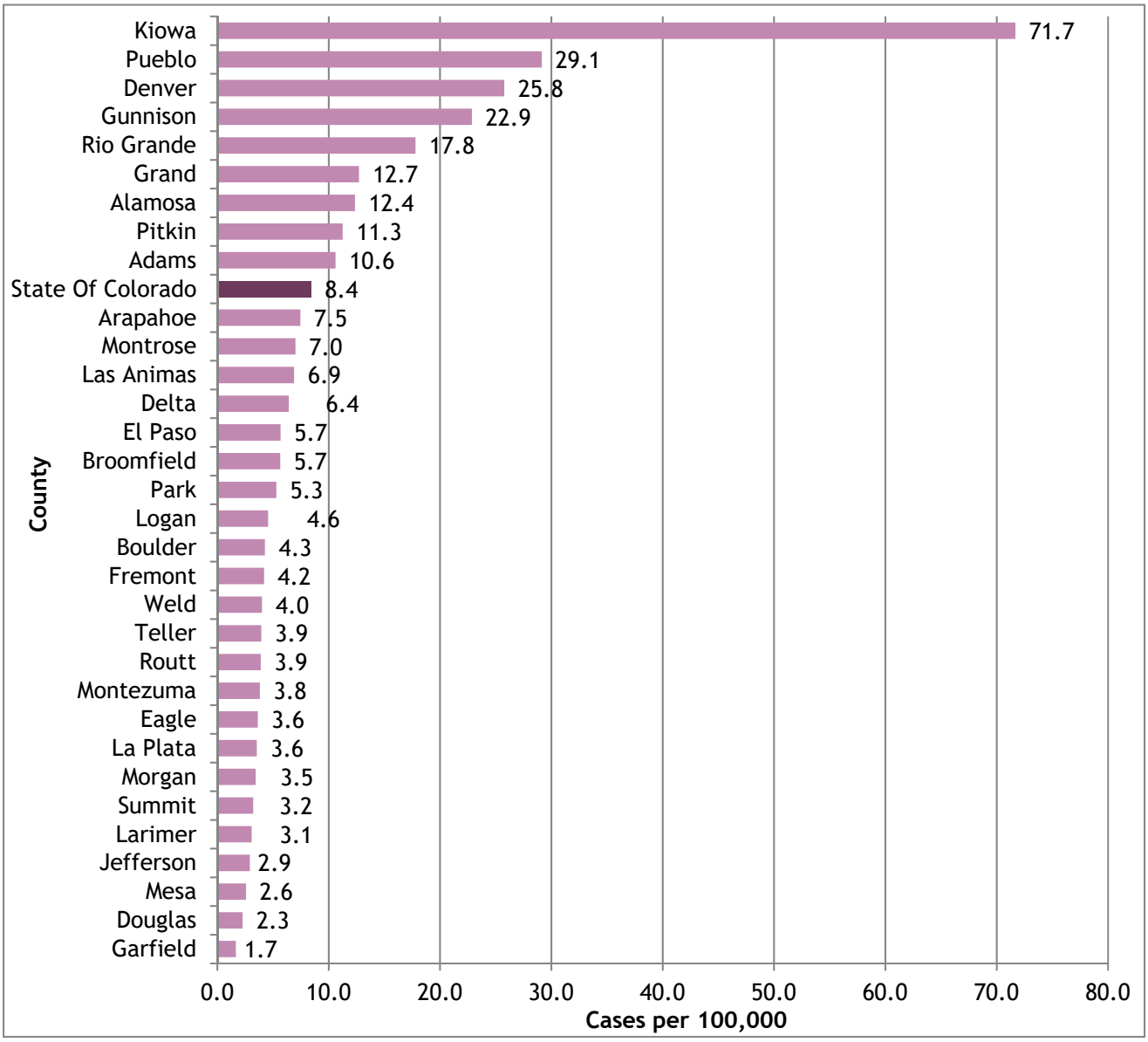
Figure PS.7 and **Figure PS.8** describe the geographical distribution of primary and secondary syphilis rates in Colorado at the county level. The map shows primary and secondary syphilis has been diagnosed in 32 of 64 counties with Denver County reporting the highest proportion of cases, 38.7% in 2019. The highest rates were in Kiowa, Pueblo, and Denver counties with a rate of 71.7, 29.1, and 25.8, respectively, (**Figure PS.8**). However, the Kiowa rate was produced from five or less cases and is not reliable. Use caution when interpreting some of these rates as the county may have a small population and small case numbers.

Figure PS.7: Rates of Reported Primary & Secondary Syphilis Cases by County Map, Colorado, 2019



High rates do not necessarily mean high case counts; for further details, see Figure PS.8 and Table 2.

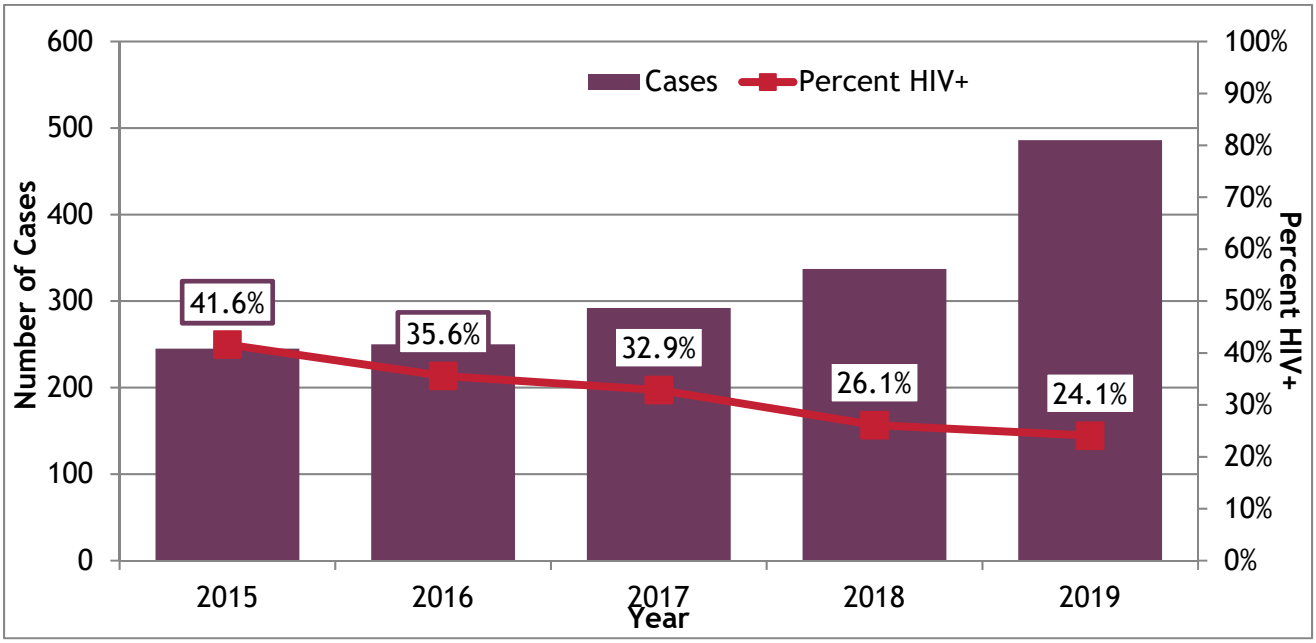
Figure PS.8: Rates of Reported Primary & Secondary Syphilis Cases by County Chart, Colorado, 2019



Caution: these rates use small numbers and should be interpreted with caution. For details see Table 2.

Figure PS.9 shows the rate of primary and secondary syphilis and HIV co-infections; i.e. the percent of syphilis cases that were reported among people living with HIV (both previously diagnosed with HIV or diagnosed with HIV at the same time as the syphilis diagnosis), for 2015-2019. The rate has ranged from 41.6% in 2015 to 24.1% in 2019 producing a downward trend. The five-year average rate for primary and secondary syphilis and HIV co-infections was 30.6%.

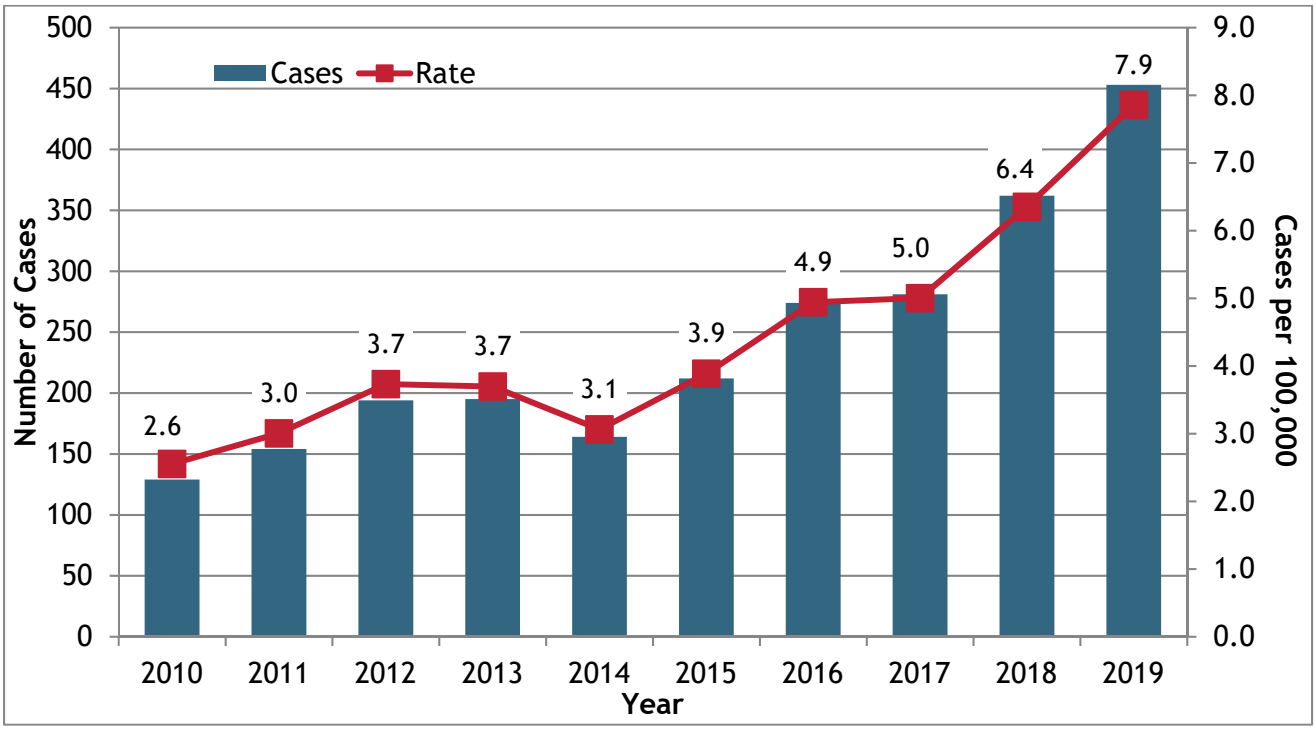
Figure PS.9: Reported Primary & Secondary Syphilis Cases and Percent HIV+ by Year of Diagnosis, Colorado, 2015-2019



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 the infection occurred within the past 12 months. There were 453 cases of non-primary, non-secondary latent syphilis diagnosed and reported in 2019, and the rate was 7.9 per 100,000. The rate increased by 23.4% from 2018 and 102.6% from 2015 as shown in **Figure EL.1**. Similar to the three previous sections, this is an all-time high for Colorado. In the United States in 2019, 42,118 (12.7 per 100,000) cases of non-primary, non-secondary latent syphilis were diagnosed and reported to the CDC. This rate for the U.S. was an increase (67.1%) compared to 2015 (7.6 per 100,000).[10]

Figure EL.1: Reported Non-Primary, Non-Secondary Latent Syphilis Cases and Rates of Reported Cases, Colorado, 2010-2019

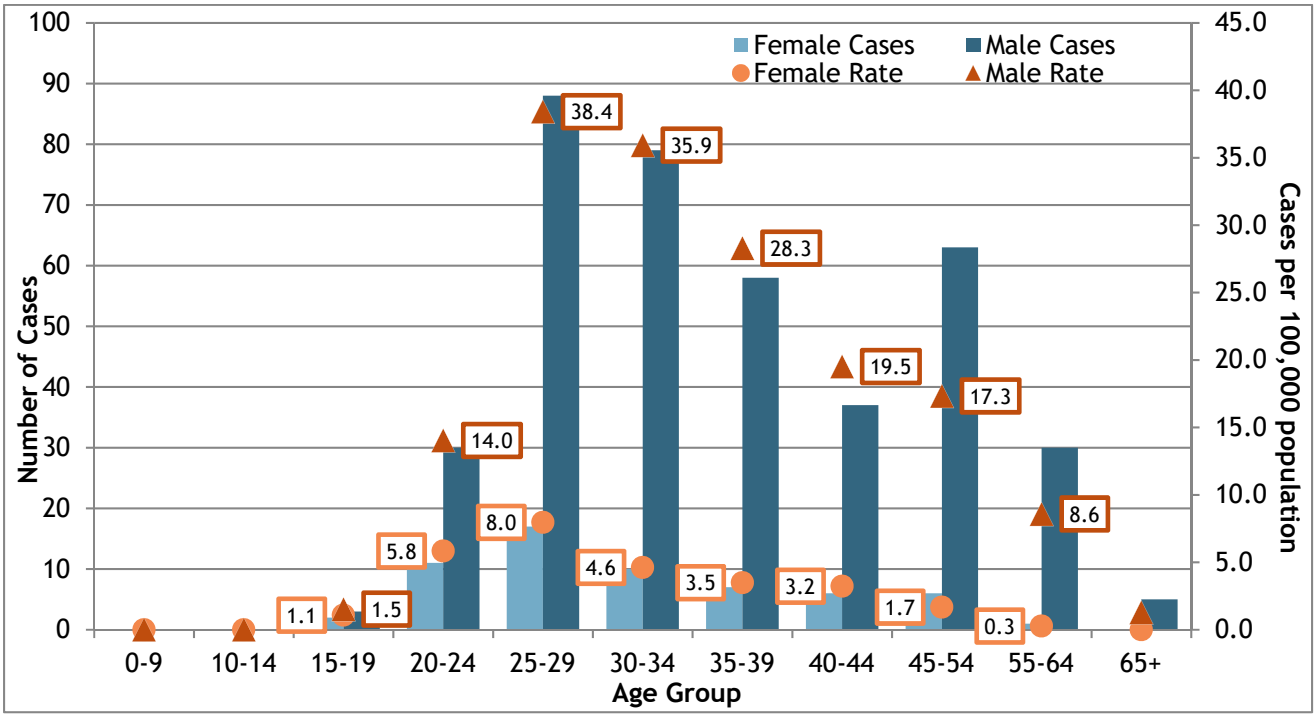


Non-Hispanic White males represent 42.2% of reported non-primary, non-secondary latent cases. Additionally, 55.4% of cases were among MSM. In 2019, 39.3% of non-primary, non-secondary latent syphilis diagnoses were co-infected with HIV; i.e. percent of syphilis cases that were reported among people living with HIV (both previously diagnosed with HIV or diagnosed with HIV at the same time as the syphilis diagnosis), and 52.6% of those who reported MSM risk were co-infected with HIV.

[10] Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2019*. Atlanta: U.S. Department of Health and Human Services; 2021. http://www.cdc.gov/std/stats.

Figure EL.2 shows age and sex case counts for non-primary, non-secondary latent syphilis diagnosed in 2019. The mean age at diagnosis was 36.7 with a range of 16 to 76 years of age. Overall from 2010-2019, the highest rates were reported among 25-29 year old males whose rate was 38.4 cases per 100,000. In 2019, 19.4% of the cases occurred among 25-29 year old males; followed by 30-34 year old males which accounted for 17.4% of cases.

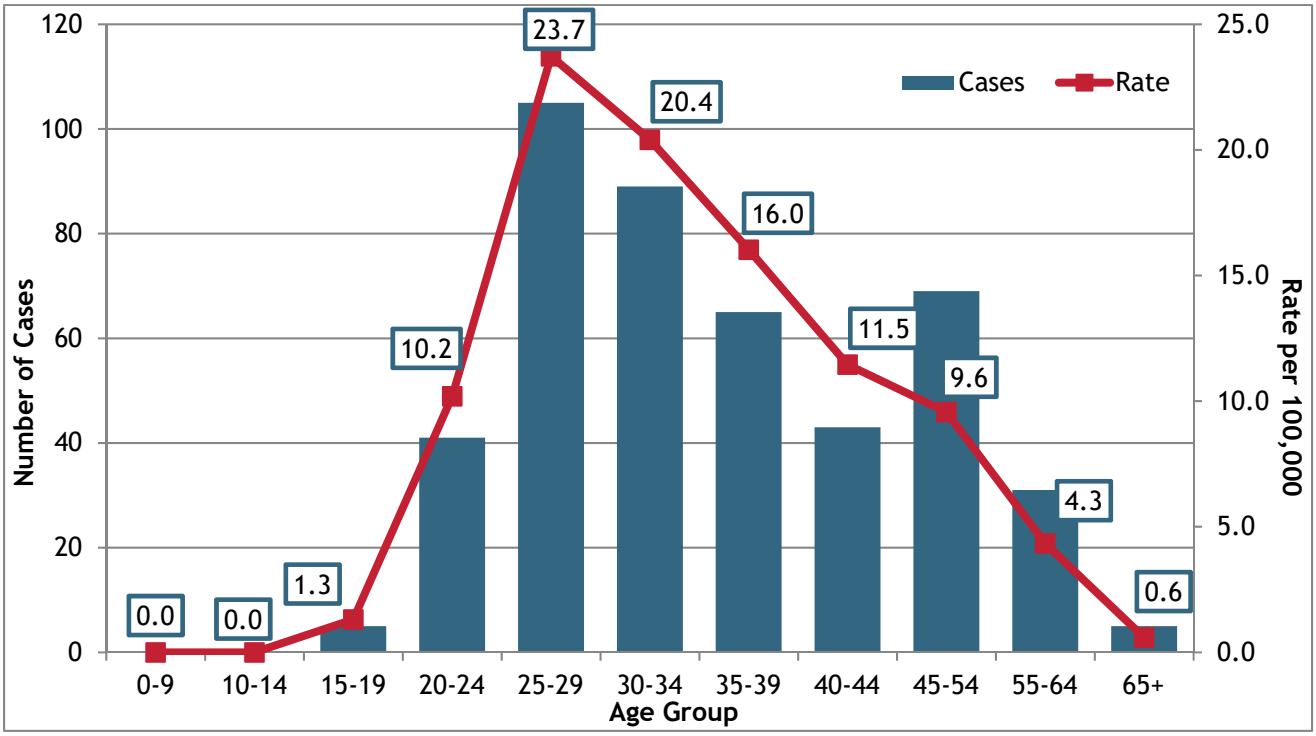
Figure EL.2: Reported Non-Primary, Non-Secondary Latent Syphilis Cases and Rates of Reported Cases by Sex and Age Group, Colorado, 2019



Caution: these rates use small numbers and should be interpreted with caution.

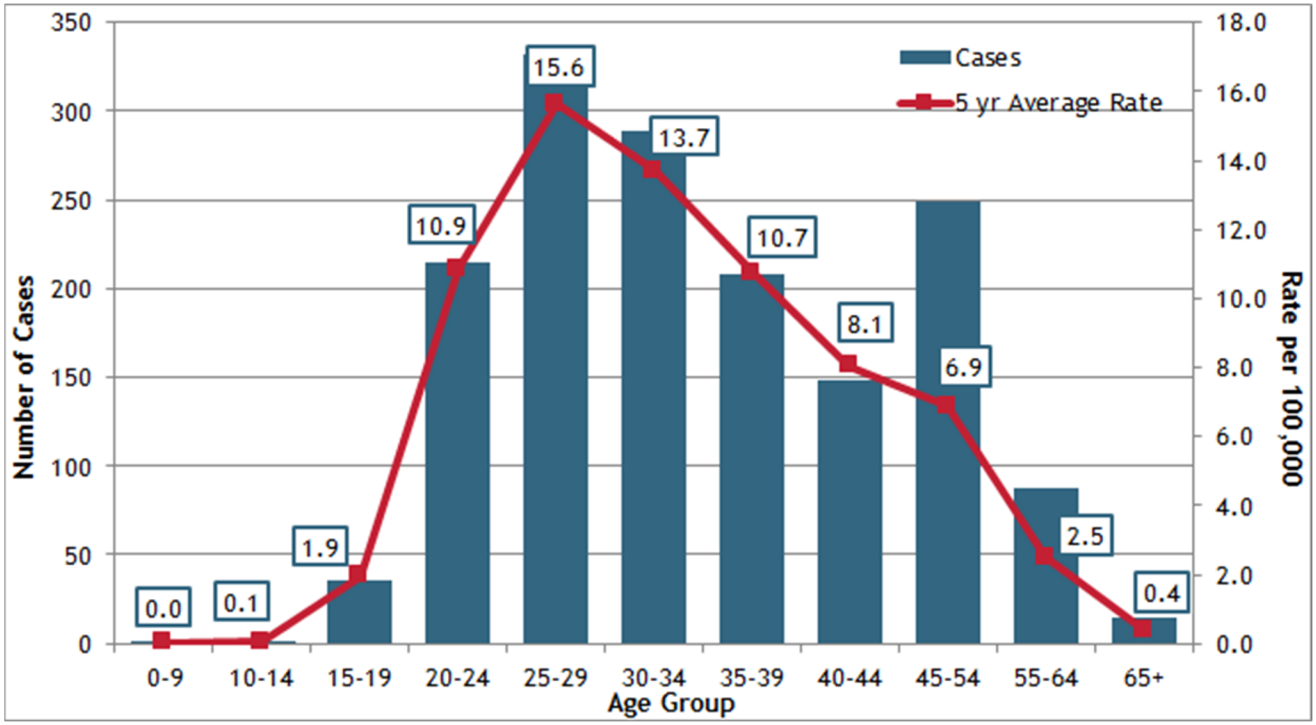
Figure EL.3 and **Figure EL.4** below depict age group case counts and rates for non-primary, non-secondary latent syphilis. This five-year average rate helps to stabilize the rate and thus produces a more accurate representation of the rate.

Figure EL.3: Reported Non-Primary, Non-Secondary Latent Syphilis Cases and Rates of Reported Cases by Age Group, Colorado, 2019



Caution: these rates use small numbers and should be interpreted with caution.

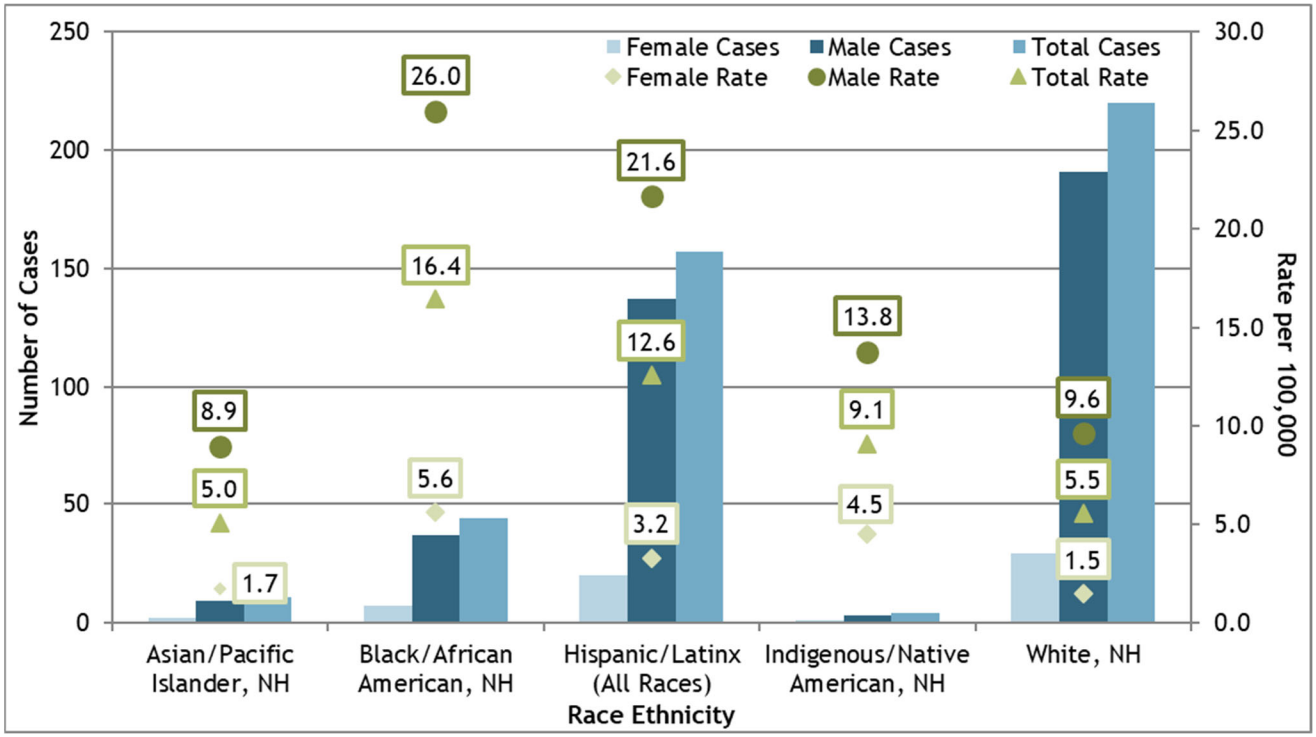
Figure EL.4: Reported Non-Primary, Non-Secondary Latent Syphilis Cases and Rates of Reported Cases by Age Group, Colorado, 2015-2019



More stable than the one-year rate from Figure EL.3

Figure EL.5 shows that the highest rate of non-primary, non-secondary latent syphilis is seen among Black/African American males, 26.0 per 100,000 in 2019. The next highest rate was among Hispanic/Latinx males of all races, 21.6 per 100,000. The highest proportion of non-primary, non-secondary latent syphilis was among Non-Hispanic Whites, accounting for 48.6%, however their rate was one of the lowest at 5.5 per 100,000, only higher than Non-Hispanic Asian/Pacific Islanders, 5.0 per 100,000.

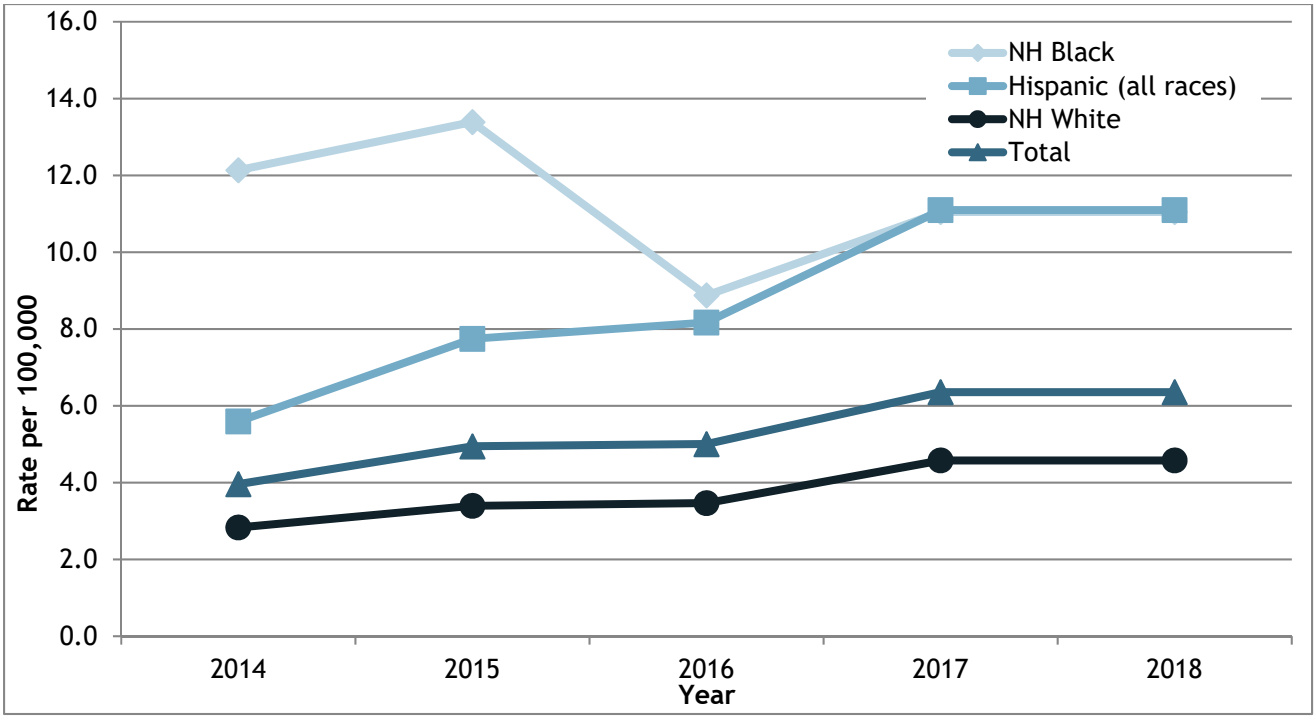
Figure EL.5: Rates of Non-Primary, Non-Secondary Latent Syphilis Cases by Race/Ethnicity and Sex, Colorado, 2019



Caution: these rates use small numbers and should be interpreted with caution.
NH: Non-Hispanic.

Figure EL.6 shows the five-year trend in rates for Non-Hispanic Black/African Americans, Hispanics/Latinx of all races, and Non-Hispanic Whites. Other races were not displayed due to small numbers. Rates among Hispanics/Latinx of all races and Non-Hispanic Whites have had an overall increasing trend from 2015-2019. Rates for Non-Hispanic Black/African Americans have been increasing since 2016 with a sharp increase from 2018 to 2019. Non-Hispanic Blacks/African Americans and Hispanics/Latinx of all races have had the highest rates of diagnosis over the past five years, and similar rates from 2016 to 2018, demonstrating a clear health inequity.

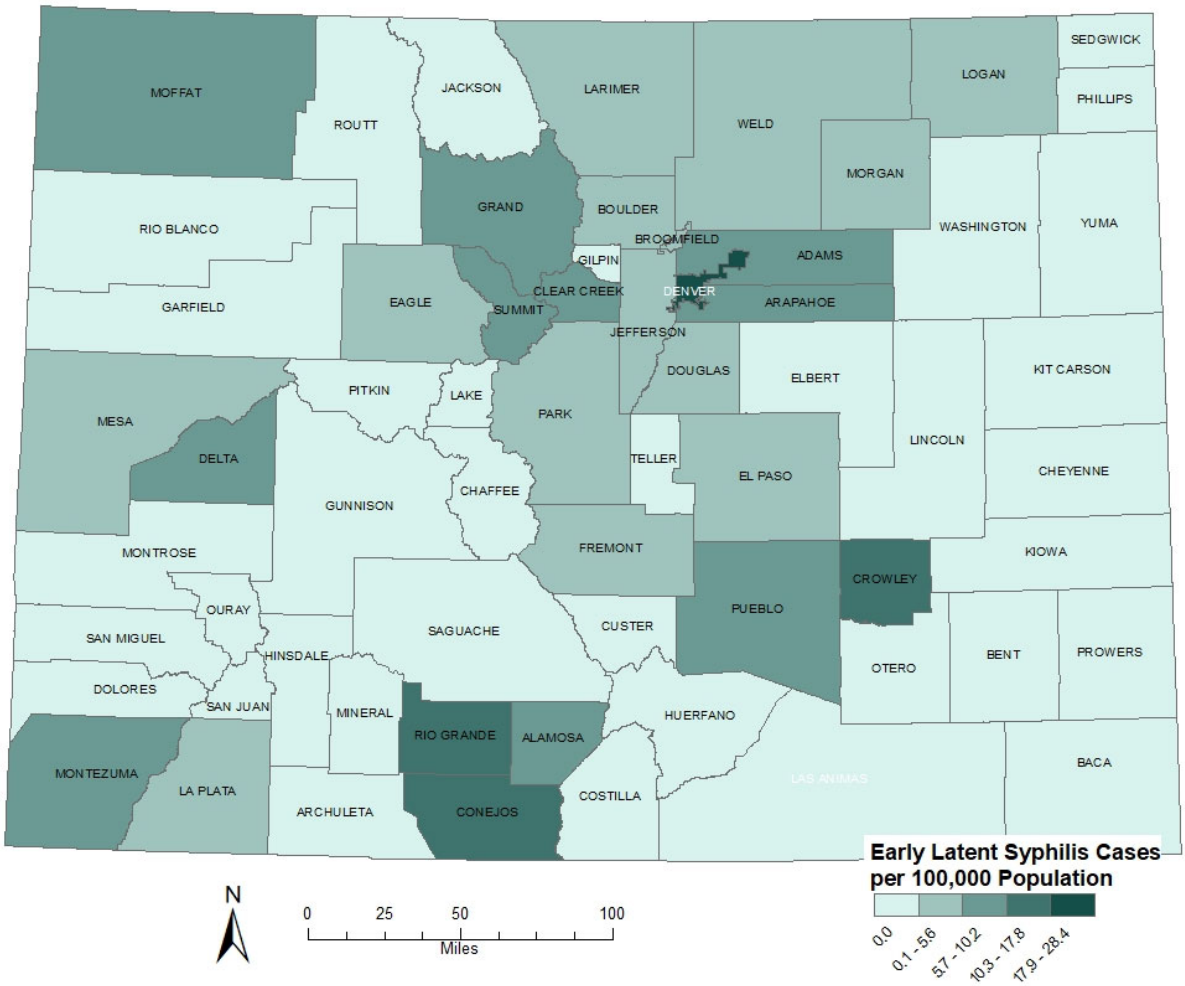
Figure EL.6: Rates of Non-Primary, Non-Secondary Latent Syphilis Cases by Race/Ethnicity, Colorado, 2015-2019



Caution: these rates use small numbers and should be interpreted with caution.
NH: Non-Hispanic.

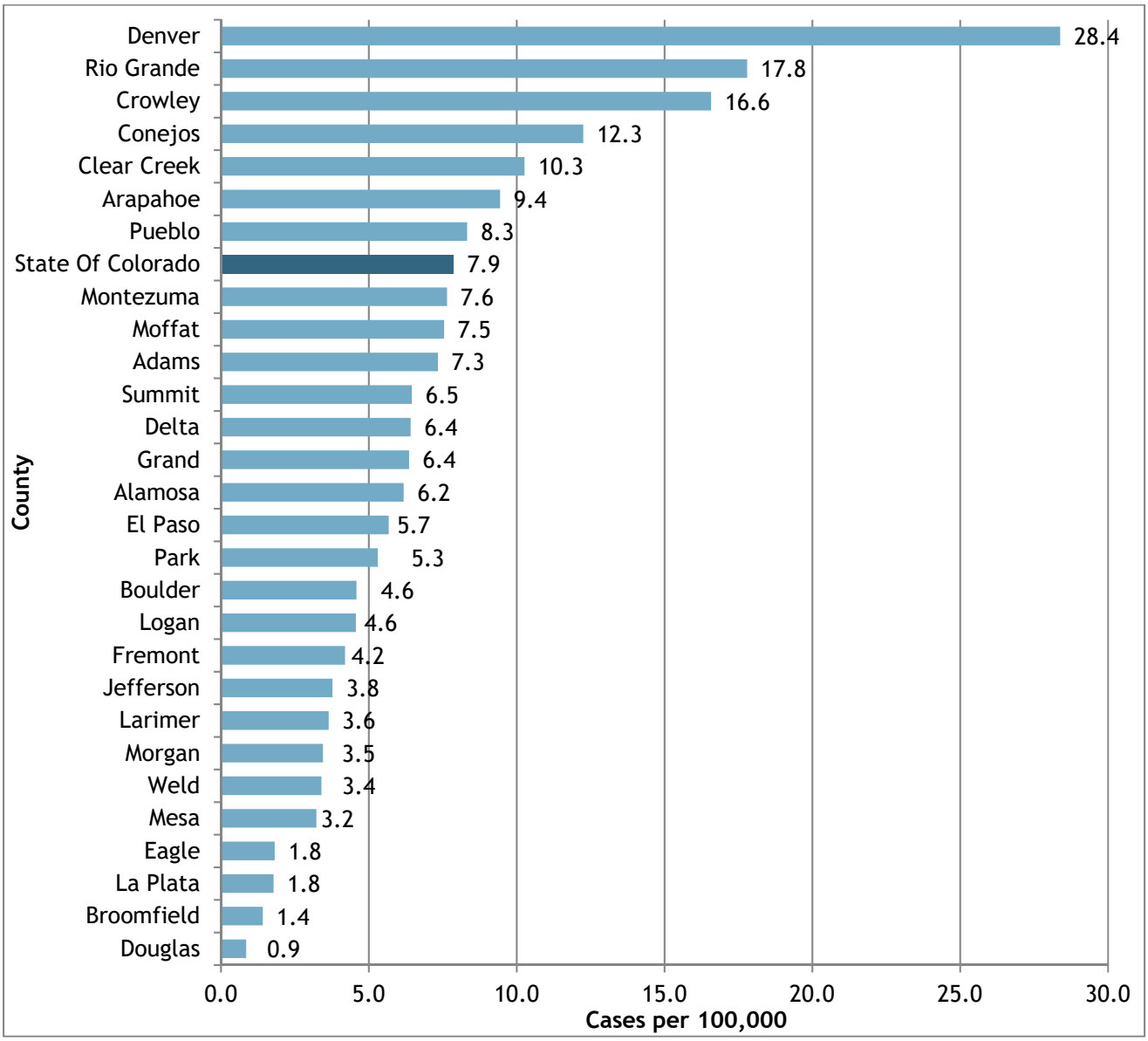
Figure EL.7 and **Figure EL.8** describe the geographical distribution of non-primary, non-secondary latent syphilis rates in Colorado at the county level. The map shows non-primary, non-secondary latent syphilis cases have been diagnosed in residents of 28 of 64 counties with Denver County reporting the highest proportion and highest rate of reported cases, 45.7% and 28.4 per 100,000 population in 2019. This represents a 20.8% increase from 2018, when the rate was 23.5 per 100,000 population. The next highest rates were in Rio Grande and Crowley counties (**Figure EL.8**). However, the Rio Grande and Crowley rates were produced from five or less cases and are not reliable. Use caution when interpreting some of these rates as the county may have a small population and small case numbers.

Figure EL.7: Rates of Non-Primary, Non-Secondary Latent Syphilis Cases by County Map, Colorado, 2019



High rates do not necessarily mean high case counts; for further details, see Figure EL.8 and Table 2.

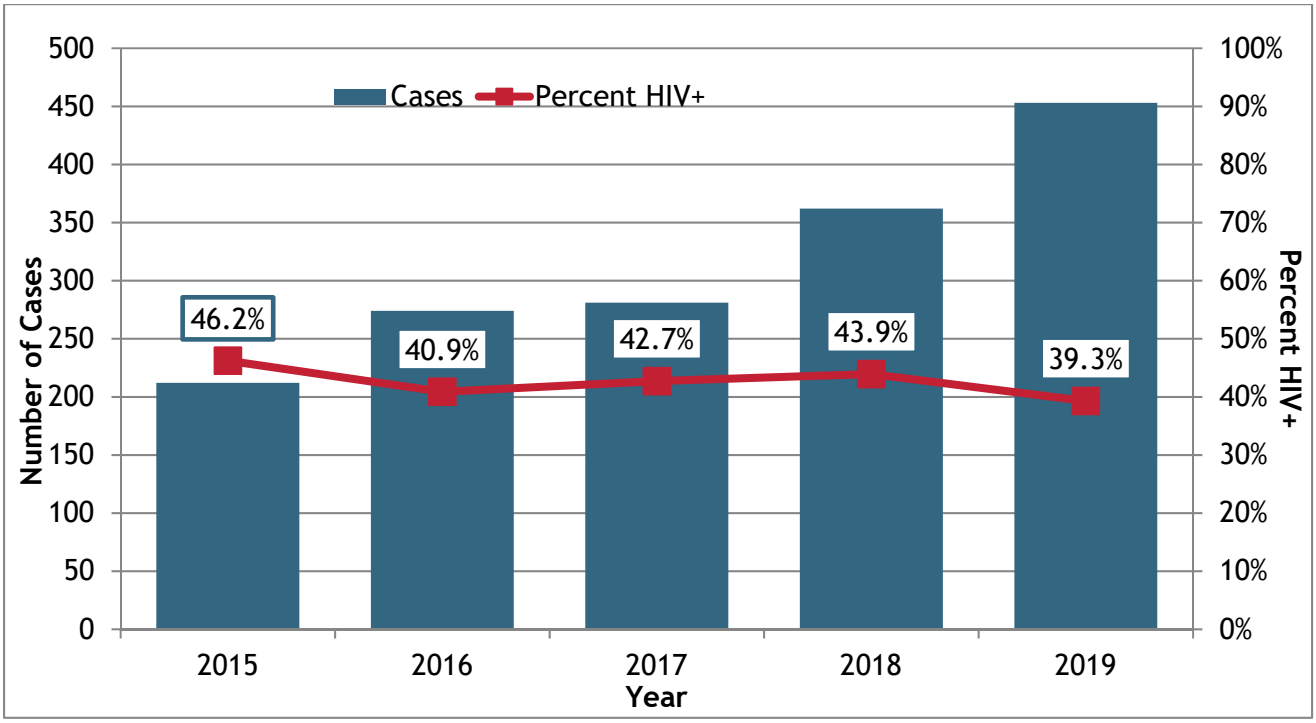
Figure EL.8: Rates of Non-Primary, Non-Secondary Latent Syphilis Cases by County Chart, Colorado, 2019



Caution: these rates use small numbers and should be interpreted with caution. For details, see Table 2.

Figure EL.9 shows the rate of non-primary, non-secondary latent syphilis and HIV co-infections; i.e. the percent of syphilis cases that were reported among people living with HIV (both previously diagnosed with HIV or diagnosed with HIV at the same time as the syphilis diagnosis), for 2015-2019. The five-year average rate for non-primary, non-secondary latent syphilis and HIV co-infections was 42.2%.

Figure EL.9: Non-Primary, Non-Secondary Latent Syphilis Reported Cases and Percent HIV+ by Year of Diagnosis, Colorado, 2015-2019

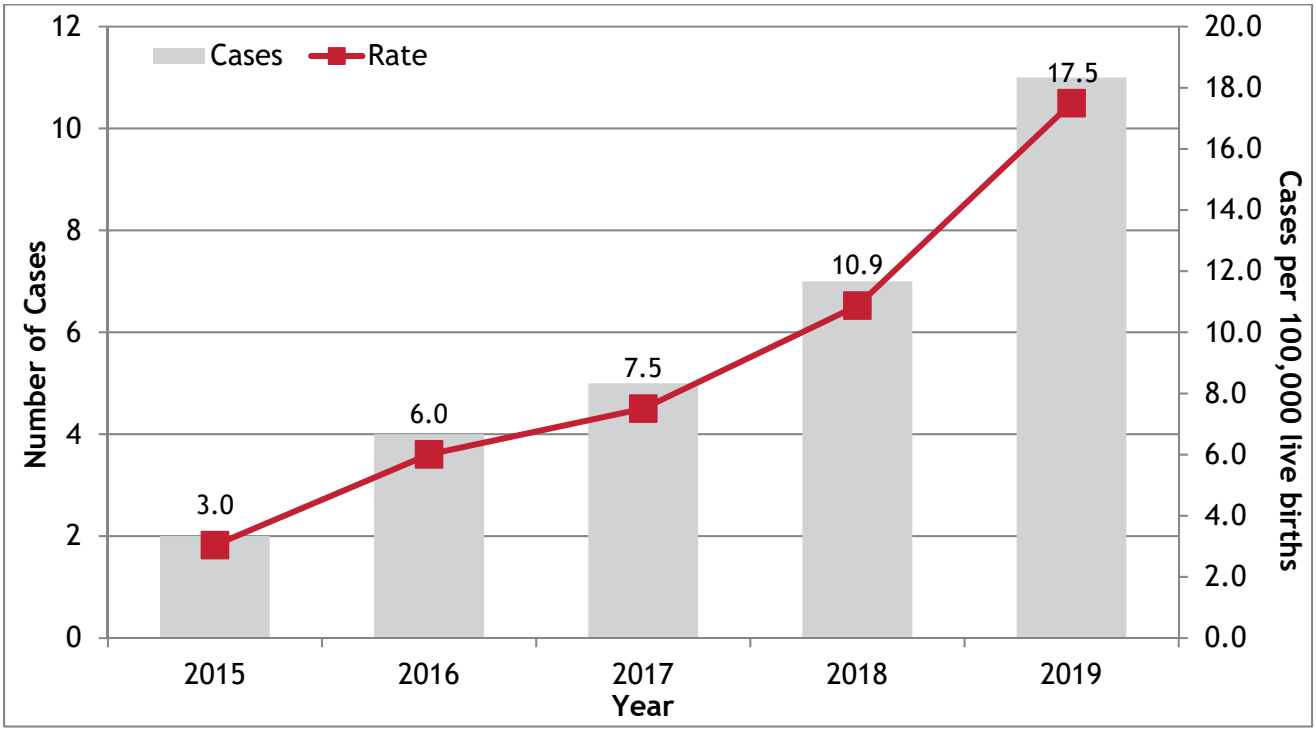


Congenital Syphilis

All congenital syphilis reports that meet the current case definition for "probable" or "confirmed" are considered congenital syphilis cases.

There were eleven cases of congenital syphilis reported in Colorado in 2019, and the rate was 17.5 per 100,000 live births.[11] In 2019, there were a total of 1,877 cases of congenital syphilis (48.3 per 100,000 live births) reported for the United States to the CDC.[12]

Figure CS.1: Reported Congenital Syphilis Cases and Rates of Reported Cases, Colorado, 2015-2019



Utilizes the data compiled by the program.

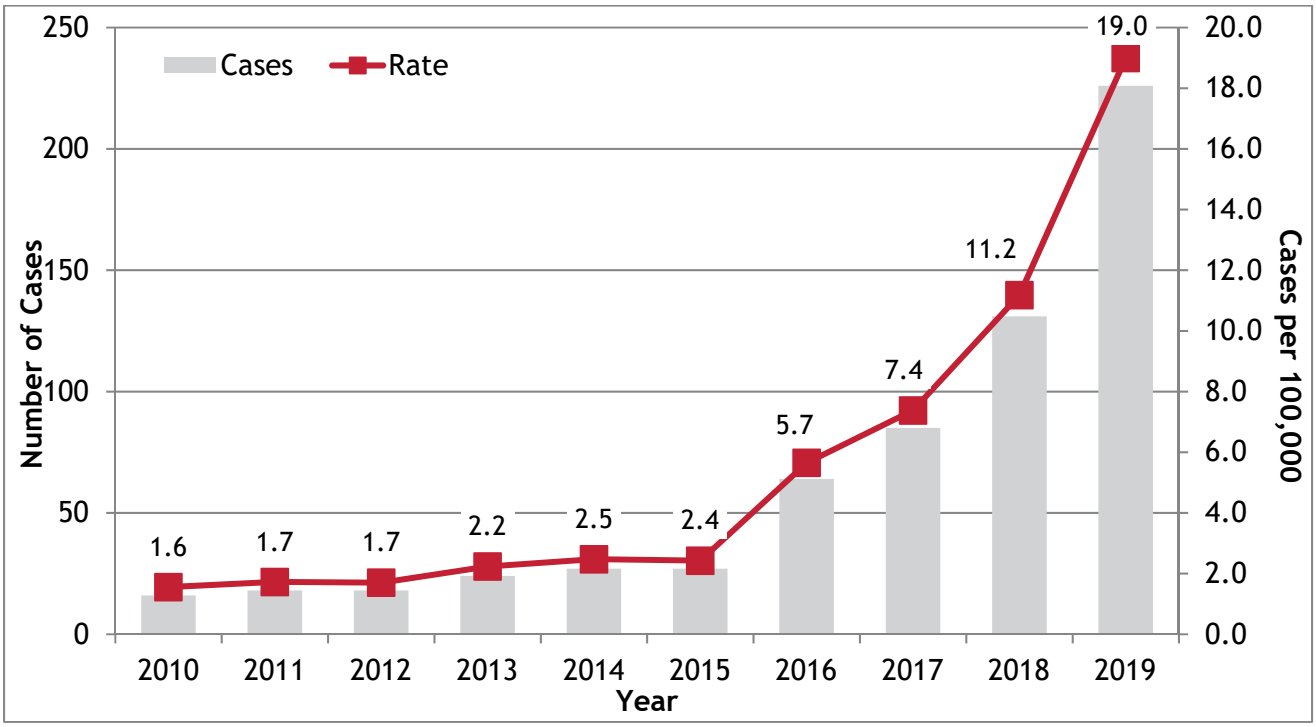
[11] Live birth data from the Colorado Health Information Dataset (COHID) managed by CDPHE. http://www.cohid.dphe.state.co.us/

[12] Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2019*. Atlanta: U.S. Department of Health and Human Services; 2021. http://www.cdc.gov/std/stats.

Syphilis Among Women of Reproductive Age

Trends for congenital syphilis mirror trends for syphilis of all stages among women of reproductive age (WRA), which is defined as 15-44 years of age. For the years 2010 to 2015, this particular cohort has had stable numbers of reported cases. In 2016, however, the number of cases more than doubled compared to the previous year as seen below in **Figure CS.2** (27 cases in 2015 to 64 cases in 2016). For 2019, 226 cases of syphilis among WRA were diagnosed and reported to CDPHE, producing a rate of 19.0 per 100,000. Similarly, the rate of primary and secondary syphilis among WRA 2015-2019 increased 172.2% from 3.2 to 8.7 cases per 100,000 nationally.[13]

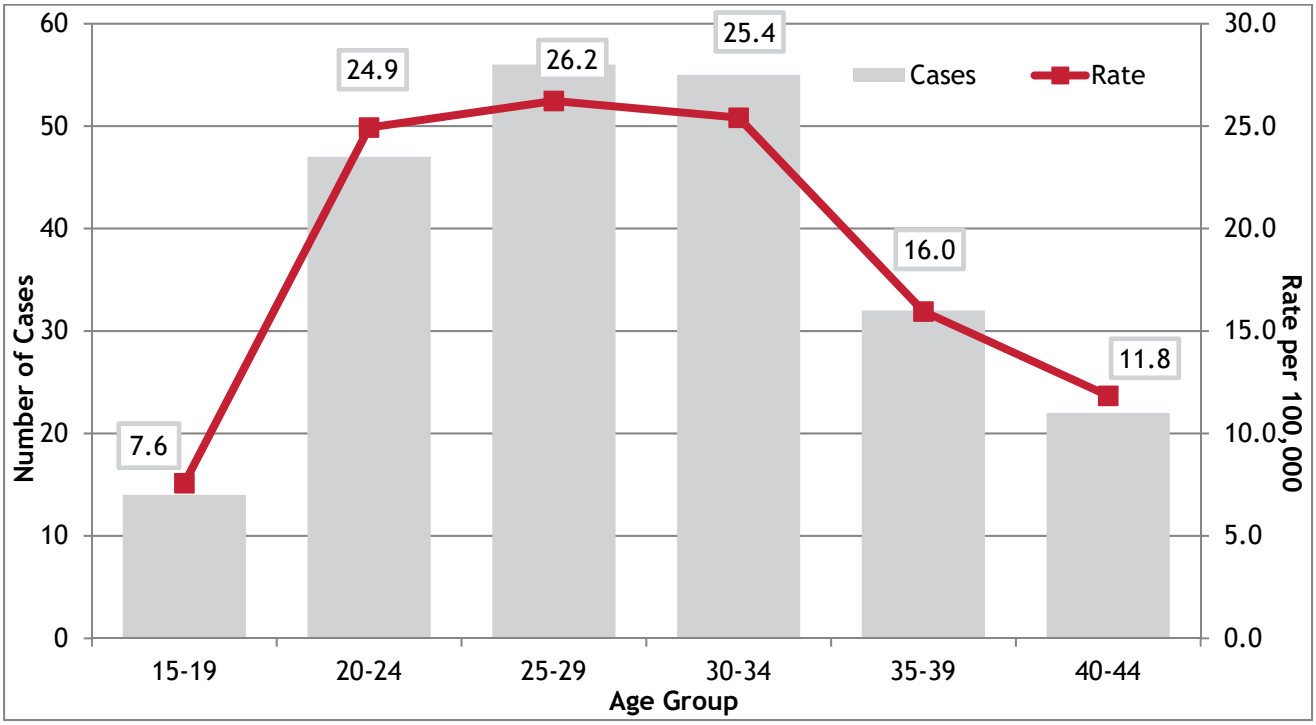
Figure CS.2: Reported Syphilis Cases Among Women of Reproductive Age and Rates of Reported Cases, Colorado, 2010-2019



[13] Centers for Disease Control and Prevention. *Sexually Transmitted Disease Surveillance 2019*. Atlanta: U.S. Department of Health and Human Services; 2019. http://www.cdc.gov/std/stats.

Figure CS.3 shows age group case counts for syphilis among women of reproductive age diagnosed in 2019. The mean age at diagnosis was 29.9 with a range of 15 to 44 years of age. Overall in 2019, the highest rates were reported among 25-29 year olds whose rate was 26.2 cases per 100,000.

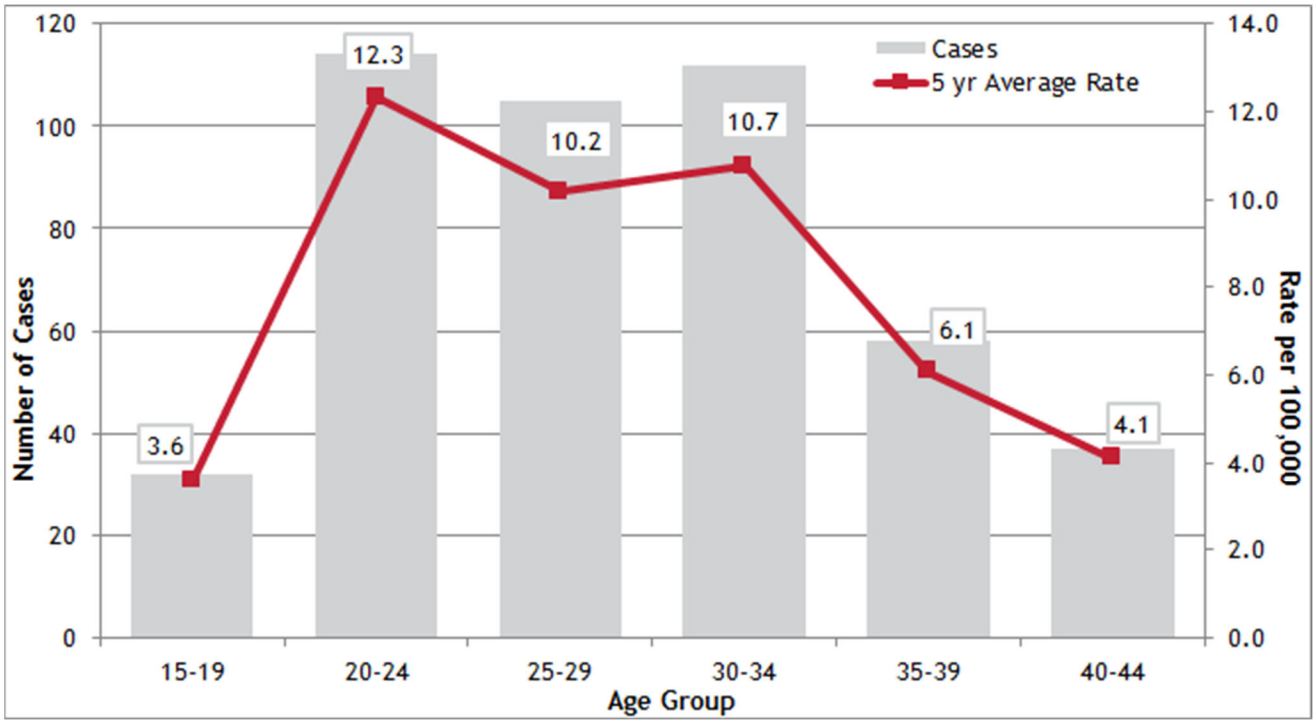
Figure CS.3: Reported Syphilis Cases Among Women of Reproductive Age and Rates of Reported Cases by Age Group, Colorado, 2019



Caution: 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 in 2015-2019. This five-year average rate helps to stabilize the rate and thus produces a more accurate representation of the condition.

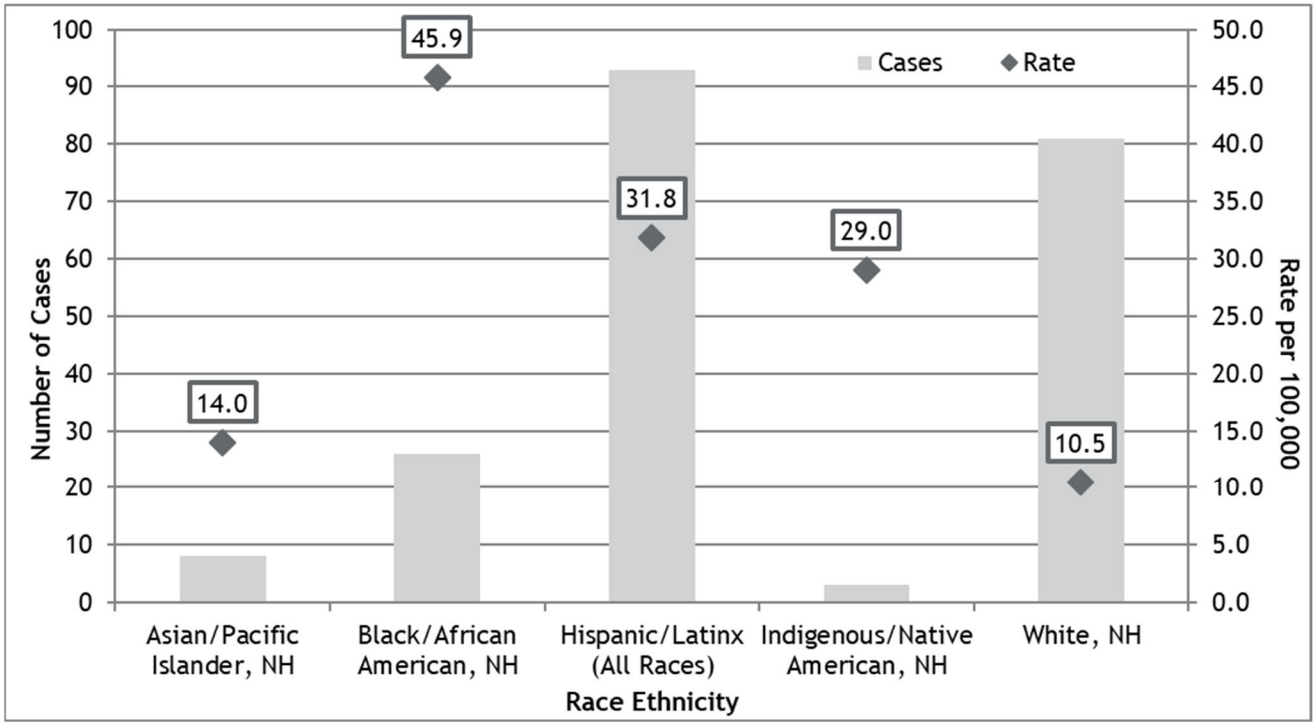
Figure CS.4: Reported Syphilis Cases Among Women of Reproductive Age and Rates of Reported Cases by Age Group, Colorado, 2015-2019



More stable than the one-year rate from Figure CS.3

Figure CS.5 shows that the highest rate of syphilis among women of reproductive age is seen among Non-Hispanic Black/African Americans, 45.9 per 100,000 in 2019. The highest proportion of cases was among Hispanic/Latinx of all races, accounting for 41.1% and their rate of diagnosis was the second highest at 31.8 per 100,000. Non-Hispanic Whites had the lowest rate at 10.5 per 100,00 and accounted for 35.8% of diagnoses in 2019.

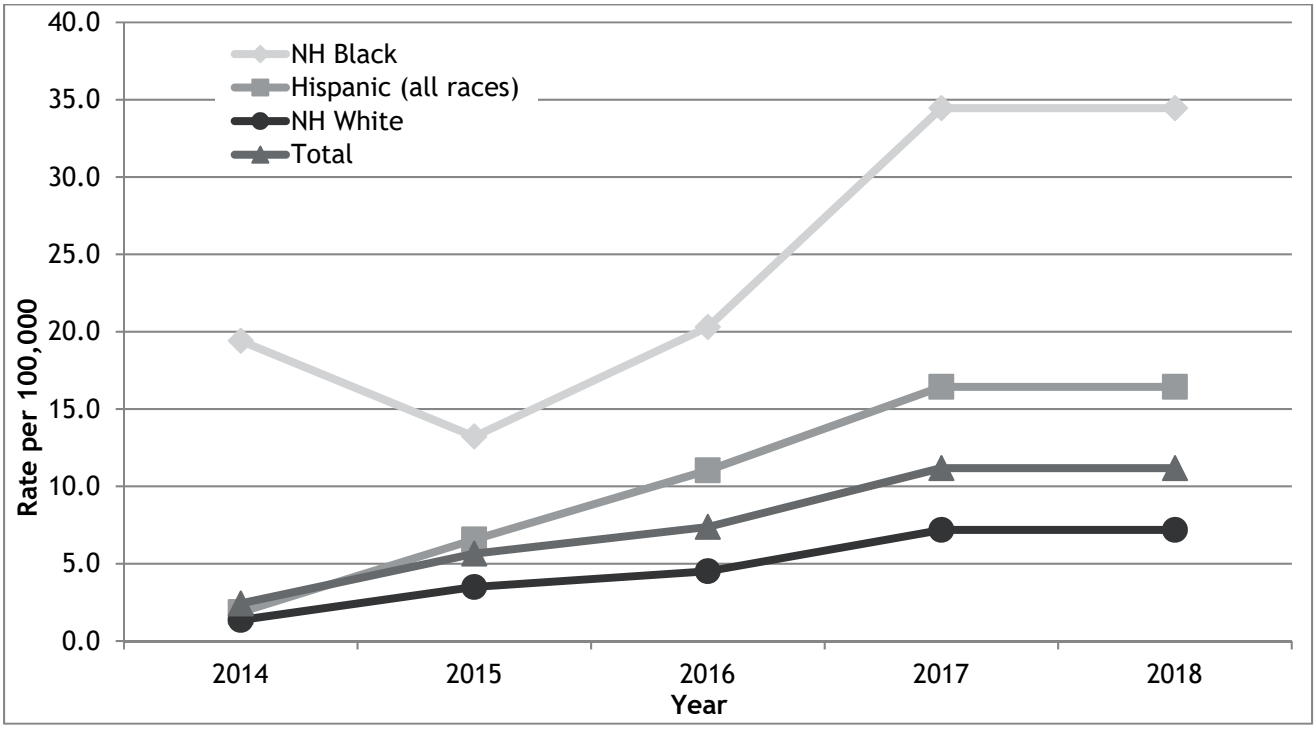
Figure CS.5: Reported Syphilis Cases Among Women of Reproductive Age and Rates of Reported Cases by Race/Ethnicity, Colorado, 2019



Caution: these rates use small numbers and should be interpreted with caution.
NH: Non-Hispanic.

Figure CS.6 shows the five-year trend in rates for Non-Hispanic Blacks/African Americans, Hispanics/Latinx of all races, and Non-Hispanic Whites. Other races were not displayed due to small numbers. All three showed an increasing trend from 2015-2019 with a sharp increase from 2018 to 2019. The rates for Non-Hispanic Blacks/African Americans and Hispanics/Latinx of all races experienced the sharpest increases with respective rates of 45.9 and 31.8 per 100,000. This represents an increase of 33.1% and 93.7% for Non-Hispanic Blacks/African Americans and Hispanics/Latinx of all races, respectively, from 2018 to 2019.

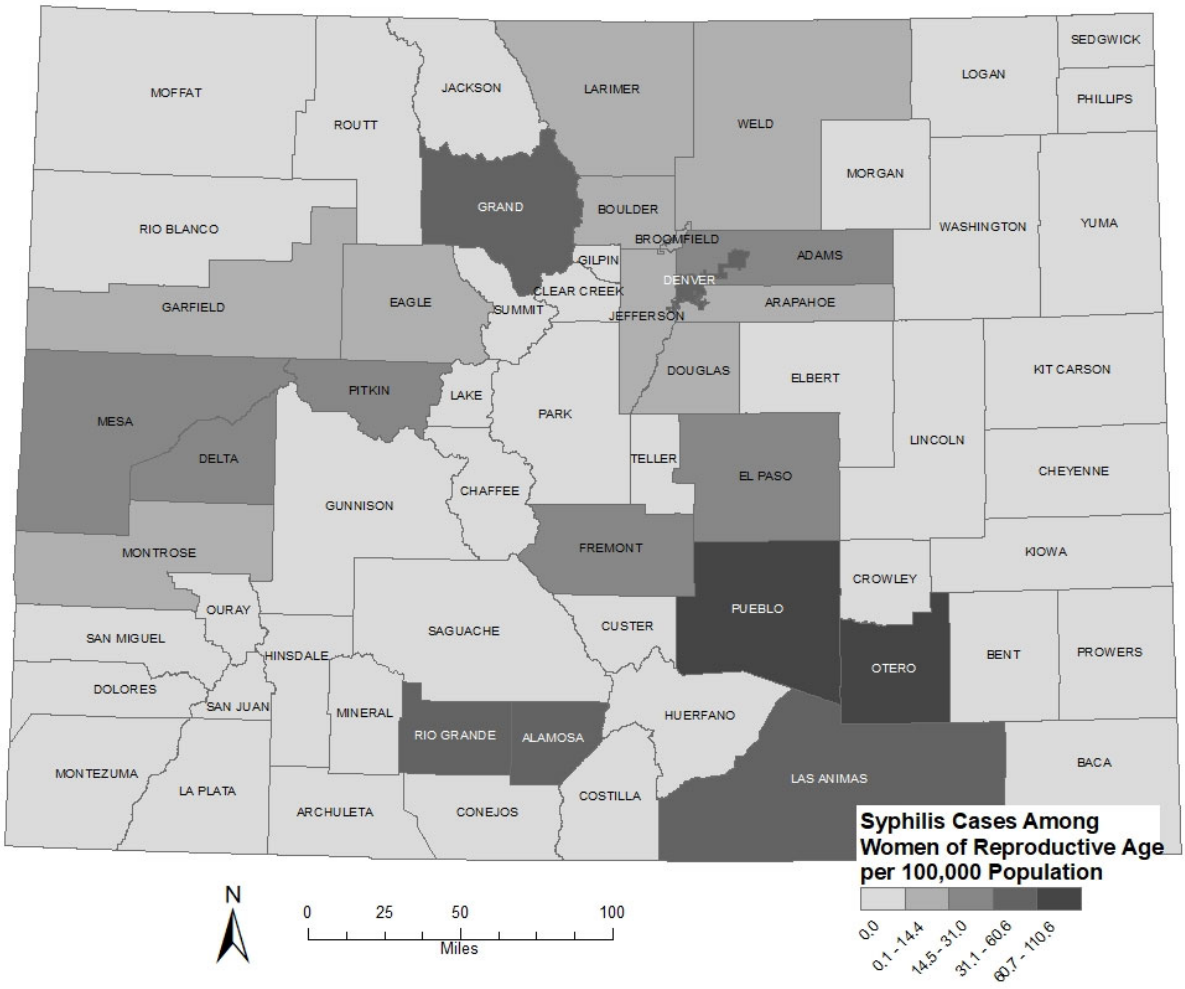
Figure CS.6: Rates of Reported Syphilis Cases Among Women of Reproductive Age by Race/Ethnicity, Colorado, 2015-2019



Caution: these rates use small numbers and should be interpreted with caution.
NH: Non-Hispanic.

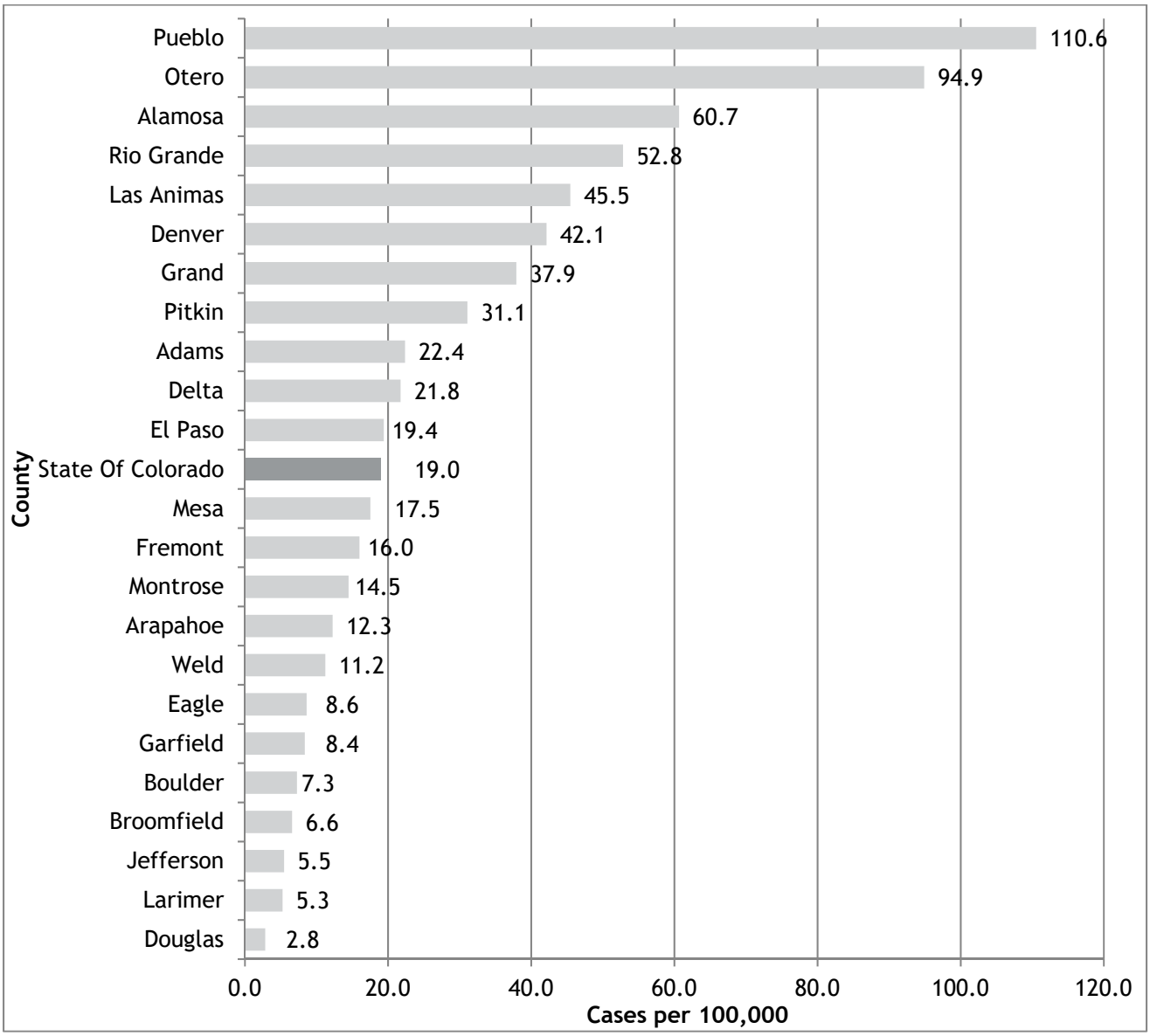
Figure CS.7 and **Figure CS.8** describe the geographical distribution of syphilis rates among women of reproductive age in Colorado at the county level. The chart shows syphilis cases have been diagnosed in residents of 23 of 64 counties with Denver County reporting the highest proportion (32.7%) in 2019. The three highest rates were in Pueblo, Otero, and Alamosa counties (**Figure CS.8**) however, the rates were produced from small case counts and are not reliable. Use caution when interpreting some of these rates as the county may have a small population and small case numbers.

Figure CS.7: Rates of Reported Syphilis Cases Among Women of Reproductive Age by County Map, Colorado, 2019



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

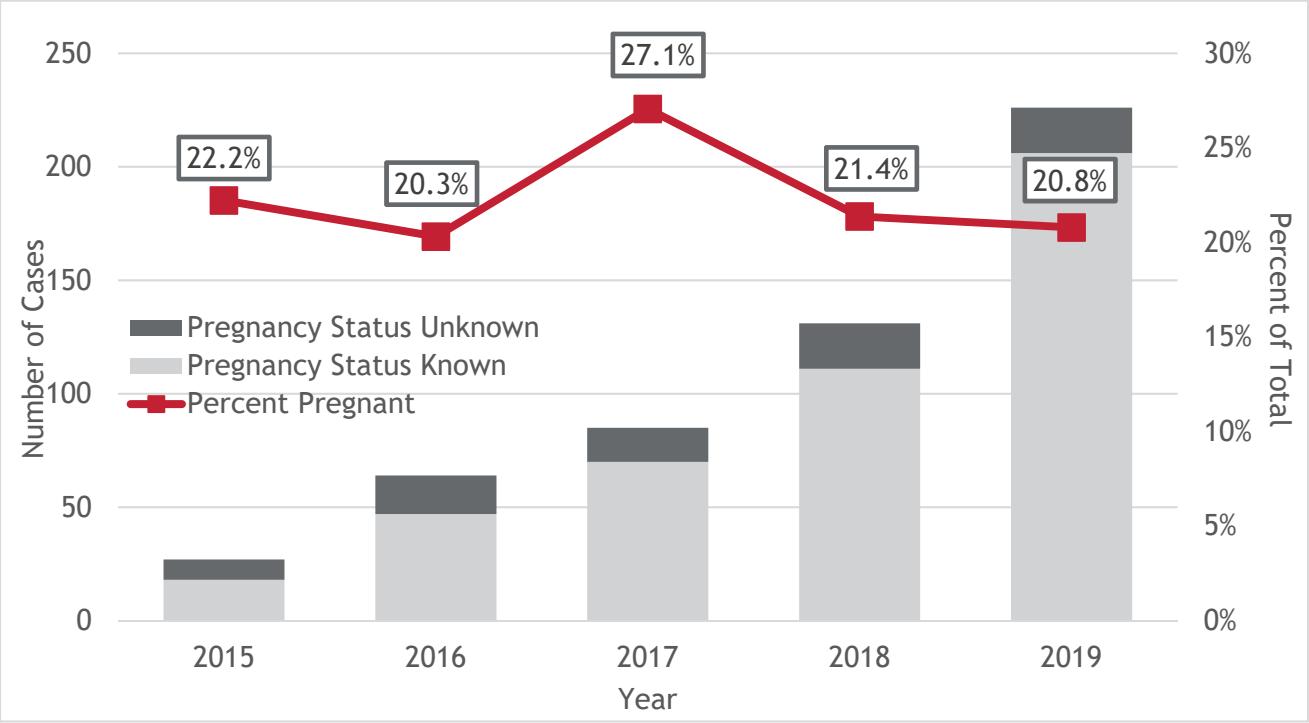
Figure CS.8: Rates of Reported Syphilis Cases Among Women of Reproductive Age by County Chart, Colorado, 2019



Caution: these rates use small numbers and should be interpreted with caution. For details, see Table 7.

Figure CS.9 shows the rate of pregnancy and syphilis among women of reproductive age for 2015-2019 reported to CDPHE. The five-year average for percent pregnant and syphilis was 22.0%. In 2019, 47 (20.8% of the total reported cases) women were pregnant at the time of their syphilis diagnosis.

Figure CS.9: Reported Syphilis Cases Among Women of Reproductive Age and Percent Pregnant by Year of Diagnosis, Colorado, 2015-2019



Data Tables

Table 1: Reported Chlamydia, Gonorrhea and Early Syphilis Cases and Rates of Reported Cases by Demographic Characteristics, 2019

		Chlamydia			Gonorrhea			Primary & Secondary Syphilis			Early Latent Syphilis		
	2019 Population ^	Cases	%	Rate†	Cases	%	Rate†	Cases	%	Rate†	Cases	%	Rate†
Total	5,763,976	29,820	100.0	517.4	9,573	100.0	166.1	486	100.0	8.4	453	100.0	7.9
Gender													
Female	2,879,618	18,747	62.9	651.0	3,890	40.6	135.1	62	12.8	2.2	60	13.2	2.1
Male	2,884,358	11,073	37.1	383.9	5,683	59.4	197.0	424	87.2	14.7	393	86.8	13.6
Race/Ethnicity													
Asian/PI, NH	218,115	452	1.5	207.2	126	1.3	57.8	6	1.2	2.8	11	2.4	5.0
Black/African American, NH	267,977	2,775	9.3	1035.5	1,551	16.2	578.8	56	11.5	20.9	44	9.7	16.4
Hispanic/Latinx (all races)	1,249,902	6,614	22.2	529.2	2,633	27.5	210.7	171	35.2	13.7	157	34.7	12.6
Indigenous/Native American, NH	43,992	238	0.8	541.0	106	1.1	241.0	4	0.8	9.1	4	0.9	9.1
Other, NH	---	1,026	3.4	---	187	2.0	---	4	0.8	---	1	0.2	---
White, NH	3,983,991	8,048	27.0	202.0	2,824	29.5	70.9	234	48.1	5.9	220	48.6	5.5
Unknown	---	10,667	35.8	---	2,146	22.4	---	11	2.3	---	16	3.5	---
Age Group													
0 to 9	669,008	5	0.0	0.7	5	0.1	0.7	0	0.0	0.0	0	0.0	0.0
10 to 14	368,772	177	0.6	48.0	44	0.5	11.9	0	0.0	0.0	0	0.0	0.0
15 to 19	381,136	7,437	24.9	1951.3	1,469	15.3	385.4	11	2.3	2.9	5	1.1	1.3
20 to 24	402,198	10,210	34.2	2538.6	2,193	22.9	545.3	61	12.6	15.2	41	9.1	10.2
25 to 29	442,539	5,577	18.7	1260.2	1,975	20.6	446.3	110	22.6	24.9	105	23.2	23.7
30 to 34	436,235	2,955	9.9	677.4	1,557	16.3	356.9	102	21.0	23.4	89	19.6	20.4
35 to 39	405,469	1,597	5.4	393.9	992	10.4	244.7	64	13.2	15.8	65	14.3	16.0
40 to 44	375,348	831	2.8	221.4	574	6.0	152.9	43	8.8	11.5	43	9.5	11.5
45 to 54	721,292	765	2.6	106.1	559	5.8	77.5	61	12.6	8.5	69	15.2	9.6
55 to 64	715,216	233	0.8	32.6	171	1.8	23.9	29	6.0	4.1	31	6.8	4.3
65+	846,764	33	0.1	3.9	33	0.3	3.9	5	1.0	0.6	5	1.1	0.6
Unknown	---	0	0.0	---	1	0.0	---	0	0.0	---	0	0.0	---

^2019 population estimates from the Colorado State Demography Office (SDO). †Rate per 100,000 population. All STI surveillance data reported to the CDPHE for the year of 2019.

Table 2: Reported Chlamydia, Gonorrhea and Early Syphilis Cases and Rate of Reported Cases with Ranking by County & Health Statistics Region (HSR), 2019

		Chlamydia				Gonorrhea				Primary & Secondary Syphilis				Early Latent Syphilis			
	2019 Population^	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:	**72,210**	**236**	**326.8**	---	**13**	**48**	**66.5**	---	**13**	**2**	**2.8**	---	**16**	**2**	**2.8**	**---**	**14**
Logan	21,914	67	305.7	29	---	9	41.1	37	---	1	4.6	17	---	1	4.6	18	---
Morgan	28,984	141	486.5	7	---	37	127.7	8	---	1	3.5	26	---	1	3.5	22	---
Phillips	4,278	7	163.6	49	---	0	0.0	57	---	0	0.0	33	---	0	0.0	29	---
Sedgwick	2,229	3	134.6	56	---	0	0.0	57	---	0	0.0	33	---	0	0.0	29	---
Washington	4,742	4	84.4	64	---	2	42.2	36	---	0	0.0	33	---	0	0.0	29	---
Yuma	10,063	14	139.1	54	---	0	0.0	57	---	0	0.0	33	---	0	0.0	29	---
Region 2: Larimer	**356,938**	**1,362**	**381.6**	**14**	**10**	**263**	**73.7**	**18**	**10**	**11**	**3.1**	**28**	**12**	**13**	**3.6**	**21**	**9**
Region 3: Douglas	**351,528**	**691**	**196.6**	**45**	**18**	**126**	**35.8**	**41**	**20**	**8**	**2.3**	**31**	**19**	**3**	**0.9**	**28**	**20**
Region 4: El Paso	**722,493**	**4,130**	**571.6**	**5**	**4**	**1,267**	**175.4**	**5**	**5**	**41**	**5.7**	**14**	**7**	**41**	**5.7**	**15**	**6**
Region 5:	**41,331**	**71**	**171.8**	---	**20**	**20**	**48.4**	---	**17**	**0**	**0.0**	---	**21**	**0**	**0.0**	**---**	**21**
Cheyenne	1,825	2	109.6	59	---	1	54.8	30	---	0	0.0	33	---	0	0.0	29	---
Elbert	26,686	44	164.9	48	---	14	52.5	31	---	0	0.0	33	---	0	0.0	29	---
Kit Carson	7,128	19	266.6	34	---	1	14.0	52	---	0	0.0	33	---	0	0.0	29	---
Lincoln	5,692	6	105.4	60	---	4	70.3	22	---	0	0.0	33	---	0	0.0	29	---
Region 6:	**68,531**	**226**	**329.8**	---	**12**	**55**	**80.3**	---	**9**	**2**	**2.9**	---	**14**	**1**	**1.5**	**---**	**19**
Baca	3,556	5	140.6	52	---	2	56.2	29	---	0	0.0	33	---	0	0.0	29	---
Bent	5,798	19	327.7	25	---	5	86.2	14	---	0	0.0	33	---	0	0.0	29	---
Crowley	6,032	13	215.5	42	---	4	66.3	23	---	0	0.0	33	---	1	16.6	3	---
Huerfano	6,854	19	277.2	33	---	9	131.3	6	---	0	0.0	33	---	0	0.0	29	---
Kiowa	1,395	3	215.1	43	---	0	0.0	57	---	1	71.7	1	---	0	0.0	29	---
Las Animas	14,493	52	358.8	20	---	17	117.3	10	---	1	6.9	12	---	0	0.0	29	---
Otero	18,281	71	388.4	12	---	15	82.1	15	---	0	0.0	33	---	0	0.0	29	---
Prowers	12,122	44	363.0	17	---	3	24.7	47	---	0	0.0	33	---	0	0.0	29	---
Region 7: Pueblo	**168,110**	**1,162**	**691.2**	**3**	**2**	**484**	**287.9**	**2**	**2**	**49**	**29.1**	**2**	**1**	**14**	**8.3**	**7**	**4**
Region 8:	**47,040**	**227**	**482.6**	---	**6**	**29**	**61.6**	---	**14**	**4**	**8.5**	---	**5**	**4**	**8.5**	**---**	**3**
Alamosa	16,181	125	772.5	2	---	16	98.9	11	---	2	12.4	7	---	1	6.2	14	---
Conejos	8,161	29	355.3	21	---	5	61.3	27	---	0	0.0	33	---	1	12.3	4	---
Costilla	3,872	11	284.1	31	---	2	51.7	32	---	0	0.0	33	---	0	0.0	29	---
Mineral	764	1	130.9	57	---	0	0.0	57	---	0	0.0	33	---	0	0.0	29	---
Rio Grande	11,238	42	373.7	15	---	5	44.5	34	---	2	17.8	5	---	2	17.8	2	---
Saguache	6,824	19	278.4	32	---	1	14.7	51	---	0	0.0	33	---	0	0.0	29	---
Region 9:	**99,197**	**362**	**364.9**	---	**11**	**88**	**88.7**	---	**7**	**3**	**3.0**	---	**13**	**3**	**3.0**	**---**	**13**

Archuleta	14,002	41	292.8	30	---	5	35.7	42	---	0	0.0	33	---	0	0.0	29	---
Dolores	2,037	2	98.2	62	---	0	0.0	57	---	0	0.0	33	---	0	0.0	29	---
La Plata	56,272	204	362.5	18	---	50	88.9	12	---	2	3.6	25	---	1	1.8	26	---
Montezuma	26,160	114	435.8	10	---	33	126.1	9	---	1	3.8	23	---	2	7.6	8	---
San Juan	726	1	137.7	55	---	0	0.0	57	---	0	0.0	33	---	0	0.0	29	---
Region 10:	**105,360**	**283**	**268.6**	---	**16**	**57**	**54.1**	---	**15**	**9**	**8.5**	---	**4**	**2**	**1.9**	**---**	**18**
Delta	31,173	98	314.4	28	---	18	57.7	28	---	2	6.4	13	---	2	6.4	12	---
Gunnison	17,495	65	371.5	16	---	3	17.1	49	---	4	22.9	4	---	0	0.0	29	---
Hinsdale	819	2	244.2	37	---	0	0.0	57	---	0	0.0	33	---	0	0.0	29	---
Montrose	42,765	91	212.8	44	---	33	77.2	16	---	3	7.0	11	---	0	0.0	29	---
Ouray	4,934	7	141.9	51	---	0	0.0	57	---	0	0.0	33	---	0	0.0	29	---
San Miguel	8,174	20	244.7	36	---	3	36.7	39	---	0	0.0	33	---	0	0.0	29	---
Region 11:	**46,594**	**136**	**291.9**	---	**15**	**9**	**19.3**	---	**21**	**1**	**2.1**	---	**20**	**1**	**2.1**	**---**	**17**
Jackson	1,383	5	361.5	19	---	0	0.0	57	---	0	0.0	33	---	0	0.0	29	---
Moffat	13,252	30	226.4	40	---	5	37.7	38	---	0	0.0	33	---	1	7.5	9	---
Rio Blanco	6,307	15	237.8	38	---	0	0.0	57	---	0	0.0	33	---	0	0.0	29	---
Routt	25,652	86	335.3	23	---	4	15.6	50	---	1	3.9	22	---	0	0.0	29	---
Region 12:	**179,695**	**544**	**302.7**	---	**14**	**65**	**36.2**	---	**19**	**8**	**4.5**	---	**9**	**4**	**2.2**	**---**	**16**
Eagle	55,070	175	317.8	27	---	14	25.4	46	---	2	3.6	24	---	1	1.8	25	---
Garfield	60,168	194	322.4	26	---	22	36.6	40	---	1	1.7	32	---	0	0.0	29	---
Grand	15,718	22	140.0	53	---	5	31.8	43	---	2	12.7	6	---	1	6.4	13	---
Pitkin	17,756	44	247.8	35	---	5	28.2	45	---	2	11.3	8	---	0	0.0	29	---
Summit	30,983	109	351.8	22	---	19	61.3	26	---	1	3.2	27	---	2	6.5	11	---
Region 13:	**81,146**	**185**	**228.0**	---	**17**	**41**	**50.5**	---	**16**	**2**	**2.5**	---	**18**	**2**	**2.5**	**---**	**15**
Chaffee	20,361	36	176.8	47	---	6	29.5	44	---	0	0.0	33	---	0	0.0	29	---
Custer	5,059	5	98.8	61	---	1	19.8	48	---	0	0.0	33	---	0	0.0	29	---
Fremont	47,645	113	237.2	39	---	30	63.0	25	---	2	4.2	19	---	2	4.2	19	---
Lake	8,081	31	383.6	13	---	4	49.5	33	---	0	0.0	33	---	0	0.0	29	---
Region 14: Adams	**517,885**	**2,903**	**560.5**	**6**	**5**	**960**	**185.4**	**4**	**4**	**55**	**10.6**	**9**	**3**	**38**	**7.3**	**10**	**5**
Region 15: Arapahoe	**656,822**	**4,315**	**657.0**	**4**	**3**	**1,547**	**235.5**	**3**	**3**	**49**	**7.5**	**10**	**6**	**62**	**9.4**	**6**	**2**
Region 16:	**397,926**	**1,594**	**400.6**	---	**9**	**290**	**72.9**	---	**11**	**18**	**4.5**	---	**8**	**16**	**4.0**	**---**	**7**
Boulder	327,164	1,359	415.4	11	---	236	72.1	19	---	14	4.3	18	---	15	4.6	17	---
Broomfield	70,762	235	332.1	24	---	54	76.3	17	---	4	5.7	15	---	1	1.4	27	---
Region 17:	**60,154**	**80**	**133.0**	---	**21**	**24**	**39.9**	---	**18**	**2**	**3.3**	---	**11**	**2**	**3.3**	**---**	**11**
Clear Creek	9,740	15	154.0	50	---	7	71.9	20	---	0	0.0	33	---	1	10.3	5	---
Gilpin	6,215	14	225.3	41	---	4	64.4	24	---	0	0.0	33	---	0	0.0	29	---
Park	18,844	18	95.5	63	---	2	10.6	53	---	1	5.3	16	---	1	5.3	16	---
Teller	25,355	33	130.2	58	---	11	43.4	35	---	1	3.9	21	---	0	0.0	29	---
Region 18: Weld	**323,763**	**1,508**	**465.8**	**9**	**8**	**417**	**128.8**	**7**	**6**	**13**	**4.0**	**20**	**10**	**11**	**3.4**	**23**	**10**
Region 19: Mesa	**154,933**	**736**	**475.0**	**8**	**7**	**137**	**88.4**	**13**	**8**	**4**	**2.6**	**30**	**17**	**5**	**3.2**	**24**	**12**
Region 20: Denver	**729,239**	**7,935**	**1088.1**	**1**	**1**	**3,235**	**443.6**	**1**	**1**	**188**	**25.8**	**3**	**2**	**207**	**28.4**	**1**	**1**

Region 21: Jefferson	**583,081**	**1,134**	**194.5**	**46**	**19**	**411**	**70.5**	**21**	**12**	**17**	**2.9**	**29**	**15**	**22**	**3.8**	**20**	**8**
Unknown	---	**0**	**---**	---	---	**0**	**---**	---	---	**0**	**---**	---	---	**0**	---	---	---
STATEWIDE TOTAL	**5,695,430**	**29,820**	**523.6**	---	---	**9,573**	**168.1**	---	---	**486**	**8.5**	---	---	**453**	**8.0**	---	---

^2019 SDO Population Estimate †Rate per 100,000 population ‡Counties ranked by STI rate per 100,000 population

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

Table 3: Reported Chlamydia Cases and Rates of Reported Cases by Demographic Characteristics and Sex, 2019

	Chlamydia											
	Female				Male				Total			
	2019 Population ^	Cases	%	Rate†	2019 Population ^	Cases	%	Rate†	2019 Population ^	Cases	%	Rate†
Total	2,879,618	18,747	100.0	651.0	2,884,358	11,073	100.0	383.9	5,763,976	29,820	100.0	517.4
Race/Ethnicity												
Asian/PI, NH	117,492	304	1.6	258.7	100,623	148	1.3	147.1	218,115	452	1.5	207.2
Black/African American, NH	125,595	1,484	7.9	1,181.6	142,381	1,291	11.7	906.7	267,976	2,775	9.3	1,035.5
Hispanic/Latinx (all races)	616,726	4,551	24.3	737.9	633,176	2,063	18.6	325.8	1,249,902	6,614	22.2	529.2
Indigenous/Native American, NH	22,195	160	0.9	720.9	21,797	78	0.7	357.8	43,992	238	0.8	541.0
Other, NH	---	696	3.7	---	---	330	3.0	---	---	1,026	3.4	---
White, NH	1,997,610	4,793	25.6	239.9	1,986,381	3,255	29.4	163.9	3,983,991	8,048	27.0	202.0
Unknown	---	6,759	36.1	---	---	3,861	34.9	---	---	10,620	35.6	---
Age Group												
0 to 9	327,334	2	0.0	0.6	341,674	3	0.0	0.9	669,008	5	0.0	0.7
10 to 14	179,973	157	0.8	87.2	188,799	20	0.2	10.6	368,772	177	0.6	48.0
15 to 19	184,864	5,703	30.4	3,085.0	196,272	1,734	15.7	883.5	381,136	7,437	24.9	1,951.3
20 to 24	188,508	6,838	36.5	3,627.4	213,690	3,372	30.5	1,578.0	402,198	10,210	34.2	2,538.6
25 to 29	213,488	3,163	16.9	1,481.6	229,051	2,414	21.8	1,053.9	442,539	5,577	18.7	1,260.2
30 to 34	216,414	1,436	7.7	663.5	219,822	1,519	13.7	691.0	436,236	2,955	9.9	677.4
35 to 39	200,537	717	3.8	357.5	204,932	880	7.9	429.4	405,469	1,597	5.4	393.9
40 to 44	185,798	371	2.0	199.7	189,550	460	4.2	242.7	375,348	831	2.8	221.4
45 to 54	357,937	295	1.6	82.4	363,355	470	4.2	129.4	721,292	765	2.6	106.1
55 to 64	365,785	59	0.3	16.1	349,431	174	1.6	49.8	715,216	233	0.8	32.6
65+	458,982	6	0.0	1.3	387,782	27	0.2	7.0	846,764	33	0.1	3.9
Unknown	---	0	0.0	---	---	0	0.0	---	---	0	0.0	---

^2019 SDO Population Estimate †Rate per 100,000 population

Table 4: Reported Gonorrhea Cases and Rates of Reported Cases by Demographic Characteristics and Sex, 2019

	Gonorrhea											
	Female				Male				Total			
	2019 Population ^	Cases	%	Rate†	2019 Population ^	Cases	%	Rate†	2019 Population ^	Cases	%	Rate†
Total	2,879,618	3,890	100.0	135.1	2,884,358	5,683	100.0	197.0	5,763,976	9,573	100.0	166.1
Race/Ethnicity												
Asian/PI, NH	117,492	54	1.4	46.0	100,623	72	1.3	71.6	218,115	126	1.3	57.8
Black/African American, NH	125,595	543	14.0	432.3	142,381	1,008	17.7	708.0	267,976	1,551	16.2	578.8
Hispanic/Latinx (all races)	616,726	1,212	31.2	196.5	633,176	1,421	25.0	224.4	1,249,902	2,633	27.5	210.7
Indigenous/Native American, NH	22,195	62	1.6	279.3	21,797	44	0.8	201.9	43,992	106	1.1	241.0
Other, NH	---	85	2.2	---	---	102	1.8	---	---	187	2.0	---
White, NH	1,997,610	1,035	26.6	51.8	1,986,381	1,789	31.5	90.1	3,983,991	2,824	29.5	70.9
Unknown	---	899	23.1	---	---	1,247	21.9	---	---	2,146	22.4	---
Age Group												
0 to 9	327,334	3	0.1	0.9	341,674	2	0.0	0.6	669,008	5	0.1	0.7
10 to 14	179,973	39	1.0	21.7	188,799	5	0.1	2.6	368,772	44	0.5	11.9
15 to 19	184,864	931	23.9	503.6	196,272	538	9.5	274.1	381,136	1,469	15.3	385.4
20 to 24	188,508	1,038	26.7	550.6	213,690	1,155	20.3	540.5	402,198	2,193	22.9	545.3
25 to 29	213,488	710	18.3	332.6	229,051	1,265	22.3	552.3	442,539	1,975	20.6	446.3
30 to 34	216,414	486	12.5	224.6	219,822	1,071	18.8	487.2	436,236	1,557	16.3	356.9
35 to 39	200,537	357	9.2	178.0	204,932	635	11.2	309.9	405,469	992	10.4	244.7
40 to 44	185,798	172	4.4	92.6	189,550	402	7.1	212.1	375,348	574	6.0	152.9
45 to 54	357,937	126	3.2	35.2	363,355	433	7.6	119.2	721,292	559	5.8	77.5
55 to 64	365,785	24	0.6	6.6	349,431	147	2.6	42.1	715,216	171	1.8	23.9
65+	458,982	3	0.1	0.7	387,782	30	0.5	7.7	846,764	33	0.3	3.9
Unknown	---	0	0.0	---	---	0	0.0	---	---	0	0.0	---

^2019 SDO Population Estimate †Rate per 100,000 population

Table 5: Reported Primary and Secondary Syphilis Cases and Rates of Reported Cases by Demographic Characteristics and Sex, 2019

	Primary & Secondary Syphilis											
	Female				Male				Total			
	2019 Population ^	Cases	%	Rate†	2019 Population ^	Cases	%	Rate†	2019 Population ^	Cases	%	Rate†
Total	2,879,618	62	100.0	2.2	2,884,358	424	100.0	14.7	5,763,976	486	100.0	8.4
Race/Ethnicity												
Asian/PI, NH	117,492	1	1.6	0.9	100,623	5	1.2	5.0	218,115	6	1.2	2.8
Black/African American, NH	125,595	9	14.5	7.2	142,381	47	11.1	33.0	267,976	56	11.5	20.9
Hispanic/Latinx (all races)	616,726	20	32.3	3.2	633,176	151	35.6	23.8	1,249,902	171	35.2	13.7
Indigenous/Native American, NH	22,195	0	0.0	0.0	21,797	4	0.9	18.4	43,992	4	0.8	9.1
Other, NH	---	0	0.0	---	---	4	0.9	---	---	4	0.8	---
White, NH	1,997,610	29	46.8	1.5	1,986,381	205	48.3	10.3	3,983,991	234	48.1	5.9
Unknown	---	3	4.8	---	---	8	1.9	---	---	11	2.3	---
Age Group												
0 to 9	327,334	0	0.0	0.0	341,674	0	0.0	0.0	669,008	0	0.0	0.0
10 to 14	179,973	0	0.0	0.0	188,799	0	0.0	0.0	368,772	0	0.0	0.0
15 to 19	184,864	3	4.8	1.6	196,272	8	1.9	4.1	381,136	11	2.3	2.9
20 to 24	188,508	10	16.1	5.3	213,690	51	12.0	23.9	402,198	61	12.6	15.2
25 to 29	213,488	15	24.2	7.0	229,051	95	22.4	41.5	442,539	110	22.6	24.9
30 to 34	216,414	16	25.8	7.4	219,822	86	20.3	39.1	436,236	102	21.0	23.4
35 to 39	200,537	7	11.3	3.5	204,932	57	13.4	27.8	405,469	64	13.2	15.8
40 to 44	185,798	6	9.7	3.2	189,550	37	8.7	19.5	375,348	43	8.8	11.5
45 to 54	357,937	4	6.5	1.1	363,355	57	13.4	15.7	721,292	61	12.6	8.5
55 to 64	365,785	1	1.6	0.3	349,431	28	6.6	8.0	715,216	29	6.0	4.1
65+	458,982	0	0.0	0.0	387,782	5	1.2	1.3	846,764	5	1.0	0.6
Unknown	---	0	0.0	---	---	0	0.0	---	---	0	0.0	---

^2019 SDO Population Estimate †Rate per 100,000 population

Table 6: Reported Non-Primary, Non-Secondary Latent Syphilis Cases and Rates of Reported Cases by Demographic Characteristics and Sex, 2019

	Early Latent Syphilis											
	Female				Male				Total			
	2019 Population ^	Cases	%	Rate†	2019 Population ^	Cases	%	Rate†	2019 Population ^	Cases	%	Rate†
Total	2,879,618	60	100.0	2.1	2,884,358	393	100.0	13.6	5,763,976	453	100.0	7.9
Race/Ethnicity												
Asian/PI, NH	117,492	2	3.3	1.7	100,623	9	2.3	8.9	218,115	11	2.4	5.0
Black/African American, NH	125,595	7	11.7	5.6	142,381	37	9.4	26.0	267,976	44	9.7	16.4
Hispanic/Latinx (all races)	616,726	20	33.3	3.2	633,176	137	34.9	21.6	1,249,902	157	34.7	12.6
Indigenous/Native American, NH	22,195	1	1.7	4.5	21,797	3	0.8	13.8	43,992	4	0.9	9.1
Other, NH	---	0	0.0	---	---	1	0.3	---	---	1	0.2	---
White, NH	1,997,610	29	48.3	1.5	1,986,381	191	48.6	9.6	3,983,991	220	48.6	5.5
Unknown	---	1	1.7	---	---	15	3.8	---	---	16	3.5	---
Age Group												
0 to 9	327,334	0	0.0	0.0	341,674	0	0.0	0.0	669,008	0	0.0	0.0
10 to 14	179,973	0	0.0	0.0	188,799	0	0.0	0.0	368,772	0	0.0	0.0
15 to 19	184,864	2	3.3	1.1	196,272	3	0.8	1.5	381,136	5	1.1	1.3
20 to 24	188,508	11	18.3	5.8	213,690	30	7.6	14.0	402,198	41	9.1	10.2
25 to 29	213,488	17	28.3	8.0	229,051	88	22.4	38.4	442,539	105	23.2	23.7
30 to 34	216,414	10	16.7	4.6	219,822	79	20.1	35.9	436,236	89	19.6	20.4
35 to 39	200,537	7	11.7	3.5	204,932	58	14.8	28.3	405,469	65	14.3	16.0
40 to 44	185,798	6	10.0	3.2	189,550	37	9.4	19.5	375,348	43	9.5	11.5
45 to 54	357,937	6	10.0	1.7	363,355	63	16.0	17.3	721,292	69	15.2	9.6
55 to 64	365,785	1	1.7	0.3	349,431	30	7.6	8.6	715,216	31	6.8	4.3
65+	458,982	0	0.0	0.0	387,782	5	1.3	1.3	846,764	5	1.1	0.6
Unknown	---	0	0.0	---	---	0	0.0	---	---	0	0.0	---

^2019 SDO Population Estimate †Rate per 100,000 population

Table 7: Reported Congenital Syphilis Cases and Syphilis Cases Among Women of Reproductive Age and Rates of Reported Cases by Demographic Characteristics, 2019

	Syphilis							
	Congenital Syphilis				Syphilis Among Women of Reproductive Age			
	2019 Live Births*	Cases	%	Rate†	2019 Population ^	Cases	%	Rate†
Total	62,875	11	100.0	17.5	1,189,608	226	100.0	19.0
Gender								
Female	30,661	3	27.3	9.8	1,189,608	226	100.0	19.0
Male	32,211	8	72.7	24.8	---		---	---
Race/Ethnicity								
Asian/PI, NH	2,946	0	0.0	0.0	57,082	8	3.5	14.0
Black/African American, NH	3,508	3	27.3	85.5	56,705	26	11.5	45.9
Hispanic/Latinx (all races)	18,554	4	36.4	21.6	292,175	93	41.2	31.8
Indigenous/Native American, NH	447	0	0.0	0.0	10,332	3	1.3	29.0
White, NH	36,628	1	9.1	2.7	773,314	81	35.8	10.5
NH Other/Unknown	149	3	27.3	---	---	15	6.6	---
Age Group								
15 to 19	---	---	---	---	184,864	14	6.2	7.6
20 to 24	---	---	---	---	188,508	47	20.8	24.9
25 to 29	---	---	---	---	213,488	56	24.8	26.2
30 to 34	---	---	---	---	216,414	55	24.3	25.4
35 to 39	---	---	---	---	200,537	32	14.2	16.0
40 to 44	---	---	---	---	185,798	22	9.7	11.8
Pregnancy Status								
Pregnant	---	---	---	---	---	47	20.8	---
Not Pregnant	---	---	---	---	---	159	70.4	---
Unknown	---	---	---	---	---	20	8.8	---
County of Residence								
Adams	6,758	1	9.1	14.8	116,197	26	11.5	22.4
Arapahoe	7,646	1	9.1	13.1	138,682	17	7.5	12.3
Denver	8,688	4	36.4	46.0	175,564	74	32.7	42.1
Pueblo	1,805	3	27.3	166.2	31,657	35	15.5	110.6
Mesa	1,579	1	9.1	63.3	28,523	5	2.2	17.5
Other Urban Counties‡	28,889	0	0.0	0.0	560,352	55	24.3	9.8
Rural Counties	7,510	1	9.1	13.3	138,633	14	6.2	10.1

* Live birth data from COHID ^2019 SDO Population Estimate †Rate per 100,000

‡ Includes Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson, Larimer, and Pueblo Counties.

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