

Epidemiologic Profile of Primary & Secondary and Congenital Syphilis: Oklahoma

National Syphilis and Congenital Syphilis Syndemic
Federal Task Force

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DISCLAIMER

This document is a pilot epidemiological profile, produced by the National Syphilis and Congenital Syphilis Syndemic (NSCSS) Federal Task Force.

Intended Audience

The audience of the Epidemiological Profile are the technical lead and support staff of the Oklahoma State Department of Health as well as the NSCSS Federal Task Force. This document is not intended to be publicly distributed.

Purpose of the Epidemiological Profile

The epidemiological profile was created in response to the NSCSS Federal Task Force request to compile and share data on primary and secondary syphilis as well as congenital syphilis with the Task Force and identified priority jurisdictions. This document is intended to provide a brief, epidemiological summary of primary and secondary syphilis as well as congenital syphilis within the state of Oklahoma from 2018 to 2022.

Limitations

- The data contained in this report is preliminary and may be incomplete.
- The epidemiological profile data may not match data published in local or national data.
- Data is presented at a geographic level, which may not align with local or national funding.

Data sources

The data used to produce this epidemiological report were sourced from the following:

- **Cases of Primary & Secondary Syphilis and Congenital Syphilis:**
 - 2022 Sexually Transmitted Infection Surveillance Report, Centers for Disease Control and Prevention. Available at: <https://www.cdc.gov/std/statistics/2022/>
 - Centers for Disease Control and Prevention. National Notifiable Disease Surveillance System (NNDSS).
- **Population Estimates:** American Community Survey, 2022 Estimates, Age and Demography, U.S. Census Department
- **Live Births:** Wide-ranging Online Data for Epidemiologic Research (WONDER), Live Births 2022, Centers for Disease Control and Prevention. Available at: <https://wonder.cdc.gov/>

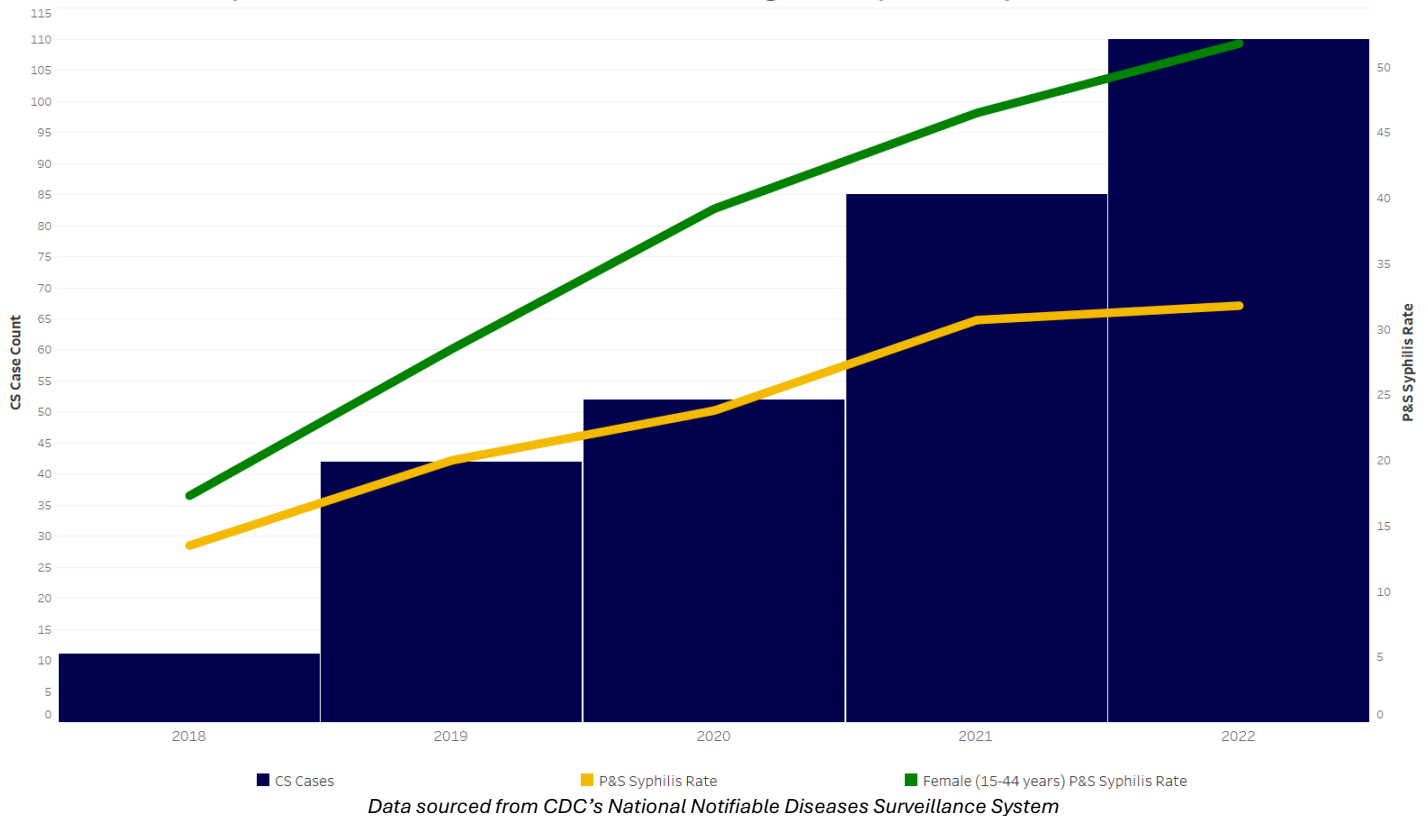
For questions or comments, please email STI@hhs.gov

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SECTION A: SYPHILIS OVERVIEW, OKLAHOMA

Figure 1. Congenital Syphilis Case Counts and Primary & Secondary Syphilis Rates per 100,000 People and Females 15-44 Years of Age, Respectively, Oklahoma, 2018-2022



Over the past five years there has been an increase in the rate of both primary and secondary syphilis (P&S) and congenital syphilis (CS). These data are representative of P&S syphilis and CS incidence, the number of cases observed within the Oklahoma population in a specified timeframe.

- In 2022
 - 1,278 people were identified as having P&S syphilis
 - 31.8 cases per 100,000 people
 - There were a total of 110 cases of CS
 - 227.2 cases per 100,000 live births
- During 2018-2022
 - There was a 136% increase in the rate of P&S syphilis
 - There was a 928% increase in the rate of CS

Oklahoma received
\$1,183,879 in
 federal funding to
 address sexually
 transmitted
 infections

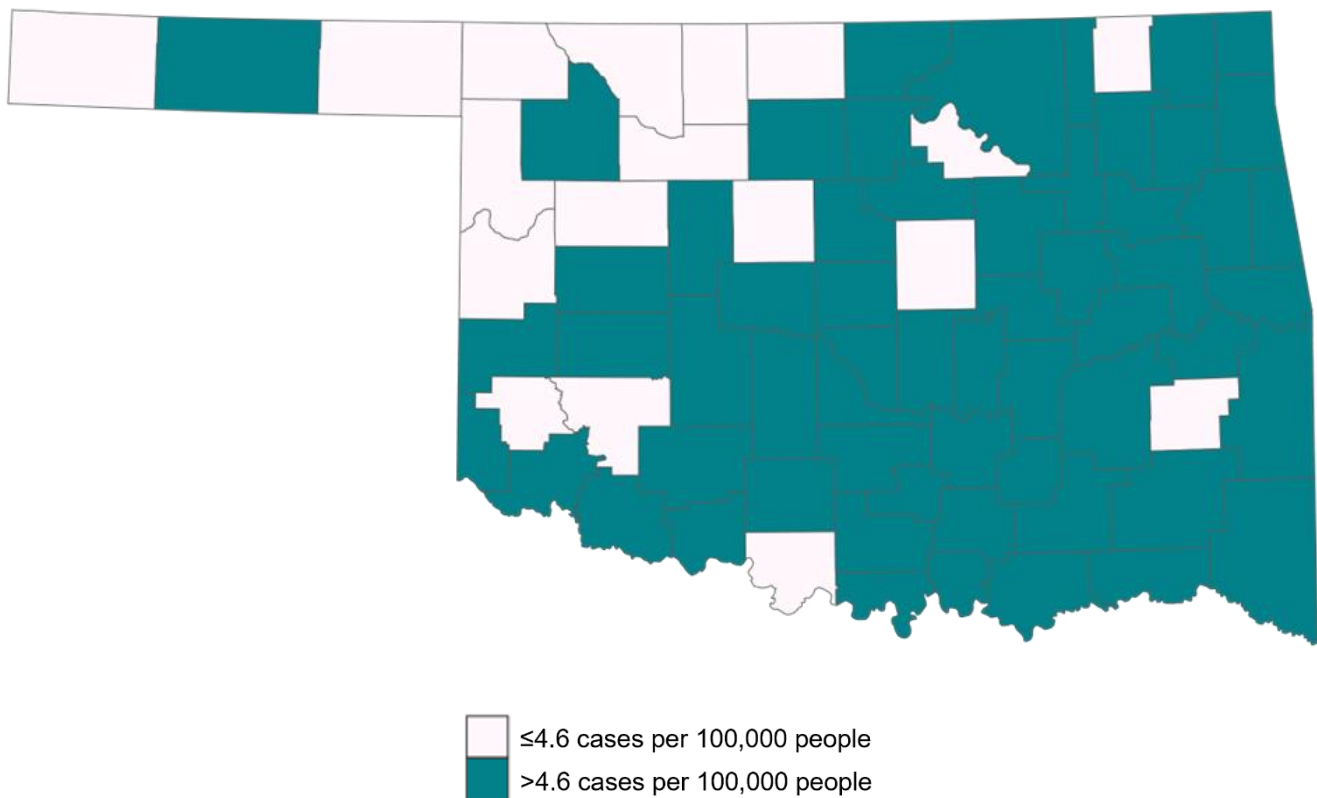
Case rates of P&S Syphilis among women of reproductive age (15-44 years) shows a consistent increase from 2018 to 2022, which surpasses the general population case rate for P&S Syphilis. This reflects the growing burden of P&S syphilis among the heterosexual population in Oklahoma.

In the most recent round of funding, Oklahoma received \$1,183,879 in federal funding to address sexually transmitted infections, which includes P&S syphilis and CS.

SECTION B: GEOGRAPHY OF P&S AND CS, OKLAHOMA

Healthy People 2030 identifies a goal to reduce the rate of P&S cases among females aged 15-44 years to 4.6 per 100,000 population. In counties with a rate that exceeds this goal, offering syphilis testing to sexually active females aged 15-44 years and their sex partners might help identify syphilis cases and prevent spread, support progress towards the Healthy People 2030 goal, and reduce congenital syphilis. In 2022, 46% of U.S. counties, accounting for 76% of the U.S. Population, had syphilis rates above the goal level.

Figure 2. Counties in Oklahoma with Rates of P&S Syphilis Among Females 15-44 Years of Age Over 4.6 Cases per 100,000 People, 2022



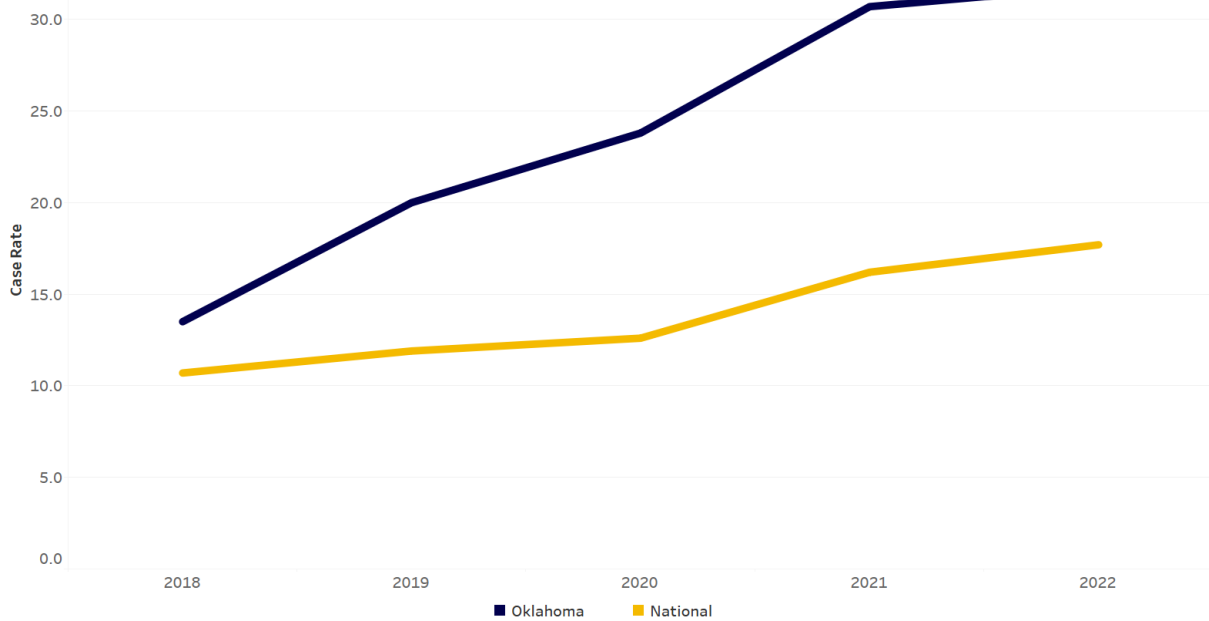
Data sourced from CDC's National Notifiable Diseases Surveillance System

In counties with a rate of P&S syphilis among females aged 15-44 years less than or equal to 4.6 per 100,000 people, providers should continue to assess individual risk factors to determine screening needs. In counties where the rate of P&S syphilis among females aged 15-44 years is above 4.6 per 100,000 people, providers should offer syphilis testing to all sexually active people aged 15-44 years.

Of the 77 counties in Oklahoma, 59 reported P&S rates among females 15-44 years of age above the Healthy People 2030 goal of 4.6 cases per 100,000 people.

SECTION C: PRIMARY AND SECONDARY SYPHILIS (P&S SYPHILIS), OKLAHOMA

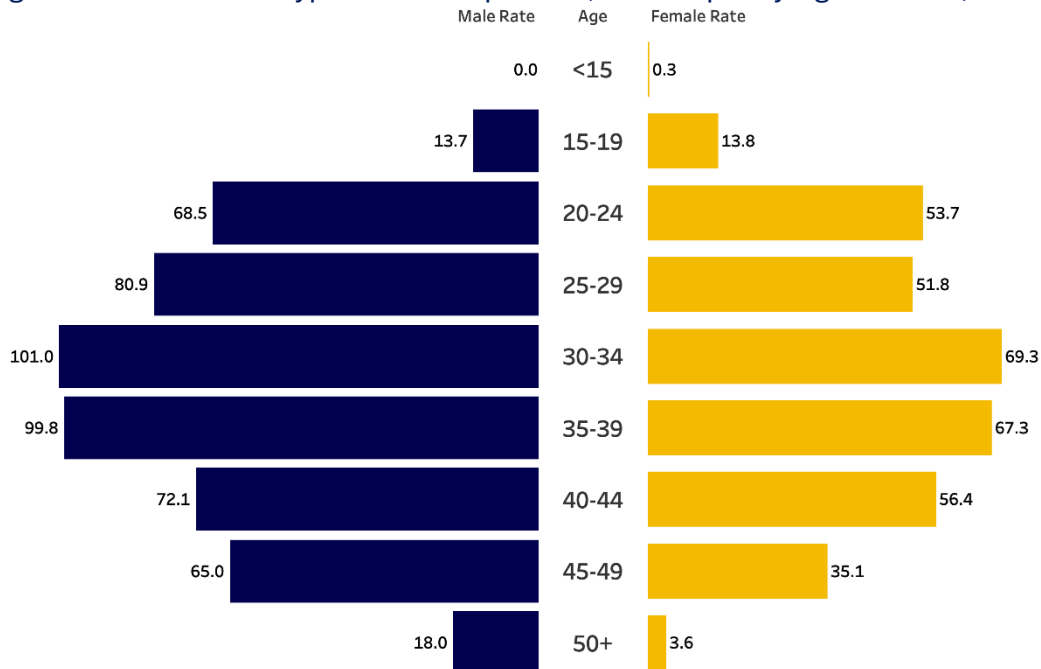
Figure 3. P&S Syphilis Case Rates per 100,000 People, Oklahoma and United States, 2018-2022



Data sourced from CDC's National Notifiable Diseases Surveillance System

The national P&S syphilis rate in 2022 was 17.7 cases per 100,000 persons. The P&S syphilis rate in Oklahoma was 31.8 cases per 100,000 persons, 1.80 times the national average. Oklahoma ranks 4th among states for P&S syphilis case rates in 2022.

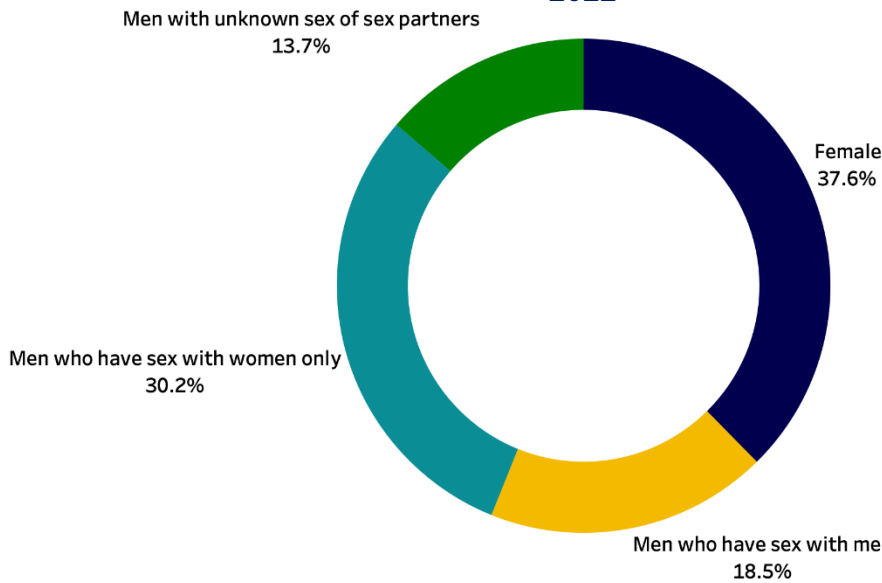
Figure 4. Rate of P&S Syphilis Cases per 100,000 People by Age and Sex, Oklahoma, 2022



Case data sourced from CDC's National Notifiable Diseases Surveillance System; Population sourced from Census American Community Survey Estimates for 2022

Of the 1,278 P&S syphilis cases in 2022, 797 were male. When stratified by age groups, males 30-34 had the highest rate of disease (140 cases, 101.0 cases per 100,000 males aged 30-34). The remaining 481 of the P&S syphilis cases were female in 2022. When stratified by age groups, females 30-34 had the highest rate of disease among females (93 cases, 69.3 cases per 100,000 females aged 30-34).

Figure 5. Percentage of P&S Syphilis Cases by Sex and Sex of Sex Partners Among Men, Oklahoma, 2022



Data sourced from CDC's National Notifiable Diseases Surveillance System

Table 1. Proportion of P&S Syphilis Burden and Population by Race/Ethnicity, Oklahoma, 2022

Race/Ethnicity	% Population*	% Burden of P&S
White	62.6%	47.7%
Hispanic/Latino	12.1%	11.5%
Multiracial	9.1%	7.9%
American Indian/Alaskan Native	6.8%	13.8%
Black/African American	6.7%	18.1%
Asian	2.3%	0.5%
Native Hawaiian/Other Pacific Islander	0.1%	0.3%
Other/Unknown/Missing	N/A	0.2%

*Proportions do not add to 100% due to the exclusion of population with Other Race
 Population data pulled from US Census Bureau American Community Survey, 2022 Estimates, all races are non-Hispanic unless stated otherwise. Case data from CDC's National Notifiable Diseases Surveillance System

The highest portion of P&S syphilis burden in Oklahoma is among White individuals at 47.7% (n=609) of the 1,278 cases in 2022. However, this is relatively reflective of the proportion of Oklahoma's population that identifies as White, 62.6% from 2022 Census American Community Survey estimates. Black and/or African American persons represent only 6.7% of Oklahoma's population but represent 18.1% (n=231) of the state's 2022 P&S syphilis cases. Similarly, American Indian or Alaskan Native persons have an outsized share of the P&S syphilis burden in Oklahoma, representing 6.8% of the population, but 13.8% (n=176) of the disease burden. The portion of P&S syphilis cases among Native Hawaiian/Other Pacific Islander (NH/OPI) persons was at least double the portion of the population identifying as NH/OPI individuals in Oklahoma in 2022.

Figure 6. P&S Syphilis Cases by Sex and HIV Status, Oklahoma, 2022

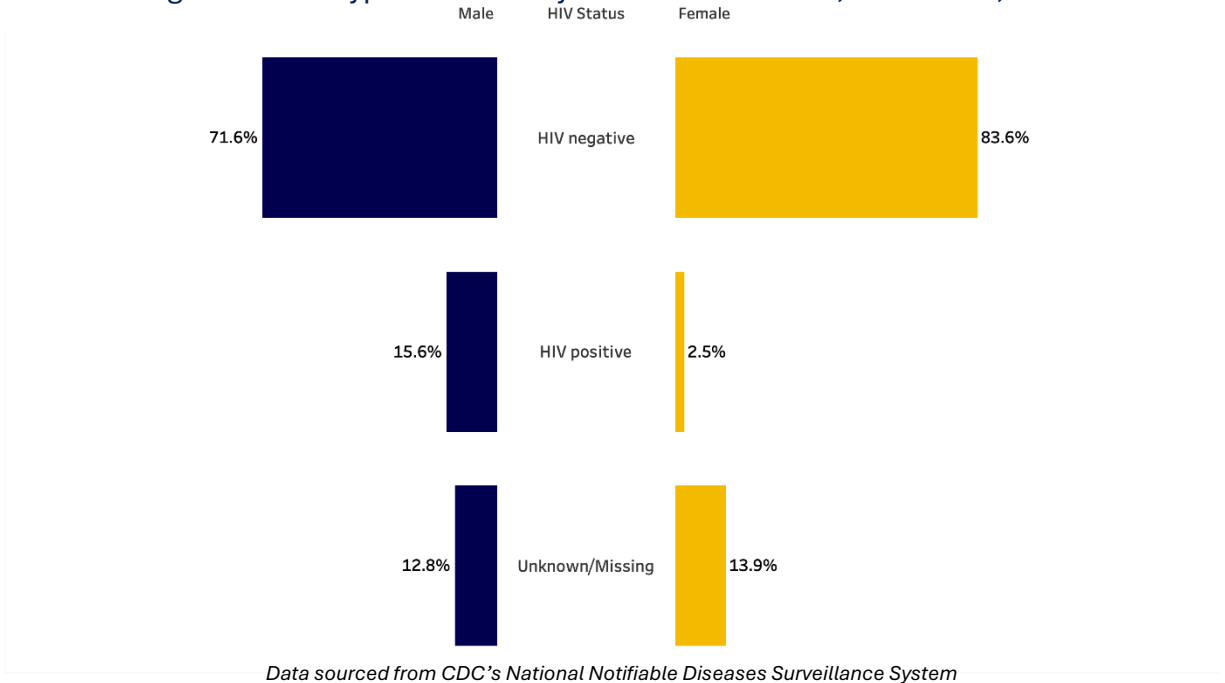
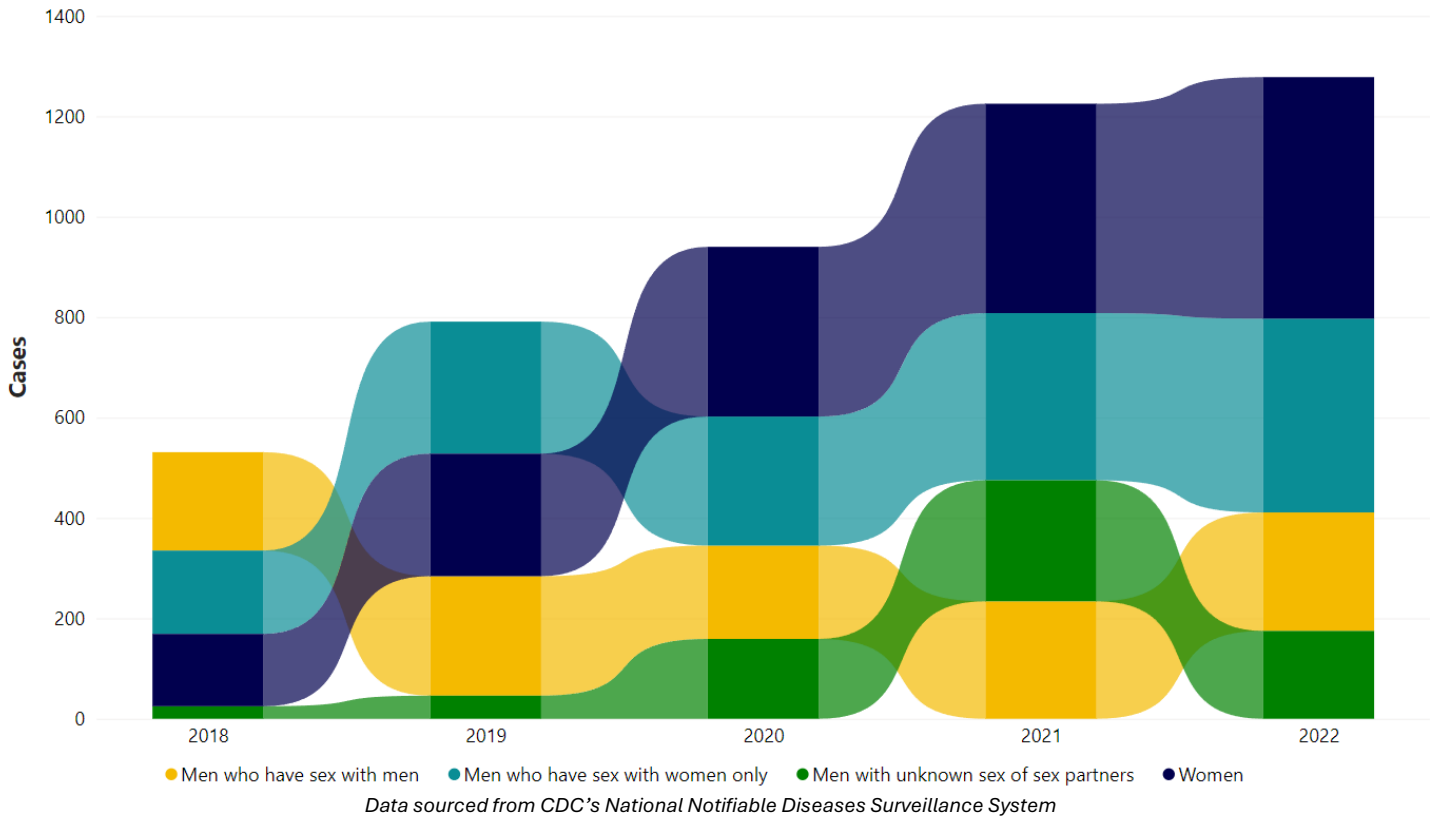


Figure 7. P&S Syphilis Cases by Sex and Sex of Sex Partners Among Men, Oklahoma, 2018-2022



Women were the most affected P&S syphilis group in 2022 at 37.6% of all P&S syphilis cases. Women have had a growing portion of P&S syphilis cases since 2018 (27.1%). The second highest burden of P&S syphilis in 2022 is among men who have sex with women only (MSW) at 30.2%. This could reflect the growing burden of P&S syphilis among the heterosexual population in Oklahoma. MSW and women represent 67.8% of all P&S syphilis cases in 2022.

SECTION C: CONGENITAL SYPHILIS (CS), OKLAHOMA

There were a total of 110 cases of CS in Oklahoma in 2022, with a case rate of 227.2 CS cases per 100,000 live births. This translates to 1 CS case for every 441 live births in Oklahoma in 2022. Of the 110 CS cases in Oklahoma in 2022, 10.0% were stillborn (n=11) and 0.9% were born alive but died after birth (n=1). This equates to 1 in 10 CS cases in Oklahoma in 2022 resulting in a fatal outcome.

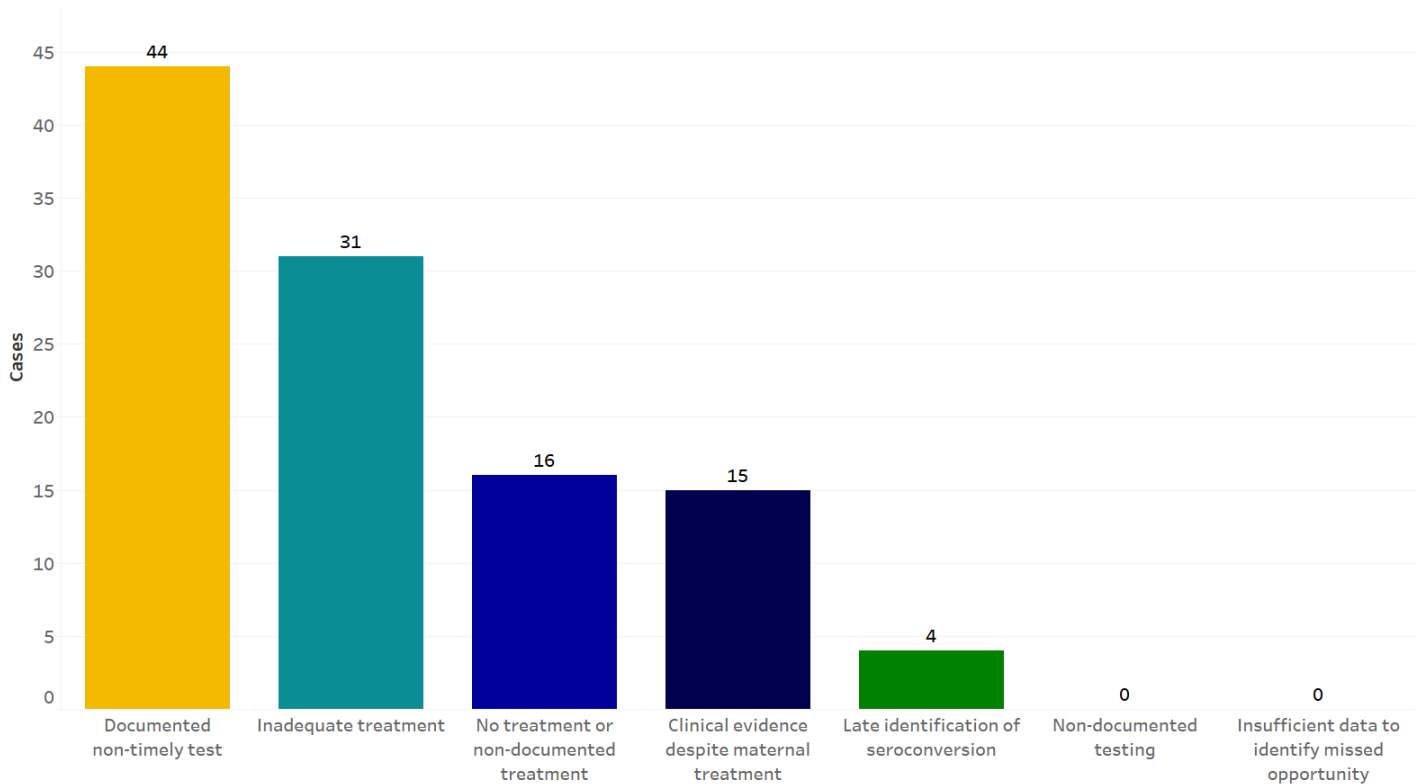
There was **1 case** of congenital syphilis for every **440 live births** in Oklahoma in 2022



Approximately **1 in 10** of the babies with congenital syphilis were stillborn or died after birth

CS is a preventable disease Oklahoma has prenatal screening laws requiring that pregnant women are screened for syphilis only at their first prenatal visit. Oklahoma also requires testing in the third trimester and at delivery if the mother/infant is at increased risk.

Figure 8. Missed CS Prevention Opportunities, Oklahoma, 2022

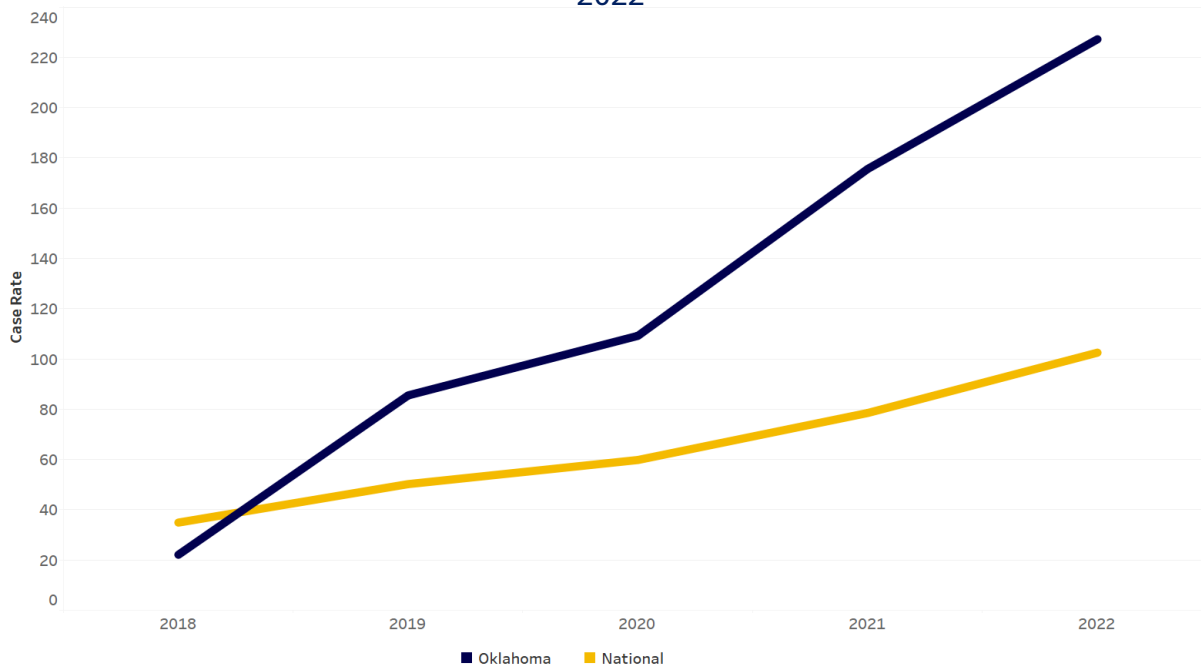


Data sourced from CDC's National Notifiable Diseases Surveillance System

Missed prevention opportunities were identified for the 110 CS cases in Oklahoma in 2022. The most common missed prevention opportunity was documented non-timely test (n=44, 40.0%).

Inadequate treatment (n=31, 28.2%) and no treatment or non-documented treatment (n=16, 14.5%) were the second and third most common missed prevention opportunities in Oklahoma in 2022.

Figure 9. Congenital Syphilis Case Rates per 100,000 live births, Oklahoma and United States, 2018-2022



Data sourced from CDC’s National Notifiable Diseases Surveillance System

The national CS rate in 2022 was 102.5 cases per 100,000 live births. The CS rate in Oklahoma was 227.2 cases per 100,000 live births, 2.22 times the national average. Since 2018, Oklahoma has experienced a 928% increase in CS case rates. Oklahoma ranks 5th among states for CS case rates.

Table 2. Proportion of Population and CS Burden by Race/Ethnicity, Oklahoma, 2022

Race/Ethnicity	% Live Births*	% Burden of CS
White	54.3%	36.4%
Hispanic/Latino	17.5%	10.0%
American Indian/Alaskan Native	9.0%	15.5%
Multiracial	8.3%	11.8%
Black/African American	7.6%	23.6%
Asian	2.7%	0.9%
Native Hawaiian/Other Pacific Islander	0.5%	0.9%
Other/Unknown/Missing	N/A	0.9%

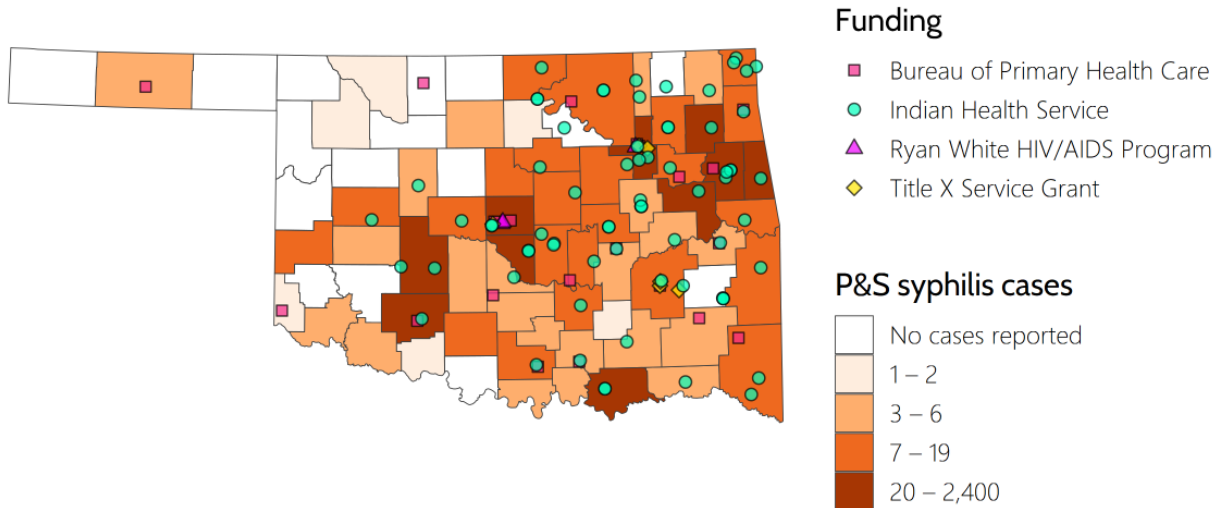
**Proportions do not add to 100% due to the exclusion of population with Other/Unknown/Missing race/ethnicity
Live birth data taken from CDC Wonder from 2022, when ethnicity was missing or unknown these data were excluded. Case data sourced from CDC’s National Notifiable Diseases Surveillance System*

The highest portion of CS burden in Oklahoma is among White individuals at 36.4% of the 110 cases in 2022 (n=40). This is reflective of the of the proportion of Oklahoma’s live births that are identified as White, 54.3% in 2022. Black or African American persons represent only 7.6% of Oklahoma’s live births but represent 23.6% (n=26) of the state’s 2022 CS cases.

APPENDIX A: HEATMAPS, OKLAHOMA

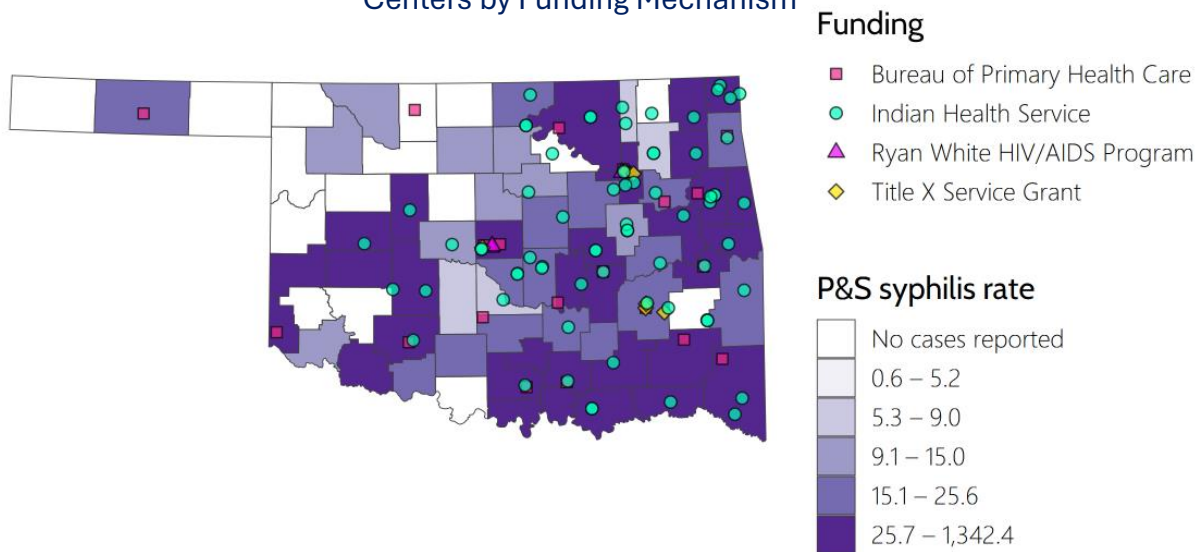
Cases and Rates of P&S syphilis among the population of Oklahoma and among women aged 15-44, as well as for CS were mapped against the county jurisdictions of Oklahoma. Muskogee County reported cases and rates in the top quintile for all mapped data.

Figure 10.a P&S Syphilis Cases by County, Oklahoma, 2022, with Health Centers by Funding Mechanism



Note: Case categories are based on nonzero quintiles of national data. Repeated quintiles were collapsed for this figure, resulting in fewer categories.

Figure 10.b Rates of P&S Syphilis Cases per 100,000 Persons by County, Oklahoma, 2022, with Health Centers by Funding Mechanism

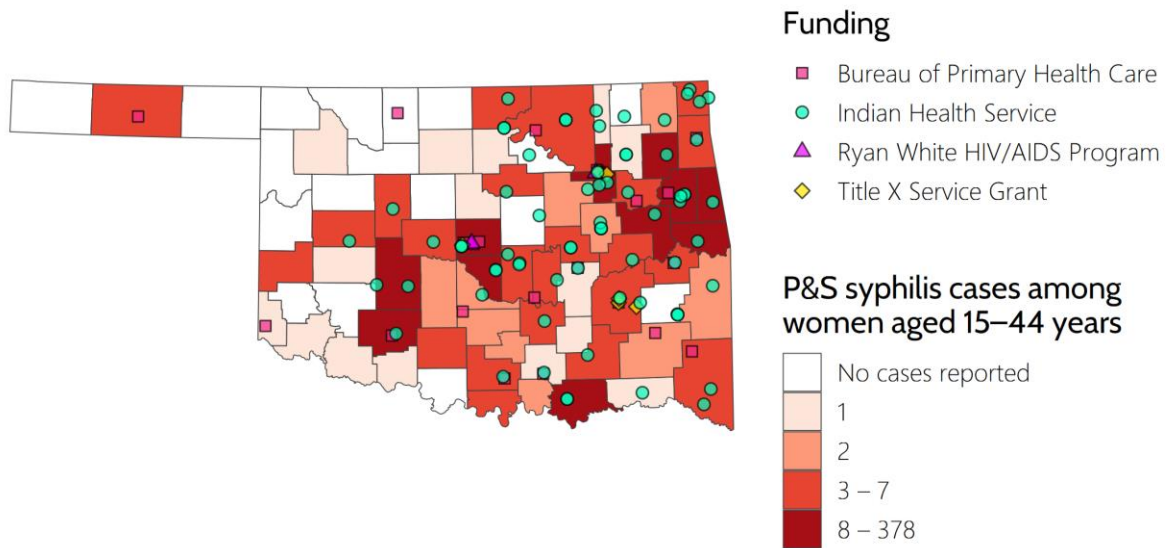


Note: Rate categories are based on nonzero quintiles of national data.

Adair, Bryan, Caddo, Cherokee, Cleveland, Comanche, Mayes, Muskogee, Oklahoma, and Tulsa counties reported P&S syphilis cases in the highest quintile in 2022 (20-2,400 cases). Thirty-two counties reported rates of P&S syphilis in the highest quintile in 2022 (25.7-1,342.4 cases per 100,000 persons).

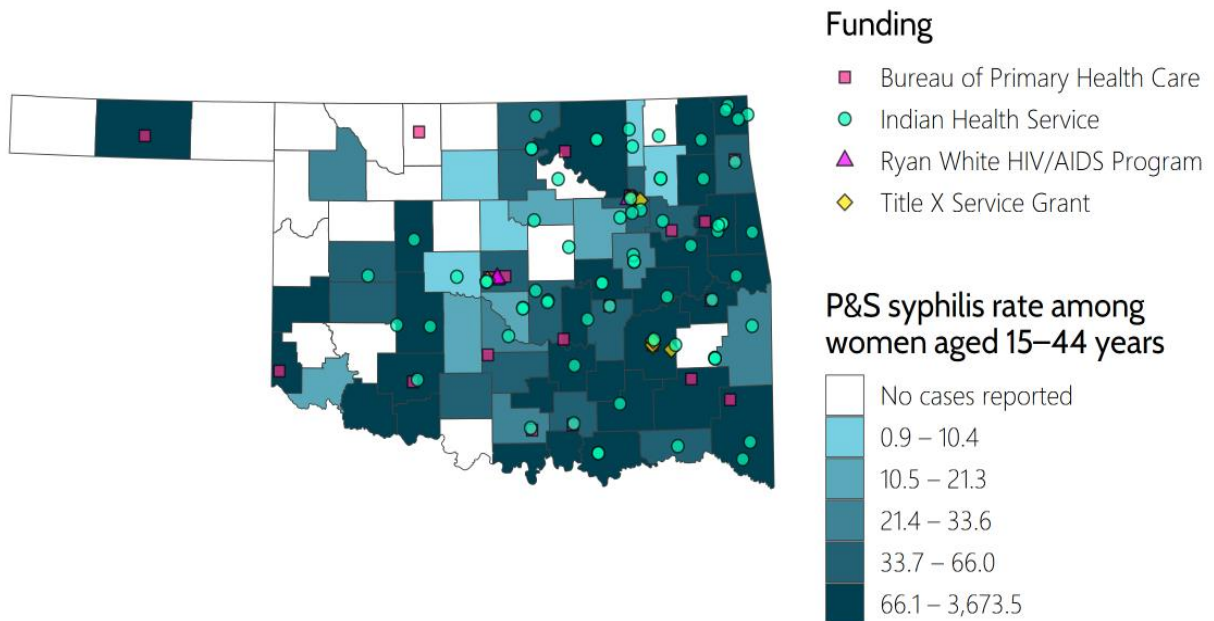
Federally funded health centers are available in many counties in Oklahoma. Availability of a facility does not reflect accessibility or capture the existing barriers to accessing treatment for syphilis.

Figure 11.a P&S Syphilis Cases Among Women Aged 15-44 Years by County, Oklahoma, 2022, with Health Centers by Funding Mechanism



Note: Case categories are based on nonzero quintiles of national data. Repeated quintiles were collapsed for this figure, resulting in fewer categories.

Figure 11.b Rates of P&S Syphilis Cases per 100,000 Women Aged 15-44 by County, Oklahoma, 2022, with Health Centers by Funding Mechanism

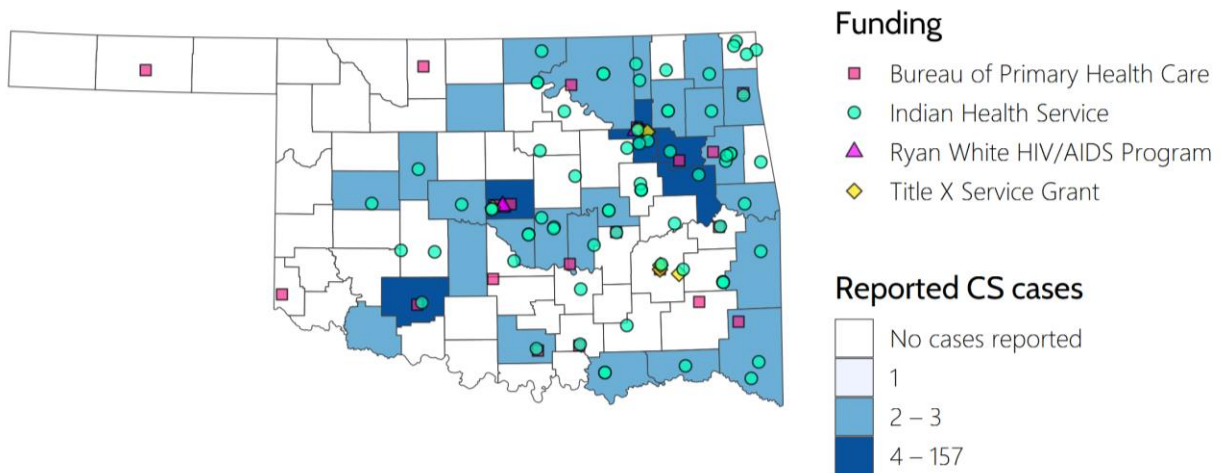


Note: Rate categories are based on nonzero quintiles of national data.

Adair, Bryan, Caddo, Cherokee, Cleveland, Comanche, Mayes, Muskogee, Oklahoma, Sequoyah, and Tulsa counties reported P&S syphilis cases in the highest quintile in 2022 among women aged 15-44 (8-378 cases).

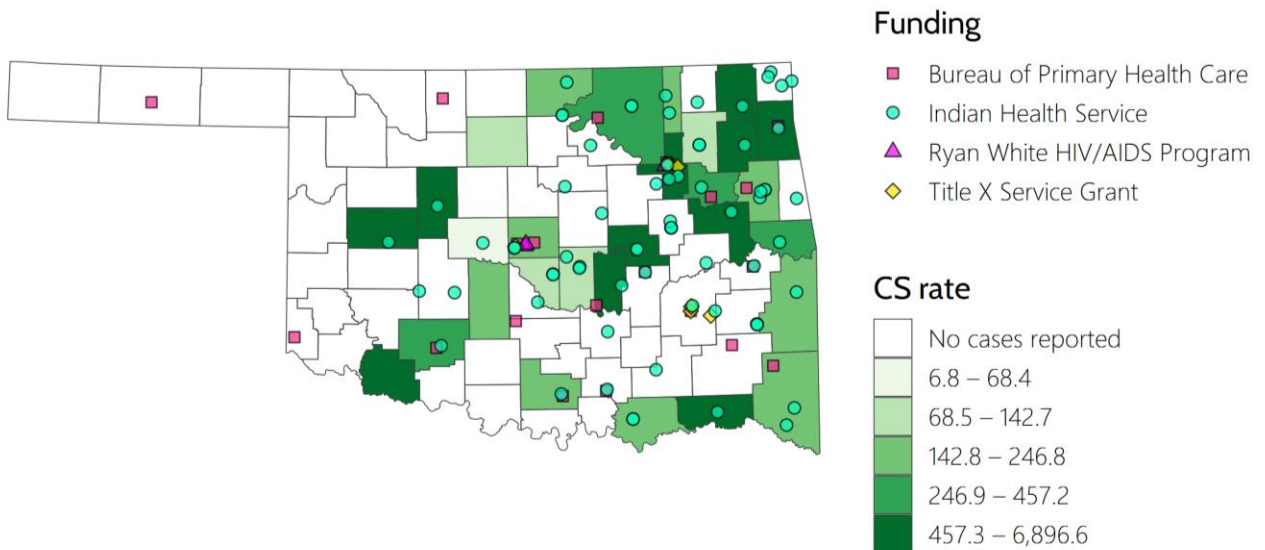
Thirty counties reported rates of P&S syphilis among women aged 15-44 in the highest quintile in 2022 (66.1-3,673.5 cases per 100,000 women aged 15-44).

Figure 12.a CS Cases by County, Oklahoma, 2022, with Health Centers by Funding Mechanism



Note: Case categories are based on nonzero quintiles of national data. Repeated quintiles were collapsed for this figure, resulting in fewer categories.

Figure 12.b Rates of CS Cases per 100,000 Live Births by County, Oklahoma, 2022, with Health Centers by Funding Mechanism



Note: Rate categories are based on nonzero quintiles of national data.

Comanche, Muskogee, Oklahoma, Tulsa, and Wagoner counties reported CS cases in the highest quintile in 2022 (4-157 cases).

Blaine, Choctaw, Craig, Custer, Delaware, Mayes, Muskogee, Okfuskee, Seminole, Tillman, and Tulsa counties reported rates of CS in the highest quintile in 2022 (457.3-6,869.6 cases per 100,000 live births).

APPENDIX B: SOURCES AND ACKNOWLEDGEMENT

The data used to produce this epidemiological report were sourced from the following:

1. 2022 Sexually Transmitted Infection Surveillance Report, Centers for Disease Control and Prevention. Available at: <https://www.cdc.gov/std/statistics/2022/>
2. Centers for Disease Control and Prevention. National Notifiable Disease Surveillance System (NNDSS).
3. American Community Survey, 2022 Estimates, Age and Demography, U.S. Census Department
4. Wide-ranging Online Data for Epidemiologic Research (WONDER), Live Births 2022, Centers for Disease Control and Prevention. Available at: <https://wonder.cdc.gov/>

The National Syphilis and Congenital Syphilis Syndemic Federal Task Force would like to thank all those who contributed to the collection, distribution, and visualization of the data provided in this report.

