



2021 North Carolina STD Surveillance Report

**HIV/STD/Hepatitis Surveillance Unit
Division of Public Health
North Carolina Department of Health and Human Services
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Summary

Note for 2021 North Carolina STD Surveillance Report

The 2020 STD surveillance data should be treated with caution due to the reduced availability of testing caused by the COVID-19 pandemic. For this reason, the 2020 data will be italicized on all our surveillance tables throughout this report.

Chlamydia

- The number of chlamydia cases diagnosed in North Carolina in 2021 was 65,107, a rate of 617 per 100,000 population.
- The COVID-19 pandemic affected chlamydia testing; testing decreased in 2020 and diagnoses did not return in 2021 to pre-2020 numbers.
- Among women, chlamydia diagnoses varied over time but were similar in 2021 to 2017 (43,627 in 2017, 43,383 in 2021). Women decreased from 69% to 67% of total population diagnosed with chlamydia during this time.
- Among men, chlamydia diagnoses increased 12% from 19,330 in 2017 to 21,724 in 2021.
- Among women reported with chlamydia, the highest rates occurred in 20- to 24-year-olds, followed by 15- to 19-year-olds, and 25- to 29-year-olds (4,898, 3,690, and 2,170 per 100,000, respectively). Overall, the 15- to 29-year-olds (both men and women) comprised 82% of people diagnosed with chlamydia in 2021.
- In 2021, Black/African American men and women had the highest chlamydia rates among race/ethnicity groups (864 and 1,352 per 100,000, respectively) and accounted for 39% of people diagnosed with chlamydia.

Gonorrhea

- The reported number of gonorrhea cases in 2021 was 29,177, a rate of 277 per 100,000 population, an increase from 28,075 cases in 2020 (rate of 269 per 100,000). Gonorrhea cases have been increasing in North Carolina for the past few years. In 2017, there were a total of 22,730 cases reported (221 per 100,000).
- Among women, gonorrhea diagnoses increased 23% from 11,033 in 2017 to 13,577 in 2021.
- Among men, gonorrhea diagnoses increased 33% from 11,696 in 2017 to 15,600 in 2021; gonorrhea increases may be due in part to increased screening for gonorrhea at non-genital sites.
- Among women reported with gonorrhea, the highest rates occurred in 20- to 24-year-olds, followed by 15- to 19-year-olds, and 25- to 29-year-olds (1321, 860, and 797 per 100,000, respectively). The 15- to 29-year-olds (both men and women) comprised 67% of people diagnosed with gonorrhea in 2021.
- In 2021, Black/African American men and women had the highest gonorrhea rates (824 and 569 per 100,000, respectively) and accounted for 53% of people diagnosed with gonorrhea.

Early Syphilis

- The number of early syphilis (primary, secondary, and early non-primary non-secondary) cases diagnosed in North Carolina in 2021 was 3,162, a rate of 30 per 100,000 population. This is an increase from previous years (2019: 2,135 cases and rate of 20 per 100,000; 2020: 2,363 cases and rate of 23 per 100,000).
- There were 42 infants reported with congenital syphilis in 2021. This number is an important increase from the 32 probable congenital syphilis cases reported in 2020. Two stillbirths due to maternal syphilis infections in 2021.
- Early syphilis cases increased among women in 2021. There were 600 early syphilis cases (11 per 100,000) in 2021, compared to 410 cases in 2020 (8 per 100,000); early syphilis among women increased from 17% to 19% of total early syphilis infections reported over this period.
- The highest rates of newly diagnosed early syphilis occurred among 25- to 29-year-olds (90 per 100,000), followed by 30-to-34-year-olds (85 per 100,000), and 20- to 24-year-olds (rate of 68 per 100,000). Cases in these age groups comprised 54% of the total early syphilis cases in 2021.
- Black/African American men had the highest rates of early syphilis (144 per 100,000) and accounted for 48% of total early syphilis cases in 2021.
- Men who report sex with men (MSM) and men who report sex with men and women (MSMW) accounted for 44% of newly diagnosed early syphilis in North Carolina in 2021.

BACTERIAL AND OTHER SEXUALLY TRANSMITTED DISEASES IN NORTH CAROLINA

Reportable Sexually Transmitted Diseases (STDs) in North Carolina

In North Carolina, eight bacterial sexually transmitted conditions (STDs) are reportable by law (10A NCAC 41A .0101) to the North Carolina Department of Health and Human Services (North Carolina DHHS).¹ Statewide surveillance information, such as patient demographics, diagnosis date, and treatment information, is collected by the local health departments and sent to the Communicable Disease Branch, within North Carolina DHHS. Local health departments are required to report bacterial STDs to the North Carolina DHHS according to the following schedule:

Within 24 hours	Within seven days
Chancroid*	Chlamydia*
Gonorrhea*	Lymphogranuloma venereum
Granuloma inguinale	Nongonococcal urethritis (NGU)
Syphilis*	Pelvic inflammatory disease (PID)

*The conditions with asterisks are nationally notifiable to the Centers for Disease Control and Prevention.

Chlamydia

Chlamydia is caused by the bacterium *Chlamydia trachomatis* and is the most frequently reported bacterial STD both nationally and in North Carolina. Although symptoms from infections caused by *C. trachomatis* include discharge and painful urination, most individuals with chlamydia have no symptoms at all.² Chlamydia is easily treated with antibiotics. Chlamydia and other STDs appear to increase susceptibility to human immunodeficiency virus (HIV) infection via inflammation, which increases the concentration of cells targeted by HIV in genital regions.³ In addition, untreated chlamydial infection can cause severe damage to the female reproductive tract, including infertility and PID.² Chlamydia in untreated pregnant women can result in poor pregnancy outcomes, including preterm labor, premature rupture of the membranes surrounding the baby in the uterus, and low birth weight. The newborn may also become infected during delivery as the baby passes through the birth canal, leading primarily to eye and lung infections.⁴ For this reason, the Centers for Disease Control and Prevention (CDC) and North Carolina DHHS recommend that all sexually active females age under 25 years of age, as well as all

¹North Carolina Office of Administrative Hearings (2019). Chapter 41: Epidemiology Health. Accessed July 2, 2019. Retrieved from <http://reports.oah.state.nc.us/ncac.asp?folderName=\Title%2010A%20-%20Health%20and%20Human%20Services\Chapter%2041%20-%20Epidemiology%20Health>.

²Centers for Disease Control and Prevention (2022). Chlamydia CDC detailed fact sheet. Updated April 12, 2022. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/std/chlamydia/stdfact-chlamydia.htm>.

³Centers for Disease Control and Prevention (2022). STDs and HIV-CDC detailed fact sheet. Updated April 12, 2022. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/std/hiv/stdfact-std-hiv.htm>.

⁴Centers for Disease Control and Prevention (2022). STDs during Pregnancy-CDC detailed fact sheet. Updated April 12, 2022. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/std/pregnancy/stdfact-pregnancy.htm>.

pregnant women and women ≥ 25 years of age with risk factors, such as new or multiple sex partners, be screened for chlamydia. No comparable screening programs exist for young men. As a result, chlamydia reporting is highly biased with respect to gender, with a higher number of cases detected and reported for women.

Gonorrhea

Gonorrhea is caused by the bacterium *Neisseria gonorrhoeae*. The majority of males with urethral gonorrhea experience symptoms of infection, which include discharge and burning on urination.⁵ Many women also experience symptoms, although they may be mild. Unlike urogenital infections, gonorrhea infections of the oropharynx and rectum are often asymptomatic, therefore individuals with reported exposures at these sites should be screened regardless of symptoms. Like chlamydia, untreated urogenital gonorrhea can cause severe damage to the female reproductive tract, including PID and infertility, and facilitates the acquisition of HIV in both men and women.⁶

Gonorrhea is the most likely of the bacterial STDs to develop antibiotic resistance. Antibiotic resistance is widely reported throughout the world.⁷ North Carolina contributes to CDC's gonorrhea resistance screening project, Strengthening the United States to Respond to Resistant Gonorrhea (SURRG).⁸ Cultures from all gonorrhea cases diagnosed through the Guilford County Health Department are screened for drug resistance. In 2018, a small number of organisms had partial resistance to drugs used for treatment. Resistance was mainly to azithromycin. Resistance in North Carolina is more limited than in other parts of the country.⁹ Surveillance for resistance is very important and will continue.

Ophthalmia Neonatorum

Ophthalmic infection with *N. gonorrhoeae* or *C. trachomatis* can occur in infants when a pregnant woman has an untreated case of gonorrhea or chlamydia. During delivery, the infant's eyes can become infected with either bacterium while passing through the birth canal.¹⁰ Neonates born to mothers with untreated urogenital gonorrhea or chlamydia infection should receive ocular screening and prophylactic treatment upon delivery because when left untreated, ophthalmia neonatorum can result in perforation of the globe of the eye and blindness. In the past, ophthalmia neonatorum was reportable by law in North Carolina, but it is no longer a reportable disease in the state. However, cases may be reported because positive lab tests for *N. gonorrhoeae* and *C. trachomatis* are reportable. Cases are reviewed to detect repeated ophthalmia neonatorum in a delivery hospital, which may indicate imperfect practice.

⁵Centers for Disease Control and Prevention (2022). Gonorrhea-CDC detailed fact sheet. Updated August 22, 2022. Retrieved October 10, 2022. <https://www.cdc.gov/std/gonorrhea/stdfact-gonorrhea.htm>.

⁶Hook, E. & Handsfield, H. (1999). Chapter 32: Gonococcal infections in the adult. In K.K. Holmes, P.F. Sparling, P.A. Mårdh, S.M. Lemon, W.E. Stamm, P. Piot & J.N. Wasserheit (eds.), *Sexually Transmitted Diseases, 3rd Edition* (pp. 1165-1189). New York: McGraw-Hill.

⁷Hook, E & Kirkcaldy, R. (2018). A Brief History of Evolving Diagnostics and Therapy for Gonorrhea: Lessons Learned. *Clinical Infectious Diseases*. 67(8): pp 1294-9.

⁸Centers for Disease Control and Prevention (2017). Combating the Threat of Antibiotic-Resistant Gonorrhea. Updated August 9, 2017. Accessed October 10, 2022. Retrieved from https://www.cdc.gov/std/gonorrhea/arg/CARB_FACTSHEET-2018.pdf.

⁹Centers for Disease Control and Prevention (2018). Gonococcal Isolate Surveillance Project (GISP) Profiles, 2019. Updated July 29, 2021. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/std/statistics/2019/gisp/default.htm>.

¹⁰Centers for Disease Control and Prevention (2019). Conjunctivitis (pink eye) in newborns. Updated January 4, 2019. Retrieved October 10, 2022. <https://www.cdc.gov/conjunctivitis/newborns.html>.

Syphilis

Please note the case definition for syphilis changed in 2018. Therefore, data presented in this report before 2018 used the 2014 case definition, while data after 2018 uses the 2018 case definition. For more information on this, please refer to the [Technical Notes section](#).

Syphilis is a complex disease with a natural history encompassing a number of different stages, caused by the spirochete bacterium *Treponema pallidum*.¹¹ Early stages are the most infectious and the focus of public health activity.

Patients in the primary or secondary stages of syphilis are most likely to have noticeable symptoms, such as a chancre or rash, and to have their disease diagnosed and reported because they go to a doctor for treatment. These stages are also the most infectious and, therefore, of the greatest public health concern. Non-primary non-secondary early syphilis (formerly early latent) infections do not have symptoms but have serologic evidence of having acquired the infection within the past 12 months. Asymptomatic cases are less likely to be diagnosed and are generally identified through risk-based screening or partner notification. Primary, secondary, and early (non-primary non-secondary) stages all occur within the first year of infection.¹² These stages are often grouped together when discussing infectious syphilis and are called “early syphilis.”

If a case progresses past the early stage (greater than 12 months from initial infection), the infection moves into a stage known as late or unknown duration syphilis. These syphilis cases are detected and reported in several different ways. Some patients with late syphilis develop symptoms and go to a doctor, while others are detected through risk-based screening or partner notification. Although individuals with late or unknown duration syphilis cannot transmit the infection to sex partners, finding these cases is still important, as long-term consequences of untreated syphilis can be severe.¹²

Pregnant women with any stage of syphilis can pass the infection to their unborn child. Exposure to syphilis while in utero can result in stillbirth or infant death, especially when the pregnant woman is not treated during pregnancy. Up to 40% of babies born to women with untreated syphilis may be stillborn or die from the infection as a newborn. Infants that are born with congenital syphilis can have a skin rash, low birth weight, jaundice, bone and joint deformities, and eye and ear nerve damage.¹³ Congenital syphilis is preventable and is more likely when pregnant women receive consistent and timely prenatal care. The North Carolina Administrative Code requires that all pregnant women be tested for syphilis at first prenatal visit, between 28-30 weeks of gestation, and at delivery. Failure to detect maternal syphilis infection during the pregnancy or at delivery can result in delayed identification of infection in children who can have ongoing infection for months to years before being diagnosed.¹³ Identifying a confirmed or probable case of congenital syphilis at delivery allows for appropriate

¹¹Centers for Disease Control and Prevention (2022). Syphilis-CDC detailed fact sheet. Updated April 12, 2022. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/std/syphilis/stdfact-syphilis-detailed.htm>.

¹²Centers for Disease Control and Prevention (2018). Syphilis 2018 case definition-CSTE position paper. Updated April 16, 2021. Accessed October 10, 2022. Retrieved from <https://ndc.services.cdc.gov/case-definitions/syphilis-2018/>.

¹³Centers for Disease Control and Prevention (2022). Congenital syphilis-CDC fact sheet. Updated April 12, 2022. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/std/syphilis/stdfact-congenital-syphilis.htm>.

evaluation and treatment to be initiated in the hospital before discharge to prevent the devastating impact of untreated infection.

Nongonococcal urethritis (NGU) and Pelvic Inflammatory Disease (PID)

Nongonococcal urethritis (NGU) and pelvic inflammatory disease (PID), are syndromic in nature. NGU and PID are diagnosed by symptom presentation and exclusion of other causes. NGU is a diagnosis of exclusion that requires the presence of specific clinical symptoms, including urethral discharge, pain with urination, or meatal pruritis in the absence of evidence of diplococci by Gram, MG, or GV smear on microscopy.¹⁴ Although NGU can be caused by a number of different organisms, including *C. trachomatis* and *M. genitalium*, no pathogen is identified in ~50% of cases.¹⁴; Most NGU cases in North Carolina are diagnosed in local health department clinics.

PID describes a spectrum of inflammatory disorders of the upper female genital tract, including any combination or endometritis, tubo-ovarian abscess, and pelvic peritonitis. PID symptoms can include cervical motion tenderness, discharge, fever, lower back pain, and painful urination.¹⁵ Many different types of microorganisms can cause PID, but *N. gonorrhoeae* and *C. trachomatis* have been identified in approximately 50% of PID cases. Quick detection and antibiotic treatment is critical to prevent long term reproductive organ damage.

Rare Bacterial Sexually Transmitted Infections

Chancroid is caused by *Haemophilus ducreyi* organism. Symptoms include painful genital ulcers and tender suppurative inguinal adenopathy.¹⁶ Cases are rarely reported in North Carolina. Laboratory diagnosis is complex since there are no FDA approved nucleic acid amplification tests (NAAT) for the detection of *H. ducreyi* is not widely available. Two other rare bacterial STDs are reportable in North Carolina. Lymphogranuloma venereum (LGV) is caused by a variant of *C. trachomatis*. The clinical manifestations of LGV include tender inguinal or femoral lymphadenopathy, a genital ulcer at the site of inoculation, or proctocolitis. A definitive diagnosis of LGV can be made with an LGV-specific molecular test which are not widely available, therefore diagnosis is based on clinical suspicion, epidemiologic information, and positive *C. trachomatis* NAAT at symptomatic anatomic site.¹⁷ Granuloma inguinale is a genital ulcerative disease caused by *Klebsiella granulomatis*.¹⁸ North Carolina DHHS investigates less than 10 possible cases of these conditions each year. Because these STDs are so rare, most clinicians have little experience in diagnosis and reporting, and it is possible that these diseases are underreported.

¹⁴Centers for Disease Control and Prevention (2022). Diseases characterized by urethritis and cervicitis. Updated September 21, 2022. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/std/treatment-guidelines/urethritis-and-cervicitis.htm>.

¹⁵Centers for Disease Control and Prevention (2021). Pelvic Inflammatory Disease (PID)-2021 STD Treatment Guidelines. Updated September 21, 2022. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/std/treatment-guidelines/pid.htm>.

¹⁶Centers for Disease Control and Prevention (2021). Chancroid-2021 STD Treatment Guidelines. Updated July 22, 2021. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/std/treatment-guidelines/chancroid.htm>.

¹⁷Centers for Disease Control and Prevention (2021). Lymphogranuloma venereum (LGV)-2021 STD Treatment Guidelines. Updated July 22, 2021. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/std/treatment-guidelines/lgv.htm>.

¹⁸Centers for Disease Control and Prevention (2021). Granuloma Inguinale (Donovanosis)-2021 STD Treatment Guidelines. Updated July 22, 2021. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/std/treatment-guidelines/donovanosis.htm>.

Table A displays the overall number of reportable STD cases in NC in 2021. The majority of STDs reported were chlamydia, gonorrhea, and syphilis.

Table A. North Carolina Reportable Bacterial Sexually Transmitted Diseases (STDs) by Gender, 2021

Bacterial STDs	Gender		Total*
	Men	Women	
Chlamydia	21,724	43,382	65,044
Gonorrhea	15,600	13,576	29,149
Syphilis			
Primary Syphilis	644	127	771
Secondary Syphilis	872	209	1,081
Early Non-Primary, Non-Secondary	1,039	264	1,303
Late or Unknown duration Syphilis	1,213	559	1,772
Congenital Syphilis	--	--	42
Nongonococcal urethritis (NGU)	1,989	3	2,000
Pelvic inflammatory disease (PID)	--	128	128
Chancroid	0	0	0
Granuloma Inguinale	0	0	0
Lymphogranuloma venereum	1	1	2
Total	43,082	58,249	101,292

*Total includes cases with missing gender.

Data Source: North Carolina Electronic Disease Surveillance System (data as of September 7, 2022).

Non-Reportable Sexually Transmitted Diseases (STDs) in North Carolina

In order to get a clear picture of STDs in North Carolina, it is worth mentioning four non-reportable diseases that impact North Carolinians. The following section will explain the significance of human papillomavirus, genital herpes, *Mycoplasma genitalium*, and trichomoniasis.

Human Papillomavirus (HPV)

Genital human papillomavirus (HPV) is the most common sexually transmitted infection.¹⁹ The CDC estimates that about 13 million Americans become infected each year with HPV.²⁰ There are

¹⁹Centers for Disease Control and Prevention (2022). Genital HPV Infection-CDC fact sheet. Updated April 12, 2022. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/std/hpv/stdfact-hpv.htm>.

²⁰Centers for Disease Control and Prevention (2019). About HPV. Updated July 23, 2021. Accessed August 16, 2022. Retrieved from https://www.cdc.gov/hpv/parents/about-hpv.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fhpv%2Fparents%2Fwhatishpv.html.

approximately 150 types of HPV that have been identified, at least 40 of which infect the genital area. Most HPV infections are asymptomatic and self-limited, but there are a few strains associated with genital warts and others associated with the development of cancer in both women and men.²⁰ Since most infected people are asymptomatic, extensive screening would be required to diagnose the majority of infections. Current screening efforts focus on the detection of cancer, in particular cervical cancer in females, rather than on HPV infection.²⁰ The most recent data available estimated that 333 cases of cervical cancer were reported in North Carolina in 2020.²¹

There are three vaccines licensed by the US Food and Drug Administration (FDA) to protect against HPV infection, and all three have high efficacy (close to 100%).²² The HPV vaccination is recommended for preteen girls and boys at age 11 or 12. For more information, visit the CDC website:

<https://www.cdc.gov/vaccines/vpd/hpv/public/index.html>.

Genital Herpes

The CDC estimates that 572,000 people are newly infected with genital herpes each year. Around 12% of people aged 14 to 49 have a genital herpes simplex virus type 2 (HSV-2) infection.²³ In 2015-2016, prevalence of HSV-1 was 48% and prevalence of HSV-2 was 12% in the U.S. population.²⁴ Asymptomatic shedding of the virus is not uncommon. Many infected patients are unaware they are infected and represent a source of transmission in the community.²⁴

HSV-2 infection is more common in women than in men, but transmission from an infected male to a female partner is more likely than from an infected female to male partner.²⁴ Symptoms are most severe immediately following the initial infection with subsequent outbreaks typically decreasing in severity. A rare but important consequence of genital herpes is transmission to newborns at the time of birth.²⁴ Since active disease causes ulcerative lesions, herpes infection is believed to increase the risk of HIV transmission and acquisition.¹⁹ The CDC does not recommend routine serological screening for herpes in asymptomatic people.²⁵

²¹North Carolina State Center for Health Statistics (2020). Cancer incidence rates by race, North Carolina, 2020. Updated August 10, 2022. Accessed October 10, 2022. Retrieved from <https://schs.dph.ncdhhs.gov/schs/CCR/incidence/2020/2020-PreliminaryIncidenceRatesFinal-Race.pdf>

²²Centers for Disease Control and Prevention (2021). About HPV vaccines. Updated November 16, 2021. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/vaccines/vpd/hpv/hcp/vaccines.html>.

²³Centers for Disease Control and Prevention (2021). Genital herpes-CDC detailed fact sheet. Updated July 22, 2021. Accessed September 2, 2022. Retrieved from <https://www.cdc.gov/std/herpes/stdfact-herpes-detailed.htm>.

²⁴Centers for Disease Control and Prevention (2018). Prevalence of herpes simplex virus type 1 and 2 in persons aged 14-49: United States, 2015-2016. Updated February 7, 2018. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/nchs/products/databriefs/db304.htm>.

²⁵Centers for Disease Control and Prevention (2022). Genital herpes screening FAQ. Updated July 11, 2022. Accessed September 2, 2022. Retrieved from <https://www.cdc.gov/std/herpes/screening.htm>.

Mycoplasma genitalium

Mycoplasma genitalium infections cause urethritis in men and cervicitis in women. Many cases are asymptomatic. *M. genitalium* is believed to be responsible for approximately 20-25% of nonchlamydial NGU cases, 4%-22% of PID cases, and 40% of persistent or recurrent urethritis.²⁶

Trichomoniasis

Trichomoniasis is caused by the protozoan *Trichomonas vaginalis* and affects more than 2 million patients annually in the US.²⁷ Symptoms can include urethritis in males and diffuse malodorous vaginal discharge with vulvar irritation in females; asymptomatic infection also occurs.

T. vaginalis infection has been associated with an increased risk of HIV acquisition and an increase in HIV vaginal shedding in women living with HIV who are not virally suppressed.²⁸ In pregnant women, adverse pregnancy outcomes are associated with infection including premature rupture of membranes, preterm delivery, and low birth weight infants. Trichomoniasis usually responds to a single dose of metronidazole or tinidazole, although resistance to treatment can occur. Partner treatment is necessary to prevent re-infection.²⁸

Poverty and STDs

While the North Carolina surveillance data shows higher STD rates in some racial and ethnic groups, factors such as poverty and unequal distribution of wealth may be driving these differences.²⁹ People who cannot afford basic needs may also have trouble accessing quality sexual health services, and may have had experiences with the health system that discourage the accessing of testing and care.²⁹ For each person diagnosed with a STD in North Carolina in 2021, we calculated the proportion of the population living below the poverty line in their census tract of residence at the time of their diagnosis using 5-year (2016-2020) estimates from the American Community Survey. This calculation estimated the neighborhood poverty level experienced for people newly diagnosed with STDs in North Carolina. Figure 1 shows the rate of newly diagnosed STDs in 2021 by census tract poverty rate. Figure 1 demonstrates that although people living at all levels of poverty get STDs, those living in census tracts with a higher proportion of residents residing below the federal poverty line are more likely to be diagnosed with STDs.

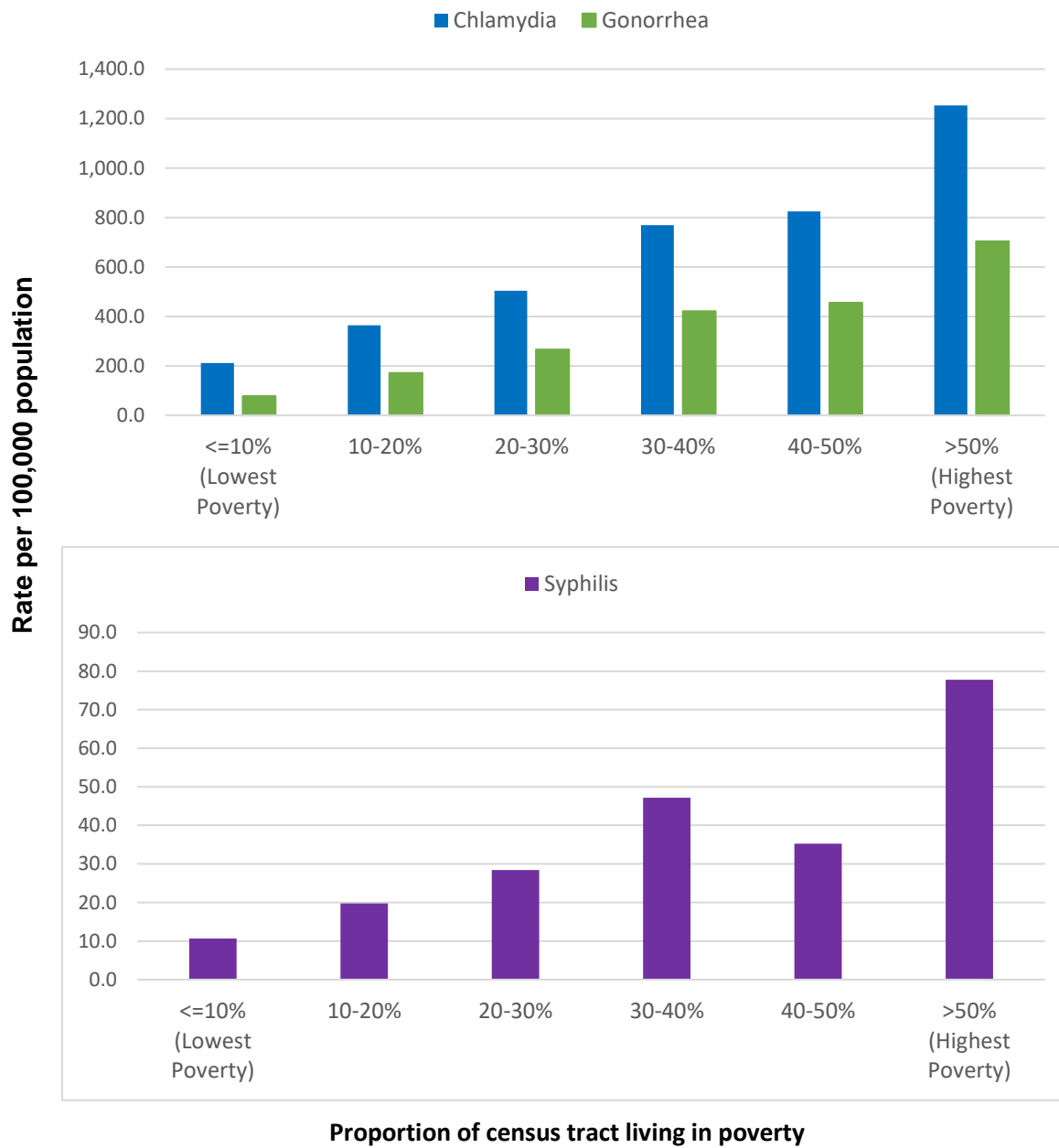
²⁶Centers for Disease Control and Prevention (2021). *Mycoplasma genitalium*-2021 STD Treatment Guidelines. Updated July 22, 2021. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/std/treatment-guidelines/mycoplasmagenitalium.htm>

²⁷Centers for Disease Control and Prevention (2022). Trichomoniasis-CDC detailed fact sheet. Updated April 25, 2022. Retrieved September 2, 2022. <https://www.cdc.gov/std/trichomonas/stdfact-trichomoniasis.htm>.

²⁸Centers for Disease Control and Prevention (2021). Trichomoniasis-2021 STD Treatment Guidelines. Updated September 21, 2022. Accessed October 10, 2022. Retrieved from <https://www.cdc.gov/std/treatment-guidelines/trichomoniasis.htm>.

²⁹Centers for Disease Control and Prevention. (2020). STD health equity. Updated March 2, 2020. Accessed September 2, 2022. Retrieved from <https://www.cdc.gov/std/health-disparities/default.htm#ftn5>.

Figure 1. People Newly Diagnosed with Chlamydia, Gonorrhea, and Early Syphilis (Primary, Secondary, and Early Non-Primary Non-Secondary) in North Carolina by Poverty Indicator*, 2021

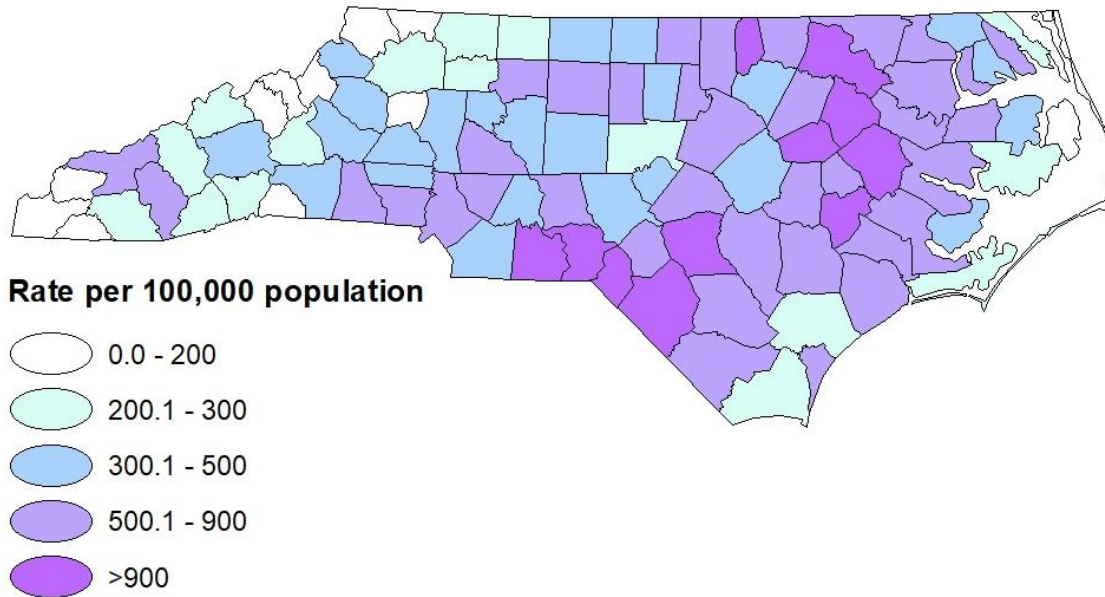


*Estimates of people living below the poverty line within a census tract and all population estimates obtained from the American Community Survey, 2016-2020, five-year estimate.

Data Sources: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022), and 2016-2020 American Community Survey (ACS) five-year estimates (accessed from <https://www.data.census.gov>).

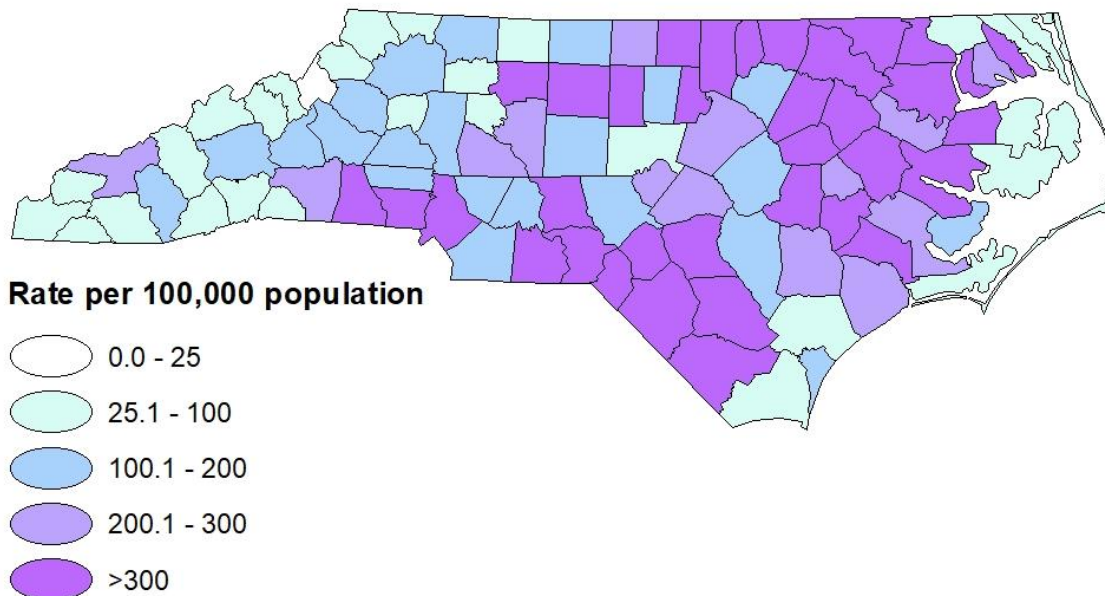
Chlamydia, Gonorrhea, and Syphilis Annual Rate Maps by County of Residence at Diagnosis, 2021

Figure 2. Newly Diagnosed Chlamydia Rates in North Carolina by County of Residence at Diagnosis, 2021



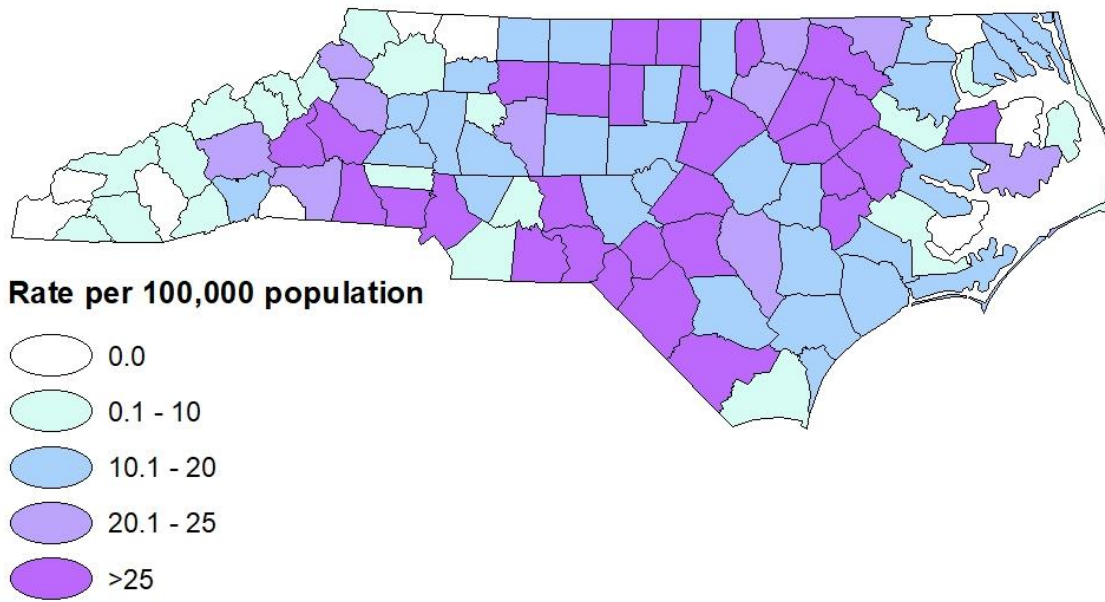
Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Figure 3. Newly Diagnosed Gonorrhea Rates in North Carolina by County of Residence at Diagnosis, 2021



Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Figure 4. Newly Diagnosed Early Syphilis (Primary, Secondary, and Early Non-Primary Non-Secondary) Rates in North Carolina by County of Residence at Diagnosis, 2021



Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

County Totals and Rates for Chlamydia, Gonorrhea, and Syphilis 2021

Table 1. Newly Diagnosed Chlamydia Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2017-2021 2

Table 2. Newly Diagnosed Gonorrhea Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2017-2021 5

Table 3. Newly Diagnosed Early Syphilis (Primary, Secondary, and Early Latent) Annual Rates in North Carolina by Rank Order, and Year of Diagnosis, 2019-2021 8

Table 4. Newly Diagnosed Syphilis Annual Rates in North Carolina by Stage of Infection and County of Diagnosis, 2021 11

Table 5. Newly Diagnosed Early Syphilis (Primary, Secondary, and Early Latent) Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2017-2021 14

Table 1. Newly Diagnosed Chlamydia Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2017-2021*

County	2017		2018		2019		2020*		2021	
	Cases	Rate [^]	Cases	Rate [^]	Cases	Rate [^]	Cases	Rate [^]	Cases	Rate [^]
Alamance	904	553.5	936	562.1	1,059	626	<i>926</i>	<i>540.2</i>	1,023	588.3
Alexander	67	180.6	75	201.2	81	216.5	<i>111</i>	<i>304.6</i>	68	185.6
Alleghany	27	245.4	38	340.3	23	206.6	<i>19</i>	<i>174.5</i>	12	108.6
Anson	166	667.8	181	739.2	248	1053.6	<i>204</i>	<i>925</i>	213	965.5
Ashe	41	153	40	147.5	30	110.2	<i>58</i>	<i>218.2</i>	44	164.7
Avery	33	188.3	30	171.3	34	194.3	<i>26</i>	<i>146</i>	28	156.7
Beaufort	254	539.3	290	615.4	307	651.9	<i>307</i>	<i>687.5</i>	289	649.9
Bertie	154	800.2	162	849.4	128	675	<i>129</i>	<i>719.3</i>	133	759.8
Bladen	166	496.3	141	425.1	174	529.5	<i>189</i>	<i>638.4</i>	155	525
Brunswick	400	305.4	443	323.2	472	330.1	<i>388</i>	<i>283.8</i>	403	279.4
Buncombe	1,104	428.9	1,139	438.5	1,250	477	<i>1,121</i>	<i>416</i>	1039	382.6
Burke	333	369.4	356	394.2	360	398.1	<i>309</i>	<i>352.9</i>	283	323
Cabarrus	976	471.5	1,134	536.2	1,225	566.2	<i>1,193</i>	<i>528.3</i>	1,297	560.8
Caldwell	240	292.8	289	351.9	332	403.5	<i>326</i>	<i>404.2</i>	261	324.4
Camden	24	228.2	37	348.6	23	213.6	<i>19</i>	<i>183.5</i>	30	276.9
Carteret	225	326	241	346.5	248	356.8	<i>207</i>	<i>305.8</i>	155	226.1
Caswell	122	539.3	98	431.9	90	398.4	<i>98</i>	<i>431</i>	93	409.4
Catawba	623	394.7	656	413.8	689	432.3	<i>705</i>	<i>439</i>	634	392
Chatham	195	273.7	211	288.4	226	303.7	<i>178</i>	<i>233.3</i>	209	268.3
Cherokee	42	150	52	182.9	49	170.7	<i>36</i>	<i>125.1</i>	48	164.6
Chowan	101	720.7	95	677.7	92	661.1	<i>93</i>	<i>678.4</i>	91	663.2
Clay	18	163.1	22	197.3	27	239.4	<i>15</i>	<i>135.3</i>	14	123.8
Cleveland	566	582.3	665	681.4	644	657.4	<i>657</i>	<i>660.2</i>	733	730.4
Columbus	310	553.6	297	532.6	320	577.1	<i>306</i>	<i>604.5</i>	336	670.8
Craven	814	792.3	816	794.8	791	775.3	<i>625</i>	<i>620.5</i>	523	519.5
Cumberland	3,655	1,101.9	4,055	1,212.3	4,502	1,337.8	<i>4,218</i>	<i>1,260.1</i>	4,352	1,297.1
Currituck	61	231.7	77	284.3	50	179.1	<i>64</i>	<i>227.8</i>	56	188.9
Dare	108	297.9	111	302.4	75	202.3	<i>68</i>	<i>184.2</i>	65	171.8
Davidson	665	401.8	691	414.5	667	396.5	<i>714</i>	<i>422.7</i>	759	444.8
Davie	137	323.9	131	308.2	147	344.3	<i>129</i>	<i>302</i>	134	307.8
Duplin	275	466.6	322	545.8	319	542.5	<i>343</i>	<i>704.1</i>	336	692.6
Durham	2,740	876.9	2,862	901.5	2,999	928.6	<i>2,423</i>	<i>745.9</i>	2,388	732.2
Edgecombe	503	952.8	521	1,001.6	638	1,240.5	<i>600</i>	<i>1,227</i>	601	1242.8
Forsyth	2,533	673.8	2,847	750.8	3,232	845.8	<i>2,986</i>	<i>780.5</i>	2,920	757.4
Franklin	330	498.7	347	513	342	490.1	<i>300</i>	<i>437.5</i>	312	435.1
Gaston	1,383	629.2	1,576	707.2	1,676	746	<i>1,554</i>	<i>681.7</i>	1,519	658
Gates	46	399.9	39	338.4	52	450.8	<i>68</i>	<i>649</i>	34	328
Graham	21	246.2	17	200.2	18	212.5	<i>27</i>	<i>336.2</i>	9	111.9
Granville	477	802.3	458	762.1	420	695.8	<i>300</i>	<i>491.9</i>	350	564.6
Greene	147	701.2	167	793.7	178	851.1	<i>182</i>	<i>889.9</i>	123	602.4
Guilford	4,992	944.3	5,159	967.5	5,415	1,006.7	<i>4,609</i>	<i>851.5</i>	4,344	800.9

Continued

*2020 data should be treated with caution due to reduced availability of testing caused by the COVID-19 pandemic. Data is italicized for this reason.

[^]Rates are expressed per 100,000 population.

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Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 1 (Continued). Newly Diagnosed Chlamydia Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2017-2021*

County	2017		2018		2019		2020*		2021	
	Cases	Rate^	Cases	Rate^	Cases	Rate^	Cases	Rate^	Cases	Rate^
Halifax	418	814.4	491	968.5	468	934.6	<i>480</i>	<i>987.2</i>	460	952.9
Harnett	694	523.4	759	563.7	784	575.7	<i>730</i>	<i>546.5</i>	800	588.4
Haywood	139	227.2	168	270.2	179	286.4	<i>151</i>	<i>243.2</i>	129	206.5
Henderson	326	282.4	338	290	325	277	<i>333</i>	<i>286.4</i>	282	241.4
Hertford	155	648.1	195	816.5	176	744.4	<i>237</i>	<i>1,099.7</i>	183	860
Hoke	387	713.9	400	731.8	423	766.8	<i>397</i>	<i>762.3</i>	462	869.8
Hyde	24	458.9	17	339.6	8	162.2	<i>14</i>	<i>305.1</i>	11	244
Iredell	768	437.2	728	408.2	773	425	<i>715</i>	<i>383</i>	738	384.4
Jackson	206	476.6	204	468.5	282	644.8	<i>194</i>	<i>450</i>	233	536.7
Johnston	838	426.4	881	433.9	981	467.6	<i>888</i>	<i>411.1</i>	935	412.8
Jones	61	638.7	49	512.7	48	514	<i>41</i>	<i>447</i>	59	637.5
Lee	326	539.6	287	468.8	342	553.6	<i>319</i>	<i>504.1</i>	317	494.2
Lenoir	474	836.8	541	965.2	581	1036.1	<i>552</i>	<i>1,001.4</i>	521	952.4
Lincoln	257	311.1	324	384.2	299	345.2	<i>358</i>	<i>412.4</i>	298	332.3
Macon	98	283.2	101	286.7	79	221.1	<i>76</i>	<i>205.3</i>	87	231.6
Madison	53	245.3	71	327.8	71	328.1	<i>53</i>	<i>250.1</i>	46	213.9
Martin	144	632.3	170	749	191	850.7	<i>181</i>	<i>821.6</i>	157	721.7
McDowell	177	392.6	145	318.8	168	366.9	<i>155</i>	<i>347.7</i>	115	257.2
Mecklenburg	8,833	818.1	9,204	839.8	10,052	9,02.9	<i>9,453</i>	<i>847.4</i>	9,754	869.1
Mitchell	33	220.1	36	240.2	38	254.6	<i>37</i>	<i>248.3</i>	20	133.7
Montgomery	156	572	141	520.2	129	474.1	<i>120</i>	<i>466</i>	132	511.7
Moore	327	335.8	389	393.1	428	423.1	<i>333</i>	<i>333.9</i>	399	388.3
Nash	641	681.2	680	722.2	774	821.2	<i>702</i>	<i>739.2</i>	714	750.2
New Hanover	1,259	550.1	1,216	522.9	1,301	555.3	<i>961</i>	<i>425.8</i>	1,190	519.6
Northampton	130	653.3	176	891.5	178	912.9	<i>147</i>	<i>841.4</i>	149	869.9
Onslow	1,778	910.2	2,092	1,061.6	2,394	1,180.5	<i>2,131</i>	<i>1,041.7</i>	1,853	898.8
Orange	777	541	691	466.8	751	506.8	<i>543</i>	<i>365.2</i>	736	494.3
Pamlico	43	340.4	33	261.9	47	371.5	<i>39</i>	<i>317.7</i>	39	315.9
Pasquotank	326	827	323	813.7	303	758.1	<i>299</i>	<i>737</i>	266	651.6
Pender	225	370.1	205	330	207	328.3	<i>208</i>	<i>345.5</i>	165	262.7
Perquimans	76	564.5	60	446.9	57	419.8	<i>52</i>	<i>399.8</i>	54	411.3
Person	240	609	176	445.2	208	525	<i>240</i>	<i>613.9</i>	271	692.6
Pitt	2,096	1,173.2	2,046	1,138.7	2,232	1,231.4	<i>1,925</i>	<i>1,130.7</i>	1,907	1,107.6
Polk	47	228.5	37	179	35	168.9	<i>34</i>	<i>175.9</i>	34	173
Randolph	469	328	508	354.8	567	395.1	<i>570</i>	<i>395.4</i>	553	380.9
Richmond	438	978	407	906.8	444	991.9	<i>403</i>	<i>938.4</i>	403	943.3
Robeson	1,268	956.2	1,155	875.7	1,320	1,012	<i>1,259</i>	<i>1,080.4</i>	1,326	1,139.9
Rockingham	354	389.7	419	462.1	459	503.7	<i>392</i>	<i>430.3</i>	386	422.9
Rowan	929	662.2	950	674.4	900	634.6	<i>831</i>	<i>565.8</i>	762	514.3
Rutherford	244	366.6	284	425.7	291	434.1	<i>281</i>	<i>436</i>	286	442.8

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^Rates are expressed per 100,000 population.

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Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 1 (Continued). Newly Diagnosed Chlamydia Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2017-2021*

County	2017		2018		2019		2020*		2021	
	Cases	Rate [^]	Cases	Rate [^]	Cases	Rate [^]	Cases	Rate [^]	Cases	Rate [^]
Sampson	282	446.3	323	510.5	406	640.7	330	559	340	576.4
Scotland	313	889.8	314	904.9	346	994.9	305	892.5	320	934.9
Stanly	239	388.9	268	431.7	287	458.1	255	408	316	498.2
Stokes	101	221	114	250.8	116	254.2	130	292	107	240.2
Surry	213	295.4	207	287.7	198	276	172	241	186	261.4
Swain	88	616.8	118	827.5	125	873.4	64	453.4	80	565.9
Transylvania	69	204.1	77	225.3	93	271.4	75	227.4	72	217.1
Tyrrell	16	383.5	18	437.6	15	393.4	12	369.8	12	368.8
Union	815	352	986	417.4	1,107	461.2	966	405.4	986	404.7
Vance	471	1061.1	490	1095.3	508	1137.2	475	1115.6	442	1047.8
Wake	6,091	567.9	6,501	595.2	6,602	593.3	5,761	510.1	5,947	517
Warren	109	549.7	123	620.7	128	650	96	515	108	575.6
Washington	83	694.7	90	763.2	88	756.3	77	699.8	94	863
Watauga	268	485.1	274	487.5	279	495.8	220	406.8	250	461
Wayne	796	646.1	918	743.4	962	776.4	824	702.3	992	849.1
Wilkes	176	257.1	184	268.7	188	275.3	190	288	186	282.6
Wilson	516	633.5	667	819.5	897	1096.9	771	978.6	897	1144.6
Yadkin	72	191.5	86	229.6	80	212.7	100	268.7	90	242
Yancey	28	158.1	34	190	31	171.7	27	146.2	34	181.3
North Carolina	62,958	612.7	66,713	642	71,401	679.9	64,514	618	65,107	617.1

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Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 2. Newly Diagnosed Gonorrhea Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2017-2021*

County	2017		2018		2019		2020*		2021	
	Cases	Rate [^]	Cases	Rate [^]	Cases	Rate [^]	Cases	Rate [^]	Cases	Rate [^]
Alamance	274	167.8	261	156.7	259	153.1	368	214.7	524	301.4
Alexander	26	70.1	21	56.3	43	114.9	48	131.7	28	76.4
Alleghany	2	18.2	6	53.7	3	26.9	5	45.9	8	72.4
Anson	62	249.4	69	281.8	73	310.1	104	471.5	106	480.5
Ashe	4	14.9	5	18.4	6	22	19	71.5	26	97.3
Avery	5	28.5	7	40	5	28.6	7	39.3	4	22.4
Beaufort	77	163.5	75	159.1	144	305.8	156	349.4	137	308.1
Bertie	48	249.4	49	256.9	63	332.2	60	334.6	83	474.2
Bladen	91	272.1	74	223.1	113	343.8	112	378.3	93	315
Brunswick	135	103.1	170	124	165	115.4	120	87.8	142	98.5
Buncombe	452	175.6	402	154.8	473	180.5	582	216	488	179.7
Burke	165	183	188	208.2	177	195.7	135	154.2	103	117.6
Cabarrus	256	123.7	326	154.1	326	150.7	399	176.7	445	192.4
Caldwell	105	128.1	149	181.5	214	260.1	146	181	101	125.5
Camden	7	66.6	9	84.8	7	65	8	77.3	7	64.6
Carteret	41	59.4	39	56.1	43	61.9	53	78.3	42	61.3
Caswell	39	172.4	27	119	18	79.7	44	193.5	60	264.2
Catawba	294	186.3	264	166.5	302	189.5	226	140.7	240	148.4
Chatham	56	78.6	40	54.7	40	53.7	45	59	69	88.6
Cherokee	13	46.4	19	66.8	31	108	18	62.6	13	44.6
Chowan	37	264	47	335.3	71	510.2	32	233.4	50	364.4
Clay	1	9.1	2	17.9	11	97.5	11	99.2	7	61.9
Cleveland	349	359.1	413	423.2	312	318.5	333	334.6	320	318.9
Columbus	216	385.7	132	236.7	142	256.1	125	246.9	175	349.4
Craven	185	180.1	229	223.1	182	178.4	204	202.5	206	204.6
Cumberland	1,484	447.4	1,484	443.7	1,768	525.4	1,736	518.6	2,015	600.6
Currituck	15	57	21	77.5	17	60.9	11	39.1	16	54
Dare	27	74.5	20	54.5	19	51.3	25	67.7	15	39.7
Davidson	282	170.4	293	175.7	417	247.9	420	248.6	477	279.5
Davie	46	108.8	39	91.8	44	103	45	105.4	32	73.5
Duplin	88	149.3	95	161	102	173.5	103	211.4	108	222.6
Durham	1,073	343.4	1,108	349	1,139	352.7	1,242	382.4	1,054	323.2
Edgecombe	237	448.9	278	534.5	311	604.7	412	842.5	350	723.8
Forsyth	966	257	1167	307.8	1570	410.9	1542	403	1510	391.7
Franklin	127	191.9	154	227.7	169	242.2	152	221.7	133	185.5
Gaston	534	243	658	295.2	610	271.5	720	315.9	770	333.5
Gates	13	113	14	121.5	14	121.4	21	200.4	9	86.8
Graham	3	35.2	5	58.9	3	35.4	0	0	3	37.3
Granville	133	223.7	137	228	170	281.7	147	241	186	300.1
Greene	49	233.7	53	251.9	59	282.1	71	347.2	55	269.4
Guilford	1,917	362.6	1,965	368.5	2,334	433.9	2,221	410.3	2,346	432.5

Continued

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Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 2 (Continued). Newly Diagnosed Gonorrhea Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2017-2021*

County	2017		2018		2019		2020*		2021	
	Cases	Rate [^]	Cases	Rate [^]	Cases	Rate [^]	Cases	Rate [^]	Cases	Rate [^]
Halifax	163	317.6	180	355.1	222	443.3	<i>289</i>	<i>594.4</i>	275	569.7
Harnett	193	145.6	244	181.2	286	210	<i>282</i>	<i>211.1</i>	292	214.8
Haywood	42	68.7	51	82	75	120	<i>81</i>	<i>130.5</i>	41	65.6
Henderson	102	88.4	106	90.9	143	121.9	<i>158</i>	<i>135.9</i>	105	89.9
Hertford	46	192.3	68	284.7	66	279.2	<i>88</i>	<i>408.3</i>	79	371.3
Hoke	158	291.5	150	274.4	182	329.9	<i>184</i>	<i>353.3</i>	196	369
Hyde	6	114.7	3	59.9	4	81.1	<i>5</i>	<i>109</i>	3	66.5
Iredell	364	207.2	222	124.5	255	140.2	<i>356</i>	<i>190.7</i>	311	162
Jackson	83	192	64	147	50	114.3	<i>56</i>	<i>129.9</i>	46	106
Johnston	261	132.8	245	120.7	331	157.8	<i>333</i>	<i>154.2</i>	329	145.3
Jones	19	199	20	209.3	19	203.4	<i>10</i>	<i>109</i>	33	356.6
Lee	98	162.2	79	129	86	139.2	<i>115</i>	<i>181.7</i>	135	210.5
Lenoir	202	356.6	235	419.3	222	395.9	<i>273</i>	<i>495.3</i>	270	493.5
Lincoln	76	92	98	116.2	99	114.3	<i>114</i>	<i>131.3</i>	102	113.8
Macon	14	40.5	31	88	26	72.8	<i>33</i>	<i>89.2</i>	31	82.5
Madison	15	69.4	16	73.9	18	83.2	<i>23</i>	<i>108.5</i>	15	69.8
Martin	32	140.5	62	273.2	53	236.1	<i>83</i>	<i>376.7</i>	63	289.6
McDowell	100	221.8	70	153.9	82	179.1	<i>83</i>	<i>186.2</i>	60	134.2
Mecklenburg	3,187	295.2	3,187	290.8	3,433	308.4	<i>4,337</i>	<i>388.8</i>	4,654	414.7
Mitchell	7	46.7	2	13.3	5	33.5	<i>8</i>	<i>53.7</i>	10	66.8
Montgomery	34	124.7	30	110.7	41	150.7	<i>52</i>	<i>201.9</i>	82	317.9
Moore	89	91.4	79	79.8	138	136.4	<i>108</i>	<i>108.3</i>	149	145
Nash	307	326.3	280	297.4	434	460.4	<i>476</i>	<i>501.2</i>	455	478.1
New Hanover	408	178.3	387	166.4	435	185.7	<i>283</i>	<i>125.4</i>	357	155.9
Northampton	72	361.8	64	324.2	74	379.5	<i>89</i>	<i>509.4</i>	64	373.6
Onslow	379	194	514	260.8	527	259.9	<i>449</i>	<i>219.5</i>	510	247.4
Orange	229	159.4	189	127.7	179	120.8	<i>157</i>	<i>105.6</i>	219	147.1
Pamlico	12	95	6	47.6	10	79.1	<i>14</i>	<i>114</i>	21	170.1
Pasquotank	88	223.2	128	322.5	138	345.3	<i>114</i>	<i>281</i>	135	330.7
Pender	46	75.7	58	93.4	53	84.1	<i>62</i>	<i>103</i>	55	87.6
Perquimans	13	96.6	23	171.3	35	257.8	<i>20</i>	<i>153.8</i>	38	289.4
Person	75	190.3	46	116.4	52	131.2	<i>69</i>	<i>176.5</i>	137	350.1
Pitt	687	384.5	645	359	858	473.4	<i>880</i>	<i>516.9</i>	863	501.3
Polk	12	58.3	9	43.5	20	96.5	<i>13</i>	<i>67.3</i>	13	66.1
Randolph	153	107	176	122.9	163	113.6	<i>224</i>	<i>155.4</i>	200	137.8
Richmond	114	254.5	174	387.7	246	549.5	<i>223</i>	<i>519.3</i>	224	524.3
Robeson	591	445.7	505	382.9	711	545.1	<i>701</i>	<i>601.6</i>	753	647.3
Rockingham	180	198.1	144	158.8	194	212.9	<i>183</i>	<i>200.9</i>	181	198.3
Rowan	255	181.8	343	243.5	385	271.5	<i>337</i>	<i>229.4</i>	354	238.9
Rutherford	153	229.9	177	265.3	167	249.1	<i>132</i>	<i>204.8</i>	161	249.3

Continued

*2020 data should be treated with caution due to reduced availability of testing caused by the COVID-19 pandemic. Data is italicized for this reason.

[^]Rates are expressed per 100,000 population.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 2 (Continued). Newly Diagnosed Gonorrhea Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2017-2021*

County	2017		2018		2019		2020*		2021	
	Cases	Rate [^]	Cases	Rate [^]	Cases	Rate [^]	Cases	Rate [^]	Cases	Rate [^]
Sampson	98	155.1	107	169.1	119	187.8	<i>156</i>	<i>264.2</i>	112	189.9
Scotland	156	443.5	155	446.7	173	497.5	<i>154</i>	<i>450.6</i>	160	467.5
Stanly	59	96	70	112.8	75	119.7	<i>126</i>	<i>201.6</i>	126	198.7
Stokes	25	54.7	40	88	43	94.2	<i>45</i>	<i>101.1</i>	44	98.8
Surry	46	63.8	43	59.8	63	87.8	<i>74</i>	<i>103.7</i>	88	123.7
Swain	36	252.3	49	343.6	37	258.5	<i>33</i>	<i>233.8</i>	34	240.5
Transylvania	15	44.4	24	70.2	46	134.2	<i>33</i>	<i>100</i>	19	57.3
Tyrrell	4	95.9	1	24.3	3	78.7	<i>4</i>	<i>123.3</i>	1	30.7
Union	203	87.7	285	120.7	296	123.3	<i>293</i>	<i>123</i>	299	122.7
Vance	255	574.5	263	587.9	293	655.9	<i>226</i>	<i>530.8</i>	263	623.4
Wake	2,080	193.9	2,147	196.6	2,214	199	<i>2,220</i>	<i>196.6</i>	2,390	207.8
Warren	35	176.5	38	191.8	57	289.5	<i>62</i>	<i>332.6</i>	66	351.8
Washington	20	167.4	26	220.5	32	275	<i>23</i>	<i>209</i>	50	459.1
Watauga	22	39.8	35	62.3	25	44.4	<i>29</i>	<i>53.6</i>	20	36.9
Wayne	337	273.5	314	254.3	308	248.6	<i>279</i>	<i>237.8</i>	370	316.7
Wilkes	48	70.1	51	74.5	43	63	<i>55</i>	<i>83.4</i>	84	127.6
Wilson	259	318	238	292.4	365	446.3	<i>503</i>	<i>638.5</i>	436	556.3
Yadkin	24	63.8	19	50.7	19	50.5	<i>24</i>	<i>64.5</i>	27	72.6
Yancey	9	50.8	8	44.7	10	55.4	<i>11</i>	<i>59.6</i>	11	58.6
North Carolina	22,730	221.2	23,537	226.5	26,707	254.3	28,075	268.9	29,177	276.5

*2020 data should be treated with caution due to reduced availability of testing caused by the COVID-19 pandemic. Data is italicized for this reason.

[^]Rates are expressed per 100,000 population.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 3. Newly Diagnosed Early Syphilis^a Annual Rates in North Carolina by Rank Order^b, and Year of Diagnosis, 2019-2021*

Rank ^b	County	2019 Cases	2019 Rate ^c	2020* Cases	2020* Rate ^c	2021 Cases	2021 Rate ^c	2019-2021* Average Rate ^b
1	DURHAM	164	50.8	<i>178</i>	<i>54.8</i>	192	58.9	54.8
2	MECKLENBURG	472	42.4	<i>576</i>	<i>51.6</i>	721	64.2	52.8
3	VANCE	12	26.9	<i>23</i>	<i>54</i>	17	40.3	40.4
4	GUILFORD	182	33.8	<i>183</i>	<i>33.8</i>	290	53.5	40.4
5	CUMBERLAND	115	34.2	<i>115</i>	<i>34.4</i>	176	52.5	40.3
6	WILSON	20	24.5	<i>26</i>	<i>33</i>	47	60	39.1
7	MARTIN	8	35.6	<i>10</i>	<i>45.4</i>	2	9.2	30.1
8	HALIFAX	10	20	<i>18</i>	<i>37</i>	16	33.1	30
9	WAKE	318	28.6	<i>320</i>	<i>28.3</i>	362	31.5	29.5
10	ALAMANCE	41	24.2	<i>49</i>	<i>28.6</i>	60	34.5	29.1
11	NASH	22	23.3	<i>23</i>	<i>24.2</i>	32	33.6	27.1
12	EDGECOMBE	5	9.7	<i>12</i>	<i>24.5</i>	20	41.4	25.2
13	PITT	36	19.9	<i>33</i>	<i>19.4</i>	62	36	25.1
14	ROBESON	26	19.9	<i>12</i>	<i>10.3</i>	52	44.7	25
15	FORSYTH	102	26.7	<i>65</i>	<i>17</i>	118	30.6	24.8
16	BERTIE	4	21.1	<i>6</i>	<i>33.5</i>	3	17.1	23.9
17	GASTON	40	17.8	<i>53</i>	<i>23.3</i>	70	30.3	23.8
18	PERSON	8	20.2	<i>8</i>	<i>20.5</i>	12	30.7	23.8
19	CASWELL	4	17.7	<i>5</i>	<i>22</i>	7	30.8	23.5
20	WAYNE	22	17.8	<i>37</i>	<i>31.5</i>	23	19.7	23
21	GREENE	4	19.1	<i>2</i>	<i>9.8</i>	8	39.2	22.7
22	HOKE	10	18.1	<i>8</i>	<i>15.4</i>	18	33.9	22.5
23	SCOTLAND	5	14.4	<i>7</i>	<i>20.5</i>	11	32.1	22.3
24	LENOIR	9	16.1	<i>12</i>	<i>21.8</i>	15	27.4	21.7
25	WARREN	5	25.4	<i>3</i>	<i>16.1</i>	4	21.3	20.9
26	GRANVILLE	14	23.2	<i>13</i>	<i>21.3</i>	11	17.7	20.8
27	MCDOWELL	2	4.4	<i>11</i>	<i>24.7</i>	14	31.3	20.1
28	COLUMBUS	12	21.6	<i>3</i>	<i>5.9</i>	15	29.9	19.2
29	RICHMOND	5	11.2	<i>2</i>	<i>4.7</i>	17	39.8	18.5
30	BUNCOMBE	39	14.9	<i>50</i>	<i>18.6</i>	58	21.4	18.3
31	NEW HANOVER	40	17.1	<i>37</i>	<i>16.4</i>	44	19.2	17.6
32	CLEVELAND	11	11.2	<i>7</i>	<i>7</i>	33	32.9	17
33	CHOWAN	6	43.1	<i>0</i>	<i>0</i>	1	7.3	16.8
34	HARNETT	13	9.5	<i>7</i>	<i>5.2</i>	47	34.6	16.5
35	ANSON	2	8.5	<i>0</i>	<i>0</i>	9	40.8	16.4
36	FRANKLIN	9	12.9	<i>8</i>	<i>11.7</i>	17	23.7	16.1

Continued

*2020 data should be treated with caution due to reduced availability of testing caused by the COVID-19 pandemic. Data is italicized for this reason.

^aEarly syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

^bRank is based on a three-year average rate per 100,000 population for newly diagnosed early syphilis in the county of interest.

^cRates are expressed per 100,000 population.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 3 (Continued). Newly Diagnosed Early Syphilis^a (Primary, Secondary, and Early Latent) Annual Rates in North Carolina by Rank Order^b, and Year of Diagnosis, 2019-2021*

Rank ^b	County	2019 Cases	2019 Rate ^c	2020* Cases	2020* Rate ^c	2021 Cases	2021 Rate ^c	2019-2021* Average Rate ^b
37	ROWAN	25	17.6	22	15	23	15.5	16
38	LEE	4	6.5	16	25.3	10	15.6	15.8
39	SAMPSON	4	6.3	11	18.6	13	22	15.7
40	DAVIDSON	17	10.1	21	12.4	40	23.4	15.3
41	BURKE	5	5.5	11	12.6	24	27.4	15.2
42	CATAWBA	18	11.3	32	19.9	23	14.2	15.1
43	WASHINGTON	1	8.6	1	9.1	3	27.5	15.1
44	ORANGE	20	13.5	24	16.1	23	15.4	15
45	HERTFORD	5	21.1	2	9.3	3	14.1	14.8
46	CABARRUS	28	12.9	31	13.7	39	16.9	14.5
47	ONslow	27	13.3	35	17.1	27	13.1	14.5
48	BLADEN	3	9.1	4	13.5	6	20.3	14.3
49	HYDE	1	20.3	0	0	1	22.2	14.2
50	MONTGOMERY	2	7.4	1	3.9	8	31	14.1
51	JOHNSTON	23	11	28	13	35	15.5	13.1
52	RUTHERFORD	4	6	4	6.2	16	24.8	12.3
53	GATES	2	17.3	2	19.1	0	0	12.1
54	CALDWELL	3	3.6	7	8.7	19	23.6	12
55	POLK	3	14.5	4	20.7	0	0	11.7
56	DUPLIN	3	5.1	6	12.3	8	16.5	11.3
57	NORTHAMPTON	2	10.3	0	0	4	23.4	11.2
58	CRAVEN	16	15.7	9	8.9	9	8.9	11.2
59	WATAUGA	2	3.6	5	9.2	11	20.3	11
60	TRANSYLVANIA	3	8.8	5	15.2	3	9	11
61	ROCKINGHAM	5	5.5	12	13.2	13	14.2	11
62	IREDELL	19	10.4	18	9.6	22	11.5	10.5
63	BEAUFORT	5	10.6	2	4.5	7	15.7	10.3
64	UNION	23	9.6	29	12.2	20	8.2	10
65	MADISON	1	4.6	3	14.2	2	9.3	9.4
66	PASQUOTANK	2	5	4	9.9	5	12.2	9
67	CLAY	1	8.9	1	9	1	8.8	8.9
68	PENDER	3	4.8	3	5	10	15.9	8.6

Continued

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^aEarly syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

^bRank is based on a three-year average rate per 100,000 population for newly diagnosed early syphilis in the county of interest.

^cRates are expressed per 100,000 population.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 3 (Continued). Newly Diagnosed Early Syphilis^a Annual Rates in North Carolina by Rank Order^b, and Year of Diagnosis, 2019-2021*

Rank ^b	County	2019 Cases	2019 Rate ^c	2020* Cases	2020* Rate ^c	2021 Cases	2021 Rate ^c	2019-2021* Average Rate ^b
69	HAYWOOD	5	8	5	8.1	6	9.6	8.6
70	MOORE	4	4	9	9	13	12.7	8.5
71	STOKES	1	2.2	5	11.2	5	11.2	8.2
72	HENDERSON	1	0.9	8	6.9	19	16.3	8
73	AVERY	0	0	3	16.8	1	5.6	7.5
74	RANDOLPH	4	2.8	8	5.5	20	13.8	7.4
75	CARTERET	4	5.8	4	5.9	7	10.2	7.3
76	BRUNSWICK	12	8.4	8	5.9	10	6.9	7.1
77	CHATHAM	1	1.3	6	7.9	9	11.6	6.9
78	LINCOLN	4	4.6	7	8.1	6	6.7	6.5
79	STANLY	3	4.8	6	9.6	3	4.7	6.4
80	YADKIN	1	2.7	2	5.4	4	10.8	6.3
81	DAVIE	5	11.7	1	2.3	2	4.6	6.2
82	CAMDEN	0	0	0	0	2	18.5	6.2
83	CURRITUCK	1	3.6	1	3.6	3	10.1	5.8
84	ALEXANDER	0	0	2	5.5	4	10.9	5.5
85	PAMLICO	1	7.9	1	8.1	0	0	5.4
86	PERQUIMANS	0	0	0	0	2	15.2	5.1
87	MACON	2	5.6	1	2.7	2	5.3	4.5
88	DARE	2	5.4	1	2.7	2	5.3	4.5
89	JACKSON	3	6.9	2	4.6	0	0	3.8
90	JONES	0	0	0	0	1	10.8	3.6
91	WILKES	0	0	3	4.5	4	6.1	3.5
92	SURRY	2	2.8	4	5.6	1	1.4	3.3
93	ASHE	1	3.7	0	0	1	3.7	2.5
93	SWAIN	0	0	0	0	1	7.1	2.4
93	CHEROKEE	1	3.5	1	3.5	0	0	2.3
93	MITCHELL	0	0	0	0	1	6.7	2.2
93	YANCEY	0	0	0	0	1	5.3	1.8
93	ALLEGHANY	0	0	0	0	0	0	0
93	GRAHAM	0	0	0	0	0	0	0
93	TYRRELL	0	0	0	0	0	0	0
N/A	NORTH CAROLINA	2,135	20.3	2,363	22.6	3,162	30	24.3

*2020 data should be treated with caution due to reduced availability of testing caused by the COVID-19 pandemic. Data is italicized for this reason.

^aEarly syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

^bRank is based on a three-year average rate per 100,000 population for newly diagnosed early syphilis in the county of interest.

^cRates are expressed per 100,000 population.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 4. Newly Diagnosed Syphilis Annual Rates in North Carolina by Stage of Infection and County of Diagnosis, 2021

County	Early ^a		Unknown Duration and Late ^b		Total	
	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c
Alamance	60	34.5	31	17.8	91	52.3
Alexander	4	10.9	1	2.7	5	13.6
Alleghany	0	0	0	0	0	0
Anson	9	40.8	5	22.7	14	63.5
Ashe	1	3.7	3	11.2	4	15
Avery	1	5.6	1	5.6	2	11.2
Beaufort	7	15.7	4	9	11	24.7
Bertie	3	17.1	0	0	3	17.1
Bladen	6	20.3	5	16.9	11	37.3
Brunswick	10	6.9	10	6.9	20	13.9
Buncombe	58	21.4	25	9.2	83	30.6
Burke	24	27.4	7	8	31	35.4
Cabarrus	39	16.9	20	8.6	59	25.5
Caldwell	19	23.6	2	2.5	21	26.1
Camden	2	18.5	0	0	2	18.5
Carteret	7	10.2	3	4.4	10	14.6
Caswell	7	30.8	1	4.4	8	35.2
Catawba	23	14.2	16	9.9	39	24.1
Chatham	9	11.6	6	7.7	15	19.3
Cherokee	0	0	3	10.3	3	10.3
Chowan	1	7.3	0	0	1	7.3
Clay	1	8.8	1	8.8	2	17.7
Cleveland	33	32.9	7	7	40	39.9
Columbus	15	29.9	11	22	26	51.9
Craven	9	8.9	30	29.8	39	38.7
Cumberland	176	52.5	122	36.4	298	88.8
Currituck	3	10.1	1	3.4	4	13.5
Dare	2	5.3	0	0	2	5.3
Davidson	40	23.4	21	12.3	61	35.7
Davie	2	4.6	2	4.6	4	9.2
Duplin	8	16.5	10	20.6	18	37.1
Durham	192	58.9	121	37.1	313	96
Edgecombe	20	41.4	15	31	35	72.4
Forsyth	118	30.6	56	14.5	174	45.1
Franklin	17	23.7	8	11.2	25	34.9
Gaston	70	30.3	53	23	123	53.3
Gates	0	0	1	9.6	1	9.6
Graham	0	0	1	12.4	1	12.4
Granville	11	17.7	19	30.7	30	48.4

Continued

^aPrimary, secondary, and early non-primary non-secondary (formerly early latent) is defined as having been infected for a year or less.^bLate is defined as having been infected more than one year and presenting with inflammatory lesions of the cardiovascular system, skin, bone, or other tissue/structures. Late syphilis usually becomes clinically manifest only after a period of 15–30 years of untreated infection.^cRates are expressed per 100,000 population.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 4 (Continued). Newly Diagnosed Syphilis Annual Rates in North Carolina by Stage of Infection and County of Diagnosis, 2021

County	Early ^a		Unknown Duration and Late ^b		Total	
	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c
Greene	8	39.2	2	9.8	10	49
Guilford	290	53.5	120	22.1	410	75.6
Halifax	16	33.1	4	8.3	20	41.4
Harnett	47	34.6	13	9.6	60	44.1
Haywood	6	9.6	3	4.8	9	14.4
Henderson	19	16.3	3	2.6	22	18.8
Hertford	3	14.1	3	14.1	6	28.2
Hoke	18	33.9	11	20.7	29	54.6
Hyde	1	22.2	0	0	1	22.2
Iredell	22	11.5	12	6.3	34	17.7
Jackson	0	0	1	2.3	1	2.3
Johnston	35	15.5	20	8.8	55	24.3
Jones	1	10.8	0	0	1	10.8
Lee	10	15.6	7	10.9	17	26.5
Lenoir	15	27.4	8	14.6	23	42
Lincoln	6	6.7	6	6.7	12	13.4
Macon	2	5.3	2	5.3	4	10.6
Madison	2	9.3	0	0	2	9.3
Martin	2	9.2	2	9.2	4	18.4
McDowell	14	31.3	11	24.6	25	55.9
Mecklenburg	721	64.2	330	29.4	1,051	93.6
Mitchell	1	6.7	0	0	1	6.7
Montgomery	8	31	3	11.6	11	42.6
Moore	13	12.7	7	6.8	20	19.5
Nash	32	33.6	22	23.1	54	56.7
New Hanover	44	19.2	39	17	83	36.2
Northampton	4	23.4	2	11.7	6	35
Onslow	27	13.1	25	12.1	52	25.2
Orange	23	15.4	14	9.4	37	24.9
Pamlico	0	0	0	0	0	0
Pasquotank	5	12.2	3	7.3	8	19.6
Pender	10	15.9	6	9.6	16	25.5
Perquimans	2	15.2	1	7.6	3	22.8
Person	12	30.7	5	12.8	17	43.4
Pitt	62	36	14	8.1	76	44.1
Polk	0	0	2	10.2	2	10.2
Randolph	20	13.8	11	7.6	31	21.4
Richmond	17	39.8	8	18.7	25	58.5

Continued

^aPrimary, secondary, and early non-primary non-secondary (formerly early latent) is defined as having been infected for a year or less.^bLate is defined as having been infected more than one year and presenting with inflammatory lesions of the cardiovascular system, skin, bone, or other tissue/structures. Late syphilis usually becomes clinically manifest only after a period of 15–30 years of untreated infection.^cRates are expressed per 100,000 population.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 4 (Continued). Newly Diagnosed Syphilis Annual Rates in North Carolina by Stage of Infection and County of Diagnosis, 2021

County	Early ^a		Unknown Duration, or Late ^b		Total	
	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c
Robeson	52	44.7	36	30.9	88	75.6
Rockingham	13	14.2	5	5.5	18	19.7
Rowan	23	15.5	31	20.9	54	36.4
Rutherford	16	24.8	2	3.1	18	27.9
Sampson	13	22	14	23.7	27	45.8
Scotland	11	32.1	6	17.5	17	49.7
Stanly	3	4.7	4	6.3	7	11
Stokes	5	11.2	2	4.5	7	15.7
Surry	1	1.4	3	4.2	4	5.6
Swain	1	7.1	0	0	1	7.1
Transylvania	3	9	1	3	4	12.1
Tyrrell	0	0	1	30.7	1	30.7
Union	20	8.2	16	6.6	36	14.8
Vance	17	40.3	19	45	36	85.3
Wake	362	31.5	249	21.6	611	53.1
Warren	4	21.3	1	5.3	5	26.6
Washington	3	27.5	0	0	3	27.5
Watauga	11	20.3	0	0	11	20.3
Wayne	23	19.7	20	17.1	43	36.8
Wilkes	4	6.1	1	1.5	5	7.6
Wilson	47	60	26	33.2	73	93.1
Yadkin	4	10.8	1	2.7	5	13.4
Yancey	1	5.3	1	5.3	2	10.7
North Carolina	3,162	30	1,781	16.9	4,943	46.8

^aEarly syphilis comprises primary, secondary, and early non-primary non-secondary (formerly early latent) disease; early syphilis reflects infection for a year or less.

^bLate is defined as having been infected more than one year and presenting with inflammatory lesions of the cardiovascular system, skin, bone, or other tissue/structures. Late syphilis usually becomes clinically manifest only after a period of 15–30 years of untreated infection.

^cRates are expressed per 100,000 population.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 5. Newly Diagnosed Early Syphilis^a Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2017-2021*

County	2017				2018				2019				2020*				2021			
	Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b	
	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c
Alamance	14	8.6	9	5.5	13	7.8	13	7.8	16	9.5	25	14.8	28	16.3	21	12.3	42	24.2	18	10.4
Alexander	0	0	1	2.7	0	0	0	0	0	0	0	0	1	2.7	1	2.7	3	8.2	1	2.7
Alleghany	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Anson	2	8	1	4	4	16.3	1	4.1	1	4.2	1	4.2	0	0	0	0	5	22.7	4	18.1
Ashe	0	0	0	0	0	0	0	0	0	0	1	3.7	0	0	0	0	1	3.7	0	0
Avery	0	0	0	0	1	5.7	0	0	0	0	0	0	2	11.2	1	5.6	1	5.6	0	0
Beaufort	2	4.2	0	0	1	2.1	2	4.2	3	6.4	2	4.2	2	4.5	0	0	5	11.2	2	4.5
Bertie	2	10.4	1	5.2	1	5.2	3	15.7	0	0	4	21.1	3	16.7	3	16.7	2	11.4	1	5.7
Bladen	1	3	3	9	2	6	1	3	2	6.1	1	3	2	6.8	2	6.8	5	16.9	1	3.4
Brunswick	7	5.3	6	4.6	3	2.2	4	2.9	6	4.2	6	4.2	3	2.2	5	3.7	7	4.9	3	2.1
Buncombe	31	12	13	5.1	16	6.2	13	5	27	10.3	12	4.6	32	11.9	18	6.7	41	15.1	17	6.3
Burke	8	8.9	5	5.5	1	1.1	1	1.1	3	3.3	2	2.2	9	10.3	2	2.3	17	19.4	7	8
Cabarrus	11	5.3	10	4.8	17	8	10	4.7	16	7.4	12	5.5	16	7.1	15	6.6	22	9.5	17	7.4
Caldwell	2	2.4	5	6.1	2	2.4	3	3.7	3	3.6	0	0	3	3.7	4	5	16	19.9	3	3.7
Camden	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	9.2	1	9.2
Carteret	1	1.4	1	1.4	1	1.4	0	0	2	2.9	2	2.9	3	4.4	1	1.5	3	4.4	4	5.8
Caswell	1	4.4	0	0	1	4.4	1	4.4	3	13.3	1	4.4	2	8.8	3	13.2	3	13.2	4	17.6
Catawba	12	7.6	7	4.4	21	13.2	6	3.8	13	8.2	5	3.1	20	12.5	12	7.5	12	7.4	11	6.8
Chatham	2	2.8	1	1.4	2	2.7	0	0	1	1.3	0	0	2	2.6	4	5.2	6	7.7	3	3.9
Cherokee	0	0	0	0	0	0	0	0	1	3.5	0	0	1	3.5	0	0	0	0	0	0
Chowan	1	7.1	0	0	1	7.1	0	0	3	21.6	3	21.6	0	0	0	0	1	7.3	0	0
Clay	0	0	0	0	0	0	0	0	0	0	1	8.9	1	9	0	0	1	8.8	0	0
Cleveland	6	6.2	3	3.1	3	3.1	4	4.1	7	7.1	4	4.1	3	3	4	4	22	21.9	11	11
Columbus	6	10.7	4	7.1	1	1.8	1	1.8	5	9	7	12.6	1	2	2	4	7	14	8	16
Craven	6	5.8	8	7.8	6	5.8	6	5.8	8	7.8	8	7.8	5	5	4	4	3	3	6	6
Cumberland	49	14.8	35	10.6	62	18.5	51	15.2	59	17.5	56	16.6	48	14.3	67	20	104	31	72	21.5
Currituck	1	3.8	1	3.8	0	0	3	11.1	1	3.6	0	0	1	3.6	0	0	0	0	3	10.1

Continued

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^aEarly syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

^bEarly non-primary non-secondary (formerly early latent) syphilis.

^cRates are expressed per 100,000 population. Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 5 (Continued). Newly Diagnosed Early Syphilis^a Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2017-2021*

County	2017				2018				2019				2020*				2021			
	Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b	
	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c
Dare	0	0	1	2.8	0	0	0	0	2	5.4	0	0	<i>0</i>	<i>0</i>	1	2.7	2	5.3	0	0
Davidson	8	4.8	7	4.2	3	1.8	5	3	8	4.8	9	5.3	15	8.9	6	3.6	30	17.6	10	5.9
Davie	2	4.7	0	0	2	4.7	1	2.4	0	0	5	11.7	1	2.3	0	0	1	2.3	1	2.3
Duplin	2	3.4	1	1.7	4	6.8	3	5.1	3	5.1	0	0	3	6.2	3	6.2	5	10.3	3	6.2
Durham	82	26.2	45	14.4	110	34.6	65	20.5	97	30	67	20.7	114	35.1	64	19.7	130	39.9	62	19
Edgecombe	8	15.2	9	17	3	5.8	3	5.8	3	5.8	2	3.9	5	10.2	7	14.3	11	22.7	9	18.6
Forsyth	57	15.2	24	6.4	51	13.4	48	12.7	63	16.5	39	10.2	39	10.2	26	6.8	86	22.3	32	8.3
Franklin	1	1.5	1	1.5	4	5.9	2	3	6	8.6	3	4.3	4	5.8	4	5.8	9	12.6	8	11.2
Gaston	21	9.6	16	7.3	20	9	20	9	24	10.7	16	7.1	29	12.7	24	10.5	35	15.2	35	15.2
Gates	0	0	0	0	0	0	1	8.7	2	17.3	0	0	1	9.5	1	9.5	0	0	0	0
Graham	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Granville	3	5	5	8.4	13	21.6	3	5	9	14.9	5	8.3	7	11.5	6	9.8	7	11.3	4	6.5
Greene	2	9.5	0	0	0	0	0	0	1	4.8	3	14.3	2	9.8	0	0	4	19.6	4	19.6
Guilford	113	21.4	68	12.9	88	16.5	64	12	82	15.2	100	18.6	104	19.2	79	14.6	172	31.7	118	21.8
Halifax	4	7.8	6	11.7	3	5.9	4	7.9	5	10	5	10	8	16.5	10	20.6	10	20.7	6	12.4
Harnett	6	4.5	2	1.5	3	2.2	9	6.7	7	5.1	6	4.4	2	1.5	5	3.7	27	19.9	20	14.7
Haywood	3	4.9	2	3.3	2	3.2	1	1.6	4	6.4	1	1.6	4	6.4	1	1.6	6	9.6	0	0
Henderson	9	7.8	4	3.5	2	1.7	3	2.6	1	0.9	0	0	4	3.4	4	3.4	15	12.8	4	3.4
Hertford	0	0	3	12.5	1	4.2	2	8.4	1	4.2	4	16.9	0	0	2	9.3	2	9.4	1	4.7
Hoke	5	9.2	4	7.4	2	3.7	6	11	3	5.4	7	12.7	5	9.6	3	5.8	11	20.7	7	13.2
Hyde	0	0	1	19.1	0	0	0	0	0	0	1	20.3	0	0	0	0	0	0	1	22.2
Iredell	12	6.8	3	1.7	9	5	7	3.9	10	5.5	9	4.9	6	3.2	12	6.4	16	8.3	6	3.1
Jackson	3	6.9	0	0	1	2.3	1	2.3	2	4.6	1	2.3	2	4.6	0	0	0	0	0	0
Johnston	9	4.6	9	4.6	13	6.4	4	2	12	5.7	11	5.2	20	9.3	8	3.7	21	9.3	14	6.2
Jones	2	20.9	0	0	0	0	1	10.5	0	0	0	0	0	0	0	0	1	10.8	0	0
Lee	3	5	1	1.7	2	3.3	2	3.3	3	4.9	1	1.6	9	14.2	7	11.1	7	10.9	3	4.7
Lenoir	4	7.1	1	1.8	6	10.7	5	8.9	4	7.1	5	8.9	6	10.9	6	10.9	9	16.5	6	11
Lincoln	3	3.6	2	2.4	4	4.7	4	4.7	2	2.3	2	2.3	3	3.5	4	4.6	5	5.6	1	1.1

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^aEarly syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

^bEarly non-primary non-secondary (formerly early latent) syphilis.

^cRates are expressed per 100,000 population. Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 5 (Continued). Newly Diagnosed Early Syphilis^a Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2017-2021*

County	2017				2018				2019				2020*				2021			
	Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b	
	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c
Macon	2	5.8	0	0	2	5.7	1	2.8	0	0	2	5.6	<i>1</i>	<i>2.7</i>	<i>0</i>	<i>0</i>	1	2.7	1	2.7
Madison	0	0	0	0	1	4.6	1	4.6	1	4.6	0	0	<i>1</i>	<i>4.7</i>	<i>2</i>	<i>9.4</i>	2	9.3	0	0
Martin	3	13.2	1	4.4	1	4.4	0	0	4	17.8	4	17.8	<i>4</i>	<i>18.2</i>	<i>6</i>	<i>27.2</i>	2	9.2	0	0
McDowell	1	2.2	0	0	4	8.8	2	4.4	1	2.2	1	2.2	<i>7</i>	<i>15.7</i>	<i>4</i>	<i>9</i>	9	20.1	5	11.2
Mecklenburg	261	24.2	189	17.5	249	22.7	173	15.8	257	23.1	215	19.3	<i>282</i>	<i>25.3</i>	<i>294</i>	<i>26.4</i>	378	33.7	343	30.6
Mitchell	0	0	1	6.7	0	0	0	0	0	0	0	0	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	1	6.7	0	0
Montgomery	1	3.7	3	11	0	0	1	3.7	0	0	2	7.4	<i>1</i>	<i>3.9</i>	<i>0</i>	<i>0</i>	3	11.6	5	19.4
Moore	1	1	3	3.1	2	2	0	0	2	2	2	2	<i>4</i>	<i>4</i>	<i>5</i>	<i>5</i>	9	8.8	4	3.9
Nash	11	11.7	9	9.6	9	9.6	8	8.5	11	11.7	11	11.7	<i>12</i>	<i>12.6</i>	<i>11</i>	<i>11.6</i>	13	13.7	19	20
New Hanover	37	16.2	16	7	26	11.2	24	10.3	20	8.5	20	8.5	<i>20</i>	<i>8.9</i>	<i>17</i>	<i>7.5</i>	23	10	21	9.2
Northampton	2	10.1	0	0	1	5.1	0	0	2	10.3	0	0	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	2	11.7	2	11.7
Onslow	15	7.7	9	4.6	17	8.6	11	5.6	16	7.9	11	5.4	<i>20</i>	<i>9.8</i>	<i>15</i>	<i>7.3</i>	13	6.3	14	6.8
Orange	11	7.7	5	3.5	11	7.4	7	4.7	9	6.1	11	7.4	<i>16</i>	<i>10.8</i>	<i>8</i>	<i>5.4</i>	15	10.1	8	5.4
Pamlico	0	0	0	0	0	0	0	0	1	7.9	0	0	<i>1</i>	<i>8.1</i>	<i>0</i>	<i>0</i>	0	0	0	0
Pasquotank	3	7.6	0	0	3	7.6	0	0	0	0	2	5	<i>1</i>	<i>2.5</i>	<i>3</i>	<i>7.4</i>	4	9.8	1	2.4
Pender	5	8.2	2	3.3	1	1.6	3	4.8	2	3.2	1	1.6	<i>1</i>	<i>1.7</i>	<i>2</i>	<i>3.3</i>	6	9.6	4	6.4
Perquimans	0	0	0	0	0	0	0	0	0	0	0	0	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	1	7.6	1	7.6
Person	3	7.6	1	2.5	4	10.1	2	5.1	7	17.7	1	2.5	<i>5</i>	<i>12.8</i>	<i>3</i>	<i>7.7</i>	6	15.3	6	15.3
Pitt	20	11.2	12	6.7	26	14.5	21	11.7	17	9.4	19	10.5	<i>23</i>	<i>13.5</i>	<i>10</i>	<i>5.9</i>	40	23.2	22	12.8
Polk	1	4.9	0	0	2	9.7	0	0	2	9.7	1	4.8	<i>3</i>	<i>15.5</i>	<i>1</i>	<i>5.2</i>	0	0	0	0
Randolph	9	6.3	2	1.4	3	2.1	4	2.8	3	2.1	1	0.7	<i>2</i>	<i>1.4</i>	<i>6</i>	<i>4.2</i>	9	6.2	11	7.6
Richmond	2	4.5	1	2.2	1	2.2	1	2.2	5	11.2	0	0	<i>2</i>	<i>4.7</i>	<i>0</i>	<i>0</i>	12	28.1	5	11.7
Robeson	15	11.3	9	6.8	17	12.9	16	12.1	14	10.7	12	9.2	<i>6</i>	<i>5.1</i>	<i>6</i>	<i>5.1</i>	20	17.2	32	27.5
Rockingham	5	5.5	7	7.7	3	3.3	2	2.2	2	2.2	3	3.3	<i>8</i>	<i>8.8</i>	<i>4</i>	<i>4.4</i>	9	9.9	4	4.4
Rowan	13	9.3	6	4.3	9	6.4	9	6.4	13	9.2	12	8.5	<i>10</i>	<i>6.8</i>	<i>12</i>	<i>8.2</i>	14	9.4	9	6.1
Rutherford	2	3	2	3	0	0	0	0	4	6	0	0	<i>2</i>	<i>3.1</i>	<i>2</i>	<i>3.1</i>	10	15.5	6	9.3

Continued

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^bEarly non-primary non-secondary (formerly early latent) syphilis.

^cRates are expressed per 100,000 population. Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

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Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 5 (Continued). Newly Diagnosed Early Syphilis^a Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2017-2021*

County	2017				2018				2019				2020*				2021			
	Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b	
	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c
Sampson	3	4.7	6	9.5	3	4.7	1	1.6	2	3.2	2	3.2	3	5.1	8	13.6	6	10.2	7	11.9
Scotland	2	5.7	1	2.8	4	11.5	3	8.6	3	8.6	2	5.8	2	5.9	5	14.6	8	23.4	3	8.8
Stanly	4	6.5	2	3.3	0	0	0	0	2	3.2	1	1.6	2	3.2	4	6.4	2	3.2	1	1.6
Stokes	0	0	1	2.2	0	0	1	2.2	1	2.2	0	0	3	6.7	2	4.5	5	11.2	0	0
Surry	3	4.2	1	1.4	1	1.4	4	5.6	1	1.4	1	1.4	2	2.8	2	2.8	1	1.4	0	0
Swain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7.1	0	0
Transylvania	0	0	2	5.9	0	0	0	0	2	5.8	1	2.9	4	12.1	1	3	2	6	1	3
Tyrrell	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Union	17	7.3	12	5.2	11	4.7	4	1.7	14	5.8	9	3.7	13	5.5	16	6.7	11	4.5	9	3.7
Vance	2	4.5	3	6.8	7	15.6	3	6.7	9	20.1	3	6.7	18	42.3	5	11.7	11	26.1	6	14.2
Wake	124	11.6	114	10.6	154	14.1	96	8.8	166	14.9	152	13.7	171	15.1	149	13.2	200	17.4	162	14.1
Warren	1	5	0	0	2	10.1	1	5	2	10.2	3	15.2	3	16.1	0	0	4	21.3	0	0
Washington	1	8.4	0	0	0	0	0	0	0	0	1	8.6	0	0	1	9.1	2	18.4	1	9.2
Watauga	2	3.6	1	1.8	0	0	0	0	0	0	2	3.6	3	5.5	2	3.7	9	16.6	2	3.7
Wayne	12	9.7	5	4.1	4	3.2	7	5.7	15	12.1	7	5.6	23	19.6	14	11.9	14	12	9	7.7
Wilkes	1	1.5	1	1.5	2	2.9	0	0	0	0	0	0	1	1.5	2	3	4	6.1	0	0
Wilson	11	13.5	8	9.8	12	14.7	9	11.1	10	12.2	10	12.2	17	21.6	9	11.4	20	25.5	27	34.5
Yadkin	1	2.7	0	0	1	2.7	0	0	1	2.7	0	0	2	5.4	0	0	2	5.4	2	5.4
Yancey	0	0	1	5.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5.3
North Carolina	1,134	11	765	7.4	1,098	10.6	802	7.7	1,155	11	980	9.3	1,280	12.3	1,083	10.4	1,856	17.6	1,306	12.4

*2020 data should be treated with caution due to reduced availability of testing caused by the COVID-19 pandemic. Data is italicized for this reason.

^aEarly syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

^bEarly non-primary non-secondary (formerly early latent) syphilis.

^cRates are expressed per 100,000 population. Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

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Table 6. Number of Infants Diagnosed with Congenital Syphilis in North Carolina by Year of Birth, 2012-2021*

Classification	2012	2013	2014	2015	2016	2017	2018	2019	2020*	2021
Presumptive/Probable	1	3	5	11	16	23	18	26	<i>32</i>	40
Confirmed-Live birth	0	1	0	0	1	0	0	0	<i>0</i>	0
Confirmed-Still birth	0	2	2	0	1	0	1	1	<i>0</i>	2
Total	1	5	7	11	18	23	19	27	<i>32</i>	42

*2020 data should be treated with caution due to the impact of the COVID-19 pandemic on accessing STD testing, STD treatment, and surveillance activities in North Carolina. 2020 data is italicized for this reason.

Data Source: Sexually Transmitted Disease Management Information System (STD*MIS) and North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 7. Newly Diagnosed Chlamydia Annual Rates in North Carolina by Gender^a, Age at Diagnosis, and Year of Diagnosis, 2017-2021*

Gender	Age at Diagnosis (Year)	2017			2018			2019			2020*			2021		
		Cases	%	Rate ^b	Cases	%	Rate ^b	Cases	%	Rate ^b	Cases	%	Rate ^b	Cases	%	Rate ^b
Men	Less than 10	7	0	1.1	2	0	0.3	4	0	0.6	<i>0</i>	<i>0</i>	<i>0</i>	11	0	1.8
	10-14	29	0	8.6	31	0	9.1	50	0.1	14.7	<i>40</i>	<i>0.1</i>	<i>11.4</i>	50	0.1	14.5
	15-19	3,823	6.1	1,103.5	4,080	6.1	1,168	4,453	6.2	1,266.6	<i>3,910</i>	<i>6.1</i>	<i>1,105.9</i>	3,842	5.9	1,080.1
	20-24	7,466	11.9	2,055.3	7,991	12	2,208.3	8,850	12.4	2,436.3	<i>7,673</i>	<i>11.9</i>	<i>2,164.8</i>	7,903	12.1	2,190.4
	25-29	4,020	6.4	1,121.3	4,578	6.9	1,249	4,897	6.9	1,318.7	<i>4,347</i>	<i>6.7</i>	<i>1,228.1</i>	4,518	6.9	1,285.5
	30-34	1,763	2.8	548.3	1,966	2.9	601.7	2,428	3.4	723	<i>2,252</i>	<i>3.5</i>	<i>666</i>	2,599	4	742.2
	35-39	912	1.4	287	1,053	1.6	327.8	1,217	1.7	376.3	<i>1,140</i>	<i>1.8</i>	<i>349.2</i>	1,184	1.8	358.6
	40-44	534	0.8	171.9	616	0.9	198.8	696	1	223.6	<i>623</i>	<i>1</i>	<i>197</i>	701	1.1	217.2
	45-54	550	0.9	81.5	613	0.9	91.3	657	0.9	98.9	<i>615</i>	<i>1</i>	<i>92.2</i>	620	1	93.7
	55-64	184	0.3	29.4	183	0.3	28.8	250	0.4	38.7	<i>224</i>	<i>0.3</i>	<i>34.1</i>	232	0.4	35
	65 and older	36	0.1	5.1	41	0.1	5.5	46	0.1	6	<i>44</i>	<i>0.1</i>	<i>5.7</i>	60	0.1	7.5
	Unknown ^c	6	0	---	0	0	---	1	0	---	<i>10</i>	<i>0</i>	<i>---</i>	4	0	---
Total		19,330	30.7	386.5	21,154	31.7	418.4	23,549	33	461.1	<i>20,878</i>	<i>32.4</i>	<i>408.9</i>	21,724	33.4	421.3
Women	Less than 10	10	0	1.6	3	0	0.5	17	0	2.8	<i>14</i>	<i>0</i>	<i>2.3</i>	7	0	1.2
	10-14	356	0.6	110.3	370	0.6	113.6	413	0.6	126.4	<i>392</i>	<i>0.6</i>	<i>117.4</i>	363	0.6	109.9
	15-19	14,340	22.8	4,285.4	14,746	22.1	4,366.1	15,399	21.6	4,546.7	<i>13,415</i>	<i>20.8</i>	<i>3,944.1</i>	12,622	19.4	3,689.8
	20-24	16,859	26.8	5,012.7	17,355	26	5,139.4	17,959	25.2	5,304.9	<i>16,451</i>	<i>25.5</i>	<i>4,942.1</i>	16,680	25.6	4,897.9
	25-29	7,008	11.1	1,957.1	7,717	11.6	2,128.5	8,114	11.4	2,228	<i>7,566</i>	<i>11.7</i>	<i>2,151.8</i>	7,579	11.6	2,169.5
	30-34	2,745	4.4	825.2	2,918	4.4	863.7	3,258	4.6	936.1	<i>3,234</i>	<i>5</i>	<i>923.6</i>	3,404	5.2	940
	35-39	1,202	1.9	360.1	1,322	2	391.8	1,382	1.9	407	<i>1,339</i>	<i>2.1</i>	<i>396.7</i>	1,446	2.2	423.4
	40-44	557	0.9	170.5	592	0.9	180.8	687	1	207.9	<i>657</i>	<i>1</i>	<i>198.8</i>	645	1	190.9
	45-54	424	0.7	59.8	396	0.6	56.1	496	0.7	70.9	<i>432</i>	<i>0.7</i>	<i>62.8</i>	484	0.7	70.6
	55-64	96	0.2	13.8	125	0.2	17.7	110	0.2	15.4	<i>108</i>	<i>0.2</i>	<i>15.3</i>	129	0.2	18.1
	65 and older	18	0	2	14	0	1.5	14	0	1.4	<i>21</i>	<i>0</i>	<i>2.2</i>	18	0	1.8
	Unknown ^c	12	0	---	0	0	---	3	0	---	<i>6</i>	<i>0</i>	<i>---</i>	6	0	---
Total		43,627	69.3	827.1	45,558	68.3	853.8	47,852	67	887.2	<i>43,635</i>	<i>67.6</i>	<i>818.1</i>	43,383	66.6	804.1

Continued

*2020 data should be treated with caution due to the impact of the COVID-19 pandemic on accessing STD testing, STD treatment, and surveillance activities in North Carolina. 2020 data is italicized for this reason.

^aChlamydia case reports are always highly biased with respect to gender. See Appendix A: Technical Notes for more information.

^bRate is expressed per 100,000 population.

^cRates are not available due to the lack of overall population data for unknown age group.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 7 (Continued). Newly Diagnosed Chlamydia Annual Rates in North Carolina by Gender^a, Age at Diagnosis, and Year of Diagnosis, 2017-2021*

Gender	Age at Diagnosis (Year)	2017			2018			2019			2020*			2021		
		Cases	%	Rate ^b	Cases	%	Rate ^b	Cases	%	Rate ^b	Cases	%	Rate ^b	Cases	%	Rate ^b
Total^d	Less than 10	17	0	1.4	5	0	0.4	21	0	1.7	<i>14</i>	<i>0</i>	<i>1.1</i>	18	0	1.5
	10-14	385	0.6	58.4	401	0.6	60.3	463	0.6	69.4	<i>432</i>	<i>0.7</i>	<i>63.1</i>	413	0.6	61.1
	15-19	18,163	28.8	2,666.8	18,826	28.2	2,740.1	19,852	27.8	2,876	<i>17,325</i>	<i>26.9</i>	<i>2,497.5</i>	16,464	25.3	2,359.5
	20-24	24,325	38.6	3,477	25,346	38	3,623.2	26,809	37.5	3,820.1	<i>24,124</i>	<i>37.4</i>	<i>3,509.9</i>	24,583	37.8	3,505.1
	25-29	11,029	17.5	1,539.1	12,295	18.4	1,686.4	13,011	18.2	1,768.9	<i>11,913</i>	<i>18.5</i>	<i>1,688.4</i>	12,097	18.6	1,726.2
	30-34	4,508	7.2	689.1	4,885	7.3	735.1	5,686	8	831.5	<i>5,486</i>	<i>8.5</i>	<i>797.1</i>	6,003	9.2	842.8
	35-39	2,114	3.4	324.4	2,375	3.6	360.6	2,599	3.6	392	<i>2,479</i>	<i>3.8</i>	<i>373.4</i>	2,630	4	391.5
	40-44	1,091	1.7	171.2	1,208	1.8	189.6	1,383	1.9	215.5	<i>1,280</i>	<i>2</i>	<i>197.9</i>	1,346	2.1	203.8
	45-54	974	1.5	70.4	1,009	1.5	73.3	1,153	1.6	84.5	<i>1,047</i>	<i>1.6</i>	<i>77.3</i>	1,104	1.7	81.9
	55-64	280	0.4	21.2	308	0.5	22.9	360	0.5	26.4	<i>332</i>	<i>0.5</i>	<i>24.3</i>	361	0.6	26.3
	65 and older	54	0.1	3.3	55	0.1	3.3	60	0.1	3.4	<i>65</i>	<i>0.1</i>	<i>3.8</i>	78	0.1	4.3
	Unknown ^c	18	0	---	0	0	---	4	0	---	<i>17</i>	<i>0</i>	---	10	0	---
Total^d	62,958	100	612.7	66,713	100	642	71,401	100	679.9	64,514	100	618	65,107	100	617.1	

*2020 data should be treated with caution due to the impact of the COVID-19 pandemic on accessing STD testing, STD treatment, and surveillance activities in North Carolina. 2020 data is italicized for this reason.

^aChlamydia case reports are always highly biased with respect to gender. See Appendix A: Technical Notes for more information.

^bRate is expressed per 100,000 population.

^cRates are not available due to the lack of overall population data for unknown age group.

^dTotals may include cases with missing gender information.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 8. Newly Diagnosed Chlamydia Annual Rates in North Carolina by Gender^a, Race/Ethnicity, and Year of Diagnosis, 2017-2021*

Gender	Race/Ethnicity	2017			2018			2019			2020*			2021		
		Cases	%	Rate ^b	Cases	%	Rate ^b	Cases	%	Rate ^b	Cases	%	Rate ^b	Cases	%	Rate ^b
Men	American Indian/Alaska Native ^c	173	0.3	311.9	149	0.2	267.7	160	0.2	286	<i>169</i>	<i>0.3</i>	<i>303.3</i>	162	0.2	290.1
	Asian/Pacific Islander ^c	134	0.2	88.6	155	0.2	98.9	150	0.2	92.1	<i>121</i>	<i>0.2</i>	<i>72.5</i>	143	0.2	82.7
	Black/African American ^c	9,392	14.9	914.7	10,037	15	967.5	11,015	15.4	1052	<i>9,420</i>	<i>14.6</i>	<i>900.1</i>	9,111	14	863.8
	Hispanic/LatinX	1,036	1.6	208.6	1,216	1.8	237.2	1,326	1.9	251.6	<i>1,327</i>	<i>2.1</i>	<i>247.5</i>	1,536	2.4	276.9
	White/Caucasian ^c	4,067	6.5	128.1	4,456	6.7	139.5	4,825	6.8	150.2	<i>3,766</i>	<i>5.8</i>	<i>117.9</i>	3,562	5.5	111
	Multiple Races	267	0.4	279	328	0.5	330.3	349	0.5	338.8	<i>324</i>	<i>0.5</i>	<i>308.1</i>	292	0.4	265.9
	Unknown/Unspecified ^d	4,261	6.8	---	4,813	7.2	---	5,724	8	---	<i>5,751</i>	<i>8.9</i>	<i>---</i>	6,918	10.6	---
Total		19,330	30.7	386.5	21,154	31.7	418.4	23,549	33	461.1	<i>20,878</i>	<i>32.4</i>	<i>408.9</i>	21,724	33.4	421.3
Women	American Indian/Alaska Native ^c	542	0.9	909.8	527	0.8	878.7	549	0.8	909.5	<i>496</i>	<i>0.8</i>	<i>832.4</i>	477	0.7	795.3
	Asian/Pacific Islander ^c	379	0.6	236	370	0.6	222.3	380	0.5	219.9	<i>330</i>	<i>0.5</i>	<i>188.6</i>	329	0.5	181.8
	Black/African American ^c	19,542	31	1,670.5	20,119	30.2	1,701.3	20,567	28.8	1,721.3	<i>17,742</i>	<i>27.5</i>	<i>1,500.9</i>	16,142	24.8	1,351.7
	Hispanic/LatinX	3,127	5	676.2	3,329	5	693.1	3,708	5.2	747	<i>3,430</i>	<i>5.3</i>	<i>681.1</i>	4,178	6.4	798
	White/Caucasian ^c	11,375	18.1	342.5	11,803	17.7	353.2	11,867	16.6	353.1	<i>10,136</i>	<i>15.7</i>	<i>307</i>	8,883	13.6	267.5
	Multiple Races	649	1	641.6	722	1.1	686	909	1.3	835.2	<i>782</i>	<i>1.2</i>	<i>704.5</i>	693	1.1	597.8
	Unknown/Unspecified ^d	8,013	12.7	---	8,688	13	---	9,872	13.8	---	<i>10,719</i>	<i>16.6</i>	<i>---</i>	12,681	19.5	---
Total		43,627	69.3	827.1	45,558	68.3	853.8	47,852	67	887.2	<i>43,635</i>	<i>67.6</i>	<i>818.1</i>	43,383	66.6	804.1
Total^e	American Indian/Alaska Native ^c	715	1.1	621.5	677	1	585.4	709	1	609.6	<i>665</i>	<i>1</i>	<i>576.7</i>	639	1	551.7
	Asian/Pacific Islander ^c	513	0.8	164.5	525	0.8	162.5	530	0.7	157.9	<i>451</i>	<i>0.7</i>	<i>131.9</i>	472	0.7	133.4
	Black/African American ^c	28,934	46	1,317.2	30,156	45.2	1,358.4	31,582	44.2	1,408.7	<i>27,162</i>	<i>42.1</i>	<i>1,218.8</i>	25,253	38.8	1,122.9
	Hispanic/LatinX	4,163	6.6	434.1	4,545	6.8	457.7	5,034	7.1	491.9	<i>4,757</i>	<i>7.4</i>	<i>457.5</i>	5,714	8.8	529.9
	White/Caucasian ^c	15,442	24.5	237.7	16,259	24.4	248.8	16,692	23.4	254	<i>13,902</i>	<i>21.5</i>	<i>214</i>	12,445	19.1	190.6
	Multiple Races	916	1.5	465.4	1,050	1.6	513.3	1,258	1.8	593.9	<i>1,106</i>	<i>1.7</i>	<i>511.6</i>	985	1.5	436.4
	Unknown/Unspecified ^d	12,275	19.5	---	13,501	20.2	---	15,596	21.8	---	<i>16,471</i>	<i>25.5</i>	<i>---</i>	19,599	30.1	---
Total^e		62,958	100	612.7	66,713	100	642	71,401	100	679.9	<i>64,514</i>	<i>100</i>	<i>618</i>	65,107	100	617.1

*2020 data should be treated with caution due to the impact of the COVID-19 pandemic on accessing STD testing, STD treatment, and surveillance activities in North Carolina. 2020 data is italicized for this reason.

^aChlamydia case reports are always highly biased with respect to gender. See Appendix A: Technical Notes for more information.

^bRate is expressed per 100,000 population.

^cNon-Hispanic/LatinX.

^dRates are not available due to the lack of overall population data for the unknown/unspecified race/ethnicity group.

^eTotals may include cases with missing gender information.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 9. Newly Diagnosed Gonorrhea Annual Rates in North Carolina by Gender, Age at Diagnosis, and Year of Diagnosis, 2017-2021*

Gender	Age at Diagnosis (Year)	2017			2018			2019			2020*			2021		
		Cases	%	Rate ^a	Cases	%	Rate ^a	Cases	%	Rate ^a	Cases	%	Rate ^a	Cases	%	Rate ^a
Men	Less than 10	0	0	0	0	0	0	1	0	0.2	<i>1</i>	<i>0</i>	<i>0.2</i>	2	0	0.3
	10-14	16	0.1	4.8	14	0.1	4.1	26	0.1	7.6	<i>20</i>	<i>0.1</i>	<i>5.7</i>	30	0.1	8.7
	15-19	1,473	6.5	425.2	1,477	6.3	422.8	1,631	6.1	463.9	<i>1,633</i>	<i>5.8</i>	<i>461.9</i>	1,749	6	491.7
	20-24	3,370	14.8	927.7	3,339	14.2	922.7	3,757	14.1	1,034.3	<i>3,935</i>	<i>14</i>	<i>1,110.2</i>	4,240	14.5	1,175.2
	25-29	2,674	11.8	745.9	2,765	11.7	754.4	3,300	12.4	888.6	<i>3,488</i>	<i>12.4</i>	<i>985.4</i>	3,402	11.7	968
	30-34	1,414	6.2	439.8	1,586	6.7	485.4	2,020	7.6	601.5	<i>2,255</i>	<i>8</i>	<i>666.9</i>	2,538	8.7	724.8
	35-39	880	3.9	276.9	1,049	4.5	326.6	1,227	4.6	379.4	<i>1,223</i>	<i>4.4</i>	<i>374.7</i>	1,319	4.5	399.5
	40-44	594	2.6	191.2	651	2.8	210.1	735	2.8	236.1	<i>829</i>	<i>3</i>	<i>262.1</i>	848	2.9	262.8
	45-54	847	3.7	125.5	739	3.1	110	884	3.3	133	<i>883</i>	<i>3.1</i>	<i>132.3</i>	912	3.1	137.8
	55-64	357	1.6	57.1	359	1.5	56.4	405	1.5	62.7	<i>431</i>	<i>1.5</i>	<i>65.6</i>	448	1.5	67.7
	65 and older	71	0.3	10	72	0.3	9.7	81	0.3	10.6	<i>109</i>	<i>0.4</i>	<i>14.2</i>	112	0.4	14.1
	Unknown ^b	0	0	---	0	0	---	0	0	---	<i>2</i>	<i>0</i>	<i>---</i>	0	0	---
Total		11,696	51.5	233.9	12,051	51.2	238.4	14,067	52.7	275.4	<i>14,809</i>	<i>52.7</i>	<i>290</i>	15,600	53.5	302.5
Women	Less than 10	3	0	0.5	3	0	0.5	7	0	1.2	<i>6</i>	<i>0</i>	<i>1</i>	7	0	1.2
	10-14	75	0.3	23.2	77	0.3	23.6	98	0.4	30	<i>100</i>	<i>0.4</i>	<i>29.9</i>	103	0.4	31.2
	15-19	2,739	12.1	818.5	2,710	11.5	802.4	2,969	11.1	876.6	<i>3,053</i>	<i>10.9</i>	<i>897.6</i>	2,940	10.1	859.5
	20-24	3,778	16.6	1,123.3	3,716	15.8	1,100.4	4,102	15.4	1,211.7	<i>4,335</i>	<i>15.4</i>	<i>1,302.3</i>	4,498	15.4	1,320.8
	25-29	2,267	10	633.1	2,479	10.5	683.8	2,661	10	730.7	<i>2,710</i>	<i>9.7</i>	<i>770.7</i>	2,784	9.5	796.9
	30-34	1,073	4.7	322.6	1,266	5.4	374.7	1,378	5.2	395.9	<i>1,479</i>	<i>5.3</i>	<i>422.4</i>	1,622	5.6	447.9
	35-39	552	2.4	165.4	611	2.6	181.1	689	2.6	202.9	<i>801</i>	<i>2.9</i>	<i>237.3</i>	842	2.9	246.5
	40-44	263	1.2	80.5	291	1.2	88.9	363	1.4	109.9	<i>423</i>	<i>1.5</i>	<i>128</i>	389	1.3	115.2
	45-54	231	1	32.6	251	1.1	35.6	287	1.1	41	<i>270</i>	<i>1</i>	<i>39.3</i>	302	1	44
	55-64	47	0.2	6.8	69	0.3	9.8	68	0.3	9.5	<i>74</i>	<i>0.3</i>	<i>10.4</i>	74	0.3	10.4
	65 and older	5	0	0.5	12	0.1	1.3	16	0.1	1.6	<i>15</i>	<i>0.1</i>	<i>1.6</i>	15	0.1	1.5
	Unknown ^b	0	0	---	0	0	---	2	0	---	<i>0</i>	<i>0</i>	<i>---</i>	1	0	---
Total		11,033	48.5	209.2	11,485	48.8	215.2	12,640	47.3	234.3	<i>13,266</i>	<i>47.3</i>	<i>248.7</i>	13,577	46.5	251.7

Continued

*2020 data should be treated with caution due to the impact of the COVID-19 pandemic on accessing STD testing, STD treatment, and surveillance activities in North Carolina. 2020 data is italicized for this reason.

^aRate is expressed per 100,000 population.

^bRates are not available due to the lack of overall population data for unknown age group.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 9 (Continued). Newly Diagnosed Gonorrhea Annual Rates in North Carolina by Gender, Age at Diagnosis, and Year of Diagnosis, 2017-2021*

Gender	Age at Diagnosis (Year)	2017			2018			2019			2020*			2021		
		Cases	%	Rate ^a	Cases	%	Rate ^a	Cases	%	Rate ^a	Cases	%	Rate ^a	Cases	%	Rate ^a
Total^c	Less than 10	3	0	0.2	3	0	0.2	8	0	0.6	7	0	0.6	9	0	0.7
	10-14	91	0.4	13.8	91	0.4	13.7	124	0.5	18.6	120	0.4	17.5	133	0.5	19.7
	15-19	4,212	18.5	618.4	4,187	17.8	609.4	4,600	17.2	666.4	4,686	16.7	675.5	4,689	16.1	672
	20-24	7,148	31.4	1,021.7	7,055	30	1,008.5	7,859	29.4	1,119.9	8,270	29.5	1,203.2	8,738	29.9	1,245.9
	25-29	4,941	21.7	689.5	5,244	22.3	719.3	5,961	22.3	810.4	6,198	22.1	878.4	6,186	21.2	882.7
	30-34	2,487	10.9	380.2	2,853	12.1	429.3	3,398	12.7	496.9	3,734	13.3	542.5	4,160	14.3	584
	35-39	1,432	6.3	219.8	1,660	7.1	252	1,916	7.2	289	2,024	7.2	304.8	2,161	7.4	321.7
	40-44	857	3.8	134.5	942	4	147.8	1,098	4.1	171.1	1,252	4.5	193.6	1,237	4.2	187.3
	45-54	1,079	4.7	78	990	4.2	71.9	1,171	4.4	85.8	1,153	4.1	85.1	1,214	4.2	90.1
	55-64	404	1.8	30.6	428	1.8	31.9	473	1.8	34.7	505	1.8	37	522	1.8	38
	65 and older	76	0.3	4.7	84	0.4	5	97	0.4	5.5	124	0.4	7.2	127	0.4	7.1
Unknown ^b	0	0	---	0	0	---	2	0	---	2	0	---	1	0	---	
Total^c		22,730	100	221.2	23,537	100	226.5	26,707	100	254.3	28,075	100	268.9	29,177	100	276.5

*2020 data should be treated with caution due to the impact of the COVID-19 pandemic on accessing STD testing, STD treatment, and surveillance activities in North Carolina. 2020 data is italicized for this reason.

^aRate is expressed per 100,000 population.

^bRates are not available due to the lack of overall population data for unknown age group.

^cTotal may include cases with missing gender information.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 10. Newly Diagnosed Gonorrhea Annual Rates in North Carolina by Gender, Race/Ethnicity, and Year of Diagnosis, 2017-2021*

Gender	Race/Ethnicity	2017			2018			2019			2020*			2021		
		Cases	%	Rate ^a	Cases	%	Rate ^a	Cases	%	Rate ^a	Cases	%	Rate ^a	Cases	%	Rate ^a
Men	American Indian/Alaska Native ^b	143	0.6	257.8	98	0.4	176	147	0.6	262.8	<i>136</i>	<i>0.5</i>	<i>244.1</i>	143	0.5	256.1
	Asian/Pacific Islander ^b	51	0.2	33.7	49	0.2	31.3	54	0.2	33.1	<i>56</i>	<i>0.2</i>	<i>33.6</i>	76	0.3	44
	Black/African American ^b	7,415	32.6	722.1	7,533	32	726.1	8,463	31.7	808.3	<i>8,833</i>	<i>31.5</i>	<i>844.1</i>	8,692	29.8	824.1
	Hispanic/LatinX	389	1.7	78.3	410	1.7	80	513	1.9	97.4	<i>675</i>	<i>2.4</i>	<i>125.9</i>	822	2.8	148.2
	White/Caucasian ^b	1,838	8.1	57.9	1,946	8.3	60.9	2,291	8.6	71.3	<i>1,922</i>	<i>6.8</i>	<i>60.1</i>	2,037	7	63.5
	Multiple Races	96	0.4	100.3	158	0.7	159.1	142	0.5	137.9	<i>153</i>	<i>0.5</i>	<i>145.5</i>	182	0.6	165.7
	Unknown/Unspecified ^c	1,764	7.8	---	1,857	7.9	---	2,457	9.2	---	<i>3,034</i>	<i>10.8</i>	---	3,648	12.5	---
Total		11,696	51.5	233.9	12,051	51.2	238.4	14,067	52.7	275.4	14,809	52.7	290	15,600	53.5	302.5
Women	American Indian/Alaska Native ^b	238	1	399.5	213	0.9	355.2	229	0.9	379.4	<i>224</i>	<i>0.8</i>	<i>375.9</i>	198	0.7	330.1
	Asian/Pacific Islander ^b	51	0.2	31.8	50	0.2	30	44	0.2	25.5	<i>51</i>	<i>0.2</i>	<i>29.1</i>	54	0.2	29.8
	Black/African American ^b	6,369	28	544.4	6,480	27.5	548	6,681	25	559.2	<i>6,987</i>	<i>24.9</i>	<i>591.1</i>	6,791	23.3	568.7
	Hispanic/LatinX	260	1.1	56.2	329	1.4	68.5	379	1.4	76.4	<i>512</i>	<i>1.8</i>	<i>101.7</i>	629	2.2	120.1
	White/Caucasian ^b	2,460	10.8	74.1	2,631	11.2	78.7	2,992	11.2	89	<i>2,689</i>	<i>9.6</i>	<i>81.4</i>	2,456	8.4	74
	Multiple Races	118	0.5	116.6	150	0.6	142.5	166	0.6	152.5	<i>185</i>	<i>0.7</i>	<i>166.7</i>	193	0.7	166.5
	Unknown/Unspecified ^c	1,537	6.8	---	1,632	6.9	---	2,149	8	---	<i>2,618</i>	<i>9.3</i>	---	3,256	11.2	---
Total		11,033	48.5	209.2	11,485	48.8	215.2	12,640	47.3	234.3	13,266	47.3	248.7	13,577	46.5	251.7
Total^d	American Indian/Alaska Native ^b	381	1.7	331.2	312	1.3	269.8	376	1.4	323.3	<i>360</i>	<i>1.3</i>	<i>312.2</i>	341	1.2	294.4
	Asian/Pacific Islander ^b	102	0.4	32.7	99	0.4	30.6	98	0.4	29.2	<i>107</i>	<i>0.4</i>	<i>31.3</i>	130	0.4	36.7
	Black/African American ^b	13,785	60.6	627.5	14,013	59.5	631.2	15,144	56.7	675.5	<i>15,820</i>	<i>56.3</i>	<i>709.9</i>	15,483	53.1	688.4
	Hispanic/LatinX	649	2.9	67.7	739	3.1	74.4	892	3.3	87.2	<i>1,187</i>	<i>4.2</i>	<i>114.2</i>	1,451	5	134.6
	White/Caucasian ^b	4,298	18.9	66.2	4,577	19.4	70	5,283	19.8	80.4	<i>4,611</i>	<i>16.4</i>	<i>71</i>	4,493	15.4	68.8
	Multiple Races	214	0.9	108.7	308	1.3	150.6	308	1.2	145.4	<i>338</i>	<i>1.2</i>	<i>156.4</i>	375	1.3	166.1
	Unknown/Unspecified ^c	3,301	14.5	---	3,489	14.8	---	4,606	17.2	---	<i>5,652</i>	<i>20.1</i>	---	6,904	23.7	---
Total^d		22,730	100	221.2	23,537	100	226.5	26,707	100	254.3	28,075	100	268.9	29,177	100	276.5

*2020 data should be treated with caution due to the impact of the COVID-19 pandemic on accessing STD testing, STD treatment, and surveillance activities in North Carolina. 2020 data is italicized for this reason.

^aRate is expressed per 100,000 population.

^bNon-Hispanic/LatinX.

^cRates are not available due to the lack of overall population data for the unknown/unspecified race/ethnicity group.

^dTotals may include cases with missing gender information.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 11. Newly Diagnosed Early Syphilis^a Annual Rates in North Carolina by Gender, Age at Diagnosis, and Year of Diagnosis, 2017-2021*

Gender	Age at Diagnosis (Year)	2017				2018				2019				2020*				2021			
		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		<i>Primary and Secondary</i>		<i>Early^b</i>		Primary and Secondary		Early ^b	
		Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c
Men	Less than 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10-14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	15-19	52	15	25	7.2	43	12.3	16	4.6	44	12.5	22	6.3	42	11.9	19	5.4	62	17.4	26	7.3
	20-24	221	60.8	106	29.2	183	50.6	112	31	174	47.9	117	32.2	176	49.7	105	29.6	248	68.7	139	38.5
	25-29	227	63.3	150	41.8	227	61.9	150	40.9	240	64.6	183	49.3	232	65.5	206	58.2	313	89.1	200	56.9
	30-34	133	41.4	102	31.7	132	40.4	118	36.1	150	44.7	151	45	200	59.1	164	48.5	265	75.7	226	64.5
	35-39	103	32.4	74	23.3	97	30.2	82	25.5	91	28.1	99	30.6	135	41.4	116	35.5	174	52.7	144	43.6
	40-44	81	26.1	50	16.1	64	20.7	44	14.2	67	21.5	68	21.8	81	25.6	78	24.7	141	43.7	95	29.4
	45-54	112	16.6	96	14.2	126	18.8	83	12.4	127	19.1	109	16.4	123	18.4	113	16.9	182	27.5	123	18.6
	55-64	65	10.4	38	6.1	61	9.6	36	5.7	60	9.3	47	7.3	76	11.6	53	8.1	117	17.7	75	11.3
	65 and older	9	1.3	7	1	5	0.7	10	1.4	16	2.1	10	1.3	23	3	11	1.4	18	2.3	14	1.8
Total	1,003	20.1	648	13	938	18.6	651	12.9	969	19	806	15.8	1,088	21.3	865	16.9	1,520	29.5	1,042	20.2	
Women	Less than 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.2
	10-14	1	0.3	0	0	1	0.3	0	0	0	0	0	0	0	0	1	0.3	1	0.3	0	0
	15-19	12	3.6	22	6.6	18	5.3	17	5	12	3.5	11	3.2	17	5	12	3.5	14	4.1	23	6.7
	20-24	29	8.6	28	8.3	30	8.9	33	9.8	33	9.7	41	12.1	25	7.5	46	13.8	56	16.4	36	10.6
	25-29	33	9.2	19	5.3	43	11.9	37	10.2	37	10.2	30	8.2	41	11.7	44	12.5	60	17.2	60	17.2
	30-34	21	6.3	16	4.8	20	5.9	19	5.6	34	9.8	32	9.2	34	9.7	31	8.9	68	18.8	48	13.3
	35-39	10	3	9	2.7	17	5	11	3.3	20	5.9	16	4.7	28	8.3	22	6.5	47	13.8	35	10.2
	40-44	10	3.1	8	2.4	12	3.7	15	4.6	20	6.1	18	5.4	18	5.4	25	7.6	28	8.3	21	6.2
	45-54	10	1.4	10	1.4	13	1.8	11	1.6	21	3	19	2.7	21	3.1	21	3.1	44	6.4	29	4.2
	55-64	1	0.1	4	0.6	4	0.6	7	1	7	1	7	1	3	0.4	15	2.1	15	2.1	9	1.3
	65 and older	4	0.4	1	0.1	2	0.2	1	0.1	2	0.2	0	0	5	0.5	1	0.1	3	0.3	2	0.2
Total	131	2.5	117	2.2	160	3	151	2.8	186	3.4	174	3.2	192	3.6	218	4.1	336	6.2	264	4.9	

Continued

*2020 data should be treated with caution due to reduced availability of testing caused by the COVID-19 pandemic. Data is italicized for this reason.

^aEarly syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

^bEarly non-primary non-secondary (formerly early latent) syphilis.

^cRates are expressed per 100,000 population.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of July 6, 2021).

Table 11 (Continued). Newly Diagnosed Early Syphilis^a Annual Rates in North Carolina by Gender, Age at Diagnosis, and Year of Diagnosis, 2017-2021*

Gender	Age at Diagnosis (Year)	2017				2018				2019				2020*				2021			
		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		<i>Primary and Secondary</i>		<i>Early^b</i>		Primary and Secondary		Early ^b	
		Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c
Total ^d	Less than 10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
	10-14	1	0.2	0	0	1	0.2	0	0	0	0	0	0	0	0	0	1	0.1	0	0	0
	15-19	64	9.4	47	6.9	61	8.9	33	4.8	56	8.1	33	4.8	59	8.5	31	4.5	76	10.9	49	7
	20-24	250	35.7	134	19.2	213	30.4	145	20.7	207	29.5	158	22.5	201	29.2	151	22	304	43.3	175	25
	25-29	260	36.3	169	23.6	270	37	187	25.6	277	37.7	213	29	273	38.7	250	35.4	373	53.2	260	37.1
	30-34	154	23.5	118	18	152	22.9	137	20.6	184	26.9	183	26.8	234	34	195	28.3	333	46.8	274	38.5
	35-39	113	17.3	83	12.7	114	17.3	93	14.1	111	16.7	115	17.3	163	24.5	138	20.8	221	32.9	179	26.6
	40-44	91	14.3	58	9.1	76	11.9	59	9.3	87	13.6	86	13.4	99	15.3	103	15.9	169	25.6	116	17.6
	45-54	122	8.8	106	7.7	139	10.1	94	6.8	148	10.8	128	9.4	144	10.6	134	9.9	226	16.8	152	11.3
	55-64	66	5	42	3.2	65	4.8	43	3.2	67	4.9	54	4	79	5.8	68	5	132	9.6	84	6.1
65 and older	13	0.8	8	0.5	7	0.4	11	0.7	18	1	10	0.6	28	1.6	12	0.7	21	1.2	16	0.9	
Total	1,134	11	765	7.4	1,098	10.6	802	7.7	1,155	11	980	9.3	1,280	12.3	1083	10.4	1,856	17.6	1,306	12.4	

*2020 data should be treated with caution due to reduced availability of testing caused by the COVID-19 pandemic. Data is italicized for this reason.

^aEarly syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

^bEarly non-primary non-secondary (formerly early latent) syphilis.

^cRates are expressed per 100,000 population.

^dTotals may include cases with missing gender information.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 12. Newly Diagnosed Early Syphilis^a Annual Rates in North Carolina by Gender, Race/Ethnicity, and Year of Diagnosis, 2017-2021*

Gender	Race/Ethnicity	2017				2018				2019				2020*				2021			
		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b	
		Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c	Cases	Rate ^c
Men	American Indian/Alaska Native ^d	6	10.8	3	5.4	9	16.2	6	10.8	6	10.7	6	10.7	4	7.2	6	10.8	16	28.6	6	10.7
	Asian/Pacific Islander ^d	13	8.6	3	2	6	3.8	4	2.6	4	2.5	7	4.3	6	3.6	5	3	7	4	4	2.3
	Black/African American ^d	606	59	374	36.4	572	55.1	395	38.1	575	54.9	506	48.3	645	61.6	543	51.9	898	85.1	632	59.9
	Hispanic/LatinX	65	13.1	72	14.5	76	14.8	57	11.1	86	16.3	78	14.8	80	14.9	84	15.7	149	26.9	135	24.3
	White/Caucasian ^d	291	9.2	173	5.4	243	7.6	165	5.2	263	8.2	185	5.8	312	9.8	192	6	387	12.1	219	6.8
	Multiple Races	22	23	22	23	31	31.2	24	24.2	35	34	24	23.3	38	36.1	35	33.3	62	56.5	44	40.1
	Unknown/Unspecified ^e	0	---	1	---	1	---	0	---	0	---	0	---	3	---	0	---	1	---	2	---
Total	1,003	20.1	648	13	938	18.6	651	12.9	969	19	806	15.8	1,088	21.3	865	16.9	1,520	29.5	1,042	20.2	
Women	American Indian/Alaska Native ^d	2	3.4	0	0	2	3.3	0	0	1	1.7	0	0	1	1.7	2	3.4	6	10	7	11.7
	Asian/Pacific Islander ^d	1	0.6	2	1.2	0	0	0	0	2	1.2	2	1.2	0	0	0	0	0	0	1	0.6
	Black/African American ^d	84	7.2	74	6.3	108	9.1	105	8.9	126	10.5	108	9	91	7.7	118	10	185	15.5	121	10.1
	Hispanic/LatinX	4	0.9	10	2.2	6	1.2	12	2.5	9	1.8	17	3.4	12	2.4	16	3.2	11	2.1	23	4.4
	White/Caucasian ^d	32	1	25	0.8	39	1.2	28	0.8	41	1.2	39	1.2	78	2.4	72	2.2	119	3.6	94	2.8
	Multiple Races	8	7.9	6	5.9	5	4.8	6	5.7	7	6.4	8	7.4	10	9	10	9	15	12.9	17	14.7
	Unknown/Unspecified ^e	0	---	0	---	0	---	0	---	0	---	0	---	0	---	0	---	0	---	1	---
Total	131	2.5	117	2.2	160	3	151	2.8	186	3.4	174	3.2	192	3.6	218	4.1	336	6.2	264	4.9	
Total [^]	American Indian/Alaska Native ^d	8	7	3	2.6	11	9.5	6	5.2	7	6	6	5.2	5	4.3	8	6.9	22	19	13	11.2
	Asian/Pacific Islander ^d	14	4.5	5	1.6	6	1.9	4	1.2	6	1.8	9	2.7	6	1.8	5	1.5	7	2	5	1.4
	Black/African American ^d	690	31.4	448	20.4	680	30.6	500	22.5	701	31.3	614	27.4	736	33	661	29.7	1,083	48.2	753	33.5
	Hispanic/LatinX	69	7.2	82	8.6	82	8.3	69	6.9	95	9.3	95	9.3	92	8.8	100	9.6	160	14.8	158	14.7
	White/Caucasian ^d	323	5	198	3	282	4.3	193	3	304	4.6	224	3.4	390	6	264	4.1	506	7.8	313	4.8
	Multiple Races	30	15.2	28	14.2	36	17.6	30	14.7	42	19.8	32	15.1	48	22.2	45	20.8	77	34.1	61	27
	Unknown/Unspecified ^e	0	---	1	---	1	---	0	---	0	---	0	---	3	---	0	---	1	---	3	---
Total[^]	1,134	11	765	7.4	1,098	10.6	802	7.7	1,155	11	980	9.3	1,280	12.3	1,083	10.4	1,856	17.6	1,306	12.4	

*2020 data should be treated with caution due to reduced availability of testing caused by the COVID-19 pandemic. Data is italicized for this reason.

^aEarly syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

^bEarly non-primary non-secondary (formerly early latent) syphilis.

^cRate is expressed per 100,000 population.

^dNon-Hispanic/LatinX.

^eRates are not available due to the lack of overall population data for the unknown/unspecified race/ethnicity group.

[^]Totals may include cases with missing gender information.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of September 7, 2022).

Table 13. Newly Diagnosed Early Syphilis^a Annual Rates in North Carolina by Gender, Risk of Exposure, and Year of Diagnosis, 2017-2021*

Risk of Exposure	2017				2018				2019				2020*				2021			
	Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b		Primary and Secondary		Early ^b	
	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
WSM/W ^c	131	11.6	117	15.3	160	14.6	151	18.8	186	16.1	174	17.8	<i>192</i>	<i>15.0</i>	<i>218</i>	<i>20.1</i>	336	18.1	264	20.2
MSM ^d	632	55.7	444	58.0	573	52.2	455	56.7	545	47.2	548	55.9	<i>590</i>	<i>46.1</i>	<i>562</i>	<i>51.9</i>	692	37.3	600	45.9
MSM/W ^e	62	5.5	36	4.7	48	4.4	18	2.2	43	3.7	22	2.2	<i>63</i>	<i>4.9</i>	<i>31</i>	<i>2.9</i>	77	4.2	32	2.5
MSW only ^f	225	19.8	97	12.7	222	20.2	99	12.3	246	21.3	113	11.5	<i>269</i>	<i>21.0</i>	<i>106</i>	<i>9.8</i>	473	25.5	148	11.3
Unknown Men	84	7.4	71	9.3	95	8.7	79	9.9	135	11.7	123	12.6	<i>166</i>	<i>13.0</i>	<i>166</i>	<i>15.3</i>	278	15.0	262	20.1
Total	1,134	100.0	765	100.0	1,098	100.0	802	100.0	1,155	100.0	980	100.0	<i>1,280</i>	<i>100.0</i>	<i>1,083</i>	<i>100.0</i>	1,856	100.0	1,306	100.0

*2020 data should be treated with caution due to reduced availability of testing caused by the COVID-19 pandemic. Data is italicized for this reason.

^aEarly syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

^bEarly non-primary non-secondary (formerly early latent) syphilis.

^cWomen with a partner of any gender.

^dMSM = Men who report sex with men.

^eMSM/W = Men who report sex with men and women.

^fMSW only = Men who report sex with women only.

Please use caution when interpreting reported numbers less than 10 and the corresponding rates based on these numbers.

Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as Of September 7, 2022).

APPENDIX A: Technical Notes

About the Authors

North Carolina law requires that diagnoses of certain communicable diseases, including STDs, be reported to local health departments that in turn report the information to the state. The HIV/STD/Hepatitis Surveillance Unit is the designated recipient for STD, viral hepatitis B (HBV) and hepatitis C (HCV), and HIV morbidity reports at the state level. From these reports, the HIV/STD/Hepatitis Surveillance Unit is responsible for aggregating these reports and providing county, regional, and statewide data to the public and the CDC. The HIV/STD/Hepatitis Surveillance Unit is part of the Communicable Disease Branch within the North Carolina Department of Health and Human Services, Division of Public Health.

About the Content of This Report

This document, the *2021 North Carolina STD Surveillance Report*, includes summary tables of surveillance reports and other information for chlamydia, gonorrhea, and syphilis. In some instances, total numbers of reports may not agree between separate cross-tabulations due to missing values for some variables.

Rates are presented by race/ethnicity, age group, and gender for each disease. For the combined race/ethnicity category, we classified all cases with reported Hispanic ethnicity as Hispanic/LatinX, regardless of their race. Cases with non-Hispanic or unknown ethnicity were classified according to their reported race. Cases with a reported race of "other" were included in the unknown race category. Rates are also presented for counties across the state and are expressed as cases per 100,000 population. Beginning this year, rate denominators were estimated using the Census demographic population estimates for 2017-2021 from the Census Bureau's Population Estimates Program (PEP). More information about Census Population and Housing Estimates is available at the website <https://www.census.gov/programs-surveys/popest/data/special-tab/content.html>. Use of these population denominators enabled calculation of rates for the multiple race category.

Rates that are based on a small number of cases (fewer than 10) should be viewed with caution and are considered unreliable because these rates have large standard errors and can vary widely with small changes in case numbers. Data are suppressed in this document for table cells with a population denominator less than 500, according to the North Carolina Department of Health and Human Services, Division of Public Health Communicable Disease Branch data release guidelines.

Chlamydia Surveillance Data

Chlamydia case reports represent people who have a laboratory-confirmed chlamydial infection (isolation of *Chlamydia trachomatis* by culture or detection of antigen or nucleic acid)³⁰. Chlamydial infection is often asymptomatic in both males and females and most cases are detected through screening. Therefore, changes in the number of reported cases may be due to changes in screening practices rather than changes in true disease incidence. The disease can cause serious complications in females, such as pelvic inflammatory disease and infertility, so a number of screening programs are in place to detect chlamydia infection in young women. No comparable screening programs exist for young men. For this reason, chlamydia case reports are always highly biased with respect to gender.

Reports are summarized by the **date of diagnosis**.

Gonorrhea Surveillance Data

Gonorrhea case reports represent people who have a laboratory-confirmed gonorrhea infection. Gonorrhea is often symptomatic in males and slightly less so in females. Many cases are detected when patients seek medical care. Other cases are detected through routine testing even if no symptoms are present. Classification of gonorrhea is based on the presence of a gram-negative intracellular diplococci in a urethral smear (male) or endocervical smear (female) (probable case) OR the isolation of a gram-negative, oxidase-positive diplococci by culture (probable case) from clinical specimen OR *N. gonorrhoeae* by detection of antigen or nucleic acid amplification (confirmed case).³¹

Gonorrhea can cause serious complications for women, and a number of screening programs focus on this population. Screening programs focused on female patients are predominately conducted at public clinics and health departments, which can cause the reported cases to be biased toward those attending public clinics. Men are less likely to be diagnosed by routine screening; however, they are more likely to have symptoms that would bring them to a clinic. Therefore, gender bias in gonorrhea reporting is not considered to be large.

Reports are summarized by the **date of diagnosis**.

Determining whether the prevalence of gonorrhea infections is changing is difficult because gonorrhea reporting is dependent on screening practices; in 2018, these changes included an increase in screening for infection in pharyngeal and rectal sites, which may lead to the detection of more cases in the absence of a true increase in disease.

³⁰Centers for Disease Control and Prevention (2010). National Notifiable Disease Surveillance System (NNDSS): *Chlamydia trachomatis* infection 2010 case definition. Retrieved from <https://ndc.services.cdc.gov/case-definitions/chlamydia-trachomatis-infection-2010/>.

³¹Centers for Disease Control and Prevention (2014). National Notifiable Disease Surveillance System (NNDSS): Gonorrhea (*Neisseria gonorrhoeae*) 2014 case definition. Retrieved from <https://ndc.services.cdc.gov/case-definitions/gonorrhea-2014/>.

Syphilis Surveillance Data

Syphilis cases are reported by stage of infection, which is determined through a combination of laboratory testing and patient interviews. Primary and secondary syphilis have characteristic symptoms, so misclassification of these stages is highly unlikely. Primary, secondary, and early non-primary non-secondary (formerly early latent syphilis) are considered “early syphilis,” and all stages of early syphilis are considered a priority for public health action.

North Carolina performs patient interviews, partner notification, and contact tracing on all early syphilis cases; therefore, the quality of early syphilis case data is good. Screening programs are more likely to detect asymptomatic cases, which may result in more complete reporting of cases in the screened populations (pregnant women, jail inmates, and others). However, thorough contact tracing further aids in case detection and reduces these biases.

During the fourth quarter of 2012, the HIV/STD/Hepatitis Surveillance Unit converted syphilis surveillance data from the Sexually Transmitted Disease Management Information System (STD*MIS) data system to NC EDSS. Reports are summarized by the **date of diagnosis** by the HIV/STD/Hepatitis Surveillance Unit.

For more complete case definition of the stages of syphilis, please refer to the CDC’s websites (<https://ndc.services.cdc.gov/case-definitions/syphilis-2014/> and <https://ndc.services.cdc.gov/case-definitions/syphilis-2018/>). CDC and the Council for Territorial and State Epidemiologists (CSTE) periodically update case definitions. Included below are the syphilis case definitions that were in using during the collection of the data in this report.

The 2014 case definitions, that cover data through 2017, for all stages of syphilis are summarized below.

2014 Case Definition of Primary Syphilis

- *Confirmed: Treponema pallidum* in clinical specimen by dark field microscopy or by PCR or equivalent direct molecular methods AND one or more ulcerative lesions (such as chancre), which may differ in appearance.
- *Probable: One or more ulcerative lesions AND a reactive serologic test (nontreponemal: Venereal Disease Research Laboratory [VDRL], rapid plasma reagin [RPR], or equivalent serologic methods; treponemal: fluorescent treponemal antibody absorbed [FTA-ABS], T. pallidum particle agglutination [TP-PA], enzyme immunoassay [EIA], chemiluminescence immunoassay [CIA] or equivalent serologic methods).*³²

2014 Case Definition of Secondary Syphilis

- *Confirmed: T. pallidum* in clinical specimens by darkfield microscopy or by PCR or equivalent direct molecular methods AND at least one sign or symptom common with secondary syphilis (lesions, rash, or localized lymphadenopathy).

³²Centers for Disease Control and Prevention (2014). National Notifiable Disease Surveillance System (NNDSS): Syphilis (*Treponema pallidum*) 2014 case definition. Accessed July 2, 2019. Retrieved from <https://ndc.services.cdc.gov/case-definitions/syphilis-2014/>.

- *Probable*: At least one sign or symptom common with secondary syphilis as stated above AND a nontreponemal (VDRL, RPR, or equivalent serologic methods) titer ≥ 4 AND a reactive treponemal test (FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods).³²

2014 Case Definition of Early Latent Syphilis

- *Probable*: No clinical symptoms AND evidence of having acquired the infection within the past 12 months, and has one of the following:
 - No past diagnosis of syphilis AND a reactive nontreponemal test (VDRL, RPR, or equivalent serologic methods) AND a reactive treponemal test (FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods); OR
 - A current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer.³²

2014 Case Definition of Late Latent Syphilis

- *Probable*: No clinical symptoms AND no evidence of having acquired the infection in the past 12 months, and has one of the following:
 - No past diagnosis of syphilis AND a reactive nontreponemal test (VDRL, RPR, or equivalent serologic methods) AND a reactive treponemal test (FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods); OR
 - A past history of syphilis therapy and a current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer.³²

2014 Case Definition of Late Syphilis with Clinical Manifestations

Clinical manifestations include inflammatory lesions of the cardiovascular system, skin, bone, or other tissue. Late syphilis usually becomes clinically manifest only after a period of 15-30 years of untreated infection. If neurological manifestations of syphilis are present and infection occurred more than 12 months ago, the case should be reported as "late syphilis."³²

- *Confirmed*: Demonstration of *T. pallidum* in late lesions by special stain or equivalent methods, or by PCR or equivalent direct molecular methods.
- *Probable*: Characteristic abnormalities or lesions of the cardiovascular system, skin, bone, or other tissue AND a reactive treponemal test (FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods) in the absence of other known causes. Cerebrospinal fluid abnormalities and clinical symptoms or signs consistent with neurologic manifestations of syphilis might be present.³²

2014 Case Definition of Congenital Syphilis

A condition caused by in utero infection with *T. pallidum*. A wide spectrum of severity exists, which includes stillbirth.³²

- *Confirmed*: Demonstration of *T. pallidum* by darkfield microscopy, fluorescent antibody, or other specific stains in specimens from lesions, placenta, umbilical cord, or autopsy material.
- *Probable*: A condition affecting an infant whose mother had untreated or inadequately treated syphilis at delivery, regardless of signs in the infant OR an infant or child who has a reactive treponemal test for syphilis AND one of the following:
 - Any evidence of congenital syphilis on physical examination or radiographs of long bones;
 - A reactive cerebrospinal fluid VDRL;
 - An elevated cerebrospinal fluid cell count or protein; or
 - A fluorescent treponemal antibody absorbed -19S-IgM antibody test or IgM enzyme-linked immunosorbent assay.^{33,32}

The 2018 case definitions for all stages of syphilis are summarized below.

2018 Case Definition of Primary Syphilis

- *Confirmed*: *T. pallidum* in clinical specimen by dark field microscopy that was not obtained from the oropharynx AND one or more ulcerative lesions (such as chancre), which may differ in appearance.
- *Probable*: One or more ulcerative lesions AND a reactive serologic test (nontreponemal: Venereal Disease Research Laboratory [VDRL], rapid plasma reagin [RPR], or equivalent serologic methods; treponemal: fluorescent treponemal antibody absorbed [FTA-ABS], *T. pallidum* particle agglutination [TP-PA], enzyme immunoassay [EIA], chemiluminescence immunoassay [CIA] or equivalent serologic methods).³⁴

2018 Case Definition of Secondary Syphilis

- *Confirmed*: *T. pallidum* in clinical specimens by darkfield microscopy that was not obtained from the oropharynx AND at least one sign or symptom common with secondary syphilis (lesions, rash, or localized lymphadenopathy).
- *Probable*: At least one sign or symptom common with secondary syphilis as stated above AND a nontreponemal serologic test (VDRL, RPR, or equivalent serologic methods) AND a reactive treponemal serologic test (FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods).³³

2018 Case Definition of Early Non-Primary Non-Secondary Syphilis (Formerly Early Latent Syphilis)

- *Probable*: No clinical symptoms evidence of having acquired the infection within the past 12 months (but no signs or symptoms of primary or secondary syphilis) AND has one of the following:
 - No past diagnosis of syphilis AND a current reactive nontreponemal test (VDRL, RPR, or equivalent serologic methods) AND a reactive treponemal test (FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods); OR

³³Centers for Disease Control and Prevention (2014). National Notifiable Disease Surveillance System (NNDSS): Syphilis (*Treponema pallidum*) 2014 case definition. Retrieved from <https://ndc.services.cdc.gov/case-definitions/syphilis-2014/>.

³⁴Centers for Disease Control and Prevention (2018). National Notifiable Disease Surveillance System (NNDSS): Syphilis (*Treponema pallidum*) 2018 case definition. Retrieved from <https://ndc.services.cdc.gov/case-definitions/syphilis-2018/>.

- A prior history of syphilis AND a current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer, unless there is evidence that this increase was not sustained for ≥ 2 weeks; AND
- Evidence having acquired the infection within the past 12 months based on 1.) documented seroconversion or fourfold or greater increase in titer of nontreponemal test during previous 12 months, unless there is evidence this increase was not sustained for ≥ 2 weeks, 2.) documented seroconversion of a treponemal test during previous 12 months, 3.) a history of symptoms consistent with primary or secondary syphilis during the previous 12 months, and 4.) has a history of sexual exposure to a partner within the previous 12 months who had primary, secondary, or early non-primary non-secondary syphilis (documented ≤ 12 months) or only sexual contact was within the previous 12 months.³⁴

2018 Case Definition of Unknown Duration or Late Syphilis

- *Probable*: A person with no clinical signs or symptoms of primary or secondary syphilis AND who has no evidence of acquiring the infection within 12 months AND who meets one of the following:
 - No prior history of syphilis and a current reactive nontreponemal test (VDRL, RPR, or equivalent serologic methods), and a current reactive treponemal test (FTA-ABS, TP-PA, EIA, CIA, or equivalent serologic methods); OR
 - A prior history of syphilis with a current nontreponemal test titer demonstrating a fourfold or greater increase from the last nontreponemal test titer, unless there is evidence that this increase was not sustained for more than two weeks; OR
 - Clinical signs or symptoms and laboratory results that meet the likely or verified criteria for neurological, ocular, otic, or late clinical manifestations (15-30 years of untreated syphilis).³³ More information about neurological, ocular, otic, or late clinical manifestations can be found on the CDC's website, under "Comments": <https://www.cdc.gov/nndss/conditions/syphilis/case-definition/2018/>.

2018 Case Definition of Congenital Syphilis

A condition caused by in utero infection with *T. pallidum*. A wide spectrum of severity exists, which includes stillbirth.³³

- *Confirmed*: Demonstration of *T. pallidum* by:
 - Darkfield microscopy of lesions, body fluids, or neonatal nasal discharge; OR
 - PCR or equivalent direct molecular methods of lesions, neonatal nasal discharge, placenta, umbilical cord, or autopsy material; OR
 - Immunohistochemistry or specific stains of specimens from lesions, neonatal nasal discharge, placenta, umbilical cord, or autopsy material.

³⁴Centers for Disease Control and Prevention (2018). National Notifiable Disease Surveillance System (NNDSS): Syphilis (*Treponema pallidum*) 2018 case definition. Retrieved from <https://ndc.services.cdc.gov/case-definitions/syphilis-2018/>.

- *Probable*: A condition affecting an infant whose mother had untreated or inadequately treated syphilis at delivery, regardless of signs in the infant OR an infant or child who has a reactive treponemal test for syphilis AND one of the following:
 - Any evidence of congenital syphilis on physical examination or radiographs of long bones;
 - A reactive cerebrospinal fluid VDRL;
 - An elevated cerebrospinal fluid cell count or protein; or
 - In a non-traumatic lumbar puncture, an elevated cerebrospinal fluid leukocyte (white blood cell) count or protein.³⁴

³⁴ Centers for Disease Control and Prevention (2018). National Notifiable Disease Surveillance System (NNDSS): Syphilis (*Treponema pallidum*) 2018 case definition. Retrieved from <https://ndc.services.cdc.gov/case-definitions/syphilis-2018/>.