2020 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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Please direct any comments or questions to:

HIV/STD/Hepatitis Surveillance Unit
North Carolina Communicable Disease Branch
1902 Mail Service Center
Raleigh, North Carolina 27699-1902
919-733-7301

https://epi.publichealth.nc.gov/cd/stds/figures.html

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Special Notes:

The portable document format or PDF version of this document contains hyperlinks to related topics in other sections of the document. To navigate to the related topic, click the hyperlink in the table of contents.

North Carolina
Department of Health and Human Services
Division of Public Health
Epidemiology Section

Communicable Disease Branch

Nicole Adams, MSc, HIV/Hepatitis Surveillance Epidemiologist
Anna Cope, PhD, MPH, Epidemiologist
Jason Maxwell, BS, HIV/STD Surveillance Data Manager
Danielle Robinson, MPH, PhD, STD Epidemiology Supervisor
Erika Samoff, PhD, MPH, HIV/STD/Hepatitis Surveillance Manager
Victoria Mobley, MD, MPH, HIV/STD Medical Director
Jacquelyn Clymore, MS, State HIV/STD/Hepatitis Director
Evelyn Foust, MPH, CPM, Branch Head

State of North Carolina • Roy Cooper, Governor
Department of Health and Human Services • Mandy Cohen, M.D., MPH, Secretary
Division of Public Health • Mark Benton, Assistant Secretary of Public Health
Epidemiology Section • Zack Moore, M.D., MPH, State Epidemiologist

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TABLE OF CONTENTS

Summary

Note for 2020 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 2020 was 64,342, a rate of 607.0 per 100,000 population.
- Among women, chlamydia diagnoses increased from 41,201 in 2016 to 43,512 in 2020.
- Among men, chlamydia diagnoses increased 23% from 16,963 in 2016 to 20,829 in 2020. Men also increased from 29% to 32% of the total population diagnosed with chlamydia during this time.
- 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 (4,798.8, 3,949.6, and 2,084.9 per 100,000, respectively). Overall, the 15- to 29-year-olds (both men and women) comprised 82.7% % of people diagnosed with chlamydia in 2020.
- In 2020, Black/African American men and women had the highest chlamydia rates (625.9 and 1,045.5 per 100,000, respectively) and accounted for 30.9% of people diagnosed with chlamydia.

Gonorrhea

- The reported number of gonorrhea cases in 2020 was 28,014, a rate of 264.3 per 100,000 population, an increase from 26,705 cases in 2019 (rate of 254.3 per 100,000). Gonorrhea cases have been increasing in North Carolina for the past few years. In 2016, there were a total of 19,597 cases reported (192.8 per 100,000).
- Among women, gonorrhea diagnoses increased 47% from 9,568 in 2016 to 13,240 in 2020.
- Among men, gonorrhea diagnoses increased 66% from 10,029 in 2016 to 14,774 in 2020; this may in part be due to increased screening among men. Men also increased from 51% to 53% of the total population diagnosed with gonorrhea during this time.
- 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 (1,265.5, 899.4, and 745.6 per 100,000, respectively). The 15- to 29-year-olds (both men and women) comprised 68% of people diagnosed with gonorrhea in 2020.
- In 2020, Black/African American men and women had the highest gonorrhea rates (636.1 and 424.9 per 100,000, respectively) and accounted for 43.8% 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 2020 was 2,342, a rate of 22.1 per 100,000 population. This is a slight increase from previous years (2018: 1,905 cases and rate of 18.3 per 100,000; 2019: 2,113 cases and rate of 20.1 per 100,000).
- There were 32 infants reported with congenital syphilis in 2020. This number is an important increase from the 27 probable congenital syphilis cases reported in 2019.
- Early syphilis cases increased among women in 2020. There were 408 early syphilis cases (7.5 per 100,000) in 2020, compared to 351 cases in 2019 (6.5 per 100,000).
- The highest rates of newly diagnosed early syphilis occurred among 25- to 29-year-olds (70.0 per 100,000), followed by the 30-to-34-year-olds (61.4 per 100,000), and the 20- to 24-year-olds (rate of 48.8 per 100,000). Cases in these age groups comprised 55.1% of the total early syphilis cases in 2020.
- Black/African American men had the highest rates of early syphilis (103.5 per 100,000) and accounted for 48.4% of total early syphilis cases in 2020.
- Men who report sex with men (MSM and MSMW) accounted for 52.8% of newly diagnosed early syphilis in North Carolina in 2020.

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, the infection can cause severe damage to the female reproductive tract, including infertility and PID.[2] Chlamydia in untreated pregnant women can result in problems during pregnancy, 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 25 years and younger, as well as all pregnant

[1]North 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.
[2]Centers for Disease Control and Prevention (2014). Chlamydia CDC detailed fact sheet. Updated January 23, 2014. Accessed April 9, 2019. Retrieved from https://www.cdc.gov/std/chlamydia/stdfact-chlamydia.htm.
[3]Centers for Disease Control and Prevention (2014). STDs and HIV-CDC detailed fact sheet. Updated December 16, 2014. Accessed April 9, 2019. Retrieved from https://www.cdc.gov/std/hiv/stdfact-std-hiv.htm.
[4]Centers for Disease Control and Prevention (2016). STDs during Pregnancy-CDC detailed fact sheet. Updated March 28, 2016. Accessed Retrieved April 9, 2019. Retrieved from https://www.cdc.gov/std/pregnancy/stdfact-pregnancy.htm.

women and older women 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 among women.

Gonorrhea

Gonorrhea is caused by the bacterium *Neisseria gonorrhoeae.* Nearly all infected males experience symptoms of a gonorrheal infection, including discharge and burning on urination.[5] Many women also experience symptoms, although they may be mild. Like chlamydia, untreated 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 in Guilford County 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, with a very small number of gonorrhea isolates resistant to cefixime or ceftriaxone. Resistance is 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 (also known as neonatal conjunctivitis) 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.[10] 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.

[5]Centers for Disease Control and Prevention (2014). Gonorrhea-CDC detailed fact sheet. Updated January 29, 2014. Retrieved April 9, 2019. https://www.cdc.gov/std/gonorrhea/stdfact-gonorrhea.htm.
[6]Hook, 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.
[7]Hook, E & Kirkcaldy, R. (2018). A Brief History of Evolving Diagnostics and Therapy for Gonorrhea: Lessons Learned. Clinical Infectious Diseases. 67(8): pp 1294-9.
[8]Centers for Disease Control and Prevention (2017). Combating the Threat of Antibiotic-Resistant Gonorrhea. Updated August 9, 2017. Accessed July 2, 2019. Retrieved from https://www.cdc.gov/std/gonorrhea/arg/CARB_FACTSHEET-2018.pdf.
[9]Centers for Disease Control and Prevention (2018). Gonococcal Isolate Surveillance Project (GISP) Profiles, 2017. Updated March 27, 2018. Accessed July 2, 2019. Retrieved from https://www.cdc.gov/std/stats17/gisp2017/default.htm.
[10]Centers for Disease Control and Prevention (2019). Conjunctivitis (pink eye) in newborns. Updated January 4, 2019. Retrieved April 9, 2019. 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 pallidium*.[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) does not have symptoms. Patients in the asymptomatic stage are also infectious to their sexual partners, although less so than in the primary or secondary stages of disease.[11] Such cases are less likely to be diagnosed and are generally identified through 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 screening or partner notification. Patients of either sex are not likely to be infectious to their sexual partners beyond the early latent stage, but finding these cases is still important, as long-term outcomes of untreated syphilis can be severe.[12]

Pregnant women can pass syphilis to their infants at any stage. 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 provided that pregnant women receive consistent and timely prenatal care. North Carolina Administrative Code states pregnant women shall be tested for syphilis at first prenatal visit, at 28-32 weeks, and at delivery. If the syphilis infection is not detected during pregnancy or at the time of delivery, and the infant does not have initial physical symptoms, congenital syphilis diagnosis may not occur until years later.[13] If a confirmed or probable case of congenital syphilis is detected at delivery the infant can be treated at the hospital before discharge.

[11]Centers for Disease Control and Prevention (2017). Syphilis-CDC detailed fact sheet. Updated January 30,2017. Accessed April 9, 2019. Retrieved from https://www.cdc.gov/std/syphilis/stdfact-syphilis-detailed.htm.
[12]Centers for Disease Control and Prevention (2018). Syphilis 2018 case definition-CSTE position paper. Updated January 1, 2018. Accessed April 9, 2019. Retrieved from https://wwwn.cdc.gov/nndss/conditions/syphilis/case-definition/2018/.
[13]Centers for Disease Control and Prevention (2017). Congenital syphilis-CDC fact sheet. Updated January 31,2017. Accessed April 9, 2019. Retrieved from https://www.cdc.gov/std/syphilis/stdfact-congenital-syphilis.htm.

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 causative organisms. NGU is a diagnosis of exclusion that requires specific physical manifestations which include the inflammation of the urethra, painful urination and penile and/or rectal discharge.[14] Diagnosis is determined by the documented absence of *N. gonorrhoeae*, the causative agent in gonorrheal urethritis. Although NGU is caused by several different organisms, *C. trachomatis* may be responsible for many infections; however, these NGU cases are not tested for chlamydia.[14] Most NGU cases in North Carolina are diagnosed at local health department clinics.

Similarly, PID occurs when an untreated sexually transmitted infection spreads to the uterus and the reproductive organs. PID symptoms can include cervical motion tenderness, discharge, fever, lower back pain, and painful urination.[15] Many different types of microorganisms can cause PID; therefore, this STD is considered a polymicrobial infection. Sexually transmitted disease pathogens *N. gonorrhoeae* and *C. trachomatis* have frequently been identified among women with PID infection (one third to half of cases); most cases of PID are caused by these organisms.[15] Quick detection and antibiotic treatment is critical to prevent long term sexual reproductive organ damage.

Rare Bacterial Sexually Transmitted Infections

Chancroid is caused by *Haemophilus ducreyi* organism. Symptoms include painful genital ulcer and tender suppurative inguinal adenopathy.[16] Cases are rarely reported in North Carolina. Laboratory diagnosis is complex since no PCR tests for detection are cleared by the FDA and the culture media for *H. ducrey* 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 physical symptoms can include tender inguinal and or femoral lymphadenopathy, a lesion, proctocolitis, and other symptoms. The diagnostic criteria for LGV include *C. trachomatis* culture and serology.[17] Granuloma inguinale is caused by *Klebsiella granulomatis*, and the symptom is a genital ulcer.[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.

[14]Centers for Disease Control and Prevention (2015). Diseases characterized by urethritis and cervicitis. Updated June 4, 2015. Accessed April 9, 2019. Retrieved from https://www.cdc.gov/std/tg2015/urethritis-and-cervicitis.htm.
[15]Centers for Disease Control and Prevention (2015). Pelvic Inflammatory Disease (PID)-CDC basic fact sheet. Updated December 11, 2015. Accessed April 9, 2019. Retrieved from https://www.cdc.gov/std/pid/stdfact-pid.htm.
[16]Centers for Disease Control and Prevention (2015). Chancroid-2015 STD Treatment Guidelines. Updated June 4, 2015. Accessed April 9, 2019. Retrieved from https://www.cdc.gov/std/tg2015/chancroid.htm.
[17]Centers for Disease Control and Prevention (2015). Lymphogranuloma venereum (LGV)-2015 STD Treatment Guidelines. Updated June 4, 2015. Accessed April 9, 2019. Retrieved from https://www.cdc.gov/std/tg2015/lgv.htm.
[18]Centers for Disease Control and Prevention (2015). Granuloma Inguinale (Donovanosis)-2015 STD Treatment Guidelines. Updated June 4, 2015. Accessed April 9, 2019. Retrieved from https://www.cdc.gov/std/tg2015/donovanosis.htm.

Table A displays the overall number of reportable STD cases in NC in 2020. The majority of STDs reported were chlamydia, gonorrhea, and syphilis.

Table A. North Carolina Reportable Bacterial Sexually Transmitted Diseases (STDs) by Gender, 2020*

Bacterial STDs	Gender		Total**
	Men	Women	
Chlamydia	*20,829*	*43,512*	*64,342*
Gonorrhea	*14,774*	*13,240*	*28,014*
Syphilis			
Primary Syphilis	*419*	*63*	*482*
Secondary Syphilis	*652*	*129*	*781*
Early Non-Primary, Non-Secondary	*863*	*216*	*1,079*
Late or Unknown duration Syphilis	*841*	*355*	*1,202*
Congenital Syphilis^	*--*	*--*	*32*
Nongonococcal urethritis (NGU)	*2,338*	*1*	*2,339*
Pelvic inflammatory disease (PID)	*--*	*145*	*145*
Chancroid	*0*	*0*	*0*
Granuloma Inguinale	*0*	*0*	*0*
Lymphogranuloma venereum	*3*	*0*	*3*
Total	***40,719***	***57,661***	***98,419***

*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.
**Total includes cases with missing gender.
^Congenital syphilis cases are not broken down by gender per the Communicable Disease Branch data confidentiality policy.
Data Source: North Carolina Electronic Disease Surveillance System (data as of July 6, 2021).

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 14 million Americans become infected each year with HPV.[20] More than 40 strains of HPV can be sexually transmitted. Most strains produce no symptoms in infected individuals, but there

[19]Centers for Disease Control and Prevention (2017). Genital HPV Infection-CDC fact sheet. Updated November 16, 2017. Accessed April 9, 2019. Retrieved from https://www.cdc.gov/std/hpv/stdfact-hpv.htm.
[20]Centers for Disease Control and Prevention (2019). About HPV. Updated April 29, 2019. Accessed July 2, 2019. Retrieved from https://www.cdc.gov/hpv/parents/about-hpv.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fhpv%2Fparents%2Fwhatishpv.html.

are a few strains associated with genital warts and others associated with the development of cancer in both women and men.[21] 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.[21] The most recent data available estimated that 333 cases of cervical cancer were reported in North Carolina in 2017.[22]

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%).[23] The HPV vaccination is recommended or 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 776,000 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.[24] In 2015-2016, prevalence of HSV-1 was 48% and prevalence of HSV-2 was 12% in the U.S. population.[25] Asymptomatic shedding of the virus is not uncommon. Many infected patients are unaware of being 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 a male partner.[24] Symptoms are most severe immediately following the initial infection and subsequent outbreaks decrease in severity. A rare but extreme consequence of genital herpes is transmission to newborns during 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.[26]

[21]Centers for Disease Control and Prevention (2016). What is HPV? Updated December 13, 2016. Accessed April 9, 2019. Retrieved from https://www.cdc.gov/hpv/parents/whatishpv.html.
[22]North Carolina State Center for Health Statistics (2019). Cancer incidence rates by race, North Carolina, 2017. Updated March 18, 2019. Accessed November 12, 2014. Retrieved from https://schs.dph.ncdhhs.gov/schs/CCR/incidence/2017/race_v2.pdf
[23]Centers for Disease Control and Prevention (2016). About HPV vaccines. Updated December 15, 2016. Accessed April 9, 2019. Retrieved from https://www.cdc.gov/vaccines/vpd/hpv/hcp/vaccines.html.
[24]Centers for Disease Control and Prevention (2017). Genital herpes-CDC detailed fact sheet. Updated January 31, 2017. Accessed April 9, 2019. Retrieved from https://www.cdc.gov/std/herpes/stdfact-herpes-detailed.htm.
[25]Centers 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 April 9, 2019. Retrieved from https://www.cdc.gov/nchs/products/databriefs/db304.htm.
[26]Centers for Disease Control and Prevention (2017). Genital herpes screening FAQ.Updated February 9, 2017. Accessed April 9, 2019. 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 associated as a causative organism in NGU and PID diagnoses.[27] *M. genitalium* is responsible for approximately 15%-20% of NGU cases, and 2%-22% of PID cases.[27]

Trichomoniasis

Trichomoniasis is caused by the protozoan *Trichomonas vaginalis* that affects about 3.7 million patients annually in the US.[28] Symptoms can include urethritis in males and diffuse malodorous vaginal discharge with vulvar irritation in females; asymptomatic infection also occurs.

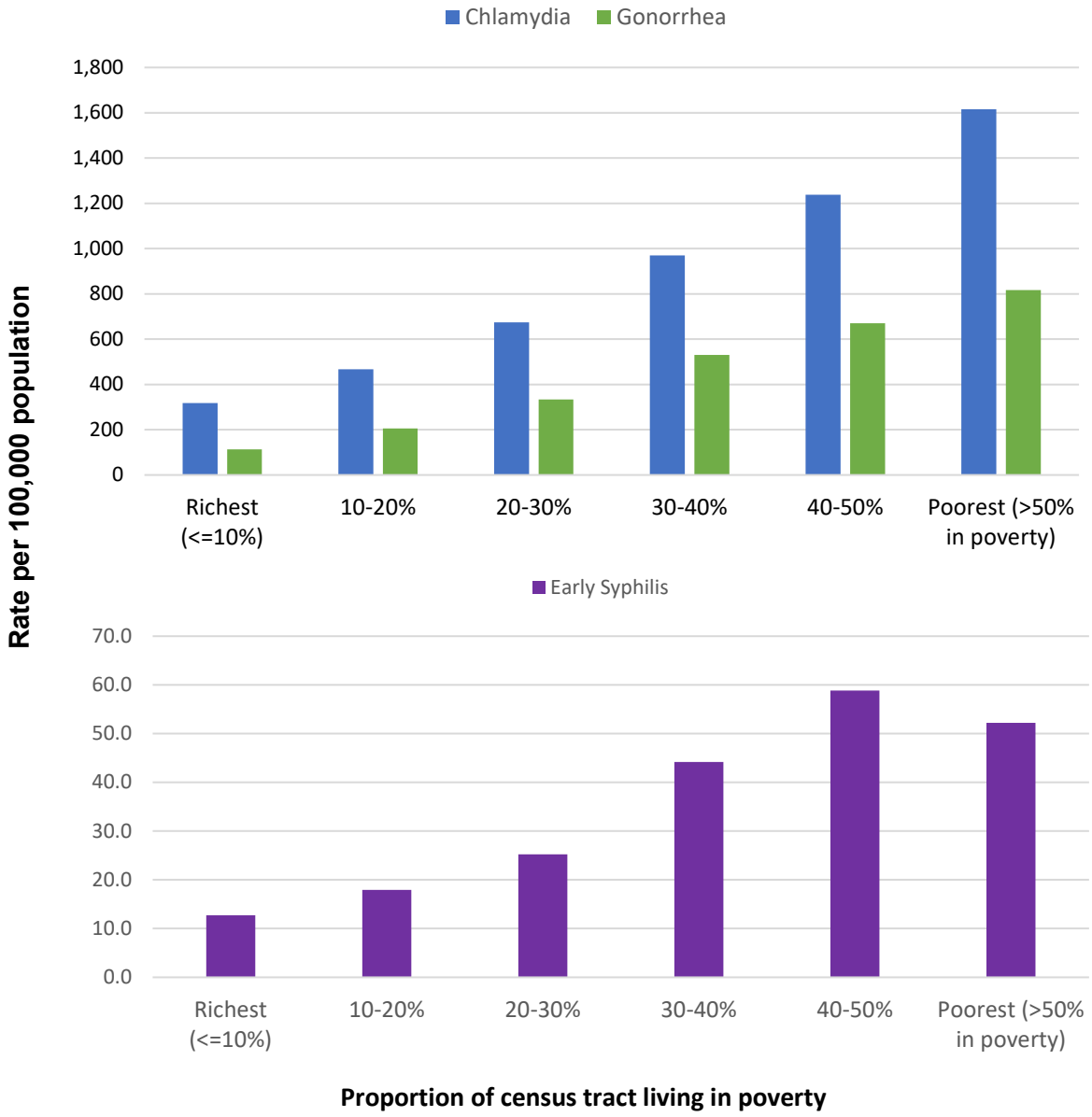
Some studies have suggested that vaginal trichomoniasis is a risk factor for HIV acquisition, and up to 53% of women with HIV are also infected with *T. vaginalis*. In pregnant women, adverse pregnancy outcomes are associated with infection including premature rupture of membranes and low birth weight 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 large gaps in wealth distribution 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 2020, 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 (2015-2019) 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 2020 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.

[27]Centers for Disease Control and Prevention (2015). 2015 STD Treatment Guidelines-Emerging Issues-*Mycoplasma genitalium*. Updated June 4, 2015. Accessed July 2, 2019. Retrieved from https://www.cdc.gov/std/general/other.htm.
[28]Centers for Disease Control and Prevention (2017). Trichomoniasis-CDC detailed fact sheet. Updated January 31, 2017. Retrieved April 9, 2019. https://www.cdc.gov/std/trichomonas/stdfact-trichomoniasis.htm.
[29]Centers for Disease Control and Prevention. (2017). STD health equity. Updated February 15, 2017. Accessed July 19, 2017. 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*, 2020^



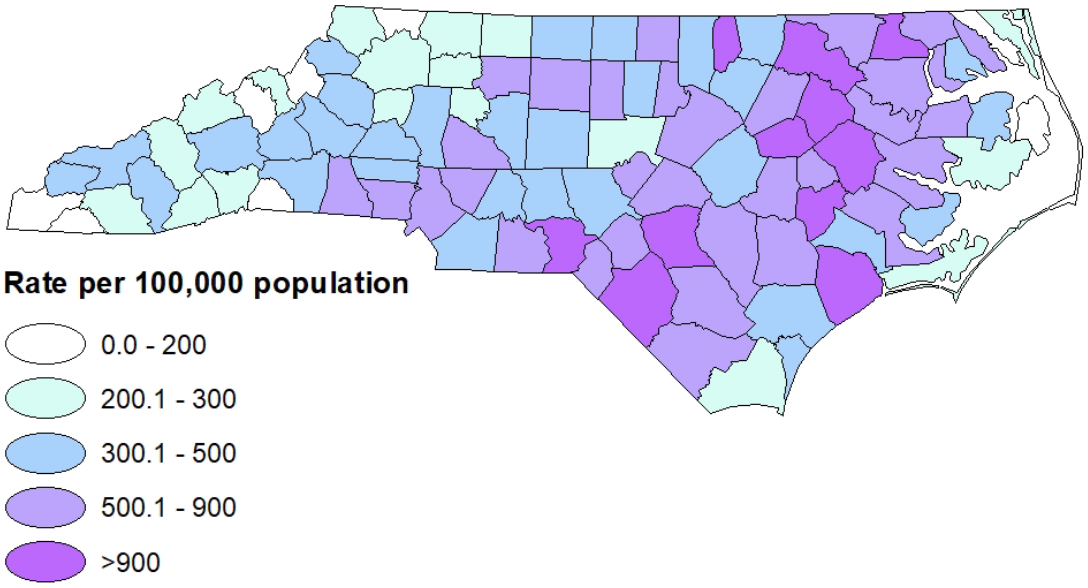
*Estimates of people living below the poverty line within a census tract and all population estimates obtained from the American Community Survey, 2015-2019 5-year estimate.

^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.

Data Sources: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of July 6, 2021), and 2015-2019 American Community Survey (ACS) 5-year estimates (accessed from https://www.census.gov/programs-surveys/acs/).

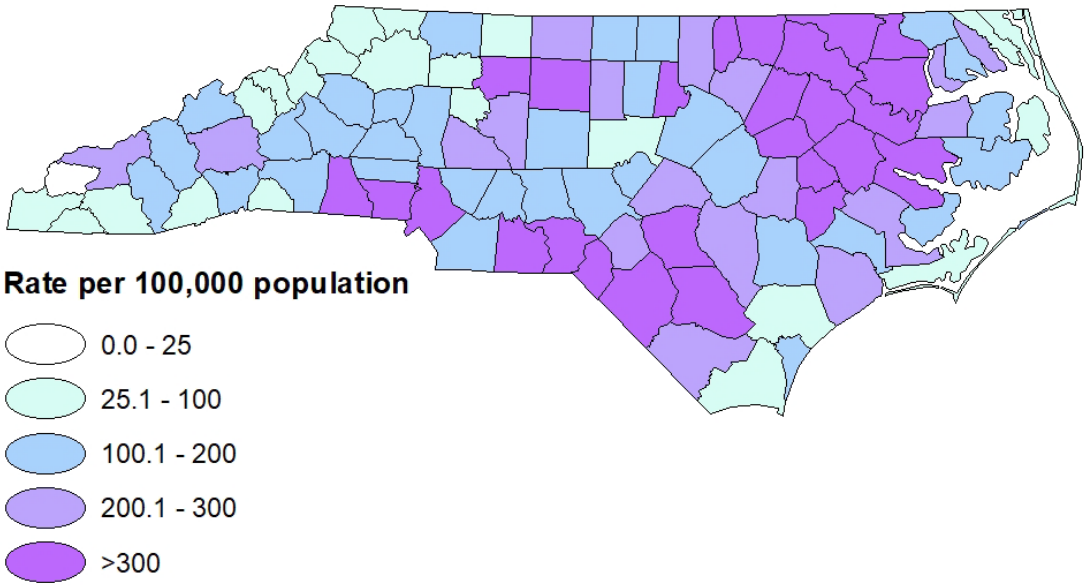
Chlamydia, Gonorrhea, and Syphilis Annual Rate Maps by County of Residence at Diagnosis, 2020

Figure 2. Newly Diagnosed Chlamydia Rates in North Carolina by County of Residence at Diagnosis, 2020*



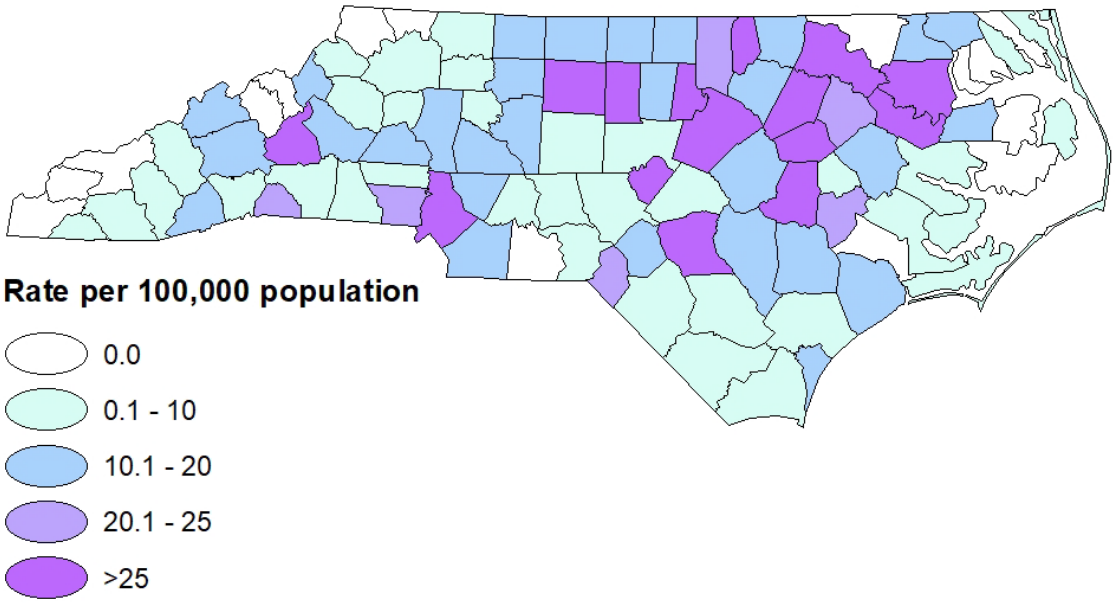
*2020 data should be treated with caution due to reduced availability of testing caused by the COVID-19 pandemic.
Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of July 6, 2021).

Figure 3. Newly Diagnosed Gonorrhea Rates in North Carolina by County of Residence at Diagnosis, 2020



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

Figure 4. Newly Diagnosed Early Syphilis (Primary, Secondary, and Early Non-Primary Non-Secondary) Rates in North Carolina by County of Residence at Diagnosis, 2020



*2020 data should be treated with caution due to reduced availability of testing caused by the COVID-19 pandemic.
Data Source: North Carolina Electronic Disease Surveillance System (NC EDSS) (data as of July 6, 2021).

County Totals and Rates for Chlamydia, Gonorrhea, and Syphilis 2020

Table 1. Newly Diagnosed Chlamydia Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2016-2020*

County	2016		2017		2018		2019		*2020**	
	Cases	Rate^	Cases	Rate^	Cases	Rate^	Cases	Rate^	*Cases*	*Rate^*
Alamance	835	520.7	905	554.1	936	562.1	1,059	626.0	*927*	*541.0*
Alexander	90	242.5	67	180.6	75	201.2	81	216.5	*111*	*296.5*
Alleghany	14	128.1	27	245.4	38	340.3	23	206.6	*19*	*169.7*
Anson	174	691.2	166	667.8	181	739.2	248	1,053.6	*204*	*846.6*
Ashe	43	161.7	41	153.0	40	147.5	30	110.2	*58*	*213.5*
Avery	32	183.4	33	188.3	30	171.3	34	194.3	*26*	*148.0*
Beaufort	254	535.8	254	539.3	290	615.4	307	651.9	*307*	*652.2*
Bertie	130	669.6	154	800.2	162	849.4	128	675.0	*128*	*684.1*
Bladen	182	540.7	166	496.3	142	428.1	174	529.5	*189*	*574.3*
Brunswick	351	277.6	400	305.4	443	323.2	472	330.1	*388*	*260.3*
Buncombe	998	391.0	1,104	428.9	1,139	438.5	1,250	477.0	*1,120*	*425.1*
Burke	285	318.6	333	369.4	356	394.2	360	398.1	*309*	*341.7*
Cabarrus	922	457.0	976	471.5	1,134	536.2	1,225	566.2	*1,193*	*538.7*
Caldwell	210	256.6	240	292.8	289	351.9	332	403.5	*326*	*397.1*
Camden	23	221.5	24	228.2	37	348.6	23	213.6	*19*	*173.0*
Carteret	194	281.7	225	326.0	241	346.5	248	356.8	*207*	*297.6*
Caswell	92	404.4	122	539.3	98	431.9	90	398.4	*98*	*436.7*
Catawba	585	373.8	623	394.7	656	413.8	689	432.3	*705*	*439.8*
Chatham	158	226.8	195	273.7	211	288.4	226	303.7	*178*	*235.0*
Cherokee	38	136.4	42	150.0	52	182.9	49	170.7	*36*	*123.8*
Chowan	87	612.3	101	720.7	95	677.7	92	661.1	*93*	*673.2*
Clay	14	129.8	18	163.1	22	197.3	27	239.4	*15*	*130.4*
Cleveland	508	523.5	566	582.3	665	681.4	644	657.4	*657*	*663.4*
Columbus	314	557.5	310	553.6	297	532.6	320	577.1	*306*	*558.9*
Craven	729	709.3	814	792.3	816	794.8	791	775.3	*625*	*617.4*
Cumberland	3,368	1,009.2	3,656	1,102.2	4,055	1,212.3	4,501	1,337.5	*4,214*	*1,252.8*
Currituck	67	261.0	61	231.7	77	284.3	50	179.1	*64*	*220.3*
Dare	69	192.2	108	297.9	112	305.1	75	202.3	*68*	*181.1*
Davidson	681	414.0	665	401.8	691	414.5	665	395.3	*714*	*421.9*
Davie	131	312.4	137	323.9	131	308.2	147	344.3	*128*	*295.7*
Duplin	218	367.7	275	466.6	322	545.8	319	542.5	*343*	*583.4*
Durham	2,427	787.7	2,741	877.2	2,862	901.5	2,999	928.6	*2,422*	*740.0*
Edgecombe	496	930.9	503	952.8	521	1,001.6	638	1,240.5	*599*	*1,178.5*
Forsyth	2,631	708.3	2,533	673.8	2,847	750.8	3,232	845.8	*2,976*	*775.3*
Franklin	271	419.0	330	498.7	347	513.0	342	490.1	*299*	*416.1*
Gaston	1,282	591.5	1,383	629.2	1,577	707.6	1,676	746.0	*1,554*	*685.9*
Gates	45	388.9	46	399.9	39	338.4	52	450.8	*68*	*593.2*
Graham	17	199.1	21	246.2	17	200.2	18	212.5	*27*	*318.6*
Granville	486	827.7	477	802.3	458	762.1	420	695.8	*300*	*496.0*
Greene	157	744.5	147	701.2	167	793.7	178	851.1	*182*	*869.6*
Guilford	4,611	879.1	4,992	944.3	5,159	967.5	5,414	1,006.6	*4,581*	*847.5*

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

Table 1 (Continued). Newly Diagnosed Chlamydia Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2016-2020*

County	2016		2017		2018		2019		*2020**	
	Cases	Rate^	Cases	Rate^	Cases	Rate^	Cases	Rate^	*Cases*	*Rate^*
Halifax	370	714.1	419	816.3	491	968.5	468	934.6	*480*	*970.1*
Harnett	606	463.2	694	523.4	758	562.9	784	575.7	*729*	*531.9*
Haywood	133	219.9	139	227.2	168	270.2	179	286.4	*150*	*238.2*
Henderson	286	251.5	326	282.4	338	290.0	325	277.0	*331*	*279.5*
Hertford	166	685.6	155	648.1	195	816.5	176	744.4	*231*	*999.7*
Hoke	353	665.0	387	713.9	400	731.8	423	766.8	*351*	*628.7*
Hyde	17	312.8	24	458.9	17	339.6	8	162.2	*14*	*289.1*
Iredell	612	354.6	768	437.2	728	408.2	774	425.6	*715*	*384.9*
Jackson	154	361.1	206	476.6	204	468.5	282	644.8	*194*	*440.6*
Johnston	728	381.3	838	426.4	881	433.9	981	467.6	*888*	*410.6*
Jones	41	428.4	61	638.7	49	512.7	47	503.3	*41*	*443.2*
Lee	333	558.2	327	541.2	287	468.8	342	553.6	*319*	*511.6*
Lenoir	449	784.1	474	836.8	541	965.2	581	1,036.1	*552*	*990.7*
Lincoln	226	278.2	257	311.1	324	384.2	299	345.2	*358*	*406.4*
Macon	70	204.1	98	283.2	101	286.7	79	221.1	*75*	*208.4*
Madison	56	261.7	53	245.3	71	327.8	71	328.1	*53*	*243.8*
Martin	131	566.6	144	632.3	170	749.0	191	850.7	*181*	*816.1*
McDowell	164	365.5	177	392.6	145	318.8	168	366.9	*155*	*338.6*
Mecklenburg	7,983	754.5	8,835	818.3	9,204	839.8	10,051	902.8	*9,441*	*836.3*
Mitchell	34	226.6	33	220.1	36	240.2	38	254.6	*37*	*248.6*
Montgomery	125	458.1	156	572.0	141	520.2	128	470.4	*120*	*440.6*
Moore	343	359.3	327	335.8	389	393.1	428	423.1	*333*	*322.2*
Nash	645	685.7	641	681.2	680	722.2	774	821.2	*700*	*737.9*
New Hanover	1,171	520.6	1,259	550.1	1,216	522.9	1,301	555.3	*958*	*404.9*
Northampton	114	566.2	130	653.3	176	891.5	178	912.9	*146*	*764.9*
Onslow	1,742	903.8	1,782	912.3	2,092	1,061.6	2,392	1,179.5	*2,131*	*1,044.9*
Orange	692	484.4	778	541.7	691	466.8	751	506.8	*540*	*362.2*
Pamlico	21	164.4	43	340.4	33	261.9	47	371.5	*39*	*306.7*
Pasquotank	278	705.3	327	829.5	323	813.7	303	758.1	*298*	*738.1*
Pender	198	336.6	225	370.1	205	330.0	207	328.3	*208*	*321.6*
Perquimans	53	394.8	76	564.5	60	446.9	57	419.8	*52*	*380.5*
Person	210	534.1	240	609.0	176	445.2	207	522.5	*240*	*601.1*
Pitt	1,910	1,077.3	2,096	1,173.2	2,046	1,138.7	2,232	1,231.4	*1,924*	*1,051.8*
Polk	40	195.9	47	228.5	37	179.0	35	168.9	*34*	*161.7*
Randolph	420	293.6	469	328.0	509	355.5	567	395.1	*570*	*394.3*
Richmond	372	826.0	438	978.0	407	906.8	444	991.9	*403*	*909.0*
Robeson	1,219	914.2	1,268	956.2	1,155	875.7	1,319	1,011.2	*1,259*	*968.5*
Rockingham	377	412.8	354	389.7	419	462.1	460	504.8	*392*	*429.4*
Rowan	736	527.9	929	662.2	950	674.4	900	634.6	*831*	*583.2*
Rutherford	223	336.3	244	366.6	284	425.7	291	434.1	*281*	*418.9*

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

Table 1 (Continued). Newly Diagnosed Chlamydia Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2016-2020*

County	2016		2017		2018		2019		*2020**	
	Cases	Rate^	Cases	Rate^	Cases	Rate^	Cases	Rate^	*Cases*	*Rate^*
Sampson	327	517.4	282	446.3	323	510.5	406	640.7	*329*	*519.1*
Scotland	304	860.8	313	889.8	314	904.9	346	994.9	*304*	*877.7*
Stanly	248	407.7	239	388.9	268	431.7	287	458.1	*255*	*403.2*
Stokes	118	257.1	101	221.0	114	250.8	116	254.2	*130*	*284.2*
Surry	185	256.9	213	295.4	207	287.7	197	274.6	*172*	*239.9*
Swain	109	768.2	88	616.8	118	827.5	125	873.4	*64*	*451.4*
Transylvania	62	185.4	71	210.0	77	225.3	93	271.4	*75*	*217.4*
Tyrrell	16	398.3	16	383.5	18	437.6	15	393.4	*12*	*318.0*
Union	806	355.8	816	352.4	986	417.4	1,107	461.2	*966*	*395.0*
Vance	492	1,104.2	471	1,061.1	490	1,095.3	508	1,137.2	*475*	*1,062.2*
Wake	5,516	525.9	6,091	567.9	6,501	595.2	6,602	593.3	*5,720*	*505.2*
Warren	123	618.9	109	549.7	123	620.7	128	650.0	*96*	*491.8*
Washington	84	695.3	83	694.7	90	763.2	88	756.3	*77*	*670.4*
Watauga	203	374.7	268	485.1	274	487.5	279	495.8	*219*	*388.0*
Wayne	830	667.4	796	646.1	918	743.4	962	776.4	*823*	*663.9*
Wilkes	153	223.1	176	257.1	184	268.7	188	275.3	*190*	*279.2*
Wilson	468	575.7	516	633.5	667	819.5	897	1,096.9	*771*	*940.5*
Yadkin	76	201.9	72	191.5	86	229.6	80	212.7	*100*	*265.8*
Yancey	24	136.4	28	158.1	34	190.0	31	171.7	*27*	*149.2*
North Carolina	**58,164**	**572.4**	**62,974**	**612.8**	**66,716**	**642.0**	**71,391**	**679.8**	***64,342***	***607.0***

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

Table 2. Newly Diagnosed Gonorrhea Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2016-2020*

County	2016		2017		2018		2019		*2020**	
	Cases	Rate^	Cases	Rate^	Cases	Rate^	Cases	Rate^	*Cases*	*Rate^*
Alamance	378	235.7	274	167.8	261	156.7	259	153.1	*368*	*214.8*
Alexander	15	40.4	26	70.1	21	56.3	43	114.9	*48*	*128.2*
Alleghany	1	9.2	2	18.2	6	53.7	3	26.9	*5*	*44.7*
Anson	99	393.3	62	249.4	69	281.8	73	310.1	*104*	*431.6*
Ashe	6	22.6	4	14.9	5	18.4	6	22.0	*19*	*69.9*
Avery	6	34.4	5	28.5	7	40.0	5	28.6	*7*	*39.8*
Beaufort	60	126.6	77	163.5	75	159.1	144	305.8	*156*	*331.4*
Bertie	39	200.9	48	249.4	49	256.9	63	332.2	*60*	*320.6*
Bladen	76	225.8	91	272.1	74	223.1	113	343.8	*113*	*343.4*
Brunswick	136	107.6	135	103.1	170	124.0	165	115.4	*120*	*80.5*
Buncombe	252	98.7	452	175.6	402	154.8	473	180.5	*582*	*220.9*
Burke	69	77.1	165	183.0	188	208.2	177	195.7	*135*	*149.3*
Cabarrus	251	124.4	256	123.7	326	154.1	326	150.7	*399*	*180.2*
Caldwell	57	69.7	105	128.1	149	181.5	214	260.1	*146*	*177.8*
Camden	3	28.9	7	66.6	9	84.8	7	65.0	*8*	*72.8*
Carteret	44	63.9	41	59.4	39	56.1	43	61.9	*53*	*76.2*
Caswell	38	167.0	39	172.4	27	119.0	18	79.7	*44*	*196.1*
Catawba	123	78.6	294	186.3	264	166.5	302	189.5	*226*	*141.0*
Chatham	39	56.0	56	78.6	40	54.7	40	53.7	*45*	*59.4*
Cherokee	8	28.7	13	46.4	19	66.8	31	108.0	*18*	*61.9*
Chowan	27	190.0	37	264.0	47	335.3	71	510.2	*32*	*231.6*
Clay	2	18.5	1	9.1	2	17.9	11	97.5	*11*	*95.6*
Cleveland	253	260.7	349	359.1	413	423.2	312	318.5	*333*	*336.2*
Columbus	100	177.5	216	385.7	132	236.7	142	256.1	*124*	*226.5*
Craven	226	219.9	185	180.1	229	223.1	182	178.4	*204*	*201.5*
Cumberland	1,249	374.3	1,484	447.4	1,484	443.7	1,768	525.4	*1,736*	*516.1*
Currituck	10	39.0	15	57.0	21	77.5	17	60.9	*11*	*37.9*
Dare	9	25.1	27	74.5	20	54.5	19	51.3	*25*	*66.6*
Davidson	285	173.3	282	170.4	293	175.7	417	247.9	*420*	*248.2*
Davie	39	93.0	46	108.8	39	91.8	44	103.0	*42*	*97.0*
Duplin	84	141.7	88	149.3	95	161.0	102	173.5	*103*	*175.2*
Durham	959	311.3	1,073	343.4	1,108	349.0	1,139	352.7	*1,242*	*379.5*
Edgecombe	187	351.0	237	448.9	278	534.5	311	604.7	*412*	*810.6*
Forsyth	1,050	282.7	966	257.0	1,167	307.8	1,570	410.9	*1,537*	*400.4*
Franklin	68	105.1	127	191.9	154	227.7	169	242.2	*152*	*211.5*
Gaston	476	219.6	534	243.0	658	295.2	610	271.5	*720*	*317.8*
Gates	20	172.9	13	113.0	14	121.5	14	121.4	*21*	*183.2*
Graham	1	11.7	3	35.2	5	58.9	3	35.4	*0*	*0.0*
Granville	105	178.8	133	223.7	137	228.0	170	281.7	*147*	*243.0*
Greene	46	218.1	49	233.7	53	251.9	59	282.1	*70*	*334.5*
Guilford	1,770	337.5	1,917	362.6	1,965	368.5	2,334	433.9	*2,215*	*409.8*

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

Table 2 (Continued). Newly Diagnosed Gonorrhea Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2016-2020*

County	2016		2017		2018		2019		*2020**	
	Cases	Rate^	Cases	Rate^	Cases	Rate^	Cases	Rate^	*Cases*	*Rate^*
Halifax	109	210.4	163	317.6	180	355.1	221	441.3	*289*	*584.1*
Harnett	163	124.6	193	145.6	244	181.2	286	210.0	*282*	*205.8*
Haywood	14	23.1	42	68.7	51	82.0	75	120.0	*81*	*128.6*
Henderson	57	50.1	102	88.4	106	90.9	143	121.9	*158*	*133.4*
Hertford	40	165.2	46	192.3	68	284.7	66	279.2	*88*	*380.8*
Hoke	151	284.4	158	291.5	150	274.4	182	329.9	*154*	*275.8*
Hyde	2	36.8	6	114.7	3	59.9	4	81.1	*5*	*103.2*
Iredell	152	88.1	364	207.2	222	124.5	255	140.2	*356*	*191.6*
Jackson	24	56.3	83	192.0	65	149.3	50	114.3	*56*	*127.2*
Johnston	201	105.3	261	132.8	245	120.7	331	157.8	*333*	*154.0*
Jones	18	188.1	19	199.0	20	209.3	19	203.4	*10*	*108.1*
Lee	144	241.4	98	162.2	79	129.0	86	139.2	*115*	*184.4*
Lenoir	157	274.2	202	356.6	235	419.3	222	395.9	*273*	*489.9*
Lincoln	59	72.6	76	92.0	98	116.2	99	114.3	*114*	*129.4*
Macon	13	37.9	14	40.5	31	88.0	26	72.8	*33*	*91.7*
Madison	5	23.4	15	69.4	16	73.9	18	83.2	*23*	*105.8*
Martin	33	142.7	32	140.5	62	273.2	53	236.1	*83*	*374.2*
McDowell	34	75.8	100	221.8	70	153.9	82	179.1	*83*	*181.3*
Mecklenburg	2,782	262.9	3,188	295.3	3,187	290.8	3,433	308.4	*4,335*	*384.0*
Mitchell	11	73.3	7	46.7	2	13.3	5	33.5	*8*	*53.8*
Montgomery	43	157.6	34	124.7	30	110.7	41	150.7	*51*	*187.2*
Moore	94	98.5	89	91.4	79	79.8	138	136.4	*108*	*104.5*
Nash	223	237.1	307	326.3	280	297.4	434	460.4	*476*	*501.8*
New Hanover	476	211.6	408	178.3	387	166.4	435	185.7	*283*	*119.6*
Northampton	37	183.8	72	361.8	64	324.2	74	379.5	*89*	*466.3*
Onslow	306	158.8	379	194.0	514	260.8	527	259.9	*448*	*219.7*
Orange	175	122.5	229	159.4	189	127.7	178	120.1	*157*	*105.3*
Pamlico	10	78.3	12	95.0	6	47.6	10	79.1	*14*	*110.1*
Pasquotank	60	152.2	88	223.2	128	322.5	138	345.3	*114*	*282.4*
Pender	72	122.4	46	75.7	58	93.4	53	84.1	*62*	*95.9*
Perquimans	16	119.2	13	96.6	23	171.3	35	257.8	*20*	*146.3*
Person	79	200.9	75	190.3	46	116.4	52	131.2	*69*	*172.8*
Pitt	661	372.8	687	384.5	645	359.0	858	473.4	*880*	*481.1*
Polk	9	44.1	12	58.3	9	43.5	20	96.5	*13*	*61.8*
Randolph	184	128.6	153	107.0	176	122.9	163	113.6	*224*	*155.0*
Richmond	105	233.2	114	254.5	174	387.7	246	549.5	*223*	*503.0*
Robeson	517	387.7	591	445.7	505	382.9	711	545.1	*702*	*540.0*
Rockingham	174	190.5	180	198.1	144	158.8	194	212.9	*183*	*200.5*
Rowan	203	145.6	255	181.8	343	243.5	385	271.5	*337*	*236.5*
Rutherford	83	125.2	153	229.9	177	265.3	167	249.1	*132*	*196.8*

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 July 6, 2021).

Table 2 (Continued). Newly Diagnosed Gonorrhea Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2016-2020*

County	2016		2017		2018		2019		*2020**	
	Cases	Rate^	Cases	Rate^	Cases	Rate^	Cases	Rate^	*Cases*	*Rate^*
Sampson	129	204.1	98	155.1	107	169.1	119	187.8	*155*	*244.5*
Scotland	89	252.0	156	443.5	155	446.7	173	497.5	*154*	*444.6*
Stanly	70	115.1	59	96.0	70	112.8	75	119.7	*126*	*199.2*
Stokes	32	69.7	25	54.7	40	88.0	43	94.2	*45*	*98.4*
Surry	34	47.2	46	63.8	43	59.8	63	87.8	*74*	*103.2*
Swain	24	169.1	36	252.3	49	343.6	37	258.5	*33*	*232.7*
Transylvania	7	20.9	15	44.4	24	70.2	46	134.2	*33*	*95.7*
Tyrrell	0	0.0	4	95.9	1	24.3	3	78.7	*4*	*106.0*
Union	267	117.9	203	87.7	285	120.7	296	123.3	*293*	*119.8*
Vance	219	491.5	255	574.5	263	587.9	293	655.9	*226*	*505.4*
Wake	1,626	155.0	2,080	193.9	2,148	196.7	2,214	199.0	*2,208*	*195.0*
Warren	34	171.1	35	176.5	38	191.8	57	289.5	*62*	*317.6*
Washington	16	132.4	20	167.4	26	220.5	32	275.0	*23*	*200.3*
Watauga	28	51.7	22	39.8	35	62.3	25	44.4	*29*	*51.4*
Wayne	384	308.8	337	273.5	314	254.3	308	248.6	*279*	*225.1*
Wilkes	27	39.4	48	70.1	51	74.5	43	63.0	*55*	*80.8*
Wilson	230	282.9	259	318.0	238	292.4	365	446.3	*503*	*613.6*
Yadkin	17	45.2	24	63.8	19	50.7	19	50.5	*24*	*63.8*
Yancey	2	11.4	9	50.8	8	44.7	10	55.4	*11*	*60.8*
North Carolina	**19,597**	**192.8**	**22,731**	**221.2**	**23,539**	**226.5**	**26,705**	**254.3**	***28,014***	***264.3***

*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.
^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 July 6, 2021).

Table 3. Newly Diagnosed Early Syphilis[a] Annual Rates in North Carolina by Rank Order[b], and Year of Diagnosis, 2018-2020*

Rank[b]	County	2018 Cases	2018 Rate[c]	2019 Cases	2019 Rate[c]	*2020* Cases*	*2020* Rate[c]*	*2018-2020* Average Rate[b]*
1	Durham	175	55.1	168	52.0	*175*	*53.5*	*53.5*
2	Mecklenburg	423	38.6	457	41.0	*568*	*50.3*	*43.3*
3	Cumberland	116	34.7	111	33.0	*120*	*35.7*	*34.4*
4	Vance	9	20.1	13	29.1	*22*	*49.2*	*32.8*
5	Guilford	151	28.3	184	34.2	*176*	*32.6*	*31.7*
6	Martin	2	8.8	8	35.6	*10*	*45.1*	*29.8*
7	Wilson	20	24.6	21	25.7	*24*	*29.3*	*26.5*
8	Wake	247	22.6	308	27.7	*329*	*29.1*	*26.4*
9	Halifax	8	15.8	9	18.0	*20*	*40.4*	*24.7*
10	Granville	16	26.6	14	23.2	*13*	*21.5*	*23.8*
11	Forsyth	100	26.4	100	26.2	*64*	*16.7*	*23.1*
12	Bertie	3	15.7	5	26.4	*5*	*26.7*	*22.9*
13	Alamance	27	16.2	41	24.2	*48*	*28.0*	*22.8*
14	Nash	15	15.9	25	26.5	*24*	*25.3*	*22.6*
15	Pitt	49	27.3	35	19.3	*33*	*18.0*	*21.5*
16	Gaston	41	18.4	40	17.8	*53*	*23.4*	*19.9*
17	Wayne	14	11.3	18	14.5	*40*	*32.3*	*19.4*
18	Lenoir	10	17.8	10	17.8	*12*	*21.5*	*19.1*
19	Warren	2	10.1	6	30.5	*3*	*15.4*	*18.6*
20	Person	6	15.2	8	20.2	*8*	*20.0*	*18.5*
21	Robeson	34	25.8	26	19.9	*12*	*9.2*	*18.3*
22	Scotland	7	20.2	5	14.4	*7*	*20.2*	*18.3*
23	New Hanover	49	21.1	43	18.4	*34*	*14.4*	*17.9*
24	Chowan	1	7.1	6	43.1	*0*	*0.0*	*16.7*
25	Catawba	28	17.7	18	11.3	*32*	*20.0*	*16.3*
26	Hoke	8	14.6	10	18.1	*7*	*12.5*	*15.1*
27	Onslow	28	14.2	26	12.8	*36*	*17.7*	*14.9*
28	Caswell	2	8.8	4	17.7	*4*	*17.8*	*14.8*
29	Buncombe	26	10.0	41	15.6	*47*	*17.8*	*14.5*
30	Gates	1	8.7	2	17.3	*2*	*17.4*	*14.5*
31	Polk	2	9.7	2	9.7	*5*	*23.8*	*14.4*
32	Orange	17	11.5	20	13.5	*27*	*18.1*	*14.4*
33	Edgecombe	6	11.5	5	9.7	*11*	*21.6*	*14.3*
34	Hertford	3	12.6	4	16.9	*3*	*13.0*	*14.2*
35	Rowan	16	11.4	26	18.3	*18*	*12.6*	*14.1*
36	McDowell	6	13.2	1	2.2	*12*	*26.2*	*13.9*

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.

[a]Early syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

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

[c]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 July 6, 2021).

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, 2018-2020*

Rank[b]	County	2018 Cases	2018 Rate[c]	2019 Cases	2019 Rate[c]	*2020* Cases*	*2020* Rate[c]*	*2018-2020* Average Rate[b]*
37	Cabarrus	26	12.3	27	12.5	*31*	*14.0*	*12.9*
38	Lee	3	4.9	5	8.1	*16*	*25.7*	*12.9*
39	Craven	16	15.6	15	14.7	*6*	*5.9*	*12.1*
40	Sampson	6	9.5	5	7.9	*10*	*15.8*	*11.0*
41	Franklin	5	7.4	10	14.3	*8*	*11.1*	*11.0*
42	Johnston	18	8.9	23	11.0	*24*	*11.1*	*10.3*
43	Columbus	2	3.6	12	21.6	*3*	*5.5*	*10.2*
44	Anson	3	12.3	4	17.0	*0*	*0.0*	*9.7*
45	Iredell	16	9.0	18	9.9	*19*	*10.2*	*9.7*
46	Duplin	7	11.9	3	5.1	*7*	*11.9*	*9.6*
47	Greene	0	0.0	4	19.1	*2*	*9.6*	*9.6*
48	Madison	2	9.2	1	4.6	*3*	*13.8*	*9.2*
49	Cleveland	8	8.2	11	11.2	*8*	*8.1*	*9.2*
50	Union	15	6.4	21	8.7	*30*	*12.3*	*9.1*
51	Bladen	3	9.0	3	9.1	*3*	*9.1*	*9.1*
52	Davidson	8	4.8	18	10.7	*19*	*11.2*	*8.9*
53	Rockingham	6	6.6	4	4.4	*12*	*13.1*	*8.1*
54	Harnett	12	8.9	13	9.5	*7*	*5.1*	*7.9*
55	Lincoln	9	10.7	4	4.6	*7*	*7.9*	*7.7*
56	Avery	1	5.7	0	0.0	*3*	*17.1*	*7.6*
57	Pasquotank	3	7.6	2	5.0	*4*	*9.9*	*7.5*
58	Beaufort	3	6.4	5	10.6	*2*	*4.2*	*7.1*
59	Davie	3	7.1	5	11.7	*1*	*2.3*	*7.0*
60	Haywood	3	4.8	5	8.0	*5*	*7.9*	*6.9*
61	Transylvania	0	0.0	3	8.8	*4*	*11.6*	*6.8*
62	Hyde	0	0.0	1	20.3	*0*	*0.0*	*6.8*
63	Richmond	2	4.5	5	11.2	*2*	*4.5*	*6.7*
64	Burke	2	2.2	5	5.5	*11*	*12.2*	*6.6*
65	Caldwell	6	7.3	3	3.6	*7*	*8.5*	*6.5*
66	Brunswick	7	5.1	13	9.1	*7*	*4.7*	*6.3*
67	Currituck	1	3.7	3	10.7	*1*	*3.4*	*6.0*
68	Clay	0	0.0	1	8.9	*1*	*8.7*	*5.9*

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.

[a]Early syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

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

[c]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 July 6, 2021).

Table 3 (Continued). Newly Diagnosed Early Syphilis[a] Annual Rates in North Carolina by Rank Order[b], and Year of Diagnosis, 2018-2020*

Rank[b]	County	2018 Cases	2018 Rate[c]	2019 Cases	2019 Rate[c]	*2020* Cases*	*2020* Rate[c]*	*2018-2020* Average Rate[b]*
69	Washington	0	0.0	0	0.0	*2*	*17.4*	*5.8*
70	Macon	3	8.5	2	5.6	*1*	*2.8*	*5.6*
71	Pender	4	6.4	3	4.8	*3*	*4.6*	*5.3*
72	Pamlico	0	0.0	1	7.9	*1*	*7.9*	*5.3*
73	Northampton	1	5.1	2	10.3	*0*	*0.0*	*5.1*
74	Stokes	1	2.2	1	2.2	*5*	*10.9*	*5.1*
75	Surry	5	6.9	2	2.8	*4*	*5.6*	*5.1*
76	Montgomery	2	7.4	0	0.0	*2*	*7.3*	*4.9*
77	Carteret	2	2.9	4	5.8	*4*	*5.8*	*4.8*
78	Stanly	0	0.0	3	4.8	*6*	*9.5*	*4.8*
79	Watauga	1	1.8	2	3.6	*5*	*8.9*	*4.7*
80	Randolph	7	4.9	4	2.8	*9*	*6.2*	*4.6*
81	Moore	2	2.0	4	4.0	*8*	*7.7*	*4.6*
82	Chatham	2	2.7	1	1.3	*6*	*7.9*	*4.0*
83	Rutherford	0	0.0	4	6.0	*4*	*6.0*	*4.0*
84	Henderson	5	4.3	1	0.9	*8*	*6.8*	*4.0*
85	Jackson	2	4.6	2	4.6	*1*	*2.3*	*3.8*
86	Jones	1	10.5	0	0.0	*0*	*0.0*	*3.5*
87	Dare	0	0.0	2	5.4	*1*	*2.7*	*2.7*
88	Yadkin	1	2.7	1	2.7	*1*	*2.7*	*2.7*
89	Wilkes	2	2.9	0	0.0	*2*	*2.9*	*2.0*
90	Alexander	0	0.0	0	0.0	*2*	*5.3*	*1.8*
91	Ashe	0	0.0	1	3.7	*0*	*0.0*	*1.2*
92	Cherokee	0	0.0	1	3.5	*0*	*0.0*	*1.2*
93	Alleghany	0	0.0	0	0.0	*0*	*0.0*	*0.0*
93	Camden	0	0.0	0	0.0	*0*	*0.0*	*0.0*
93	Graham	0	0.0	0	0.0	*0*	*0.0*	*0.0*
93	Mitchell	0	0.0	0	0.0	*0*	*0.0*	*0.0*
93	Perquimans	0	0.0	0	0.0	*0*	*0.0*	*0.0*
93	Swain	0	0.0	0	0.0	*0*	*0.0*	*0.0*
93	Tyrrell	0	0.0	0	0.0	*0*	*0.0*	*0.0*
93	Yancey	0	0.0	0	0.0	*0*	*0.0*	*0.0*
N/A	**North Carolina**	**1,905**	**18.3**	**2,113**	**20.1**	***2,342***	***22.1***	***20.2***

*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.

[a]Early syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

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

[c]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 July 6, 2021).

Table 4. Newly Diagnosed Syphilis Annual Rates in North Carolina by Stage of Infection and County of Diagnosis, 2020*

County	*Primary, Secondary, and Early*[a]		*Unknown Duration and Late*[b]		*Total*	
	Cases	*Rate*[c]	*Cases*	*Rate*[c]	*Cases*	*Rate*[c]
Alamance	*48*	*28.0*	*12*	*7.0*	*60*	*35.0*
Alexander	*2*	*5.3*	*2*	*5.3*	*4*	*10.7*
Alleghany	*0*	*0.0*	*1*	*8.9*	*1*	*8.9*
Anson	*0*	*0.0*	*1*	*4.1*	*1*	*4.1*
Ashe	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*
Avery	*3*	*17.1*	*1*	*5.7*	*4*	*22.8*
Beaufort	*2*	*4.2*	*1*	*2.1*	*3*	*6.4*
Bertie	*5*	*26.7*	*3*	*16.0*	*8*	*42.8*
Bladen	*3*	*9.1*	*4*	*12.2*	*7*	*21.3*
Brunswick	*7*	*4.7*	*3*	*2.0*	*10*	*6.7*
Buncombe	*47*	*17.8*	*17*	*6.5*	*64*	*24.3*
Burke	*11*	*12.2*	*7*	*7.7*	*18*	*19.9*
Cabarrus	*31*	*14.0*	*23*	*10.4*	*54*	*24.4*
Caldwell	*7*	*8.5*	*2*	*2.4*	*9*	*11.0*
Camden	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*
Carteret	*4*	*5.8*	*1*	*1.4*	*5*	*7.2*
Caswell	*4*	*17.8*	*1*	*4.5*	*5*	*22.3*
Catawba	*32*	*20.0*	*12*	*7.5*	*44*	*27.4*
Chatham	*6*	*7.9*	*5*	*6.6*	*11*	*14.5*
Cherokee	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*
Chowan	*0*	*0.0*	*1*	*7.2*	*1*	*7.2*
Clay	*1*	*8.7*	*0*	*0.0*	*1*	*8.7*
Cleveland	*8*	*8.1*	*8*	*8.1*	*16*	*16.2*
Columbus	*3*	*5.5*	*7*	*12.8*	*10*	*18.3*
Craven	*6*	*5.9*	*20*	*19.8*	*26*	*25.7*
Cumberland	*120*	*35.7*	*69*	*20.5*	*189*	*56.2*
Currituck	*1*	*3.4*	*1*	*3.4*	*2*	*6.9*
Dare	*1*	*2.7*	*1*	*2.7*	*2*	*5.3*
Davidson	*19*	*11.2*	*14*	*8.3*	*33*	*19.5*
Davie	*1*	*2.3*	*2*	*4.6*	*3*	*6.9*
Duplin	*7*	*11.9*	*5*	*8.5*	*12*	*20.4*
Durham	*175*	*53.5*	*86*	*26.3*	*261*	*79.7*
Edgecombe	*11*	*21.6*	*8*	*15.7*	*19*	*37.4*
Forsyth	*64*	*16.7*	*37*	*9.6*	*101*	*26.3*
Franklin	*8*	*11.1*	*7*	*9.7*	*15*	*20.9*
Gaston	*53*	*23.4*	*37*	*16.3*	*90*	*39.7*
Gates	*2*	*17.4*	*0*	*0.0*	*2*	*17.4*
Graham	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*
Granville	*13*	*21.5*	*13*	*21.5*	*26*	*43.0*

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.

[a]Primary, secondary, and early non-primary non-secondary (formerly early latent) is defined as having been infected for a year or less.

[b]Late 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.

[d]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 July 6, 2021).

Table 4 (Continued). Newly Diagnosed Syphilis Annual Rates in North Carolina by Stage of Infection and County of Diagnosis, 2020*

County	*Primary, Secondary, and Early*[a]		*Unknown Duration and Late*[b]		*Total*	
	Cases	*Rate*[c]	*Cases*	*Rate*[c]	*Cases*	*Rate*[c]
Greene	*2*	*9.6*	*0*	*0.0*	*2*	*9.6*
Guilford	*176*	*32.6*	*56*	*10.4*	*232*	*42.9*
Halifax	*20*	*40.4*	*5*	*10.1*	*25*	*50.5*
Harnett	*7*	*5.1*	*9*	*6.6*	*16*	*11.7*
Haywood	*5*	*7.9*	*3*	*4.8*	*8*	*12.7*
Henderson	*8*	*6.8*	*2*	*1.7*	*10*	*8.4*
Hertford	*3*	*13.0*	*10*	*43.3*	*13*	*56.3*
Hoke	*7*	*12.5*	*11*	*19.7*	*18*	*32.2*
Hyde	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*
Iredell	*19*	*10.2*	*9*	*4.8*	*28*	*15.1*
Jackson	*1*	*2.3*	*1*	*2.3*	*2*	*4.5*
Johnston	*24*	*11.1*	*16*	*7.4*	*40*	*18.5*
Jones	*0*	*0.0*	*1*	*10.8*	*1*	*10.8*
Lee	*16*	*25.7*	*1*	*1.6*	*17*	*27.3*
Lenoir	*12*	*21.5*	*4*	*7.2*	*16*	*28.7*
Lincoln	*7*	*7.9*	*6*	*6.8*	*13*	*14.8*
Macon	*1*	*2.8*	*3*	*8.3*	*4*	*11.1*
Madison	*3*	*13.8*	*1*	*4.6*	*4*	*18.4*
Martin	*10*	*45.1*	*1*	*4.5*	*11*	*49.6*
McDowell	*12*	*26.2*	*1*	*2.2*	*13*	*28.4*
Mecklenburg	*568*	*50.3*	*268*	*23.7*	*836*	*74.1*
Mitchell	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*
Montgomery	*2*	*7.3*	*2*	*7.3*	*4*	*14.7*
Moore	*8*	*7.7*	*4*	*3.9*	*12*	*11.6*
Nash	*24*	*25.3*	*8*	*8.4*	*32*	*33.7*
New Hanover	*34*	*14.4*	*19*	*8.0*	*53*	*22.4*
Northampton	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*
Onslow	*36*	*17.7*	*28*	*13.7*	*64*	*31.4*
Orange	*27*	*18.1*	*14*	*9.4*	*41*	*27.5*
Pamlico	*1*	*7.9*	*1*	*7.9*	*2*	*15.7*
Pasquotank	*4*	*9.9*	*4*	*9.9*	*8*	*19.8*
Pender	*3*	*4.6*	*3*	*4.6*	*6*	*9.3*
Perquimans	*0*	*0.0*	*1*	*7.3*	*1*	*7.3*
Person	*8*	*20.0*	*4*	*10.0*	*12*	*30.1*
Pitt	*33*	*18.0*	*23*	*12.6*	*56*	*30.6*
Polk	*5*	*23.8*	*1*	*4.8*	*6*	*28.5*
Randolph	*9*	*6.2*	*4*	*2.8*	*13*	*9.0*
Richmond	*2*	*4.5*	*2*	*4.5*	*4*	*9.0*

Continued

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[a]Primary, secondary, and early non-primary non-secondary (formerly early latent) is defined as having been infected for a year or less.

[b]Late 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.

[d]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 July 6, 2021).

Table 4 (Continued). Newly Diagnosed Syphilis Annual Rates in North Carolina by Stage of Infection and County of Diagnosis, 2020*

County	Primary, Secondary, and Early[a]		Unknown Duration, or Late[b]		Total	
	Cases	Rate[c]	*Cases*	*Rate[c]*	*Cases*	*Rate[c]*
Robeson	*12*	*9.2*	*10*	*7.7*	*22*	*16.9*
Rockingham	*12*	*13.1*	*5*	*5.5*	*17*	*18.6*
Rowan	*18*	*12.6*	*11*	*7.7*	*29*	*20.4*
Rutherford	*4*	*6.0*	*3*	*4.5*	*7*	*10.4*
Sampson	*10*	*15.8*	*8*	*12.6*	*18*	*28.4*
Scotland	*7*	*20.2*	*2*	*5.8*	*9*	*26.0*
Stanly	*6*	*9.5*	*3*	*4.7*	*9*	*14.2*
Stokes	*5*	*10.9*	*0*	*0.0*	*5*	*10.9*
Surry	*4*	*5.6*	*0*	*0.0*	*4*	*5.6*
Swain	*0*	*0.0*	*2*	*14.1*	*2*	*14.1*
Transylvania	*4*	*11.6*	*4*	*11.6*	*8*	*23.2*
Tyrrell	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*
Union	*30*	*12.3*	*10*	*4.1*	*40*	*16.4*
Vance	*22*	*49.2*	*14*	*31.3*	*36*	*80.5*
Wake	*329*	*29.1*	*154*	*13.6*	*483*	*42.7*
Warren	*3*	*15.4*	*5*	*25.6*	*8*	*41.0*
Washington	*2*	*17.4*	*2*	*17.4*	*4*	*34.8*
Watauga	*5*	*8.9*	*2*	*3.5*	*7*	*12.4*
Wayne	*40*	*32.3*	*14*	*11.3*	*54*	*43.6*
Wilkes	*2*	*2.9*	*1*	*1.5*	*3*	*4.4*
Wilson	*24*	*29.3*	*14*	*17.1*	*38*	*46.4*
Yadkin	*1*	*2.7*	*0*	*0.0*	*1*	*2.7*
Yancey	*0*	*0.0*	*0*	*0.0*	*0*	*0.0*
North Carolina	***2,342***	***22.1***	***1,202***	***11.3***	***3,544***	***33.4***

*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.

[a]Primary, secondary, and early non-primary non-secondary (formerly early latent) is defined as having been infected for a year or less.

[b]Late 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.

[d]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 July 6, 2021).

Table 5. Newly Diagnosed Early Syphilis[a] Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2016-2020*

County	2016				2017				2018				2019				*2020**			
	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[b]	Cases	Rate[b]	Cases	Rate[b]	Cases	Rate[b]	Cases	Rate[b]	Cases	Rate[b]	Cases	Rate[b]	Cases	Rate[b]	*Cases*	*Rate[b]*	*Cases*	*Rate[b]*
Alamance	23	14.3	23	14.3	13	8.0	9	5.5	14	8.4	13	7.8	16	9.5	25	14.8	*27*	*15.8*	*21*	*12.3*
Alexander	1	2.7	0	0.0	0	0.0	1	2.7	0	0.0	0	0.0	0	0.0	0	0.0	*1*	*2.7*	*1*	*2.7*
Alleghany	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	*0*	*0.0*	*0*	*0.0*
Anson	4	15.9	0	0.0	2	8.0	1	4.0	3	12.3	0	0.0	2	8.5	2	8.5	*0*	*0.0*	*0*	*0.0*
Ashe	1	3.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	3.7	*0*	*0.0*	*0*	*0.0*
Avery	0	0.0	0	0.0	0	0.0	0	0.0	1	5.7	0	0.0	0	0.0	0	0.0	*2*	*11.4*	*1*	*5.7*
Beaufort	3	6.3	2	4.2	2	4.2	0	0.0	1	2.1	2	4.2	3	6.4	2	4.2	*2*	*4.2*	*0*	*0.0*
Bertie	1	5.2	1	5.2	2	10.4	1	5.2	1	5.2	2	10.5	0	0.0	5	26.4	*3*	*16.0*	*2*	*10.7*
Bladen	0	0.0	0	0.0	1	3.0	3	9.0	2	6.0	1	3.0	2	6.1	1	3.0	*2*	*6.1*	*1*	*3.0*
Brunswick	4	3.2	3	2.4	8	6.1	5	3.8	3	2.2	4	2.9	6	4.2	7	4.9	*2*	*1.3*	*5*	*3.4*
Buncombe	24	9.4	12	4.7	33	12.8	13	5.1	13	5.0	13	5.0	29	11.1	12	4.6	*30*	*11.4*	*17*	*6.5*
Burke	5	5.6	2	2.2	8	8.9	7	7.8	1	1.1	1	1.1	3	3.3	2	2.2	*9*	*10.0*	*2*	*2.2*
Cabarrus	4	2.0	11	5.5	11	5.3	12	5.8	16	7.6	10	4.7	16	7.4	11	5.1	*16*	*7.2*	*15*	*6.8*
Caldwell	3	3.7	1	1.2	2	2.4	4	4.9	2	2.4	4	4.9	3	3.6	0	0.0	*3*	*3.7*	*4*	*4.9*
Camden	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	*0*	*0.0*	*0*	*0.0*
Carteret	2	2.9	0	0.0	0	0.0	1	1.4	2	2.9	0	0.0	2	2.9	2	2.9	*3*	*4.3*	*1*	*1.4*
Caswell	2	8.8	1	4.4	1	4.4	0	0.0	1	4.4	1	4.4	3	13.3	1	4.4	*1*	*4.5*	*3*	*13.4*
Catawba	3	1.9	5	3.2	11	7.0	8	5.1	21	13.2	7	4.4	13	8.2	5	3.1	*21*	*13.1*	*11*	*6.9*
Chatham	4	5.7	0	0.0	2	2.8	1	1.4	2	2.7	0	0.0	1	1.3	0	0.0	*2*	*2.6*	*4*	*5.3*
Cherokee	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	3.5	0	0.0	*0*	*0.0*	*0*	*0.0*
Chowan	0	0.0	0	0.0	1	7.1	0	0.0	1	7.1	0	0.0	3	21.6	3	21.6	*0*	*0.0*	*0*	*0.0*
Clay	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	8.9	*1*	*8.7*	*0*	*0.0*
Cleveland	3	3.1	3	3.1	6	6.2	2	2.1	3	3.1	5	5.1	7	7.1	4	4.1	*3*	*3.0*	*5*	*5.0*
Columbus	1	1.8	2	3.6	7	12.5	4	7.1	1	1.8	1	1.8	5	9.0	7	12.6	*1*	*1.8*	*2*	*3.7*
Craven	6	5.8	3	2.9	5	4.9	5	4.9	8	7.8	8	7.8	7	6.9	8	7.8	*3*	*3.0*	*3*	*3.0*
Cumberland	51	15.3	27	8.1	47	14.2	32	9.6	63	18.8	53	15.8	56	16.6	55	16.3	*51*	*15.2*	*69*	*20.5*
Currituck	0	0.0	0	0.0	1	3.8	1	3.8	0	0.0	1	3.7	1	3.6	2	7.2	*1*	*3.4*	*0*	*0.0*

Continued

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[a]Early syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

[b]Early non-primary non-secondary (formerly early latent) syphilis.

[c]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.

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

Table 5 (Continued). Newly Diagnosed Early Syphilis[a] Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2016-2020*

County	2016				2017				2018				2019				*2020**			
	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	0.0	1	2.8	0	0.0	1	2.8	0	0.0	0	0.0	2	5.4	0	0.0	*0*	*0.0*	*1*	*2.7*
Davidson	5	3.0	6	3.6	8	4.8	7	4.2	3	1.8	5	3.0	8	4.8	10	5.9	*14*	*8.3*	*5*	*3.0*
Davie	2	4.8	0	0.0	2	4.7	0	0.0	2	4.7	1	2.4	0	0.0	5	11.7	*1*	*2.3*	*0*	*0.0*
Duplin	1	1.7	2	3.4	3	5.1	1	1.7	4	6.8	3	5.1	2	3.4	1	1.7	*4*	*6.8*	*3*	*5.1*
Durham	67	21.7	53	17.2	76	24.3	46	14.7	112	35.3	63	19.8	99	30.7	69	21.4	*110*	*33.6*	*65*	*19.9*
Edgecombe	8	15.0	6	11.3	8	15.2	9	17.0	3	5.8	3	5.8	3	5.8	2	3.9	*4*	*7.9*	*7*	*13.8*
Forsyth	53	14.3	28	7.5	57	15.2	25	6.7	54	14.2	46	12.1	60	15.7	40	10.5	*38*	*9.9*	*26*	*6.8*
Franklin	0	0.0	1	1.5	1	1.5	1	1.5	4	5.9	1	1.5	6	8.6	4	5.7	*4*	*5.6*	*4*	*5.6*
Gaston	25	11.5	13	6.0	20	9.1	16	7.3	21	9.4	20	9.0	25	11.1	15	6.7	*29*	*12.8*	*24*	*10.6*
Gates	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	8.7	2	17.3	0	0.0	*1*	*8.7*	*1*	*8.7*
Graham	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	*0*	*0.0*	*0*	*0.0*
Granville	5	8.5	4	6.8	3	5.0	5	8.4	13	21.6	3	5.0	9	14.9	5	8.3	*7*	*11.6*	*6*	*9.9*
Greene	1	4.7	0	0.0	2	9.5	0	0.0	0	0.0	0	0.0	1	4.8	3	14.3	*2*	*9.6*	*0*	*0.0*
Guilford	91	17.3	76	14.5	119	22.5	66	12.5	87	16.3	64	12.0	81	15.1	103	19.1	*100*	*18.5*	*76*	*14.1*
Halifax	4	7.7	1	1.9	5	9.7	5	9.7	2	3.9	6	11.8	3	6.0	6	12.0	*11*	*22.2*	*9*	*18.2*
Harnett	3	2.3	5	3.8	6	4.5	2	1.5	3	2.2	9	6.7	7	5.1	6	4.4	*2*	*1.5*	*5*	*3.6*
Haywood	7	11.6	1	1.7	7	11.4	2	3.3	2	3.2	1	1.6	4	6.4	1	1.6	*4*	*6.4*	*1*	*1.6*
Henderson	6	5.3	2	1.8	10	8.7	4	3.5	2	1.7	3	2.6	1	0.9	0	0.0	*4*	*3.4*	*4*	*3.4*
Hertford	1	4.1	1	4.1	0	0.0	3	12.5	1	4.2	2	8.4	1	4.2	3	12.7	*0*	*0.0*	*3*	*13.0*
Hoke	0	0.0	3	5.7	5	9.2	4	7.4	2	3.7	6	11.0	3	5.4	7	12.7	*4*	*7.2*	*3*	*5.4*
Hyde	0	0.0	0	0.0	0	0.0	1	19.1	0	0.0	0	0.0	0	0.0	1	20.3	*0*	*0.0*	*0*	*0.0*
Iredell	6	3.5	3	1.7	12	6.8	3	1.7	9	5.0	7	3.9	9	4.9	9	4.9	*7*	*3.8*	*12*	*6.5*
Jackson	6	14.1	1	2.3	3	6.9	0	0.0	1	2.3	1	2.3	2	4.6	0	0.0	*1*	*2.3*	*0*	*0.0*
Johnston	11	5.8	10	5.2	8	4.1	9	4.6	14	6.9	4	2.0	12	5.7	11	5.2	*16*	*7.4*	*8*	*3.7*
Jones	2	20.9	0	0.0	2	20.9	0	0.0	0	0.0	1	10.5	0	0.0	0	0.0	*0*	*0.0*	*0*	*0.0*
Lee	3	5.0	3	5.0	3	5.0	1	1.7	1	1.6	2	3.3	4	6.5	1	1.6	*9*	*14.4*	*7*	*11.2*
Lenoir	5	8.7	6	10.5	4	7.1	1	1.8	6	10.7	4	7.1	4	7.1	6	10.7	*6*	*10.8*	*6*	*10.8*
Lincoln	7	8.6	2	2.5	3	3.6	1	1.2	4	4.7	5	5.9	2	2.3	2	2.3	*3*	*3.4*	*4*	*4.5*

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[a]Early syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

[b]Early non-primary non-secondary (formerly early latent) syphilis.

[c]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.

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 5 (Continued). Newly Diagnosed Early Syphilis[a] Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2016-2020*

County	2016				2017				2018				2019				*2020**			
	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	1	2.9	0	0.0	2	5.8	0	0.0	2	5.7	1	2.8	0	0.0	2	5.6	*1*	*2.8*	*0*	*0.0*
Madison	1	4.7	1	4.7	0	0.0	0	0.0	1	4.6	1	4.6	1	4.6	0	0.0	*1*	*4.6*	*2*	*9.2*
Martin	1	4.3	2	8.7	2	8.8	1	4.4	2	8.8	0	0.0	4	17.8	4	17.8	*4*	*18.0*	*6*	*27.1*
McDowell	4	8.9	0	0.0	2	4.4	0	0.0	4	8.8	2	4.4	0	0.0	1	2.2	*8*	*17.5*	*4*	*8.7*
Mecklenburg	288	27.2	196	18.5	268	24.8	190	17.6	250	22.8	173	15.8	247	22.2	210	18.9	*276*	*24.4*	*292*	*25.9*
Mitchell	0	0.0	0	0.0	0	0.0	1	6.7	0	0.0	0	0.0	0	0.0	0	0.0	*0*	*0.0*	*0*	*0.0*
Montgomery	2	7.3	1	3.7	1	3.7	3	11.0	0	0.0	2	7.4	0	0.0	0	0.0	*1*	*3.7*	*1*	*3.7*
Moore	2	2.1	2	2.1	1	1.0	3	3.1	2	2.0	0	0.0	2	2.0	2	2.0	*4*	*3.9*	*4*	*3.9*
Nash	16	17.0	14	14.9	11	11.7	8	8.5	8	8.5	7	7.4	13	13.8	12	12.7	*12*	*12.7*	*12*	*12.7*
New Hanover	5	2.2	8	3.6	36	15.7	16	7.0	24	10.3	25	10.7	23	9.8	20	8.5	*18*	*7.6*	*16*	*6.8*
Northampton	2	9.9	6	29.8	3	15.1	0	0.0	1	5.1	0	0.0	2	10.3	0	0.0	*0*	*0.0*	*0*	*0.0*
Onslow	9	4.7	9	4.7	14	7.2	9	4.6	17	8.6	11	5.6	15	7.4	11	5.4	*21*	*10.3*	*15*	*7.4*
Orange	5	3.5	5	3.5	10	7.0	5	3.5	10	6.8	7	4.7	9	6.1	11	7.4	*18*	*12.1*	*9*	*6.0*
Pamlico	1	7.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	7.9	0	0.0	*1*	*7.9*	*0*	*0.0*
Pasquotank	1	2.5	2	5.1	3	7.6	0	0.0	3	7.6	0	0.0	0	0.0	2	5.0	*1*	*2.5*	*3*	*7.4*
Pender	2	3.4	2	3.4	5	8.2	2	3.3	1	1.6	3	4.8	2	3.2	1	1.6	*1*	*1.5*	*2*	*3.1*
Perquimans	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	*0*	*0.0*	*0*	*0.0*
Person	4	10.2	0	0.0	3	7.6	1	2.5	4	10.1	2	5.1	7	17.7	1	2.5	*5*	*12.5*	*3*	*7.5*
Pitt	25	14.1	18	10.2	19	10.6	11	6.2	26	14.5	23	12.8	17	9.4	18	9.9	*22*	*12.0*	*11*	*6.0*
Polk	0	0.0	0	0.0	1	4.9	0	0.0	2	9.7	0	0.0	1	4.8	1	4.8	*4*	*19.0*	*1*	*4.8*
Randolph	8	5.6	4	2.8	9	6.3	2	1.4	3	2.1	4	2.8	3	2.1	1	0.7	*2*	*1.4*	*7*	*4.8*
Richmond	1	2.2	5	11.1	2	4.5	1	2.2	1	2.2	1	2.2	5	11.2	0	0.0	*2*	*4.5*	*0*	*0.0*
Robeson	10	7.5	14	10.5	15	11.3	8	6.0	17	12.9	17	12.9	13	10.0	13	10.0	*7*	*5.4*	*5*	*3.8*
Rockingham	2	2.2	5	5.5	4	4.4	8	8.8	4	4.4	2	2.2	2	2.2	2	2.2	*7*	*7.7*	*5*	*5.5*
Rowan	11	7.9	4	2.9	13	9.3	5	3.6	9	6.4	7	5.0	12	8.5	14	9.9	*9*	*6.3*	*9*	*6.3*
Rutherford	4	6.0	0	0.0	2	3.0	3	4.5	0	0.0	0	0.0	4	6.0	0	0.0	*2*	*3.0*	*2*	*3.0*

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.

[a]Early syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

[b]Early non-primary non-secondary (formerly early latent) syphilis.

[c]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.

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 5 (Continued). Newly Diagnosed Early Syphilis[a] Annual Rates in North Carolina by County of Diagnosis and Year of Diagnosis, 2016-2020*

County	2016				2017				2018				2019				*2020**			
	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	4	6.3	2	3.2	3	4.7	6	9.5	3	4.7	3	4.7	3	4.7	2	3.2	*3*	*4.7*	*7*	*11.0*
Scotland	4	11.3	5	14.2	2	5.7	1	2.8	4	11.5	3	8.6	3	8.6	2	5.8	*2*	*5.8*	*5*	*14.4*
Stanly	1	1.6	2	3.3	6	9.8	2	3.3	0	0.0	0	0.0	2	3.2	1	1.6	*2*	*3.2*	*4*	*6.3*
Stokes	0	0.0	1	2.2	0	0.0	1	2.2	0	0.0	1	2.2	1	2.2	0	0.0	*3*	*6.6*	*2*	*4.4*
Surry	2	2.8	2	2.8	3	4.2	1	1.4	1	1.4	4	5.6	1	1.4	1	1.4	*2*	*2.8*	*2*	*2.8*
Swain	1	7.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	*0*	*0.0*	*0*	*0.0*
Transylvania	1	3.0	1	3.0	0	0.0	2	5.9	0	0.0	0	0.0	2	5.8	1	2.9	*3*	*8.7*	*1*	*2.9*
Tyrrell	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	*0*	*0.0*	*0*	*0.0*
Union	9	4.0	6	2.6	18	7.8	12	5.2	11	4.7	4	1.7	13	5.4	8	3.3	*14*	*5.7*	*16*	*6.5*
Vance	8	18.0	4	9.0	2	4.5	3	6.8	7	15.6	2	4.5	9	20.1	4	9.0	*17*	*38.0*	*5*	*11.2*
Wake	122	11.6	116	11.1	127	11.8	115	10.7	148	13.6	99	9.1	159	14.3	149	13.4	*177*	*15.6*	*152*	*13.4*
Warren	0	0.0	1	5.0	1	5.0	0	0.0	1	5.0	1	5.0	3	15.2	3	15.2	*3*	*15.4*	*0*	*0.0*
Washington	1	8.3	1	8.3	1	8.4	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	*0*	*0.0*	*2*	*17.4*
Watauga	2	3.7	0	0.0	2	3.6	1	1.8	1	1.8	0	0.0	0	0.0	2	3.6	*3*	*5.3*	*2*	*3.5*
Wayne	12	9.6	7	5.6	13	10.6	3	2.4	5	4.0	9	7.3	12	9.7	6	4.8	*25*	*20.2*	*15*	*12.1*
Wilkes	1	1.5	0	0.0	1	1.5	1	1.5	2	2.9	0	0.0	0	0.0	0	0.0	*0*	*0.0*	*2*	*2.9*
Wilson	4	4.9	9	11.1	12	14.7	7	8.6	12	14.7	8	9.8	10	12.2	11	13.5	*16*	*19.5*	*8*	*9.8*
Yadkin	1	2.7	1	2.7	1	2.7	0	0.0	1	2.7	0	0.0	1	2.7	0	0.0	*1*	*2.7*	*0*	*0.0*
Yancey	0	0.0	0	0.0	0	0.0	1	5.6	0	0.0	0	0.0	0	0.0	0	0.0	*0*	*0.0*	*0*	*0.0*
North Carolina	**1,042**	**10.3**	**780**	**7.7**	**1,148**	**11.2**	**756**	**7.4**	**1,096**	**10.5**	**809**	**7.8**	**1,131**	**10.8**	**982**	**9.4**	**1,263**	**11.9**	**1,079**	**10.2**

*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.

[a]Early syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

[b]Early non-primary non-secondary (formerly early latent) syphilis.

[c]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.

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).

North Carolina State Totals and Rates of Chlamydia, Gonorrhea, and Syphilis by Selected Demographics, 2020

Table 6. Number of Infants Diagnosed with Congenital Syphilis in North Carolina by Year of Birth, 2011-2020*

Classification	2011	2012	2013	2014	2015	2016	2017	2018	2019	*2020**
Presumptive/Probable	6	1	3	5	11	16	23	18	26	*32*
Confirmed-Live birth	0	0	1	0	0	1	0	0	0	*0*
Confirmed-Still birth	0	0	2	2	0	1	0	1	1	*0*
Total	**6**	**1**	**5**	**7**	**11**	**18**	**23**	**19**	**27**	***32***

*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 July 6, 2021).

Table 7. Newly Diagnosed Chlamydia Annual Rates in North Carolina by Gender[a], Age at Diagnosis, and Year of Diagnosis, 2016-2020*

Gender	Age at Diagnosis (Year)	2016			2017			2018			2019			*2020**		
		Cases	%	Rate[b]	Cases	%	Rate[b]	Cases	%	Rate[b]	Cases	%	Rate[b]	*Cases*	*%*	*Rate[b]*
Men	Less than 10	10	0.1	1.6	7	0.0	1.1	2	0.0	0.3	4	0.0	0.6	*0*	*0.0*	*0.0*
	10-14	38	0.2	11.4	29	0.1	8.6	31	0.1	9.1	50	0.2	14.7	*40*	*0.2*	*11.8*
	15-19	3,222	19.0	936.9	3,824	19.8	1,103.8	4,080	19.3	1,168.0	4,453	18.9	1,266.6	*3,904*	*18.7*	*1,113.2*
	20-24	6,698	39.5	1,821.3	7,469	38.6	2,056.1	7,992	37.8	2,208.6	8,850	37.6	2,436.3	*7,660*	*36.8*	*2,098.2*
	25-29	3,548	20.9	1,020.2	4,023	20.8	1,122.2	4,578	21.6	1,249.0	4,897	20.8	1,318.7	*4,335*	*20.8*	*1,172.6*
	30-34	1,530	9.0	482.2	1,764	9.1	548.6	1,967	9.3	602.0	2,429	10.3	723.3	*2,243*	*10.8*	*646.8*
	35-39	863	5.1	274.7	912	4.7	287.0	1,053	5.0	327.8	1,217	5.2	376.3	*1,133*	*5.4*	*348.8*
	40-44	418	2.5	132.8	534	2.8	171.9	616	2.9	198.8	696	3.0	223.6	*621*	*3.0*	*196.7*
	45-54	450	2.7	66.7	550	2.8	81.5	613	2.9	91.3	657	2.8	98.9	*614*	*2.9*	*93.1*
	55-64	152	0.9	24.7	185	1.0	29.6	183	0.9	28.8	250	1.1	38.7	*224*	*1.1*	*34.3*
	65 and older	29	0.2	4.2	36	0.2	5.1	41	0.2	5.5	46	0.2	6.0	*44*	*0.2*	*5.5*
	Unknown[c]	5	0.0	---	6	0.0	---	0	0.0	---	1	0.0	---	*11*	*0.1*	*---*
	Total	16,963	100.0	342.9	19,339	100.0	386.7	21,156	100.0	418.5	23,550	100.0	461.1	*20,829*	*100.0*	*404.2*
Women	Less than 10	14	0.0	2.3	10	0.0	1.6	3	0.0	0.5	17	0.0	2.8	*14*	*0.0*	*2.3*
	10-14	341	0.8	106.7	356	0.8	110.3	370	0.8	113.6	413	0.9	126.4	*391*	*0.9*	*119.8*
	15-19	12,883	31.3	3,877.8	14,341	32.9	4,285.7	14,746	32.4	4,366.1	15,393	32.2	4,544.9	*13,371*	*30.7*	*3,949.6*
	20-24	16,345	39.7	4,829.2	16,863	38.6	5,013.9	17,355	38.1	5,139.4	17,956	37.5	5,304.1	*16,406*	*37.7*	*4,798.8*
	25-29	6,800	16.5	1,944.6	7,009	16.1	1,957.4	7,717	16.9	2,128.5	8,112	17.0	2,227.4	*7,550*	*17.4*	*2,084.9*
	30-34	2,679	6.5	814.7	2,746	6.3	825.5	2,918	6.4	863.7	3,258	6.8	936.1	*3,224*	*7.4*	*900.0*
	35-39	1,170	2.8	355.0	1,202	2.8	360.1	1,323	2.9	392.1	1,382	2.9	407.0	*1,336*	*3.1*	*391.7*
	40-44	492	1.2	149.5	557	1.3	170.5	592	1.3	180.8	687	1.4	207.9	*653*	*1.5*	*194.9*
	45-54	375	0.9	52.9	424	1.0	59.8	396	0.9	56.1	496	1.0	70.9	*432*	*1.0*	*62.0*
	55-64	73	0.2	10.7	96	0.2	13.8	125	0.3	17.7	110	0.2	15.4	*108*	*0.2*	*15.0*
	65 and older	10	0.0	1.1	18	0.0	2.0	14	0.0	1.5	14	0.0	1.4	*21*	*0.0*	*2.1*
	Unknown[c]	19	0.0	---	12	0.0	---	0	0.0	---	3	0.0	---	*6*	*0.0*	*---*
	Total	41,201	100.0	790.0	43,634	100.0	827.2	45,559	100.0	853.8	47,841	100.0	887.0	*43,512*	*100.0*	*798.6*

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.
[a]Chlamydia case reports are always highly biased with respect to gender. See Appendix A: Technical Notes for more information.
[b]Rate is expressed per 100,000 population.
[c]Rates 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 July 6, 2021).

Table 7 (Continued). Newly Diagnosed Chlamydia Annual Rates in North Carolina by Gender[a], Age at Diagnosis, and Year of Diagnosis, 2016-2020*

Gender	Age at Diagnosis (Year)	2016			2017			2018			2019			*2020**		
		Cases	%	Rate[b]	Cases	%	Rate[b]	Cases	%	Rate[b]	Cases	%	Rate[b]	*Cases*	*%*	*Rate[b]*
Total[d]	Less than 10	24	0.0	1.9	17	0.0	1.4	5	0.0	0.4	21	0.0	1.7	*14*	*0.0*	*1.1*
	10-14	379	0.7	58.2	385	0.6	58.4	401	0.6	60.3	463	0.6	69.4	*431*	*0.7*	*64.6*
	15-19	16,105	27.7	2,381.9	18,165	28.8	2,667.1	18,826	28.2	2,740.1	19,846	27.8	2,875.2	*17,275*	*26.8*	*2,506.4*
	20-24	23,043	39.6	3,262.9	24,332	38.6	3,478.0	25,347	38.0	3,623.4	26,806	37.5	3,819.7	*24,066*	*37.4*	*3,404.2*
	25-29	10,348	17.8	1,483.6	11,033	17.5	1,539.7	12,295	18.4	1,686.4	13,009	18.2	1,768.6	*11,885*	*18.5*	*1,624.0*
	30-34	4,209	7.2	651.4	4,510	7.2	689.4	4,886	7.3	735.2	5,687	8.0	831.6	*5,467*	*8.5*	*775.5*
	35-39	2,033	3.5	315.8	2,114	3.4	324.4	2,376	3.6	360.7	2,599	3.6	392.0	*2,469*	*3.8*	*370.8*
	40-44	910	1.6	141.3	1,091	1.7	171.2	1,208	1.8	189.6	1,383	1.9	215.5	*1,274*	*2.0*	*195.8*
	45-54	825	1.4	59.6	974	1.5	70.4	1,009	1.5	73.3	1,153	1.6	84.5	*1,046*	*1.6*	*77.1*
	55-64	225	0.4	17.3	281	0.4	21.3	308	0.5	22.9	360	0.5	26.4	*332*	*0.5*	*24.2*
	65 and older	39	0.1	2.5	54	0.1	3.3	55	0.1	3.3	60	0.1	3.4	*65*	*0.1*	*3.6*
	Unknown[c]	24	0.0	---	18	0.0	---	0	0.0	---	4	0.0	---	*18*	*0.0*	---
	Total[d]	**58,164**	**100.0**	**572.4**	**62,974**	**100.0**	**612.8**	**66,716**	**100.0**	**642.0**	**71,391**	**100.0**	**679.8**	**64,342**	**100.0**	**607.0**

*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.
[a]Chlamydia case reports are always highly biased with respect to gender. See Appendix A: Technical Notes for more information.
[b]Rate is expressed per 100,000 population.
[c]Rates 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 July 6, 2021).

Table 8. Newly Diagnosed Chlamydia Annual Rates in North Carolina by Gender[a], Race/Ethnicity, and Year of Diagnosis, 2016-2020*

Gender	Race/Ethnicity	2016			2017			2018			2019			*2020**		
		Cases	%	Rate[b]	Cases	%	Rate[b]	Cases	%	Rate[b]	Cases	%	Rate[b]	*Cases*	*%*	*Rate[b]*
Men	American Indian/Alaska Native[c]	148	0.9	253.5	212	1.1	360.6	223	1.1	377.7	227	1.0	382.4	*179*	*0.9*	*300.4*
	Asian/Pacific Islander[c]	82	0.5	54.2	92	0.5	57.5	101	0.5	60.9	98	0.4	56.9	*73*	*0.4*	*40.7*
	Black/African American[c]	6,038	35.6	574.4	7,044	36.4	662.2	7,534	35.6	700.2	7,939	33.7	730.3	*6,860*	*32.9*	*625.9*
	Hispanic/LatinX	887	5.2	183.7	1,036	5.4	208.6	1,216	5.7	237.2	1,326	5.6	251.6	*1,325*	*6.4*	*245.1*
	White/Caucasian[c]	2,210	13.0	69.0	2,798	14.5	86.8	2,885	13.6	89.0	3,143	13.3	96.4	*2,515*	*12.1*	*76.7*
	Multiple Races[d]	24	0.1	---	29	0.1	---	41	0.2	---	48	0.2	---	*74*	*0.4*	---
	Unknown/Unspecified[d]	7,574	44.7	---	8,128	42.0	---	9,156	43.3	---	10,769	45.7	---	*9,803*	*47.1*	---
	Total	16,963	100.0	342.9	19,339	100.0	386.7	21,156	100.0	418.5	23,550	100.0	461.1	*20,829*	*100.0*	*404.2*
Women	American Indian/Alaska Native[c]	619	1.5	982.9	680	1.6	1,071.9	624	1.4	975.8	634	1.3	985.0	*474*	*1.1*	*732.1*
	Asian/Pacific Islander[c]	234	0.6	144.8	277	0.6	163.2	268	0.6	152.3	270	0.6	147.7	*203*	*0.5*	*107.2*
	Black/African American[c]	14,308	34.7	1,197.8	14,981	34.3	1,239.8	15,461	33.9	1,264.6	15,350	32.1	1,241.5	*13,050*	*30.0*	*1,045.5*
	Hispanic/LatinX	2,859	6.9	640.9	3,128	7.2	676.5	3,329	7.3	693.1	3,708	7.8	747.0	*3,417*	*7.9*	*667.6*
	White/Caucasian[c]	7,694	18.7	229.7	8,493	19.5	251.9	8,560	18.8	252.3	8,669	18.1	253.9	*7,436*	*17.1*	*216.5*
	Multiple Races[d]	111	0.3	---	118	0.3	---	102	0.2	---	148	0.3	---	*171*	*0.4*	---
	Unknown/Unspecified[d]	15,376	37.3	---	15,957	36.6	---	17,215	37.8	---	19,062	39.8	---	*18,761*	*43.1*	---
	Total	41,201	100.0	790.0	43,634	100.0	827.2	45,559	100.0	853.8	47,841	100.0	887.0	*43,512*	*100.0*	*798.6*
Total[e]	American Indian/Alaska Native[c]	767	1.3	632.0	892	1.4	729.8	848	1.3	689.5	861	1.2	695.9	*653*	*1.0*	*525.2*
	Asian/Pacific Islander[c]	316	0.5	101.0	369	0.6	112.0	369	0.6	108.0	368	0.5	103.6	*276*	*0.4*	*74.9*
	Black/African American[c]	20,346	35.0	906.0	22,025	35.0	969.4	22,995	34.5	1,000.4	23,289	32.6	1,002.3	*19,910*	*30.9*	*849.3*
	Hispanic/LatinX	3,746	6.4	403.2	4,164	6.6	434.2	4,545	6.8	457.7	5,034	7.1	491.9	*4,742*	*7.4*	*450.6*
	White/Caucasian[c]	9,904	17.0	151.1	11,291	17.9	171.3	11,445	17.2	172.5	11,812	16.5	176.9	*9,951*	*15.5*	*148.3*
	Multiple Races[d]	135	0.2	---	147	0.2	---	143	0.2	---	196	0.3	---	*245*	*0.4*	---
	Unknown/Unspecified[d]	22,950	39.5	---	24,086	38.2	---	26,371	39.5	---	29,831	41.8	---	*28,565*	*44.4*	---
	Total[e]	**58,164**	**100.0**	**572.4**	**62,974**	**100.0**	**612.8**	**66,716**	**100.0**	**642.0**	**71,391**	**100.0**	**679.8**	***64,342***	***100.0***	***607.0***

*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.

[a]Chlamydia case reports are always highly biased with respect to gender. See Appendix A: Technical Notes for more information.

[b]Rate is expressed per 100,000 population.

[c]Non-Hispanic/LatinX.

[e]Rates are not available due to the lack of overall population data for the multiple race and unknown/unspecified race/ethnicity groups.

[e]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 July 6, 2021).

Table 9. Newly Diagnosed Gonorrhea Annual Rates in North Carolina by Gender, Age at Diagnosis, and Year of Diagnosis, 2016-2020*

Gender	Age at Diagnosis (Year)	2016			2017			2018			2019			*2020**		
		Cases	%	Rate[a]	Cases	%	Rate[a]	Cases	%	Rate[a]	Cases	%	Rate[a]	*Cases*	*%*	*Rate[a]*
Men	Less than 10	1	0.0	0.2	0	0.0	0.0	0	0.0	0.0	1	0.0	0.2	*1*	*0.0*	*0.2*
	10-14	25	0.2	7.5	16	0.1	4.8	14	0.1	4.1	26	0.2	7.6	*22*	*0.1*	*6.5*
	15-19	1,287	12.8	374.2	1,473	12.6	425.2	1,478	12.3	423.1	1,631	11.6	463.9	*1,630*	*11.0*	*464.8*
	20-24	3,116	31.1	847.3	3,370	28.8	927.7	3,340	27.7	923.0	3,757	26.7	1034.3	*3,922*	*26.5*	*1074.3*
	25-29	2,347	23.4	674.8	2,674	22.9	745.9	2,765	22.9	754.4	3,300	23.5	888.6	*3,481*	*23.6*	*941.6*
	30-34	1,189	11.9	374.7	1,414	12.1	439.8	1,586	13.2	485.4	2,020	14.4	601.5	*2,252*	*15.2*	*649.4*
	35-39	727	7.2	231.4	880	7.5	276.9	1,049	8.7	326.6	1,227	8.7	379.4	*1,220*	*8.3*	*375.6*
	40-44	425	4.2	135.0	594	5.1	191.2	651	5.4	210.1	735	5.2	236.1	*827*	*5.6*	*262.0*
	45-54	619	6.2	91.7	847	7.2	125.5	739	6.1	110.0	884	6.3	133.0	*879*	*5.9*	*133.2*
	55-64	228	2.3	37.1	357	3.1	57.1	359	3.0	56.4	405	2.9	62.7	*431*	*2.9*	*66.0*
	65 and older	63	0.6	9.2	71	0.6	10.0	72	0.6	9.7	81	0.6	10.6	*109*	*0.7*	*13.7*
	Unknown[b]	2	0.0	---	0	0.0	---	0	0.0	---	0	0.0	---	*0*	*0.0*	---
	Total	10,029	100.0	202.7	11,696	100.0	233.9	12,053	100.0	238.4	14,067	100.0	275.4	*14,774*	*100.0*	*286.7*
Women	Less than 10	6	0.1	1.0	3	0.0	0.5	3	0.0	0.5	7	0.1	1.2	*6*	*0.0*	*1.0*
	10-14	85	0.9	26.6	75	0.7	23.2	77	0.7	23.6	98	0.8	30.0	*100*	*0.8*	*30.6*
	15-19	2,337	24.4	703.4	2,739	24.8	818.5	2,710	23.6	802.4	2,969	23.5	876.6	*3,045*	*23.0*	*899.4*
	20-24	3,441	36.0	1016.7	3,778	34.2	1123.3	3,716	32.4	1100.4	4,102	32.5	1211.7	*4,328*	*32.7*	*1265.9*
	25-29	1,969	20.6	563.1	2,267	20.5	633.1	2,479	21.6	683.8	2,660	21.0	730.4	*2,700*	*20.4*	*745.6*
	30-34	902	9.4	274.3	1,073	9.7	322.6	1,266	11.0	374.7	1,377	10.9	395.7	*1,479*	*11.2*	*412.9*
	35-39	443	4.6	134.4	553	5.0	165.6	611	5.3	181.1	689	5.5	202.9	*800*	*6.0*	*234.5*
	40-44	201	2.1	61.1	263	2.4	80.5	291	2.5	88.9	363	2.9	109.9	*423*	*3.2*	*126.3*
	45-54	135	1.4	19.0	231	2.1	32.6	251	2.2	35.6	287	2.3	41.0	*270*	*2.0*	*38.7*
	55-64	38	0.4	5.6	47	0.4	6.8	69	0.6	9.8	68	0.5	9.5	*74*	*0.6*	*10.3*
	65 and older	7	0.1	0.8	5	0.0	0.5	12	0.1	1.3	16	0.1	1.6	*15*	*0.1*	*1.5*
	Unknown[b]	4	0.0	---	0	0.0	---	0	0.0	---	2	0.0	---	*0*	*0.0*	---
	Total	9,568	100.0	183.5	11,034	100.0	209.2	11,485	100.0	215.2	12,638	100.0	234.3	*13,240*	*100.0*	*243.0*

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.
[a]Rate is expressed per 100,000 population.
[b]Rates 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 July 6, 2021).

Table 9 (Continued). Newly Diagnosed Gonorrhea Annual Rates in North Carolina by Gender, Age at Diagnosis, and Year of Diagnosis, 2016-2020*

Gender	Age at Diagnosis (Year)	2016			2017			2018			2019			*2020**		
		Cases	%	Rate[a]	Cases	%	Rate[a]	Cases	%	Rate[a]	Cases	%	Rate[a]	*Cases*	*%*	*Rate[a]*
Total[c]	Less than 10	7	0.0	0.6	3	0.0	0.2	3	0.0	0.2	8	0.0	0.6	*7*	*0.0*	*0.6*
	10-14	110	0.6	16.9	91	0.4	13.8	91	0.4	13.7	124	0.5	18.6	*122*	*0.4*	*18.3*
	15-19	3,624	18.5	536.0	4,212	18.5	618.4	4,188	17.8	609.5	4,600	17.2	666.4	*4,675*	*16.7*	*678.3*
	20-24	6,557	33.5	928.5	7,148	31.4	1021.7	7,056	30.0	1008.7	7,859	29.4	1119.9	*8,250*	*29.4*	*1167.0*
	25-29	4,316	22.0	618.8	4,941	21.7	689.5	5,244	22.3	719.3	5,960	22.3	810.3	*6,181*	*22.1*	*844.6*
	30-34	2,091	10.7	323.6	2,487	10.9	380.2	2,853	12.1	429.3	3,397	12.7	496.7	*3,731*	*13.3*	*529.2*
	35-39	1,170	6.0	181.7	1,433	6.3	219.9	1,660	7.1	252.0	1,916	7.2	289.0	*2,020*	*7.2*	*303.3*
	40-44	626	3.2	97.2	857	3.8	134.5	942	4.0	147.8	1,098	4.1	171.1	*1,250*	*4.5*	*192.1*
	45-54	754	3.8	54.5	1,079	4.7	78.0	990	4.2	71.9	1,171	4.4	85.8	*1,149*	*4.1*	*84.7*
	55-64	266	1.4	20.5	404	1.8	30.6	428	1.8	31.9	473	1.8	34.7	*505*	*1.8*	*36.8*
	65 and older	70	0.4	4.5	76	0.3	4.7	84	0.4	5.0	97	0.4	5.5	*124*	*0.4*	*6.8*
	Unknown[b]	6	0.0	---	0	0.0	---	0	0.0	---	2	0.0	---	*0*	*0.0*	---
	Total[c]	**19,597**	**100.0**	**192.8**	**22,731**	**100.0**	**221.2**	**23,539**	**100.0**	**226.5**	**26,705**	**100.0**	**254.3**	***28,014***	***100.0***	***264.3***

*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.

[a]Rate is expressed per 100,000 population.

[b]Rates are not available due to the lack of overall population data for unknown age group.

[c]Total 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 July 6, 2021).

Table 10. Newly Diagnosed Gonorrhea Annual Rates in North Carolina by Gender, Race/Ethnicity, and Year of Diagnosis, 2016-2020*

Gender	Race/Ethnicity	2016			2017			2018			2019			*2020**		
		Cases	%	Rate[a]	Cases	%	Rate[a]	Cases	%	Rate[a]	Cases	%	Rate[a]	*Cases*	*%*	*Rate[a]*
Men	American Indian/Alaska Native[b]	112	1.1	191.8	136	1.2	231.4	120	1.0	203.3	132	0.9	222.4	*121*	*0.8*	*203.1*
	Asian/Pacific Islander[b]	25	0.2	16.5	37	0.3	23.1	39	0.3	23.5	44	0.3	25.5	*31*	*0.2*	*17.3*
	Black/African American[b]	5,167	51.5	491.5	5,917	50.6	556.2	5,989	49.7	556.6	6,671	47.4	613.6	*6,972*	*47.2*	*636.1*
	Hispanic/LatinX	379	3.8	78.5	389	3.3	78.3	410	3.4	80.0	513	3.6	97.4	*673*	*4.6*	*124.5*
	White/Caucasian[b]	1,043	10.4	32.6	1,450	12.4	45.0	1,476	12.2	45.5	1,744	12.4	53.5	*1,488*	*10.1*	*45.4*
	Multiple Races[c]	24	0.2	---	25	0.2	---	30	0.2	---	47	0.3	---	*67*	*0.5*	---
	Unknown/Unspecified[c]	3,279	32.7	---	3,742	32.0	---	3,989	33.1	---	4,916	34.9	---	*5,422*	*36.7*	---
	Total	10,029	100.0	202.7	11,696	100.0	233.9	12,053	100.0	238.4	14,067	100.0	275.4	*14,774*	*100.0*	*286.7*
Women	American Indian/Alaska Native[b]	153	1.6	243.0	232	2.1	365.7	186	1.6	290.9	209	1.7	324.7	*171*	*1.3*	*264.1*
	Asian/Pacific Islander[b]	21	0.2	13.0	35	0.3	20.6	41	0.4	23.3	32	0.3	17.5	*38*	*0.3*	*20.1*
	Black/African American[b]	4,573	47.8	382.8	5,073	46.0	419.8	5,186	45.2	424.2	5,186	41.0	419.5	*5,304*	*40.1*	*424.9*
	Hispanic/LatinX	274	2.9	61.4	260	2.4	56.2	329	2.9	68.5	379	3.0	76.4	*511*	*3.9*	*99.8*
	White/Caucasian[b]	1,405	14.7	41.9	1,975	17.9	58.6	2,084	18.1	61.4	2,350	18.6	68.8	*2,152*	*16.3*	*62.7*
	Multiple Races[c]	45	0.5	---	31	0.3	---	46	0.4	---	42	0.3	---	*72*	*0.5*	---
	Unknown/Unspecified[c]	3,097	32.4	---	3,428	31.1	---	3,613	31.5	---	4,440	35.1	---	*4,992*	*37.7*	---
	Total	9,568	100.0	183.5	11,034	100.0	209.2	11,485	100.0	215.2	12,638	100.0	234.3	*13,240*	*100.0*	*243.0*
Total[d]	American Indian/Alaska Native[b]	265	1.4	218.4	368	1.6	301.1	307	1.3	249.6	341	1.3	275.6	*292*	*1.0*	*234.8*
	Asian/Pacific Islander[b]	46	0.2	14.7	72	0.3	21.8	80	0.3	23.4	76	0.3	21.4	*69*	*0.2*	*18.7*
	Black/African American[b]	9,740	49.7	433.7	10,991	48.4	483.7	11,175	47.5	486.2	11,857	44.4	510.3	*12,276*	*43.8*	*523.7*
	Hispanic/LatinX	653	3.3	70.3	649	2.9	67.7	739	3.1	74.4	892	3.3	87.2	*1,184*	*4.2*	*112.5*
	White/Caucasian[b]	2,448	12.5	37.4	3,425	15.1	51.9	3,560	15.1	53.7	4,094	15.3	61.3	*3,640*	*13.0*	*54.2*
	Multiple Races[c]	69	0.4	---	56	0.2	---	76	0.3	---	89	0.3	---	*139*	*0.5*	---
	Unknown/Unspecified[c]	6,376	32.5	---	7,170	31.5	---	7,602	32.3	---	9,356	35.0	---	*10,414*	*37.2*	---
	Total[d]	**19,597**	**100.0**	**192.8**	**22,731**	**100.0**	**221.2**	**23,539**	**100.0**	**226.5**	**26,705**	**100.0**	**254.3**	***28,014***	***100.0***	***264.3***

*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.

[a]Rate is expressed per 100,000 population.

[b]Non-Hispanic/LatinX.

[c]Rates are not available due to the lack of overall population data for the multiple race and unknown/unspecified race/ethnicity groups.

[d]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 July 6, 2021).

Table 11. Newly Diagnosed Early Syphilis[a] Annual Rates in North Carolina by Gender, Age at Diagnosis, and Year of Diagnosis, 2016-2020*

Gender	Age at Diagnosis (Year)	2016				2017				2018				2019				*2020**			
		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	Less than 10	0	0.0	0	0.0	0	0.0	0	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	0.0	0	0.0	*0*	*0.0*	*0*	*0.0*
	15-19	46	13.4	23	6.7	55	15.9	25	7.2	42	12.0	16	4.6	43	12.2	23	6.5	*41*	*11.7*	*19*	*5.4*
	20-24	189	51.4	110	29.9	228	62.8	109	30.0	178	49.2	114	31.5	177	48.7	115	31.7	*166*	*45.5*	*106*	*29.0*
	25-29	221	63.5	144	41.4	227	63.3	151	42.1	233	63.6	151	41.2	231	62.2	187	50.4	*227*	*61.4*	*199*	*53.8*
	30-34	147	46.3	86	27.1	134	41.7	97	30.2	132	40.4	121	37.0	144	42.9	148	44.1	*200*	*57.7*	*167*	*48.2*
	35-39	85	27.1	83	26.4	104	32.7	72	22.7	96	29.9	83	25.8	90	27.8	100	30.9	*134*	*41.3*	*113*	*34.8*
	40-44	63	20.0	47	14.9	80	25.7	48	15.4	66	21.3	44	14.2	64	20.6	69	22.2	*85*	*26.9*	*77*	*24.4*
	45-54	126	18.7	93	13.8	115	17.0	95	14.1	123	18.3	82	12.2	130	19.6	111	16.7	*120*	*18.2*	*116*	*17.6*
	55-64	49	8.0	30	4.9	63	10.1	37	5.9	60	9.4	36	5.7	59	9.1	47	7.3	*74*	*11.3*	*55*	*8.4*
	65 and older	13	1.9	7	1.0	10	1.4	6	0.8	6	0.8	11	1.5	14	1.8	10	1.3	*24*	*3.0*	*11*	*1.4*
	Total	939	19.0	623	12.6	1,016	20.3	640	12.8	936	18.5	658	13.0	952	18.6	810	15.9	*1,071*	*20.8*	*863*	*16.7*
Women	Less than 10	0	0.0	0	0.0	0	0.0	0	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	1	0.3	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	*0*	*0.0*	*1*	*0.3*
	15-19	13	3.9	16	4.8	11	3.3	23	6.9	19	5.6	17	5.0	11	3.2	11	3.2	*16*	*4.7*	*13*	*3.8*
	20-24	19	5.6	27	8.0	32	9.5	28	8.3	30	8.9	32	9.5	30	8.9	42	12.4	*27*	*7.9*	*46*	*13.5*
	25-29	26	7.4	44	12.6	33	9.2	19	5.3	42	11.6	35	9.7	36	9.9	31	8.5	*42*	*11.6*	*44*	*12.2*
	30-34	16	4.9	22	6.7	18	5.4	15	4.5	23	6.8	20	5.9	32	9.2	31	8.9	*35*	*9.8*	*31*	*8.7*
	35-39	10	3.0	13	3.9	10	3.0	8	2.4	14	4.1	12	3.6	19	5.6	16	4.7	*28*	*8.2*	*21*	*6.2*
	40-44	6	1.8	8	2.4	10	3.1	8	2.4	12	3.7	16	4.9	20	6.1	16	4.8	*18*	*5.4*	*25*	*7.5*
	45-54	8	1.1	17	2.4	12	1.7	10	1.4	14	2.0	11	1.6	21	3.0	19	2.7	*19*	*2.7*	*19*	*2.7*
	55-64	4	0.6	8	1.2	1	0.1	4	0.6	4	0.6	7	1.0	7	1.0	6	0.8	*3*	*0.4*	*15*	*2.1*
	65 and older	1	0.1	2	0.2	4	0.4	1	0.1	1	0.1	1	0.1	3	0.3	0	0.0	*4*	*0.4*	*1*	*0.1*
	Total	103	2.0	157	3.0	132	2.5	116	2.2	160	3.0	151	2.8	179	3.3	172	3.2	*192*	*3.5*	*216*	*4.0*

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.
[a]Early syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.
[b]Early non-primary non-secondary (formerly early latent) syphilis.
[c]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 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, 2016-2020*

Gender	Age at Diagnosis (Year)	2016				2017				2018				2019				*2020**			
		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]*
Total	Less than 10	0	0.0	0	0.0	0	0.0	0	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	1	0.2	0	0.0	1	0.2	0	0.0	0	0.0	0	0.0	*0*	*0.0*	*1*	*0.1*
	15-19	59	8.7	39	5.8	66	9.7	48	7.0	61	8.9	33	4.8	54	7.8	34	4.9	*57*	*8.3*	*32*	*4.6*
	20-24	208	29.5	137	19.4	260	37.2	137	19.6	208	29.7	146	20.9	207	29.5	157	22.4	*193*	*27.3*	*152*	*21.5*
	25-29	247	35.4	188	27.0	260	36.3	170	23.7	275	37.7	186	25.5	267	36.3	218	29.6	*269*	*36.8*	*243*	*33.2*
	30-34	163	25.2	108	16.7	152	23.2	112	17.1	155	23.3	141	21.2	176	25.7	179	26.2	*235*	*33.3*	*198*	*28.1*
	35-39	95	14.8	96	14.9	114	17.5	80	12.3	110	16.7	95	14.4	109	16.4	116	17.5	*162*	*24.3*	*134*	*20.1*
	40-44	69	10.7	55	8.5	90	14.1	56	8.8	78	12.2	60	9.4	84	13.1	85	13.2	*103*	*15.8*	*102*	*15.7*
	45-54	134	9.7	110	7.9	127	9.2	105	7.6	137	9.9	93	6.8	151	11.1	130	9.5	*139*	*10.2*	*135*	*9.9*
	55-64	53	4.1	38	2.9	64	4.8	41	3.1	64	4.8	43	3.2	66	4.8	53	3.9	*77*	*5.6*	*70*	*5.1*
	65 and older	14	0.9	9	0.6	14	0.9	7	0.4	7	0.4	12	0.7	17	1.0	10	0.6	*28*	*1.5*	*12*	*0.7*
Total		**1,042**	**10.3**	**780**	**7.7**	**1,148**	**11.2**	**756**	**7.4**	**1,096**	**10.5**	**809**	**7.8**	**1,131**	**10.8**	**982**	**9.4**	***1,263***	***11.9***	***1,079***	***10.2***

*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.

[a]Early syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

[b]Early non-primary non-secondary (formerly early latent) syphilis.

[c]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 July 6, 2021).

Table 12. Newly Diagnosed Early Syphilis[a] Annual Rates in North Carolina by Gender, Race/Ethnicity, and Year of Diagnosis, 2016-2020*

Gender	Race/Ethnicity	2016				2017				2018				2019				*2020**			
		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	10.3	4	6.9	6	10.2	2	3.4	7	11.9	6	10.2	7	11.8	7	11.8	4	6.7	6	10.1
	Asian/Pacific Islander[d]	9	5.9	1	0.7	12	7.5	3	1.9	5	3.0	4	2.4	5	2.9	7	4.1	5	2.8	4	2.2
	Black/African American[d]	539	51.3	383	36.4	599	56.3	357	33.6	563	52.3	387	36.0	552	50.8	502	46.2	613	55.9	521	47.5
	Hispanic/LatinX	66	13.7	59	12.2	68	13.7	69	13.9	76	14.8	60	11.7	84	15.9	74	14.0	78	14.4	89	16.5
	White/Caucasian[d]	278	8.7	137	4.3	293	9.1	177	5.5	236	7.3	165	5.1	249	7.6	181	5.5	293	8.9	182	5.6
	Multiple Races[e]	25	---	21	---	20	---	21	---	26	---	19	---	28	---	18	---	33	---	28	---
	Unknown/Unspecified[e]	16	---	18	---	18	---	11	---	23	---	17	---	27	---	21	---	45	---	33	---
	Total	939	19.0	623	12.6	1,016	20.3	640	12.8	936	18.5	658	13.0	952	18.6	810	15.9	1,071	20.8	863	16.7
Women	American Indian/Alaska Native[d]	1	1.6	2	3.2	2	3.2	0	0.0	2	3.1	0	0.0	1	1.6	1	1.6	1	1.5	2	3.1
	Asian/Pacific Islander[d]	1	0.6	1	0.6	0	0.0	2	1.2	0	0.0	0	0.0	2	1.1	2	1.1	0	0.0	0	0.0
	Black/African American[d]	75	6.3	109	9.1	87	7.2	72	6.0	104	8.5	106	8.7	120	9.7	103	8.3	89	7.1	118	9.5
	Hispanic/LatinX	1	0.2	7	1.6	3	0.6	10	2.2	7	1.5	12	2.5	8	1.6	17	3.4	12	2.3	16	3.1
	White/Caucasian[d]	20	0.6	29	0.9	30	0.9	25	0.7	41	1.2	26	0.8	40	1.2	40	1.2	72	2.1	64	1.9
	Multiple Races[e]	1	---	6	---	8	---	6	---	5	---	4	---	5	---	6	---	7	---	10	---
	Unknown/Unspecified[e]	4	---	3	---	2	---	1	---	1	---	3	---	3	---	3	---	11	---	6	---
	Total	103	2.0	157	3.0	132	2.5	116	2.2	160	3.0	151	2.8	179	3.3	172	3.2	192	3.5	216	4.0
Total^	American Indian/Alaska Native[d]	7	5.8	6	4.9	8	6.5	2	1.6	9	7.3	6	4.9	8	6.5	8	6.5	5	4.0	8	6.4
	Asian/Pacific Islander[d]	10	3.2	2	0.6	12	3.6	5	1.5	5	1.5	4	1.2	7	2.0	9	2.5	5	1.4	4	1.1
	Black/African American[d]	614	27.3	492	21.9	686	30.2	429	18.9	667	29.0	493	21.4	672	28.9	605	26.0	702	29.9	639	27.3
	Hispanic/LatinX	67	7.2	66	7.1	71	7.4	79	8.2	83	8.4	72	7.3	92	9.0	91	8.9	90	8.6	105	10.0
	White/Caucasian[d]	298	4.5	166	2.5	323	4.9	202	3.1	277	4.2	191	2.9	289	4.3	221	3.3	365	5.4	246	3.7
	Multiple Races[e]	26	---	27	---	28	---	27	---	31	---	23	---	33	---	24	---	40	---	38	---
	Unknown/Unspecified[e]	20	---	21	---	20	---	12	---	24	---	20	---	30	---	24	---	56	---	39	---
	Total^	**1,042**	**10.3**	**780**	**7.7**	**1,148**	**11.2**	**756**	**7.4**	**1,096**	**10.5**	**809**	**7.8**	**1,131**	**10.8**	**982**	**9.4**	**1,263**	**11.9**	**1,079**	**10.2**

*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.

[a]Early syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

[b]Early non-primary non-secondary (formerly early latent) syphilis.

[c]Rate is expressed per 100,000 population.

[d]Non-Hispanic/LatinX.

[e]Rates are not available due to the lack of overall population data for the multiple race and unknown/unspecified race/ethnicity groups.

^Totals include 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 July 6, 2021).

Table 13. Newly Diagnosed Early Syphilis[a] Annual Rates in North Carolina by Gender, Risk of Exposure, and Year of Diagnosis, 2016-2020*

Risk of Exposure	2016				2017				2018				2019				*2020**			
	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]	100	9.9	157	20.1	132	11.5	116	15.3	160	14.6	151	18.7	179	15.8	172	17.5	*192*	*15.2*	*216*	*20.0*
MSM[d]	562	53.9	417	53.5	627	54.6	445	51.5	579	52.8	461	57.0	544	48.1	551	56.1	*578*	*45.8*	*567*	*52.3*
MSM/W[e]	136	13.1	65	8.3	71	602	35	4.6	44	4.0	18	2.2	47	4.2	20	2.0	*64*	*5.1*	*32*	*3.0*
MSW only[f]	191	18.3	81	10.4	230	20.0	86	27.2	216	19.7	104	12.9	242	21.4	118	12.0	*269*	*21.3*	*100*	*9.3*
Unknown Men	50	4.8	60	7.7	88	7.7	74	9.8	97	8.9	75	9.2	119	10.5	121	12.4	*160*	*12.7*	*167*	*15.4*
Total	**1,042**	**100.0**	**780**	**100.0**	**1,148**	**100.0**	**756**	**100.0**	**1,096**	**100.0**	**809**	**100.0**	**1,131**	**100.0**	**982**	**100.0**	***1,263***	***100.0***	***1,079***	***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.

[a]Early syphilis is defined as having primary, secondary, or early non-primary non-secondary (formerly early latent) syphilis.

[b]Early non-primary non-secondary (formerly early latent) syphilis.

[C]Women with a partner of any gender.

[d]MSM =Men who report sex with men.

[e]MSM/W = Men who report sex with men and women.

[f]MSW 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 July 6, 2021).

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 *2019 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 for several categories of race/ethnicity, age group, and gender for each disease. Rates are also presented for counties across the state and are expressed as cases per 100,000 population. Rate denominators were calculated using the available bridged-race population estimates for 2018 from the National Center for Health Statistics. More information about bridged-race categories is available at the website http://www.cdc.gov/nchs/nvss/bridged_race.htm.

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

[30]Centers for Disease Control and Prevention (2010). National Notifiable Disease Surveillance System (NNDSS): *Chlamydia trachomatis* infection 2010 case definition. Retrieved from https://wwwn.cdc.gov/nndss/conditions/chlamydia-trachomatis-infection/case-definition/2010/.

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**. Please note that in HIV/STD Surveillance reports prior to 2013 and Quarterly reports prior to Q2 2016, chlamydia cases are summarized by **date of report**, so there are slight differences in the case numbers when comparing this report with previous reports.

Determining whether the prevalence of chlamydia infections is changing is difficult because chlamydia reporting is dependent on screening practices. While North Carolina State Laboratory of Public Health screening data from local health department clinic cases provides better data on chlamydia rates, data are unavailable at this time due to data system changes.

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 (presumptive *Neisseria gonorrhoeae*) from clinical specimen OR *N. gonorrhoeae* by detection of antigen or nucleic acid amplification (confirmed case).[31]

Gonorrhea can cause serious complications for females, and a number of screening programs exist targeting 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. Males are less likely to be diagnosed by routine screening; however, they are more likely to have symptoms that would bring them to an STD clinic. Therefore, gender bias in gonorrhea reporting is not considered to be large.

Reports are summarized by the **date of diagnosis**. Please note that in HIV/STD Surveillance reports prior to 2013 and Quarterly reports prior to Q2 2016, gonorrhea cases are summarized by **date of report**, so there are slight differences in the case numbers when comparing this report with other reports.

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. North Carolina State Laboratory of Public Health screening data from local health department clinic cases provides better data on gonorrhea rates. By using these data,

[31]Centers for Disease Control and Prevention (2014). National Notifiable Disease Surveillance System (NNDSS): Gonorrhea (*Neisseria gonorrhoeae*) 2014 case definition. Retrieved from https://wwwn.cdc.gov/nndss/conditions/gonorrhea/case-definition/2014/.

we can examine positivity rates over time among stable, screened populations. 2018 data from this source is not available at this time due to data system changes.

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. Please note that in HIV/STD Surveillance reports prior to 2013 and Quarterly reports prior to Q2 2016, syphilis cases are summarized by **date of report**, so there are slight differences in the case numbers when comparing this report with other reports.

For more complete case definition of the stages of syphilis, please refer to the CDC's websites (https://wwwn.cdc.gov/nndss/conditions/syphilis/case-definition/2014/ and https://wwwn.cdc.gov/nndss/conditions/syphilis/case-definition/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]

[32]Centers 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://wwwn.cdc.gov/nndss/conditions/syphilis/case-definition/2014/.

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).
- *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]

[32]Centers for Disease Control and Prevention (2014). National Notifiable Disease Surveillance System (NNDSS): Syphilis (*Treponema pallidum*) 2014 case definition. Retrieved from https://wwwn.cdc.gov/nndss/conditions/syphilis/case-definition/2014/.

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.[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).[33]

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]

[32] Centers for Disease Control and Prevention (2014). National Notifiable Disease Surveillance System (NNDSS): Syphilis (*Treponema pallidum*) 2014 case definition. Retrieved from https://wwwn.cdc.gov/nndss/conditions/syphilis/case-definition/2014/.
[33]Centers for Disease Control and Prevention (2018). National Notifiable Disease Surveillance System (NNDSS): Syphilis (*Treponema pallidum*) 2018 case definition. Retrieved from https://wwwn.cdc.gov/nndss/conditions/syphilis/case-definition/2018/.

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
    - 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.[33]

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://wwwn.cdc.gov/nndss/conditions/syphilis/case-definition/2018/.

[33] Centers for Disease Control and Prevention (2018). National Notifiable Disease Surveillance System (NNDSS): Syphilis (*Treponema pallidum*) 2018 case definition. Retrieved from https://wwwn.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.
- *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.[33]

[33] Centers for Disease Control and Prevention (2018). National Notifiable Disease Surveillance System (NNDSS): Syphilis (*Treponema pallidum*) 2018 case definition. Retrieved from https://wwwn.cdc.gov/nndss/conditions/syphilis/case-definition/2018/.