2025 Communicable Disease Report

PUBLIC HEALTH REPORT

NORTH CAROLINA Accredited Health Department 2019-2024 Local Health Department Accreditation Board

WAKE COUNTY NORTH CAROLINA | Public Health

TABLE OF CONTENTS

1.0 INTRODUCTION AND OVERVIEW

Wake County Public Health provides the 10 Essential Public Health Services shown in Figure 1. These services guide how the department monitors health, addresses emerging issues, and supports the well-being of the community.

Public Health reports, including those on communicable disease, chronic disease, and injuries, help fulfill two of the essential services:

1. Assess and monitor population health
2. Communicate effectively to inform and educate

By sharing data and trends with residents, providers, policymakers, and the community, these reports support informed decision-making across Wake County. Reports are published annually and can be accessed at wake.gov/epidemiology.

Figure 1: Ten Essential Public Health Services

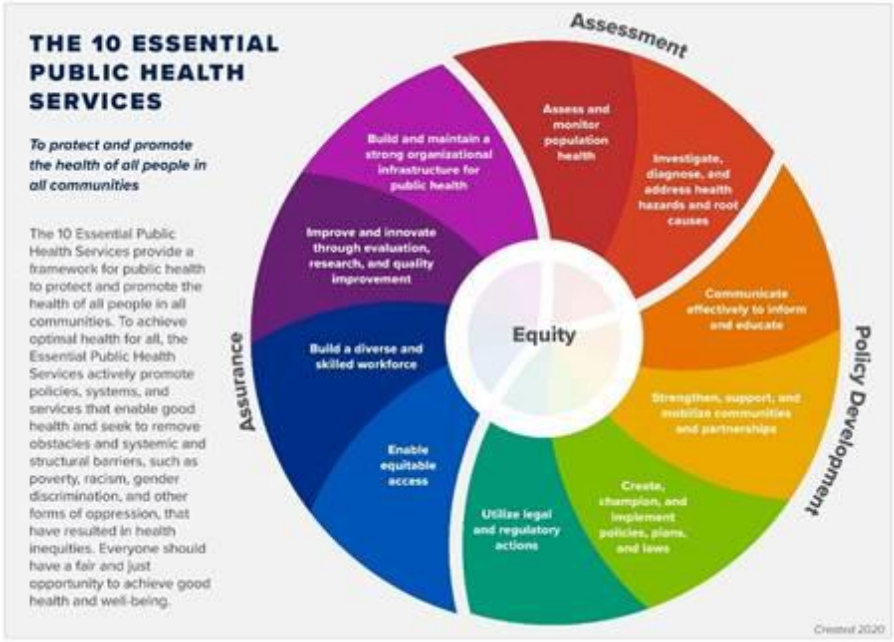


Image source: Centers for Disease Control and Prevention (CDC). https://www.cdc.gov/public-health-gateway/php/about/?CDC_AAref_Val=https://www.cdc.gov/publichealthgateway/publichealthservices/essentialhealthservices.html

Communicable diseases, also known as infectious diseases, are illnesses caused by microorganisms such as bacteria, viruses, parasites, and fungi. The route of transmission varies by disease and may include direct contact with contaminated body fluids or excretions, contact with contaminated objects, inhalation of contaminated airborne particles, ingestion of contaminated food or water, or transmission from an animal or vector (i.e., arthropod) carrying the microorganism. This report contains information on the burden of communicable diseases in Wake County including:

- Demographic composition of the county's population
- Counts and rates of all reportable diseases and conditions for Wake County, NC (2020-2024)
- Detailed analysis of the top ten reported communicable diseases for Wake County, NC (2024)
- Respiratory virus surveillance in Wake County, NC (2024-2025 season)

Additionally, Wake County Public Health carries out efforts to assess, identify, treat, follow up on, and prevent both reportable and certain non-reportable communicable diseases and conditions in Wake County.

2.0 SURVEILLANCE

In North Carolina, there are more than 75 reportable diseases and conditions that are determined to be of public health significance and are specified in the N.C. Administrative Code rule 10A NCAC 41A.0101. When a case of these diseases or conditions occurs, it must be reported to the North Carolina Department of Health and Human Services (NCDHHS). Many of these diseases and conditions must also be reported to the Centers for Disease Control and Prevention (CDC) as part of national public health surveillance.

Most of the diseases reported to NCDHHS are tracked through the North Carolina Electronic Disease Surveillance System (NCEDSS), but a few have their own reporting systems, such as the Enhanced HIV/AIDS Reporting System (eHARS).[2] NCEDSS and other disease reporting databases support public health surveillance, which is "the ongoing, systematic collection, analysis, and interpretation of health-related data essential to planning, implementation, and evaluation of public health practice." [1]

Although the list of reportable diseases may vary slightly from state to state, all states use the same criteria to define what constitutes a case of a given disease. Timely and complete disease reporting allows public health practitioners to monitor and respond to the changing health status of their community. It also helps ensure that prevention efforts are directed appropriately and that public health programs are supported with the necessary resources.[2]

Case definitions are different for each reportable disease, but in general:

- A confirmed case requires both clinical symptoms and a positive laboratory test
- A probable case has clinical symptoms and meets other criteria, such as known exposure (epidemiological linkage)
- A suspect case has clinical symptoms but no confirmatory lab test or known exposure

To ensure comprehensive reporting and capture all potential cases, this report includes confirmed, probable, and suspect cases for most diseases and conditions. This approach helps avoid missed opportunities to identify positive cases and accurately monitor the spread of disease. By including all case classifications, a thorough and inclusive surveillance system can be maintained.

In addition to clinical testing and case-based reporting, wastewater surveillance has become a routine part of disease monitoring in Wake County.

Since joining the CDC's National Wastewater Surveillance System (NWSS) in 2021, six wastewater treatment plants in Wake County have collected wastewater samples weekly, for monitoring.[3] These samples are tested for several pathogens, including SARS-CoV-2, Respiratory Syncytial Virus (RSV), Influenza A (Flu A), Influenza B (Flu B), and Mpox.[3] Infected individuals can shed viral material into the wastewater system through normal daily activities such as using the bathroom, washing hands, or doing laundry.[4] Wastewater operators collect samples before treatment, and laboratories analyze them for genetic material from specific pathogens. Results are usually available within 5 to 7 days.[4] Wastewater data enhances local surveillance by offering population-level insight into disease activity.[5] This method is especially useful when clinical testing is limited or delayed.[5]

Wake County public health teams use wastewater trends alongside hospital data, lab reports, and syndromic surveillance to guide local response efforts. The wastewater surveillance system also offers a flexible framework for monitoring additional public health targets and emerging threats as surveillance needs evolve.

3.0 KEY FINDINGS

- The 2024–2025 flu season was more severe than the previous year, with influenza-like illness peaking in January 2025. Both COVID-19 and RSV peaked earlier in December 2024.
- Vaccine-preventable diseases like pertussis, hepatitis B, and *Haemophilus influenzae* have increased since 2020, coinciding with declining vaccination coverage.
- Rates of tuberculosis continue to increase year to year, with a 14% increase in 2024 compared to 2023.
- In 2024, salmonellosis and cyclosporiasis cases increased sharply.
- Lyme disease cases reached their highest level in five years (2024).
- Rates of early syphilis, gonorrhea, and chlamydia decreased from 2023 to 2024, while the rate of new HIV diagnoses increased.

4.0 DEMOGRAPHIC PROFILE OF WAKE COUNTY

- In 2023, the median age of people living in Wake County was 37.7 years.
- More than half of the population (55.2%) in Wake County is between the ages of 25 and 64 years (Table 3).
- 51% of Wake County residents are female and 49% are male (Table 1).
- The four largest ethnic groups in Wake County are White (Non-Hispanic, single race) (56.0%), Black or African American (Non-Hispanic, single race) (18.6%), Hispanic or Latino (11.5%) and Asian (Non-Hispanic, single race) (8.8%) (Table 2)

Table 1: Population Distribution by Sex, Wake County, NC 2023

Sex	Population	%
Female	607,360	51%
Male	582,915	49%
Total	1,190,275	100%

Table 2: Population Distribution by Race and Ethnicity, Wake County, NC 2023

Race and Ethnicity	Total Population *1,190,275	%
Hispanic or Latino	137,414	11.5%
White Non-Hispanic, single race	666,121	56.0%
Black or African American Non-Hispanic, single race	221,946	18.6%
American Indian/Alaska Native Non-Hispanic, single race	2,633	0.2%
Asian Non-Hispanic, single race	104,741	8.8%
Native Hawaiian and Other Pacific Islander Non-Hispanic, single race	361	0.0%
Two or more races Non-Hispanic	48,794	4.1%

Table 3: Population Distribution by Age Group, Wake County, NC 2023

Age Group	Total Population N = 1,190,275	%
<15	220,443	18.5%
15-24	153,219	12.9%
25-34	172,666	14.5%
35-44	180,255	15.1%
45-54	166,637	14.0%
55-64	137,816	11.6%
65+	159,239	13.4%

Source for Tables 1-3: 2023 American Community Survey 1-Year Estimates, United States Census Bureau.[6] Note: Percentages may not sum to 100% due to rounding. *This is the total including residents who identified as "other" race, which is not shown in Table 2.

5.0 TOP TEN REPORTED COMMUNICABLE DISEASES, WAKE COUNTY, 2024

Table 4: Top Ten Reported Communicable Diseases, Wake County, 2024

	Diseases and conditions	Cases, All Statuses (Confirmed/Suspect /Probable)
1	Chlamydia+	6014
2	Gonorrhea+	2048
3	Salmonellosis	382
4	Early Syphilis*+	297
5	Campylobacter	262
6	Hepatitis B, Chronic	158
7	Cyclosporiasis	150
8	HIV, New+	149
9	Shigellosis	72
10	*E. coli*	66

Notes: Cases are reported as **"confirmed"** when laboratory tests definitively identify the infectious agent. **"Probable"** cases lack confirmatory tests but have strong clinical symptoms or epidemiological evidence suggestive of the disease. **"Suspect"** cases lack both laboratory confirmation and epidemiologic evidence but have typical clinical features. For some diseases (e.g. chlamydia and gonorrhea) only confirmed cases are reported.

*Early syphilis includes primary, secondary, and early non-primary non-secondary cases. Additionally, the early syphilis data in this report includes both confirmed and probable cases due to a change in the case definition that occurred in 2022. The breakdown of primary, secondary, and early nonprimary non-secondary syphilis cases, along with details regarding syphilis case definitions, can be found in the Sexually Transmitted Diseases (STDs) section.

+The counts for sexually transmitted diseases in this table are limited to cases with Wake County residential addresses. Counts may differ from the *Counts and Rates of Reportable Diseases and Conditions in Wake County, NC* table later in this report (NCDHHS includes individuals who were tested in Wake County but have addresses in other counties in their counts).

6.0 VACCINE PREVENTABLE DISEASES

Hepatitis B

https://www.cdc.gov/hepatitis-b/about/index.html

Epidemiology

Overview: Hepatitis B is a vaccine preventable liver infection caused by the hepatitis B virus (HBV). HBV infection can be acute (short-term) or chronic (long-term). Chronic hepatitis B can lead to serious issues such as liver disease, cirrhosis, liver cancer, and even death.

Symptoms: Not all hepatitis B cases have symptoms. Symptoms can include fatigue, poor appetite, stomach pain, nausea, and jaundice. As mentioned above, chronic infection can lead to serious issues such as liver disease and liver cancer.

Transmission: HBV is transmitted through activities that involve puncturing the skin or mucous membrane contact with infectious blood or body fluids (e.g., semen, saliva).

Treatment: Mostly supportive care (e.g., rest, good nutrition, plenty of fluids, avoiding alcohol, drugs, etc.).

Prevention: Vaccination is the best prevention. The CDC recommends hepatitis B vaccination for all infants, unvaccinated children, adolescents under 19, adults ages 19 to 59, and adults 60 and older who are at higher risk for hepatitis B. Other prevention methods include not sharing personal items like razors, not sharing needles or drug equipment, and safer sex practices.

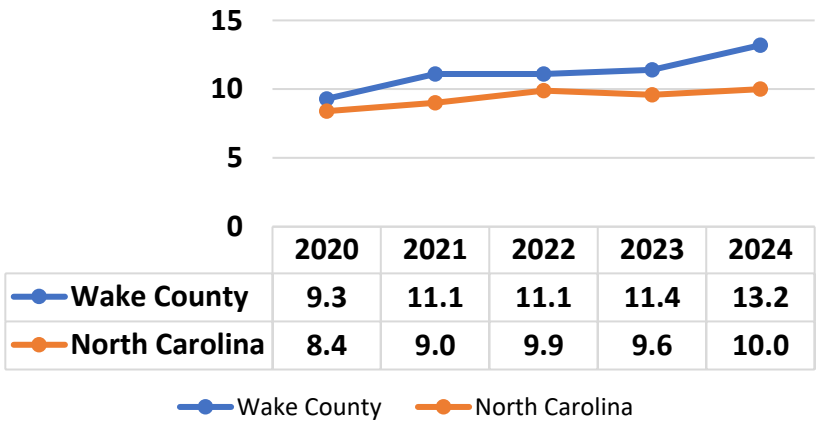
Local Facts and Figures:

The hepatitis B incidence rate in Wake County increased by 15.8% in 2024 compared to 2023 and has consistently been higher than the state rate over the past five years.

In 2024:

- 158 cases were reported.
- 58% of cases were ages 25-49 years.
- 30% of cases were reported among Asians.

Figure 2: Hepatitis B Incidence Rates, 2020-2024



	2020	2021	2022	2023	2024
Wake County	9.3	11.1	11.1	11.4	13.2
North Carolina	8.4	9.0	9.9	9.6	10.0

*Rates per 100,000 population

Figure 3: Hepatitis B by Age Group, 2024

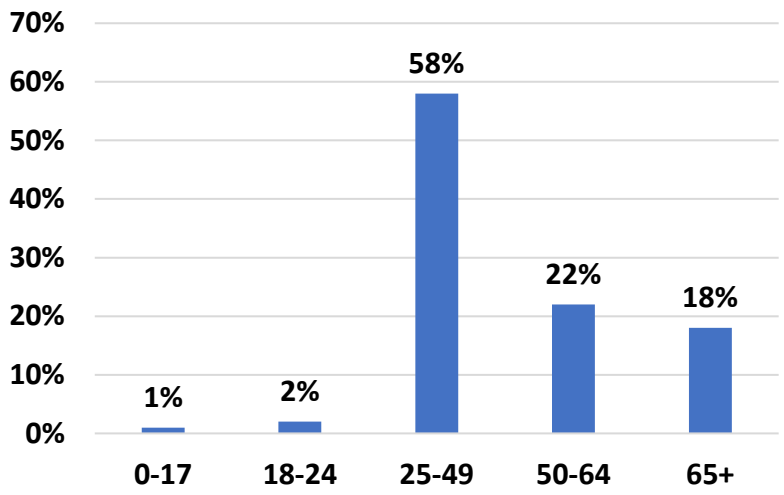


Figure 4: Hepatitis B by Race, 2024

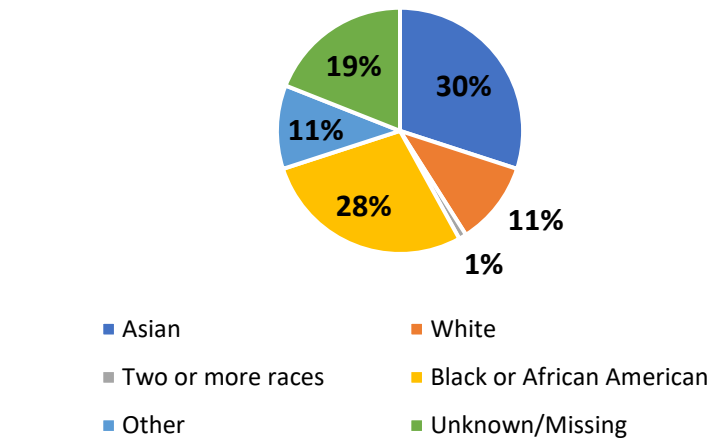
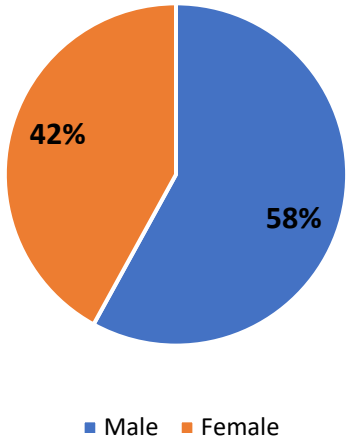


Figure 5: Hepatitis B by Sex, 2024



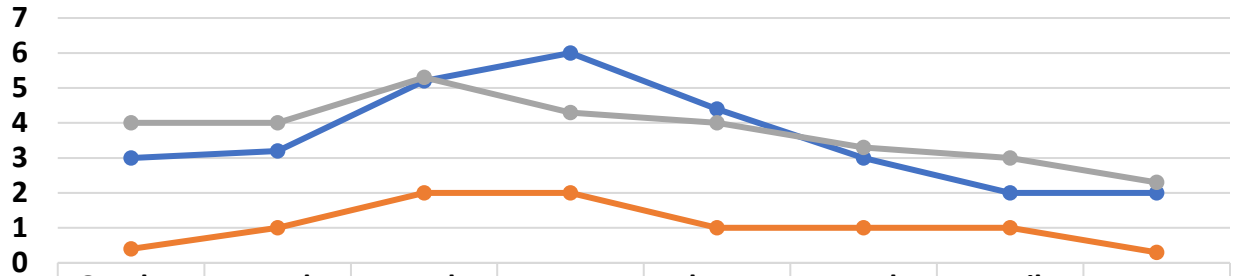
7.0 RESPIRATORY VIRUS SURVEILLANCE

Each year, the respiratory virus season spans from October through May, a time when viruses that cause respiratory illness circulate more widely and pose a significant public health challenge. During this season, COVID-19, caused by the SARS-CoV-2 virus, can lead to severe illness, with outcomes influenced by circulating variants.[7]

Influenza-like illness (ILI) is commonly reported and is characterized by fever (temperature of 100°F or higher) accompanied by cough and/or sore throat.[8]

Respiratory Syncytial Virus (RSV) is another major concern, as it usually causes mild, cold-like symptoms but is the leading cause of bronchiolitis and pneumonia in infants under one year of age.[9] Monitoring these viruses through surveillance helps track seasonal patterns, inform public health responses, and protect vulnerable populations.

Figure 6: Percentage of Total Emergency Department (ED) Visits, ILI, RSV, COVID-19, 2024-2025



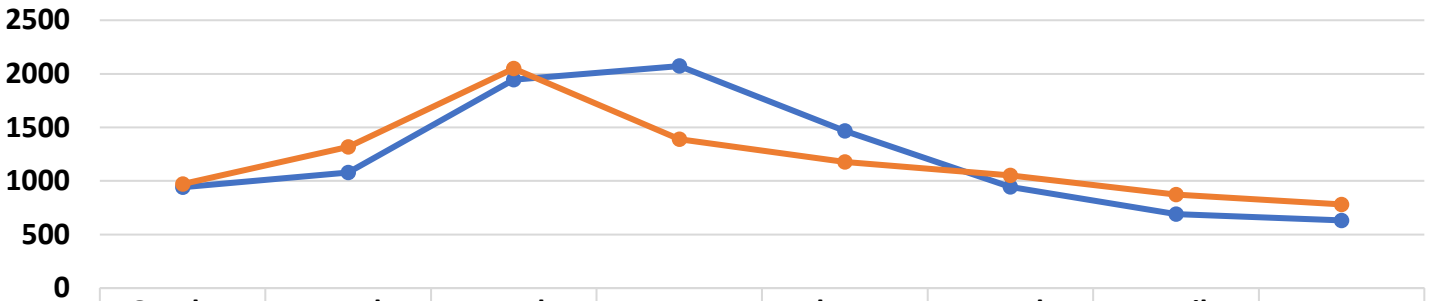
	October	November	December	January	February	March	April	May
ILI%	3.0	3.2	5.2	6.0	4.4	3.0	2.0	2.0
RSV%	0.4	1.0	2.0	2.0	1.0	1.0	1.0	0.3
COVID-19%	4.0	4.0	5.3	4.3	4.0	3.3	3.0	2.3

During the 2024–2025 respiratory virus season in Wake County, COVID-19 and RSV activity peaked in December, while influenza-like illness (ILI) continued to rise and peaked in January 2025. After December, COVID-19 and RSV activity began to decline, but ILI levels remained elevated through February before gradually decreasing. Compared to the previous season, ILI activity was higher in December, peaked later, and stayed elevated longer. COVID-19 and RSV followed similar patterns to the prior season, peaking in December and declining steadily thereafter. During this season, nine influenza-associated deaths were reported in Wake County, all among individuals aged 18 and older.

The 0–4-year age group was most affected across all three viruses, indicating increased vulnerability to respiratory illnesses in young children. ED visit data showed the highest burden among Black or African American residents, who accounted for 41% of ILI visits, 40% of COVID-19 visits, and 36% of RSV visits.

The following figures illustrate the burden of influenza-like illness (ILI) in Wake County, highlighting trends in emergency department visits from 2023 to 2025, as well as differences by age group and race during the 2024-2025 season.

Figure 7: Number of Emergency Department (ED) Visits for ILI, 2023-2025



	October	November	December	January	February	March	April	May
2024-2025	940	1079	1945	2072	1467	944	691	632
2023-2024	971	1318	2049	1389	1178	1051	872	781

Figure 8: Percent of Emergency Department (ED) Visits for ILI by Age Group, 2024-2025

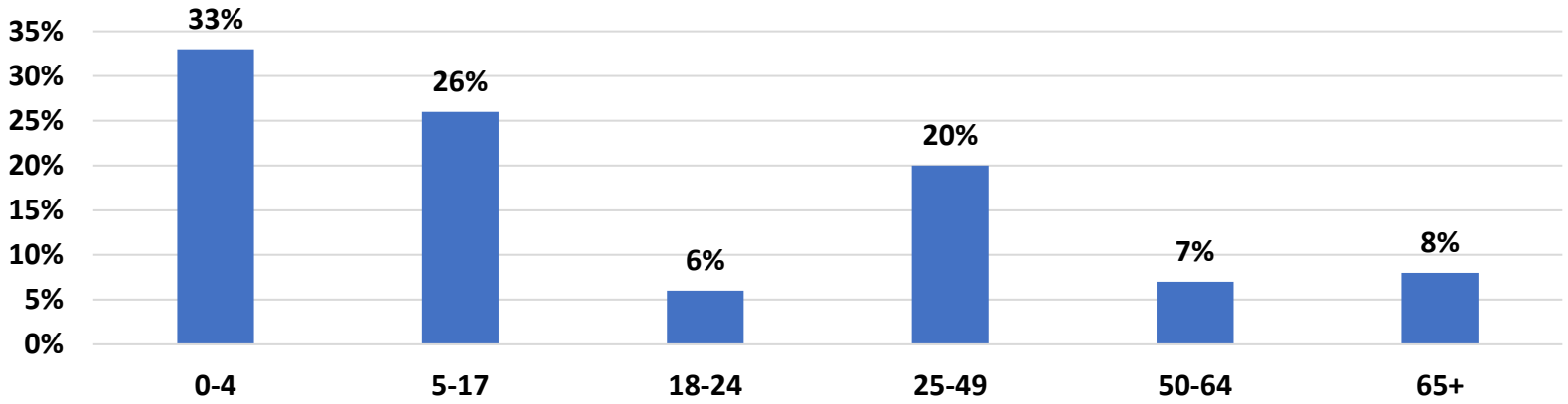
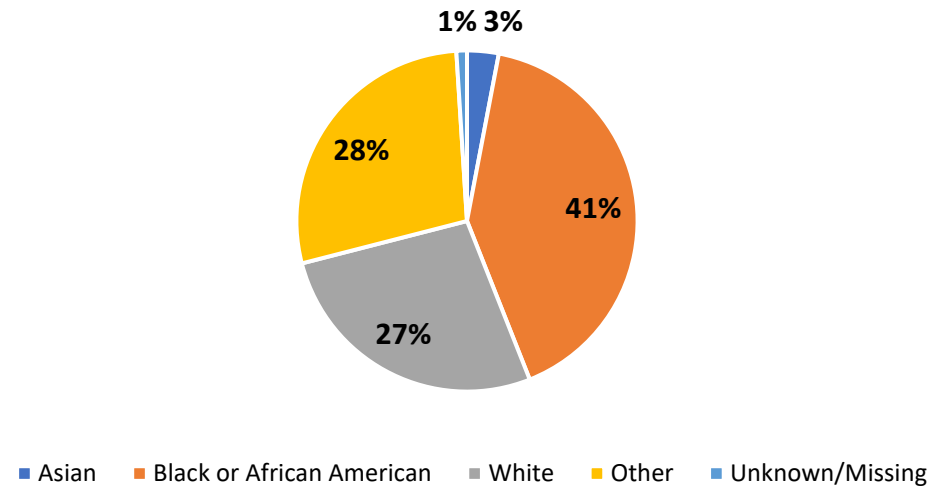


Figure 9: Percent of Emergency Department (ED) Visits for ILI by Race, 2024-2025



The Wake County Public Health Communicable Disease Surveillance Team (CDST) investigated 45 COVID-19 outbreaks from January 1, 2024, to December 31, 2024, all of which occurred in long-term care facilities, although outbreaks can also occur in childcare facilities, schools, and other settings.

In 2024, the Centers for Disease Control and Prevention (CDC) recommended that all individuals aged six months and older receive the updated COVID-19 vaccine in addition to the annual influenza vaccine. A single dose of the influenza vaccine is typically sufficient each season, with September and October identified as the optimal months for vaccination.[10]

In addition to vaccination, CDC provides comprehensive guidance to help reduce the risk of respiratory virus transmission, including COVID-19, influenza, and RSV. This guidance emphasizes key prevention strategies such as immunization, good hygiene practices, improved indoor air quality, and staying home when sick.

CDC recommends that individuals with respiratory virus symptoms stay home and avoid contact with others until symptoms improve **and** they have been fever-free for at least 24 hours without the use of fever-reducing medication. After resuming normal activities, taking additional precautions for five days- such as wearing a well-fitting mask, improving ventilation, keeping distance from others, and getting tested-can further reduce the risk of spreading illness.

For more information regarding these core prevention strategies and more, please visit https://www.cdc.gov/respiratory-viruses/guidance/index.html

7.1 Emerging Trends in Vaccine-Preventable Diseases and Kindergarten Immunization Coverage

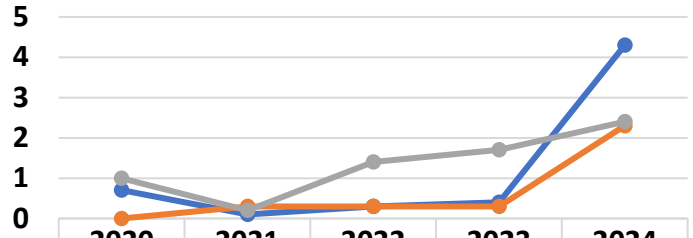
Figure 10 displays the incidence of three key vaccine-preventable diseases: pertussis, acute hepatitis B, and *Haemophilus influenzae* in Wake County from 2020 to 2024.

Case counts for most vaccine-preventable diseases dropped significantly in 2020, likely due to the COVID-19 pandemic and widespread public health measures that were implemented at the time, such as masking, social distancing, remote learning, and reduced travel. These mitigation strategies not only slowed the spread of COVID-19 but also limited the transmission of many other communicable diseases.[11]

As public health restrictions were lifted, an increase in disease activity was anticipated. However, the continued rise, particularly the sharp increases observed in 2024, raises public health concern. The following data highlight these concerning trends.

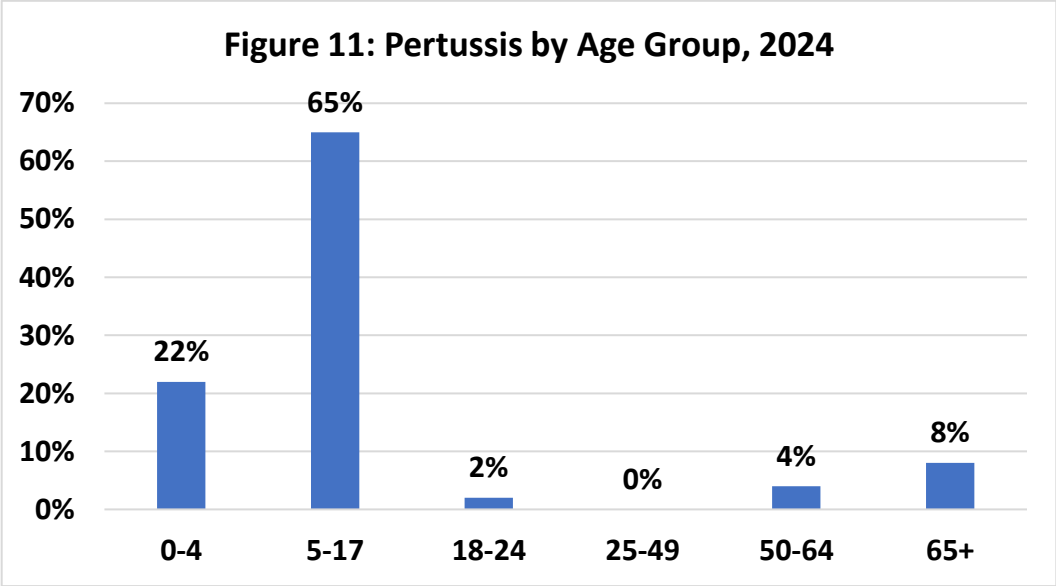
- The incidence rate of pertussis increased from 0.4 in 2023 to 4.3 in 2024, a rise of approximately 975%.
- Acute hepatitis B increased from 0.3 to 2.3 during the same period, an increase of nearly 667%.
- Haemophilus influenzae continued its upward trend, increasing from 1.7 in 2023 to 2.4 in 2024 which is a 41% increase.

Figure 10: Pertussis, Acute Hepatitis B and *Haemophilus influenzae* Incidence Rates, 2020-2024



	2020	2021	2022	2023	2024
Pertussis	0.7	0.1	0.3	0.4	4.3
Hepatitis B, Acute	0.0	0.3	0.3	0.3	2.3
Haemophilus influenzae	1.0	0.2	1.4	1.7	2.4

*Rates per 100,000 population



The increases in these vaccine-preventable diseases may reflect not only the resurgence of disease transmission but also the impact of declining routine vaccination coverage within the community. Although kindergarten immunization rates declined gradually from 2021-2023, the increase in vaccination coverage in 2024 signals a positive trend (Figure 12).

In 2024, the majority of pertussis cases (65%) were reported among children and adolescents aged 5-17 years, highlighting the significant burden of pertussis on school-age children (Figure 11). Monitoring vaccine uptake and exemption patterns in this age group is essential, as high vaccination rates at school entry are critical for preventing outbreaks in both schools and the broader community.[10]

In Wake County, vaccination coverage among kindergarteners has fluctuated over the past five years, increasing from 93.0% in 2020 to 95.8% in 2021, then declining to 93.9% in 2022 and 92.3% in 2023, before rising again to 94.1% in 2024. The 2024 data indicate a positive shift, with kindergarten vaccination coverage increasing by 2% in Wake County and by 0.3% statewide[12]. These gains suggest early signs of recovery in routine immunizations following the disruptions caused by the COVID-19 pandemic.

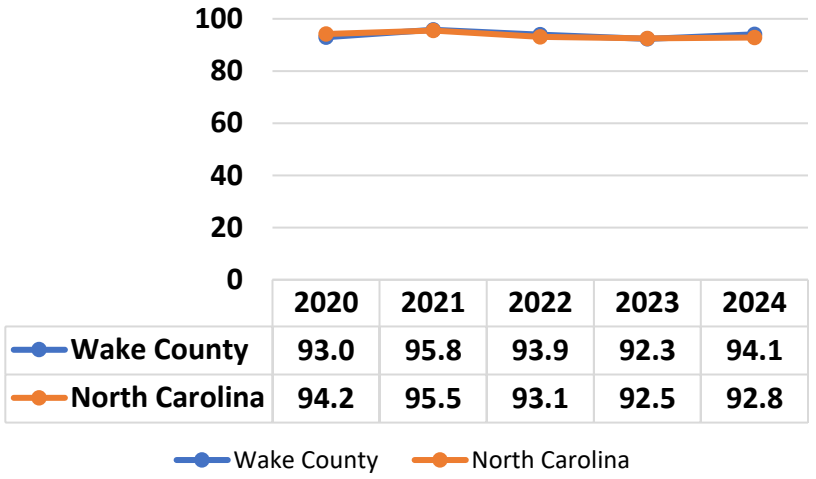
2024 Kindergarten Vaccination Status-

Wake County

- 94.1% were up to date on required immunizations (Figure 12)
- 2.0% were provisionally enrolled and still completing their required vaccines
- 2.4% had documented exemptions, the majority of which were religious (Figure 13)
- 2.0% were not up to date

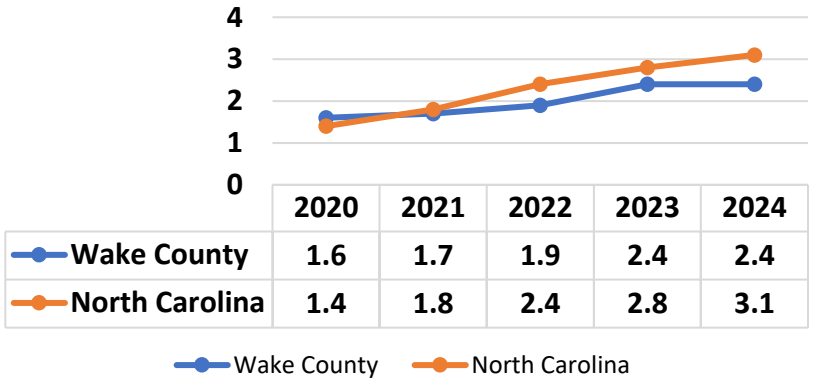
Exemptions have steadily increased since 2020, with religious exemptions making up the majority.[12]

Figure 12: Percent of Kindergarten Students Up-to-Date on Required Vaccinations



	2020	2021	2022	2023	2024
Wake County	93.0	95.8	93.9	92.3	94.1
North Carolina	94.2	95.5	93.1	92.5	92.8

Figure 13: Percent of Kindergarten Students with Vaccination Exemptions



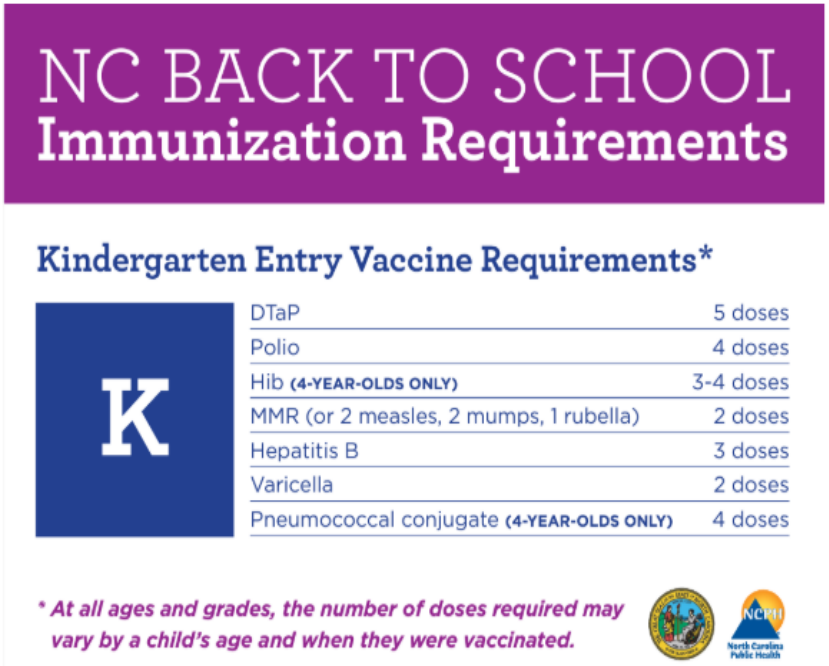
	2020	2021	2022	2023	2024
Wake County	1.6	1.7	1.9	2.4	2.4
North Carolina	1.4	1.8	2.4	2.8	3.1

Key Public Health Considerations:

- Immunization coverage remains relatively strong, though the fluctuations from year to year highlight the need for continued vigilance.
- The recent increase in vaccination rates in 2024 is encouraging but sustaining this progress is critical.
- The growing number of exemptions, particularly non-medical ones, needs ongoing monitoring.[13]
- Public health efforts should continue to focus on education, outreach, and improving access to vaccines.[14]
- Families are encouraged to stay informed, ensure their children are up to date on vaccines, and consult healthcare providers with any questions.[14]

Children entering kindergarten in Wake County and across North Carolina are required to receive vaccines that protect against serious illnesses, including measles, mumps, rubella, diphtheria, tetanus, pertussis, polio, hepatitis B, and varicella (Figure 14).[12]

Figure 14: North Carolina Back to School Immunization Requirements



7.2 Emerging Measles Activity and Public Health Considerations

Measles is a highly contagious viral disease that can cause serious complications such as pneumonia and encephalitis. Despite being declared eliminated in the United States in 2000, measles cases and outbreaks continue, primarily due to unvaccinated travelers bringing the virus from abroad. After a temporary decline during the COVID-19 pandemic, measles activity in the U.S. and worldwide is rising again, emphasizing the need for sustained vaccination efforts.

https://www.cdc.gov/measles/index.html

Key Public Health Considerations[15]:

- Maintain high MMR vaccination coverage; two doses are approximately 97% effective.
- Protect vulnerable populations, including immuno-compromised individuals and pregnant people.
- Ensure healthcare facilities remain prepared with proper airborne isolation and infection control protocols.
- Promote outreach to under-vaccinated communities to increase awareness and vaccination uptake.
- Educate travelers about measles risks and recommend MMR vaccination before international travel for all U.S. residents older than 6 months without evidence of immunity.
- Schools, early childhood education providers, and healthcare providers should ensure students are current with MMR vaccinations.
- If measles is identified, implement rapid case investigation, contact tracing, and outbreak response to prevent spread.

8.0 TUBERCULOSIS

https://www.cdc.gov/tb/index.html

Epidemiology

Overview: Tuberculosis (TB) is caused by the bacterium *Mycobacterium tuberculosis*. The bacteria typically attack the lungs but can attack any part of the body such as the kidney, spine, and brain.

Not all TB bacteria infections lead to sickness. Two TB-related conditions exist: latent TB infection, where the bacteria reside in the body without causing illness, and TB disease, wherein active bacteria make the person sick.

Symptoms: Bad cough that lasts three weeks or longer, chest pain, coughing up blood or sputum, weakness or fatigue, weight loss, no appetite, chills, fever, sweating at night.

Transmission: TB bacteria can spread through the air from one person to another.

Treatment: Treatment can take four, six, or nine months depending on the regimen which includes a 4-month rifapentine-moxifloxacin regimen and a six- or nine-month RIPE (rifampin, isoniazid, pyrazinamide and ethambutol) TB regimen. Directly Observed Therapy (DOT) helps patients' complete treatment.

Prevention: Close contact with infectious TB patients should be avoided.

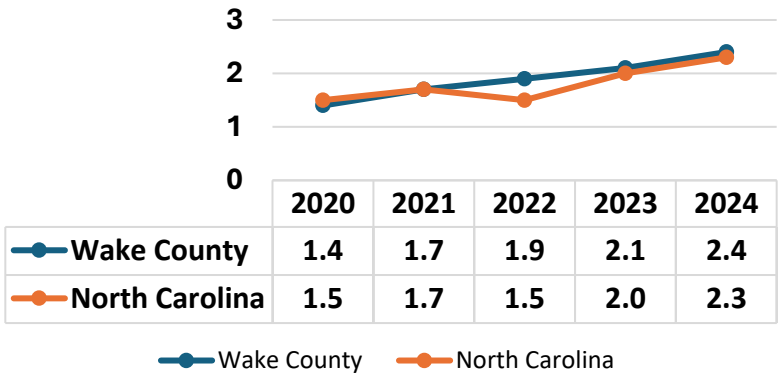
Local Facts and Figures:

Tuberculosis incidence rates in Wake County increased by 14% in 2024 compared to 2023.

In 2024:

- 29 cases of active TB were reported.
- Majority of cases (41%) reported among ages 25-44 years.
- The majority of cases (48%) were reported among the Asian population.

Figure 15: Tuberculosis Incidence Rates, 2020-2024



	2020	2021	2022	2023	2024
Wake County	1.4	1.7	1.9	2.1	2.4
North Carolina	1.5	1.7	1.5	2.0	2.3

*Rates per 100,000 population

Figure 16: Tuberculosis by Age Group, 2024

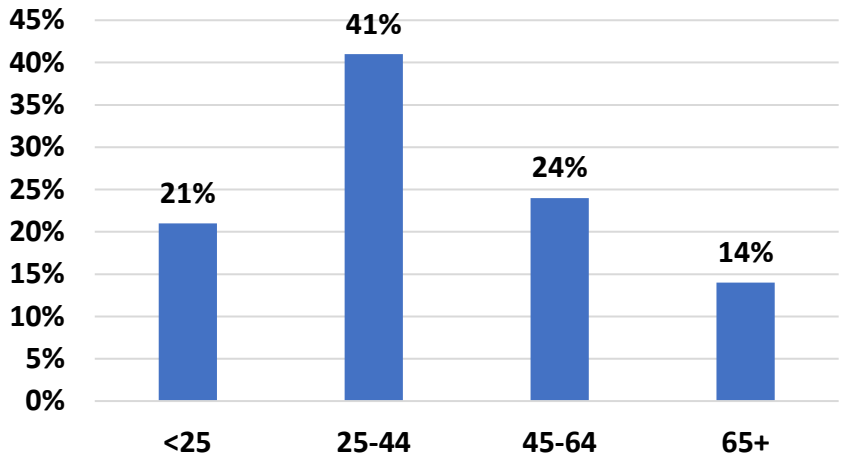


Figure 17: Tuberculosis by Race, 2024

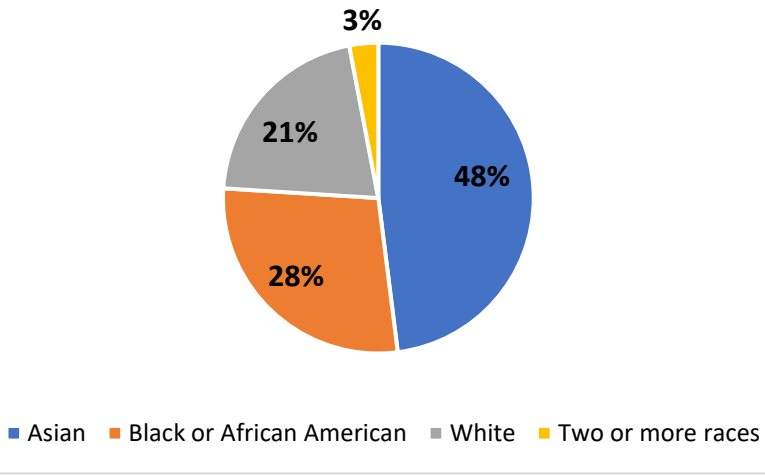
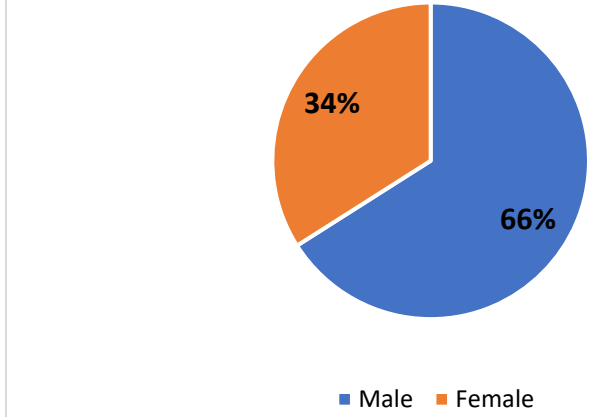


Figure 18: Tuberculosis by Sex, 2024



9.0 FOODBORNE DISEASES

Salmonellosis

https://www.cdc.gov/salmonella

Epidemiology

Overview: Salmonellosis is an infectious disease caused by *Salmonella* bacteria.

Symptoms: Common symptoms include watery diarrhea, fever, and abdominal cramps between 12 and 72 hours after infection.

Transmission: Transmission occurs by eating or drinking contaminated food or water. *Salmonella* bacteria can also spread by direct contact with an infected person or animal.

Treatment: Most people recover without treatment. However, young children, older adults, and those with severe diarrhea should see a healthcare provider for treatment options.

Prevention: Prevention methods include washing hands after contact with animals and before eating, drinking only pasteurized milk, avoiding untreated water, and cooking food to temperature.

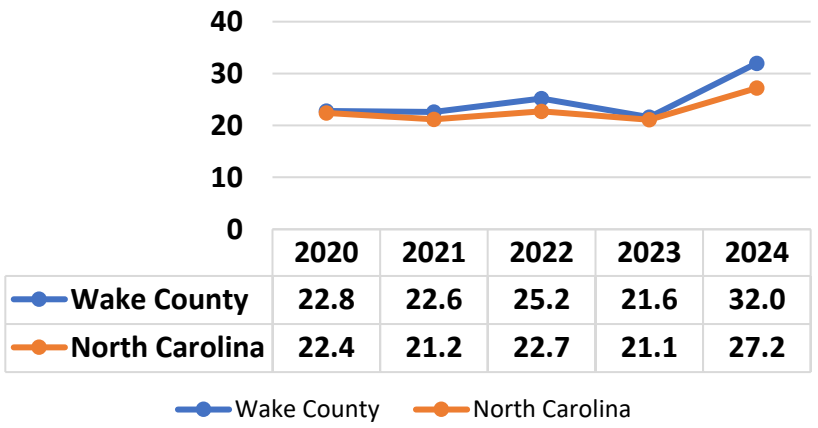
Local Facts and Figures:

Salmonellosis incidence rates in Wake County increased by 48% in 2024 compared to 2023 and have consistently been higher than the state rate over the past five years.

In 2024:

- 382 cases were reported.
- 25% of cases were reported among children ages 0-4 years.
- The majority (55%) of cases were reported among the White population.

Figure 19: Salmonellosis Incidence Rates, 2020-2024



	2020	2021	2022	2023	2024
Wake County	22.8	22.6	25.2	21.6	32.0
North Carolina	22.4	21.2	22.7	21.1	27.2

*Rates per 100,000 population

Figure 20: Salmonellosis by Age Group, 2024

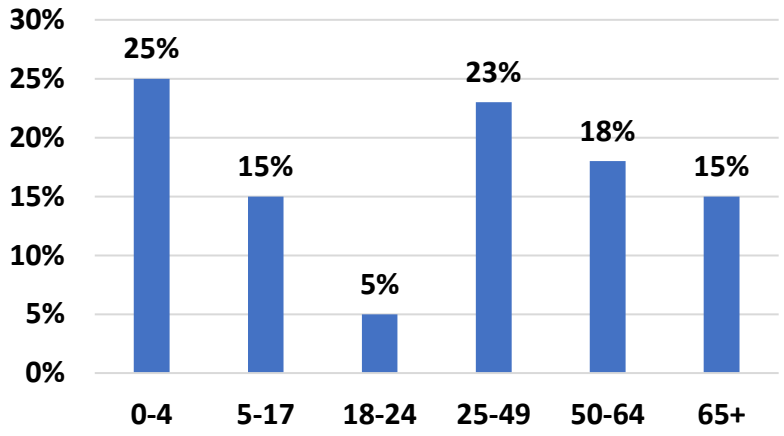


Figure 22: Salmonellosis by Sex, 2024

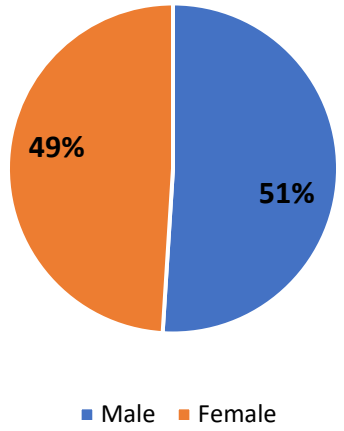
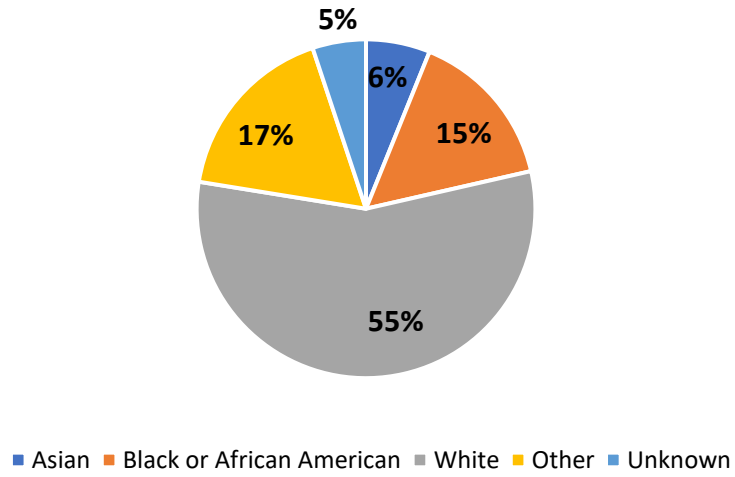


Figure 21: Salmonellosis by Race, 2024



Cyclosporiasis

https://www.cdc.gov/cyclosporiasis/index.html

Epidemiology

Overview: Cyclosporiasis is an intestinal illness caused by the microscopic parasite *Cyclospora cayetanensis*, also known as Cyclospora.

Symptoms: Common symptoms include watery diarrhea, loss of appetite, weight loss, cramping, bloating, increased gas, nausea, and fatigue. Less common symptoms may include vomiting, body aches, headache, low-grade fever, and other flu-like symptoms.

Transmission: Cyclospora spreads when people eat food or drink water that is contaminated with feces (stool). Direct person-to-person transmission is unlikely.

Treatment: Supportive care, such as rest and plenty of fluids, is advised. Consult a healthcare provider if symptoms occur. Cyclosporiasis is treated with trimethoprim-sulfamethoxazole (Bactrim, Septra, Cotrim).

Prevention: To prevent cyclosporiasis, avoid food or water that may be contaminated with feces. When traveling to endemic areas (tropical and subtropical regions), note that routine chemical disinfection or sanitization is unlikely to kill Cyclospora.

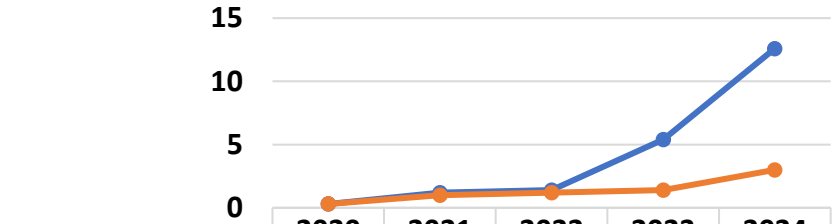
Local Facts and Figures:

Cyclosporiasis incidence rates in Wake County rose sharply in 2023 and increased by an additional 133% in 2024 compared to the previous year, significantly exceeding the state rate.

In 2024:

- 150 cases were reported.
- 37% of cases were reported among individuals ages 50-64.
- Majority (70%) of cases were reported among the White population.

Figure 23: Cyclosporiasis Incidence Rates, 2020-2024



	2020	2021	2022	2023	2024
Wake County	0.3	1.2	1.4	5.4	12.6
North Carolina	0.3	1	1.2	1.4	3.0

*Rates per 100,000 population

Figure 24: Cyclosporiasis by Age Group, 2024

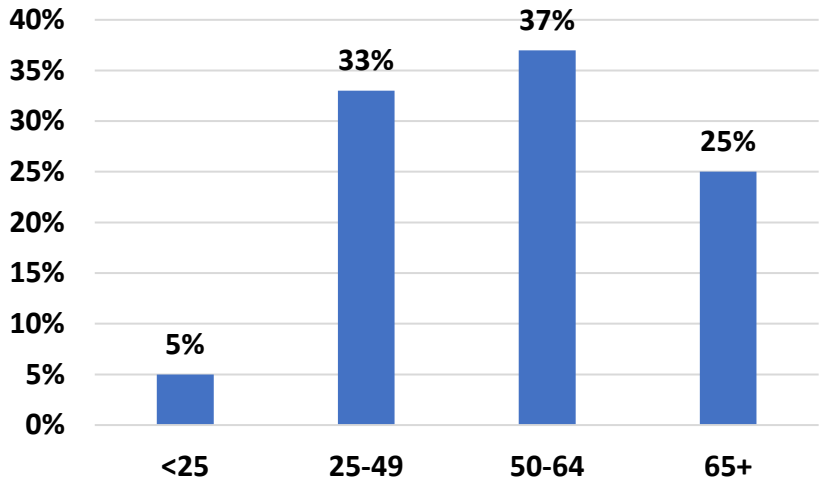


Figure 26: Cyclosporiasis by Sex, 2024

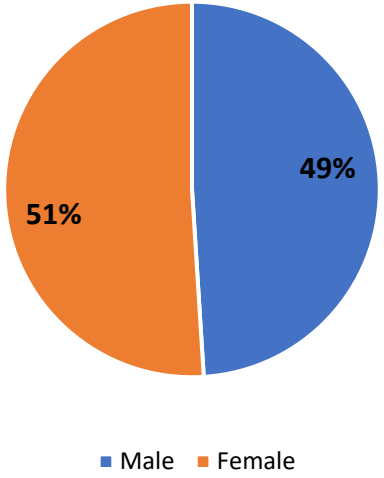
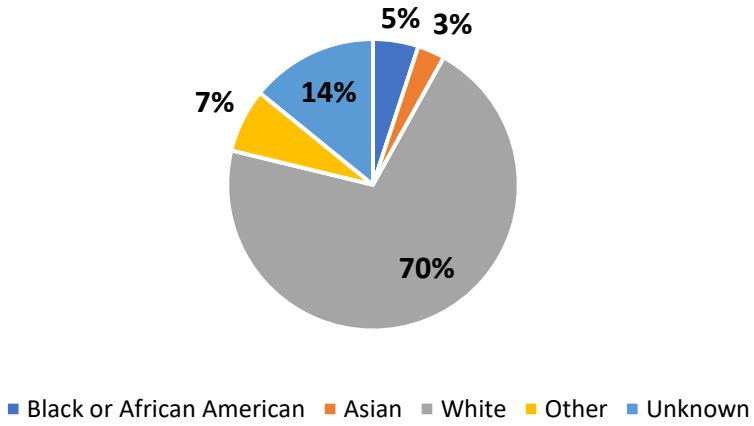


Figure 25: Cyclosporiasis by Race, 2024



Campylobacteriosis

https://www.cdc.gov/campylobacter

Epidemiology

Overview: Campylobacteriosis is an infectious disease caused by the *Campylobacter* bacteria. It is one of the most common causes of diarrheal illness in the U.S.

Symptoms: Symptoms typically include diarrhea (often bloody), fever, abdominal cramps, and bloating. Symptoms occur within 2-5 days after exposure and last about a week.

Transmission: Most infections are associated with eating raw or undercooked poultry or contamination transferred to other foods.

Treatment: Most people recover without treatment, and antibiotics are only recommended for the very ill.

Prevention: Proper hand hygiene before eating and after contact with animals will help prevent the spread of disease. Avoiding raw milk also helps to prevent infection.

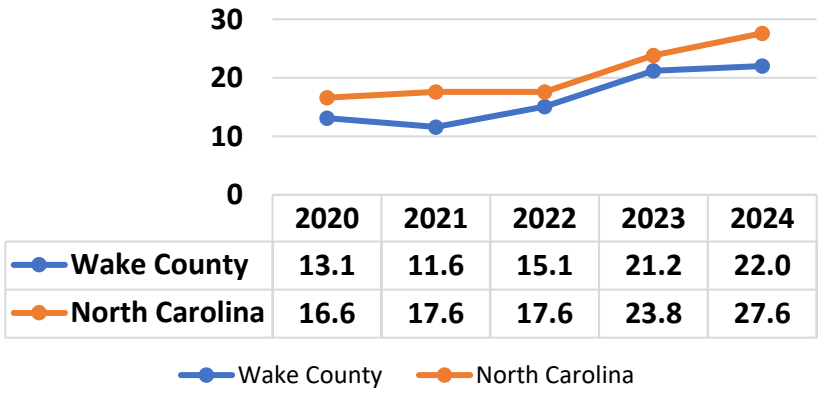
Local Facts and Figures:

Campylobacteriosis incidence rates in Wake County increased by 4% in 2024 compared to 2023 and have consistently been lower than the state rate over the past five years.

In 2024:

- 262 cases were reported.
- 31% of cases were reported among individuals ages 25-49.
- The majority (64%) of cases were reported among the White population.

Figure 27: Campylobacteriosis Incidence Rates, 2020-2024



	2020	2021	2022	2023	2024
Wake County	13.1	11.6	15.1	21.2	22.0
North Carolina	16.6	17.6	17.6	23.8	27.6

*Rates per 100,000 population

Figure 28: Campylobacteriosis by Age Group, 2024

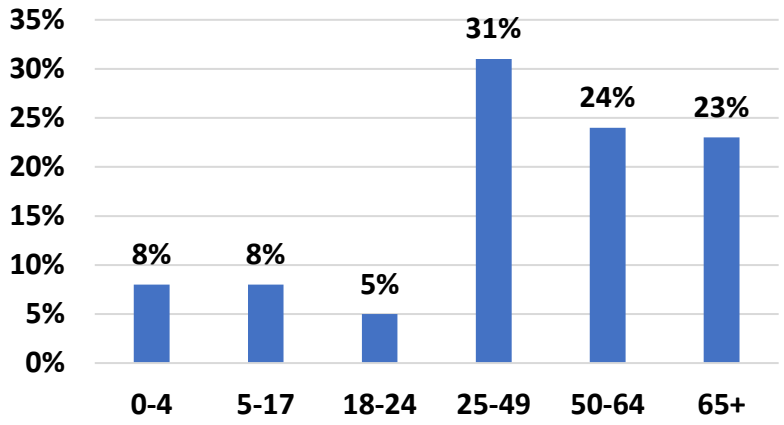


Figure 29: Campylobacteriosis by Race, 2024

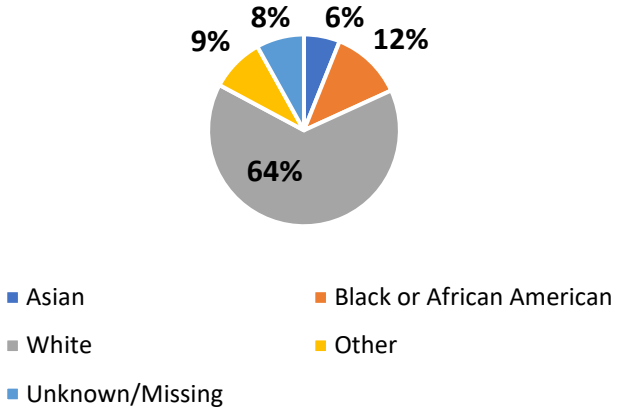
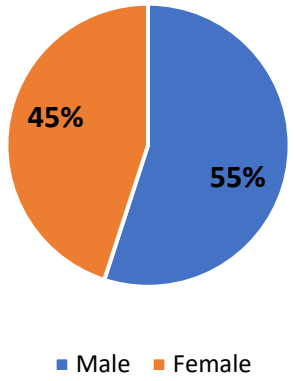


Figure 30: Campylobacteriosis by Sex, 2024



Shigellosis

https://www.cdc.gov/shigella

Epidemiology

Overview: Shigellosis is an infectious disease caused by a group of bacteria called *Shigella*. There are four different species of *Shigella* which include *Shigella sonnei, Shigella flexneri, Shigella boydii,* and *Shigella dysenteriae*.

Symptoms: Symptoms commonly include diarrhea, fever, and stomach cramps. Some individuals may be asymptomatic.

Transmission: The disease is spread person to person via the fecal-oral route. Shigella is very contagious and only a small number of bacteria are needed to make someone ill.

Treatment: Treatment is supportive care. Antibiotics are not recommended unless the infection is severe. Anti-diarrheal medications are also not recommended.

Prevention: Frequent and proper handwashing with soap can help stop the spread of disease.

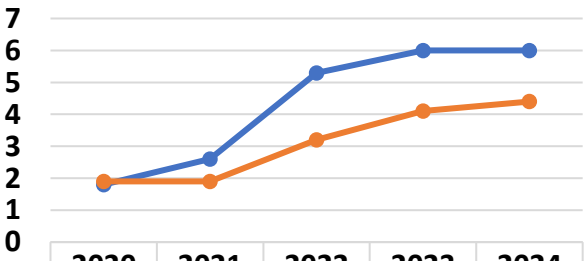
Local Facts and Figures:

Shigellosis incidence rates in Wake County remained steady in 2024 compared to 2023 and have remained higher than the state rate since 2021.

In 2024:

- 72 cases were reported.
- The majority (47%) of cases were reported among those 25-49 years.
- The majority of cases (77%) were reported among males.

Figure 31: Shigellosis Incidence Rates, 2020-2024



	2020	2021	2022	2023	2024
Wake County	1.8	2.6	5.3	6.0	6.0
North Carolina	1.9	1.9	3.2	4.1	4.4

*Rates per 100,000 population

Figure 32: Shigellosis by Age Group, 2024

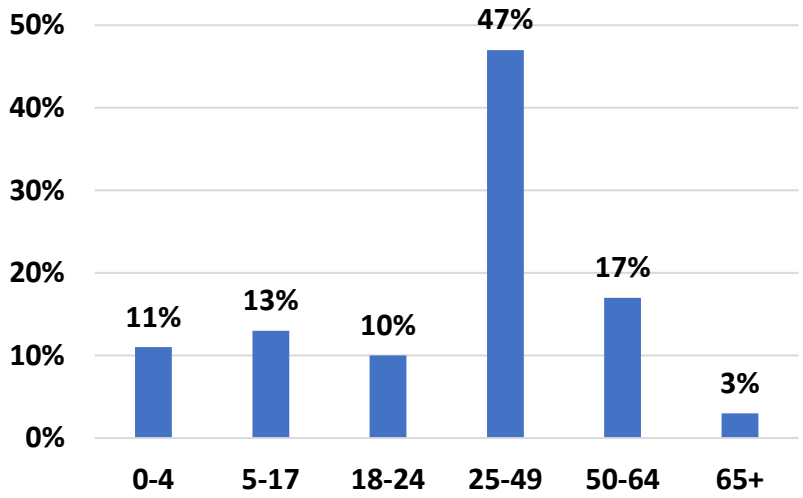


Figure 33: Shigellosis by Race, 2024

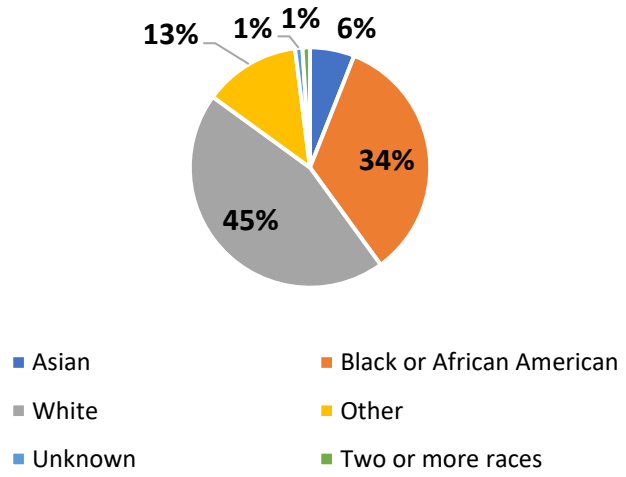
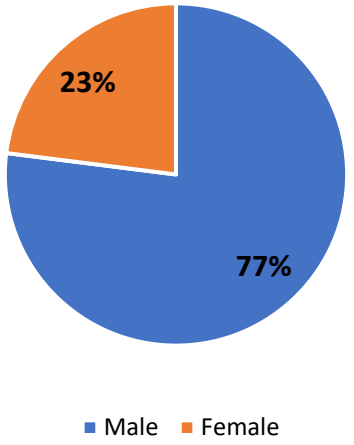


Figure 34: Shigellosis by Sex, 2024



E. coli

https://www.cdc.gov/ecoli

Epidemiology

Overview: *E. coli* is an intestinal disease caused by the bacteria *Escherichia Coli.* Strains of *E. coli* can produce a toxin that causes serious illness.

Symptoms: Common symptoms include bloody diarrhea, and *E. coli* can create a condition called hemolytic uremic syndrome. This syndrome can cause kidney failure.

Transmission: The disease is spread through the fecal-oral route by the consumption of contaminated food, raw milk, untreated water, and other contact with feces of an infected person.

Treatment: Treatment is supportive care. Antibiotics should not be used to treat infection.

Prevention: Prevention methods include proper hand hygiene before handling food and after contact with animals. Ensure food is cooked to the proper temperature.

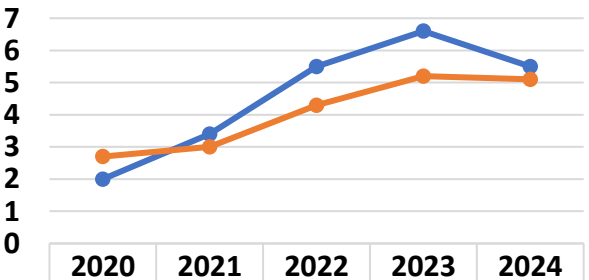
Local Facts and Figures:

E. coli incidence rates in Wake County decreased by 17% in 2024 compared to 2023 and have remained higher than the state rate since 2021.

In 2024:

- 66 cases were reported.
- More than half of (52%) cases were reported among those between the ages of 25 and 64 years.
- The majority (61%) of cases were reported among the White population.

Figure 35: *E. coli* Incidence Rates, 2020-2024



	2020	2021	2022	2023	2024
Wake County	2.0	3.4	5.5	6.6	5.5
North Carolina	2.7	3.0	4.3	5.2	5.1

*Rates per 100,000 population

Figure 36: *E. coli* by Age Group, 2024

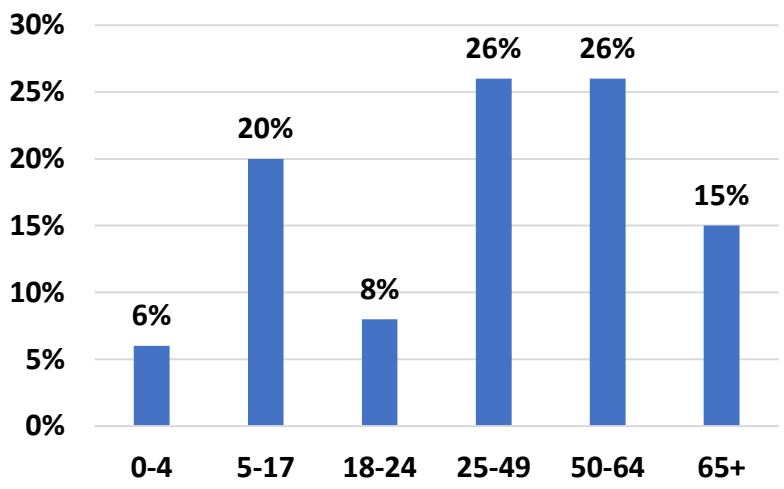


Figure 37: *E. coli* by Race, 2024

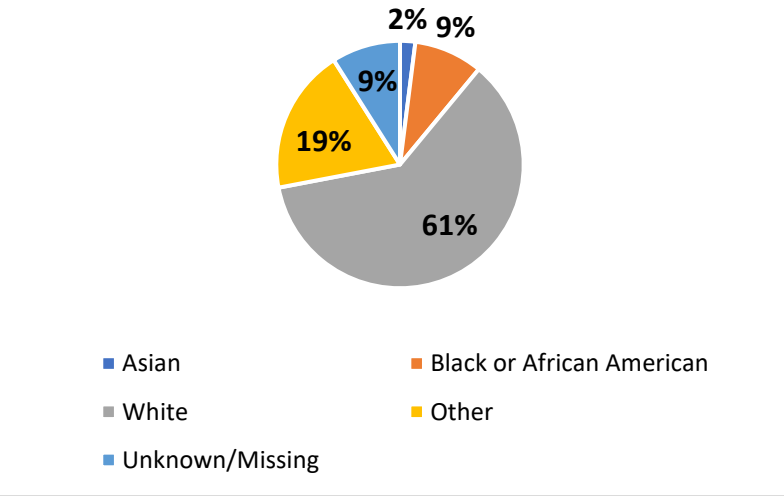
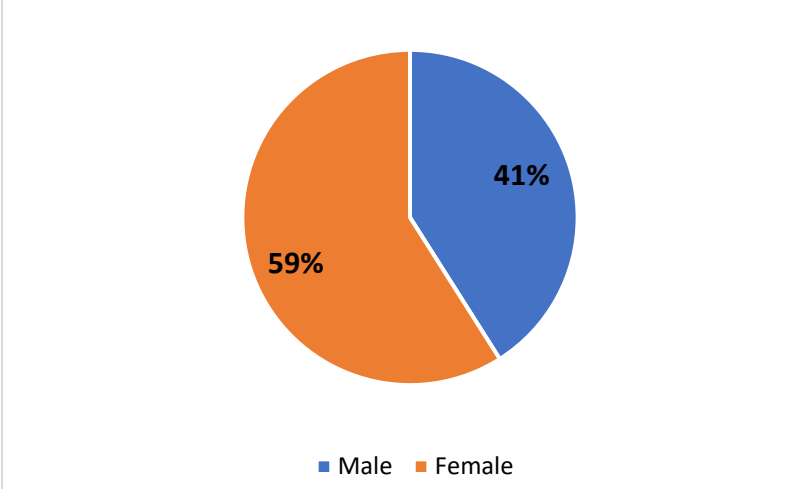


Figure 38: *E. coli* by Sex, 2024



10.0 FOODBORNE OUTBREAKS AND PREVENTION

All foodborne and/or gastrointestinal outbreaks must be reported to the local health department and the North Carolina Division of Public Health (NC DPH). In 2024, the Wake County Public Health Communicable Disease Surveillance Team (CDST) investigated four outbreaks involving these illnesses. Most sickened individuals were infected with Cyclospora. However, the majority of cyclosporiasis cases in the county during 2024 were not outbreak-related. From May through August 2024, there were 146 confirmed and probable cases in Wake County, of which only 24% (35 cases) were related to an outbreak involving multiple restaurants while the remaining 76% (111 cases) were not.

Individuals can help prevent the spread of most foodborne gastrointestinal illnesses by [16]:

- Washing hands with soap and water before eating, after using the bathroom, and before handling food.
    - Soap and water are the most effective way to remove germs like norovirus.
    - If unavailable, use an alcohol-based hand sanitizer with at least 60% alcohol.
- Practicing safe produce handling.
    - Wash fruits and vegetables under running water before eating or preparing.
    - Scrub firm produce (e.g., melons, cucumbers) with a clean brush.
    - Trim away bruised or damaged areas before use.
- Preventing cross-contamination.
    - Wash cutting boards, utensils, and surfaces used for raw meat or seafood before using them with produce or ready-to-eat foods.
- Avoiding sharing personal items such as drinking glasses or eating utensils.

Additional prevention measures include [16]:

- Safe storage of produce: Refrigerate cut, peeled, or cooked fruits and vegetables within 2 hours. Store them separately from raw meat, poultry, and seafood.
- Safe food and water while traveling: In some countries, drink only bottled or boiled water, or sealed carbonated beverages. Avoid tap water, fountain drinks, and ice. Depending on the destination, extra precautions with food may be needed. Country-specific traveler's health guidance is available (https://wwwnc.cdc.gov/travel/destinations/list).
- Seeking medical care: Anyone who becomes ill after eating potentially contaminated food should consult a healthcare provider-especially if diarrhea lasts more than three days.

The Wake County Communicable Disease Program provides a guide for long-term care facilities on preventing the transmission of gastrointestinal illnesses and responding effectively when cases occur. This guide, included in Appendix 17.2 of this report and can also be accessed here, offers recommendations similar to those outlined above for individuals, along with facility-specific checklists for both prevention and response when a resident or staff member becomes ill.

11.0 VECTOR-BORNE DISEASES

https://www.cdc.gov/vector-borne-diseases/about/index.html

Vector-borne diseases (VBDs) are illnesses transmitted by mosquitoes, ticks, and fleas, and can sometimes lead to serious or life-threatening illness. In Wake County, tick-borne diseases remain the primary concern. As shown in Table 5, Lyme disease cases have steadily increased over the past five years, reaching their highest level in 2024. Cases of ehrlichiosis and spotted fever have also generally risen, although annual totals vary. Mosquito-borne diseases, such as chikungunya, dengue, malaria, and West Nile Virus, remain rare in Wake County. Reported cases have been travel-associated with no evidence of local transmission at this time.

Who Is at Risk?

While anyone can get a vector-borne disease, some people are more likely to be exposed to or to have more serious illness.

Those at higher risk include:

- People who spend a lot of time outdoors, such as hikers, campers, gardeners, and outdoor workers.
- Children, who often play outside in grassy or wooded areas where ticks live.
- Pet owners, since pets like dogs can carry ticks into the home.
- Older adults and people with weakened immune systems, who may develop more severe illness if infected.

Contributing Factors to Increased Risk Locally and Nationally:

- Suburban growth and changing land use: More homes and recreational spaces near wooded or grassy areas increase tick exposure.
- Warmer, longer summers: Extended tick and mosquito seasons give these pests more time to spread disease.
- Travel and global connections: Individuals who travel to areas where diseases like malaria or dengue are common can bring infections back to communities.

In North Carolina, several local efforts are bringing more awareness to prevent tick and mosquito borne diseases:

In April 2025, North Carolina's Governor Josh Stein proclaimed April as Tick and Mosquito Awareness Month in North Carolina. This proclamation creates the opportunity for North Carolina residents and health care providers to learn more about the threat, medical implications, and prevention of these diseases.[18] For more information on tick distribution and tickborne illness in North Carolina, visit https://epi.dph.ncdhhs.gov/cd/ticks/figures.html.

Join the Fight the Bite Campaign

The "Fight the Bite" campaign, led by the North Carolina Department of Health and Human Services (NCDHHS), aims to increase public awareness about tick- and mosquito-borne diseases throughout the state. Local schools are actively participating through a K–12 poster contest, which promotes the campaign's message in an engaging and educational manner. Community-wide efforts such as using insect repellent and eliminating standing water are essential to reducing the risk of vector-borne diseases and protecting public health. [19]

While mosquito-borne diseases remain rare in Wake County, the steady rise in tick-borne illnesses highlights vector-borne diseases as an emerging public health concern in our community.

Table 5 shows confirmed, suspect and probable cases of tickborne (ehrlichiosis, Lyme disease, and Spotted fever) and mosquito-borne (chikungunya, dengue, malaria, West Nile Virus, and Zika virus) disease over the last five years in Wake County. For tickborne diseases, many more cases are suspected and investigated than can be confirmed. This is due to the difficulty in getting clinical and/or laboratory information needed to meet the confirmed case definition.

Table 5: Vector-borne Diseases in Wake County, Annual Counts, 2020-2024

		2020	2021	2022	2023	2024
All Statuses (Confirmed, Probable, and Suspect)						
		No. of Cases	No. of Cases	No. of Cases	No. of Cases	No. of Cases
Tick-borne	Ehrlichiosis, chaffeensis	8	12	9	19	21
	Spotted Fever	11	4	16	15	20
	Lyme Disease	4	20	25	10	27
Mosquito-borne	Chikungunya	2	1	0	0	4
	Dengue	0	2	0	4	15
	Malaria	1	7	11	7	11
	West Nile Virus	0	2	1	3	3
	Zika Virus	0	0	0	0	0

Preventive Measures[17]

Preventing Mosquito Bites

- Wear long sleeve shirts and long pants, treat clothing with permethrin (0.5%) for extra protection, effective for several washes.
- Use EPA registered insect repellents containing DEET, picaridin, IR3535, oil of lemon eucalyptus, para-menthane-diol, or 2-undecanone.
- Mosquito-proof your home using screens on windows and doors.
- Eliminate breeding sites by preventing stagnant water.

Preventing Tick Bites

- Wear a hat and light-colored clothing (long sleeves and pants tucked into boots or socks) to spot ticks easily.
- Use EPA registered insect repellents containing DEET, picaridin, IR3535, oil of lemon eucalyptus, para-menthane-diol, or 2-undecanone.
- Avoid ticks in wooded/brushy areas with high grasses and leaf litter by walking in the center of trails.
- Check clothing and skin for ticks you may have encountered while outdoors; shower soon after returning indoors.

Vaccination

- Vaccines for vector borne diseases such as malaria, Japanese encephalitis, tickborne encephalitis and yellow fever are available for travelers. Check with your healthcare provider if you are eligible.

Stay informed

- Stay updated on the current situation and specific preventive measures recommended by local health authorities in your region.
- Follow destination-specific guidelines for travel.

12.0 SEXUALLY TRANSMITTED DISEASES (STDS)

A sexually transmitted infection (STI) is a virus, bacteria, fungus, or parasite spread through sexual contact. [20] Many STIs have no symptoms, so people can have an infection but be unaware of it. [20] A sexually transmitted disease (STD) develops because of an STI, and the term implies that the infection has led to some symptom of disease. [20] This section contains early syphilis, gonorrhea, and chlamydia data from NCEDSS and HIV data from the NCDHHS Division of Public Health HIV/STD/Hepatitis Surveillance Unit. [21] STD cases during 2020 and 2021 may have been undetected and therefore underreported, because testing and diagnostic services were reduced in those years due to the COVID-19 pandemic.

Early Syphilis

https://www.cdc.gov/syphilis

Epidemiology

Overview: Syphilis is a sexually transmitted disease caused by the bacterium Treponema pallidum.

Symptoms: Syphilis occurs in stages, with different symptoms at each stage. In the primary stage, one or more sores may develop where the exposure to syphilis occurred, such as the penis, vagina, anus, or mouth. In the secondary stage, skin rashes or more sores may develop, as well as fever, sore throat, headaches, muscle aches, and fatigue.

Transmission: Syphilis spreads through direct contact with a syphilis sore, particularly during vaginal, anal, or oral sex, or to the baby during pregnancy.

Treatment: Syphilis can be treated with antibiotics prescribed by a healthcare provider. Treatment may not reverse some harmful effects of syphilis.

Prevention: Prevent STI exposure through proper and consistent use of condoms and regularly testing yourself and any sexual partners.

Early syphilis includes primary, secondary, and early non-primary non-secondary syphilis cases. In this report, the data for early syphilis include both confirmed and probable cases due to a change in the case definition for a confirmed syphilis case that occurred in 2022. A confirmed syphilis case now must have a positive result for T. pallidum using a darkfield microscopy test in a clinical specimen that was not obtained from the oropharynx and is not potentially contaminated by stool or from a polymerase chain reaction (PCR) test in any clinical specimen. Positive results from other laboratory tests lead to a probable case status, not confirmed.

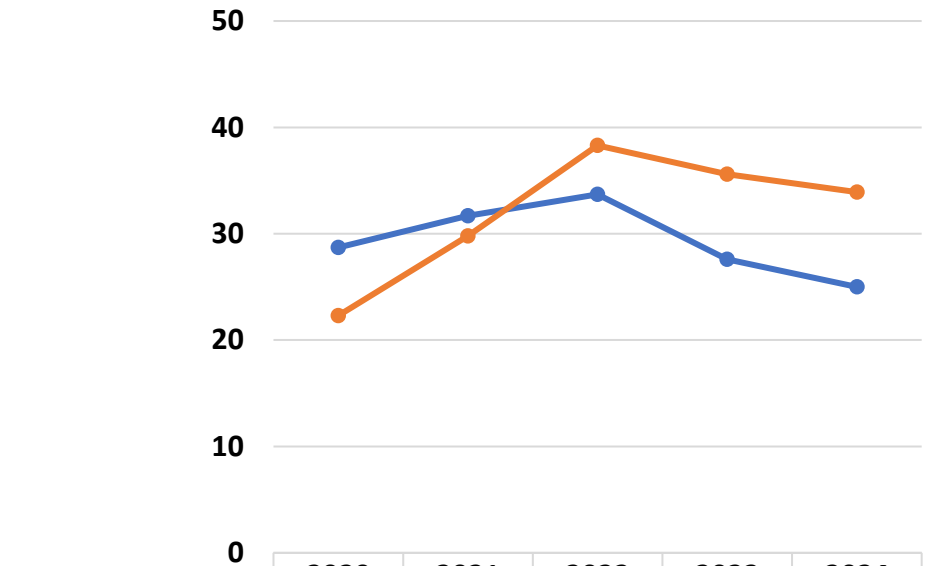
The change in case definition caused many cases from 2022 forward to be categorized as probable cases when previously, they would have been confirmed. To compare syphilis data from 2022, 2023, and 2024 to previous years, all five years include both confirmed and probable cases.

Local Facts and Figures:

297 Early syphilis cases were reported in Wake County in 2024 (as of July 2025). Of those cases:

- 70 were primary syphilis
- 116 were secondary syphilis
- 111 were early non-primary non-secondary syphilis
- The rate of Early syphilis declined both in North Carolina and Wake County from 2023 to 2024.
- The majority (83%) of the cases were reported among males.
- Over half (55%) of the cases were reported among Black or African Americans.
- The majority (61%) of the cases were reported in individuals ages 20-39.
- The zip codes with the highest rates of Early syphilis cases per 1,000 population in 2024 were 27601, 27610, and 27604.

Figure 39: Early Syphilis Incidence rates, 2020-2024



	2020	2021	2022	2023	2024
Wake County	28.7	31.7	33.7	27.6	25.0
North Carolina	22.3	29.8	38.3	35.6	33.9

*Rates per 100,000 population. Note: counts for sexually transmitted diseases in this figure are limited to cases with Wake County residential addresses. Counts may differ from the *Counts and Rates of Reportable Diseases and Conditions in Wake County, NC* table (includes individuals tested in Wake County but with addresses in other counties) later in this report.

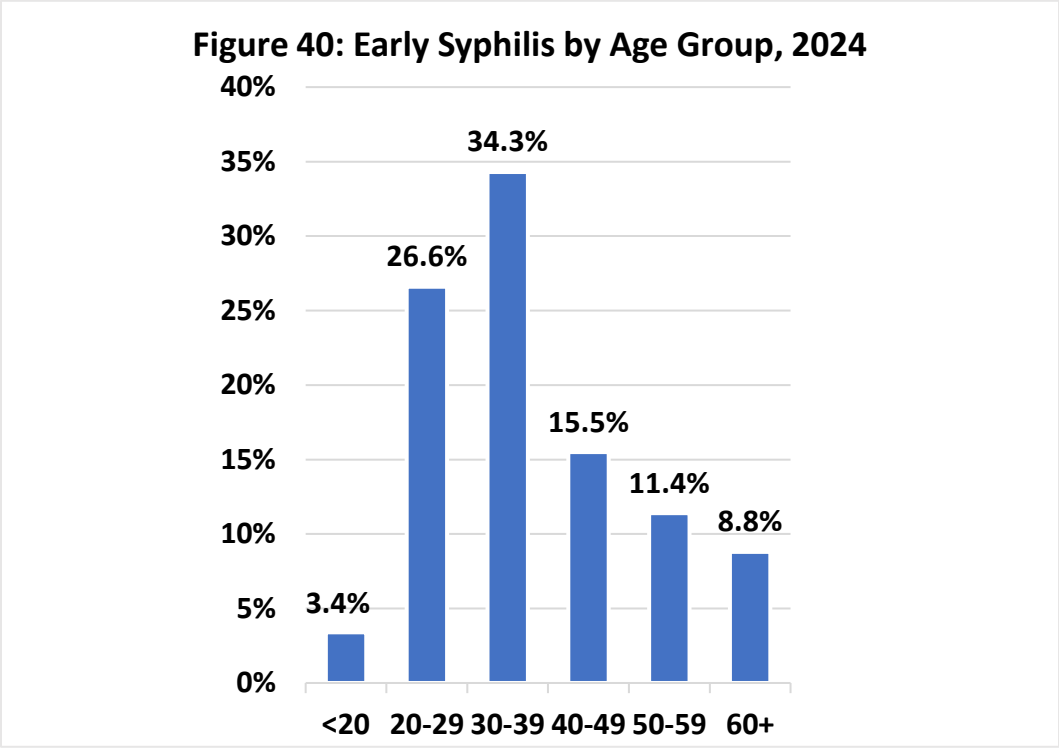


Figure 40: Early Syphilis by Age Group, 2024
40%
35%
30%
25%
20%
15%
10%
5%
0%
3.4%
26.6%
34.3%
15.5%
11.4%
8.8%
<20
20-29
30-39
40-49
50-59
60+

Figure 41: Early Syphilis by Race, 2024

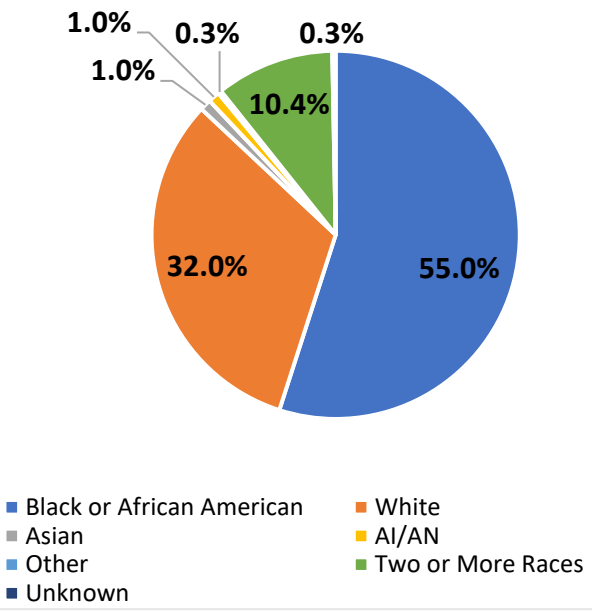
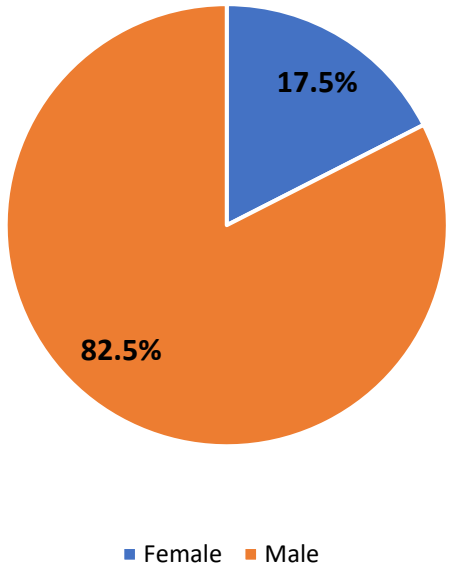
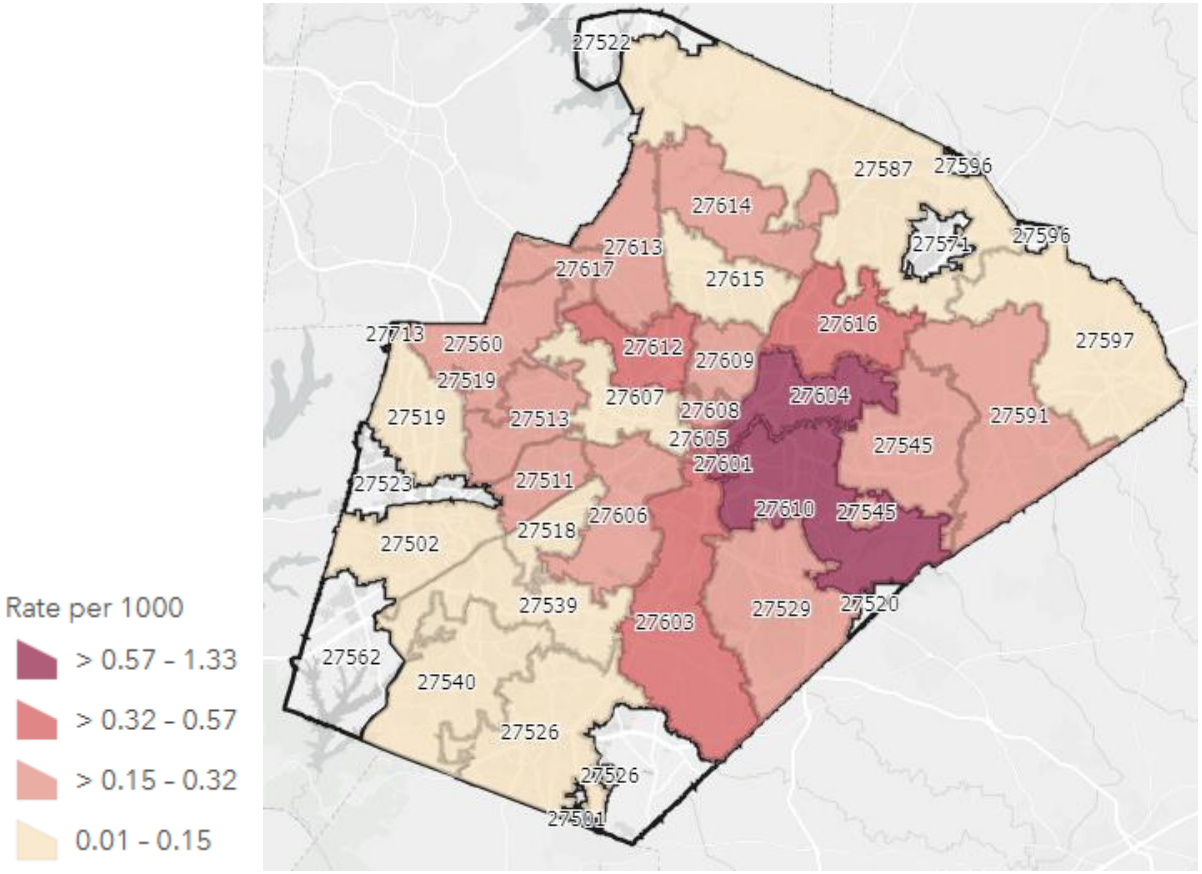


Figure 42: Early Syphilis by Sex, 2024



Note: "Other" and "Unknown" categories combined represent 0.6%.

Figure 43: 2023 Early Syphilis Rates Per 1,000 Population by Zip Code, Wake County



Note: Zip code-level rates were calculated using 2023 population estimates as 2024 estimates at the zip code level were not available as of 7/22/2025.

Human Immunodeficiency Virus (HIV)

https://www.cdc.gov/hiv

Epidemiology

Overview: HIV (human immunodeficiency virus) is a virus that when untreated can cause AIDS (Acquired Immunodeficiency syndrome).

Symptoms: Common early symptoms of HIV include flu-like symptoms such as fever, sore throat, muscle aches, and fatigue. Some people do not experience any symptoms. If untreated, HIV infection can become chronic, eventually leading to AIDS.

Transmission: HIV is transmitted through exposure to certain body fluids of an infected person. Most transmission occurs through anal sex, vaginal sex, or shared needles. Only blood, semen, pre-seminal fluid, rectal fluids, vaginal fluids, and breast milk can contain HIV.

Treatment: HIV can be treated with antiretroviral therapy (ART), which is prescribed by a healthcare provider. ART should be started as soon as possible once HIV is diagnosed. Though HIV cannot currently be cured, proper treatment prevents AIDS and transmission of HIV.

Prevention: Prevent HIV exposure through proper and consistent use of condoms and regularly testing yourself and any sexual partners. HIV infection can also be prevented using PrEP or PEP, which can be prescribed by a healthcare provider to anyone at risk of getting HIV.

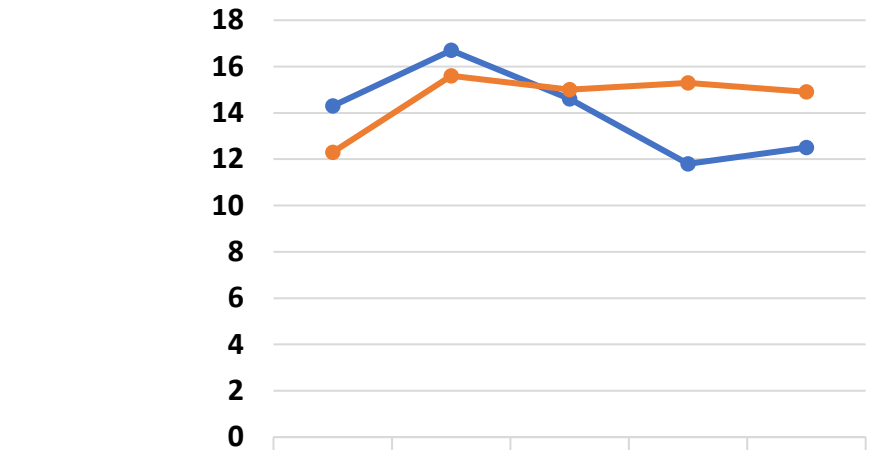
Local Facts and Figures:

In 2024:

- The rate of newly diagnosed HIV cases increased from 2023 to 2024.
- 149 newly diagnosed HIV cases were reported in Wake County in 2024 (as of July 2025).
- The majority (77%) of the cases were reported among males.
- Nearly half (47%) of the cases were reported among Black or African Americans.
- The majority (60.4%) of the cases were reported among individuals ages 20-39.

.

Figure 44: New HIV Incidence Rates



	2020	2021	2022	2023	2024
Wake County	14.3	16.7	14.6	11.8	12.5
North Carolina	12.3	15.6	15	15.3	14.9

*Rates per 100,000 population. Note: counts for sexually transmitted diseases in this figure are limited to cases with Wake County residential addresses. Counts may differ from the Counts and Rates of Reportable Diseases and Conditions in Wake County, NC table (includes individuals tested in Wake County but with addresses in other counties) later in this report.

Figure 45: New HIV by Age Group, 2024

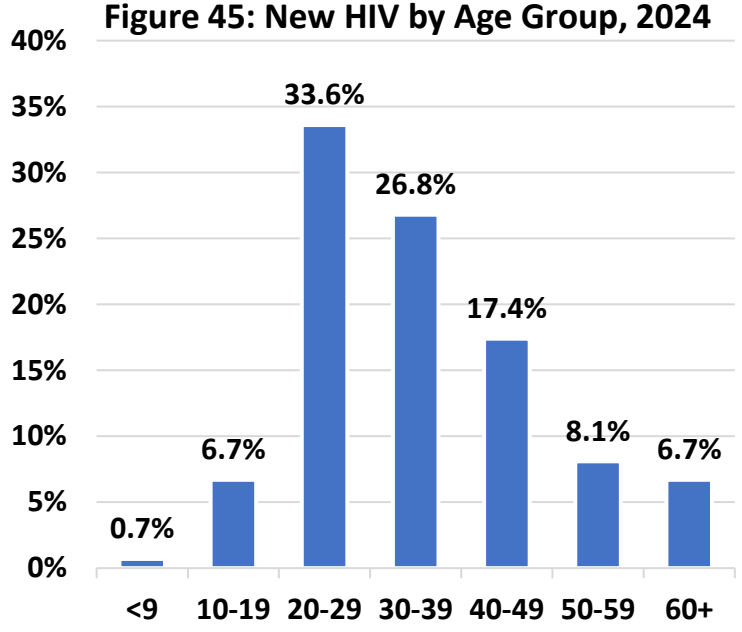


Figure 46: New HIV by Race, 2024

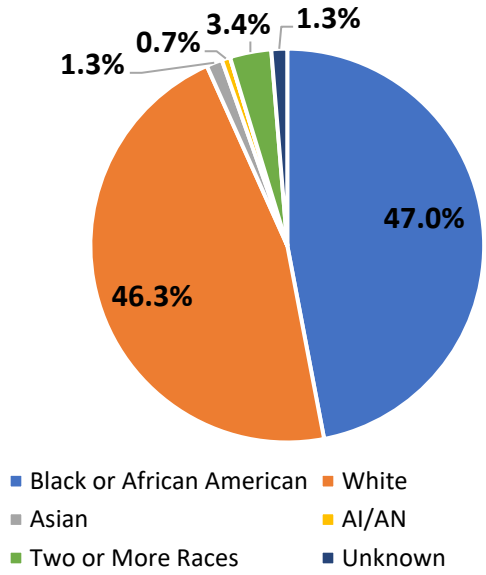
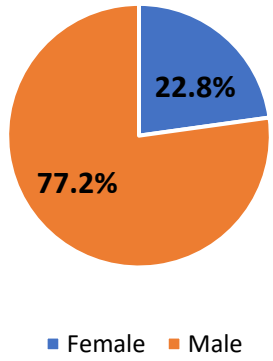


Figure 47: New HIV by Sex, 2024



Gonorrhea

https://www.cdc.gov/gonorrhea

Epidemiology

Overview: Gonorrhea is a sexually transmitted disease caused by the bacterium Neisseria gonorrhoeae.

Symptoms: Common symptoms include painful or burning sensations when urinating, increased vaginal discharge or bleeding between periods, or discharge from the penis that is white, yellow, or green. Rectal infections are also possible and can cause rectal discharge, anal itching, or painful bowel movements.

Transmission: Gonorrhea spreads through vaginal, anal, or oral sex with someone who is infected.

Treatment: Gonorrhea can be treated with antibiotics prescribed by a healthcare provider.

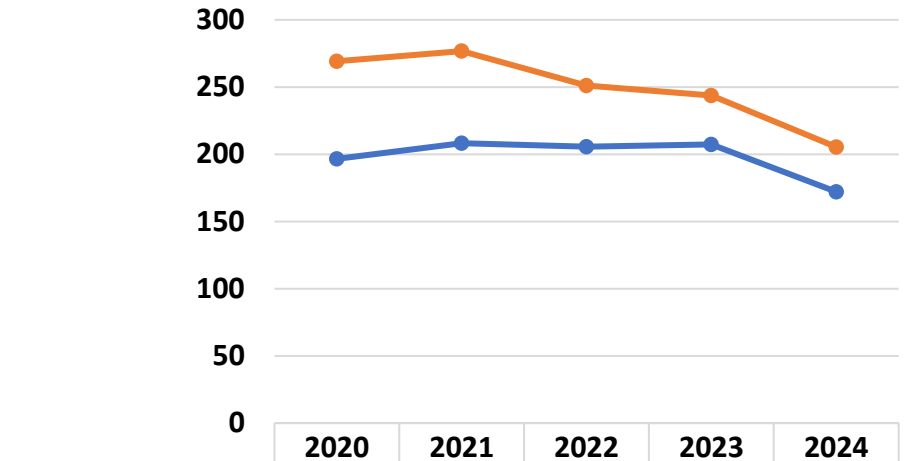
Prevention: Prevent STI exposure through proper and consistent use of condoms and regularly testing yourself and any sexual partners.

Local Facts and Figures:

In 2024:

- 2,048 cases were reported (as of July 2025).
- The majority (73%) of cases were reported in individuals ages 20-39 years.
- The majority of cases (65%) were reported among males.
- The majority of cases (62%) were reported among Black and African Americans.
- The zip codes with the highest rates of gonorrhea cases per 1,000 population in 2024 were 27601, 27610, and 27604.

Figure 48: Gonorrhea Incidence Rates, 2020-2024



	2020	2021	2022	2023	2024
Wake County	196.6	208.2	205.7	207.4	172.1
North Carolina	269.2	276.7	251.2	243.6	205.4

*Rates per 100,000 population. Note: counts for sexually transmitted diseases in this figure are limited to cases with Wake County residential addresses. Counts may differ from the *Counts and Rates of Reportable Diseases and Conditions in Wake County, NC* table (includes individuals tested in Wake County but with addresses in other counties) later in this report.

Figure 49: Gonorrhea by Age Group, 2024

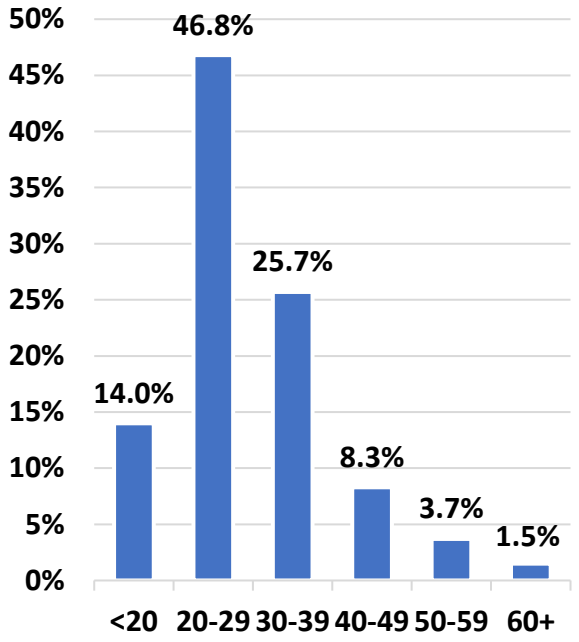


Figure 50: Gonorrhea by Race, 2024

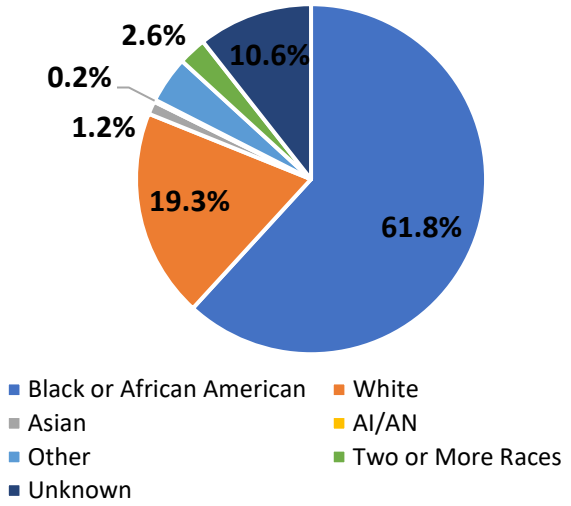


Figure 51: Gonorrhea by Sex, 2024

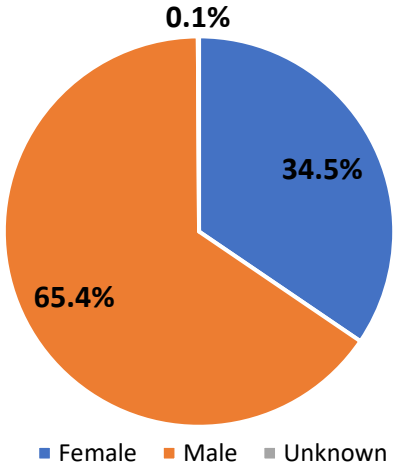
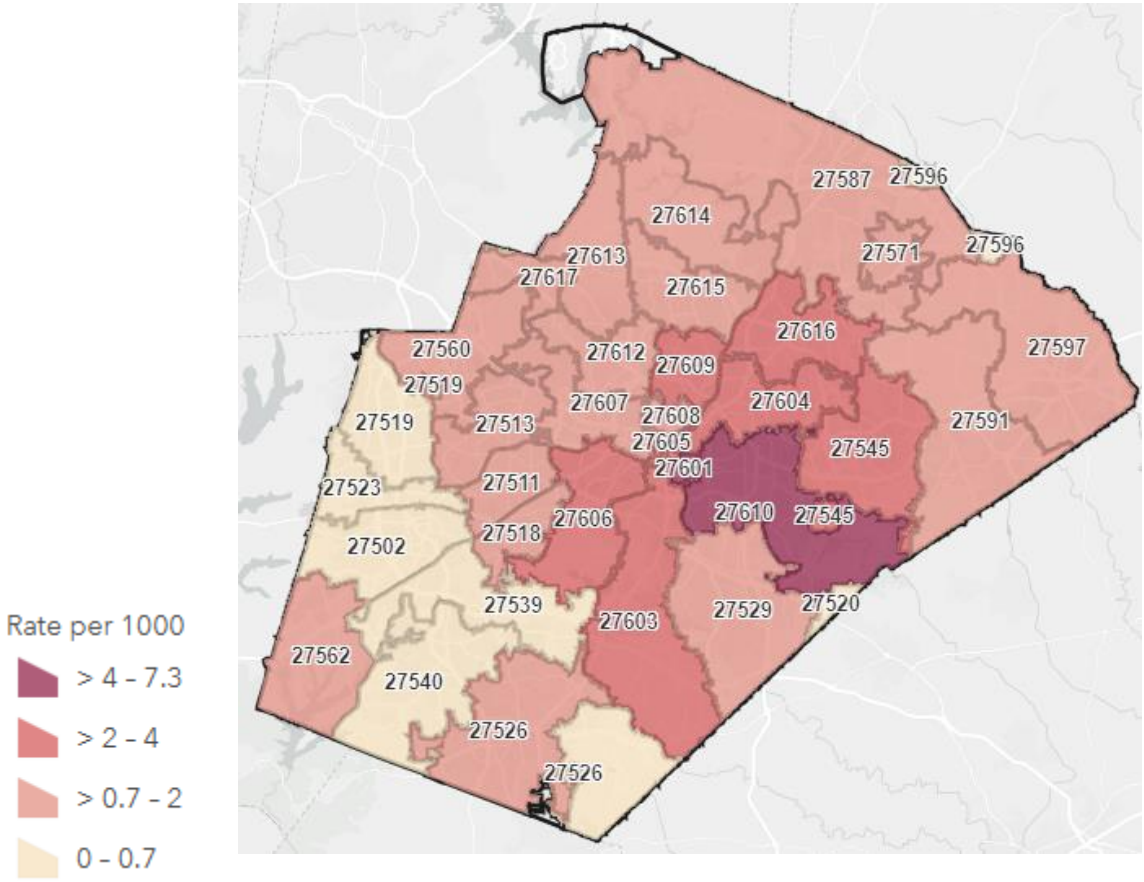


Figure 52: 2024 Gonorrhea Rates Per 1,000 Population by Zip Code, Wake County



Note: Zip code-level rates were calculated using 2023 population estimates as 2024 estimates at the zip code level were not available as of 7/22/2025.

Chlamydia

https://www.cdc.gov/chlamydia

Epidemiology

Overview: Chlamydia is a sexually transmitted disease caused by the bacterium Chlamydia trachomatis.

Symptoms: There are often no symptoms of chlamydia infection, though there may be abnormal genital discharge or a burning sensation when urinating. Whether symptomatic or asymptomatic, serious health problems can occur if the infection is left untreated.

Transmission: Chlamydia spreads through vaginal, anal, or oral sex with someone who is infected.

Treatment: Chlamydia can be treated with antibiotics prescribed by a healthcare provider.

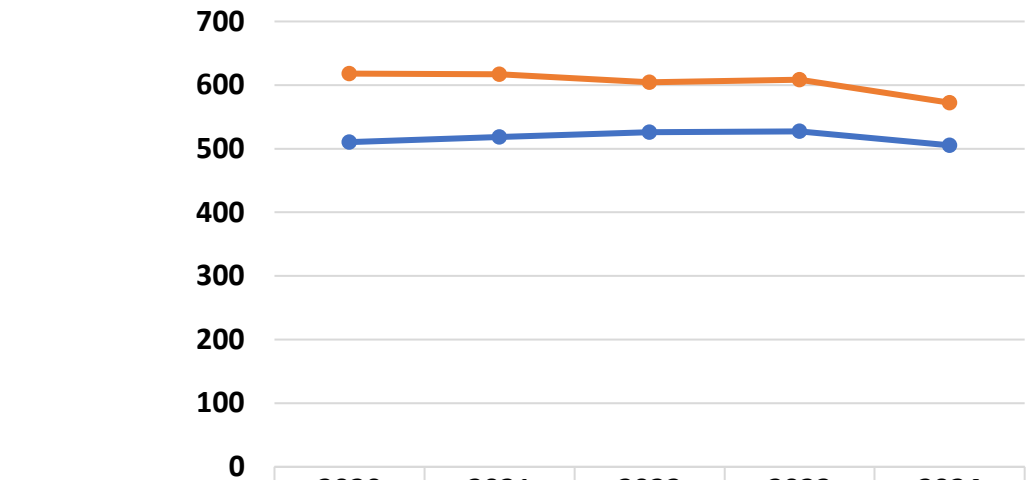
Prevention: Prevent STI exposure through proper and consistent use of condoms and regularly testing yourself and any sexual partners.

Local Facts and Figures:

In 2024:

- 6,014 cases were reported in 2024 (as of July 2025).
- Over half (53%) of cases were reported in individuals ages 20-29.
- Nearly half (48%) of the cases reported were among Black and African Americans.
- The majority of cases (63%) were reported among females.
- The zip codes with the highest rates of chlamydia cases per 1,000 population in 2024 were 27601, 27610, 27604.

Figure 53: Chlamydia Incidence Rates, 2020-2024



	2020	2021	2022	2023	2024
Wake County	510.2	518.4	525.9	527.2	505.3
North Carolina	618	616.8	604.6	608.6	572.3

*Rates per 100,000 population. Note: counts for sexually transmitted diseases in this figure are limited to cases with Wake County residential addresses. Counts may differ from the *Counts and Rates of Reportable Diseases and Conditions in Wake County, NC* table (includes individuals tested in Wake County but with addresses in other counties) later in this report.

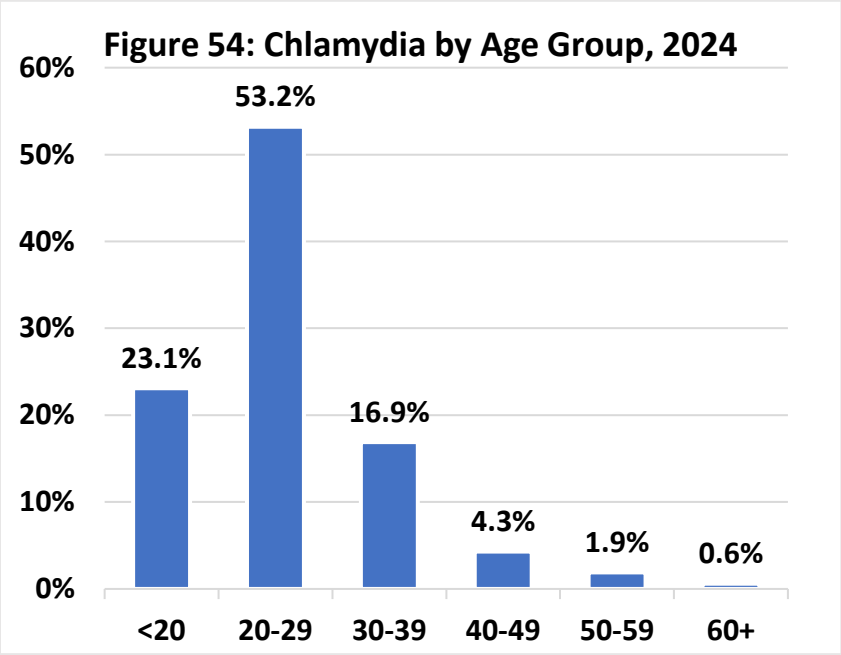


Figure 54: Chlamydia by Age Group, 2024
60%
50%
40%
30%
20%
10%
0%
23.1%
53.2%
16.9%
4.3%
1.9%
0.6%
<20
20-29
30-30
40-49
50-59
60+

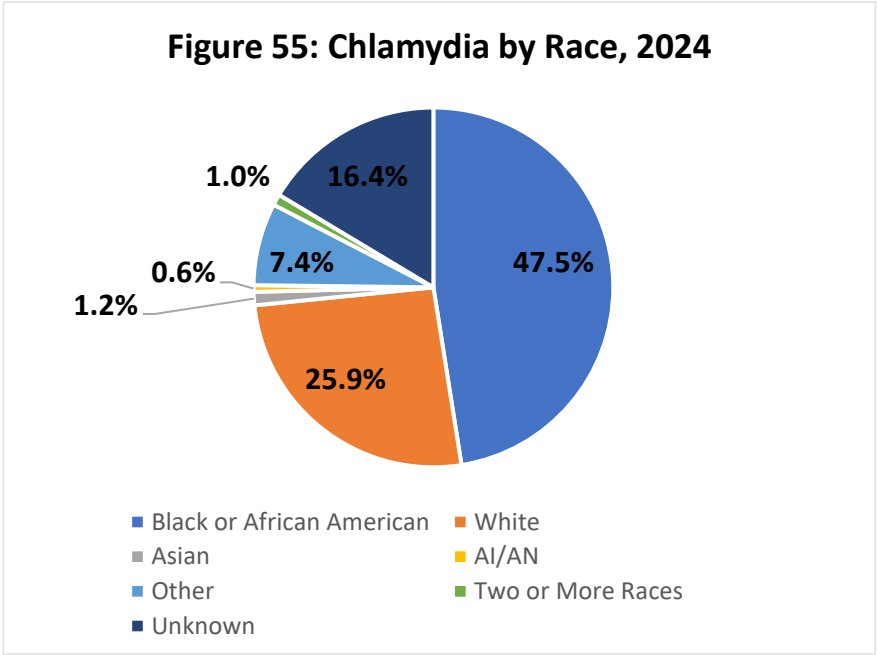


Figure 55: Chlamydia by Race, 2024
1.0%
16.4%
0.6%
7.4%
47.5%
1.2%
25.9%
Black or African American
White
Asian
AI/AN
Other
Two or More Races
Unknown

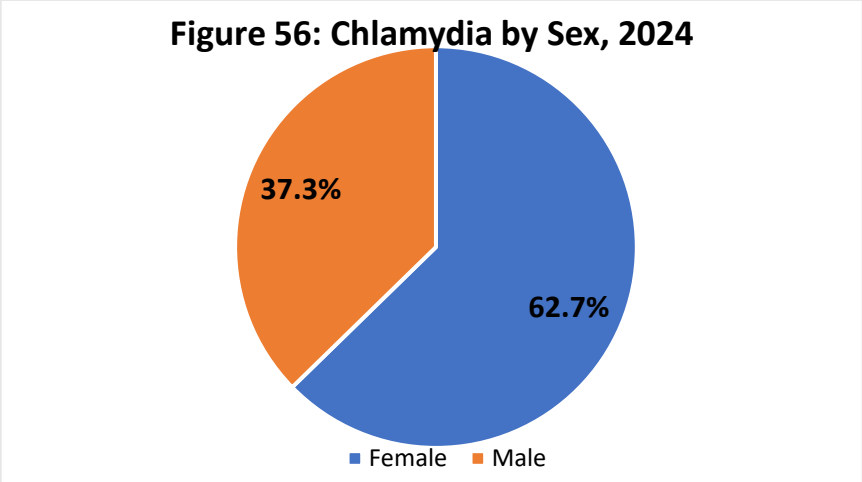
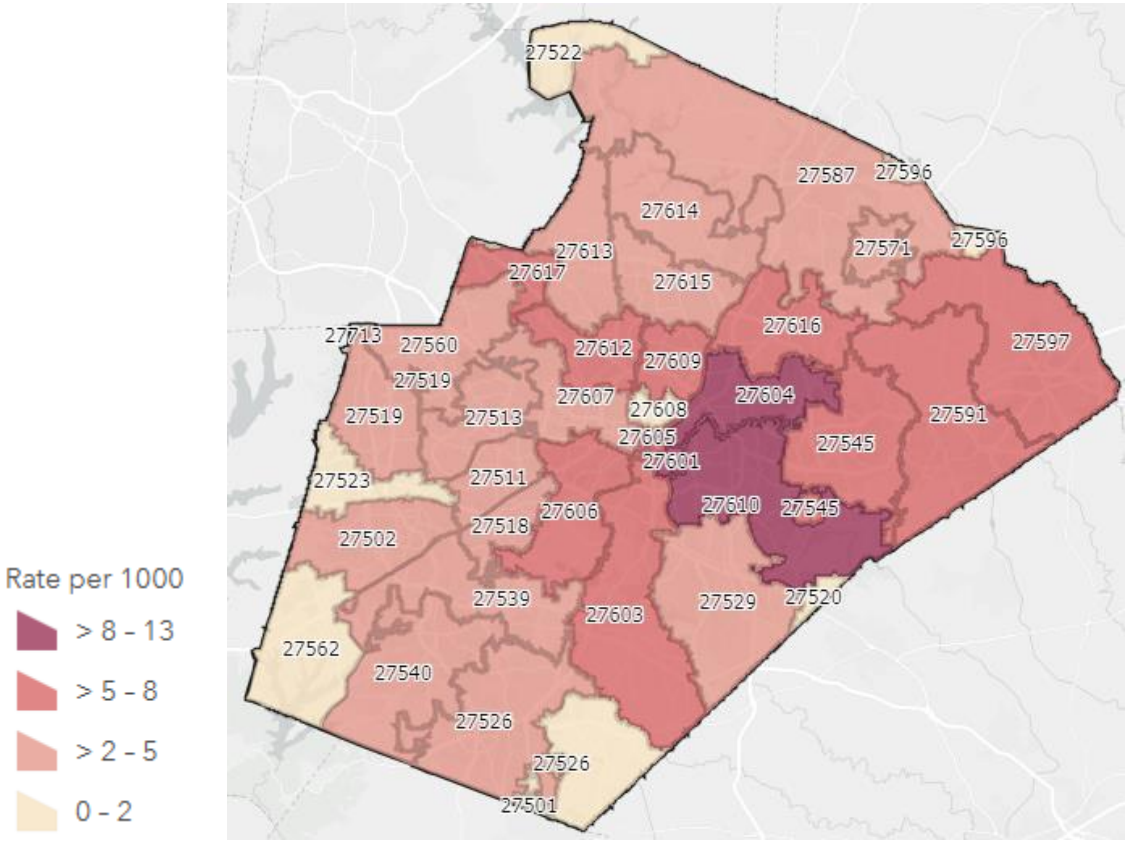


Figure 56: Chlamydia by Sex, 2024
37.3%
62.7%
Female
Male

Figure 57: 2024 Chlamydia Rates Per 1,000 Population by Zip Code, Wake County



Note: Zip code-level rates were calculated using 2023 population estimates as 2024 estimates at the zip code level were not available as of 7/22/2025.

12.1 The Impact of STIs Amongst Maternal Population in Wake County

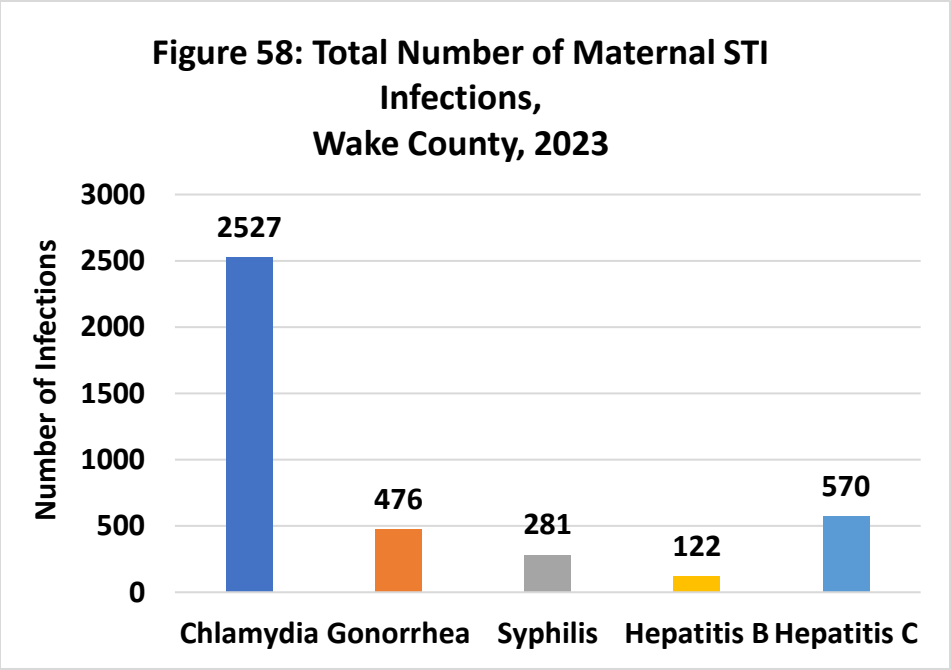
The data below display the total number of maternal infections (sexually transmitted and transmitted through contact with infected blood or bodily fluids) in Wake County for 2023. Sexually transmitted infections (STIs) affecting mothers include chlamydia (2,527), gonorrhea (476), and syphilis (281), with chlamydia affecting mothers the most.

Detecting and treating all STIs, syphilis in particular, in the maternal population is not only important for the health of the pregnant person but for the infant as well.

Congenital syphilis cases have been on the rise nationally and in North Carolina in recent years and occur when pregnant people pass the infection on to their infants during pregnancy. Undetected congenital syphilis can result in poor pregnancy outcomes such as miscarriage, stillbirth, preterm delivery, and perinatal death.[22] Additionally, conditions resulting from congenital syphilis can manifest in the newborn or later in childhood including hydrops fetalis, hepatosplenomegaly, blindness, deafness, and deformities of the bones and teeth.[22] Infected infants may be asymptomatic at birth but, if left untreated, manifest complications later in life.

The overall rate of syphilis in pregnant people giving birth in the United States more than tripled from 2016 to 2022, rising from 87.2 to 280.4 per 100,000 births.[23] In North Carolina, between 2012 and 2022, there was a 547% increase in reported syphilis cases among women with an associated 5600% increase in congenital syphilis infections.[24]

Congenital syphilis is preventable through early detection and appropriate treatment of maternal infection during pregnancy. North Carolina public health law requires healthcare providers to screen all pregnant women for syphilis during the first prenatal visit, between 28-30 weeks gestation, and again at delivery.[22] If providers fail to adhere to this law or pregnant people are not able to access appropriate prenatal care, there is a missed opportunity to identify, treat, and prevent congenital syphilis.



In 2023, the incidence rates of STIs among mothers in Wake County highlight differences among racial and ethnic groups. The graphs below show rates of STIs among mothers by race and ethnicity at the time of delivery. The highest rates of chlamydia and gonorrhea were recorded among Black or African American Non-Hispanic individuals, indicating a concerning trend in STD prevalence within this population. American Indian or Alaska Native Non-Hispanic individuals also showed elevated rates of these infections.

Figure 59: Chlamydia Infections per 1,000 Births by Race and Ethnicity, Wake County, 2023

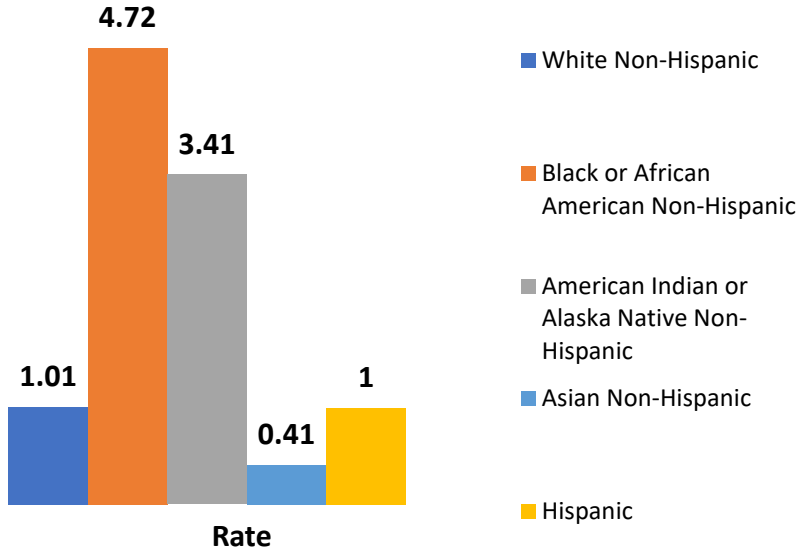


Figure 60: Gonorrhea Infections per 1,000 Births by Race and Ethnicity, Wake County, 2023

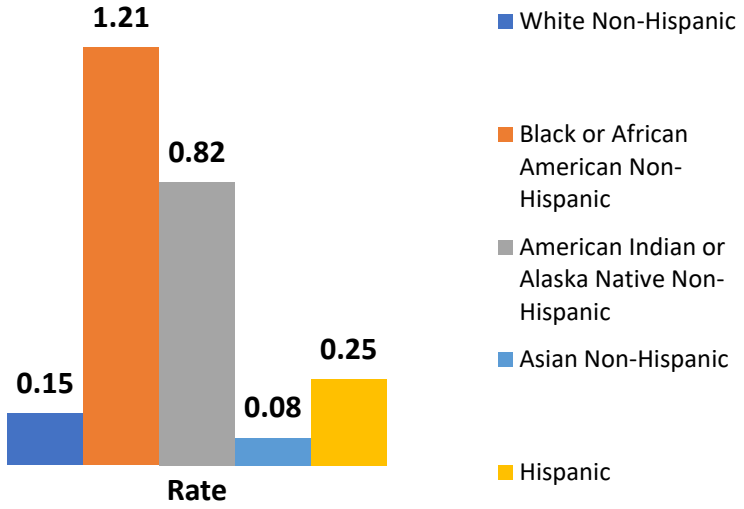
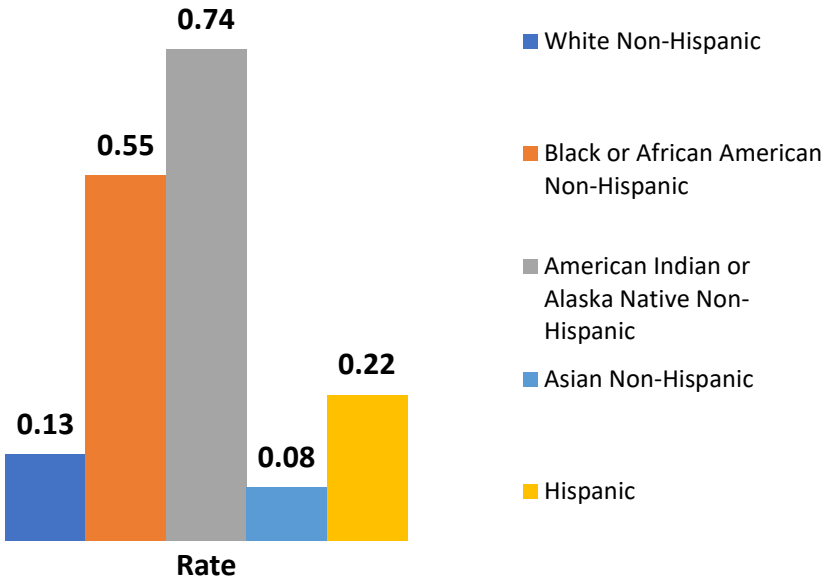


Figure 61: Syphilis Infections per 1,000 Births by Race and Ethnicity, Wake County, 2023



Note: For Figures 58-61: These are infections at the time of delivery (they do not include infections caught earlier and treated).

13.0 SUMMARY

Monitoring the spread of diseases and educating communities on disease trends are essential public health services. Public health organizations and agencies utilize surveillance systems to track diseases and guide prevention efforts. Wastewater monitoring is now a routine part of surveillance, capturing both symptomatic and asymptomatic infections. It continues to be used to monitor respiratory viruses and other infectious diseases as surveillance needs evolve.

During the 2024–2025 respiratory virus season in Wake County, influenza-like illness (ILI) activity peaked in January 2025, while COVID-19 and RSV peaked earlier in December 2024. This flu season was more severe than the previous season, with ILI levels remaining elevated through February before gradually declining. Vaccine-preventable diseases such as pertussis, hepatitis B, and Haemophilus influenzae have shown steady increases since 2020, a trend that aligns with declining vaccination coverage observed during and after the COVID-19 pandemic (2021-2023). However, the increase in vaccination rates in 2024 represents a positive development.

Tuberculosis (TB) cases continue to rise annually in Wake County, with a 14% increase reported in 2024 compared to 2023.

In 2024, Wake County also saw a sharp increase in cases of salmonellosis and cyclosporiasis. Lyme disease cases reached their highest level in five years, underscoring the importance of ongoing surveillance and vector-borne disease prevention efforts.

Rates of early syphilis and chlamydia decreased slightly in 2024, while gonorrhea had a more significant decrease, leading to the lowest rate of gonorrhea in the past five years. New HIV diagnoses increased in 2024 compared to 2023 but remained lower than previous years.

Communicable diseases can have tremendous impacts on communities. It is essential to monitor and track diseases over time and analyze information as part of public health surveillance. North Carolina law requires that more than 75 communicable diseases be reported to local health departments by a variety of sources, including healthcare providers, school administrators, childcare operators, food or drink establishments, and laboratories.

Communicable disease surveillance helps guide public health actions and ensures timely response. Staff at local health departments, including Wake County, investigate cases, provide education, recommend measures such as isolation when needed, and conduct contact tracing when appropriate. Staff work to ensure compliance with all state and national reporting requirements. Surveillance data also inform long-term planning, resource allocation, and prevention strategies. These efforts are supported by collaboration across programs and partners and are continuously adapted to meet emerging public health needs.

14.0 DATA SOURCES

United States Census Bureau

The Census Bureau collects and provides information about the people and economy of the United States. The Census Bureau's website **(http:/www.census.gov/)** includes data on demographic characteristics of the population, family structure, educational attainment, income level, and the proportion of persons who live at or below the federal poverty level. State and county-specific data are easily accessible, and valuable to understand a population.

In some sections of this report, 2023 American Community Survey (ACS) (Census Bureau) 1-year estimate is reported for Wake County.

North Carolina (N.C.) State Center for Health Statistics

The N.C. State Center for Health Statistics plays a crucial role in gathering data, conducting health-related research, generating reports, and maintaining an extensive compilation of health statistics. It serves as a reliable data source, offering valuable health information to facilitate well-informed decision-making and the development of effective health policies. This report uses maternal health data from the N.C. State Center for Health Statistics. Data can be found in the Sexually Transmitted Diseases Sub-Section (12.1 The Impact of STIs amongst Maternal Population in Wake County).

North Carolina Electronic Disease Surveillance System (NCEDSS)

This report uses communicable disease data from NCEDSS and the North Carolina Disease Data Dashboard (Annual) mentioned above. NCEDSS is a component of the CDC initiative to move states to web-based health surveillance and reporting systems. NCEDSS is also part of the Public Health Information Network (PHIN). The electronic system replaced a patchwork of smaller disease-specific surveillance systems and paper-based reporting. NCEDSS is used by the NCDHHS, the Division of Public Health, the state's 86 local and multi- county district health departments (LHDs), and eight HIV/STD Regional Offices. Laboratories also report electronically to NCEDSS.

North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT)

This report uses emergency department (ED) data from NC DETECT. NC DETECT is North Carolina's statewide syndromic surveillance system. It was created by the North Carolina Division of Public Health (NC DPH) in 2004 in collaboration with the Carolina Center for Health Informatics (CCHI) in the UNC Department of Emergency Medicine to address the need for early event detection and timely public health surveillance in North Carolina using a variety of secondary data sources. Authorized users are currently able to view data from emergency departments, North Carolina Poison Control, and emergency medical services (EMS), as well as pilot data from select urgent care centers. NC DETECT is designed, developed, and maintained by CCHI staff with funding by the NC DPH. New functionality is added regularly based on end user feedback. This report includes 2023, 2024, and 2025 ED data.

North Carolina Disease Data Dashboards

The North Carolina Department of Health and Human Services' Division of Public Health created two data dashboards: Quarterly and Annual (Interactive) to provide case counts and rates of probable and confirmed reportable infectious diseases in North Carolina. The Quarterly dashboard was created to provide the most recent case counts and rates data on a quarterly basis based on the calendar year (Quarter 1: January-March, Quarter 2: April-June, Quarter 3: July- September, and Quarter 4: October-December (**https:/ epi.dph.ncdhhs.gov/cd/dashboards/quarterly.html**). The Annual dashboard was created to provide case counts of probable and confirmed reportable infectious diseases between 2015 and 2024 (**https:/ epi.dph.ncdhhs.gov/cd/figures.html**). Both dashboards are intended to serve as a reference for local health departments, program managers, health planners, researchers, and others who are concerned with the public health implications of the communicable diseases in North Carolina. Dashboards reflect cases reported to the North Carolina Division of Public Health by healthcare organizations such as hospitals, primary care offices, clinics, local health departments, pharmacies, testing facilities, and laboratories for conditions or diseases deemed reportable by State and Federal Law. All data within the dashboards are downloadable.

15.0 REFERENCES

1. "Introduction to Public Health Surveillance". cdc.gov. Centers for Disease Control and Prevention. 2014. Web. 7/23/2025. https://www.cdc.gov/training-publichealth101/media/pdfs/introduction-to-surveillance.pdf

2. "Communicable Disease Surveillance and Reporting". epi.dph.ncdhhs.gov. North Carolina Department of Health and Human Services. September 22, 2020. Web. 7/23/2025. https://epi.dph.ncdhhs.gov/cd/report.html

3. "North Carolina Wastewater Monitoring Network". covid19.ncdhhs.gov. North Carolina Department of Health and Human Services. Web. 7/18/2025. https://covid19.ncdhhs.gov/dashboard/wastewater-monitoring

4. "How Wastewater Monitoring Works". cdc.gov. Centers for Disease Control and Prevention. March 18, 2025. Web. 7/18/2025. https://www.cdc.gov/nwss/how-wws-works.html

5. “National Wastewater Surveillance System (NWSS)”. cdc.gov. Centers for Disease Control and Prevention. Web. 7/18/2025. https://www.cdc.gov/nwss/about-data.html

6. American Community Survey 1-year Estimates, Wake County, North Carolina. census.gov. United States Census Bureau. 2023. Web.2/13/25. https://data.census.gov/all?q=Wake+County,+North+Carolina

7. “About COVID-19.” cdc.gov. Centers for Disease Control and Prevention. June 13, 2024. Web. 8/11/2025. https://www.cdc.gov/covid/about/index.html

8. “About Influenza.” cdc.gov. Centers for Disease Control and Prevention. August 13, 2024. Web. 8/11/2025. https://www.cdc.gov/flu/about/index.html

9. “About RSV.” cdc.gov. Centers for Disease Control and Prevention. July 8, 2025. Web. 8/11/2025. https://www.cdc.gov/rsv/about/index.html

10. “CDC Recommends New Vaccines for Fall and Winter Virus Season.” cdc.gov. Centers for Disease Control and Prevention. 2024. Web. 7/23/2025. https://www.cdc.gov/media/releases/2024/s-t0627-vaccine-recommendations.html

11. "Active Bacterial Core Surveillance (ABCs) Report: Emerging Infections Program Network – 2020." cdc.gov. Centers for Disease Control and Prevention. 2021. Web. 7/23/2025. https://www.cdc.gov/abcs/reports/2020-data.html

12. "North Carolina Kindergarten Immunization Data Dashboard." dph.ncdhhs.gov. North Carolina Department of Health and Human Services. 2024. Web. 7/23/2025. https://www.dph.ncdhhs.gov/programs/epidemiology/immunization/data/kindergarten-dashboard

13. "Vaccination Coverage with Selected Vaccines and Exemption Rates Among Children in Kindergarten — United States, 2022–23 School Year." cdc.gov. Centers for Disease Control and Prevention. 2023. Web. 7/23/2025. https://www.cdc.gov/mmwr/volumes/72/wr/mm7245a2.htm

14. "Decline in Vaccination Coverage by Age 24 Months and Vaccination Inequities Among Children Born in 2020 and 2021 — National Immunization Survey-Child, United States, 2021–2023." cdc.gov. Centers for Disease Control and Prevention. 2024. Web. 7/23/2025. https://www.cdc.gov/mmwr/volumes/73/wr/mm7338a3.htm

15. Site Index | Measles (Rubeola)." *cdc.gov*. Centers for Disease Control and Prevention. July 10, 2025. Web. 8/14/2025. https://www.cdc.gov/measles/site.html#hcp

16. "About Food Safety." cdc.gov. Centers for Disease Control and Prevention. 2024. Web. 8/22/2025. https://www.cdc.gov/food-safety/about/index.html

17. "Preventing Vector-Borne Diseases." cdc.gov. Centers for Disease Control and Prevention. 2024. Web. 7/23/2025. https://www.cdc.gov/vector-borne-diseases/prevention/index.html

18."Governor Proclaims Tick and Mosquito Awareness Month." governor.nc.gov. Office of the Governor of North Carolina. 2025. Web. 7/23/2025. https://governor.nc.gov/governor-proclaims-tick-and-mosquito-awareness-month

19. "NCDHHS Urges North Carolinians to 'Fight the Bite' to Prevent Tick- and Mosquito-Borne Diseases." ncdhhs.gov. North Carolina Department of Health and Human Services. 2025. Web. 7/23/2025. https://www.ncdhhs.gov/news/press-releases/2025/04/10/ncdhhs-urges-north-carolinians-fight-bite-prevent-tick-and-mosquito-borne-diseases

20. "About Sexually Transmitted Infections (STIs)". cdc.gov. Centers for Disease Control and Prevention. March 25, 2024. Web. 7/9/2025. https://www.cdc.gov/sti/about/?CDC_AAref_Val=https://www.cdc.gov/std/general/default.htm

21. "Facts and Figures: North Carolina HIV/AIDS, STDs, and Viral Hepatitis B and C". ncdhhs.gov. North Carolina Department of Health and Human Services. May 10, 2024. Web. 7/9/2025. https://epi.dph.ncdhhs.gov/cd/stds/figures.html

22. "Syphilis Resources for Providers". ncdhhs.gov. North Carolina Department of Health and Human Services. N.d. Web. 7/9/2025. https://www.dph.ncdhhs.gov/epidemiology/communicable-disease/syphilis/providers.

23. Gregory ECW, Ely DM. Trends and characteristics in maternal syphilis rates during pregnancy: United States, 2016–2022. NCHS Data Brief, no 496. Hyattsville, MD: National Center for Health Statistics. 2024. DOI: https://dx.doi.org/10.15620/cdc:145590

24. "Public Health Alert: We Need Your Help Preventing Congenital Syphilis". ncdhhs.gov. North Carolina Department of Health and Human Services. November 9, 2023. Web. 7/9/2025. https://www.dph.ncdhhs.gov/epidemiology/communicable-disease/congenital-syphilis-provider-memo/download?attachment

16.0 ACKNOWLEDGEMENTS

For contributions to this report:

- Brian Gravlin, Communicable Disease Program Manager, Wake County Public Health
- Nancy Philips, Communicable Disease Nursing Supervisor, Wake County Public Health
- Tammy Seagroves, Communicable Disease RN Team Lead, Wake County Public Health
- Jasmine Phillips, Communicable Disease Supervisor, Wake County Public Health
- Nikita Spears, HIV/STD/Hep C Section Leader, Wake County Public Health
- Ashley M Bueno, HIV/STD Community Health Supervisor, Wake County Public Health
- Kathleen Horstmann, HIV/STD Community Health Supervisor, Wake County Public Health
- Andrew Farr, HIV/STD Community Health Supervisor, Wake County Public Health
- Decarlo Braddy, Regional HIV & STD Coordinator, Wake County Public Health
- Brittany R Perkins, HIV/STD Community Health Supervisor, Wake County Public Health
- Lisa M Sellers, TB Team Lead, TB clinic, Wake County Public Health
- Michelle Ricci, Public Health Educator, Wake County Public Health
- Eleanor Wade, Immunization Tracking Coordination Supervisor, Wake County Public Health

17.0 APPENDIX

17.1 Counts and Rates of Reportable Diseases and Conditions, Wake County, NC

Table 6: Vaccine Preventable Diseases among Wake County Residents, 2020-2024

	2020		2021		2022		2023		2024	
Population*:	**1,129,352**		**1,152,301**		**1,170,778**		**1,190,275**			
	All Statuses (Confirmed, Probable, and Suspect)									
Disease/Condition	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**
Acute flaccid myelitis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Haemophilus influenzae, invasive disease	11	1.0	2	0.2	16	1.4	20	1.7	29	2.4
Influenza, adult death	9	1.0	0	0.0	9	1.0	3	0.3	12	1.3
Influenza, NOVEL virus infection	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Influenza, pediatric death	0	0.0	0	0.0	0	0.0	0	0.0	1	0.4
Measles	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Meningitis, pneumococcal	1	0.1	2	0.2	1	0.1	4	0.3	2	0.2
Meningococcal invasive disease	0	0.0	0	0.0	3	0.3	4	0.3	3	0.3
Mumps	1	0.1	0	0.0	0	0.0	0	0.0	0	0.0
Pertussis	8	0.7	1	0.1	4	0.3	5	0.4	51	4.3
Tetanus	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Varicella	0	0.0	2	0.2	7	0.6	13	1.1	9	0.8

Table 7: Foodborne Diseases among Wake County Residents, 2020-2024

	2020		2021		2022		2023		2024	
Population*:	**1,129,352**		**1,152,301**		**1,170,778**		**1,190,275**			
	All Statuses (Confirmed, Probable, and Suspect)									
Disease/Condition	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**
Botulism - foodborne/wound	0	0.0	0	0.0	0	0.0	0	0.0	1	0.1
Brucellosis	0	0.0	1	0.1	1	0.1	0	0.0	0	0.0
Campylobacteriosis	148	13.1	135	11.7	178	15.2	253	21.3	262	22.0
Cyclosporiasis	3	0.3	14	1.2	17	1.5	65	5.5	150	12.6
E. coli - shiga toxin producing	23	2.0	39	3.4	64	5.5	79	6.6	66	5.5
Foodborne C. perfringens	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Foodborne other/unknown	1	0.1	9	0.8	13	1.1	1	0.1	3	0.3
Foodborne Staphylococcal	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Foodborne poisoning	0	0.0	1	0.1	0	0.0	0	0.0	0	0.0
Hemolytic Uremic Syndrome	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0
Listeriosis	2	0.2	3	0.3	1	0.1	2	0.2	3	0.3
Salmonellosis	257	22.8	260	22.6	295	25.2	257	21.6	381	32.0
Shigellosis	20	1.8	32	2.8	63	5.4	72	6.0	72	6.0
Staph aureus, reduced suscept. to vancomycin	0	0.0	0	0.0	0	0.0	1	0.1	0	0.0
Trichinosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Typhoid - carriage	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Typhoid Fever - acute	1	0.1	2	0.2	3	0.3	1	0.1	9	0.8
Vibrio infection	2	0.2	4	0.3	11	0.9	18	1.5	18	1.5
Vibrio vulnificus infection	1	0.1	1	0.1	1	0.1	1	0.1	1	0.1

For Tables 6 and 7:
†Rate per 100,000 population.
-Case Rate is not calculated when counts are too low.
All statuses (confirmed, probable, and suspect cases) are reported in this section.
* U.S. Census Bureau, postcensal vintage estimates was used to calculate the total population. Data on the 2024 population estimate for Wake County are not available at this time.

Table 8: Waterborne Diseases among Wake County Residents, 2020-2024

	2020		2021		2022		2023		2024	
Population*:	**1,129,352**		**1,152,301**		**1,170,778**		**1,190,275**			
	All Statuses (Confirmed, Probable, and Suspect)									
Disease/Condition	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**
Cryptosporidiosis	14	1.2	30	2.6	52	4.4	68	5.7	59	5.0
Legionellosis	9	0.8	12	1.0	17	1.5	15	1.3	8	0.7
Leptospirosis	1	0.1	0	0.0	0	0.0	0	0.0	1	0.1

Table 9: Vector-borne and Zoonotic Diseases among Wake County Residents, 2020-2024

	2020		2021		2022		2023		2024	
Population*:	**1,129,352**		**1,152,301**		**1,170,778**		**1,190,275**			
	All Statuses (Confirmed, Probable, and Suspect)									
Disease/Condition	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**
Anaplasmosis	1	0.1	0	0.0	0	0.0	0	0.0	1	0.1
Chikungunya	2	0.2	1	0.1	0	0.0	0	0.0	4	0.3
Dengue	0	0.0	2	0.2	0	0.0	4	0.3	15	1.3
Ehrlichiosis, chaffeensis	8	0.7	12	1.0	9	0.8	19	1.6	21	1.7
Ehrlichiosis, unspecified	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Encephalitis, arboviral, EEE	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Encephalitis, arboviral, LAC	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Encephalitis, arboviral, other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Encephalitis, arboviral, WNV	0	0.0	2	0.2	1	0.1	3	0.3	3	0.3
Lyme Disease	5	0.4	20	1.7	25	2.1	11	0.9	27	2.2
Malaria	1	0.1	7	0.6	11	0.9	7	0.6	11	0.9
Psittacosis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Q fever	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Spotted Fever Rickettsiosis	11	1.0	4	0.3	16	1.4	15	1.3	20	1.6
Tularemia	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0
Zika	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

For Tables 8 and 9:
†Rate per 100,000 population.
-Case Rate is not calculated when counts are too low.
All statuses (confirmed, probable, and suspect cases) are reported in this section.
* U.S. Census Bureau, postcensal vintage estimates was used to calculate the total population. Data on the 2024 population estimate for Wake County are not available at this time.

Table 10: Viral Hepatitis among Wake County Residents, 2020-2024

	2020		2021		2022		2023		2024	
Population*:	**1,129,352**		**1,152,301**		**1,170,778**		**1,190,275**			
	All Statuses (Confirmed, Probable, and Suspect)									
Disease/Condition	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**
Hepatitis A	0	0.0	8	0.7	2	0.2	4	0.3	10	0.8
Hepatitis B - Acute	0	0.0	4	0.3	3	0.3	3	0.3	27	2.3
Hepatitis B - Chronic Carrier	110	9.7	138	12.0	141	12.0	154	12.9	158	13.2
Hepatitis B - Perinatally Acquired	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis B Lab/Condition Report	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Hepatitis C - Acute	4	0.4	4	0.3	5	0.4	6	0.5	3	0.3
Hepatitis C - Chronic	917	81.2	952	82.6	680	58.1	661	55.5	639	53.7

Table 11: Sexually Transmitted Infections (STI) among Wake County Residents, 2020-2024

	2020		2021		2022		2023		2024	
Population*:	**1,129,352**		**1,152,301**		**1,170,778**		**1,190,275**			
	All Statuses (Confirmed, Probable, and Suspect)									
Disease/Condition	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**
Chancroid	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chlamydia trachomatis infection	5761	510.1	5974	518.4	6181	527.9	6339	532.6	6114	513.7
Gonorrhea	2220	196.6	2399	208.2	2418	206.5	2488	209.0	2085	175.2
HIV	137	14.6	162	16.8	143	14.5	141	14.1	154	15.4
Lymphogranuloma venereum	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
PID	50	4.4	53	4.6	85	7.3	56	4.7	57	4.8
Syphilis - Congenital Syphilis	0	-	2	-	4	-	8	-	8	-

Syphilis - Early, Non-Primary, Non-Secondary Syphilis	149	13.2	160	13.9	155	13.2	138	11.6	126	10.6
Syphilis - Late Latent Syphilis	154	13.6	258	22.4	279	23.8	314	26.4	334	28.1
Syphilis - Primary Syphilis	65	5.8	85	7.4	89	7.6	60	5.0	69	5.8
Syphilis - Secondary Syphilis	109	9.7	121	10.5	150	12.8	126	10.6	129	10.8

For Tables 10 and 11:
†Rate per 100,000 population except Hepatitis B, perinatally acquired and congenital syphilis, which is per 100,000 live births.
-Case Rate is not calculated when counts are too low.
All statuses (confirmed, probable, and suspect cases) are reported in this section.
* U.S. Census Bureau, postcensal vintage estimates was used to calculate the total population. Data on the 2024 population estimate for Wake County are not available at this time.

Table 12: Other Reportable Diseases among Wake County Residents, 2020-2024

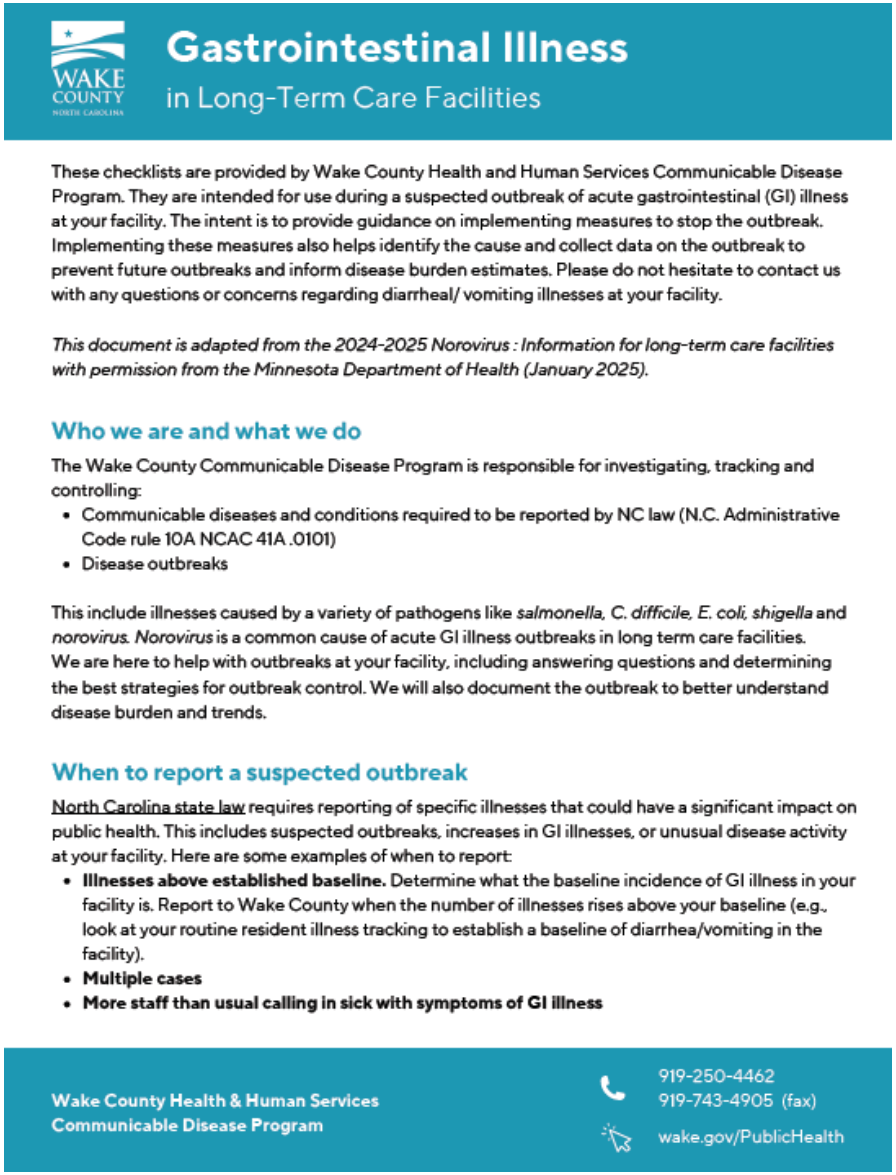
	2020		2021		2022		2023		2024	
Population*:	**1,129,352**		**1,152,301**		**1,170,778**		**1,190,275**			
	All Statuses (Confirmed, Probable, and Suspect)									
Disease/Condition	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**	**No. of Cases**	**Case Rate †**
Botulism - infant	0	0.0	2	-	1	-	2	-	0	0.0
Candida auris	0	0.0	0	0.0	0	0.0	2	0.2	0	0.0
Carbapenem-resistant Enterobacterales	9	0.8	12	1.0	27	2.3	26	2.2	26	2.2
Creutzfeldt-Jakob Disease	0	0.0	0	0.0	0	0.0	4	0.3	0	0.0
Leprosy	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mpox	0	0.0	0	0.0	116	9.9	0	0.0	12	1.0
Non-gonococcal urethritis	25	2.2	14	1.2	9	0.8	4	0.3	4	0.3

Streptococcal invasive infection, Group A	15	1.3	11	1.0	17	1.5	67	5.6	80	6.7
Toxic Shock Syndrome, non-streptococcal	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Toxic Shock Syndrome, streptococcal	0	0.0	1	0.1	0	0.0	4	0.3	7	0.6
Tuberculosis	16	1.4	20	1.7	22	1.9	25	2.1	29	2.4

For Table 12:
†Rate per 100,000 population except Botulism – infant, which is per 100,000 live births.
-Case Rate is not calculated when counts are too low.
All statuses (confirmed, probable, and suspect cases) are reported in this section.
*U.S. Census Bureau, postcensal vintage estimates was used to calculate the total population. Data on the 2024 population estimate for Wake County are not available at this time.

17.2 Gastrointestinal Illness in Long-Term Care Facilities (Guidance and Checklist)

Access here: https://s3.us-west-1.amazonaws.com/wakegov.com.if-us-west-1/s3fs-public/documents/2025-02/gastrointestinal_illness_checklist_2.pdf



WAKE COUNTY NORTH CAROLINA

Gastrointestinal Illness

in Long-Term Care Facilities

These checklists are provided by Wake County Health and Human Services Communicable Disease Program. They are intended for use during a suspected outbreak of acute gastrointestinal (GI) illness at your facility. The intent is to provide guidance on implementing measures to stop the outbreak. Implementing these measures also helps identify the cause and collect data on the outbreak to prevent future outbreaks and inform disease burden estimates. Please do not hesitate to contact us with any questions or concerns regarding diarrheal/ vomiting illnesses at your facility.

This document is adapted from the 2024-2025 Norovirus : Information for long-term care facilities with permission from the Minnesota Department of Health (January 2025).

Who we are and what we do

The Wake County Communicable Disease Program is responsible for investigating, tracking and controlling:

- Communicable diseases and conditions required to be reported by NC law (N.C. Administrative Code rule 10A NCAC 41A .0101)
- Disease outbreaks

This include illnesses caused by a variety of pathogens like *salmonella, C. difficile, E. coli, shigella* and *norovirus. Norovirus* is a common cause of acute GI illness outbreaks in long term care facilities. We are here to help with outbreaks at your facility, including answering questions and determining the best strategies for outbreak control. We will also document the outbreak to better understand disease burden and trends.

When to report a suspected outbreak

North Carolina state law requires reporting of specific illnesses that could have a significant impact on public health. This includes suspected outbreaks, increases in GI illnesses, or unusual disease activity at your facility. Here are some examples of when to report:

- **Illnesses above established baseline.** Determine what the baseline incidence of GI illness in your facility is. Report to Wake County when the number of illnesses rises above your baseline (e.g., look at your routine resident illness tracking to establish a baseline of diarrhea/vomiting in the facility).
- **Multiple cases**
- **More staff than usual calling in sick with symptoms of GI illness**

Wake County Health & Human Services
Communicable Disease Program

919-250-4462
919-743-4905 (fax)
wake.gov/PublicHealth

Gastrointestinal Illness

in Long-Term Care Facilities

How to report

Call: 919-250-4462 or Fax: 919-743-4905 to report cases or suspected cases of communicable diseases to Wake County Health & Human Services Communicable Disease Program.

- **Non-urgent reports:** Non-urgent reports can be made outside of normal business hours, on weekends or holidays by leaving a message on the Communicable Disease Line: 919-250-4462. Please provide a contact name and number for the CD Nurse to call you back the following business day. This number is checked during weekends and holidays at 9 a.m., 1 p.m. and 5 p.m.
- **Urgent reports:** Should you need to alert us of an immediate public health threat, specifically as it relates to suspicion or confirmation of the conditions or events noted below, the Emergency CD Line: 919-250-1217, will be answered immediately or will return your call within 15 minutes.
  - Novel and/or highly infectious diseases (*measles, mumps, Ebola, Middle Eastern Respiratory Syndrome*)
  - Biologic toxins, hazardous chemicals or mass casualties

Prevention Tools

- **Hand hygiene**
  - Train staff on proper hand hygiene.
  - Make sure staff and resident handwashing facilities are stocked with soap and paper towels.
  - Do not use hand sanitizer as an alternative to handwashing.
- **Clean/disinfect**
  - Check labels on cleaning products to ensure they are effective against pathogens that cause GI illnesses, like norovirus. You can check with your chemical supplier or check the EPA's website.
  - Clean up vomiting or diarrheal incidents immediately using appropriate PPE. Do no use a vacuum.
  - Always use best practices for cleaning/disinfecting, washing linens, etc.
- **Person movement**
  - When possible, do not transfer patients into or out of the facility while they have vomiting or diarrhea.
  - Visitors with vomiting or diarrhea should not visit the facility while ill.
  - Staff and volunteers should stay home from work if ill with vomiting or diarrhea.
  - Inform EMS and hospital when sending patients with symptoms of GI illness.
- **Quickly identify an outbreak**
  - Keep track of staff and volunteer illnesses.
  - Know what your normal or baseline level of diarrhea and vomiting is in you facility.
  - Call Wake County and initiate outbreak response when more residents and/or staff are ill.

Wake County Health & Human Services
Communicable Disease Program

919-250-4462
919-743-4905 (fax)
wake.gov/PublicHealth

Gastrointestinal Illness Checklist

Use this checklist for outbreak response

Report

- [ ] Report the possible outbreak when you detect an increase in gastrointestinal illnesses above the expected baseline or normal rate (e.g., more illness than usual in the facility).
  - Call the Wake County Communicable Disease nurse assigned to your facility or 919-250-4462.
- [ ] The nurse will ask the following information:
  - What date did the earliest illness start? When did the other illnesses occur?
  - How many residents do you have in the facility? How many have been ill?
  - How many staff do you have in the facility? How many have been ill?
  - What symptoms did ill individuals have? What is the approximate duration of illness?
  - Have the ill individuals been in one unit or wing, or spread across the facility?
  - Have any dietary or food staff been ill?

Document

- [ ] Start a LINE LIST. Contact managers pf each unit, etc. as necessary to gather illness info.
- [ ] Send LINE LIST back to the communicable disease nurse within 24 hours of reporting the suspected outbreak. It's okay if it's not complete, send updates as illness increases. You will be asked to send a complete one at the end of the outbreak.
- [ ] Gather additional information
  - List activities, events, etc. held during the week prior to the first illness (especially if food was served).
  - Determine when and where there were any vomiting incidents or diarrheal accidents in the facility.
  - If requested, provide a dietary menu and/or names/phone numbers of staff and/or residents.
- [ ] Collect a stool sample from two (2) residents and/or staff. If you send stools from residents or staff to a clinical laboratory, notify the communicable disease nurse of any results.
  - With the approval of NC Department of Public Health, Wake County can provide stool specimen collection kits to be processed by the state lab.
- [ ] Send the completed LINE LIST to the communicable disease nurse after the last illness.

Wake County Health & Human Services
Communicable Disease Program

919-250-4462
919-743-4905 (fax)
wake.gov/PublicHealth

Gastrointestinal Illness Checklist

Use this checklist for outbreak response

Implement Outbreak Control Measures

Residents

- ○ Monitor for resident illness (record on the LINE LIST). Isolate residents while they are ill and for 48 hours after the last episode of diarrhea or vomiting.
- ○ Restrict new admissions and transfers until the outbreak has ended.
- ○ Cancel group activities until the outbreak has ended.

Staff

- ○ Monitor for staff illness (record on the LINE LIST) and staff/volunteers should stay home until 48 hours after their vomiting and diarrhea has ended.
- ○ Assure proper handwashing and glove use.
  - Educate residents, staff and visitors on proper technique.
  - Promote proper glove use followed by handwashing. Hands should be washed before patient contact, food prep, snacks/meals, after patient contact and bathroom visits.
  - Traditional alcohol-based hand sanitizers are not effective against common gastrointestinal pathogens. Wash hands with soap and water to remove pathogens.
- ○ Staff assigned to work with patients with GI symptoms should only work with those patients. Staff assigned to work with asymptomatic patients should only work with those patients.

Visitors

- ○ Limit visitors during the outbreak, as they can spread illness in the facility or become ill themselves.
- ○ Post signs to promote visitor hand hygiene, particularly after visiting ill residents.
- ○ Visitors with vomiting and/or diarrhea or other symptoms of illness should not visit the facility while they are ill.

Wake County Health & Human Services
Communicable Disease Program

919-250-4462
919-743-4905 (fax)
wake.gov/PublicHealth

Gastrointestinal Illness Checklist

Use this checklist for outbreak response

Clean

- ○ Immediately clean/disinfect the facility. Focus on frequently touched surfaces and objects (e.g. bathrooms, door handles, counters, tables, water fountains, etc.).
  - Clean all surfaces with soap and water. Rinse.
  - Disinfect all surfaces with a disinfectant that is effective against pathogens that cause GI illness, like norovirus. See Norovirus Fact Sheet and Cleaning Disinfection.
- ○ Clean/disinfect at least daily until the outbreak is over.
- ○ Clean up vomiting or diarrheal incidents immediately.
  - Use appropriate procedures to prevent those doing the cleaning from getting sick.
  - Consider having a staff member who has been ill and recovered during the outbreak do the cleaning.
  - Never use a vacuum to clean up vomit.
  - Use caution when emptying commodes.
- ○ Launder soiled bedding and other linens immediately and use appropriate PPE.

Wake County Health & Human Services
Communicable Disease Program

919-250-4462
919-743-4905 (fax)
wake.gov/PublicHealth

Gastrointestinal Illness Checklist

Use this checklist for outbreak response

Food services

Dietary/food staff can be a source of ongoing transmission of illness by contaminating food.

- ○ Contact your dietary department to determine if dietary staff are ill (add them to the LINE LIST if so).
  - Notify your regular health inspector or call Wake County Environmental Health at 919-856-5700 or healthandsafety@wake.gov if dietary staff are ill. Your health inspector can work with the kitchen to implement additional prevention measures.
- ○ Monitor for dietary staff illness during the outbreak using the food service employee screening form.
- ○ Exclude dietary staff with vomiting or diarrhea from work until they are symptom-free for 24 hours or have medical clearance.
- ○ Clean and sanitize all kitchen and dining area surfaces with a product described in the cleaning section checklist.
- ○ Discontinue all self-service food/drinks including self-service foods using tongs or other serving utensils.
- ○ Postpone or cancel common events such as birthdays, holidays and special celebrations until the conclusion of the outbreak.
- ○ Restrict sharing of communal food/snack items and food brought in from outside the facility or prepared by residents.

Wake County Health & Human Services
Communicable Disease Program

919-250-4462
919-743-4905 (fax)
wake.gov/PublicHealth

17.2 Wake County Program Profiles (Immunization Tracking Team, Communicable Disease Program, HIV/STD Community Program, Epidemiology Program)

Immunization Tracking Team
Wake County's Immunization Tracking Team ensures that children and adults living in Wake County are age-appropriately immunized per North Carolina Law.

Programs and Services	Description	Outcomes/Outputs Data for period January 1, 2024 through December 31, 2024 (unless otherwise noted)
Tracking for Compliance	Tracking to ensure Wake County children are age appropriately immunized, focus on 19–35-month-old children with medical home at Wake County Public Health.	For children born 10/02/2021 – 10/01/2022: • 597 clients have WCPH as medical home • 89% compliant at 24 months • 94% compliant at 35 months
North Carolina Immunization Registry (NCIR)	Provide system administration, training, and support to Wake County and Wake County Public School System staff	• 883 active users • 199 new users added

Immunization Program Management	Provides vaccine supply and inventory management to support 12 clinic and program areas.	• 30,363 doses received from State • 36,448 doses administered • 12,699 clients immunized
Outreach Immunization Clinics	Provides access to immunization services to Wake County employees and the public.	• 5,967 flu vaccine doses administered to clients by WCPH • 394 flu vaccine doses administered to Wake County employees Clinic E – Back to School 9/1/24 – 10/30/24 • 306 clients immunized • 551 vaccine doses administered Outreach – Back to School – 9/3/24 – 11/16/24 • 150 students immunized • 262 vaccine doses administered
Supports Public Health Division	Provides clinical and/or administrative support and services for special projects and emergency response.	Between 1/1/2024 and 12/31/2024 • 2,475 doses of COVID-19 vaccines were administered by WCPH • 321 Mpox (Jynneos) vaccines to at-risk individuals.

Communicable Disease (CD) Program

The Wake County Communicable Disease (CD) Program investigates and follows up on diseases and conditions reported as required under North Carolina law; the program reports disease data to the North Carolina Division of Public Health through the North Carolina Electronic Disease Surveillance System (NCEDSS) and responds to public health emergencies.

Programs and Services	Description	Outcomes/Outputs Data for period January 1, 2024 through December 31, 2024 (unless otherwise noted)
General CD	• Conduct investigations for over 70 reportable diseases and conditions as well as animal exposures • Report disease data to North Carolina Division of Public Health through NCEDSS	• 2,343 total CD cases (952 foodborne diseases, 585 vaccine preventable diseases 426 vector-borne diseases, and 6 different outbreaks investigated) • 1,419 animal exposures investigated
Tuberculosis	• Conduct investigations for all TB cases in Wake County (both county and out-of-area residents) • Provide clinical care and Directly Observed Therapy (DOT) home visits. • Report TB data to North Carolina Division of Public Health through NCEDSS	• 29 active TB cases

Disease Intervention Specialist (DIS)	• Conduct investigations for HIV and syphilis cases • Report HIV and syphilis data to North Carolina Division of Public Health through NCEDSS	• 214 syphilis investigations • 46 HIV investigations
Health Education	Provides support to Communicable Disease program by; • Assessing, developing, and evaluating written educational materials and curricula for use with staff, clients, healthcare professionals, and the community • Providing communicable disease prevention education in the community • Creating and maintaining educational content for Wake.gov • Representing the CD program and Public Health on agency and county wide committees and special initiatives • Responding to public health emergencies	**Educational Materials** (creation/revision/formatting) • *Stop Rabies* pocket guide in English and Spanish against rabies. • *Preventing Illness in the Childcare Setting*. • Content on wake.gov • Syphilis display and materials for Out! Raleigh (Pride Month) • Measles Quick Guide **Program Support** • Program protocols • Public health accreditation documentation

		Outreach Education • *Food safety* • *Rabies prevention* • *Dog bite prevention* **Community Partnerships** • Pet Advocacy Coalition **Community Information Requests and Special Projects**: • COVID-19: 1 • Bed bugs: 4 • Mosquito complaints: 3 • Environmental Health: 2 • Special projects: 3

The HIV/STD Community Program
The mission of the HIV/STD Community Program is to provide HIV/STD health/outreach education services, HIV/STD counseling/testing services and HIV/AIDS Case Management services to populations at highest risk for HIV/STD in Wake County. These services are focused around the principles of Teach, Test, and Treat. We provide prevention services by utilizing health education and outreach best practices, identification of new cases through testing in community settings, and connecting people with HIV/STD treatment and care.

Programs and Services	Description	Outcomes/Outputs Data for period January 1, 2024 through December 31, 2024 (unless otherwise noted)
Health Education and Outreach	**Local Universities Peer Education Programs (Shaw University, St. Augustine's University, and NC State University):** College students are trained peer-educators who provide comprehensive prevention education on sexual health and aligning topics. Education is provided to students one-on-one, through educational sessions and workshops, and through collaborative campus wide initiatives.	• St. Augustine's University, 14 Peer Educators • Shaw University, 10 Peer Educators • NC State University, 14 Peer Educators 1,700 Students reached collectively through various campus initiatives.

	Classes at Clinic A, Clinic E, and Regional Centers: Provide HIV/STD prevention classes for patients in STD waiting room. **Substance abuse centers:** Provide HIV/STD prevention classes for substance abuse center clients. **Community response:** Respond to community requests for health education classes such as colleges and churches. **Outreach services:** Provide one-on-one education to high-risk populations (e.g. unhoused, sex workers, individuals with substance use disorders, individuals at health fairs). **Condom Distribution Sites (CDS):** Establish and maintain 47 sites throughout Wake County.	• 1,026 participants • 483 participants • 2,145 participants • 3,100 contacts with community members • 108,634 condoms distributed among all sites

Testing and Outreach	**Community testing sites (24 sites):** Provide regularly scheduled HIV, STD, and hepatitis C testing at: shelters, substance abuse centers, colleges/universities, County jails, LGBTQ Center, community-based organizations, pregnancy centers, Regional Centers and local events. **Field Delivered Therapy (FDT):** Deliver medication to clients that test positive for chlamydia at community testing sites.	# of persons tested for: • HIV- 2,736 • Syphilis-2,763 • Chlamydia-2,838 • Gonorrhea-2,838 • Hepatitis C-2,291 • 336 FDT treatments were provided.

PrEP	**PrEP Referrals:** A PrEP referral is the process of connecting an individual to a healthcare provider or clinic that can evaluate them for and potentially prescribe Pre-Exposure Prophylaxis (PrEP), a medication taken to prevent HIV infection. This referral typically includes: • Assessing the individual's HIV risk factors • Providing basic PrEP education • Linking them to a provider or clinic that offers PrEP services (e.g., evaluation, lab testing, prescription) • Ensuring follow-up or navigation support, if needed	• PrEP Referrals completed and submitted to the PrEP coordinator: 95 • Number of PrEP appointments scheduled: 44 • Number of individuals linked to PrEP: 28

Epidemiology Program

Wake County's Epidemiology Program works to understand the distribution and determinants of health-related events in communities in Wake County and applies findings to control such events. We strive to accomplish our mission through three major approaches:

- **Research: We investigate and study areas of interest over time to be informed and knowledgeable of trends.**
- **Data Analysis: We review, clean, transform and model data to discover useful information and determine the extent to which different interventions may be effective.**
- **Education: We communicate findings to the public to control health-related events in communities.**

Programs and Services	Description	Outcomes/Outputs Data for period January 1, 2024 through December 31, 2024 (unless otherwise noted)
Surveillance and Education	Monitors disease surveillance data (such as wastewater monitoring, emergency department, clinical testing, mortality) routinely to determine disease incidence and trends in Wake County. Analyzes such data for public health reporting, presentations, and publications.	• Annual Public Health Reports: Communicable Disease

		• "Epi Insight: Connecting the Dots" Quarterly Epidemiology Newsletter • Respiratory Virus Surveillance Updates including Emergency Department visits for COVID-19, Influenza, and RSV • Influenza Season Updates including Emergency Department Visits for Influenza • Wastewater Monitoring Updates for COVID-19, Influenza A and B, RSV, and Mpox • 70 publications and materials presented (includes additional reporting and presentations)

Outbreak/Public Health Incident Support	Provides support for outbreaks and other public health incidents such as conducting an outbreak analysis report as part of an outbreak investigation for outbreaks of public health concern in Wake County.	• Cyclosporiasis Outbreak Associated with Restaurants-2024 • Serve on Core Epi-Team (facilitate quarterly meetings, facilitate public health incident debriefs, share epidemiology updates, plan meeting agendas)
Data Requests	Completes ongoing and one time data requests for internal and external partners (Commonly requested data includes communicable diseases, sexually transmitted diseases (STDs), HIV/AIDS, injury data, and county demographics.	• 16 data requests filled
Expansion Request Support	Provides data, data analyses and geographical analyses to support other Public Health program's expansion requests to expand their efforts and reach.	• STD/HIV/Hep C Community Program Expansion Requests

Technical Consultation and Support	• Provides technical guidance and protocols on respiratory viruses to schools, childcare operators, and others serving specific populations that may be in a high-risk setting. Additionally, will report COVID-19 clusters for schools and childcare facilities to the State after consultation with entity administration. • Provides data-driven materials to leadership and others to inform targeted efforts amongst communities.	• COVID-19 Guidance provided to Schools and Child Care facilities • Assisted with the preparation of a H5N1 letter to State Fair exhibitors • COVID-19 Guidance for Morehead Governor School of Blind presentation

Authors & Contributors

Rebecca A. Kaufman, MS
Director of Public Health

Editors-in-Chief

Morgan Poole, MPH
Epidemiology Program Manager

Jenelle Mayer, MPH
Surveillance and Compliance Health Director

Content Editors

Katie LaWall, MPH
Senior Epidemiologist

Akanksha Acharya, MS, CPM
Senior Epidemiologist

Marlene Kurt
Epidemiology Specialist

Morgan Poole, MPH
Epidemiology Program Manager