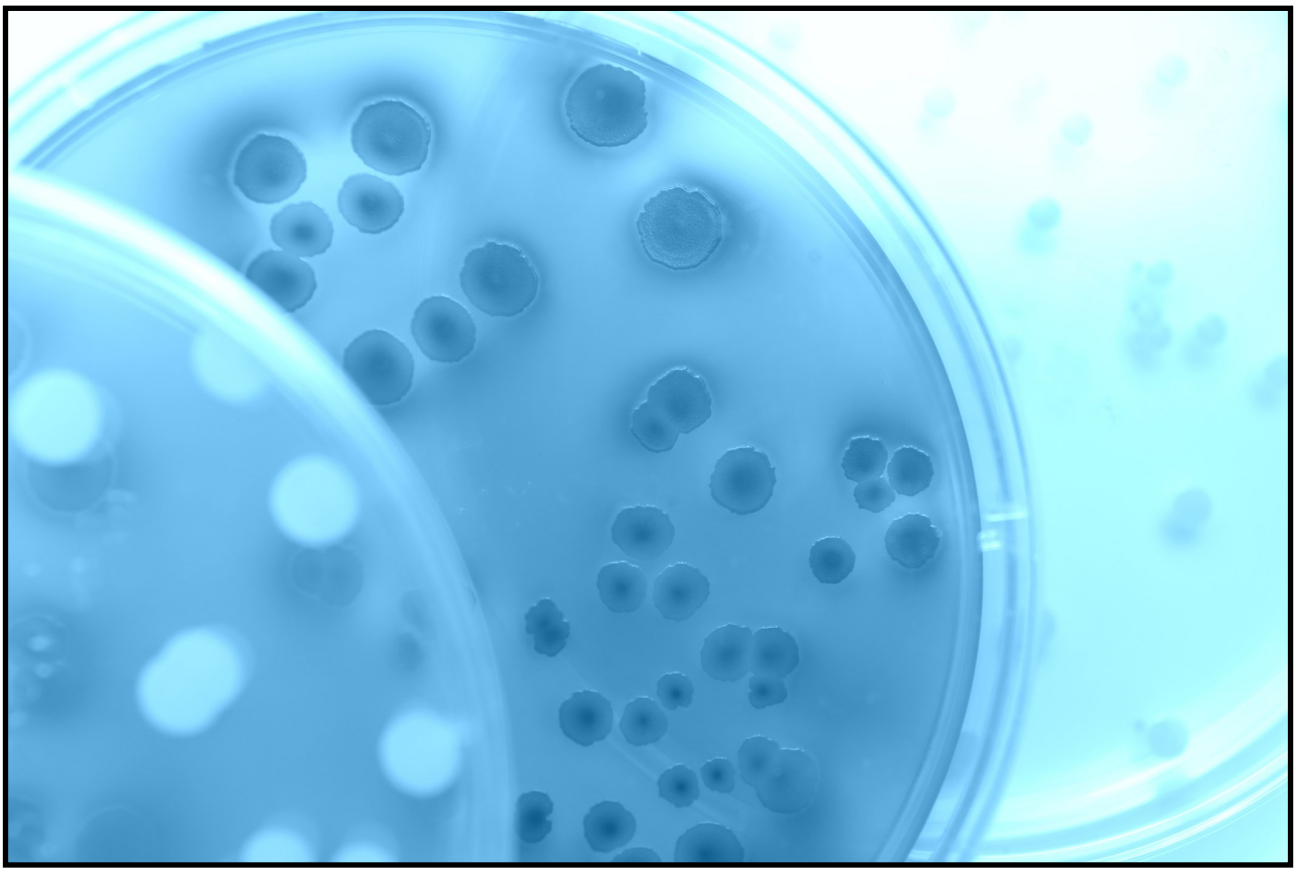
Annual Report

Epidemiology & Infectious Disease

2020
2021



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GWINNETT, NEWTON, AND ROCKDALE COUNTIES EPIDEMIOLOGY & INFECTIOUS DISEASE 2020/2021 ANNUAL REPORT

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GWINNETT, NEWTON, AND ROCKDALE COUNTIES EPIDEMIOLOGY & INFECTIOUS DISEASE 2020/2021 ANNUAL REPORT

Executive Summary

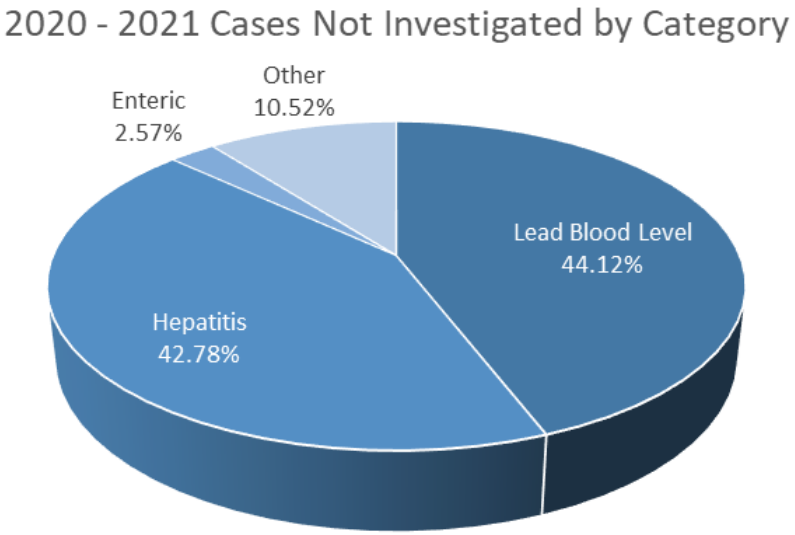
The Gwinnett, Newton, Rockdale County Health Departments (GNR Public Health), Division of Epidemiology and Infectious Disease serves the population of Gwinnett, Newton, and Rockdale Counties in metropolitan Atlanta, Georgia. The division is responsible for disease investigation and control for over one million residents. The division also participates in emergency-preparedness activities. Funding for all activities is secured through county, state, and federal grant-in-aid. The division consists of three distinct programs: Epidemiology, STI, and Tuberculosis. These programs operate as a team to meet local, state, and federal goals and deliverables.

In 2020 & 2021 a total of 26,007 notifiable conditions including 16,989 STI cases, 409 HIV cases, 5,470 general notifiable disease cases, 3,083 animal bites, and 56 tuberculosis cases were reported in the three-county health district. Notifiable conditions have increased by 142% since the first two annual reports published in 2013 & 2014. This increase is due in large part to increased reporting of viral hepatitis, Chlamydia, Gonorrhea, animal bites, and lead blood level results. Of all non-STI, non-TB notifiable diseases that require an investigation by epidemiology or a public health intervention, 79.1% were investigated.

This report encompasses data that is collected at the local and state level. All data is verified at the state level before confirmation. As such, a time delay exists allowing for verification of cases according to CDC case definitions and reporting requirements. The publication of this report encompasses all confirmed 2020 and 2021 Notifiable Disease data as of March 9, 2023.

A total of 5,262 (61.5%) of all non-STI, non-COVID-19, non-TB notifiable diseases were investigated per district protocols, and this is due to several factors. 1,899 (22.2%) of non-STI, non-COVID-19, non-TB diseases that were reported in 2020 & 2021 did not require an investigation based on statewide disease protocols, and an additional 1,392 (16.3%) diseases did not require an investigation based on district protocols. Chlamydia and Gonorrhea make up the largest proportion of uninvestigated cases due to how the data is processed and reported at the state level. Reports for these STI's will only be made accessible to the local health district if they meet priority status, per the district's custom Partner Services Priority Grid, or if the individual was diagnosed at a public health center. Though all lead blood level test results are reportable to public health, per protocol Epidemiology only investigates cases in children who meet the threshold for public health intervention (10 µg/dL or higher). In 2020, program staff investigated 62 foodborne illness complaints; 100% of these instances were investigated. In 2021, program staff investigated 86 foodborne illness complaints; 100% of these instances were investigated.

2020-2021 Cases Not Investigated		
Reportable Disease	**Number of Cases**	**Percentage of Cases**
Campylobacteriosis (>30 days)	10	0.33%
Carbapenem Resistant Enterobacteriaceae (>30 days)	21	0.68%
Cryptosporidiosis (>30 days)	6	0.20%
Giardiasis (>30 days)	<5	0.03%
Haemophilus *Influenzae*	14	0.46%
Hepatitis C (>30 days, low/no ALT)	1313	42.78%
Lead Blood Level (<10µg/dL)	1354	44.12%
Legionellosis (>30 days)	<5	0.03%
Salmonellosis (>30 days)	16	0.52%
Shiga Toxin Producing E.Coli (Stec) (>30 days)	8	0.26%
Shigellosis (>30 days)	10	0.33%
Streptococcal Disease, Group A (Invasive)	61	1.99%
Streptococcal Disease, Group B (Invasive)	172	5.60%
Streptococcal Toxic Shock Syndrome	10	0.33%
Streptococcus Pneumoniae (Invasive)	65	2.12%
Toxic Shock Syndrome (Staphylococcal)	<5	0.03%
Vibrios-Other (>30 days)	<5	0.10%
Yersinia (>30 days)	<5	0.10%
Total	**3069**	**100.00%**

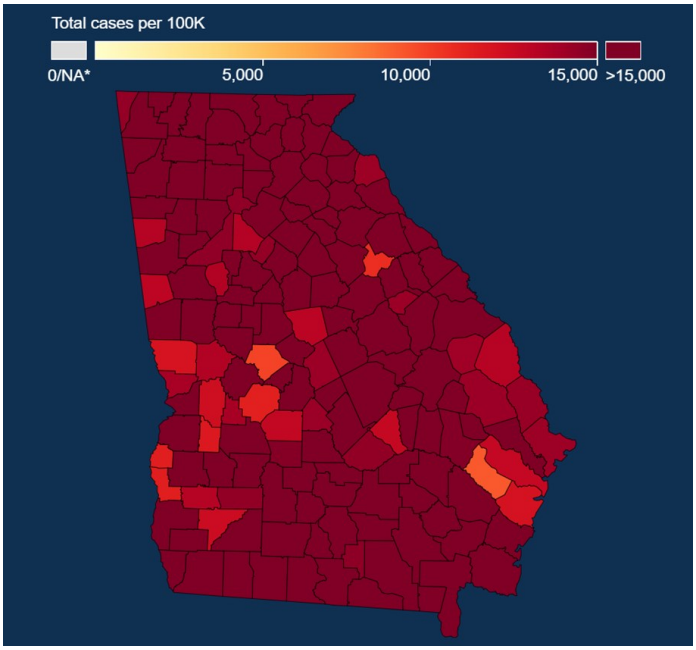


Emerging Pathogen: SARS-CoV-2 (Coronavirus)

COVID-19 (Coronavirus Disease 2019) is a highly contagious respiratory disease caused by the SARS-CoV-2 virus (Severe Acute Respiratory Syndrome Coronavirus 2). The virus typically causes respiratory symptoms that can resemble a cold, influenza, or pneumonia. Most people that are infected will develop mild to moderate respiratory illness (fever, fatigue, cough, runny nose) and can recover without special treatment. Other symptoms may included loss of taste or smell, shortness of breath, nausea, diarrhea, or other notable symptoms. If an infected person is an older adult, immunocompromised, or has underlying health conditions, they could become severely ill and require immediate medical attention. COVID-19 can spread when an infected person releases small droplets and particles that contain the virus while they are breathing, coughing, sneezing, or speaking. Other people can be exposed to those droplets and particles by inhalation or contaminated surfaces. One of the most prominent characteristics of COVID-19 is that it can spread whether or not an infected person exhibits symptoms. [17,18,19]

Human coronaviruses are not new. The first human coronavirus was discovered in the mid-1960s; since then, scientists have identified a total of seven different types, including SARS-CoV-2. The novel coronavirus, SARS-CoV-2, was first discovered late 2019 when a cluster of patients in Wuhan, China began experiencing symptoms of atypical pneumonia-like illness that responded poorly to standard treatments for this type of illness. The World Health Organization (WHO) Country Office in China took heed of cases of pneumonia from Wuhan, with symptoms of shortness of breath and fever, where the etiology was unknown. Presumably, all of these cases were connected to the Huanan Seafood Wholesale Market. The live wildlife trade at the Huanan market may have contributed to the occurrence of SARS-CoV-2. The Huanan market was shutdown on January 1, 2020, and by January 2, 2020, 41 people were hospitalized with pneumonia with an unknown cause, and 27 of them had direct exposure to the market. The United States reported its first laboratory-confirmed case on January 20, 2020 in Washington state. By March 11, 2020, the WHO declared COVID-19 as a pandemic after having more than 118,000 cases in 114 countries and 4,291 deaths.[20,21,22]

GA COVID-19 Case Rates
Jan 1, 2020 to Dec 31, 2021



Source: https://dph.georgia.gov/covid-19-status-report

The district health department played a critical role in managing the spread of COVID-19 and implementing measures to mitigate its impact on the community. The implementation of social distancing, mask mandates, and vaccine distribution slowed the spread of the virus and were important tools in the efforts to end the pandemic. Health departments worked with local hospitals and healthcare providers to ensure that patients received needed care. The district health department was greatly responsible for contact tracing to identify, contact and advise exposed individuals with guidance on testing and quarantine/isolation. District health departments also played a key role in setting up COVID-19 testing sites within the community and administering both tests and vaccines once they became available. Health departments provided education, outreach, and enforced guidelines under public health emergency orders within their communities.

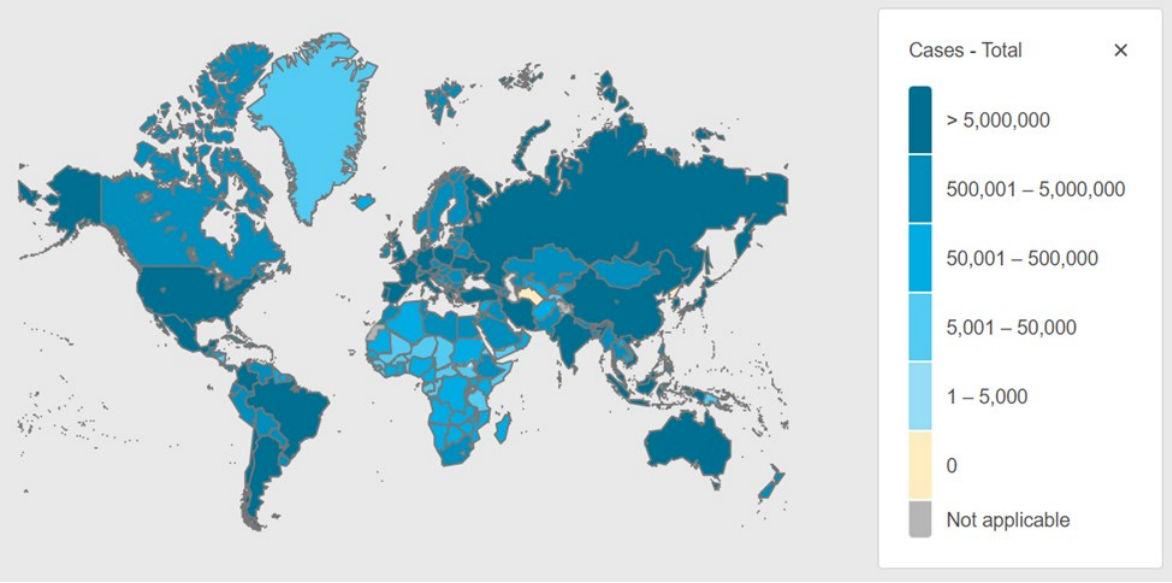
During the pandemic, employees within GNR were recruited to help in various response efforts, even if it was not within the scope of their daily work. This was due to the unprecedented nature and scale of the emergency response, which required a rapid, coordinated response from every available resource. Volunteers were also recruited and trained. Additional aid came from agency staff nurses, GNR's HIV/STD team, GNR COVID-19 hires, and 11 National Guard soldiers. In 2020, 138 DPH employees were trained to work on GNR's Case Investigation team. The state health department was responsible for non-COVID disease investigations to allow the district to respond to COVID-19. This is why non-COVID disease reporting was delayed.

GNR COVID-19 Hospitalizations January 2020 - April 2023	
Gwinnett	8,694
Newton	3,015
Rockdale	2,663

GNR COVID-19 Deaths January 2020 - April 2023		
County	**Confirmed Deaths**	**Probable Deaths**
Gwinnett	1,982	151
Newton	447	58
Rockdale	319	34

Source: https://dph.georgia.gov/covid-19-status-report

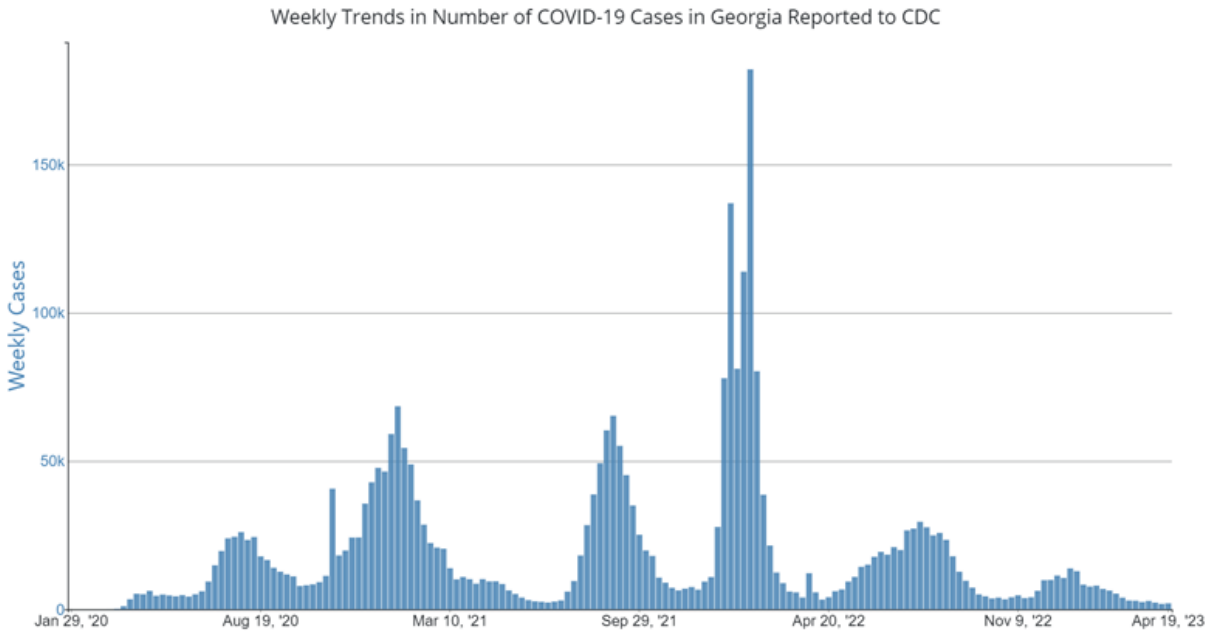
Total COVID-19 Global Cases January 2020 - April 2023



Source: https://covid19.who.int/

From January 2020 to December 2021, there were 191,174 COVID-19 cases reported in the Gwinnett, Newton, and Rockdale Health District, with the largest number of cases in Gwinnett county. Of these cases, there were 2,385 COVID-19 related deaths. GNR investigated 930 COVID-19 outbreaks in 2020 & 2021. There were increases in cases during times where new variants of COVID-19 emerged. The largest spike in cases was observed from December 2021 to January 2022 when the highly contagious Omicron variant of COVID-19 was circulating.

Due to the large number of cases and outbreaks of COVID-19 during 2020 & 2021, this report was completed excluding this data; including COVID-19 case counts would largely skew the data presented in this report. COVID-19 largely affected epidemiologic response and investigation for other notifiable diseases.



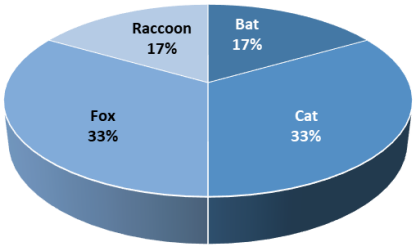
Source: CDC COVID-19 Data Tracker

Animal Bites

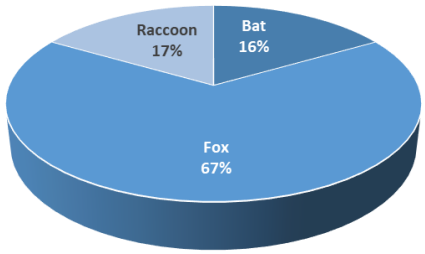
Rabies is a fatal viral infection transmitted through the saliva of infected mammals. Although all mammals are susceptible to rabies, only certain species act as reservoirs for rabies disease in the community. These species include raccoons, skunks, foxes, bats, and coyotes as well as domestic dogs, cats, and ferrets. Rabies in humans can be prevented by prohibiting exposure to rabid animals, by providing appropriate post-exposure prophylaxis, and by offering pre-exposure vaccinations to high-risk populations who might encounter rabid animals in their daily lives (veterinarians, animal control personnel, etc.).[1]

Animal bites/exposures are a notifiable condition, and are reported to Epidemiology by animal control, medical facilities, and private citizens. All reports are investigated to determine the risk for rabies transmission and to make recommendations regarding the need for rabies prophylaxis.

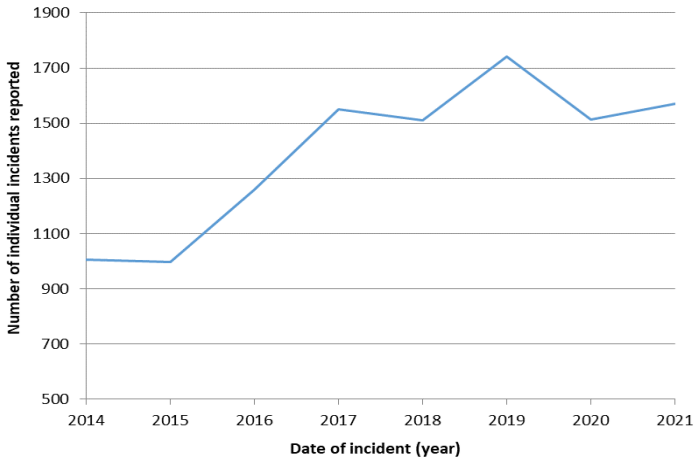
GNR 2020 Rabies Positive Animals by Type (N=6)



GNR 2021 Rabies Positive Animals by Type (N=6)

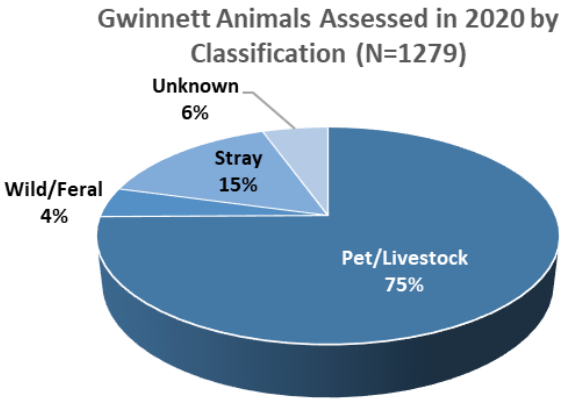


GNR Total Animal Bite Incidents Reported from 2014 to 2021

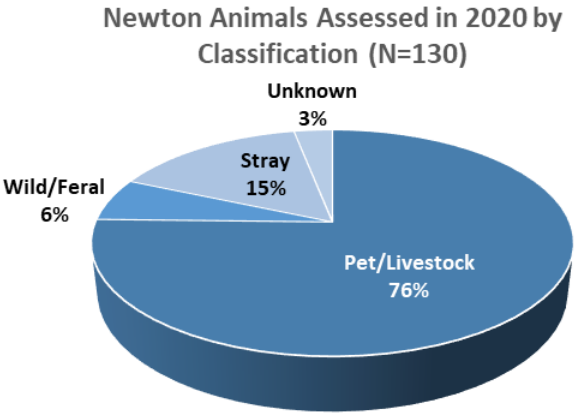


In 2020, of the 1,514 de-duplicated individual reports of animal bites involving residents in Gwinnett (N=1,297), Newton (N=128), and Rockdale (N=89) counties, post-exposure prophylaxis (PEP) was recommended to 266 human victims following an animal exposure/bite. Of those, 29 (11%) human victims completed the full course of treatment, and 77 victims (29%) refused PEP during the interview. In 2020, cats and foxes represented the majority of rabies-positive animals.

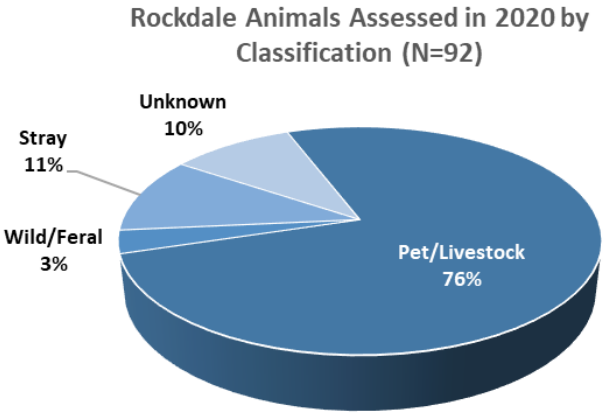
In 2021, of the 1,569 de-duplicated individual reports of animal bites involving residents in Gwinnett (N=1,354), Newton (N=126), and Rockdale (N=89) counties, post-exposure prophylaxis (PEP) was recommended to 182 human victims following an animal exposure/bite. Of those, 72 (40%) human victims completed the full course of treatment, and 74 victims (41%) refused PEP during the interview. In 2021, raccoons and foxes were the majority of rabies positive animals.



Gwinnett 2020	Animal Bites Reported	Animals Assessed
Pet/Livestock	950	957
Wild/Feral	96	57
Stray	180	195
Unknown	71	70
Total	**1297**	**1279**



Newton 2020	Animal Bites Reported	Animals Assessed
Pet/Livestock	95	98
Wild/Feral	9	8
Stray	20	20
Unknown	<5	<5
Total	**128**	**130**

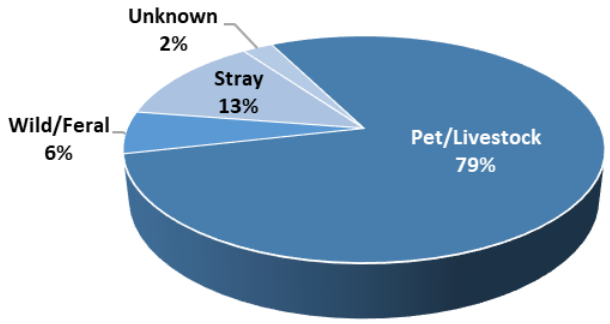


Rockdale 2020	Animal Bites Reported	Animals Assessed
Pet/Livestock	67	70
Wild/Feral	<5	<5
Stray	10	10
Unknown	8	9
Total	**89**	**92**

*Animals assessed are the number of animals that actually bit or scratched a human. Animal bites reported are based on the number of humans bitten, which means the animals assessed could be higher than the animal bites reported due to multiple animals biting or scratching one human.

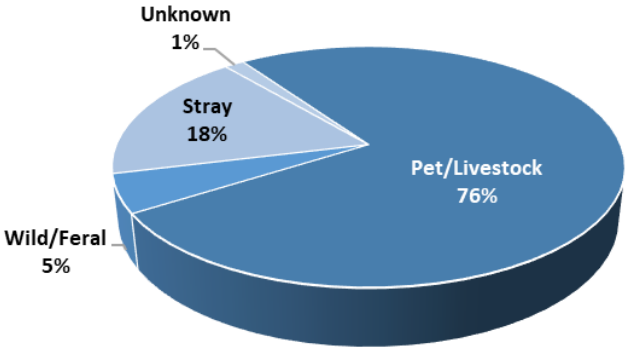
Nationally, wild animals represent the majority (92.7%) of animal rabies cases. In 2018, bats, raccoons, skunks, and foxes were the most commonly reported rabies-positive animals in the U.S.[2] Human rabies cases remain rare with only 2 confirmed human rabies cases in 2018. From 2019 to 2021, the Advisory Committee on Immunization Practices made multiple updates human rabies prevention recommendations, including a new 2-dose intramuscular vaccine series to replace the 3-dose schedule.[3]

Gwinnett Animals Assessed in 2021 by Classification (N=1309)



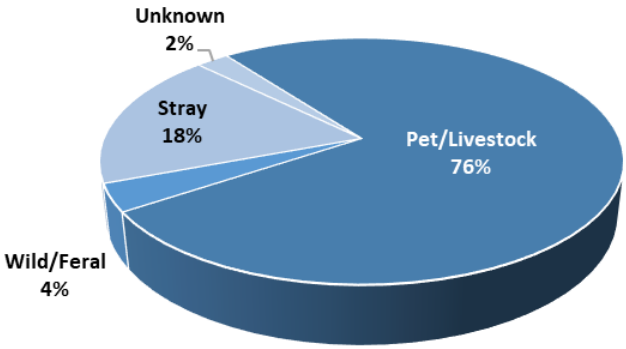
Gwinnett 2021	Animal Bites Reported	Animals Assessed
Pet/Livestock	1013	1033
Wild/Feral	155	79
Stray	153	165
Unknown	33	32
Total	**1354**	**1309**

Newton Animals Assessed in 2021 by Classification (N=136)



Newton 2021	Animal Bites Reported	Animals Assessed
Pet/Livestock	96	103
Wild/Feral	7	7
Stray	21	24
Unknown	<5	<5
Total	**126**	**136**

Rockdale Animals Assessed in 2021 by Classification (N=83)

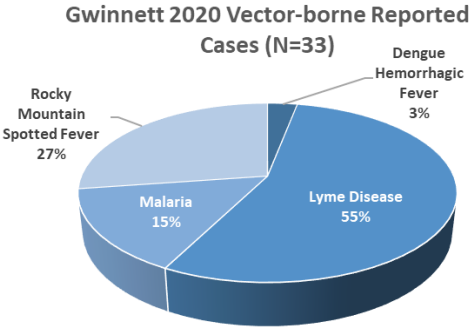


Rockdale 2021	Animal Bites Reported	Animals Assessed
Pet/Livestock	65	63
Wild/Feral	7	<5
Stray	15	15
Unknown	<5	<5
Total	**89**	**83**

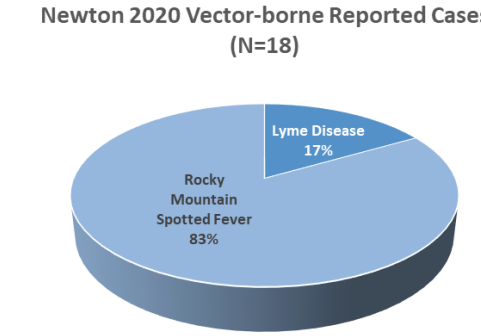
* The total number of animals assessed includes only attacking animals. Victim animals are not included.

Vector-borne and Zoonotic Diseases

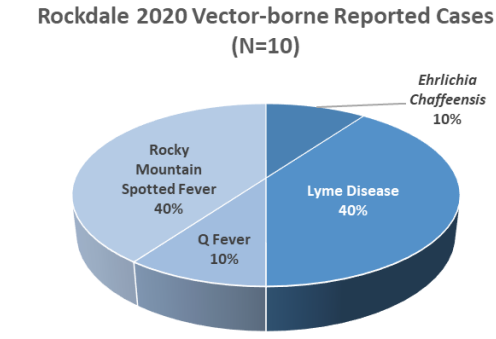
Vector-borne diseases are illnesses that are transmitted to humans or other animals by an insect or other arthropod such as mosquitoes and ticks. Many individuals infected with vector-borne diseases have no symptoms; however, a small percentage of people may develop serious illness such as encephalitis and meningitis that can result in irreversible neurological damage, paralysis, coma, or death. A combination of factors continues to define vector-borne disease epidemiology in the United States. These factors include the importation of pathogens and disease vectors from other countries, the evolution of pathogens currently impacting the U.S., and identification of novel pathogens already endemic to the U.S. but as yet uncharacterized.[4]



Gwinnett 2020	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Dengue Hemorrhagic Fever	<5	0	0
Lyme Disease	18	<5	<5
Malaria	5	<5	<5
Rocky Mountain Spotted Fever	9	0	0
Total	**33**	**4**	**4**



Newton 2020	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Lyme Disease	<5	0	0
Rocky Mountain Spotted Fever	15	<5	<5
Total	**18**	**<5**	**<5**

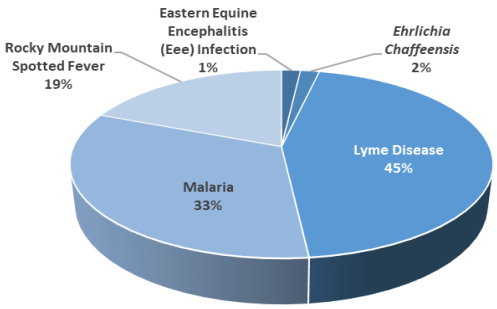


Rockdale 2020	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Ehrlichia chaffeensis	<5	<5	<5
Lyme Disease	<5	0	0
Rocky Mountain Spotted Fever	<5	<5	<5
Total	**10**	**<5**	**<5**

The Georgia Department of Public Health requires immediate reporting of all acute arboviral (arthropod-borne virus) infections. Vector-borne diseases that require reporting within 7 days include Malaria, Rocky Mountain Spotted Fever (RMSF), Ehrlichiosis, Anaplasmosis , and Lyme disease. The most common arboviral infections reported in Georgia include: Eastern Equine Encephalitis (EEE), LaCrosse Encephalitis, and West Nile Encephalitis (WNV). St. Louis Encephalitis (SLE) is less common but has also been reported in Georgia.

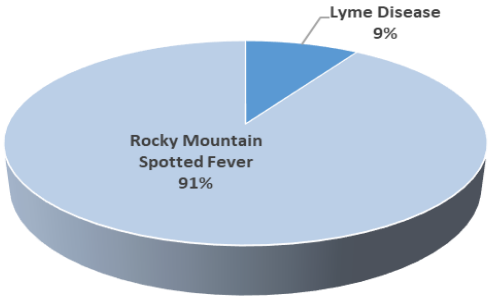
A zoonotic disease is an illness that can be passed from animals such as livestock, pets, and wild animals to humans. Brucellosis, Q fever, and tularemia are examples of zoonoses and must be reported immediately because they are classified as potential bioterrorism agents. Zoonotic diseases that require reporting within 7 days include leptospirosis, Hansen's disease, psittacosis, and toxoplasmosis.

Gwinnett 2021 Vector-borne Reported Cases (N=58)



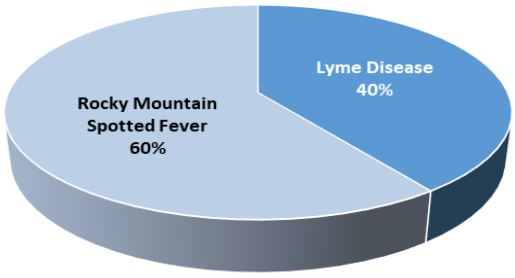
Gwinnett 2021	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Eastern Equine Encephalitis (EEE) Infection	<5	0	0
Ehrlichia chaffeensis	<5	<5	<5
Lyme Disease	26	<5	<5
Malaria	19	17	17
Rocky Mountain Spotted Fever	11	0	0
Total	**58**	**22**	**22**

Newton 2021 Vector-borne Reported Cases (N=11)



Newton 2021	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Lyme Disease	<5	0	0
Rocky Mountain Spotted Fever	10	0	0
Total	**11**	**0**	**0**

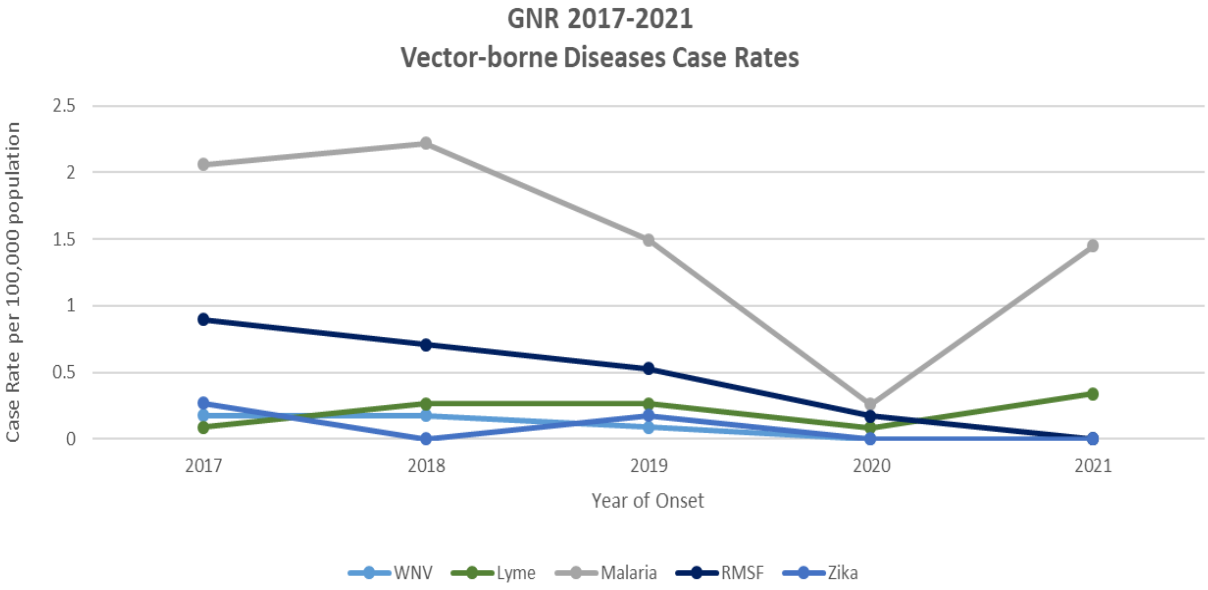
Rockdale 2021 Vector-borne Reported Cases (N=5)



Rockdale 2021	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Lyme Disease	<5	0	0
Rocky Mountain Spotted Fever	<5	0	0
Total	**5**	**0**	**0**

In 2020, a total of 61 vector-borne illnesses were reported to GNR. These illnesses consisted of Malaria, Rocky Mountain Spotted Fever (RMSF), Lyme Disease, Ehrlichia chaffeensis, and Dengue. Rocky Mountain Spotted Fever represented 46% of all vector-borne and zoonotic illness reported in 2020. In 2021, a total of 73 vector-borne illnesses were reported to GNR. These illnesses consisted of the diseases mentioned above as well as one case of Eastern Equine Encephalitis. Lyme Disease represented 40% of all vector-borne and zoonotic illness reported in 2021.

A 280% increase in Malaria cases was observed between 2020 and 2021, and a 16% increase in Lyme Disease cases was also observed during this time period. It should be noted that all GNR cases of Malaria were travel -associated. GNR Malaria patients most commonly reported recent travel to Africa where Malaria is endemic. No Zika cases were reported during 2020 & 2021.[5]



Countries Visited by 2020 GNR Malaria Cases
Ghana
Ivory Coast
Nigeria

Countries Visited by 2021 GNR Malaria Cases	
Cameroon	Ivory Coast
Congo	Nigeria
Guinea	Sierra Leone

Epidemiology program staff attempted to investigate all cases of vector-borne disease; however, the interview process is complicated by language barriers, refusal to participate, and loss-to-follow-up. Confirmation of disease also requires extensive laboratory testing. As a result many likely cases are not confirmed due to refusal to follow up with requested laboratory testing.

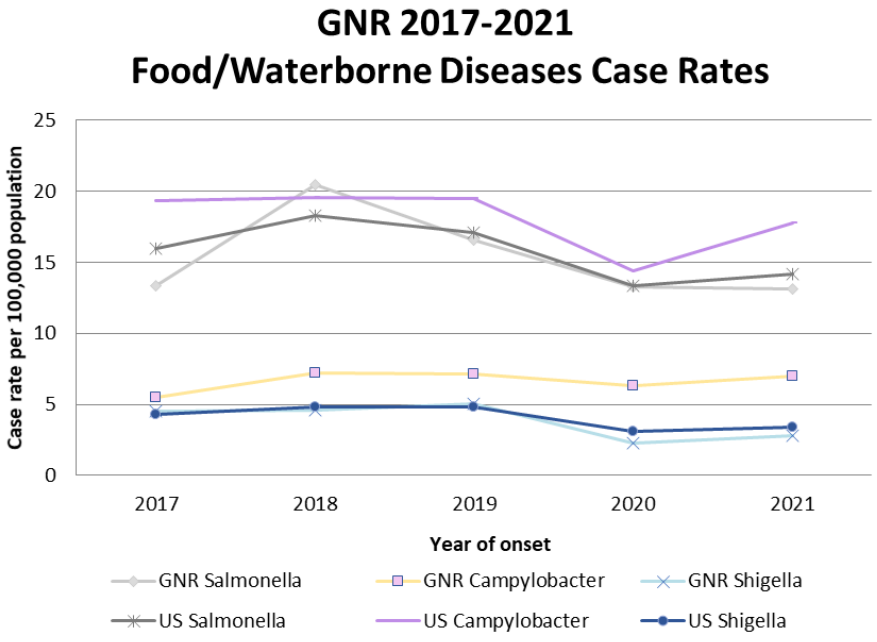
Food and Waterborne Diseases

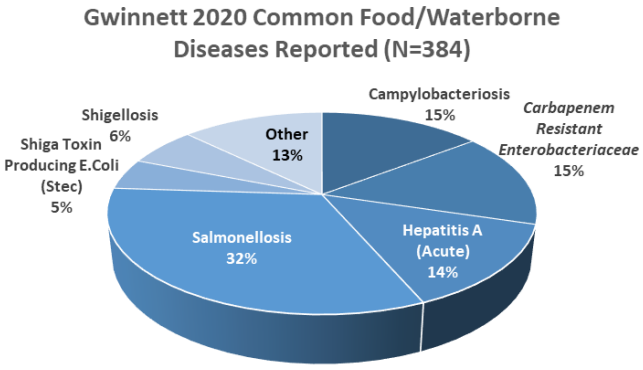
Enteric Diseases are most commonly caused by bacteria, viruses, or parasites, which are transmitted through the fecal-oral route or, frequently, through contaminated food and water, and enter the body through the gastrointestinal system. These microbes can also be spread through animal or person-to-person contact. There are over 250 identified foodborne diseases. The most common are caused by *Campylobacter*, *Salmonella*, *Shigella*, and *Escherichia coli* O157:H7 or shiga toxin-producing *E. coli* (STEC), and the calicivirus group of viruses known as Norwalk or Norwalk-like viruses. Other less common culprits include Hepatitis A, *Giardia lamblia*, *Yersinia*, *Listeria monocytogenes*, and *Cryptosporidium*. The incubation period varies widely from hours up to one month or more depending on the pathogen causing the illness.

The Epidemiology program partners with Environmental Health to investigate potential and reported outbreaks and prevent enteric diseases caused by contaminated food or water as well as those spread person -to-person. Epidemiology staff conducted surveillance activities, investigations and community education to identify sources of infection and prevent further transmission of disease.

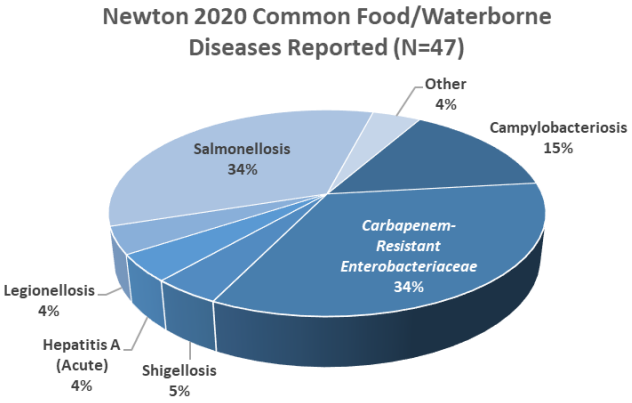
Particular attention was given to outbreaks in facilities serving highly susceptible populations such as in-home and institutional day care centers and pre-schools. These settings are of particular concern because of the high potential for transmission due to the frequency of diapering and toileting, as well as food preparation and feeding of young children in the classroom setting. In younger children, frequent hand-to-mouth activity also increases the potential for disease transmission. The Epidemiology staff worked closely with employees from these settings to dispense information on the appropriate measures to prevent transmission of enteric diseases.

The current Georgia State Law (OCGA) requires reporting of all cases of *Campylobacter*, *Cryptosporidium*, *Cyclospora*, *E. coli* O157:H7 or Shiga Toxin-producing *E. coli*, *Giardia*, Hemolytic Uremic Syndrome (HUS), *Listeria*, *Salmonella*, *Shigella*, *Yersinia* and *Vibrio*. Additional follow-up is required for any clusters in person, place, or time. Case investigation with possible special follow-up is required for cases of *C. botulinum*, *Cyclospora*, *E. coli* O157:H7 (*STEC)*, Hemolytic Uremic Syndrome (HUS), *Listeria*, Typhoid fever, and *Vibrio*.

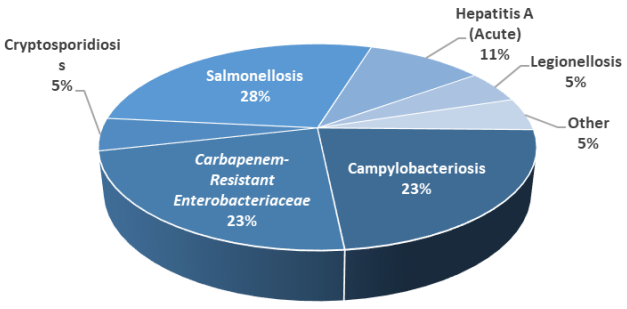




Gwinnett 2020	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Campylobacteriosis	56	52	56
Carbapenem-Resistant Enterobacteriaceae	58	52	58
Cholera	<5	0	0
Cryptosporidiosis	11	10	10
Cyclosporiasis	<5	<5	<5
Giardiasis	11	10	11
Hepatitis A (Acute)	53	53	11
Legionellosis	11	11	11
Listeriosis	<5	<5	<5
Salmonellosis	125	120	124
Shiga Toxin Producing E.Coli (STEC)	19	18	18
Shigellosis	24	22	21
Vibrios-Other	<5	<5	<5
Yersinia	7	6	5
Total	**384**	**361**	**334**

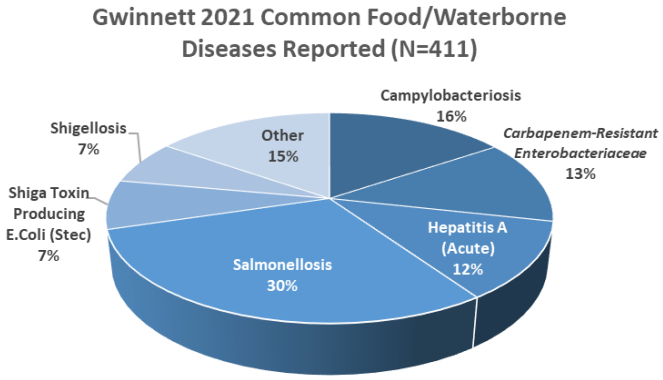


Newton 2020	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Campylobacteriosis	7	7	7
Carbapenem-Resistant Enterobacteriaceae	16	15	6
Cryptosporidiosis	<5	<5	<5
Hepatitis A (Acute)	<5	<5	0
Legionellosis	<5	<5	<5
Salmonellosis	16	15	16
Shiga Toxin Producing E.Coli (STEC)	<5	<5	<5
Shigellosis	<5	<5	<5
Total	**47**	**44**	**35**

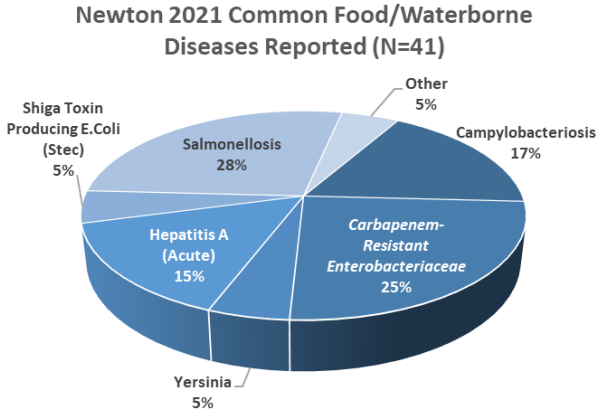


Rockdale 2020	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Campylobacteriosis	9	8	9
Carbapenem-Resistant Enterobacteriaceae	9	9	<5
Cryptosporidiosis	<5	<5	<5
Giardiasis	<5	<5	<5
Hepatitis A (Acute)	<5	<5	0
Legionellosis	<5	<5	<5
Salmonellosis	11	10	11
Vibrios-Other	<5	<5	<5
Total	**39**	**37**	**28**

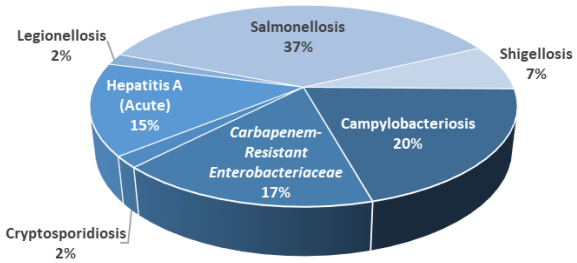
The most frequently reported enteric diseases in the GNR District were *Salmonella*, *CRE*, and *Campylobacter* which together accounted for over 72% all reported enteric illnesses in 2020 and 2021. *STEC, Shigellosis,* and *Cryptosporidium* together accounted for 17% of the total number of reported cases in 2020 and 2021. Limitations in staff capacity required prioritization of case investigations of foodborne or enteric illness, and staff limitations at GDPH resulted in late reporting of certain enteric illnesses. For example, *Carbapenem Resistant Enterobacteriaceae (CRE)* represented 27% of uninvestigated enteric illness cases. In 2020, the district received 470 reports of enteric illness of which GNR and DPH staff were able to investigate 94.3%. In 2021, 90.1% of 506 cases were investigated.



Gwinnett 2021	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Campylobacteriosis	64	60	63
Carbapenem-Resistant Enterobacteriaceae	53	42	34
Cryptosporidiosis	18	14	18
Cyclosporiasis	<5	<5	<5
Giardiasis	17	17	17
Hepatitis A (Acute)	49	49	10
Legionellosis	11	10	7
Listeriosis	<5	<5	<5
Salmonellosis	123	117	121
Shiga Toxin Producing E.Coli (STEC)	31	24	31
Shigellosis	28	21	27
Typhoid	<5	<5	<5
Vibrios-Other	<5	0	<5
Yersinia	8	6	8
Total	**411**	**367**	**328**



Newton 2021	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Campylobacteriosis	7	6	7
Carbapenem Resistant Enterobacteriaceae	10	8	8
Giardiasis	<5	<5	<5
Hepatitis A (Acute)	6	6	<5
Legionellosis	<5	<5	<5
Salmonellosis	11	11	11
Shiga Toxin Producing E.Coli (STEC)	<5	<5	<5
Shigellosis	<5	<5	<5
Yersinia	<5	<5	<5
Total	**41**	**38**	**34**



Rockdale 2021	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Campylobacteriosis	11	10	11
Carbapenem Resistant Enterobacteriaceae	9	8	8
Cryptosporidiosis	<5	<5	<5
Hepatitis A (Acute)	8	8	6
Legionellosis	<5	<5	<5
Salmonellosis	20	19	19
Shigellosis	<5	<5	<5
Total	**54**	**51**	**50**

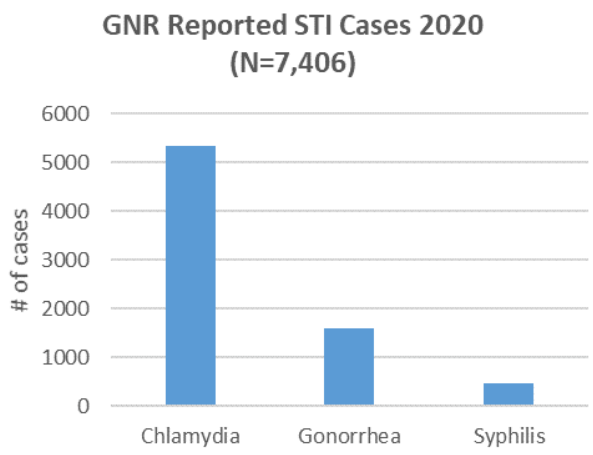
Salmonella reporting increased 1.3% from 2020 to 2021, which is lower than national rates. In 2018, the district Salmonella rate surpassed the national rate for the first time in five years, but has not exceeded national rates again since then.[6] There was also a 65% increase in Shiga-Toxin Producing E. coli cases (STEC) from 2020 to 2021. Salmonella was a leading cause of gastrointestinal illness in 2021. Reported cases were comparable in 2020 and 2021.

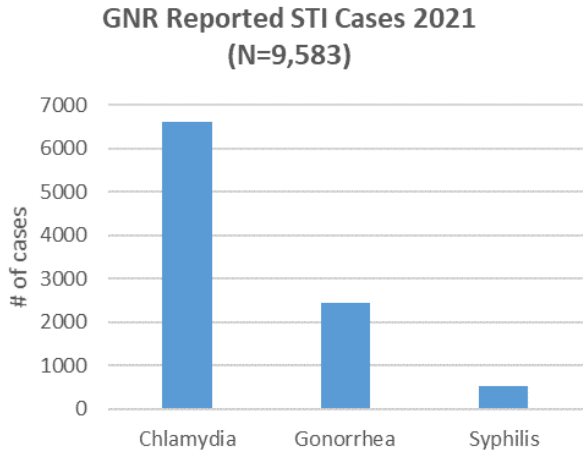
The CDC has identified drug resistant Campylobacter, Salmonella, and Shigella as serious threats to human health requiring immediate action. In 2018, the Georgia Department of Public Health's Acute Disease Epidemiology Section added questions to the standard interview form for Campylobacter and Salmonella regarding surgical history, probiotic use, and most importantly, antibiotic use. Questions regarding sexual behaviors and practices were also added to the Shigella interview form in response to an increasing number of Shigella cases among the MSM population in metro Atlanta.[7] Foodborne and waterborne disease investigations will continue to evolve to address these and other emerging disease trends.

Sexually Transmitted Infections (STIs)

The GNR District STI team received 7,586 reports of sexually-transmitted infections in 2020 and 9,812 in 2021. Sexually-transmitted infections are a significant cause of morbidity and mortality in the GNR Health District and throughout the state of Georgia. Sexually-transmitted infections are both preventable and often curable with appropriate diagnosis and treatment. Without treatment, these infections can lead to sterility, dementia, and death. Investigations were prioritized based on factors such as age, pregnancy status, clustering, and provider request. Syphilis and HIV (when reported to GNR directly) are always investigated.

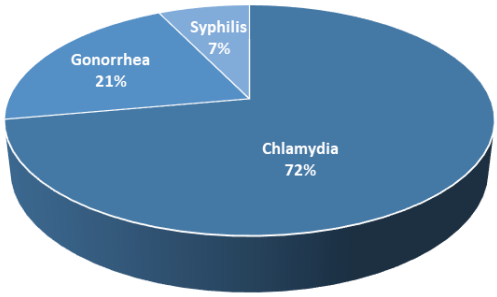
Chlamydia accounted for 68.8% of the total number of cases of sexually-transmitted infections reported in 2020 and 2021. The next most frequently reported sexually-transmitted infection was *Gonorrhea*, which accounted for 17.5% of total cases reported in 2020 and 2021. These two diseases represent a substantial percentage of the total burden of disease from STI in GNR. The state of Georgia ranks 7th in the rate of reported *Chlamydia* cases (643.8 cases/100,000 people) and 19th in the rate of reported Gonorrhea cases (202.1 cases/100,000 people).[8] In 2021, Georgia ranked 19th in the nation for primary and secondary Syphilis (17.4 cases/100,000 people).[9]



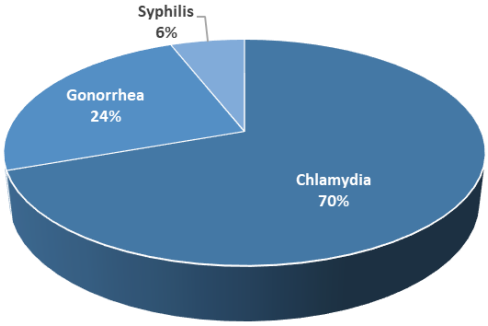


STI investigations include provider record searches, patient follow up and/or interviews, and contact tracing. A provider record search is usually conducted when insufficient data is presented to the health department and additional information (i.e. demographics, signs/symptoms, labs, treatment, etc.) is required from the health provider. Positive *chlamydia* and gonorrhea cases warrant an investigation under certain circumstances. A field investigation is initiated on patients requiring treatment that are diagnosed at public health department clinics. Syphilis and HIV cases reported by private and public entities are investigated for epidemiologic data and to implement control measures. Individuals are educated about their infection, linked to care if necessary, and interviewed to identify their sexual and needle sharing partners. Contact tracing is also a very important public health function as STI staff are able to prevent the spread of STIs by offering testing and treatment to Syphilis and HIV contacts.

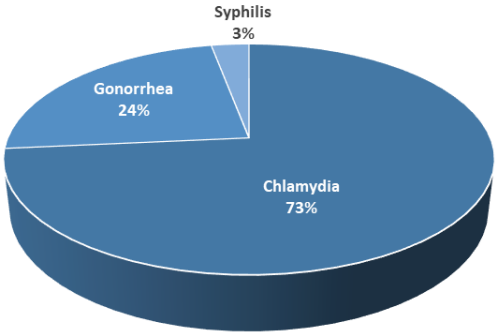
Gwinnett 2020 Reported STI Cases (N=5,485)



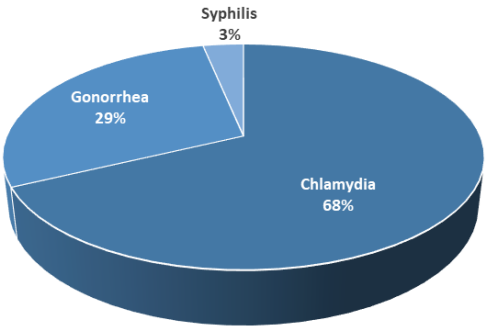
Gwinnett 2021 Reported STI Cases (N=7,298)



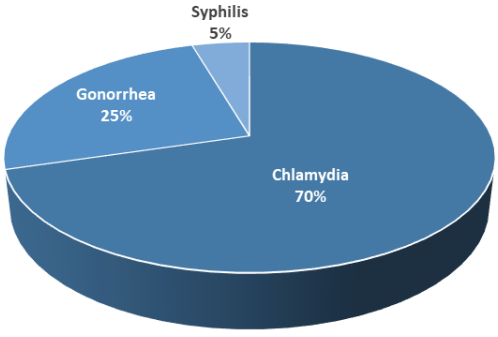
Newton 2020 Reported STI Cases (N=1,135)



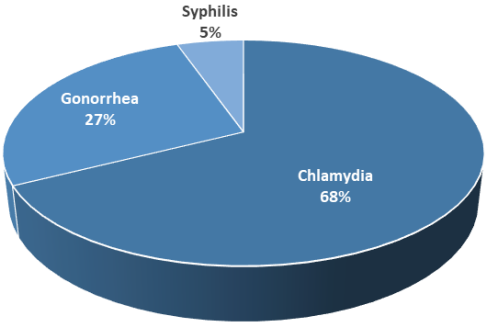
Newton 2021 Reported STI Cases (N=1,316)

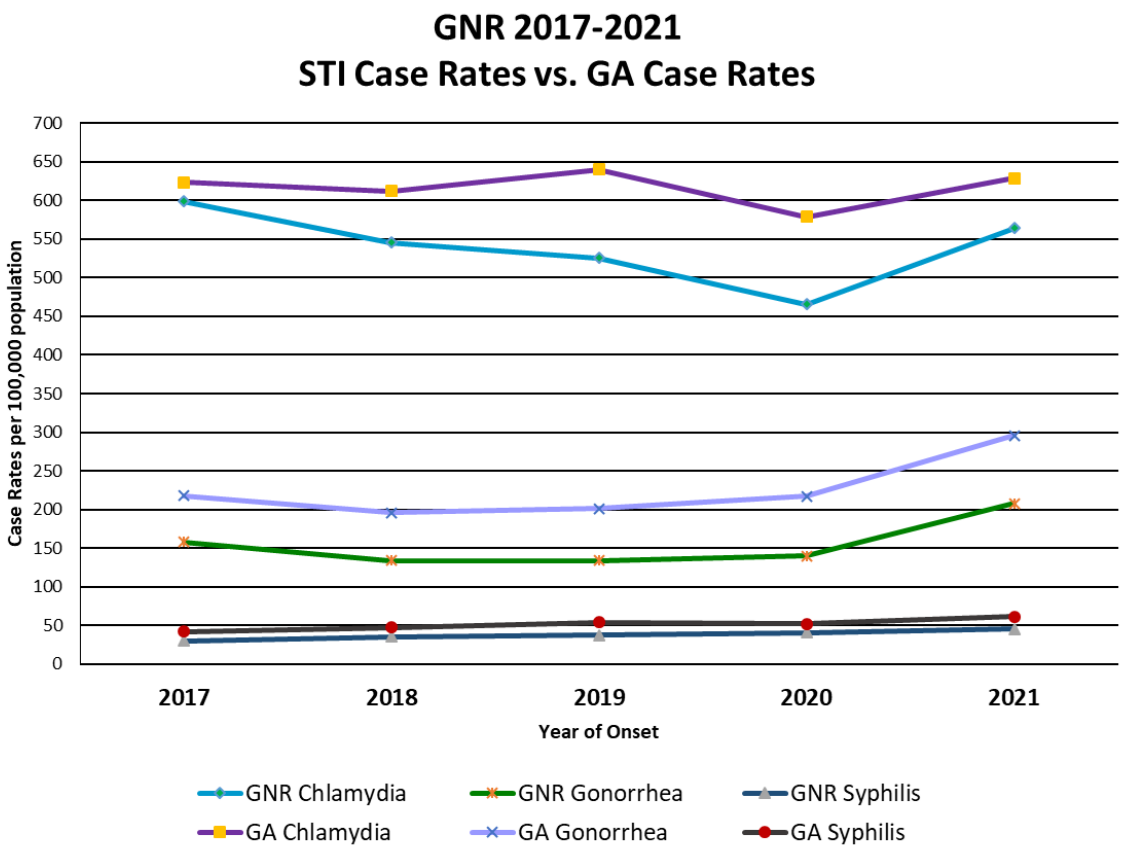


Rockdale 2020 Reported STI Cases (N=966)



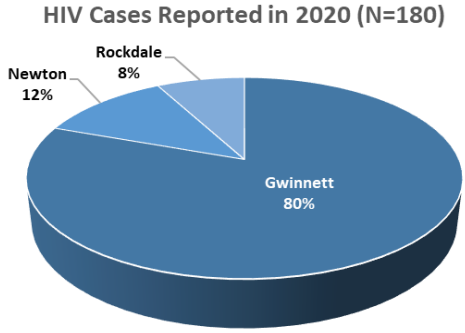
Rockdale 2021 Reported STI Cases (N=1,198)

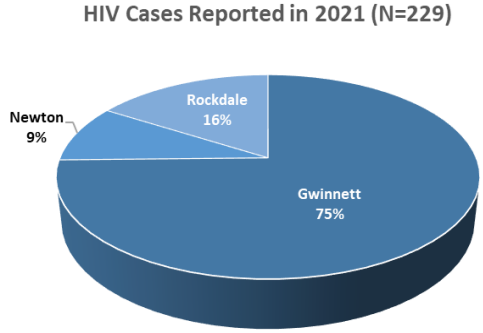




HIV

Currently, the HIV program includes EHE program staff and Comprehensive HIV program staff. The program is responsible for conducting partner notification and linkage service for all patients diagnosed with HIV that are reported directly to GNR. The HIV department is responsible for linking newly diagnosed patients to a Ryan White care provider for their HIV care. The department is required to conduct outreach events each year. The department is responsible for disseminating over 200,000 condoms to patients within Gwinnett, Newton, and Rockdale counties. Condom distribution is accomplished through a condom subscription program and distribution to community partners. The department conducts outreach HIV testing in Gwinnett, Newton, and Rockdale counties and provides PrEP for individuals living within the district. The department is currently administering PrEP through all open GNR Health center clinics including Lawrenceville, Norcross, Newton and Rockdale.

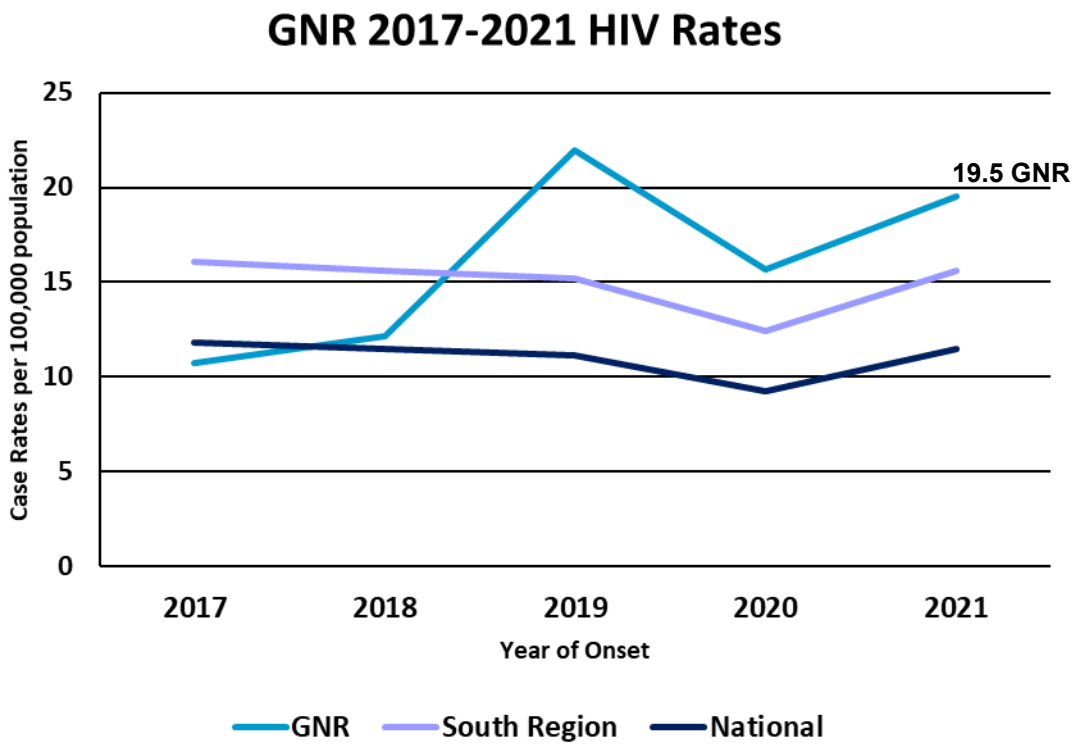




Gwinnett County is one of the four jurisdictions in GA participating in the Ending the Epidemic initiative (EHE). With this initiative, the HIV department has increased in size and functionality in association with the EHE designation and the associated funding. The four EHE pillars are to:

- **Diagnose**: Diagnose people with HIV as early as possible by making HIV testing accessible, collaborating with partners to expand HIV testing, and distribution of self-testing kits to communities.
- **Treat**: Treat people with HIV rapidly and effectively to reach sustained viral suppression. The team has EHE linkage coordinator that works to ensure newly diagnosed and those out of care are successfully and rapidly linked to care.
- **Prevent**: Prevent new HIV transmissions by using proven interventions , including PrEP. We have a PrEP coordinator on board to help with patient navigation and follow-up.
- **Respond**: Respond quickly to potential HIV outbreaks to get vital prevention and treatment services to people who need them. Partnering with other EHE jurisdictions in GA, we participate in cluster detection response within our three counties and both CDS and linkage coordinators follow -up with these patients for partner services.

The HIV program participates in quarterly Community Advisory Board meetings (CAB) to gain community feedback and buy-in on HIV prevention services and activities in the communities they serve.



Tuberculosis (TB)

Tuberculosis (TB) continues to present a major threat to population health in the GNR Health District. The goal of the Tuberculosis Program is to eliminate tuberculosis in the district. Until eradication can occur, the program staff strives to reduce the burden of disease, limit transmission, and prevent new cases. The staff provides diagnostic, treatment, and case management services to all identified persons with active TB disease. The TB program staff also conduct contact investigations for the identification of individuals with latent TB infection (LTBI) in order to prevent future cases of active disease and further transmission.

TB program staff investigates all suspected and confirmed cases of tuberculosis disease in the district. There were 29 confirmed TB cases in 2020 and 27 confirmed TB cases in 2021; 62.5% of these were pulmonary TB , characterized as TB disease occurring in the lungs. The remaining cases were reported as extra-pulmonary TB, or a combination of both tuberculosis presentations. Extra-pulmonary TB is TB disease occurring in any part of the body other than the lungs (CDC). An average of 8-12 weeks is spent investigating suspect cases. There were a total of 98 suspect cases in 2020 and 77 suspect cases in 2021. All suspect cases are fully evaluated and investigated pending negative culture results which can take up to 12 weeks to complete.

Prompt diagnosis and treatment completion by individuals with active disease, timely investigation for identification of contacts with latent TB infection, and assurance of adherence to treatment are essential functions of TB control and prevention. Limited resources have required prioritization of services in order to assure the continuation of core TB activities that provide the highest yield. Directly Observed Therapy (DOT) is the gold standard for treatment of active tuberculosis and is used for all cases and LTBI clients at highest risk of conversion to active disease.

The TB program staff utilize current CDC recommendations for a concentric circle approach to contact investigations in order to achieve the highest yield while conserving resources. As resources allow, TB program staff prioritize outreach, education, and screening efforts. Contact investigations are the gold standard for secondary prevention in individuals exposed to cases of pulmonary and laryngeal tuberculosis and for preventing future cases of active disease from untreated latent tuberculosis infections. For these reasons, investigations are a critical component of the TB program, but one which requires an extensive commitment of human and financial resources.

2020/2021 GNR Countries of Birth of TB Cases				
US	Viet Nam	Ghana	DR of Congo	El Salvado
Burma	Mexico	Guatamela	Columbia	Somali
Korea	Honduras	Ethiopia	Bosnia	Angola
India	Phillipines	Taiwan	Afghanistan	Malaysia

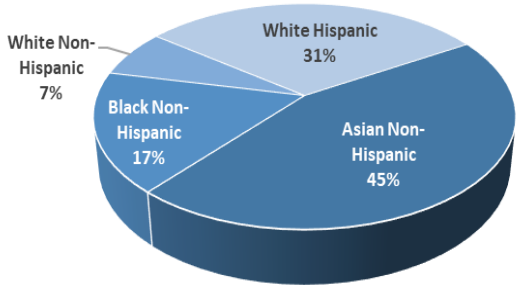
In 2020, TB program staff investigated 572 contacts of the 29 reported cases of active TB; this was a 599% decrease in the number of contacts identified compared to 2019, where 3,997 contacts were identified and screened. This decrease was due to an extensive TB investigation in a significant Gwinnett county school in 2019. Also, the decrease of cases could have been due to the COVID-19 pandemic.

In 2021, TB program staff investigated 196 contacts of the 27 reported cases of active TB. While the number of cases reported in 2020 and 2021 were about the same, the number of contacts identified decreased by about 192% from 2020 to 2021. In general, contact investigations involve close contacts such as members of the case's household and close social contacts. Large scale investigations in the public school and work settings are often conducted due to the calculated exposure.

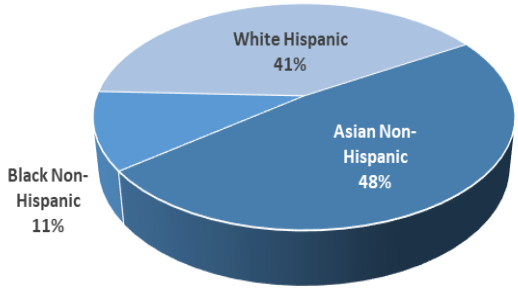
Contact elicitation is a core objective in the National TB Program Objectives & Performance Targets for 2025. Performance against national standards is measured each year through a cohort review of investigation and management of TB cases and contacts in each Public Health district. The target for 2025 is to increase contact elicitation to 100% to support the goal of preventing, controlling, and eventually eliminating tuberculosis from the United States.[10]

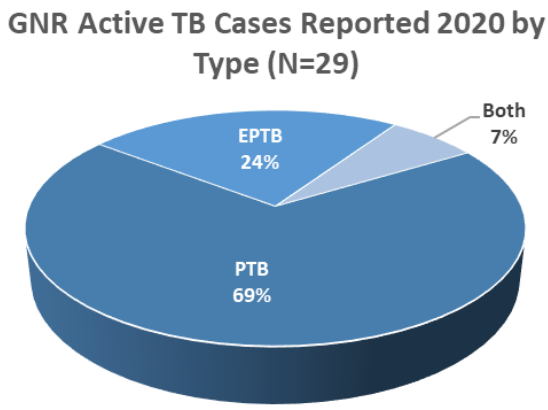
Case management services were provided to all active patients and to LTBI patients including directly observed therapy, monthly contact for monitoring adherence to treatment, efficacy of treatment, and signs of drug toxicity. Directly Observed Therapy (DOT) is the preferred treatment method for cases of Tuberculosis as well as certain individuals with LTBI (HIV infected, children ≤5 years of age, etc.). DOT is provided in GNR clinic sites and at the homes/worksites of patients as necessary. Program staff also worked closely with staff at the public schools for DOT in the school setting whenever possible. The Program staff are closely monitoring this change for impact on adherence to treatment.

GNR Active TB Cases Reported 2020 by Race and Ethnicity (N=29)



GNR Active TB Cases Reported 2021 by Race and Ethnicity (N=27)



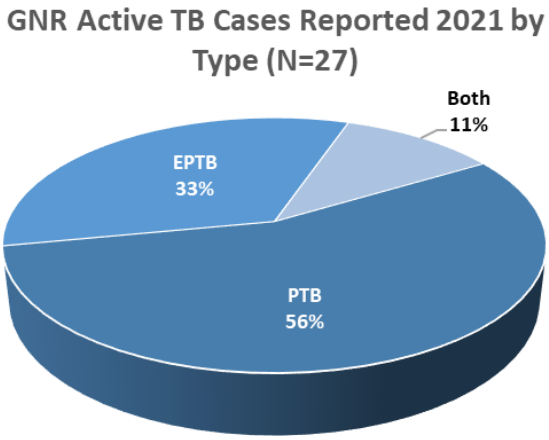


Gwinnett 2020	Cases Reported
PTB	17
EPTB	7
Both	<5

Newton 2020	Cases Reported
PTB	<5
EPTB	0
Both	0

Rockdale 2020	Cases Reported
PTB	<5
EPTB	0
Both	0

PTB = Pulmonary TB
EPTB = Extra-Pulmonary TB
BOTH = Pulmonary and Extra-Pulmonary TB
Other sites include: Ovary, Lymph Node, Pancreas, Testicles, Eye, Psoas, Skin



Gwinnett 2021	Cases Reported
PTB	15
EPTB	8
Both	<5

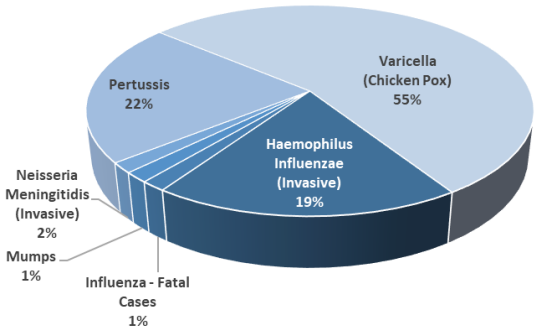
Newton 2021	Cases Reported
PTB	0
EPTB	0
Both	0

Rockdale 2021	Cases Reported
PTB	0
EPTB	<5
Both	0

Vaccine Preventable Diseases (VPDs)

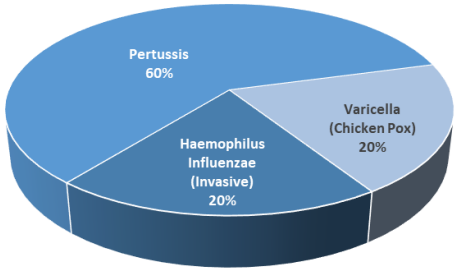
Vaccine preventable diseases are immediately notifiable in the state of Georgia. About 20 years ago vaccine preventable illnesses were declining in Georgia and in the GNR Health District. Pertussis cases were decreasing in conjunction with a 2005 innovation in adolescent and adult formulations of the Tdap vaccine. Over the past 20 years, anti-vaccination movements have played a role in outbreaks across the country. Outbreaks of measles and Pertussis are showing up across the United States. In February 2020, GNR Health District investigated the first measles case in the district since 2001. Despite no confirmed cases being reported in GNR since, epidemiology staff continue to facilitate testing of suspect cases and participate in investigating contacts to cases in other districts.

Gwinnett 2020 VPD Cases Reported (N=64)



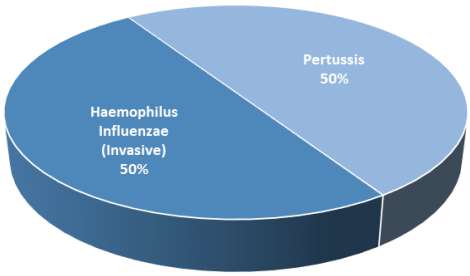
Gwinnett 2020	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Haemophilus Influenzae (Invasive)	12	0	5
Influenza - Fatal Cases	<5	<5	<5
Mumps	<5	<5	<5
Neisseria Meningitidis (Invasive)	<5	<5	<5
Pertussis	14	9	9
Varicella (Chicken Pox)	35	17	17
Total	**64**	**29**	**34**

Newton 2020 VPD Cases Reported (N=5)



Newton 2020	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Haemophilus Influenzae (Invasive)	<5	0	<5
Pertussis	<5	<5	<5
Varicella (Chicken Pox)	<5	<5	<5
Total	**5**	**<5**	**<5**

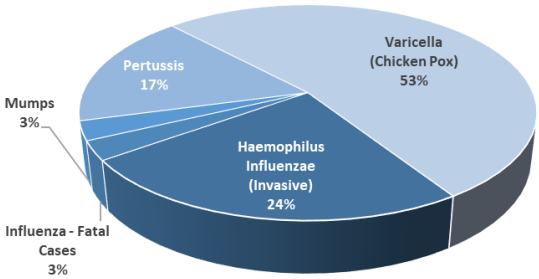
Rockdale 2020 VPD Cases Reported (N=<5)



Rockdale 2020	Reported Cases	Investigated Cases	Confirmed/ Probable
Haemophilus Influenzae (Invasive)	<5	0	<5
Pertussis	<5	<5	<5
Total	**<5**	**<5**	**<5**

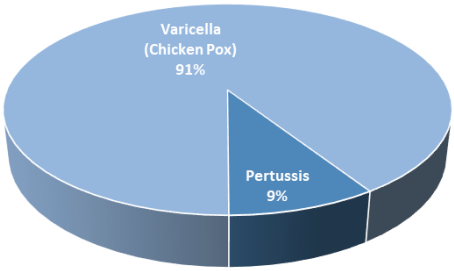
*Though all invasive *H.influenzae* cases are reviewed, only Type B requires public health intervention.

Gwinnett 2021 VPD Cases Reported (N=70)



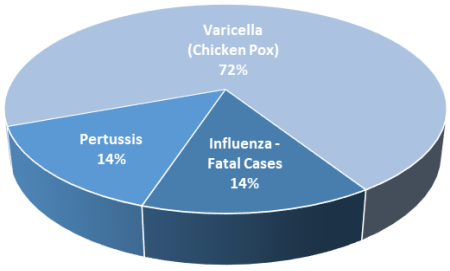
Gwinnett 2021	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Haemophilus Influenzae (Invasive)	17	0	6
Influenza - Fatal Cases	<5	<5	<5
Mumps	<5	<5	<5
Pertussis	12	<5	<5
Varicella (Chicken Pox)	37	14	14
Total	**70**	**20**	**26**

Newton 2021 VPD Cases Reported (N=11)



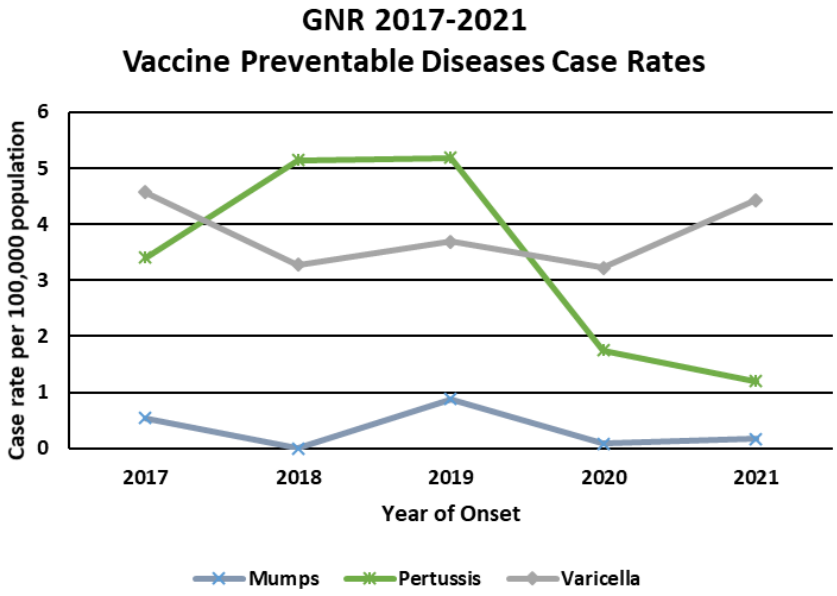
Newton 2021	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Pertussis	<5	<5	<5
Varicella (Chicken Pox)	10	9	9
Total	**11**	**10**	**10**

Rockdale 2021 VPD Cases Reported (N=7)



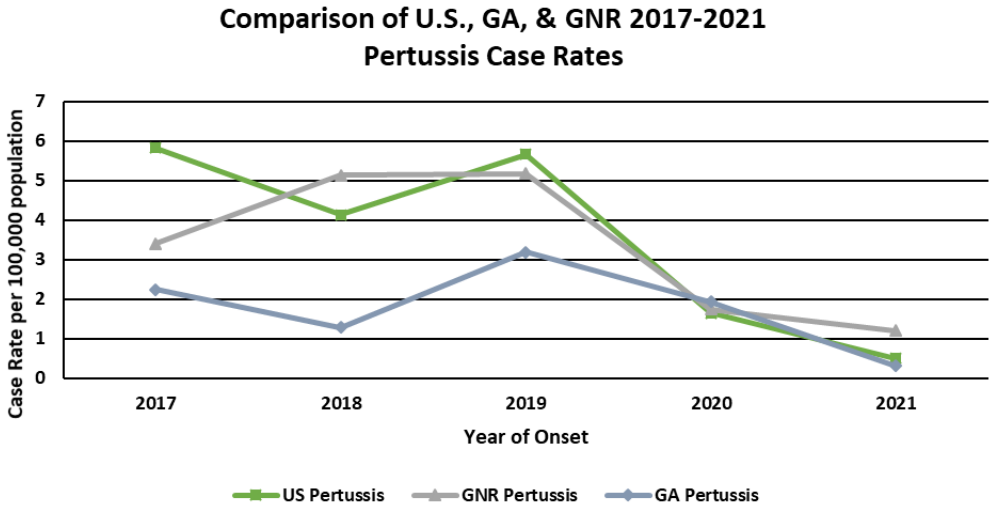
Rockdale 2021	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Influenza - Fatal Cases	<5	<5	<5
Pertussis	<5	0	0
Varicella (Chicken Pox)	5	<5	<5
Total	**7**	**5**	**5**

*Though all invasive *H.influenzae* cases are reviewed, only Type B requires public health intervention



The graph above provides a comparison of Mumps, Pertussis and Varicella case rates in the GNR Health district from 2017-2021. From 2019-2020, there was a decrease in case rates for all three diseases with a significant decrease in Pertussis cases. By the end of 2021, Pertussis case rates continued to decrease, while Varicella and Mumps cases began to increase slightly.

The graph below provides a comparison of GNR Pertussis case rates to Georgia and National Pertussis case rates from 2017-2021. GNR case rates have trended above Georgia's, and have been similar to U.S. case rates for the last 5 years. Pertussis case rates significantly declined at all levels since 2020, with the national case rate decreasing from 5.67 per 100,000 in 2019 to 1.64 per 100,000 in 2020.[11] In 2020, U.S., GA, and GNR pertussis case rates were comparable, likely due to the infection control measures in place because of the COVID-19 pandemic.



Viral Hepatitis

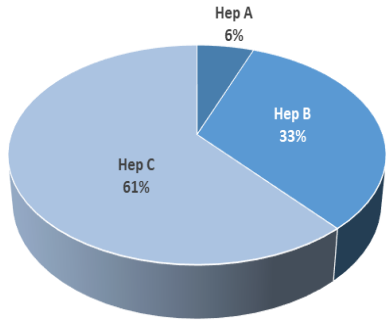
In 2020, GNR epidemiology investigated 496 viral hepatitis cases; 81 (16.3%) of the investigated cases were acute or probable acute and 260 (52.4%) were chronic. In 2021 GNR staff investigated 672 viral hepatitis cases; 81 (12.1%) of the investigated cases were acute or probable acute and 340 (50.6%) were chronic. All reported viral hepatitis cases are evaluated for acute illness symptomology by GNR epidemiology staff. Preventative medication can be given to close contacts of Hepatitis A and B cases to prevent illness. There is no preventative medication for Hepatitis C.

The majority of the viral hepatitis reports were Hepatitis C. This trend began in 2014. Hepatitis B was predominantly reported in previous years. Hepatitis A cases accounted for only 5.0% of the total number of reported viral hepatitis cases. Chronic Hepatitis B is found predominately in the Asian community. Asian and Pacific Islanders (APIs) make up less than 5% of the total population in the United States but account for more than 50% of Americans living with chronic Hepatitis B. While Newton and Rockdale do not have a significantly high Asian population, 13.2% (N=964,546) of residents in Gwinnett County are Asian according to 2021 population statistics.

Hepatitis A is of significant concern to epidemiology staff despite its low prevalence due to the potential for outbreaks within the community. Unlike Hepatitis B and C that are spread through contact with blood and other bodily fluids, Hepatitis A is spread through the fecal-oral route and can be easily transmitted person-to-person or through food or water that has been contaminated with the virus. Epidemiology staff members work closely with Environmental Health to ensure that the risk for exposure to Hepatitis A is minimized in all local food service establishments, and to quickly respond to any reports of Hepatitis A to prevent transmission from food or waterborne sources.

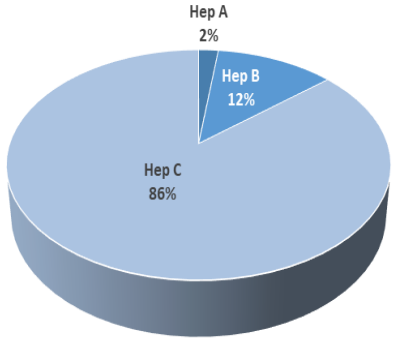
Testing guidance for Hepatitis C has changed dramatically in the past five years and this has impacted the number of cases reported to GNR. In 1998, guidance simply stated testing was recommended for asymptomatic persons with specific risk factors. In 2009 HIV infected persons were added and then in 2012 all adults born from 1945 to 1965 were included into the routine testing group. The US Centers for Disease Control and Prevention and US Preventive Services Task Force (USPSTF) recommend a one-time hepatitis C virus (HCV) screening for adults born between 1945 and 1965 (a birth cohort known as “baby boomers”). Approximately three-quarters of persons chronically infected with HCV are baby boomers, many of whom are unaware of their infection.[12] As of April 2020, the CDC recommends primary care providers screen all patients 18 years and older at least once in their lifetime for Hepatitis C and patients with recognized exposures (injecting drugs).[13] These recommendation were implemented in an effort to increase case identification and linkage to care. These changes in testing guidance resulted in an increase in reporting of Hepatitis C cases over the past 15 years, without an increase in funding or staffing. To ensure that high priority acute cases are being investigated promptly, epidemiology now investigates only cases thirty years old or younger, unless the patient is experiencing symptoms or elevated liver enzymes.

Gwinnett 2020 Viral Hepatitis Cases Reported (N=913)



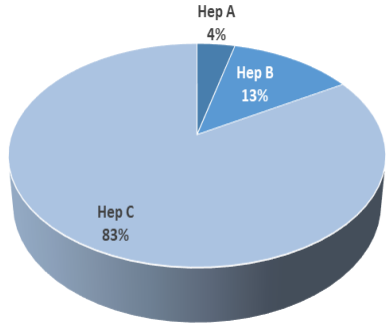
Gwinnett 2020	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Hep A (Acute)	53	53	11
Hep B	107	106	0
Hep B Acute	6	6	6
Hep B Chronic	188	188	188
Hep C	40	27	11
Hep C Acute	7	7	7
Hep C Probable Acute	9	7	9
Hep C Chronic	177	22	177
Hep C Probable Chronic	327	23	319
Total	**914**	**439**	**414**

Newton 2020 Viral Hepatitis Cases Reported (N=101)



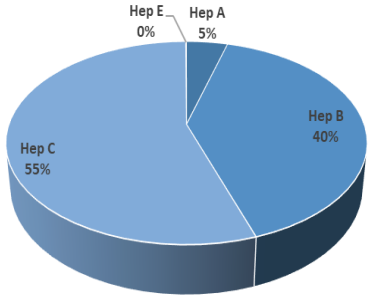
Newton 2020	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Hep A (Acute)	<5	<5	0
Hep B	5	5	0
Hep B Acute	<5	<5	<5
Hep B Chronic	6	6	6
Hep C	<5	<5	0
Hep C Acute	<5	<5	<5
Hep C Probable Acute	0	0	0
Hep C Chronic	40	<5	40
Hep C Probable Chronic	46	5	45
Total	**103**	**24**	**93**

Rockdale 2020 Viral Hepatitis Cases Reported (N=103)



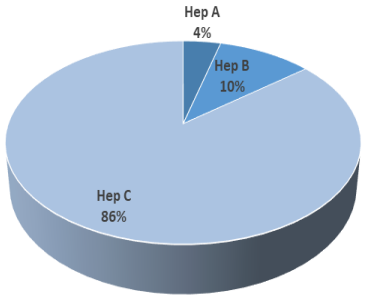
Rockdale 2020	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Hep A (Acute)	<5	<5	0
Hep B	9	9	0
Hep B Acute	0	0	0
Hep B Chronic	<5	<5	<5
Hep C	6	6	0
Hep C Acute	0	0	0
Hep C Probable Acute	0	0	0
Hep C Chronic	32	<5	32
Hep C Probable Chronic	49	7	47
Total	**104**	**33**	**83**

Gwinnett 2021 Viral Hepatitis Cases Reported (N=1,117)



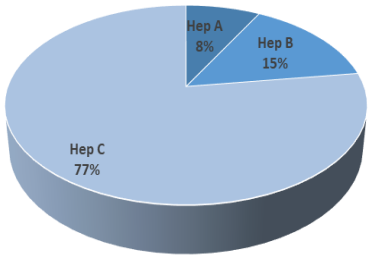
Gwinnett 2021	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Hep A (Acute)	49	49	9
Hep B	186	186	<5
Hep B Acute	9	9	9
Hep B Chronic	256	256	254
Hep C	80	42	0
Hep C Acute	<5	<5	5
Hep C Probable Acute	<5	<5	<5
Hep C Chronic	194	22	194
Hep C Probable Chronic	359	29	345
Hepatitis E (Acute)	<5	<5	0
Total	**1141**	**601**	**821**

Newton 2021 Viral Hepatitis Cases Reported (N=147)



Newton 2021	Reported Cases	Investigated Cases	Confirmed/ Probable Cases
Hep A (Acute)	6	6	<5
Hep B	8	8	0
Hep B Acute	0	0	0
Hep B Chronic	7	7	7
Hep C	17	5	0
Hep C Acute	<5	<5	,5
Hep C Probable Acute	0	0	0
Hep C Chronic	43	<5	43
Hep C Probable Chronic	66	5	66
Total	**148**	**35**	**119**

Rockdale 2021 Viral Hepatitis Cases Reported (N=101)



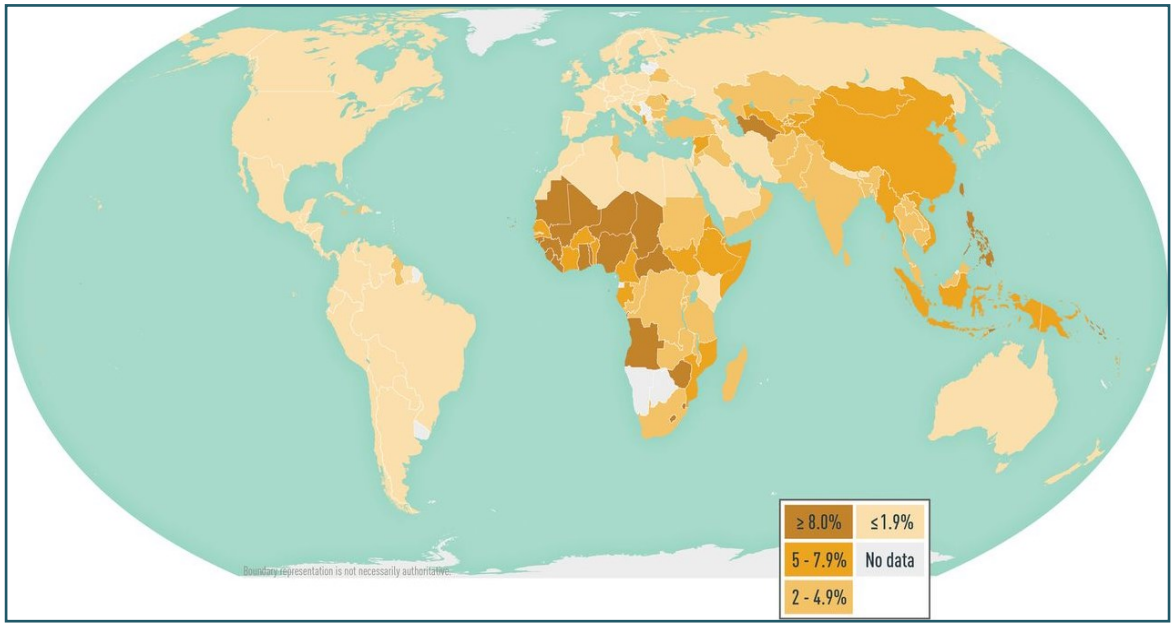
Rockdale 2021	Reported	Investigated	Confirmed/
Hep A (Acute)	8	8	6
Hep B	7	7	0
Hep B Acute	0	0	0
Hep B Chronic	9	8	9
Hep C	<5	<5	0
Hep C Acute	0	0	0
Hep C Probable Acute	0	0	0
Hep C Chronic	20	<5	20
Hep C Probable Chronic	54	6	53
Total	**102**	**36**	**88**

Perinatal Hepatitis B

Transmission of perinatal Hepatitis B infection can be prevented in approximately 95% of infants born to Hepatitis B positive mothers by early active immunoprophylaxis through immunoglobulin administration and vaccination. The Perinatal Hepatitis B program identifies pregnant women who have a positive Hepatitis B Surface Antigen test during the prenatal screen. Mothers are tracked throughout their pregnancy to ensure that their infant receives Hepatitis B Immune Globulin (HBIG) within 12 hours of birth. The infant is tracked until the hepatitis B vaccine series is completed and post vaccination testing is performed. Each case is tracked on average eighteen months.

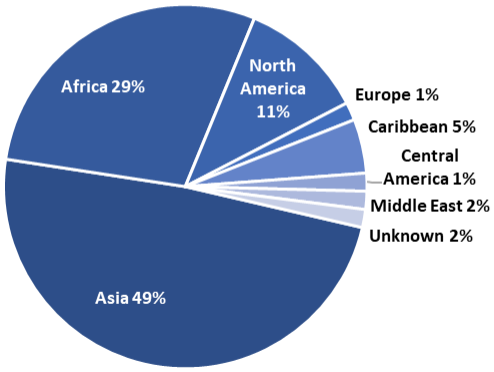
GNR Epidemiology staff work closely with hospitals and pediatrician offices to ensure babies born to Hepatitis B infected mothers receive needed preventative medication and scheduled vaccinations. Post vaccination testing is also conducted to ensure immunity. GNR has had the largest caseload of babies in the state of Georgia for the last seven years. In 2020-2021, there were 494 newborn babies in Georgia's PHBPP with 27.7% (137) from the GNR district. Of the PHBPP babies born in the GNR district where mother's country of birth is known (130), 87.7% were born outside of the United States. The countries of birth for the majority of GNR PHBPP mothers are countries where there is a high prevalence of chronic Hepatitis B.

2021 Estimates of Worldwide Hepatitis B Disease Burden

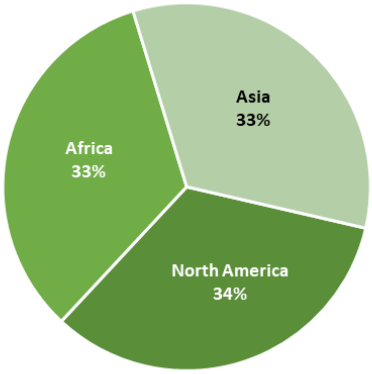


https://wwwnc.cdc.gov/travel/yellowbook/2024/infections-diseases/hepatitis-b

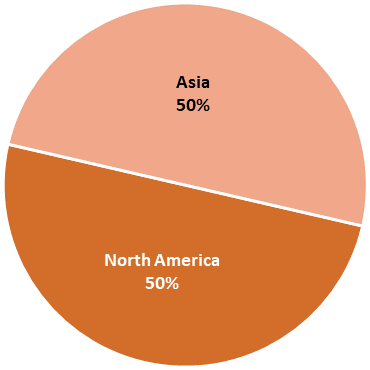
Gwinnett 2020/2021 Perinatal Hepatitis
Cases by Mother's Region of Birth (N=125)

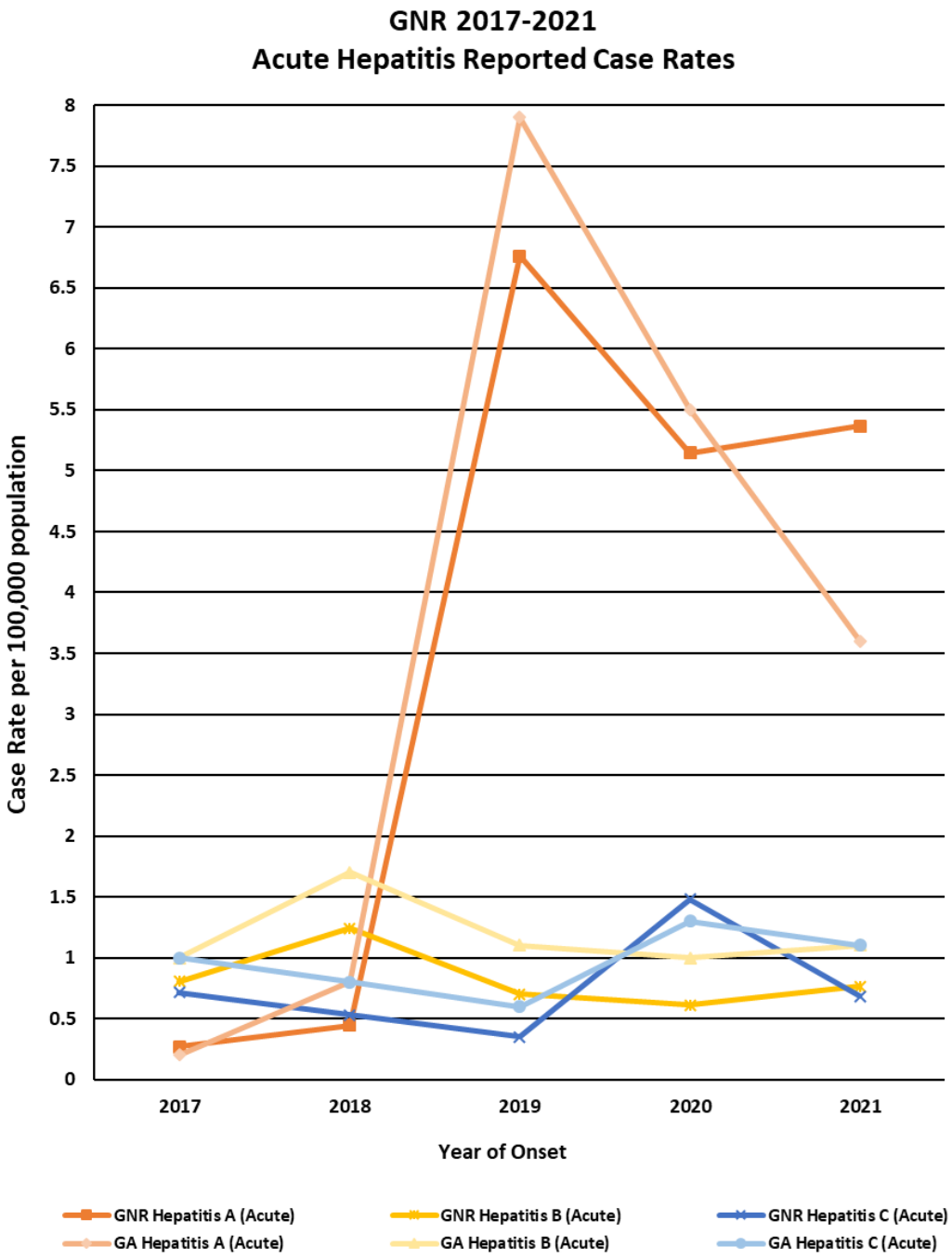


Newton 2020/2021 Perinatal Hepatitis
Cases by Mother's Region of Birth (N=3)



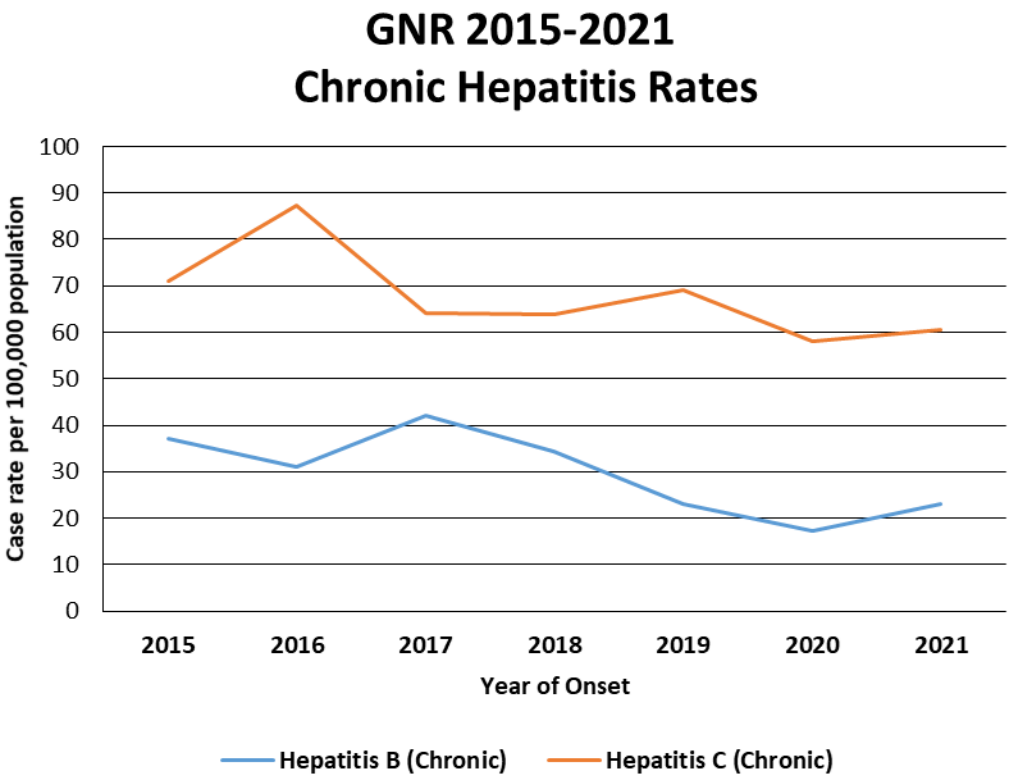
Rockdale 2020/2021 Perinatal Hepatitis
Cases by Mother's Region of Birth (N=2)





The above graph shows the GNR acute hepatitis case rates by hepatitis type. It compares GNR case rates to the Georgia case rates and Healthy People 2030 goals, a set of evidence-based 10-year national health benchmarks. There was a significant increase in Hepatitis A cases in 2019 due to a nationwide, person-to-person outbreak among high risk populations. Hepatitis A cases in GNR and Georgia have since declined, but remain much higher than they were prior to this outbreak. Healthy People 2030 aims to reach target case rates for each hepatitis types, and they are listed below:

- **Hepatitis A**: Reduce case rates to 0.4 cases per 100,000 people.
- **Hepatitis B**: Reduce case rates to 0.1 cases per 100,000 people.
- **Hepatitis C**: Reduce case rates to 0.1 cases per 100,000 people.



In the graph above, both chronic hepatitis B and C cases include individuals that are considered "Probable Chronic" and "Chronic." While Hepatitis B case rates have declined since 2017, there was an increase noted from 2020—2021, which could be attributed to diminished reporting in 2020 because of the COVID-19 pandemic. GNR chronic Hepatitis C cases have remained about the same for the last 5 years, but nationally, cases have doubled since 2014, a 129% increase. Half of people infected with hepatitis C will develop a chronic infection. During 2021, 43 U.S. states reported a total of 107,300 newly identified chronic hepatitis C cases in 2021, corresponding to 39.8 chronic hepatitis C cases per 100,000 people.

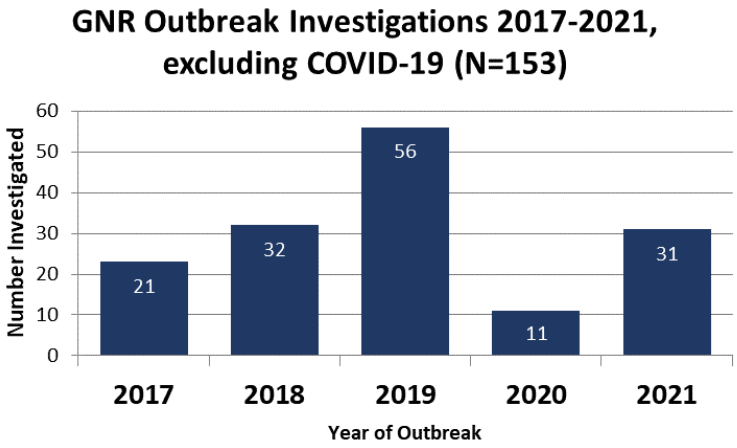
According to the CDC, 6 out of 100 infants born to mothers with chronic Hepatitis C will become infected. Universal hepatitis C testing is recommended for woman who are pregnant and people who use injection drugs, especially because people can be infected with the virus more than once.[14,15] Hepatitis C can be treated with the use of oral therapy, and can be administered to children starting at age 3.[16] The best way to prevent hepatitis C is by avoiding behaviors that can spread the disease, especially injecting drugs with non-sterile injection equipment. Since 2013, highly effective, well-tolerated curative treatments have been available for hepatitis C, but no vaccine for preventing hepatitis C is yet available.

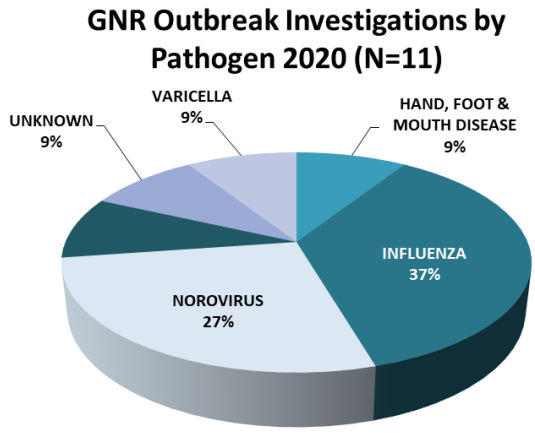
Outbreak Summary

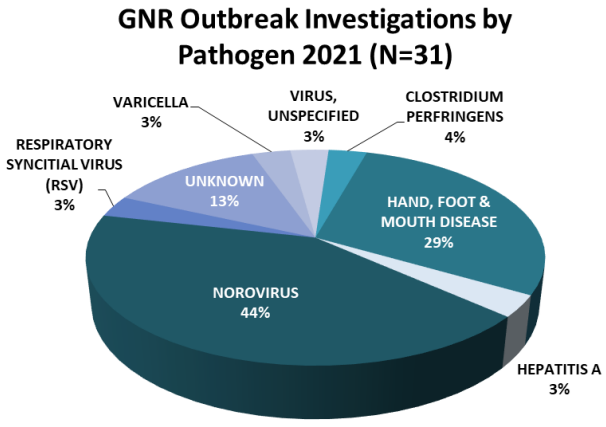
The number of notifiable disease case investigations did not include clusters or other non-notifiable disease investigations. In 2020 and 2021, priority was given to investigation of reported outbreaks (N=42) of both notifiable and non-notifiable communicable diseases. One hundred percent of these reported outbreaks of illnesses were investigated in 2020 and 2021. In 2020, influenza or suspected influenza was the predominately known pathogen for illness, causing 4 (36.4%) of the non-COVID-19 outbreaks investigated. In 2021, norovirus or suspected norovirus caused 13 (41.9%) of the non-COVID-19 outbreaks reported and investigated.

The bar graph below shows outbreaks reported and investigated rom 2017-2021. Not all outbreaks were associated with lab-confirmed pathogens.

*Note—COVID-19 outbreaks are not included in this summary or the chart below, as this would largely skew the data.







Other Activities

Public Health Associate Program (PHAP)

GNR Epidemiology has been a host site for the Public Health Associate Program managed by CDC's Office for State, Tribal, Local and Territorial Support (OSTLTS) since August 2012. The program is designed for entry-level public health professionals with either a bachelor's or master's degree to obtain real world public health experience by working at a host site for two years. GNR is hosting two 2019 associates, working a two year assignment in Infectious Diseases. The current associates have been a great addition to our staff by providing education, routine surveillance and investigations, and linking patients to testing and treatment for STD's, HIV, TB disease, and latent TB infections.

Emergency Preparedness

GNR Emergency Preparedness is tasked under the Georgia Emergency Operations plan to lead efforts related to Emergency Support Function 8 (Health and Medical) and support Emergency Support Function 6 (Mass Care). GNR Epidemiology provides technical assistance and guidance as well as assists in emergencies as members of Public Health Action Support Team (PHAST). GNR Epidemiology works in conjunction with GNR Emergency Preparedness to plan, facilitate, and participate in public health emergency exercises, drills, and trainings. The Epidemiology staff also monitors surveillance data and reports any unusual activity or bioterrorism agents to Emergency Preparedness. GNR Epidemiology is a member of the shelter inspection team and provides pre-emergency inspections as well as opening inspections and daily surveillance and clinic checks during an emergency. GNR epidemiology coordinated Emergency Preparedness with a Gwinnett County hurricane evacuation shelter in 2016. Shelter teams that included epidemiologists were sent to other locations in Georgia for hurricanes in 2017 and 2018. Epidemiology and Emergency Preparedness worked closely together through the Incident Command System (ICS) to coordinate the complex COVID-19 response from early 2020 into 2021. This large operation included setting up COVID-19 testing locations, resulting operations, contact tracing, case investigations, enhanced partner communications, preparation for and delivery of vaccine, media outreach, and much more.

Public Health Accreditation Board (PHAB)

GNR Health District completed a two day site visit as part of the national accreditation process through the Public Health Accreditation Board (PHAB) in April 2016 and earned accreditation. The accreditation process seeks to improve the standards of quality and performance within public health departments across the county. GNR Epidemiology has been a vital part of the district's accreditation application process. Epidemiology staff have been involved with the Community Health Assessment, Community Health Improvement Plan and the District's Strategic Plan as well as compiling the documentation for the Standards and Measures in the twelve domains of the application. Reaccreditation will be due in 2022.

Attachment 1: Notifiable Disease Reporting Poster

NOTIFIABLE DISEASE
CONDITION REPORTING

All Georgia physicians, laboratories, and other health care providers are required by law to report patients with the following conditions.

REPORT IMMEDIATELY

To Report Immediately | **Call:** District Health Office or **1-866-PUB-HLTH (1-866-782-4584)**

- any cluster of illness
- animal bites
- ▸ anthrax
- all acute arboviral infections*
- ▸ botulism
- ▸ brucellosis
- cholera
- diphtheria
- *E. coli 0157*
- *Haemophilus influenzae* (invasive)+
- hantavirus pulmonary syndrome
- hemolytic uremic syndrome (HUS)
- hepatitis A (acute)
- measles (rubeola)
- ▸ melioidosis
- meningitis (specify agent)
- meningococcal disease (invasive)
- novel influenza A virus infections
- novel respiratory viruses (SARS, MERS, etc.) positive lab results
- ▸ orthopoxviruses (smallpox, monkeypox)
- pertussis
- ▸ plague
- poliomyelitis
- ▸ Q fever
- rabies (human + animal)
- SARS-CoV-2 (COVID-19)
  - positive lab results from point of care (rapid) antigen or molecular tests
  - positive + negative lab results nucleic acid amplification test (e.g., RT-PCR, etc.) results from laboratories certified under CLIA to perform moderate- or high-complexity tests
- shiga toxin positive test
- *S. aureus* with vancomycin MIC ≥ 4 mcg / mL
- syphilis (adult)
- syphilis during pregnancy
- tuberculosis
- latent TB infection in children < 5 years old
- ▸ tularemia
- ▸ viral hemorrhagic fevers

▸ *Potential agent of bioterrorism.*
\+ *Invasive = isolated from blood, bone, CSF, joint, pericardial, peritoneal, or pleural fluid.*

REPORT WITHIN 1 MONTH

Birth Defects, including fetal deaths of at least 20 weeks gestational age and children under age 6. Information for reporting birth defects is available at **dph.georgia.gov/birth-defects-reporting**.

Healthcare-associated Infections (HAIs) For facilities required to report HAI data to CMS via NHSN. Report in accordance with the NHSN protocol. Reporting requirements and information available at **dph.georgia.gov/notifiable-hai-reporting**.

Neonatal Abstinence Syndrome (NAS) Information for reporting NAS is available at **dph.georgia.gov/nas**.

REPORT WITHIN 6 MONTHS

Benign brain and central nervous system tumors

Cancer

Report forms and reporting information for tumors and cancer is available at **dph.georgia.gov/georgia-comprehensive-cancer-registry**.

REPORT WITHIN 7 DAYS

- AIDS#
- acute flaccid myelitis
- anaplasmosis
- aseptic meningitis
- babesiosis
- blood lead level (all)
- campylobacteriosis
- Carbapenem-resistant Enterobacteriaceae (CRE): Enterobacter species, Escherichia coli, and Klebsiella species
- chancroid
- Chlamydia trachomatis (genital infection)
- Creutzfeldt-Jakob Disease (CJD), suspected cases, under age 55
- cryptosporidiosis
- cyclosporiasis
- ehrlichiosis
- giardiasis
- gonorrhea
- HIV infection#
- Perinatal HIV exposure#
- hearing impairment (permanent under age 5)##
- hepatitis B
  - acute hepatitis B
  - chronic HBsAg(+) or HBV DNA detected infections
  - HBsAg(+) pregnant women
  - Perinatal HBV exposure
- hepatitis C (past or present)
  - anti-HCV(+)
  - HCV RNA detected
  - HCV genotype detected
  - anti-HCV(+) or HCV RNA detected pregnant women
  - anti-HCV(+) or HCV RNA detected children ages <3 years
- hepatitis D (Delta virus present with HBsAg); acute and chronic
- hepatitis E (acute)
- influenza-associated death (all ages)
- legionellosis
- leptospirosis
- listeriosis***
- leprosy or Hansen's disease (Mycobacterium leprae)
- Lyme disease
- lymphogranuloma venereum
- malaria
- maternal deaths (during pregnancy or within 1 year of end of pregnancy)#,##
- MIS-C (multi-system inflammatory syndrome in children)
- mumps
- psittacosis
- Rocky Mountain spotted fever
- rubella (including congenital)
- salmonellosis
- shigellosis
- streptococcal disease, Group A or B (invasive)**
- Streptococcus pneumoniae (invasive)**
  - report with antibiotic-resistance information
- tetanus
- toxic shock syndrome
- typhoid
- Varicella (Chickenpox)
- Vibrio infections
- yersiniosis

REPORT CASES ELECTRONICALLY THROUGH THE STATE ELECTRONIC NOTIFIABLE DISEASE SURVEILLANCE SYSTEM AT http://sendss.state.ga.us

* California serogroup virus diseases (including: California encephalitis, Jamestown Canyon, Keystone, La Crosse, Snowshoe hare, Trivittatus virus), Chikungunya Virus Disease, Eastern equine encephalitis virus disease, Powassan virus disease, St. Louis encephalitis virus disease, West Nile virus disease, Western equine encephalitis virus disease, Zika Virus Disease

** Invasive = isolated from blood, bone, CSF, joint, pericardial, peritoneal, or pleural fluid.

*** L. monocytogenes isolated from blood, bone, CSF, joint, pericardial, peritoneal, or pleural fluid, or other normally sterile site; or from placenta or products of conception in conjunction with fetal death or illness. Infant mortality is reportable to Vital Records.

REPORTING FOR OTHER CONDITIONS:

\# Report forms and reporting information for HIV/AIDS available by phone (**1-800-827-9769**) OR online (**dph.georgia.gov/georgias-hivaids-epidemiology-surveillance-section**).
For mailing HIV/AIDS reports, please use double envelopes marked "confidential", addressed to Georgia Department of Public Health Epidemiology Section, P.O. Box 2107, Atlanta, GA 30301

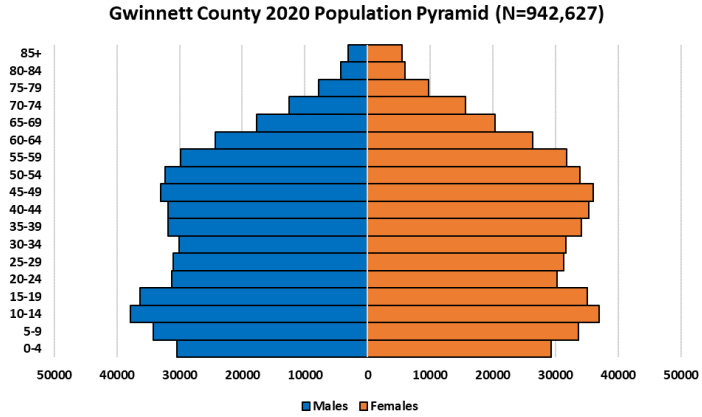
\## Report forms and reporting information for maternal deaths and hearing impairment (permanent, under age 5) available at **dph.georgia.gov/documents/forms-surveys-and-documents**.

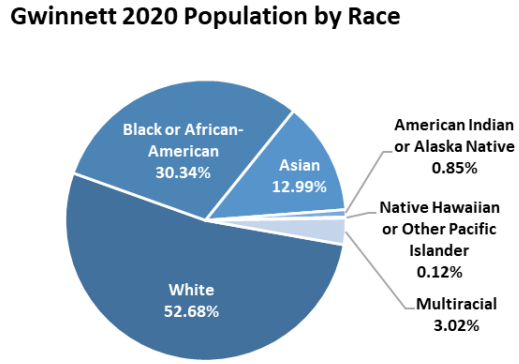
For more information:
www.dph.ga.gov/disease-reporting

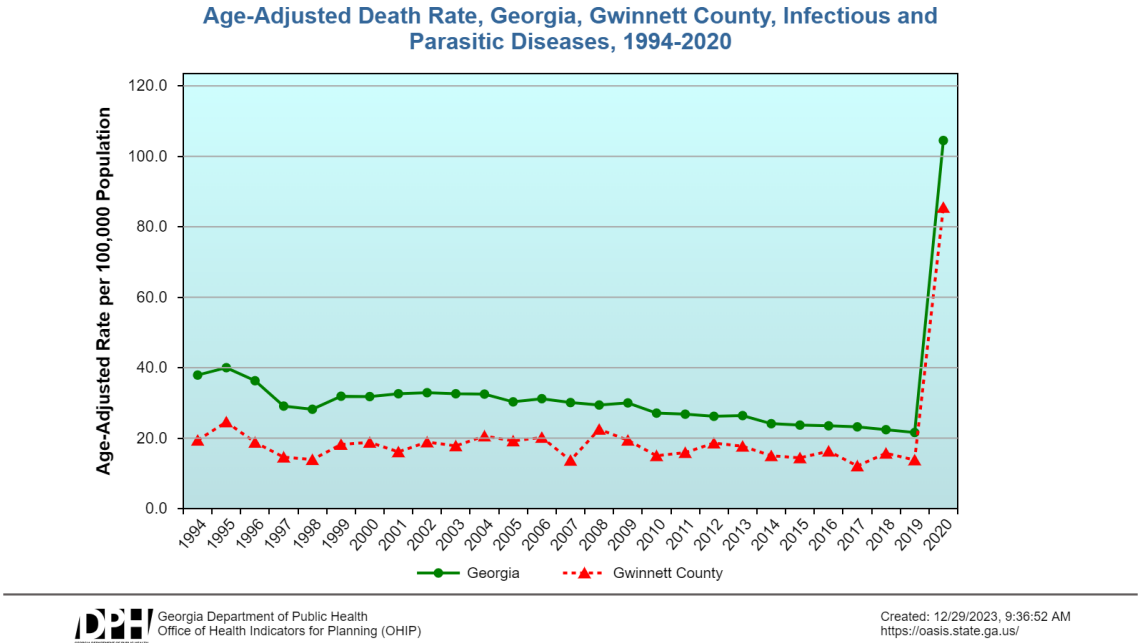
GEORGIA DEPARTMENT OF PUBLIC HEALTH

Revised March 2023 | Georgia Department of Public Health

Gwinnett County Population at a Glance







Top 10 Causes of Hospitalizations in Gwinnett County for 2020 by Age-Adjusted Deduplicated Hospital Discharge Rate Total Discharges: 65,323 (rates per 100,000 population)		
1	Septicemia	466.7
2	Cardiovascular Disease	368.7
3	COVID-19	306
4	Mental and Behavioral Disorders	254.5
5	Musculoskeletal & Connective Tissue Diseases	204.8
6	Falls	191.9
7	Cerebrovascular Disease	189.6
8	Nervous System Diseases	134.1
9	Endocrine, Nutritional, & Metabolic Diseases	133
10	Diabetes Mellitus	127.6

Select Population Based Statistics:

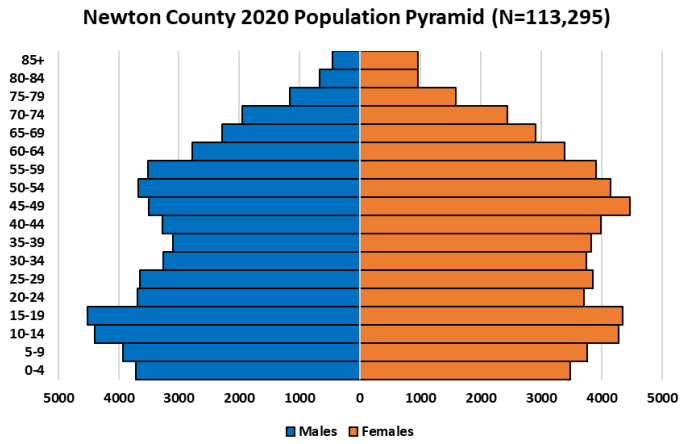
2020 Pregnancy Rate: 52.3 per 1,000 females 15-55 years

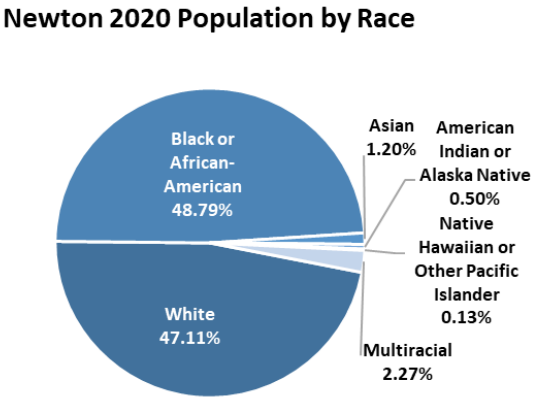
2020 Birth Rate: 34.9 per 1,000 females

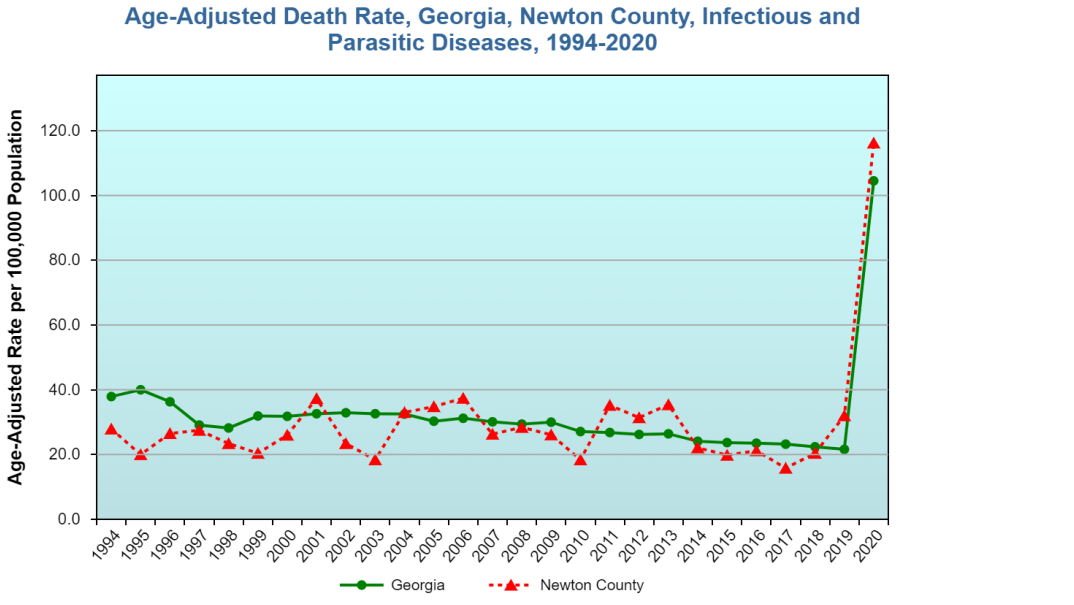
2020 Infant Mortality Rate: 5.5 per 1,000 births

Source: www.oasis.state.ga.us

Newton County Population at a Glance







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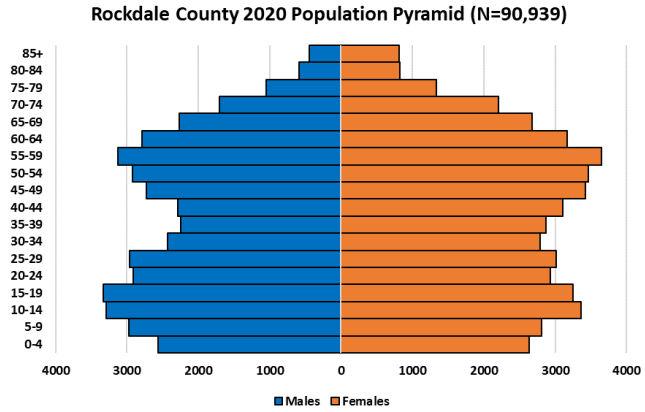
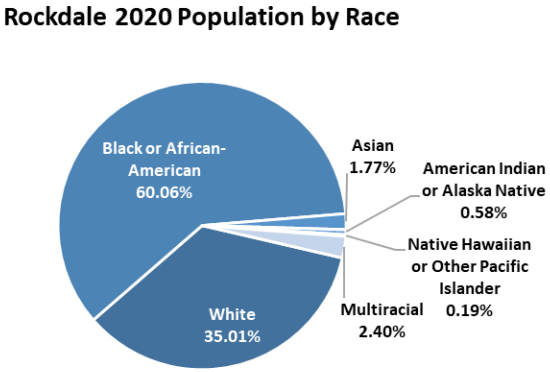
Top 10 Causes of Hospitalizations in Newton County for 2020 by Age-Adjusted Deduplicated Hospital Discharge Rate Total Discharges: 11,124 (rates per 100,000 population)		
1	Septicemia	846
2	Cardiovascular Disease	794.2
3	COVID-19	351.5
4	Musculoskeletal & Connective Tissue Diseases	274.4
5	Cerebrovascular Disease	256.9
6	Mental and Behavioral Disorders	234
7	Diabetes Mellitus	206.3
8	Endocrine, Nutritional, & Metabolic Diseases	198.4
9	Nervous System Diseases	197.3
10	Falls	193.9

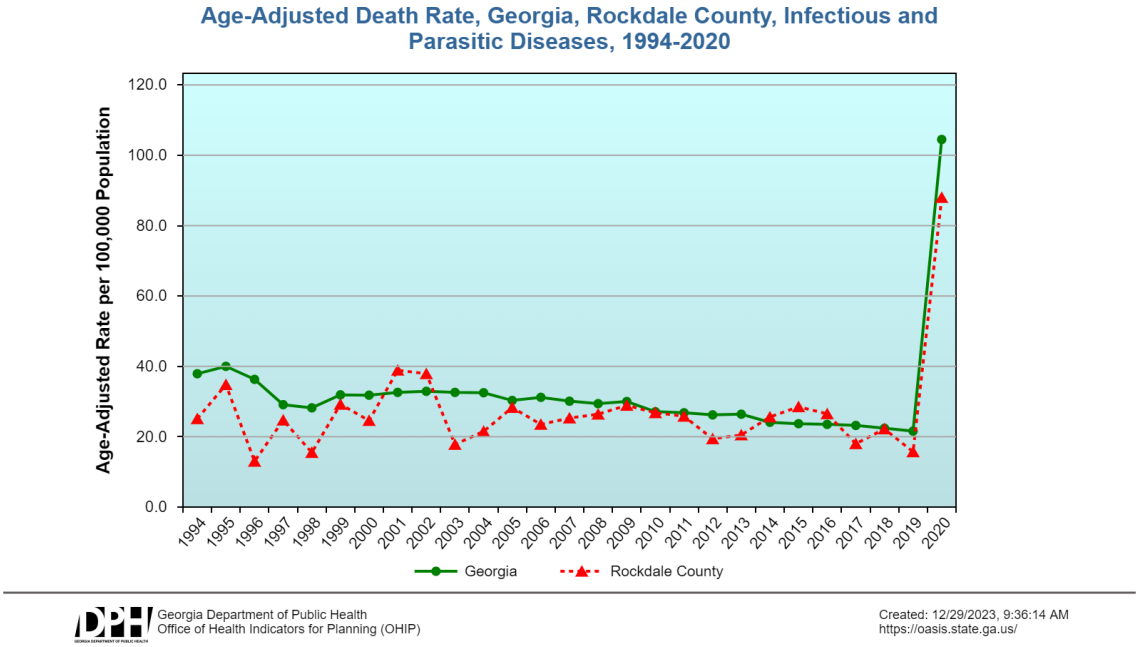
Select Population Based Statistics:

2020 Pregnancy Rate: 56 per 1,000 females 15-55 years
2020 Birth Rate: 34.5 per 1,000 females
2020 Infant Mortality Rate: 12.5 per 1,000 births
Source: www.oasis.state.ga.us

Rockdale County Population at a Glance







Top 10 Causes of Hospitalizations in Rockdale County for 2020 by Age-Adjusted Deduplicated Hospital Discharge Rate Total Discharges: 8,753 (rates per 100,000 population)		
1	Septicemia	1,011.60
2	Cardiovascular Disease	659.7
3	COVID-19	294.8
4	Cerebrovascular Disease	256.8
5	Musculoskeletal & Connective Tissue Diseases	251.4
6	Mental and Behavioral Disorders	219.9
7	Nervous System Diseases	203.6
8	Diabetes Mellitus	198.1
9	Endocrine, Nutritional, & Metabolic Diseases	196
10	Falls	184.3

Select Population Based Statistics:

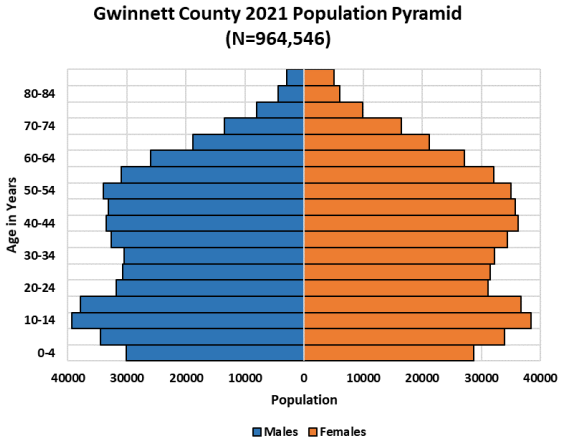
2020 Pregnancy Rate: 57.1 per 1,000 females 15-55 years

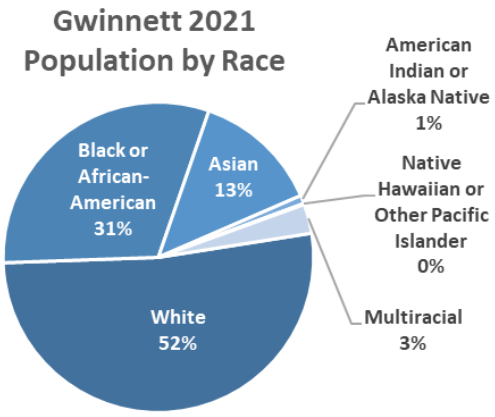
2020 Birth Rate: 33 per 1,000 females

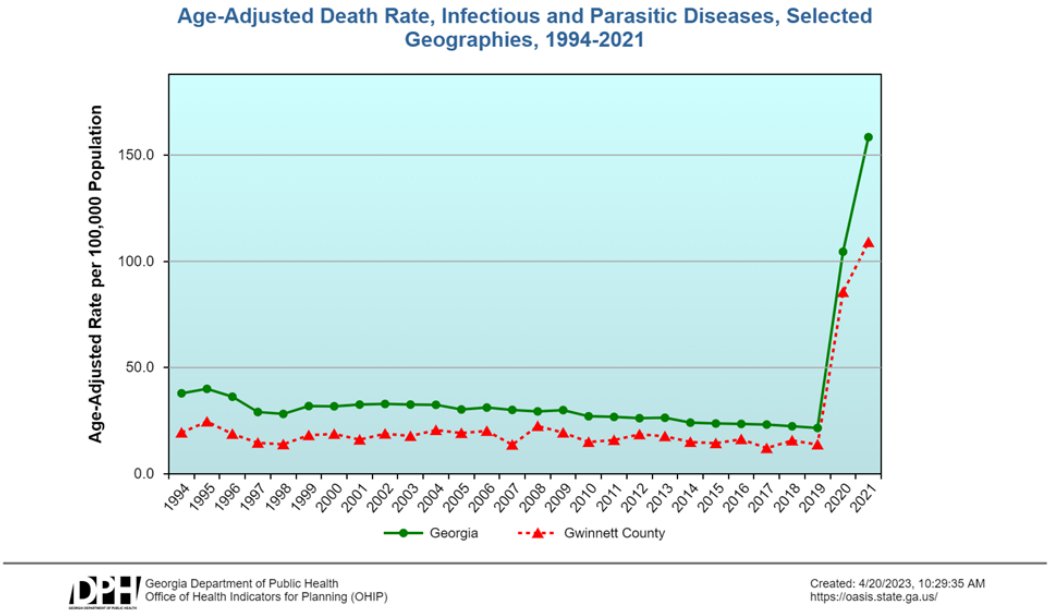
2020 Infant Mortality Rate was not available through OASIS database, however, there were <5 deaths in 2020.

Source: www.oasis.state.ga.us

Gwinnett County Population at a Glance







Top 10 Causes of Hospitalizations in Gwinnett County for 2021 by Age-Adjusted Deduplicated Hospital Discharge Rate Total Discharges: 70,866 (rates per 100,000 population)		
1	Septicemia	431.5
2	COVID-19	387.9
3	Cardiovascular Disease	361.8
4	Mental and Behavioral Disorders	224.2
5	Falls	193.2
6	Musculoskeletal & Connective Tissue Diseases	181.9
7	Cerebrovascular Disease	170.4
8	Nervous System Diseases	136.2
9	Endocrine, Nutritional, & Metabolic Diseases	129.2
10	Genitourinary System Diseases	123.6

Select Population Based Statistics:

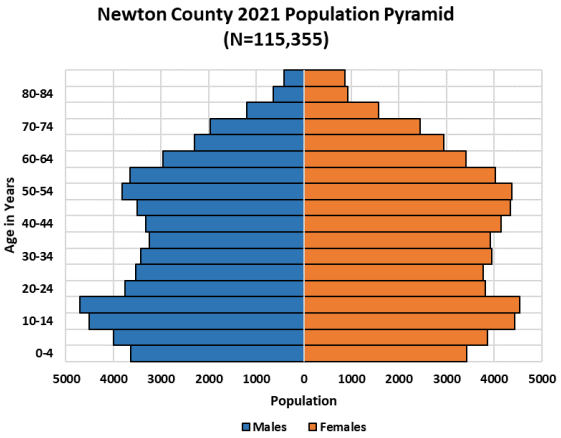
2021 Pregnancy Rate: 53.2 per 1,000 females 15-55 years

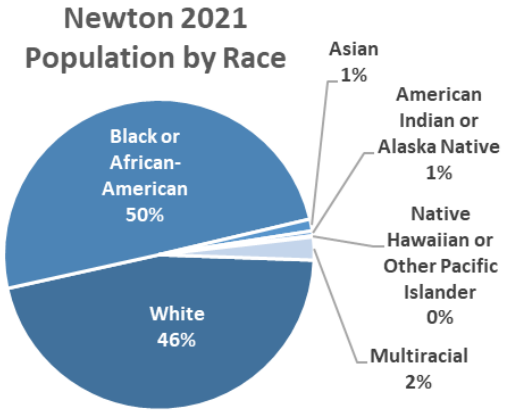
2021 Birth Rate: 34.9 per 1,000 females

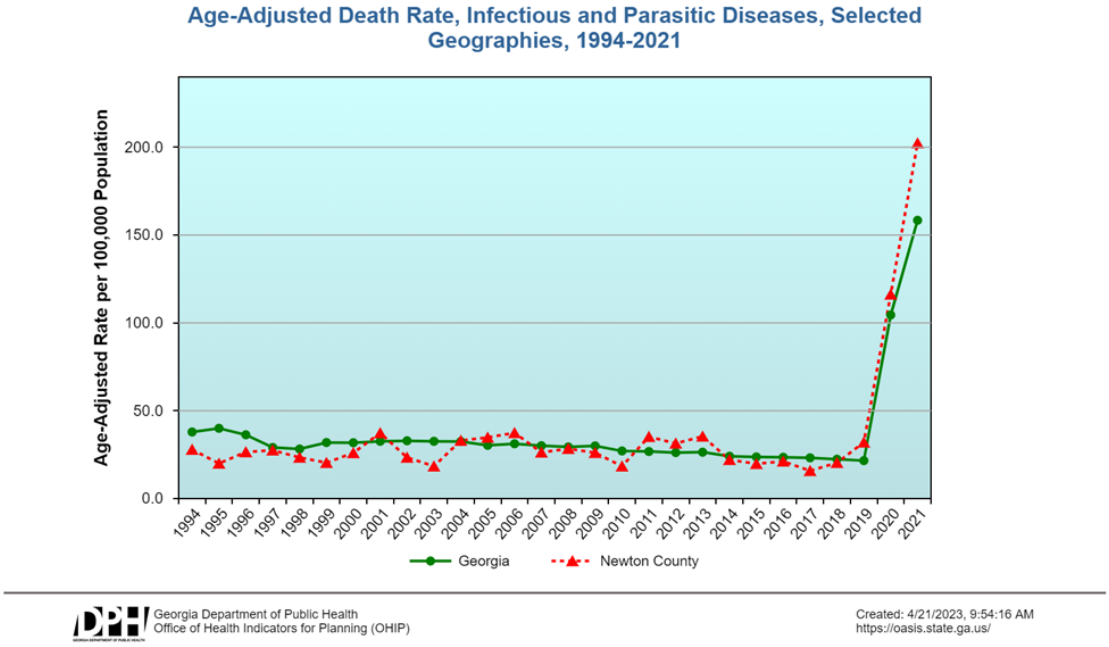
2021 Infant Mortality Rate: 4.7 per 1,000 births

Source: www.oasis.state.ga.us

Newton County Population at a Glance







Top 10 Causes of Hospitalizations in Newton County for 2021 by Age-Adjusted Deduplicated Hospital Discharge Rate Total Discharges: 11,680 (rates per 100,000 population)		
1	Septicemia	686.7
2	COVID-19	550.5
3	Cardiovascular Disease	642.2
4	Cerebrovascular Disease	227.4
5	Musculoskeletal & Connective Tissue Diseases	223.2
6	Mental and Behavioral Disorders	209.3
7	Falls	193.6
8	Endocrine, Nutritional, & Metabolic Diseases	185.2
9	Diabetes Mellitus	176.9
10	Nephritis, Nephrotic Syndrome, & Nephrosis	169.9

Select Population Based Statistics:

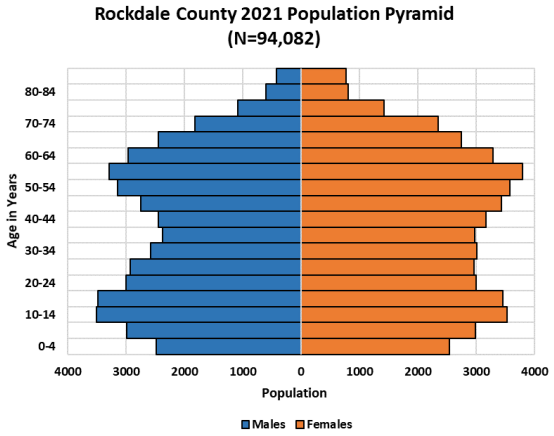
2021 Pregnancy Rate: 56.5 per 1,000 females 15-55 years

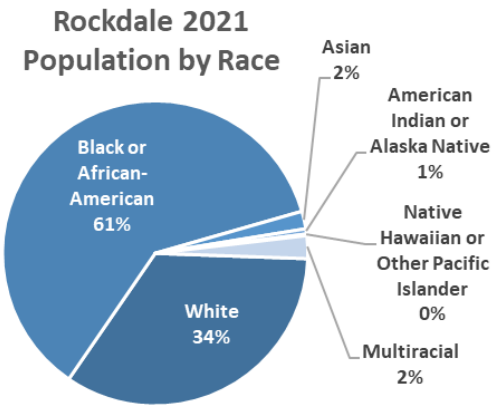
2021 Birth Rate: 32.9 per 1,000 females

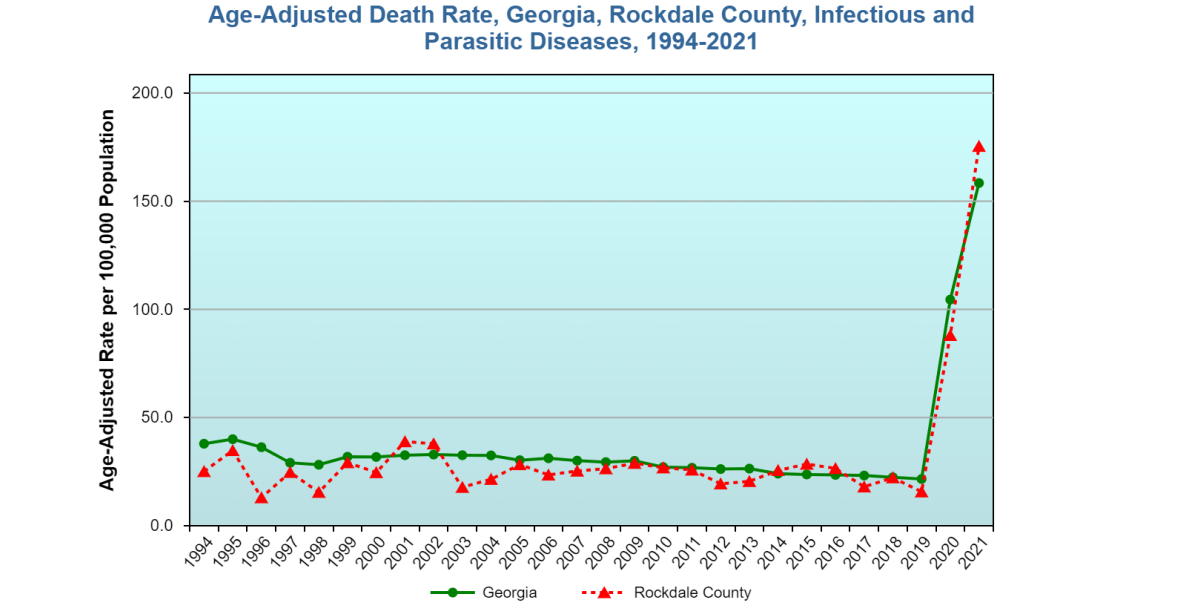
2021 Infant Mortality Rate: 6.4 per 1,000 births

Source: www.oasis.state.ga.us

Rockdale County Population at a Glance







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Top 10 Causes of Hospitalizations in Rockdale County for 2021 by Age-Adjusted Deduplicated Hospital Discharge Rate Total Discharges: 9,506 (rates per 100,000 population)		
1	Septicemia	1041.8
2	Cardiovascular Disease	494.5
3	COVID-19	444.7
4	Cerebrovascular Disease	222.6
5	Mental and Behavioral Disorders	213.5
6	Nervous System Diseases	202.9
7	Endocrine, Nutritional, & Metabolic Diseases	187.1
8	Falls	176.7
9	Musculoskeletal & Connective Tissue Diseases	170
10	Diabetes Mellitus	155.5

Select Population Based Statistics:

2021 Pregnancy Rate: 55.9 per 1,000 females 15-55 years

2021 Birth Rate: 31.4 per 1,000 females

2021 Infant Mortality Rate: 9.6 per 1,000 births

Source: www.oasis.state.ga.us

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