



**Respiratory Surveillance: September 5 – September 11, 2021
Updated September 16, 2021**

COVID-19 Key Findings

Statewide Updates	<p>During the week ending September 11, 2021, the percentage of emergency department visits for COVID-like illness decreased from the previous week.</p> <p>The percent of people seen in the emergency department for COVID-like illness who had to stay in the hospital was not included due to a technical issue.</p> <p>The total number of people admitted to hospitals in the Public Health Epidemiologist (PHE) network for COVID-19 went down, and the percentage admitted to the ICU went down.</p> <p>Three new cases of MIS-C meeting the CDC case definition were reported this week.</p>
Regional Updates	<p>Among neighboring states (SC, GA, VA, TN), VA and TN saw an increase in COVID-19 activity based on total case numbers and rate of new cases per 100,000 population over the last 7 days (09/07/21-09/14/21). GA and SC saw a decrease in COVID-19 activity based on total case numbers and rate of new cases per 100,000 population over the last 7 days (09/07/21-09/14/21). https://covid.cdc.gov/covid-data-tracker/#compare-trends_newcasesper100k</p>
National Updates	<p>The national percent positive was 7.82% on 09/12.</p> <p>The nationwide rate of new cases per 100,000 population has increased over the past 7 days (09/07/21-09/14/21). https://protect-public.hhs.gov/pages/national-testing</p>
International Updates	<p>Worldwide, the Americas have accounted for a majority of COVID-19 infections since the week of June 5, 2020. For more country specific details please visit: https://covid19.who.int/</p>

Influenza Key Findings

Due to seasonal low influenza activity, influenza and influenza-like illness (ILI) information will not be included in this report for the remainder of the summer. Influenza and ILI data will be included in this report again at the start of influenza season in the fall. NC DPH will continue to review influenza and ILI data weekly and PHE influenza testing data will continue to be included as part of respiratory testing results on page 16.

Introduction

The North Carolina Department of Health and Human Services (NCDHHS) uses multiple surveillance systems to monitor respiratory diseases across the state. These surveillance systems include information related to outpatient visits, emergency department visits, laboratory data, as well as hospital data from epidemiologists at seven of the state's largest healthcare systems. Data sources used to gather the information presented here are described below.

NC DETECT

The [North Carolina Disease Event Tracking and Epidemiologic Collection Tool](#) (NC DETECT) is North Carolina's statewide, electronic, real-time public health surveillance system. NC DETECT was created to provide early event detection and timely public health surveillance using a variety of secondary data sources, including data from the NC Emergency Departments (EDs). Each ED visit is grouped into syndromes based on keywords in several different fields and/or diagnosis codes. Two syndromes used to track COVID-like illness (CLI) and influenza-like illness (ILI) are presented in this report.

CLI and ILI data track the number and percent of emergency department visits that are for illnesses compatible with COVID-19 or influenza. This includes visits that do not have positive test results for either disease.

The CLI and ILI syndromes have similarities because COVID-19 and influenza share many of the same symptoms. However, there are a few key distinctions between the two syndrome definitions. ILI includes the key word term "sore throat" while CLI does not. CLI contains keyword terms that ILI does not, including ones regarding the loss of taste and smell, pneumonia, and specific terms like "COVID" and "corona." CLI also includes ICD-10-CM diagnosis codes¹ specific to COVID-19 and ILI does not include any ICD-10-CM codes. The syndrome definitions are as follows:

¹ The International Classification of Disease, Tenth Edition, Clinical Modification (ICD-10-CM) system is used by physicians and healthcare providers to code diagnoses for all patient visits.

	Influenza-like illness (ILI)	COVID-19-like illness (CLI)
Chief complaint only	N/A	COVID or corona or coronavirus
Chief complaint or triage notes	((fever OR febrile OR FUO OR temperature OR Documented Initial ED Temp > 38C) AND (cough or sore throat))	loss of sense of smell / taste or no taste / smell or unable to smell / taste or loss sense of smell / taste or lost taste / smell OR ((Chief complaint or triage notes: (cough or shortness of breath or SOB or SHOB or respiratory distress or cannot breathe or cyanosis or difficulty breathing or dyspnea or hypoxia or pleural effusion or pneumon or stridor) AND (Febrile or fev* or fvr or temp or chills or rigor or shivers or initial ED temp > 38)) OR Specific ICD-10-CM codes
ICD-10-CM Codes	N/A	B97.2% OR B34.2 OR J12.81 OR U07.1 OR U07.2

In order to better differentiate between CLI and ILI, the CLI syndrome definition has been modified to exclude any visits that contain a diagnosis code for influenza.

- If an ED visit has the signs and symptoms of CLI or a diagnosis of COVID-19 they are included.
- If an ED visit has the signs and symptoms of CLI and receives a diagnosis of influenza AND COVID they are included.
- If an ED visit has the signs and symptoms of CLI but receives an influenza diagnosis without also receiving a COVID diagnosis they are excluded.

NC DETECT was created by the North Carolina Division of Public Health (NCDPH) in collaboration with the Carolina Center for Health Informatics (CCHI) in the UNC Department of Emergency Medicine.

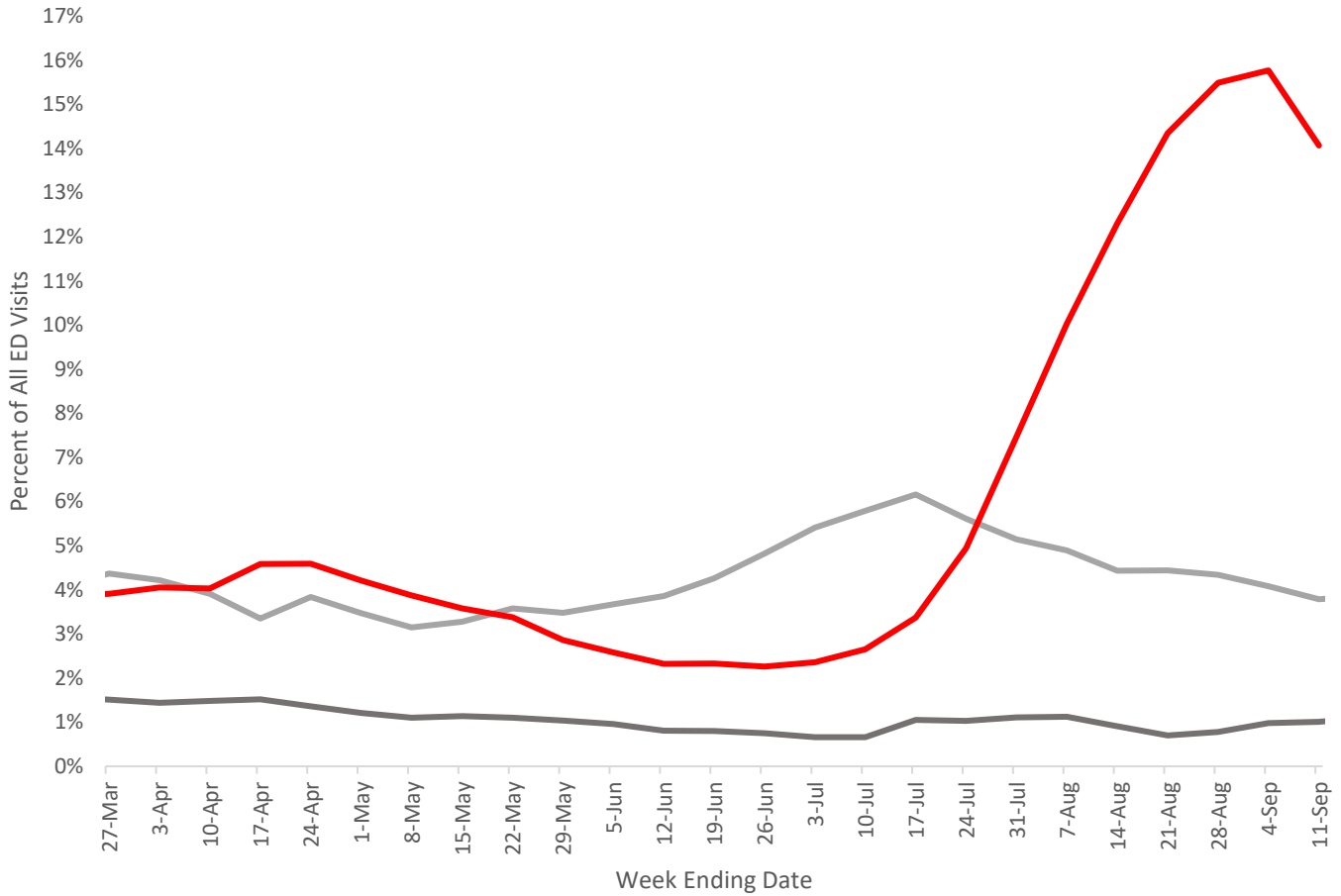
Public Health Epidemiologists Program

In 2003, NCDPH created a hospital-based Public Health Epidemiologist (PHE) program to strengthen coordination and communication between hospitals, health departments and the state. The PHE program covers approximately 38 percent of general/acute care beds and 40 percent of ED visits in the state. PHEs play a critical role in assuring routine and urgent communicable disease control, hospital reporting of communicable diseases, outbreak management and case finding during community wide outbreaks.

Influenza-like Illness Network

The U.S. Outpatient Influenza-like Illness Surveillance Network ([ILINet](#)), is a collaboration with providers, state health departments, and CDC to conduct surveillance for influenza-like illness. ILINet providers in primary care clinics and hospitals across the state send samples collected from patients with influenza-like illness to the North Carolina State Laboratory of Public Health for testing. With the current COVID-19 pandemic, ILINet has been expanded to include testing for SARS-CoV-2. Providers are asked to submit up to 10 samples from symptomatic patients each week. For ILINet surveillance purposes symptomatic is defined as fever (>100°F) and cough or sore throat. More information about ILINet can be found at flu.nc.gov.

What percent of ED visits this season are for COVID-like illness compared to previous seasons?



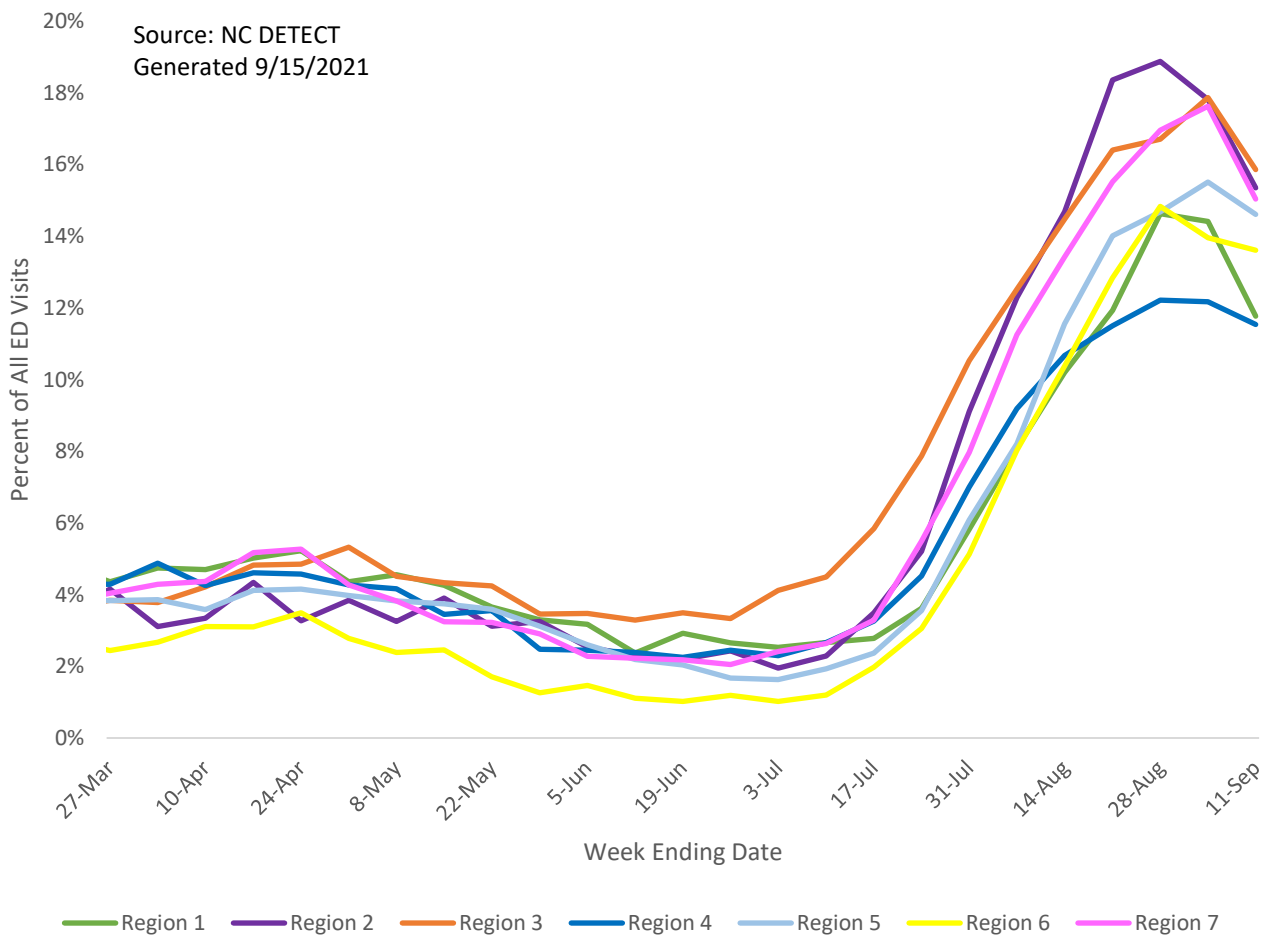
Source: NC DETECT
Generated:9/15/2021

— 2018-2019 — 2019-2020 — 2020-2021

The above graph shows how the percentage of ED visits for CLI this season compares to previous seasons. COVID-19 and influenza can both cause fever and respiratory illness, so CLI syndrome and ILI syndrome detect some of the same ED visits.

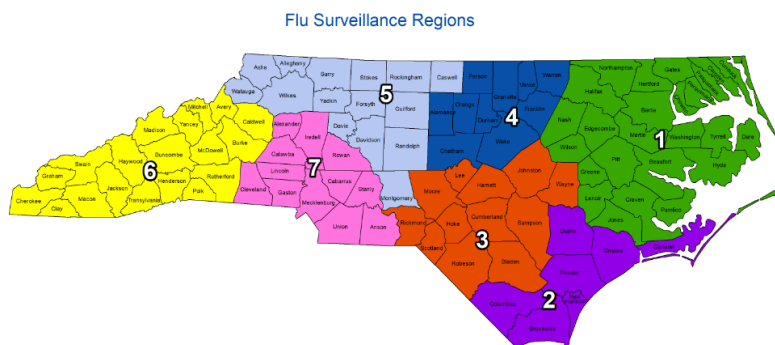
The percentage of ED visits for COVID-like illness **DECREASED** the week ending September 11, 2021.

How does the percentage of ED visits for COVID-like illness compare between regions of the state?



Diseases, including COVID-19, do not spread across the state evenly. The above graph shows the differences between regions in the percentage of ED visits for CLI. The colors of the lines correspond to the colors on the region map below.

All regions showed a DECREASE in the percent of ED visits for CLI the week ending September 11, 2021. **No regions showed an INCREASE** in the percent of ED visits for CLI the week ending September 11, 2021.

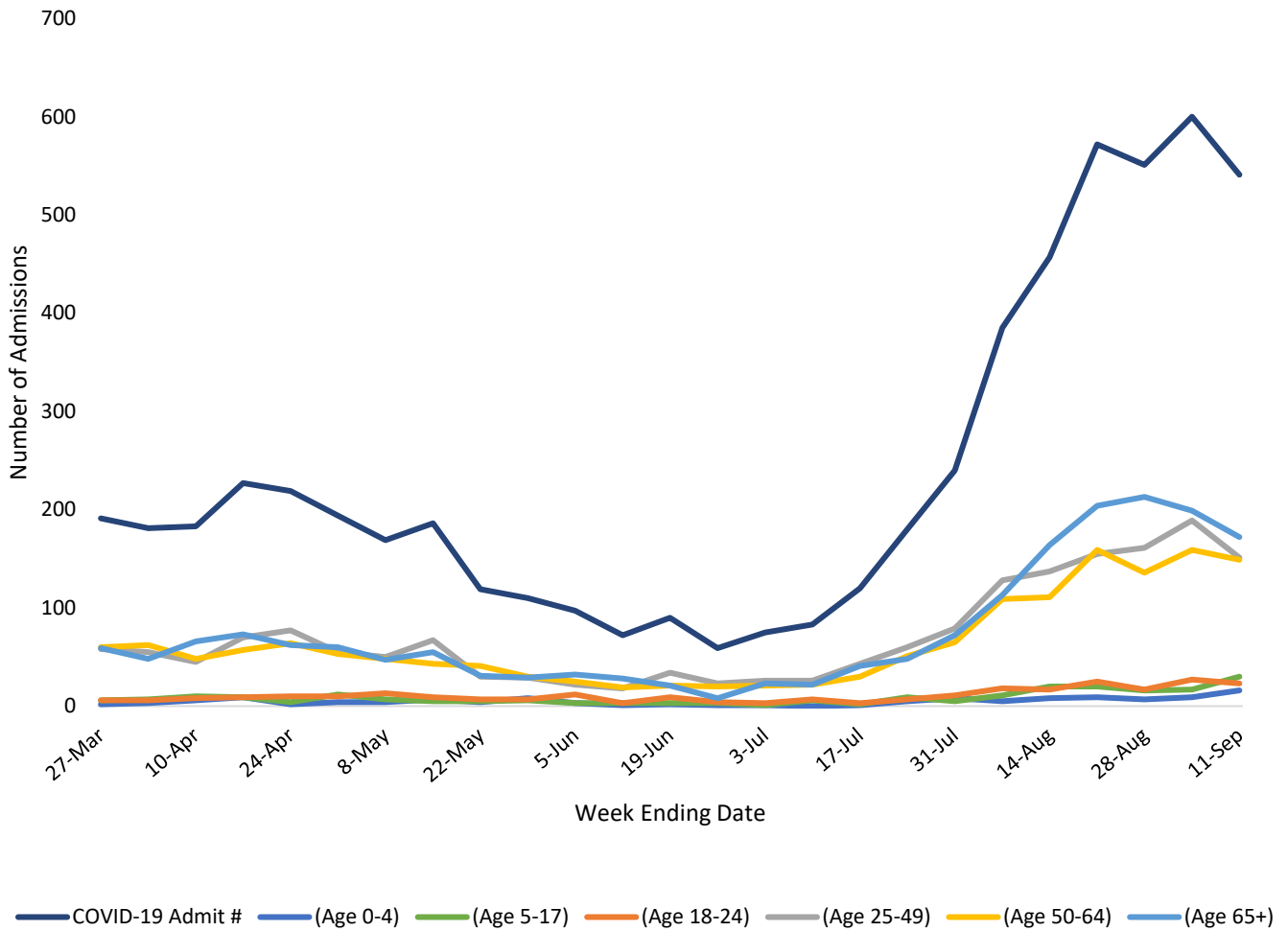


What percentage of people who go to the ED for COVID-like illness have to stay in the hospital?

The percentage of patients seen in the ED for CLI who were admitted to the hospital **was not included** the week ending September 11, 2021.

There is an ongoing technical issue with NC DETECT data reporting starting the week ending June 26. Not all hospital ED admissions were reported to NC DETECT because of this technical problem. The data will be updated as it is received, pending resolution of the technical issue.

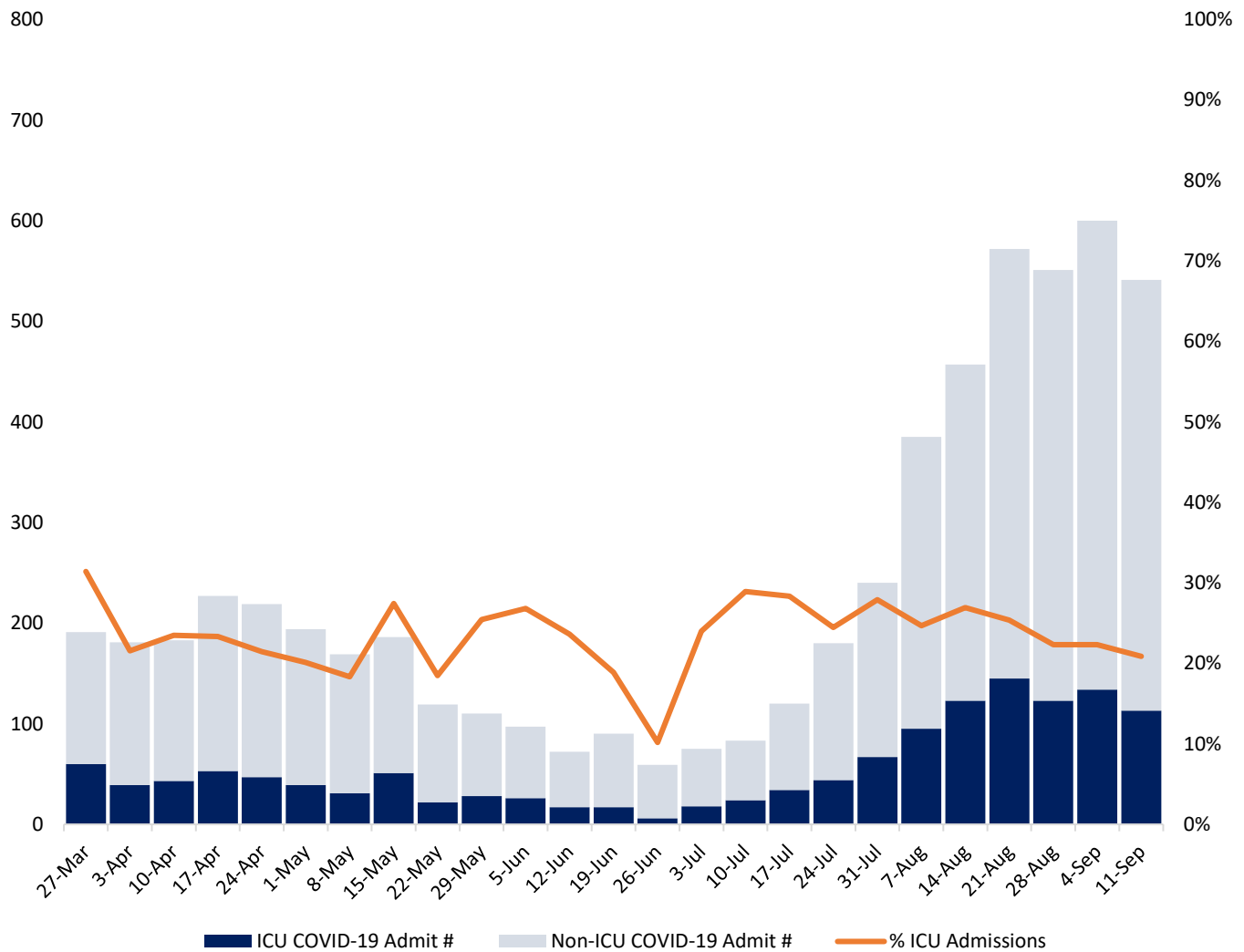
How many people were admitted to a hospital in the PHE network with COVID-19? What age groups were admitted most often?



The number of people admitted to hospitals in the PHE network for COVID-19 **DECREASED** the week ending September 11, 2021.

The most hospital admissions were among those **65+ years old** the week ending September 11, 2021.

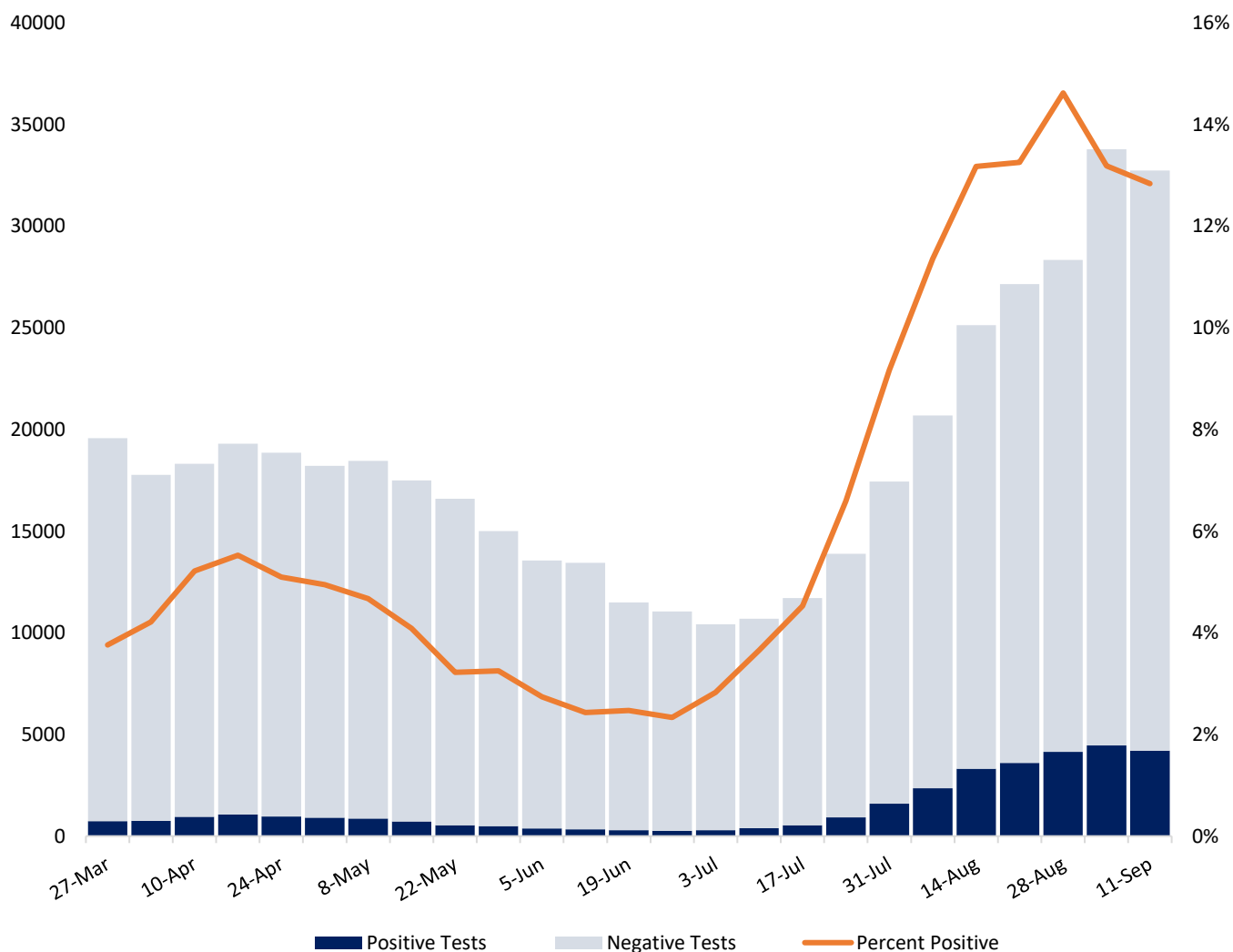
What level of care did COVID-19 patients admitted to a hospital in the PHE network require?



Patients who are admitted to the ICU versus other parts of the hospital require a higher level of care, may require a ventilator to help them breath, and are more likely to die from their illness.

The percentage of patients with COVID-19 requiring ICU level of care **DECREASED** the week ending September 11, 2021.

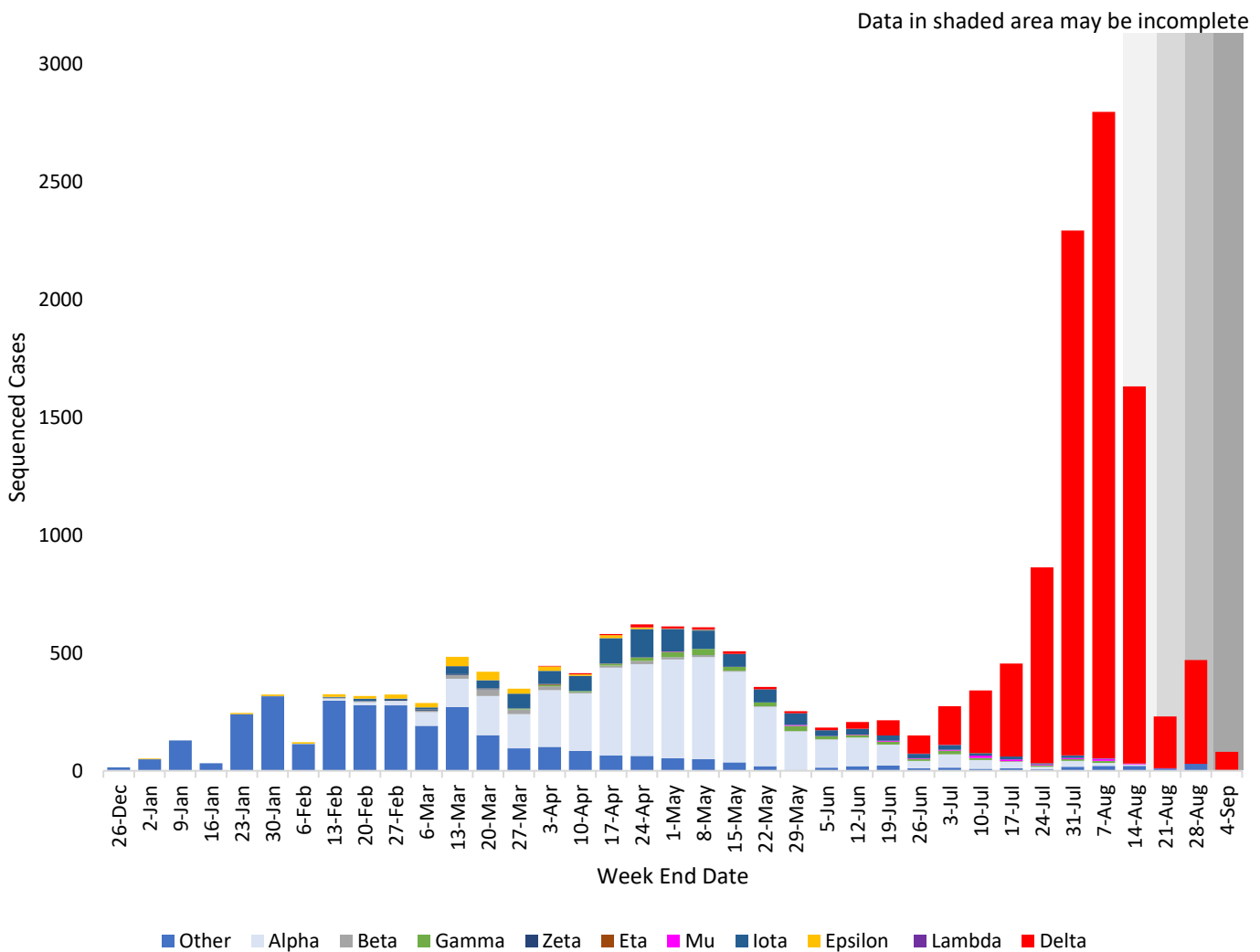
What percentage of people tested for the virus that causes COVID-19 at PHE facilities are positive?



In the week ending September 11, 2021 a total of **32,750** people were tested for the virus that causes COVID-19 at PHE facilities of which **4,204** were positive. The percentage of people who were tested and were positive helps us to understand how common the virus is in people who get tested for COVID-19.

The percentage of people tested who were positive for the virus that causes COVID-19 **DECREASED** the week ending September 11, 2021.

What COVID-19 variants are being detected in North Carolina?



Whole genome sequencing (WGS) allows tracking of genetic changes in the SARS-CoV-2 virus, the virus that causes COVID-19. These genetic changes occur over time and lead to the emergence of new variants that may have different characteristics. [CDC classifies some variants as variants of concern \(VOC\) or variants of interest \(VOI\) based on suspected or shown differences](#) in how that variant behaves, such as being more transmissible, more able to evade the immune system, or causing more severe disease. Currently several laboratories in North Carolina do WGS of SARS-CoV-2 viruses and five of those laboratories report all WGS results to NC DHHS (LabCorp, Aegis, Mako, UNC McClendon Laboratory, and the NC State Laboratory of Public Health).

This graph shows the variants identified each week among specimens sequenced by laboratories that report all WGS results to NC DHHS. The number of sequenced specimens shown is a small proportion of the total number of COVID-19 cases.

The **Delta Variant** has been the most commonly circulating variant since the week ending June 26, 2021.

Post-vaccination Cases

COVID-19 vaccines are highly effective at preventing severe illness, hospitalization and death from COVID-19, including from the Delta variant. Even when a vaccine is highly effective, post-vaccination cases are expected. A small percentage of people who are fully vaccinated will still get COVID-19 if they are exposed to the virus. When infections do occur after vaccination, they are generally less severe than infections in people who are unvaccinated, and vaccinated people are much less likely to be hospitalized or die.

What is a post-vaccination case?

A case is considered a post-vaccination case if an individual tested positive at least 14 days after completing an FDA authorized SARS-CoV-2 (COVID-19) vaccine and has not had a positive test result in the preceding 45 days. People who are not fully vaccinated (e.g., only one dose of a two-dose series or less than 14 days from vaccination) are included in the unvaccinated cases.

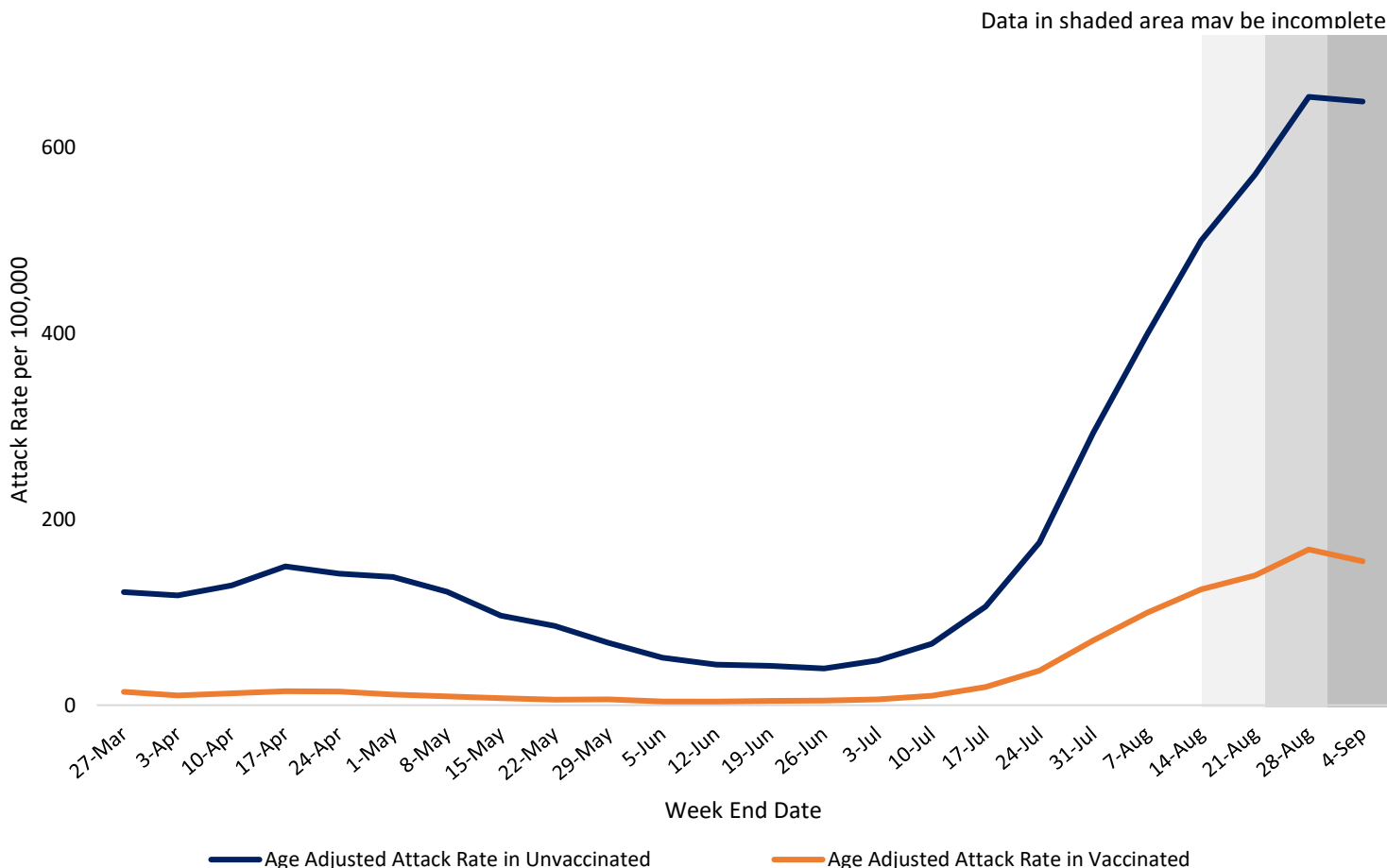
How are post-vaccination cases identified?

Every week, NCDHHS compares vaccination records with case records by running a query to match records in the North Carolina COVID-19 Vaccine Management System and the Federal Pharmacy Program with records in the database of COVID-19 cases reported to NCDHHS. This matching is done based on information such as name, date of birth, and address in each system. This data is then analyzed to determine which cases meet the definition of a post-vaccination case. This data does not include people who were vaccinated by the Department of Defense, Veterans' Administration, or Indian Health Service.

When viewing post-vaccination case data there are several important things to keep in mind

- This report updates data through September 4, 2021. Data through September 11, 2021 will be included in the next weekly report.
- Even with highly effective vaccines, the number of post-vaccination cases is expected to rise as virus transmission goes up and as more people are vaccinated.
- Although we continue to see stable and highly effective protection against hospitalizations and severe outcomes for people who are fully vaccinated, we are seeing a decrease in vaccine effectiveness against infection with the Delta variant.
- Post-vaccination case rates are affected by who gets tested, which could be different for vaccinated and unvaccinated people. Because of that, post-vaccination case rates are not the same as vaccine effectiveness studies.
- Age-adjustment takes into account differences in age distribution between people who are vaccinated and people who are unvaccinated.
- This data is preliminary and subject to change. Rates and ratios for previous weeks may change slightly as new data are received. As we improve our matching process, we may find post-vaccination cases that were not previously identified.
- Vaccination is the most effective way to prevent the spread of COVID-19 as well as severe, hospitalization and death due to the virus.

What is the risk of getting COVID-19 for people who are vaccinated versus unvaccinated?

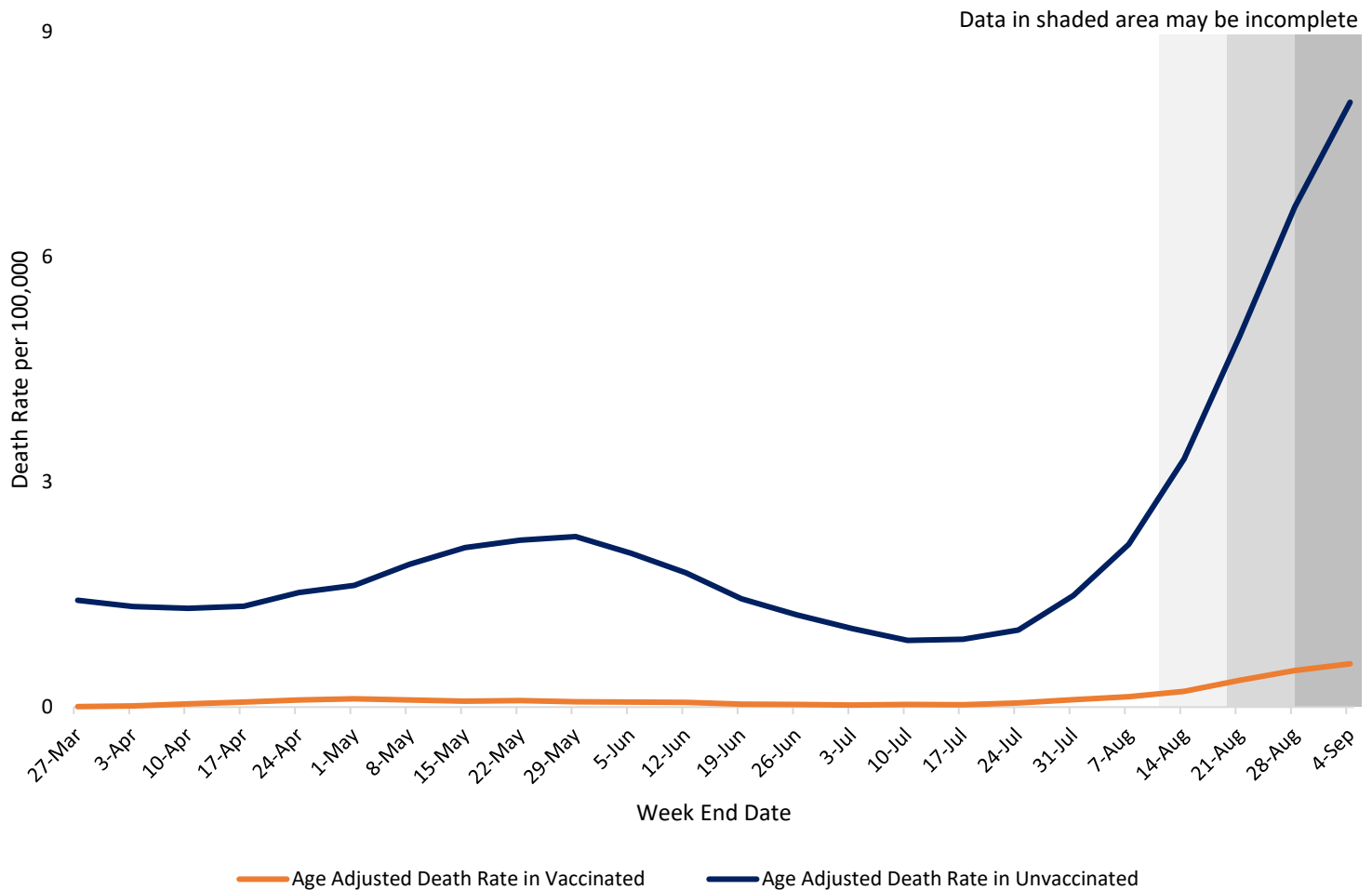


An [attack rate](#) is the number of cases that occur in a certain time period in a certain group of people. In the graph above, the number of cases in unvaccinated individuals each week is being compared to the number of cases in vaccinated individuals each week. Using the attack rate allows this comparison as the number of vaccinated and unvaccinated individuals changes over time as more people are vaccinated.

The age-adjusted* attack rate among **unvaccinated** individuals was **649 cases per 100,000** unvaccinated population and the age-adjusted attack rate among **vaccinated** individuals was **155 per 100,000** vaccinated population the week ending September 4, 2021.

An [attack rate ratio](#) compares the risk of something between two groups. The age-adjusted* attack rate ratio for unvaccinated individuals getting COVID-19 is 4.19. This means that **unvaccinated individuals more than four times or 419% more likely to get COVID-19 as vaccinated individuals.**

What is the risk of dying of COVID-19 for people who are vaccinated versus unvaccinated?



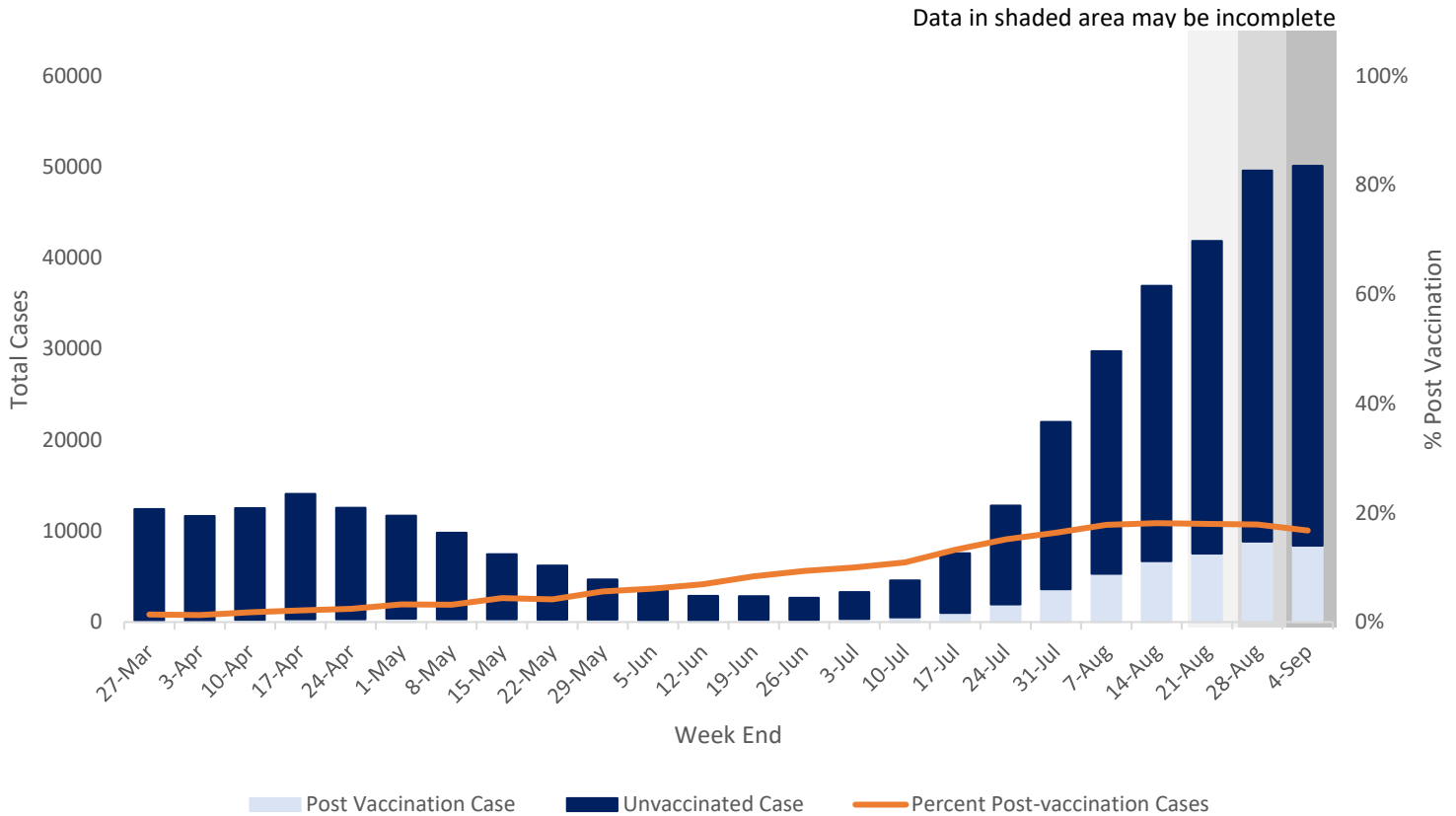
A [mortality rate](#) is the number of deaths that occur in a certain time period in a certain group of people. In the graph above, the number of COVID-19 deaths in unvaccinated individuals is being compared to the number of COVID-19 deaths in vaccinated individuals in the same period. Using the mortality rate allows this comparison as the number of vaccinated and unvaccinated individuals changes over time as more people are vaccinated. During the period January 1, 2021 – September 4, 2021, there have been 298 deaths among vaccinated people.

The age-adjusted mortality rate among **unvaccinated** individuals was **8.06 cases per 100,000** unvaccinated population and the age-adjusted mortality rate among **vaccinated** individuals was **0.58 per 100,000** vaccinated individuals for the four-week period ending September 4, 2021.

The age-adjusted mortality rate ratio compares the risk of dying between two groups. The age-adjusted mortality rate ratio for unvaccinated individuals getting COVID-19 is 13.90. This means that **unvaccinated individuals were 13.90 times or 1,390% more likely to die of COVID-19 as vaccinated individuals.**

Cases identified in North Carolina among unvaccinated and vaccinated people during January 1, 2021 — September 4, 2021

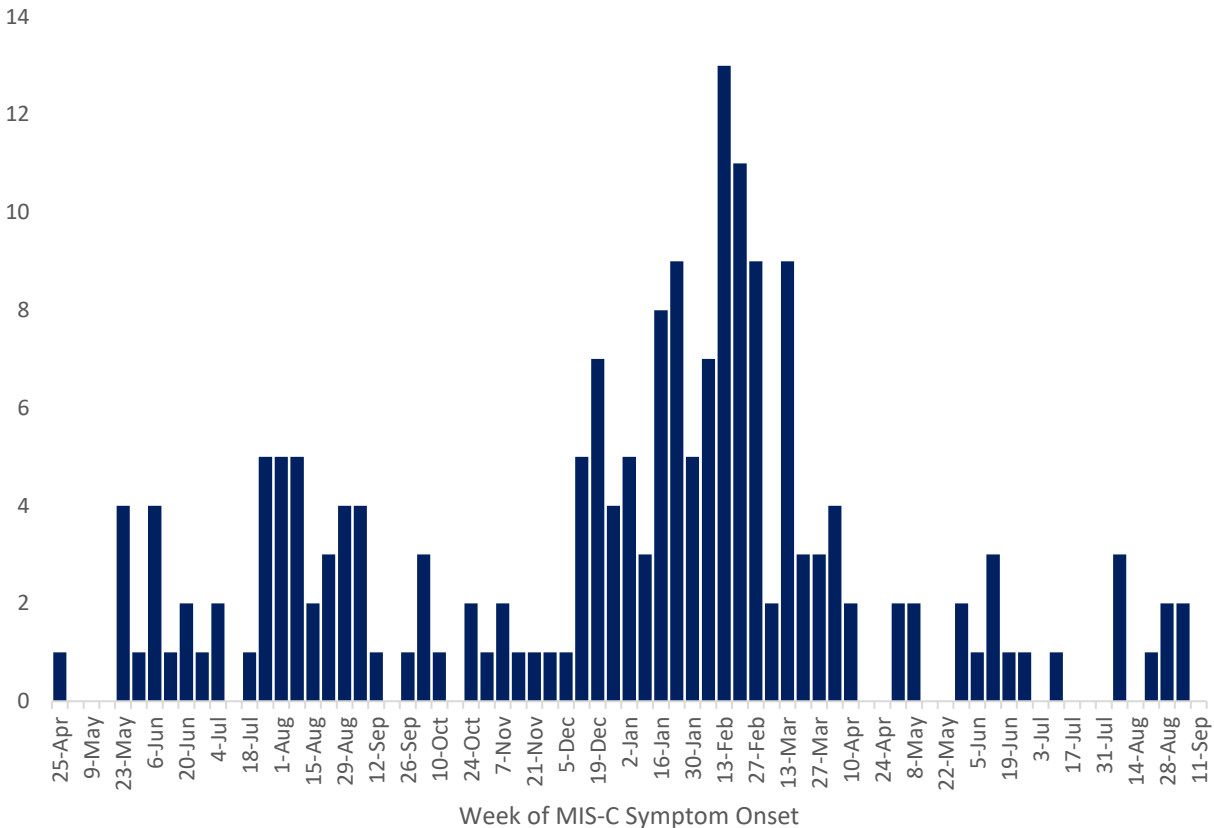
For the week ending September 4, 2021 there were 4,767,910 North Carolinians vaccinated against COVID-19 and 48,178 cases in fully vaccinated individuals since January 1, 2021.



Post-vaccination cases made up **17%** of COVID-19 cases in North Carolina the week ending September 4, 2021. The percent of post-vaccination cases **DECREASED** the week ending September 4, 2021 compared to the previous week.

How many cases of Multisystem Inflammatory Syndrome in Children (MIS-C) associated with COVID-19 have been reported in North Carolina?

Number of New Cases Reported Week Ending September 11, 2021	Total Reported Cases in NC
3	190

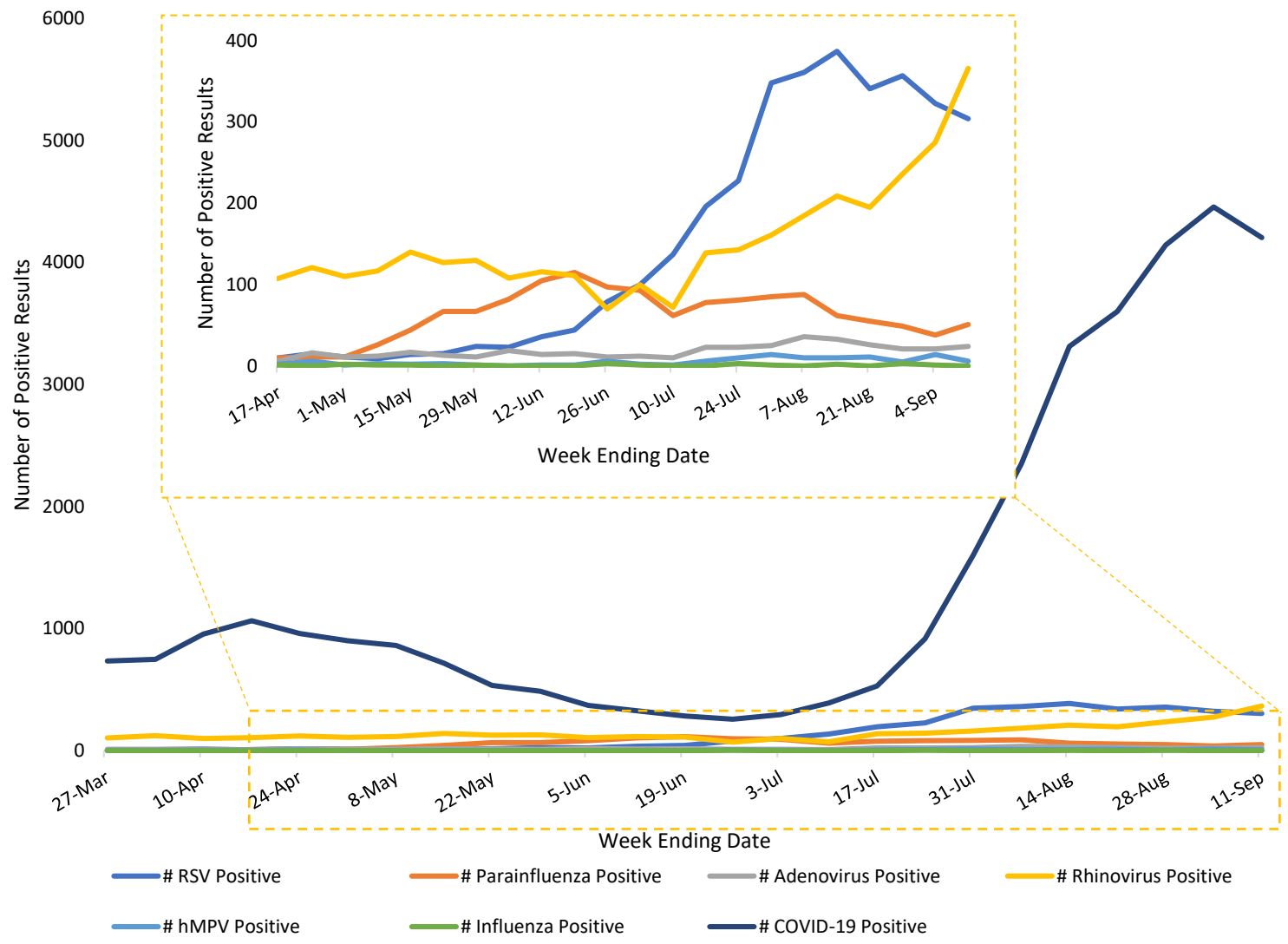


Multisystem inflammatory syndrome in children (MIS-C) is a rare health condition that has been identified in a small subset of children with current or recent COVID-19. MIS-C is similar to other serious inflammatory conditions such as [Kawasaki disease](#) and toxic shock syndrome. Children with MIS-C can have problems with their heart and other organs and need to receive medical attention.

NCDPH is looking for cases of this new syndrome in three different ways:

1. Physicians directly report suspect cases to NCDPH
2. PHEs report suspect cases to NCDPH
3. NC DETECT does surveillance for children with compatible symptoms
4. The graph above shows the number of cases that met the [CDC case definition](#) for MIS-C by the week their MIS-C symptoms first started. More information on MIS-C is available from CDC [here](#).

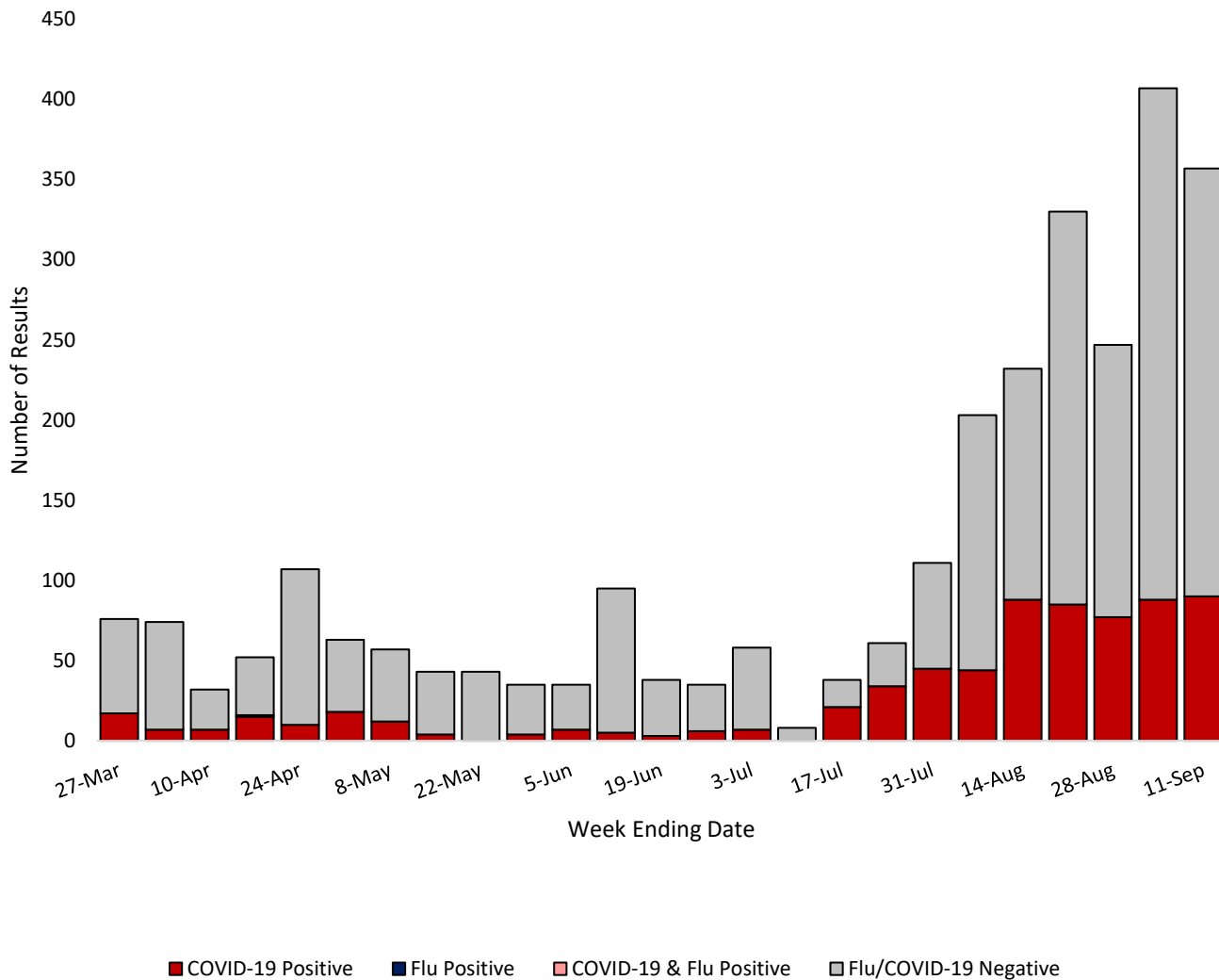
What respiratory viruses are being found in patients tested at hospitals in the PHE network?



Many viruses can cause respiratory illness. The graph above shows all tests for the listed respiratory viruses done at hospital laboratories in the PHE network. Tracking test results for patients in this network of health systems can help us to understand what other viruses are making people sick. It is important to remember that the number of positive tests depends on how many tests are done, so will change based on access to testing and testing priorities.

The most common respiratory virus seen in PHE facilities was **SARS-CoV-2, the virus that causes COVID-19** the week ending September 11, 2021.

What respiratory viruses are being found in symptomatic patients tested at the State Laboratory of Public Health?



The State Laboratory of Public Health (SLPH) tests specimens submitted from symptomatic patients for influenza and COVID-19 using a multiplex assay. Depending on laboratory capacity, a small number of nasopharyngeal specimens may also be tested for other respiratory viruses if they are negative for both influenza and COVID-19. The graph shows the results from all tests for the respiratory viruses listed above and performed at SLPH on specimens from symptomatic patients. Tracking test results for patients at SLPH can help us to understand the distribution of COVID-19 and influenza as well as potential co-infections. Because testing at SLPH focuses on prioritized populations at increased risk for COVID-19 and all results in the graph came from specimens collected from symptomatic patients, the percentage of positive tests for COVID-19 is likely to be higher than the state average.

There were **90** specimens positive for COVID-19, **no** specimens positive for influenza, and **no** co-infections out of **357** specimens tested with the multiplex assay at the SLPH the week ending September 11, 2021.