NH DIVISION OF Public Health Services
Improving health, preventing disease, reducing costs *for all*
Department of Health and Human Services

Bureau of Infectious Disease Control
Infectious Disease Surveillance Section (IDSS)

Weekly Surveillance Report for Influenza and Respiratory Syncytial Virus
Week Ending May 18, 2024
MMWR Week 20

The NH Department of Health and Human Services (DHHS) provides weekly influenza surveillance reports during the traditional influenza season, which starts at the beginning of October and continues through mid-May. The 2023–24 influenza season began on 10/01/2023.

Summary for New Hampshire

	Influenza-Like Illness (ILI)	Acute Respiratory Illness (ARI)	Pneumonia and Influenza-Like Illness (ILI) Related Deaths	Respiratory Specimens Submitted to the Laboratory	Flu Activity
Week 20	0.8% = decrease from previous week	1.0% = similar to previous week	6.5% (below threshold*)	4 Total: ▪ 2 positive for A(H1N1)pdm09 ▪ 1 positive for A/Subtyping not completed ▪ 1 negative	Local

**Epidemic threshold = 11.7%*

New Hampshire Surveillance

Outpatient Illness Surveillance

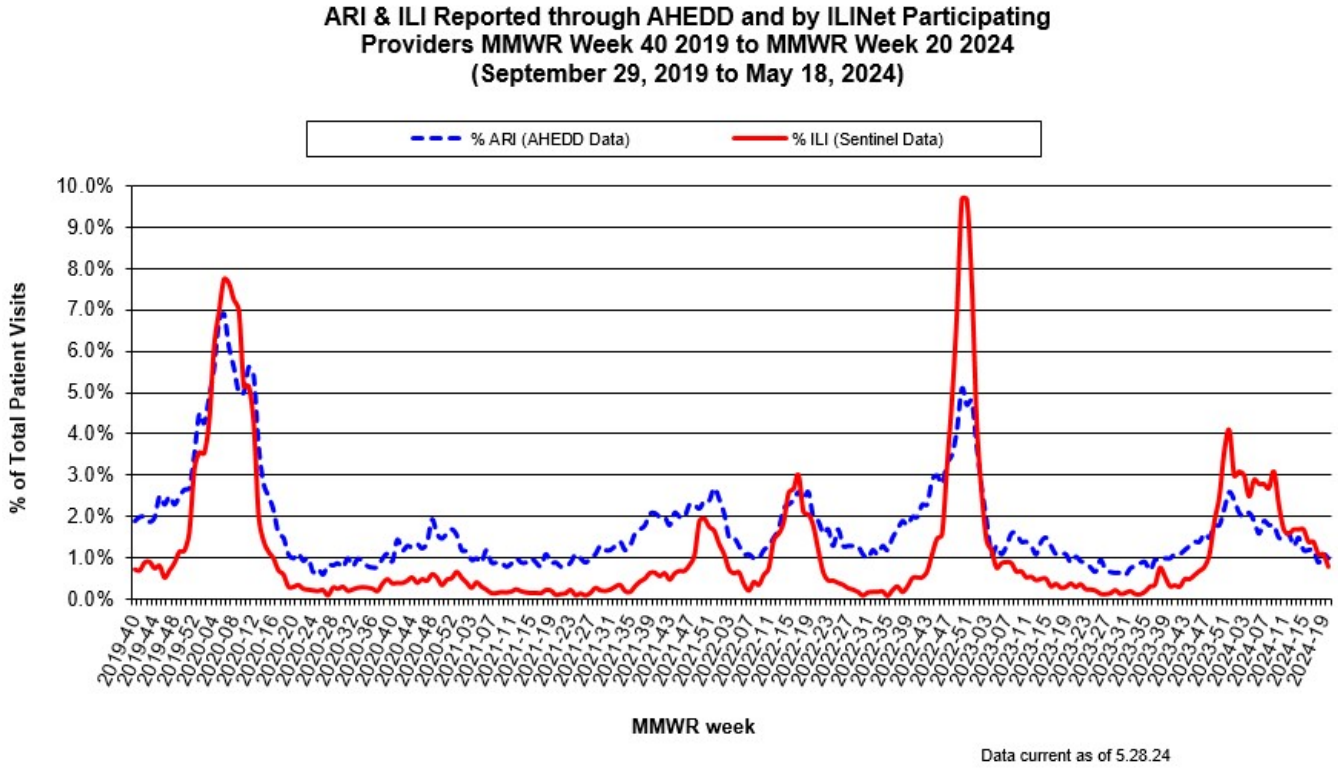
The two components of outpatient illness surveillance in New Hampshire are as follows:

1. **U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet)**: Beginning in 1997, NH has participated in this collaborative effort between the Centers for Disease Control and Prevention, state and local health departments, and health care providers. For the 2023-24 influenza season, 23 NH health care providers are participating. Types of ILINet providers enrolled in NH during the current season include family practices, student health services, community health centers, and emergency departments. Participating providers report the proportion of patients who present with influenza-like illness (ILI) on a weekly basis. ILI is defined as 1) a fever and 2) cough and/or sore throat. Participating providers are also asked to collect respiratory specimens from select patients and submit them to the PHL for viral subtyping.
2. **The Automated Hospital Emergency Department Data (AHEDD) system**: This system is a collaborative effort between NH acute care hospitals and the NH DHHS. During Week 20, 21 of the 26 hospitals electronically transmitted a complete set of data from emergency department encounters to NH DHHS. Chief complaint text within the system is queried for complaints of acute respiratory illness (ARI) in patients seen in emergency departments. While ARI includes encounters that fit the definition of ILI above, it also includes encounters for complaints such as acute bronchitis or otitis media.

Because these two systems collect information using different methods and represent different patient populations, it is expected that the proportions of ILI and ARI seen in these systems will differ. However, the overall trend of activity is expected to be similar.

	Patient Visits/Encounters	Reporting Providers/Hospitals	ILI	ARI	Change from Previous Week
ILINet	64/8,328	21	0.8%		Decrease from 1.1%
AHEDD	137/13,172	21		1.0%	Similar to 1.1%

Maps illustrating the degree of ARI activity for each of the ten counties for week 20 is available on the NH DHHS influenza activity informational page.



Laboratory Surveillance

The NH Public Health Laboratories (PHL) receives respiratory specimens for influenza testing from health care providers and hospitals throughout the State. Testing is important to identify circulating influenza viral subtypes and to confirm specimens that test positive by rapid test.

Results of Specimens Received by the PHL and Cumulative Totals for the 2023-24 Influenza Season

	Week 20 (05/12/24–5/18/24)		YTD (10/01/23–5/25/24)	
Results	# specimens	% of total positive	# specimens*	% of total positive
Influenza A (H3)	0	0.0	139	15.2
Influenza A (H1N1)pdm09	2	66.7	543	59.2
Influenza A, subtyping not completed$^{\Omega}$	1	33.3	179 $^{\Psi}$	19.5
Influenza B/Victoria	0	0.0	39	4.3
Influenza B, lineage not completed$^{\Omega}$	0	0.0	17	1.9
Negative for influenza	1		726	
Total	4		1,643	

Ω Subtyping at PHL was either not performed or unsuccessful.

Ψ Three of these 179 specimens that were *positive for influenza A had an inconclusive subtype result. One of these specimens was shipped to CDC laboratory for further characterization, and the result was reported as inconclusive with suggestive evidence for the potential to be an influenza A variant, however, a more definitive result could not be determined due to low viral titer.*

** Of the specimens testing positive for influenza for the season to date, 18 were co-infections with influenza A & SARS-CoV-2, and 4 were co-infections with influenza B & SARS-CoV-2.*

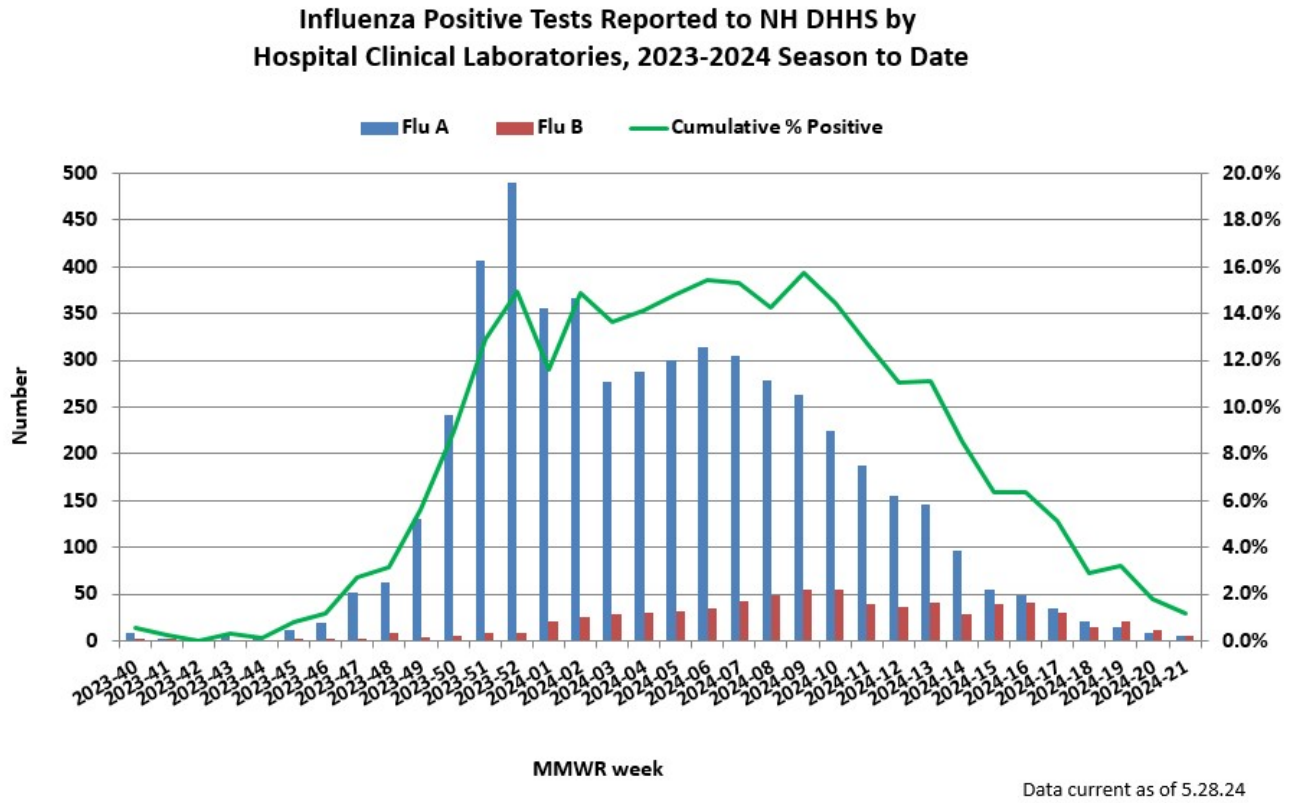
Hospital Clinical Laboratory Influenza Results

This season there are 14 hospital clinical laboratories that participate in reporting influenza test results to DHHS each week for specimens collected from patients who present with respiratory illness. These results may be generated by a variety of assays, including real-time polymerase chain reaction (RT-PCR) or rapid influenza diagnostic tests (RIDT). Results were reported for 1,121 specimens tested during week 20, and 20 (1.8%) were positive for influenza (decrease compared to 3.2% the previous week).

Results of Specimens Tested by Supplemental Clinical Laboratories and Cumulative Totals for the 2023-24 Influenza Season

	Week 20 (5/12/24–5/18/24)				YTD (10/01/23–5/25/24)			
	RIDT		PCR-based		RIDT		PCR-based	
Results	# specimens	% of positive	# specimens	% of positive	# specimens	% of positive	# specimens	% of positive
Influenza A	0	0.0	8	40.0	129	90.8	5,043	87.7
Influenza B	0	0.0	12	60.0	13	9.2	709	12.3
A&B Coinfection	0	0.0	0	0.0	0	0.0	1	<0.1
Negative	70		1,031		3,226		56,967	
Total tested	70		1,051		3,368		62,720	

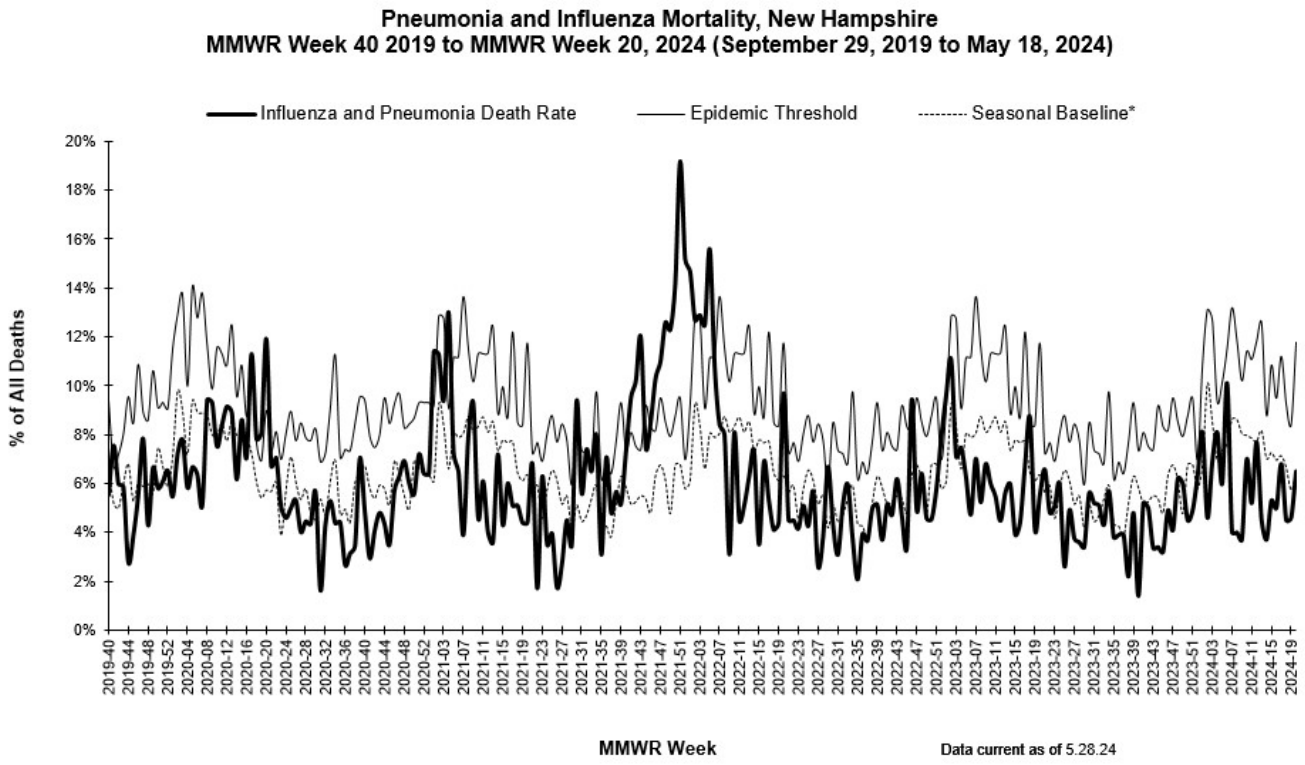
The chart below illustrates the weekly number and percentage of specimens that have tested positive at hospital clinical laboratories that reported during the current season through week 21.



Pneumonia and Influenza (P&I) Mortality

Pneumonia and Influenza (P&I) deaths in New Hampshire are identified through review of electronically filed death certificates by looking at the causes of death listed on each death certificate. The graph below, which shows the proportion of deaths attributed to P&I, represents all deaths recorded by NH's Division of Vital Records Administration. This includes resident and non-resident deaths that occurred within the State, and may not include deaths of NH residents that occurred out-of-state, or cases being investigated by the Medical Examiner's Office.

- ❑ 6.5% of all deaths recorded in NH were reported as due to P&I. This is below the epidemic threshold of 11.7%.
- ❑ Fifty-two adult influenza-related deaths have been identified so far this influenza season. The counties of residence for the persons with an identified influenza-related death are Belknap, Carroll, Cheshire, Coos, Grafton, Hillsborough, Merrimack, Rockingham, Strafford, and Sullivan. No pediatric influenza-related deaths have been identified this influenza season. Due to delays in electronic filing of death certificates, newly identified deaths in the last week may have occurred at any point during the flu season and not necessarily within the last week.



**Seasonal baseline is calculated using the previous 5 years of data. If the proportion of P&I deaths for a given week exceeds the baseline value for that week by a statistically significant amount (1.645 standard deviations), then P&I deaths are said to be above the epidemic threshold, and the proportion of deaths above threshold are considered attributable to influenza.*

Influenza Activity in New Hampshire as Assessed by the State Epidemiologist

The weekly reporting to the CDC of Geographic Spread of influenza Activity has been discontinued. Although the flu activity level will not be reported weekly to CDC, the DHHS will continue to characterize this variable and include it in these NH weekly influenza reports.

- ❑ Overall influenza activity in NH for week 20 was **local**.
- ❑ Influenza activity in NH for week 21 was **sporadic**.

Reported flu activity level is based on ILI reported by the participating providers and AHEDD surveillance systems, reported outbreaks in facilities, and reports of laboratory confirmed influenza.

Influenza activity levels are defined by CDC as follows:

- **No Activity:** Low ILI activity and no laboratory-confirmed cases of influenza.
- **Sporadic:** Low ILI activity and isolated laboratory-confirmed influenza cases or a single influenza outbreak has been reported.
- **Local:** Increased ILI activity or influenza outbreaks in a single region of the state, and recent laboratory-confirmed influenza in that region.
- **Regional:** Increased ILI activity or influenza outbreaks in ≥ 2, but less than half of state regions, and recent laboratory-confirmed influenza in affected regions.
- **Widespread:** Increased ILI activity or influenza outbreaks in at least half of state regions, and recent laboratory-confirmed influenza in the state.

National Surveillance

- ❑ Seasonal influenza activity is low nationally.
- ❑ Influenza A(H1N1)pdm09, A(H3N2), and B viruses were all co-circulating this week. Antigenic characterization data show that most of the circulating influenza viruses, including A(H1N1)pdm09, A(H3N2), and B/Victoria lineage viruses, are antigenically similar to the reference viruses contained in the current influenza vaccines.
- ❑ The proportion of outpatient visits for influenza-like illness (ILI) was 2.0%, which is below the national baseline of 2.9%. All ten regions, including region 1 (New England), are below their respective baselines.
- ❑ The percentage of deaths due to pneumonia, influenza, and/or COVID-19 (PIC) in the National Center for Health Statistics (NCHS) Mortality Surveillance System for MMWR week 20 was reported at 6.1%, which is below the epidemic threshold (6.4%). An assessment of underlying or contributing cause of death on the death certificates indicates that current PIC mortality is due primarily to COVID-19, although the proportion of deaths due to influenza remains significant.
- ❑ Two influenza-associated pediatric deaths occurring during the 2023-2024 season were reported to CDC during week 20. One death was associated with an influenza A virus with no subtyping performed and the other was associated with an influenza A(H3) virus. A total of 169 influenza-associated pediatric deaths occurring during the 2023-24 season have been reported to CDC.

Laboratory Surveillance

Public Health laboratories located in all 50 states and Washington D.C. reported specimens testing positive during week 20 for influenza viruses, as follows:

Flu Season	Influenza A (H1N1) pdm09	Influenza A (H3N2)	Influenza A - Subtyping not performed	Influenza B – Yamagata lineage	Influenza B – Victoria lineage	Influenza B – lineage not performed	Percentage of Specimens Testing Positive
Week 20 2023-24	15 (23.4%)	23 (35.9%)	11 (17.2%)	0 (0%)	5 (7.8%)	10 (15.6%)	**64/594 (10.8%)**

Novel Influenza A Virus

On May 30, 2024 the CDC confirmed there was a second human case of highly pathogenic avian influenza (HPAI) A(H5) virus infection identified in the state of Michigan. This is the third human case associated with an ongoing multistate outbreak of A(H5N1) in U.S. dairy cows. None of the three cases are associated with the others. As with the previous two cases (one in Texas, one in Michigan), the person is a dairy farm worker with exposure to infected cows, making this another instance of probable cow-to-person spread. This is the first human case of H5 in the United States to report more typical symptoms of acute respiratory illness associated with influenza virus infection, including A(H5N1) viruses. CDC continues to closely monitor available data from influenza surveillance systems, particularly in affected states, and there has been no sign of unusual influenza activity in people, including no increase in emergency room visits for influenza and no increase in laboratory detection of human influenza cases.

Based on the information available at this time, this case does not change CDC's current A(H5N1) bird flu human health risk assessment for the U.S. general public because all three sporadic cases had direct contact with infected cows. Risk depends on exposure, and in this case, the relevant exposure is to infected animals. The risk to members of the general public who do not have exposure to infected

animals remains low. However, this development underscores the importance of recommended precautions in people with exposure to infected or potentially infected animals. People with close or prolonged, unprotected exposures to infected birds or other animals (including livestock), or to environments contaminated by infected birds or other infected animals, are at greater risk of infection and should take precautions.

Antigenic Characterization

CDC has antigenically characterized 1,084 influenza viruses since October 1, 2023, including 398 A(H1N1)pdm09 viruses, 405 A(H3N2) viruses, and 281 B/Victoria lineage viruses. No B/Yamagata lineage viruses were available for antigenic characterization. The CDC characterizes antigenicity by how well antibodies made against the vaccine strains recognize circulating virus that have been grown in cell culture. Of the characterized viruses, the vaccine antibodies recognized:

- 100% of influenza A(H1N1)pdm09 samples with cell- and recombinant-based vaccine antibodies
- 97% of influenza A(H3N2) samples with cell- and recombinant-based vaccine antibodies
- 100% of influenza B/Victoria samples with cell- and recombinant-based vaccine antibodies

Antiviral Resistance

CDC assesses susceptibility of influenza viruses to antiviral medications including the neuraminidase inhibitors (oseltamivir, zanamivir, and peramivir) and the PA endonuclease inhibitor baloxavir. Viruses collected in the United States since October 1, 2023, were tested for antiviral susceptibility as follows:

	N*	Resistant Viruses, Number (%) Oseltamivir	N*	Resistant Viruses, Number (%) Peramivir	N*	Resistant Viruses, Number (%) Zanamivir	N*	Resistant Viruses, Number (%) Baloxavir
Influenza A(H1N1)pdm09	1,726	2 (0.1%)	1,726	2 (0.1%)	1,726	0 (0%)	1,670	0 (0%)
Influenza A (H3N2)	1,527	0 (0%)	1,527	0 (0%)	1,527	0 (0%)	1,486	1 (0.1%)
Influenza B/Victoria	1,277	0 (0%)	1,277	0 (0%)	1,277	0 (0%)	1,241	0 (0%)

*N equals the number of viruses tested.

- An annual flu vaccine is the best way to protect against flu and its potentially serious complications. CDC recommends that everyone ages 6 months and older get a flu vaccine annually.
- Antiviral treatment is recommended as early as possible for patients with confirmed or suspected influenza who have severe, complicated, or progressive illness; who require hospitalization; or who are at greater risk for influenza-related complications.
- Additional information on recommendations for treatment and chemoprophylaxis of influenza virus infection with antiviral agents is available at https://www.cdc.gov/flu/treatment/index.html.
- To prevent the spread of antiviral resistant virus strains, CDC reminds clinicians and the public of the need to continue hand and cough hygiene measures for the duration of any symptoms of influenza, even while taking antiviral medications. Additional information on influenza topics is available from CDC at http://www.cdc.gov/flu.

Respiratory syncytial virus

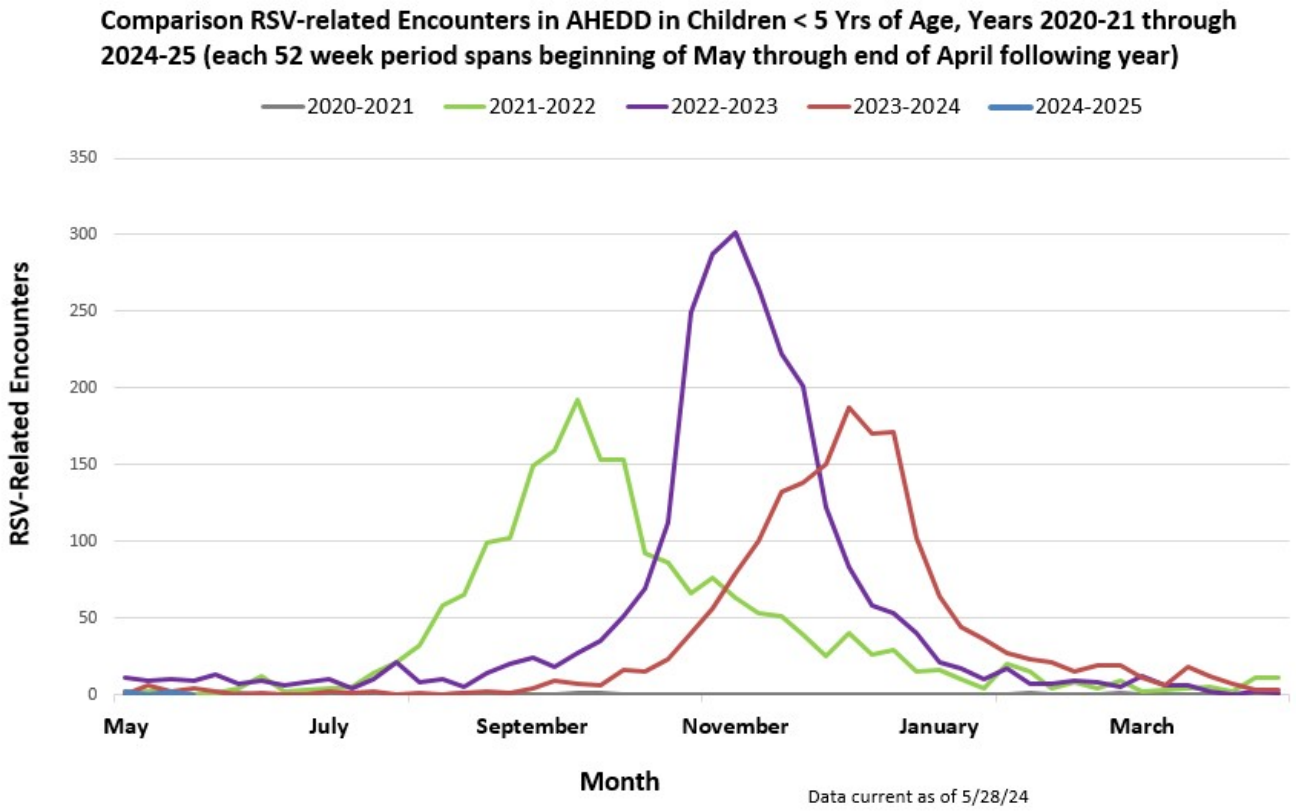
Respiratory syncytial virus, or RSV, is a common respiratory virus that usually causes mild, cold-like symptoms. Most people recover in a week or two, but RSV can be serious, especially for infants and older adults. Virtually all children get an RSV infection by the time they are 2 years old, and it is the most common cause of bronchiolitis (inflammation of the small airways in the lung) and pneumonia (infection of the lungs) in children younger than 1 year of age in the United States.

RSV is a common cause of hospitalization in children younger than 5 years old, and each year an estimated 58,000-80,000 children in this age group are hospitalized due to RSV. Those at greatest risk for severe illness from RSV include:

- premature infants
- infants, especially those 6 months and younger
- children younger than 2 years old with chronic lung disease or congenital heart disease
- children with weakened immune systems
- children who have neuromuscular disorders, including those who have difficulty swallowing or clearing mucus secretions

Prior to 2020, seasonal patterns for RSV in the United States were very consistent, typically beginning in the fall, peaking in the winter, and decreasing to inter-seasonal levels in the spring. However, the patterns of circulation for RSV and other common respiratory viruses have been disrupted since the start of the COVID-19 pandemic early in 2020.

The NH DHHS conducts syndromic surveillance to help characterize RSV activity in children younger than 5 years, by querying chief complaint text for patient emergency department encounters in NH's 26 acute care hospitals that transmit data into AHEDD (see page 1 for description). To identify such encounters, each week chief complaint text field is queried for the terms "RSV", "respiratory sync", and "syncy". This query also identifies patient encounters with ICD-10 codes that are specific to RSV*. The weekly number of RSV-related encounters identified in children < 5 years of age across all 26 acute care hospitals is displayed in the chart above. Each uniquely colored line represents a 52 week period spanning from MMWR Week 18 (beginning of May) of the first year through MMWR Week 17 (end of April) of the following year. Data are displayed for the current 2024-25 period as well as the 4 previous 52-week periods (beginning with 2020-21).



Additional resources for RSV can be found on the CDC website at the following URLs.

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

https://www.cdc.gov/rsv/research/rsv-net/dashboard.html

https://www.cdc.gov/surveillance/nrevss/rsv/hhsregion.html

* ICD-10 codes used to identify RSV-related encounters include: J21.0 (acute bronchiolitis due to respiratory syncytial virus), J20.5 (acute bronchitis due to respiratory syncytial virus), Z29.11 (encounter for prophylactic immunotherapy for respiratory syncytial virus (RSV)), B97.4 (respiratory syncytial virus as the cause of diseases classified elsewhere), and J12.1 (respiratory syncytial virus pneumonia).

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