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 April 13, 2024
MMWR Week 15

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 15	1.7% = same as previous week	1.2% = decrease from previous week	5.3% (below threshold*)	51 Total: ▪ 11 positive for A(H1N1)pdm09 ▪ 6 positive for A(H3) ▪ 12 positive for A (subtyping not performed) ▪ 4 positive for B/Victoria ▪ 18 negative	Sporadic

**Epidemic threshold = 10.8%*

New Hampshire Surveillance

Outpatient Illness Surveillance

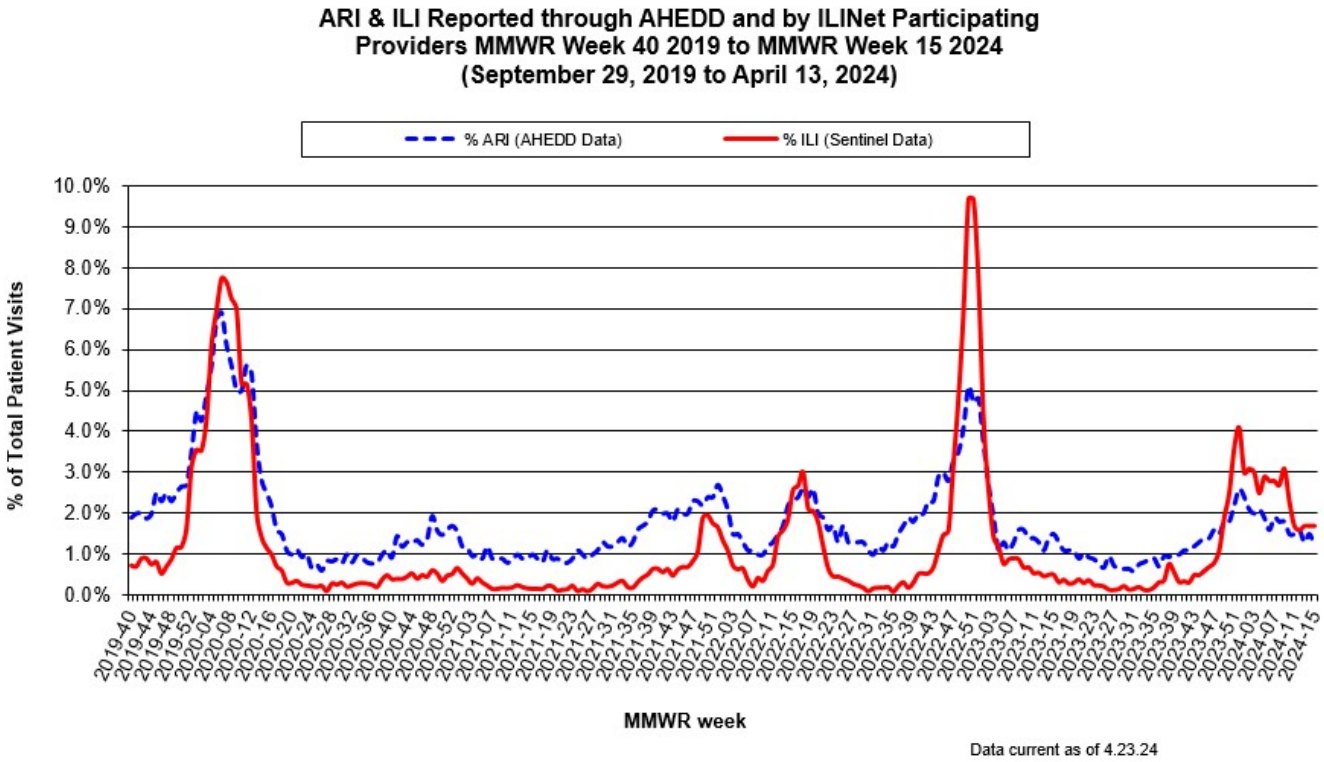
The two components of outpatient illness surveillance in New Hampshire are as follows:

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 15, 20 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	151/8,929	22	1.7%		Same as 1.7%
AHEDD	156/13,004	20		1.2%	Decrease from 1.5%

Maps illustrating the degree of ARI activity for each of the ten counties for weeks 15 and 16 are 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 15 (04/07/24–4/13/24)		YTD (10/01/23–4/20/24)	
Results	# specimens	% of total positive	# specimens*	% of total positive
Influenza A (H3)	6	18.2	136	15.5
Influenza A (H1N1)pdm09	11	33.3	527	60.0
Influenza A, subtyping not completed[Ω]	12	36.4	170 [Ψ]	19.3
Influenza B/Victoria	4	12.1	31	3.5
Influenza B, lineage not completed[Ω]	0	0.0	15	1.7
Negative for influenza	18		696	
Total	51		1,575	

Ω Subtyping at PHL was either not performed or unsuccessful.

Ψ One of these 170 *specimens was shipped to CDC laboratory for further characterization, and the result was reported as positive for influenza A, but subtype was inconclusive. Results suggest the potential for this 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.*

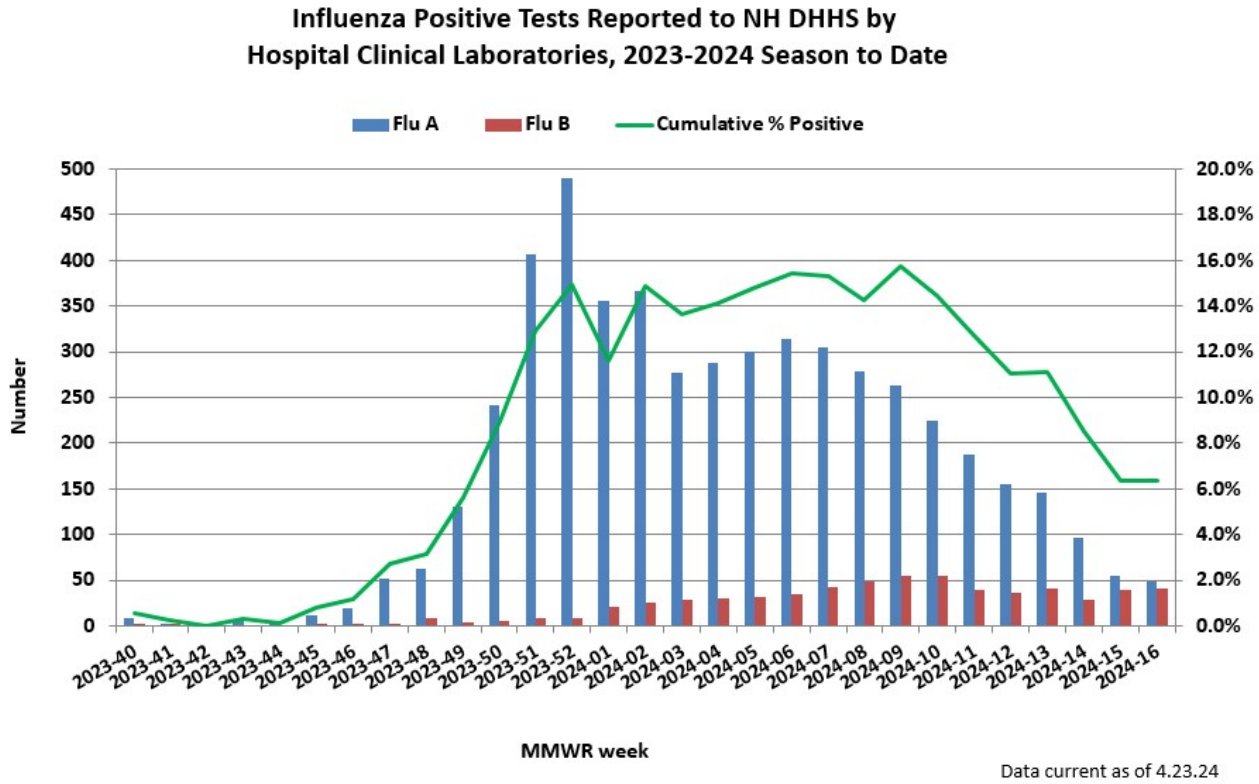
Hospital Clinical Laboratory Influenza Results

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 1,477 specimens tested during week 15, and 94 (6.4%) were positive for influenza (decrease compared to 8.5% the previous week).

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

	Week 15 (4/07/24–4/13/24)				YTD (10/01/23–4/20/24)			
	RIDT		PCR-based		RIDT		PCR-based	
Results	# specimens	% of positive	# specimens	% of positive	# specimens	% of positive	# specimens	% of positive
Influenza A	2	100.0	53	57.6	129	91.5	4,960	88.8
Influenza B	0	0.0	39	42.4	12	8.5	627	11.2
A&B Coinfection	0	0.0	0	0.0	0	0.0	1	<0.1
Negative	90		1,293		2,846		51,829	
Total tested	92		1,385		2,987		57,417	

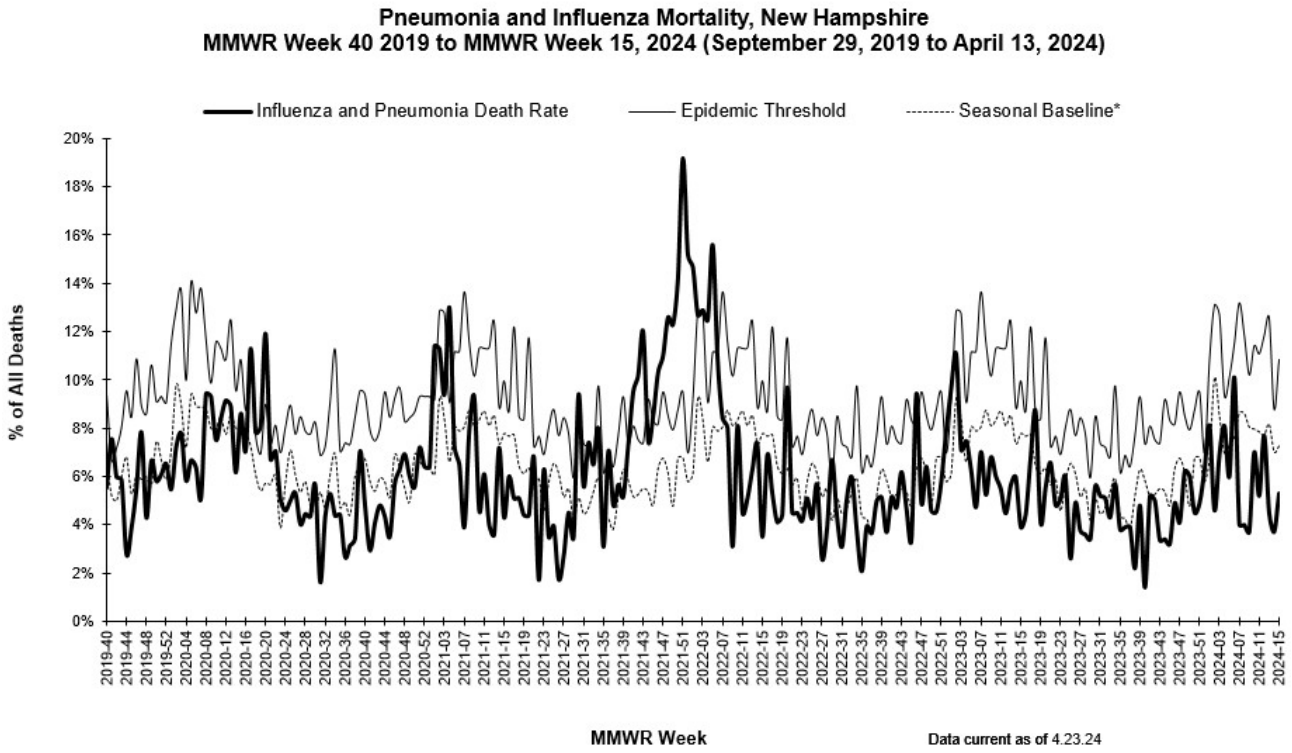
The chart below illustrates the weekly number and percentage of specimens that have tested positive at hospital clinical laboratories that reported during the current season through week 16.



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.

- 5.3% of all deaths recorded in NH were reported as due to P&I. This is below the epidemic threshold of 10.8%.
- Forty-eight 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 15 was **sporadic**.
- ❑ Influenza activity in NH for week 16 was **local**.

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 continues to decline in most areas of the country.
- 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 2.5%, which is below the national baseline of 2.9%. Region 1 (New England) is above its region-specific baseline, and all other regions 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 15 was reported at 6.8%, which is below the epidemic threshold (6.9%). 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.
- Four influenza-associated pediatric deaths occurring during the 2023-2024 season were reported to CDC during week 15. Two deaths were associated with influenza A viruses and two deaths were associated with influenza B viruses with no lineage determined. Both influenza A viruses had subtyping performed; one was an A(H1N1) virus and one was an A(H3) virus. A total of 142 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 15 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 15 2023-24	43 (20.5%)	48 (22.9%)	40 (19.0%)	0 (0%)	58 (27.6%)	21 (10.0%)	**210/962 (21.8%)**

Antigenic Characterization

CDC has antigenically characterized 728 influenza viruses since October 1, 2023, including 244 A(H1N1)pdm09 viruses, 249 A(H3N2) viruses, and 235 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
- 99% 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	1,469	2 (0.1%)	1,469	2 (0.1%)	1,469	0 (0%)	1,412	0 (0%)
Influenza A (H3N2)	1,178	0 (0%)	1,178	0 (0%)	1,178	0 (0%)	1,146	1 (0.1%)
Influenza B/Victoria	990	0 (0%)	990	0 (0%)	990	0 (0%)	961	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

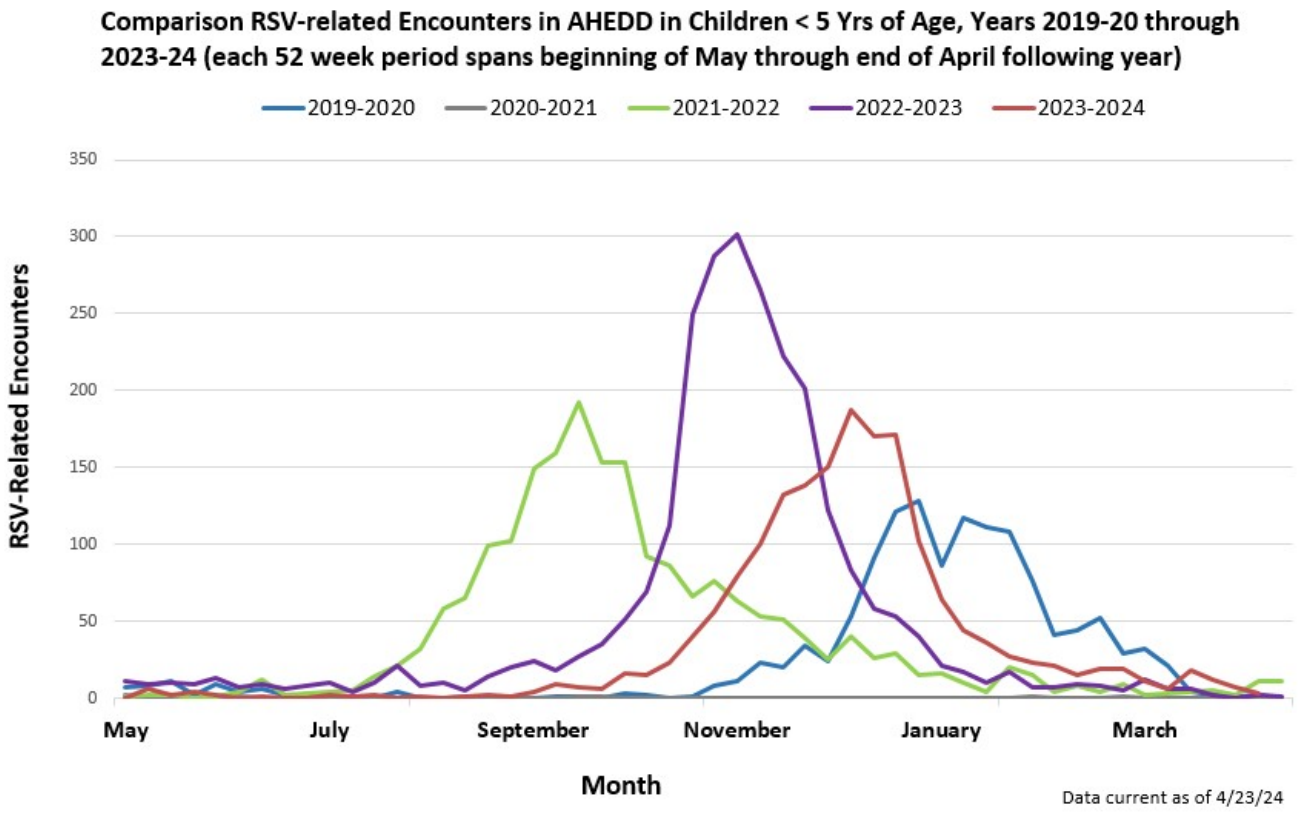
Respiratory syncytial virus, or RSV, is a common respiratory virus that usually causes mild, cold-like symptoms. Most people recover in a week or two, but RSV can be serious, especially for infants and older adults. Virtually all children get an RSV infection by the time they are 2 years old, and it 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 2023-24 period as well as the 4 previous 52-week periods (beginning with 2019-20). Note that the curve for the period 2019-20 more closely resembles the typical seasonal trend observed in years prior to the COVID-19 pandemic.



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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