

This report summarizes weekly influenza (flu) surveillance data collected during the 2023-2024 flu season and highlights the observed impact of flu in Vermont during that time.

For the 2023-24 season, data were collected between October 1, 2023 and May 18, 2024. These are the Center for Disease Control and Prevention (CDC) Morbidity and Mortality Weekly Report (MMWR) weeks 40-20 (**Detailed MMWR week information and term definitions are included in the references section**). The Health Department reports Vermont flu surveillance data to CDC to help establish weekly flu trends across the country.

In Vermont, as in most other states, individual cases of flu are not reported, except for instances of a newly identified influenza A strain, or pediatric deaths. Because individual cases cannot be counted, surveillance relies on a variety of data sources to estimate the effect of flu on Vermonters:

- Emergency department and urgent care visits for influenza-like illness (ILI)
- ILINet Service Providers
- National Respiratory and Enteric Virus Surveillance System (NREVSS)
- Vermont Department of Health Laboratory
- Reports of flu outbreaks by institutional settings (long-term care facilities, schools, etc.)

By analyzing information from these sources, the Health Department can track where flu is spreading to identify trends and communicate findings to health care providers and the public.

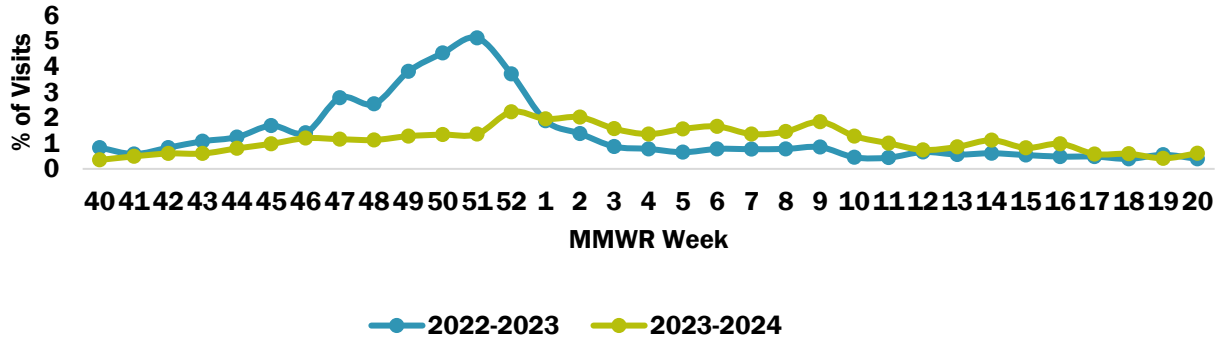
The 2023-24 flu season occurred after the end of the Federal COVID-19 Public Health Emergency declaration on May 11, 2023. Influenza activity had returned to a more typical pattern of activity, allowing for comparison to patterns observed during the Southern Hemisphere's flu season, which typically begins in April. By observing trends in the earlier flu season of the Southern Hemisphere, experts in the Northern Hemisphere can prepare for possible scenarios that may happen during their flu season, though it's not a guarantee it will follow the Southern Hemisphere's patterns ([CDC](#)). The Southern Hemisphere saw a mix of early or intense influenza A(H1N1) activity with more typically timed seasons with a range of strains active depending on time and location. Ultimately, the Northern Hemisphere's 2023-24 season trended closer to the typically timed season with a range of active strains depending on time and location. This report provides information for the Vermont 2023-24 flu season (MMWR weeks 40-20). All surveillance seasons in this report are reported in the unique context of the COVID-19 pandemic, and caution should be exercised comparing these data to data from pre-pandemic seasons (seasons earlier than the 2019-2020 season).

KEY POINTS

- **The flu surveillance season began 10/01/23 and ended 5/18/24 (MMWR report weeks 40-20).**
- **To track and prevent flu, Vermont uses a variety of surveillance data sources. Most individual cases of flu are not reportable.**
- **This flu season continued to follow a more typical pattern of activity as observed before the COVID-19 pandemic, as had the 2022-23 season before.**

Sentinel Provider Data

Percent of visits to ILINet Providers for influenza-like illness in 2023-24 stayed slightly elevated for about a third of the season, compared to an early peak in activity during Week 51 in the 2022-23 season.



The sentinel provider surveillance data is based on reports from ILINet - a nationwide group of medical offices that act as influenza sentinels. Sentinel providers report the number of patients with an influenza-like illness (ILI) seen by their practices each week throughout the flu season.

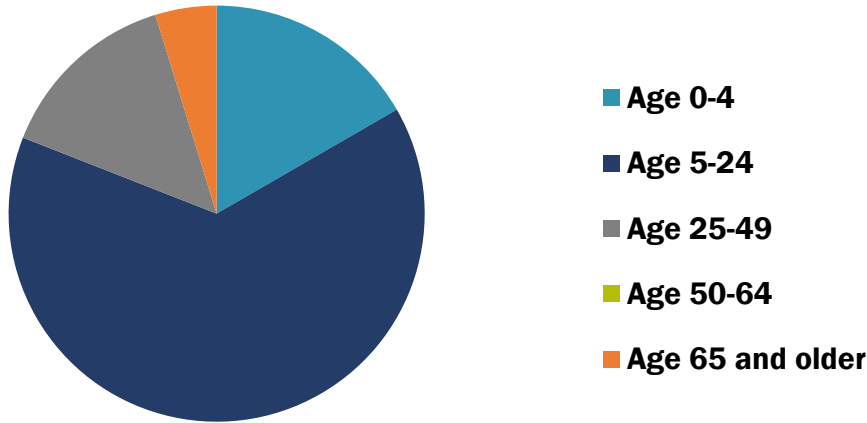
During the 2022-23 surveillance season, Vermont experienced an unseasonable and high peak in December (MMWR weeks 49-51); the early peak had also been the trend in the Southern Hemisphere's influenza season. Vermont ILI visits remained at or near the baseline of 2% of total visits for the remainder of the 2022-23 season. This varies from the 2023-24 surveillance season where, rather than a distinct peak in activity like in the previous season, influenza illness remained elevated near the baseline of 1.9% of total visits for about a third of the season following an increase in activity in late December (MMWR weeks 52-9).

For the 2023-24 season, patients most often seeking care for influenza-like illness were in the 5-24 age range, as they were during the previous two surveillance seasons. During the entire 2023-24 flu season, there were no weeks where patients ages 50-64 were seen at the highest percentage of total ILI visits.

During the 2023-24 season, 8 providers and 8 emergency departments reported ILI data to the Vermont Department of Health, an increase from the previous season. The sites provide weekly reports of their data on a range from 45% of the season to 100% of the season. ILI data is more robust when a higher percentage of provider reports are received.

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For most of the season, the age group with the highest percent of visits seeking care for influenza-like illness at sentinel provider offices was ages 5-24.



Because these data are only reported by a sample of health care providers, they do not represent the full picture of ILI visits in the state. However, they are an important piece of the surveillance system for monitoring where in the state flu may be having a substantial impact, and on which age groups.

Laboratory Data

Three hospitals in Vermont report to the National Respiratory and Enteric Virus Surveillance System (NREVSS): Central Vermont Medical Center, Southwestern Vermont Medical Center, and University of Vermont Medical Center. These hospital laboratories report all influenza tests performed at their facility and the test result.

NREVSS Reporting Hospitals	2022-23 Flu Season		2023-24 Flu Season	
	Count		Count	
Total PCR tests	14640		15782	
Total positive results	1559	10.6% of total tests	1421	8.2% of total tests
Total positive flu A	1544	99% of positive results	1299	91% of positive results
Total positive flu B	15	1% of positive results	122	9% of positive results

The Vermont Department of Health Laboratory (VDHL) performs PCR influenza testing on specimens submitted from sentinel sites, as well as those submitted from facilities during potential influenza outbreaks.

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During the 2023-2024 surveillance season, influenza A(H1N1) was the most frequently circulating subtype detected by VDHL, with influenza A(H3N2) and influenza B/Victoria also detected. This is more variation than was detected during the 2022-23 season. In that season influenza A(H3N2) was the more frequently circulating subtype detected by VDHL, with a small percentage of tests positive for influenza A(H1N1) also occurring and no influenza B positive specimens detected.

Notably, VDHL received more specimens during the 2023-24 surveillance season compared to the prior four seasons. Sample submission was most common in January through February 2024 following an increase in ILI activity in late December 2023.

Vermont Department of Health Laboratory	2022-23 Flu Season		2023-24 Flu Season	
	Count		Count	
Total PCR tests	136		425	
Total positive results	113	83% of total tests	342	80% of total tests
Total positive subtypeable flu A	106	94% of positive tests	300	88% of positive tests
H1N1	10	9% of subtypeable flu A tests	191	64% of subtypeable flu A tests
H3N2	96	91% of subtypeable flu A tests	109	36% of subtypeable flu A tests
H1N1 + flu B co-infection	--		--	
Total positive Flu B	--		42	12% of total tests
Victoria	--		42	100% of flu B lineage tests
Flu B + H1N1 co-infection				

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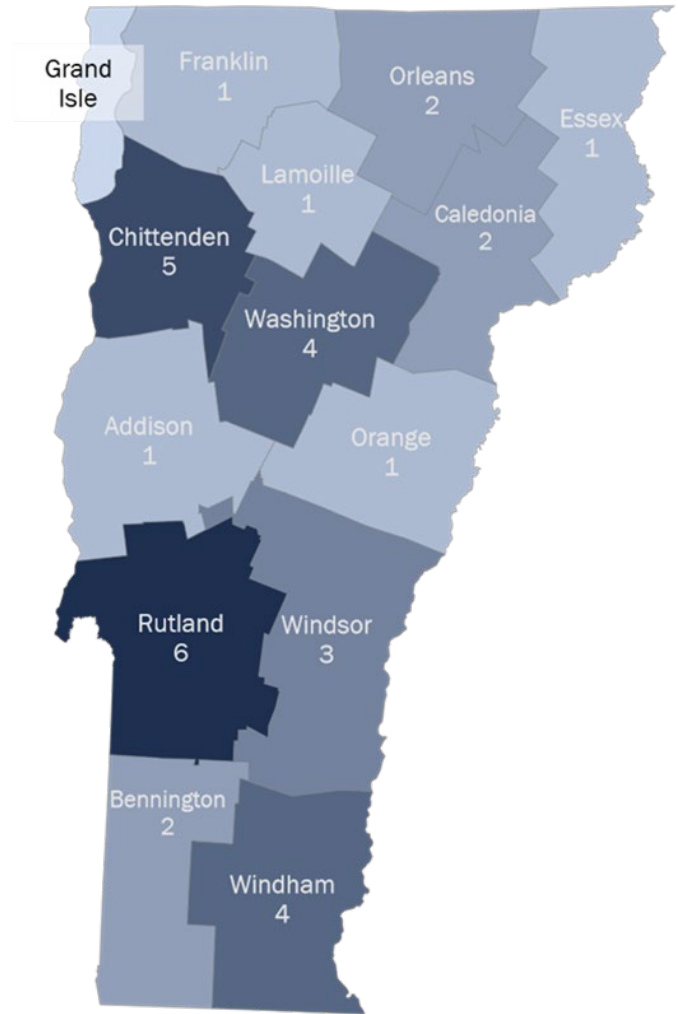
ILI Outbreak Data

All suspected ILI outbreaks in institutional settings are required to be reported to the Vermont Department of Health. During the 2023-24 surveillance season, there were 33 outbreaks reported. This is a decrease compared to 65 reported outbreaks during the 2022-23 season but an increase compared to 9 in 2021-22. Several factors contribute to this fluctuation including affects of the COVID-19 emergency and differences in influenza activity from season to season. The 2023-24 season did not see the peak in activity that was associated with the 2022-23 surveillance season.

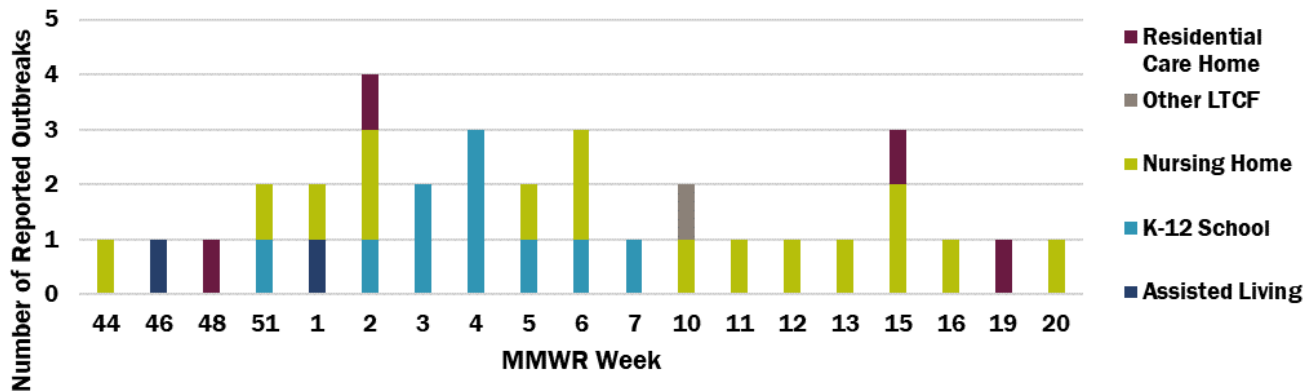
For the 2023-24 season, the majority (23) of reported outbreaks were from long-term care facilities rather than schools (10). Schools reported the majority of outbreaks in the 2022-23 season.

All counties except Grand Isle reported at least one outbreak compared to all counties reporting in 2022-23.

For additional context, in the pre-COVID-19 seasons 61 flu outbreaks were reported in the 2019-20 season (primarily in school settings), and during the 2018-19 season 39 outbreaks were reported (primarily in long-term care facility settings).



Flu or ILI outbreaks did not have a peak during the 2023-24 season. Nursing homes were the most frequently reporting type of insititutional facility.



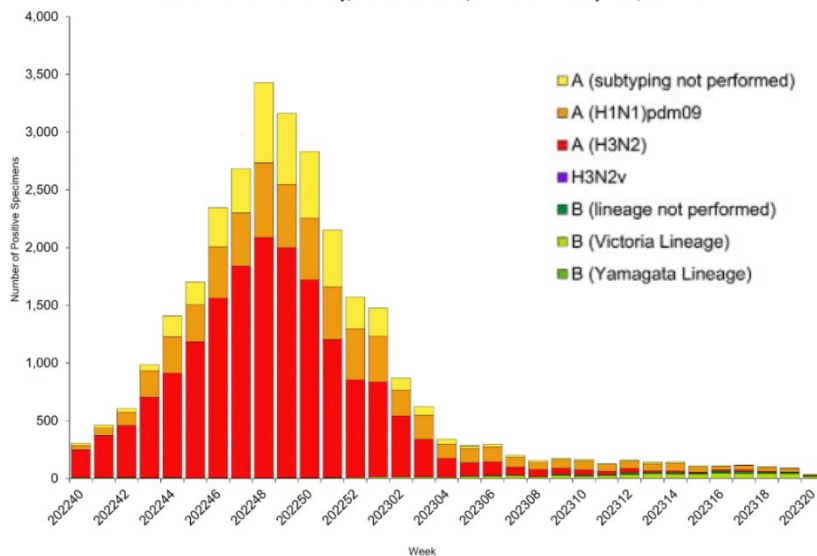
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CDC Flu Activity Overview

The number of positive specimens reported to CDC from public health laboratories increased during the 2023-24 season compared to the 2022-23 season but decreased slightly for clinical laboratory reports. The total numbers of specimens tested and reported to CDC continued to be high compared to pre-pandemic total numbers of specimens tested and reported. During the 2023-24 season, more influenza B positive specimens were reported to CDC than during any season since the start of the COVID-19 public health emergency. No detections of influenza B/Yamagata were reported to CDC during this 2023-24 surveillance period.

2022-23 Season:

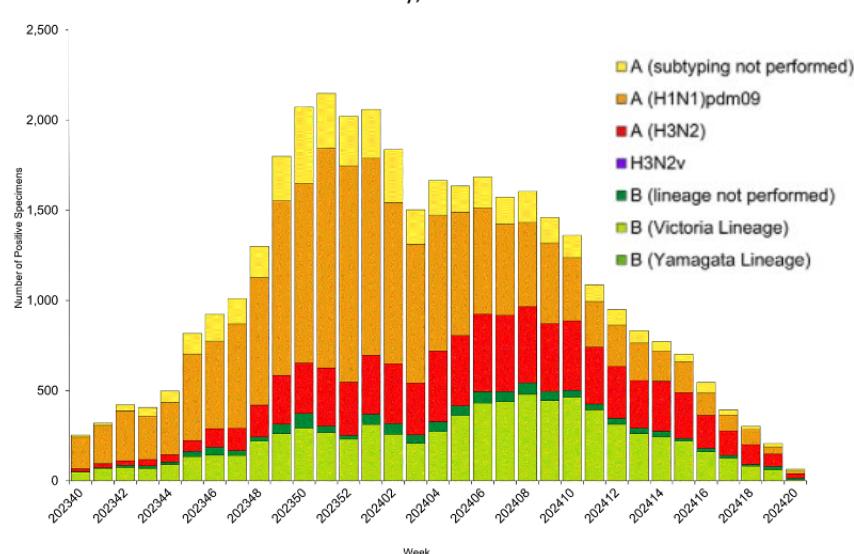
Influenza Positive Tests Reported to CDC by U.S. Public Health Laboratories, National Summary, October 2, 2022 – May 20, 2023



<https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/week20.htm>

2023-24 Season:

Influenza Positive Tests Reported to CDC by U.S. Public Health Laboratories, National Summary, 2023-2024 Season

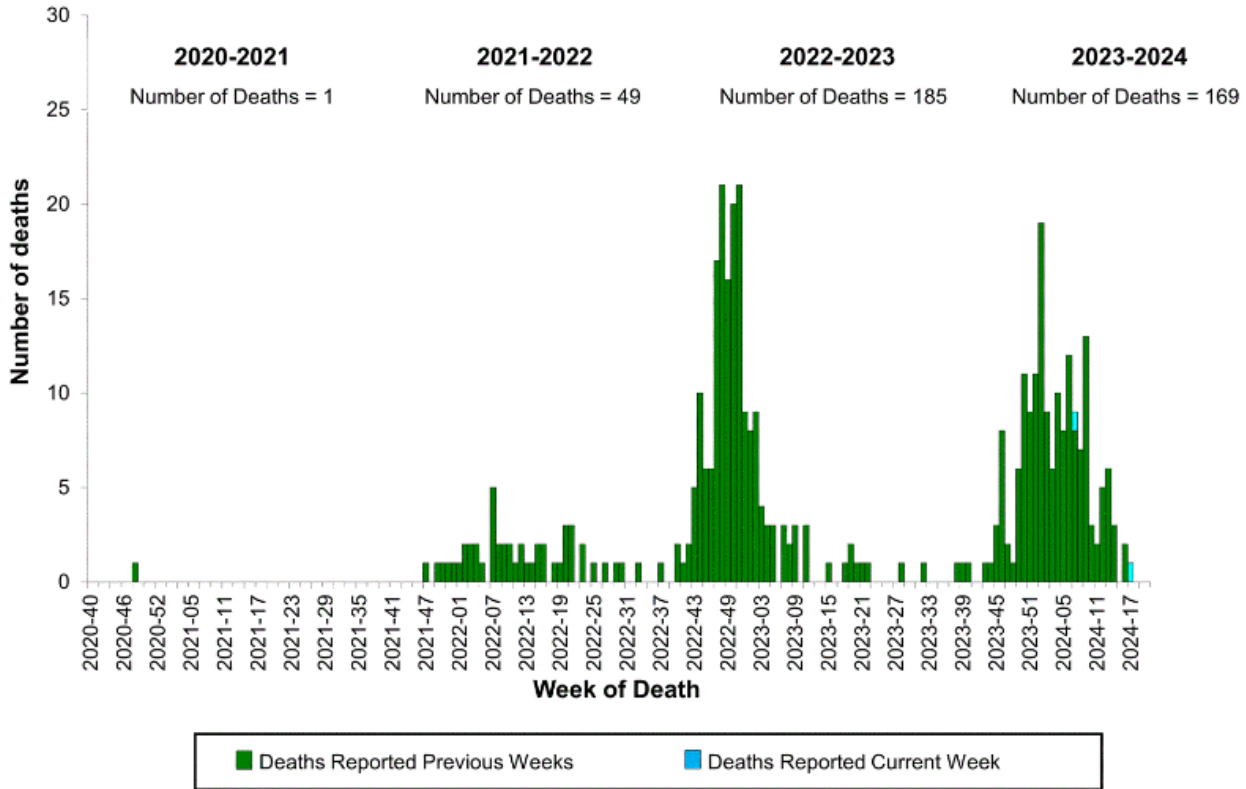


<https://www.cdc.gov/flu/weekly/weeklyarchives2023-2024/Week20.htm>

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In the 2023-24 surveillance season there were 169 influenza-associated pediatric deaths reported nationally, which is in the range of reported season totals prior to the COVID-19 pandemic. No influenza-associated pediatric deaths were reported to the Vermont Department of Health.

Influenza-Associated Pediatric Deaths by Week of Death, 2020-2021 season to 2023-2024 season



<https://www.cdc.gov/flu/weekly/weeklyarchives2023-2024/Week20.htm>

Key Takeaways

Though the 2023-24 flu surveillance season continued with pattern of more typical influenza activity, also seen in the 2022-23 surveillance season, there were some stark differences observed between these seasons. Though nationally there was again an earlier peak in influenza-like illness activity in 2023-24, Vermont did not experience this pattern in 2023-24. Instead, there was a sustained level of influenza-like illness activity at or near the epidemic baseline (1.9% of total visits for ILI in a 1-week period) for about a third of the season beginning at the end of 2023. Outbreak reporting activity was also a departure from the previous season. While reported outbreak activity was driven by school settings in the previous season, for 2023-24 the majority of reported outbreaks were from long-term care facility settings. Overall, the number of reported outbreaks were about half those reported in the previous season. Vermont increased its ILINet Sentinel Provider Network by one site compared to the previous season. ILI data is more robust when a higher percentage of provider reports are received.

Additionally, there was increased diversity in the strains of influenza detected during this surveillance season compared to 2022-23. While the previous season was mostly influenza A(H3N2) subtype, this surveillance season both Nationally and in Vermont reported more influenza A(H1N1) than A(H3N2) subtype as well as a percentage of influenza B/Victoria positive specimens higher than any season reported since before the COVID-19 public health emergency. The Vermont Department of Health Laboratory augmented its system for submission of influenza specimens for subtyping during the surveillance season, and continued requesting specimens into the summer as a step to understand the ongoing highly pathogenic avian influenza outbreak (outbreak has been active since 2022).

Though it is one of a constellation of factors influencing the severity of an influenza season, it is important to note the influenza vaccine did match circulating strains very well for this season. Additionally, there were very few instances of resistance to influenza treatment methods noted by CDC testing. These factors contribute to a less severe flu season.

While rollout of vaccines and antiviral treatments for RSV had its challenges in the 2023-24 season, this season was the first time that preventative treatments were available for three large-impact viral respiratory illnesses – flu, COVID-19 and RSV. Reduced overall respiratory illness is the anticipated outcome of the building and continued success of these preventative treatments, along with the adoption of prevention steps effective against all illnesses spread through respiratory pathways by individuals (like staying home while sick) and by institutional settings (like increasing hand washing stations and providing sick leave). The success of these strategies is challenged in the post-pandemic environment, where addressing misinformation about vaccines and mistrust in public health systems continues to be an important part of respiratory illness prevention.

Viral respiratory illness surveillance and response are undergoing changes in coming years with the introduction of RSV prevention strategies and COVID-19 no longer being a nationally notifiable illness in 2025 which will lead to integration of viral respiratory illness surveillance. Vermont will continue to provide surveillance information for these illnesses, collaboratively reshaping future reporting to best report the important information about each condition as well as the overall viral respiratory illness outlook for Vermonters.

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Terms:

CDC – The Centers for Disease Control and Prevention: [The Influenza Division at CDC collects, compiles, and analyzes information on influenza activity year-round in the United States.](#)

COVID-19 – [Defined by the World Health Organization \(WHO\)](#): COVID-19 is a disease caused by a new strain of coronavirus. ‘CO’ stands for corona, ‘VI’ for virus, and ‘D’ for disease. Formerly, this disease was referred to as ‘2019 novel coronavirus’ or ‘2019-nCoV.’ The COVID-19 virus is a new virus linked to the same family of viruses as Severe Acute Respiratory Syndrome (SARS) and some types of common cold.

Highly pathogenic avian influenza – Highly pathogenic (HP) avian influenza (AI) (HPAI) is an extremely contagious, multi-organ systemic disease of poultry leading to high mortality in birds, and is caused by some H5 and H7 subtypes of type A influenza virus, family Orthomyxoviridae ([NIH](#)).

ILINet – The U.S. Outpatient Influenza-like Illness (ILI) Surveillance Network: approximately 3,000 outpatient healthcare providers around the country report data to CDC on the total number of patients seen for any reason and the number of those patients with ILI by age group.

Influenza-like illness (ILI) – determined by using the patient’s chief complaint and/or discharge diagnosis. ILI is the presence of a fever equal to or exceeding 100 °F with the addition of cough or sore throat. As of 2021, the ILI definition no longer excludes patients with another diagnosed non-influenza illness.

Institutional settings – Examples include schools (including higher education), long-term care facilities, childcare facilities, and correctional facilities.

Long-term Care Facility – defined as a facility where services are provided to meet a person’s health or personal care needs when they can no longer perform everyday activities on their own ([NIH](#)).

MMWR – Morbidity and Mortality Weekly Report: The MMWR is the [CDC’s weekly scientific publication of public health information and recommendations](#). Weekly reports are numbered 1-52 or 1-53 depending on the number of weeks in the year.

NREVSS - The National Respiratory and Enteric Virus Surveillance System: [NREVSS](#) collects data on the number of PCR flu tests performed by participating labs across the country, and how many tests were positive. This helps determine flu activity in the community.

PCR test – polymerase chain reaction: a test, or assay, that is a rapid and sensitive method for detecting the genetic material of influenza viruses, and is now the first-choice laboratory test for influenza infection in both humans and animals ([WHO](#)).

Respiratory illness – illnesses which affect the lungs and may cause coughing, wheezing, difficulty breathing and other symptoms. Examples: colds, flu, respiratory syncytial virus (RSV), bronchitis, pneumonia, and COVID-19 ([MedExpress](#)).

Subtype - a more specific classification of the influenza A virus based on proteins unique to that strain of virus (example: influenza A(H1N1) is classified by its hemagglutinin and neuraminidase protein types H1 and N1). Influenza B strains are not subtyped. Influenza B strains are classified by their lineage, or where the strain was isolated (example: Victoria).

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MMWR Weeks 2023-24 – flu season weeks (2023 40-52, 2024 1-20) are highlighted in green:

MMWR Week	ENDING Dates for MMWR Weeks (Week starts on Sunday and ends on Saturday with this date)	
	2023	2024
1	1/7/2023	1/6/2024
2	1/14/2023	1/13/2024
3	1/21/2023	1/20/2024
4	1/28/2023	1/27/2024
5	2/4/2023	2/3/2024
6	2/11/2023	2/10/2024
7	2/18/2023	2/17/2024
8	2/25/2023	2/24/2024
9	3/4/2023	3/2/2024
10	3/11/2023	3/9/2024
11	3/18/2023	3/16/2024
12	3/25/2023	3/23/2024
13	4/1/2023	3/30/2024
14	4/8/2023	4/6/2024
15	4/15/2023	4/13/2024
16	4/22/2023	4/20/2024
17	4/29/2023	4/27/2024
18	5/6/2023	5/4/2024
19	5/13/2023	5/11/2024
20	5/20/2023	5/18/2024
–	--	--
40	10/7/2023	10/5/2024
41	10/14/2023	10/12/2024
42	10/21/2023	10/19/2024
43	10/28/2023	10/26/2024
44	11/4/2023	11/2/2024
45	11/11/2023	11/9/2024
46	11/18/2023	11/16/2024
47	11/25/2023	11/23/2024
48	12/2/2023	11/30/2024
49	12/9/2023	12/7/2024
50	12/16/2023	12/14/2024
51	12/23/2023	12/21/2024
52	12/30/2023	12/28/2024

For more information: Hilary Fannin, AHS.VDHEpiFluSurv@vermont.gov