

This report summarizes weekly influenza (flu) surveillance data collected during the 2021-2022 flu season and highlights the observed impact of flu in Vermont during that time.

For the 2021-22 season, data were collected between October 3, 2021 and May 21, 2022. 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 2021-22 flu season occurred during the ongoing COVID-19 global pandemic. In pre-pandemic years, patterns observed during the Southern Hemisphere's flu season, which typically begins in March, often foreshadowed the Northern Hemisphere's upcoming season. Due to fluctuating COVID-19 policies and personal preventive measures, it was difficult to apply trends observed in the Southern Hemisphere to the anticipated Northern Hemisphere flu activity for October 2021 to May 2022. Lower-than-usual activity was noted in the Southern Hemisphere, although the season was not as mild as the previous 2020-21 season. Ultimately this was also the case for the Northern Hemisphere's 2021-22 season.

In the Northern Hemisphere, the COVID-19 pandemic continued to present challenges to diagnosing influenza as normal healthcare seeking patterns and healthcare capacity varied. This report provides information for the Vermont 2021-22 flu season. Due to the unique context of the COVID-19 pandemic, direct comparisons between the 2021-2022, 2020-2021 and pre-pandemic seasons should be avoided.

KEY POINTS

- **The flu season began 10/03/21 and ended 5/21/22 (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 report summarizes information from the season which was affected by the COVID-19 pandemic and is not directly comparable to past seasons.**

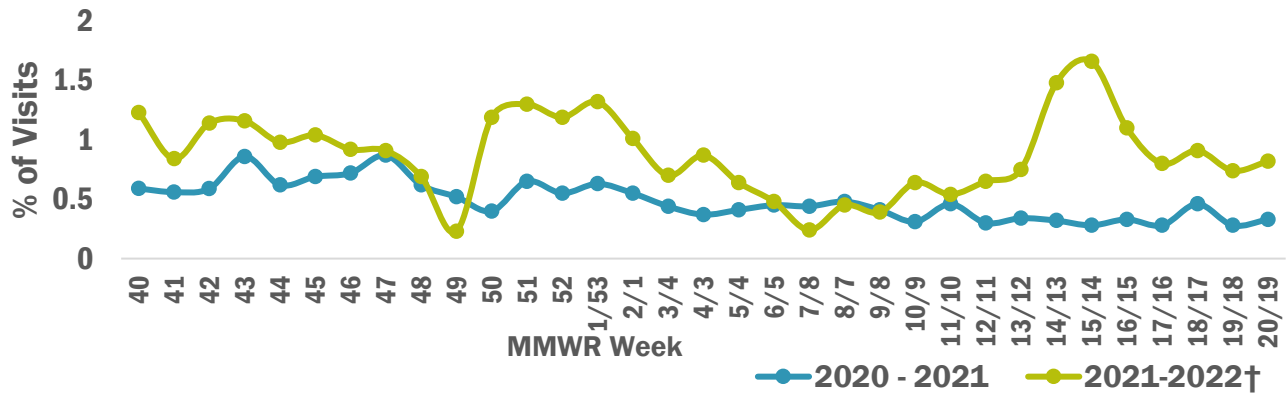
Geographic Spread

Prior to the 2021-22 influenza season, CDC required reporting from states on five levels of geographic spread. This reporting metric was discontinued by CDC for the 2021-22 season. CDC is developing a more precise tool to use in its place.

Sentinel Provider Data

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.

The 2021-22 flu season influenza-like illness visits to sentinel providers peaked unusually late in the season, consistent with national trends.



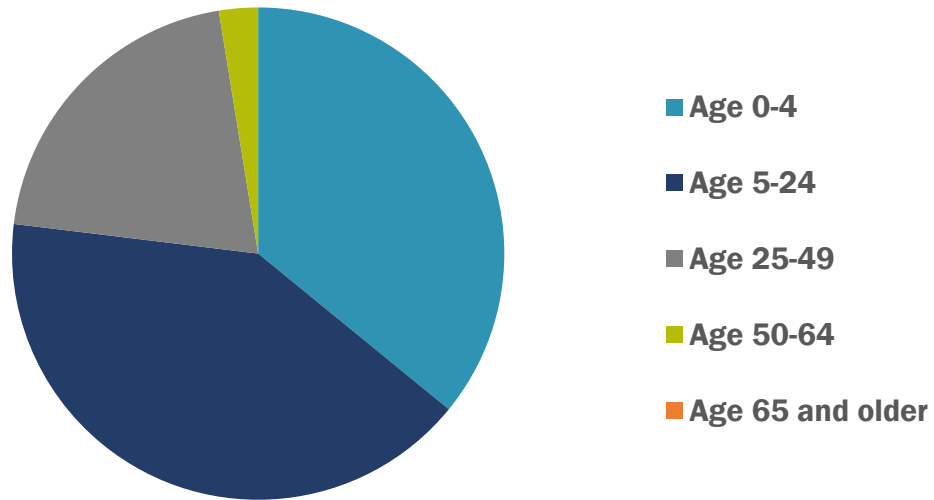
†In response to the COVID-19 pandemic, CDC changed the definition of ILI beginning in the 2021-2022 season; the ILI definition no longer excludes patients with another diagnosed non-influenza illness.

During the 2021-22 season, visits to Vermont providers and emergency departments for ILI were unusually low. During the 2020-21 season, there was no peak in ILI visits, or ILI visit activity above 1% of total visits to sentinel healthcare providers. During the 2021-22 season, ILI activity peaked twice – once beginning in mid-December (MMWR weeks 50-1), then again in April (MMWR weeks 14-16), at a time when the season is typically ending. This trend was observed nationwide, and influenza activity continued to be elevated above normal through the end of the typical season.

For the 2021-22 season, patients most often seeking care for influenza-like illness were in the 5-24 age range, as they were during both the 2018-19 and 2019-20 flu seasons (the change in ILI definition makes direct comparison of these years impossible). During the 2020-21 season, the patients most often seeking care for influenza-like illness were older, in the 25-49 age range. During the entire 2021-22 flu season, there were no weeks where patients ages 65 and older were seen at the highest percentage of total ILI visits.

During the current season, 6 providers and 8 EDs reported ILI data to the Vermont Department of Health. ILI data is more robust when a higher percentage of provider reports are received.

Ages 5-24 had the highest percent of visits to sentinel provider practices for influenza-like illness during the 2021-22 influenza season.



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 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 hospitals report all influenza tests performed at their facility and the test result.

NREVSS Reporting Hospitals	2020-21 Flu Season		2021-22 Flu Season	
	Count		Count	
Total PCR tests	4353		10138	
Total positive results	13	0.3% of total tests	558	5.5% of total tests
Total positive flu A	1	8% of positive results	552	99% of positive results
Total positive flu B	12	92% of positive results	6	1% of positive results

2021-22 End-of-Season Flu Report

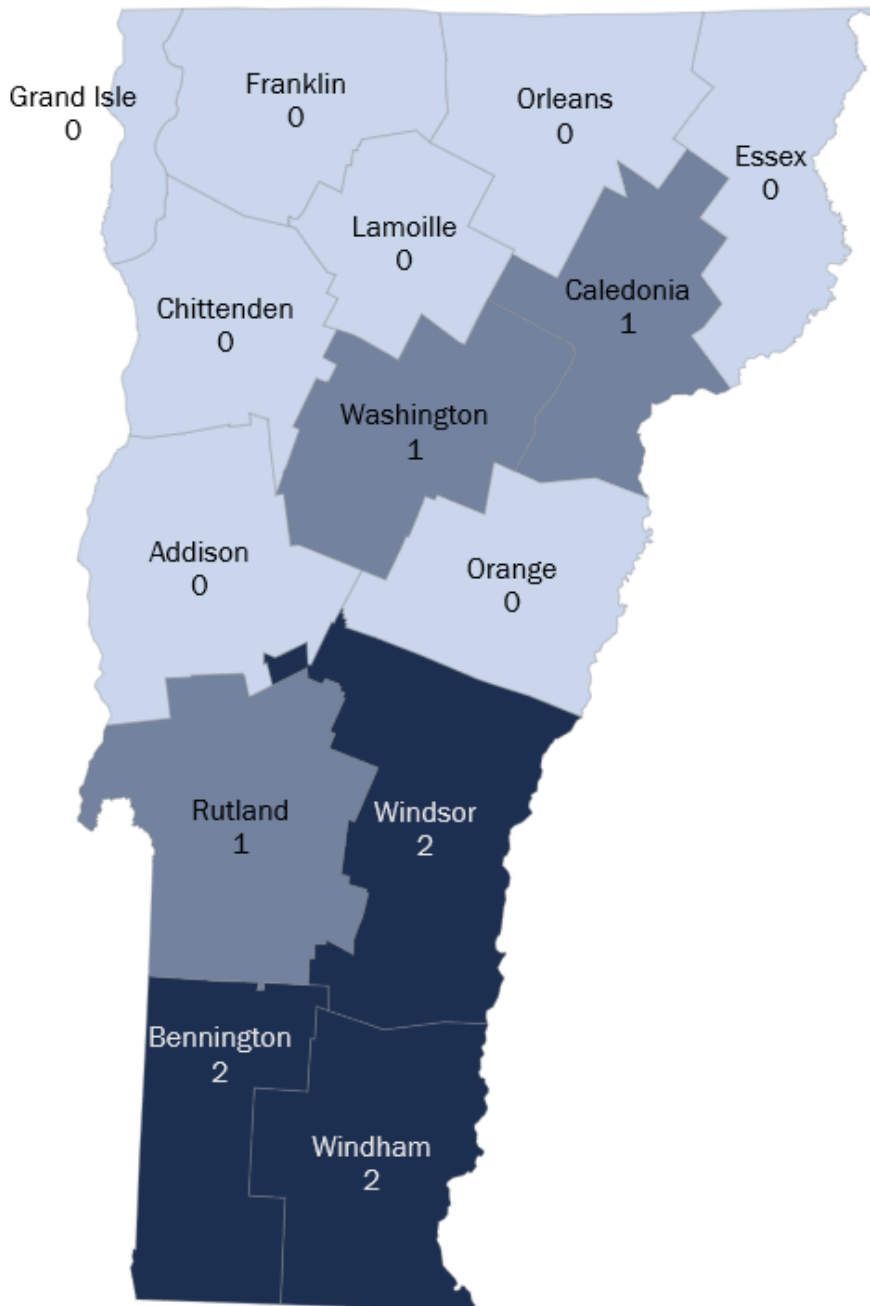
The Vermont Department of Health Laboratory (VDHL) performs PCR influenza testing on specimens submitted from sentinel sites as well as those submitted from facilities during potential influenza outbreaks. During the 2021-22 season, influenza A(H3N2) was the only circulating subtype detected by VDHL. Sample submission was most common during the peaks of activity in December 2021 and April 2022.

Vermont Department of Health Laboratory	2020-21 Flu Season		2021-22 Flu Season	
	Count		Count	
Total PCR tests	28		84	
Total positive results	0	0% of total tests	65	77% of total tests
Total positive flu A	--		65	100% of positive tests
H1N1	--		--	
H3N2	--		65	100% of positive tests
H1N1 + flu B co-infection	--		--	
Total positive Flu B	--		--	
Flu B + H1N1 co-infection	--		--	

ILI Outbreak Data

All suspected ILI outbreaks in institutional settings are required to be reported to the Vermont Department of Health. During the 2021-22 season there were 9 outbreaks reported, an increase compared to 0 in 2020-21. Outbreaks were only slightly more often reported in long-term care settings (5) than in school settings (4).

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



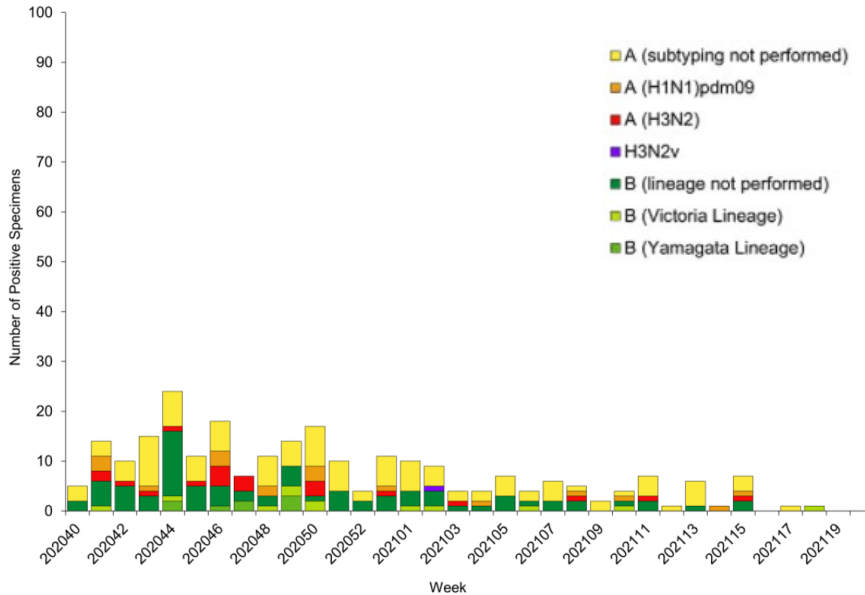
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CDC Flu Activity Overview

The number of positive specimens reported to CDC, though higher than in the 2020-21 season, was remarkably lower in 2021-22 compared to pre-pandemic seasons. However, the total numbers of specimens tested and reported to CDC were high in the 2020-21 and 2021-22 flu seasons.

2020-21 Season:

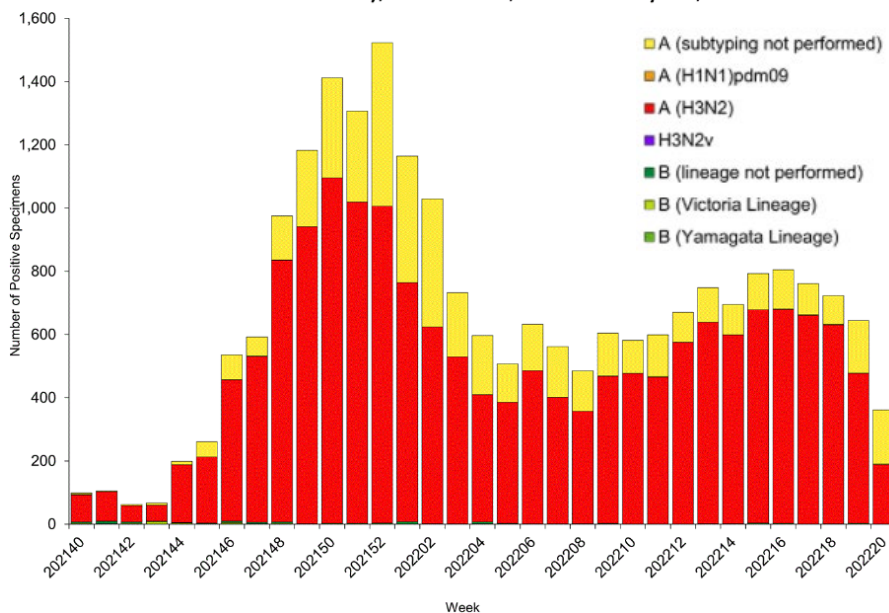
Influenza Positive Tests Reported to CDC by U.S. Public Health Laboratories, National Summary, September 27, 2020 – May 15, 2021



<https://www.cdc.gov/flu/weekly/weeklyarchives2020-2021/Week19.htm>

2021-22 Season:

Influenza Positive Tests Reported to CDC by U.S. Public Health Laboratories, National Summary, October 3, 2021 – May 21, 2022

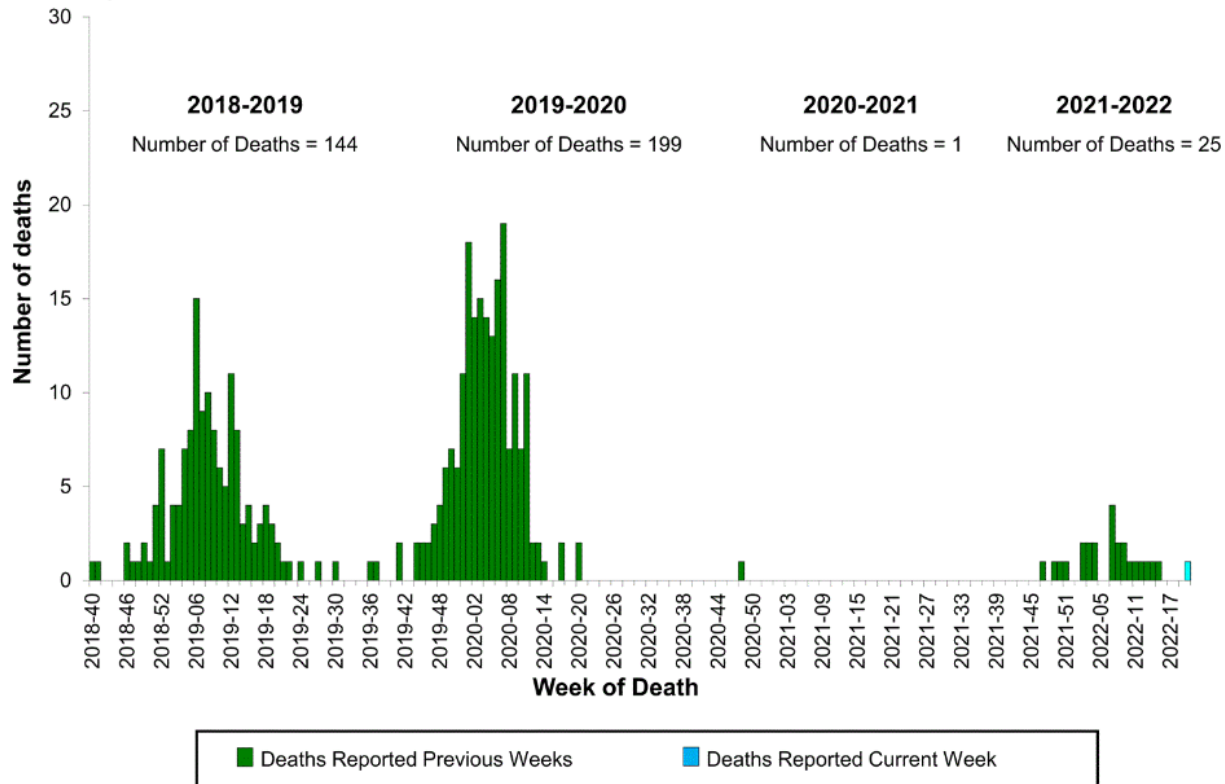


<https://www.cdc.gov/flu/weekly/weeklyarchives2021-2022/week20.htm>

2021-22 End-of-Season Flu Report

In the 2021-22 season there were 25 influenza-associated pediatric deaths reported nationally. No influenza-associated pediatric deaths were reported to the Vermont Department of Health.

Influenza-Associated Pediatric Deaths by Week of Death, 2018-2019 season to 2021-2022 season



<https://www.cdc.gov/flu/weekly/weeklyarchives2021-2022/Week20.htm>

Key Takeaways

The entire 2021-22 flu season was impacted by the COVID-19 global pandemic, as was the season before it. Many Vermonters continued to use personal prevention strategies such as physical distancing, mask-wearing, avoiding large gatherings, and hand washing to limit opportunities for exposure to respiratory illnesses. Adherence to these strategies varied greatly and, in general, was not as robust as the 2020-2021 flu season. Additional factors, such as hesitancy to seek health care (or availability of health care) and a prioritization on the COVID-19 response presented challenges for monitoring the spread of flu. However, the information available in Vermont consistently mirrored what was being seen in most of the country; fewer people presented to their care providers with influenza-like illnesses, and those who were tested for flu at NREVSS providers were less likely to be positive than in pre-pandemic seasons.

These and other factors may be why influenza and other respiratory illnesses, such as pertussis (whooping cough), were not observed to follow the same cyclical patterns as previous years. Points of interest for the 2021-22 flu season include the concentration of reported outbreaks in southern Vermont and the late-season peak of activity in April 2022 following an earlier December 2021 peak of the same subtype (A(H3N1)). In general, flu activity was detected outside the timing of the usual season. Patients who visited sentinel sites with influenza-like illness (ILI) trended younger; fewer visits were reported by patients ages 50 years or older.

Compared to the pre-pandemic seasons (2019-20 and earlier), fewer flu tests were performed at the Vermont Public Health Laboratory and NREVSS laboratories. In Vermont and [the US](#), a higher number of influenza A positive results were seen throughout the season from clinical laboratories. Nationally more flu tests were reported by clinical and public health laboratories than in the previous season, and a larger percentage were positive for influenza.

Nine Vermont institutions reported flu outbreaks and no pediatric flu deaths were reported to the Vermont Department of Health in the 2021-22 season. The total number of national pediatric flu deaths sharply decreased in recent seasons compared to the pre-COVID-19 pandemic period, with [25 deaths in the 2021-22 season compared to 199 in the 2019-20](#) season (1 pediatric influenza-related death was reported during the 2020-21 season).

In spring 2022, an outbreak of highly pathogenic avian influenza (influenza A(H5N1)) affected birds around North America ([USDA](#)). Though the risk of transmission to humans from birds was low, influenza monitoring resources were temporarily enhanced to monitor for illness in humans.

As COVID-19 continues to be the dominant circulating respiratory virus, monitoring of influenza and other respiratory illnesses is a greater challenge and a high priority. Annual flu vaccination combined with continued adherence to prevention strategies are ways individuals can do their part to reduce the severity of flu illness in Vermont's communities.

2021-22 End-of-Season Flu Report

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, and 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 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.

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](#)).

Physical distancing – or social distancing – requires staying at least 6 feet from other people who are not from your household in both indoor and outdoor spaces ([CDC](#)).

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).

2021-22 End-of-Season Flu Report

MMWR Weeks 2021-22 – flu season weeks (2020 40-52, 2021 1-20) are highlighted in green:

MMWR Week	ENDING Dates for MMWR Weeks (Week starts on Sunday and ends on Saturday with this date)	
	2021	2022
1	1/9/2021	1/8/2022
2	1/16/2021	1/15/2022
3	1/23/2021	1/22/2022
4	1/30/2021	1/29/2022
5	2/6/2021	2/5/2022
6	2/13/2021	2/12/2022
7	2/20/2021	2/19/2022
8	2/27/2021	2/26/2022
9	3/6/2021	3/5/2022
10	3/13/2021	3/12/2022
11	3/20/2021	3/19/2022
12	3/27/2021	3/26/2022
13	4/3/2021	4/2/2022
14	4/10/2021	4/9/2022
15	4/17/2021	4/16/2022
16	4/24/2021	4/23/2022
17	5/1/2021	4/30/2022
18	5/8/2021	5/7/2022
19	5/15/2021	5/14/2022
20	5/22/2021	5/21/2022
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40	10/9/2021	10/8/2022
41	10/16/2021	10/15/2022
42	10/23/2021	10/22/2022
43	10/30/2021	10/29/2022
44	11/6/2021	11/5/2022
45	11/13/2021	11/12/2022
46	11/20/2021	11/19/2022
47	11/27/2021	11/26/2022
48	12/4/2021	12/3/2022
49	12/11/2021	12/10/2022
50	12/18/2021	12/17/2022
51	12/25/2021	12/24/2022
52	1/1/2022	12/31/2022

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