

The purpose of this report is to summarize influenza (flu) surveillance data collected every week of the past flu season and identify useful information about how flu affected Vermonters.

For the 2019-20 season, data were collected between September 29, 2019 and May 16, 2020. These weeks are the Center for Disease Control and Prevention (CDC) Morbidity and Mortality Weekly Report (MMWR) weeks 40-20 (**please review the references section for detailed MMWR week information and term definitions**). Vermont reports its flu surveillance data to CDC, as do other states, to establish weekly flu trends across the country.

CDC does not require that individual cases of the flu be reported, unless it is a case where a new strain of influenza A is identified, or the illness caused a pediatric death. 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
- Vermont Department of Health Laboratory
- National Respiratory and Enteric Virus Surveillance System (NREVSS)
- Reports of flu outbreaks by institutional settings (long-term care facilities, schools, etc.)

By analyzing information from these sources, Vermont can track where flu is spreading and try to prevent further illness. When the whole season's data is analyzed and compared to previous seasons, Vermont can use it to prepare for the upcoming season and prevent the spread of flu.

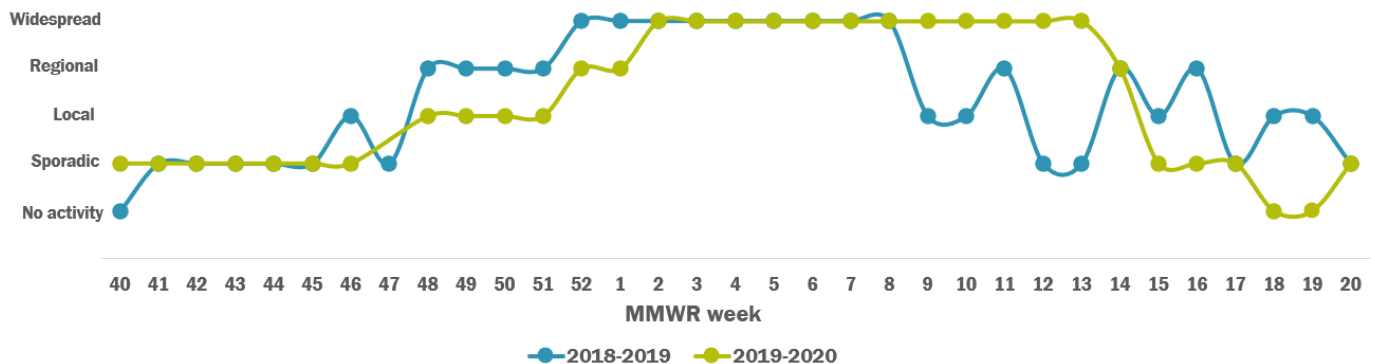
Geographic Spread

There are five geographic spread levels for influenza (No Activity, Sporadic, Local, Regional, and Widespread) as defined by [CDC](#). During the flu surveillance season, states and territories report their geographic spread to CDC. The spread is determined using influenza-like illness (ILI) reports, laboratory testing results, and outbreak information available at the time of report.

KEY POINTS

- **The flu season began 9/29/19 and ended 5/16/20 (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 and compares it to recent trends to prepare for the upcoming season and prevent the spread of flu.**

The 2019-20 flu season peaked at “widespread activity” later, and this peak lasted longer, than in the 2018-19 season.

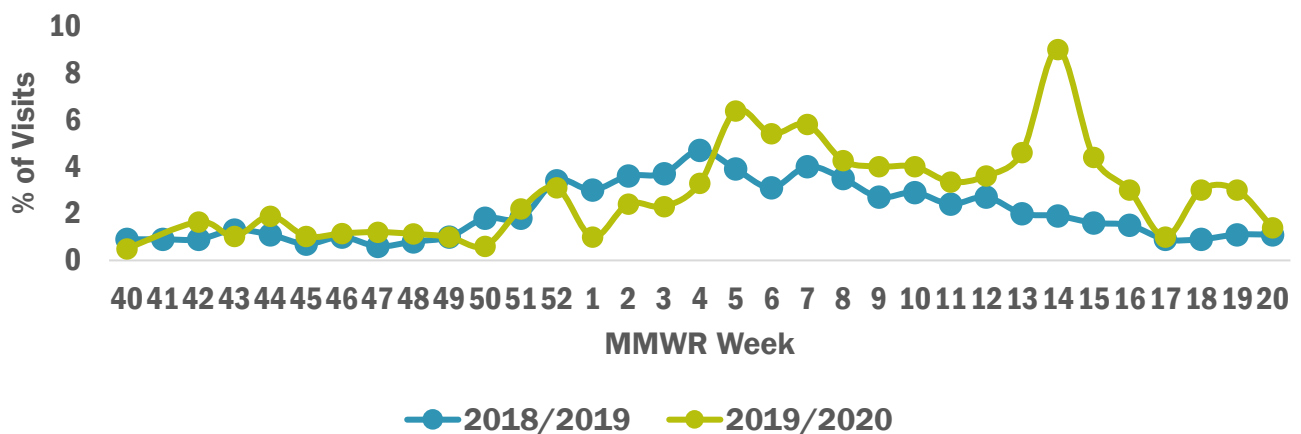


Geographic spread refers only to where flu and ILI have been reported in the state, not the severity of illness. Geographic spread in Vermont was at the highest level (widespread) for 12 weeks from the mid-January to the end of March. The 2018-19 season peaked in late December, with widespread geographic spread for 8 weeks.

Sentinel Provider Data

The sentinel provider surveillance data is based upon reports submitted by [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.

The peak for influenza-like illness visits to sentinel providers was later and more severe than the previous flu season.



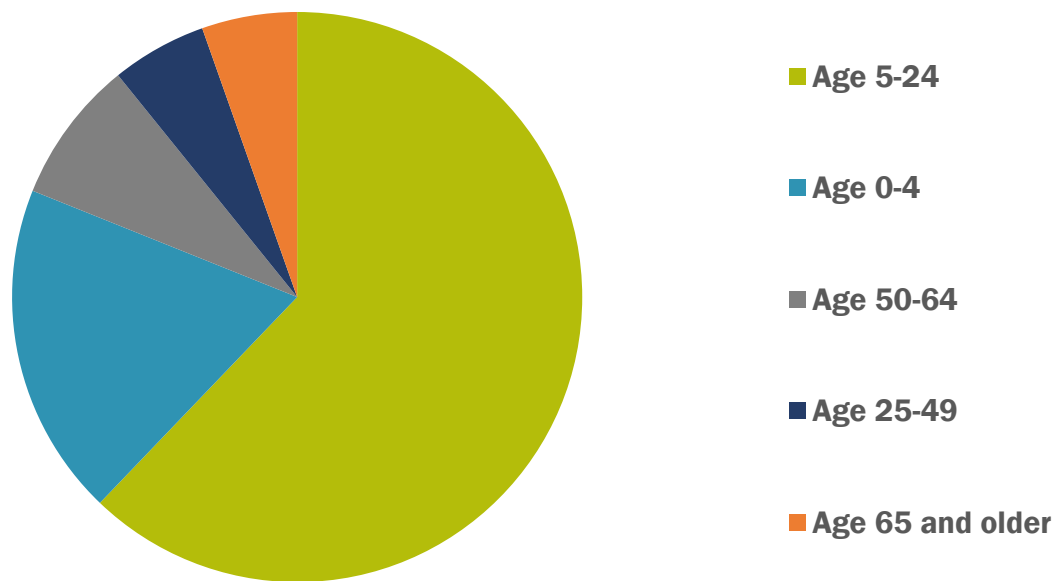
During the 2019-20 season, visits to providers and emergency departments for influenza-like illness (ILI) increased starting in late December, experiencing fluctuation until a late-season peak in week 14 (week ending 4/4/2020). The treatment-seeking behavior of Vermonters may have been influenced by the COVID-19 pandemic and so ILI visits are not directly comparable between the flu seasons 2018-19 and 2019-20. The highest percentage of 2019-20 visits due to ILI was 9%. During the season, 9 providers and 8 EDs reported ILI data to the Vermont Department of Health (VDH). ILI data is more robust when a higher percentage of provider reports are received.

2019-20 End-of-Season Flu Report

Sentinel providers report the total weekly numbers of patients seen by age range throughout the flu season. For the 2019-20 season, younger patients visited Vermont Sentinel Provider practices in higher numbers than older patients.

The age range 5-24 has the most visits recorded by ILINet providers during both the 2018-19 and 2019-20 seasons. 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 but provide an important piece of the surveillance system for monitoring where flu may be having substantial impact, and on which age groups.

Patients ages 5-24 had the highest number of visits to sentinel provider practices for influenza-like illness throughout most of the flu season.



2019-20 End-of-Season Flu Report

Laboratory Data

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.

Vermont Department of Health Laboratory	2018-19 Flu Season		2019-20 Flu Season	
	Count		Count	
Total PCR tests	437		208	
Total positive results	373	85% of total tests	149	72% of total tests
Total positive flu A	369	99% of positive results	114	77% of positive results
H1N1	220	59% of positive flu A results	82	72% of positive flu A results
H3N2	139	38% of positive flu A results	31	27% of positive flu A results
Unsubtypeable	8	2% of positive flu A results	0	
H1N1 + H3N2 co-infection	2	1% of positive flu A results	0	
H1N1 + flu B co-infection	0		1	1% of positive flu A results
Total positive Flu B	4	1% of positive results	35	23% of positive results
Flu B + H1N1 co-infection	0		1	3% of positive flu B results

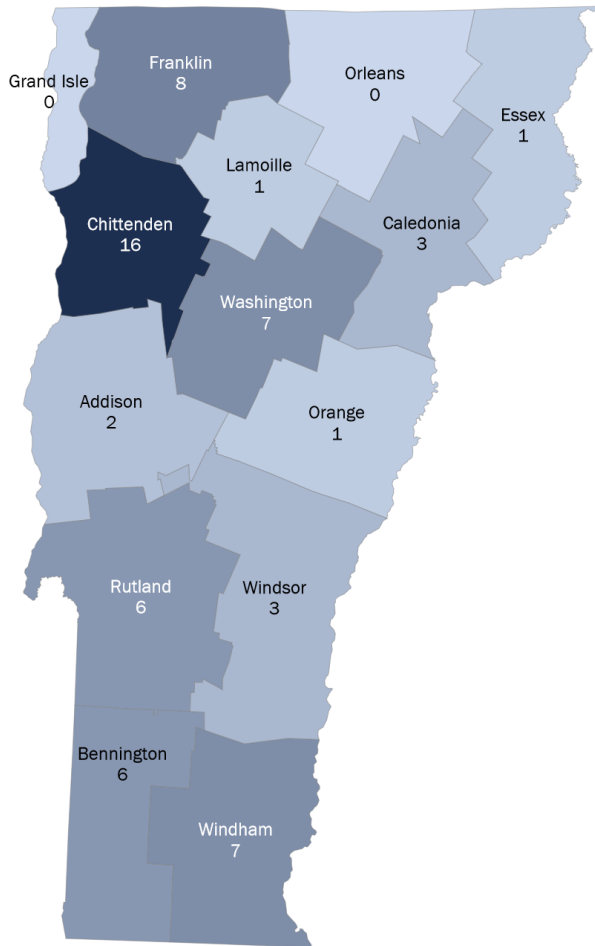
Like what was seen nationally, influenza A(H1N1) was the most frequently identified influenza virus subtype for most of the season. In Vermont, an increase of A(H3N2) started in January. It is possible the beginning of the COVID-19 global pandemic contributed to a decrease in tests performed in the 2019-20 season by the Vermont Department of Health Laboratory compared to the previous flu season.

2019-20 End-of-Season Flu Report

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. The percent of tests resulting positive for flu have been similar for the past three flu seasons.

NREVSS Reporting Hospitals	2018-19 Flu Season		2019-20 Flu Season	
	Count		Count	
Total PCR tests	8595		10175	
Total positive results	1668	19% of total tests	2013	20% of total tests
Total positive flu A	1584	95% of positive results	1067	53% of positive results
Total positive flu B	84	5% of positive flu A results	946	47% of positive flu A results

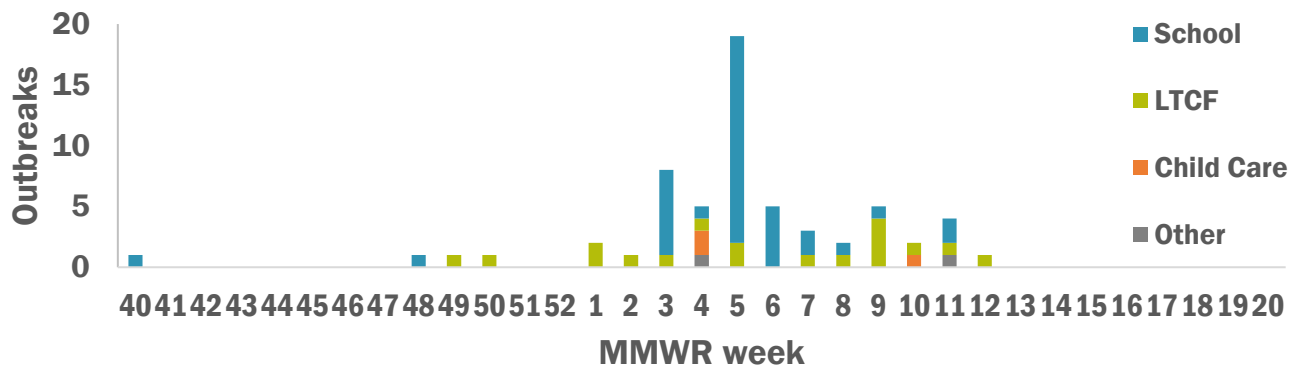
ILI Outbreak Data



All suspected ILI outbreaks in institutional settings are required to be reported to the Vermont Department of Health. During the 2019-20 season there were 61 outbreaks reported. This is higher than was reported during the 2018-19 season when 39 outbreaks were reported. The total number of outbreaks for the 2017-18 season, 58, is similar to the 2019-20 season.

Most of the outbreak activity occurred in the winter of the 2019-20 season, often in school settings (38 outbreaks reported) and long-term care facilities (LTCF reported 18 outbreaks). In the 2018-19 and 2017-18 seasons, outbreak activity was most often reported by long-term care facilities.

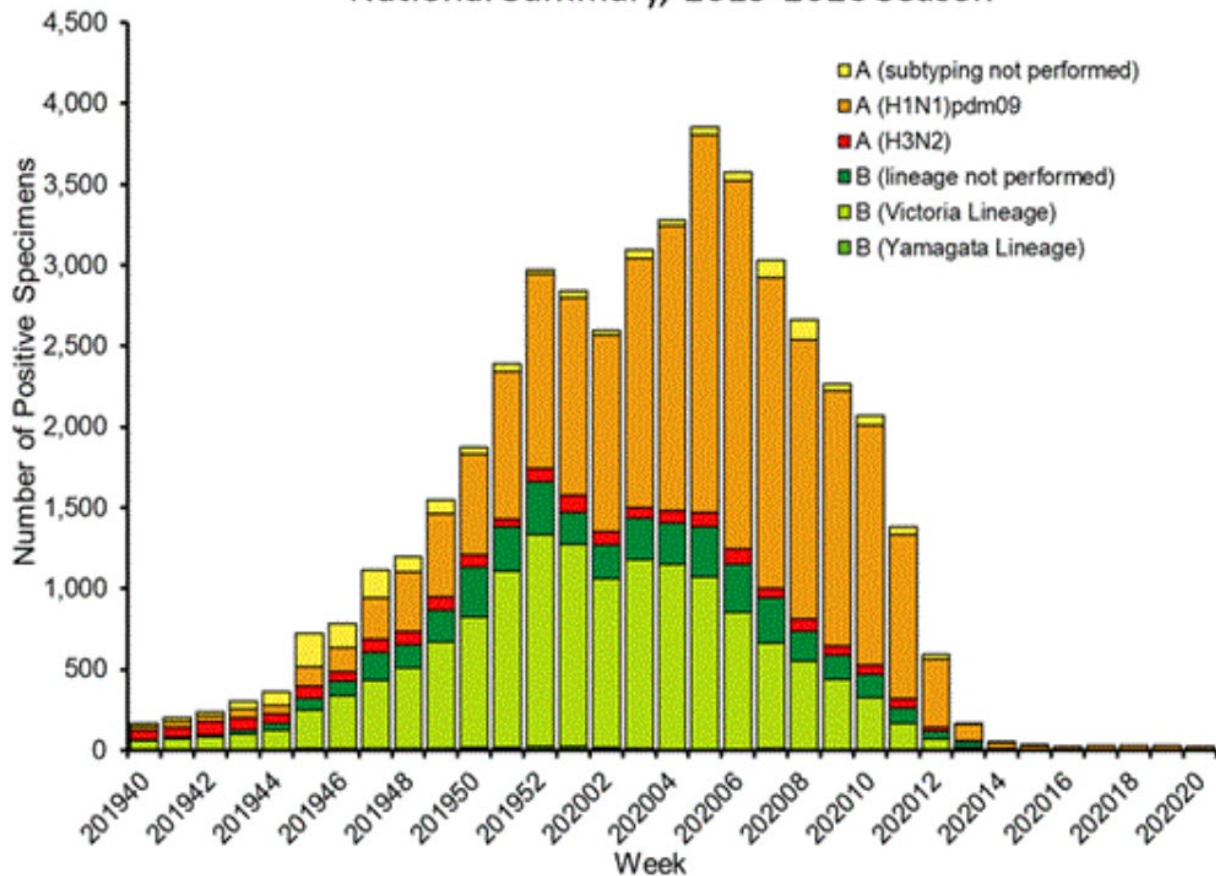
Most flu outbreaks were reported by schools.



CDC Flu Activity Overview

Influenza A(H1N1) and influenza B (Victoria Lineage) were the most commonly circulating flu classifications for the national 2019-20 season; the increase in positive influenza B results is a change from the 2018-19 season where very little flu B activity was reported and flu A(H3N2) was more actively circulating. Another change for the 2019-20 season was the beginning of the global COVID-19 pandemic, which may be a contributing factor to the decrease in flu results reported in MMWR weeks 14-20.

Influenza Positive Tests Reported to CDC by U.S. Public Health Laboratories, National Summary, 2019-2020 Season

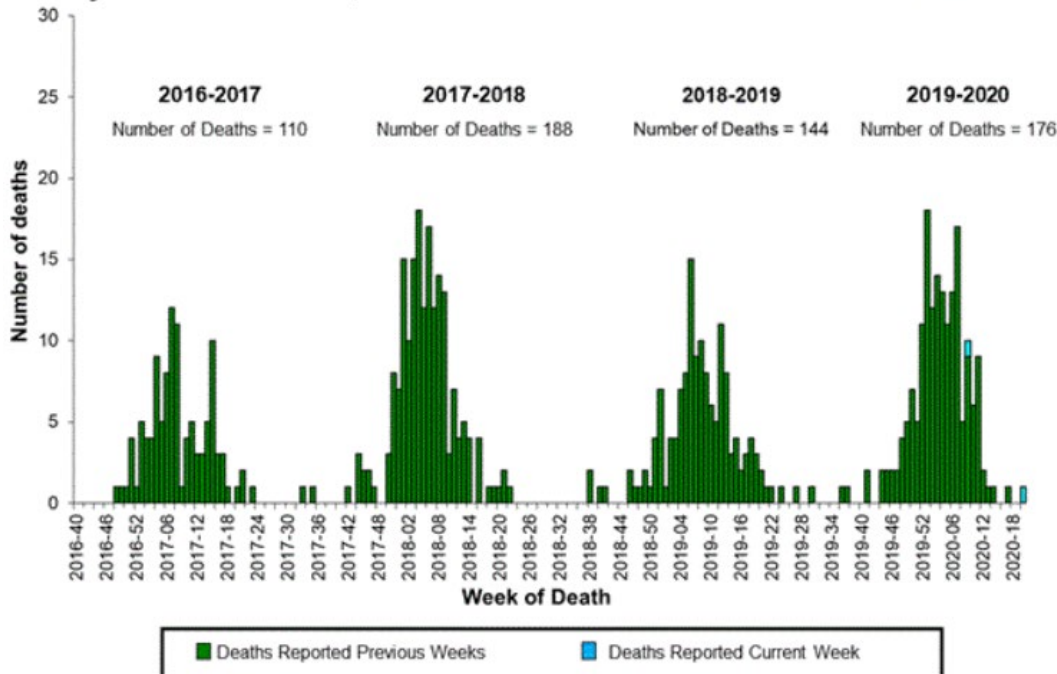


<https://www.cdc.gov/flu/weekly/weeklyarchives2019-2020/Week20.htm>

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In the 2019-20 season there were 176 reported influenza-associated pediatric deaths. No deaths were reported by Vermont.

**Influenza-Associated Pediatric Deaths
by Week of Death, 2016-2017 season to 2019-2020 season**



<https://www.cdc.gov/flu/weekly/weeklyarchives2019-2020/Week20.htm>

Key Takeaways

The 2019-20 flu season had a later and longer peak in geographic spread compared to the previous flu season, as well as a later peak in patients seeking care for influenza-like illness (ILI) in Vermont. Much like the previous season, the 2019-20 season saw younger patients seeking care for ILI, mostly in the 5-24 age range. The treatment-seeking behavior of patients may have been influenced by the onset of the COVID-19 global pandemic, which is important to remember if comparing visit data to other flu seasons.

Fewer PCR flu tests were performed by the Department of Health Laboratory in the 2019-20 season compared to the 2018-19 season, which may be at least partially due to the beginning of the COVID-19 global pandemic. Of the tests that were positive, more were classified as influenza B (Victoria) compared to the previous season and influenza A(H3N2) was not as frequently subtyped as in 2018-19. Nationally and in Vermont, influenza A(H1N1) and influenza B (Victoria) were the most frequent results for positive flu tests.

More institutions reported flu outbreaks this season than the previous season, 61 compared to 39. The 2019-20 flu season had the most reports of outbreak from school settings; the previous two seasons had most reports of flu outbreak from long-term care facility settings. Most outbreaks were in the northwest region of the state, a change from the southwest region in the 2018-19 season.

No pediatric flu deaths were reported by Vermont in the 2019-20 season; one pediatric flu death was reported in the 2018-19 season. The total number of national pediatric flu deaths increased in the 2019-20 season compared to the previous season.

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.](#)

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

ILI – Influenza-like Illness: ILI is the presence of a fever greater than or equal to 100° F with the addition of cough or sore throat when a patient seeks medical care. ILI excludes patients with a non-ILI fever (e.g. Dengue, Malaria, or Yellow Fever).

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.

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](#)).

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).

2019-20 End-of-Season Flu Report

MMWR Weeks 2019-20 – flu season weeks (2019 40-52, 2020 1-20) are highlighted in green:

MMWR Week	ENDING Dates for MMWR Weeks (Week starts on Sunday and ends on Saturday with this date)	
	2019	2020
1	1/5/2019	1/4/2020
2	1/12/2019	1/11/2020
3	1/19/2019	1/18/2020
4	1/26/2019	1/25/2020
5	2/2/2019	2/1/2020
6	2/9/2019	2/8/2020
7	2/16/2019	2/15/2020
8	2/23/2019	2/22/2020
9	3/2/2019	2/29/2020
10	3/9/2019	3/7/2020
11	3/16/2019	3/14/2020
12	3/23/2019	3/21/2020
13	3/30/2019	3/28/2020
14	4/6/2019	4/4/2020
15	4/13/2019	4/11/2020
16	4/20/2019	4/18/2020
17	4/27/2019	4/25/2020
18	5/4/2019	5/2/2020
19	5/11/2019	5/9/2020
20	5/18/2019	5/16/2020
...
40	10/5/2019	10/3/2020
41	10/12/2019	10/10/2020
42	10/19/2019	10/17/2020
43	10/26/2019	10/24/2020
44	11/2/2019	10/31/2020
45	11/9/2019	11/7/2020
46	11/16/2019	11/14/2020
47	11/23/2019	11/21/2020
48	11/30/2019	11/28/2020
49	12/7/2019	12/5/2020
50	12/14/2019	12/12/2020
51	12/21/2019	12/19/2020
52	12/28/2019	12/26/2020

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