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Weekly U.S. Influenza Surveillance Report

Updated December 16, 2022



A Weekly Influenza Surveillance Report Prepared by the Influenza Division

Note: CDC is tracking the COVID-19 pandemic in a weekly publication called [COVID Data Tracker Weekly Review](https://web.archive.org/web/20221220000255/https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/).

Key Updates for Week 49, ending December 10, 2022

Seasonal influenza activity remains high but appears to be declining in some areas.

Viruses

Clinical Lab

25.4%
positive for influenza
this week

[\(/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#ClinicalLaboratories\)](/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#ClinicalLaboratories)

Public Health Lab

The most frequently reported viruses this week were influenza A(H3N2).

[\(/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#PublicHealthLaboratories\)](/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#PublicHealthLaboratories)

Virus Characterization

Genetic and antigenic characterization and antiviral susceptibility are summarized in this report.

[\(/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#VirusCharacterization\)](/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#VirusCharacterization)

Illness

Outpatient Respiratory Illness

6.9%
of visits to a health care provider this week were for respiratory illness
(*above baseline*).

[\(/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#ILINet\)](/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#ILINet)

Outpatient Respiratory Illness: Activity Map

This week, 3 jurisdictions experienced moderate activity and 48 jurisdictions experienced high or very high activity.

[\(/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#ORIAM\)](/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#ORIAM)

Long-term Care Facilities

6.8%
of facilities reported
≥ 1 influenza-positive test
among residents this week.

[\(/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#LTFCF\)](/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#LTFCF)

Severe Disease

FluSurv-NET

32.7 per 100,000
cumulative hospitalization rate

([/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#FluSurvNet](https://www.cdc.gov/flu/weekly/index.htm#FluSurvNet))

HHS Protect Hospitalizations

23,503
patients admitted to hospitals with influenza
this week.

([/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#HHSProtect](https://www.cdc.gov/flu/weekly/index.htm#HHSProtect))

NCHS Mortality

11.6%
of deaths attributed to pneumonia, influenza, or COVID-19 this week (*above threshold*).

([/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#NCHSMortality](https://www.cdc.gov/flu/weekly/index.htm#NCHSMortality))

Pediatric Deaths

9
deaths were reported this week for a total of 30 so far this season.

([/web/20221220000255/https://www.cdc.gov/flu/weekly/index.htm#PedMortality](https://www.cdc.gov/flu/weekly/index.htm#PedMortality))

All data are preliminary and may change as more reports are received.

A description of the CDC influenza surveillance system, including methodology and detailed descriptions of each data component is available on the [surveillance methods](https://www.cdc.gov/flu/weekly/overview.htm) ([/web/20221220000255/https://www.cdc.gov/flu/weekly/overview.htm](https://www.cdc.gov/flu/weekly/overview.htm)) page.

Additional information on the current and previous influenza seasons for each surveillance component are available on [FluView Interactive](https://www.cdc.gov/flu/weekly/fluviewinteractive.htm) ([/web/20221220000255/https://www.cdc.gov/flu/weekly/fluviewinteractive.htm](https://www.cdc.gov/flu/weekly/fluviewinteractive.htm)).

Key Points

- Seasonal influenza activity remains high but appears to be declining in some areas.
- Of influenza A viruses detected and subtyped during week 49, 80% were influenza A(H3N2) and 20% were influenza A(H1N1).
- Nine influenza-associated pediatric deaths were reported this week, for a total of 30 pediatric flu deaths reported so far this season.
- CDC estimates that, so far this season, there have been at least 15 million illnesses, 150,000 hospitalizations, and 9,300 deaths from flu.
- The cumulative hospitalization rate in the FluSurv-NET system is higher than the rate observed in week 49 during every previous season since 2010-2011.
- The number of flu hospital admissions reported in the HHS Protect system decreased nationally during week 49 compared to week 48.
- The majority of influenza viruses tested are in the same genetic subclade as and antigenically similar to the influenza viruses included in this season's influenza vaccine.
- All viruses collected and evaluated this season have been susceptible to the influenza antivirals oseltamivir, peramivir, zanamivir, and baloxavir.
- An annual flu vaccine is the best way to protect against flu. Vaccination helps prevent infection and can also prevent serious outcomes in people who get vaccinated but still get sick with flu.
- CDC recommends that everyone ages 6 months and older get a flu vaccine annually. Now is a good time to get vaccinated if you haven't already.
- CDC issued Interim Guidance for Clinicians to Prioritize Antiviral Treatment of Influenza in the Setting of Reduced Availability of Oseltamivir (<https://www.archive.org/web/20221220000255/https://emergency.cdc.gov/han/2022/han00482.asp>) through the Health Alert Network (HAN) on December 15, 2022.

U.S. Virologic Surveillance

(<https://www.archive.org/web/20221220000255/https://www.cdc.gov/flu/weekly/overview.htm#LabSurveillance>)

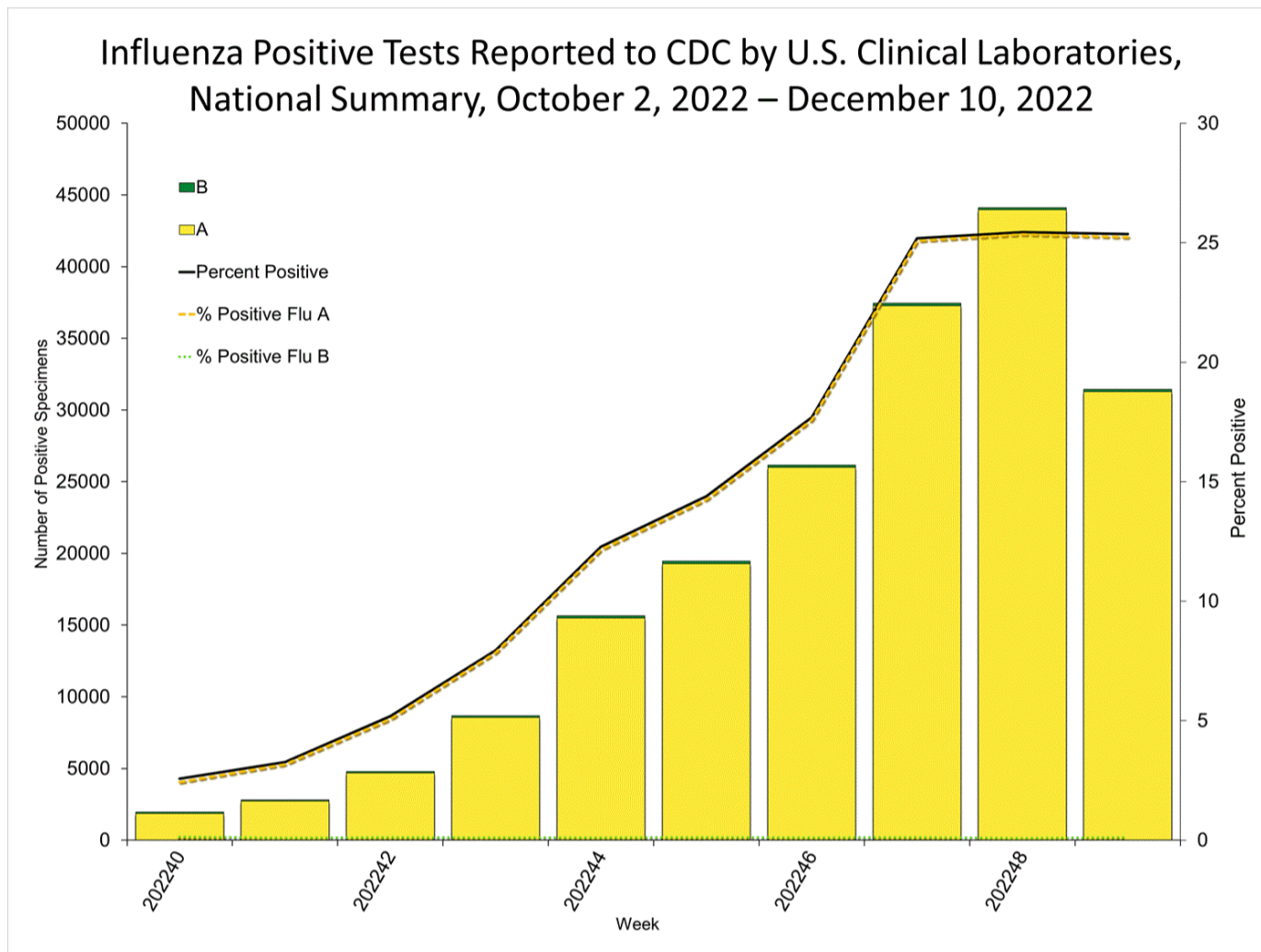
Nationally, the percentage of specimens testing positive for influenza in clinical laboratories is the same as the previous week. Percent positivity increased ≥ 0.5 percentage points this week in regions 1, 5, 7, and 8, and remained stable or decreased in all remaining regions. For regional and state level data and age group distribution, please visit [FluView Interactive](https://www.archive.org/web/20221220000255/https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html) (<https://www.archive.org/web/20221220000255/https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html>). Viruses known to be associated with recent live attenuated influenza vaccine (LAIV) receipt or found upon further testing to be a vaccine virus are not included, as they are not circulating influenza viruses.

Clinical Laboratories

The results of tests performed by clinical laboratories nationwide are summarized below. Data from clinical laboratories (the percentage of specimens tested that are positive for influenza) are used to monitor whether influenza activity is increasing or decreasing.

	Week 49	Data Cumulative since October 2, 2022 (Week 40)

	Week 49	Data Cumulative since October 2, 2022 (Week 40)
No. of specimens tested	123,987	1,219,825
No. of positive specimens (%)	31,442 (25.4%)	192,458 (15.8%)
<i>Positive specimens by type</i>		
Influenza A	31,287 (99.5%)	191,112 (99.3%)
Influenza B	155 (0.5%)	1,346 (0.7%)



(<https://web.archive.org/web/20221220000255/http://gis.cdc.gov/grasp/fluview/fluportaldashboard.html>)

[View Chart Data](#) (https://web/20221220000255/https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/data/whoAllregt_cl49.html) | [View Full Screen](#)

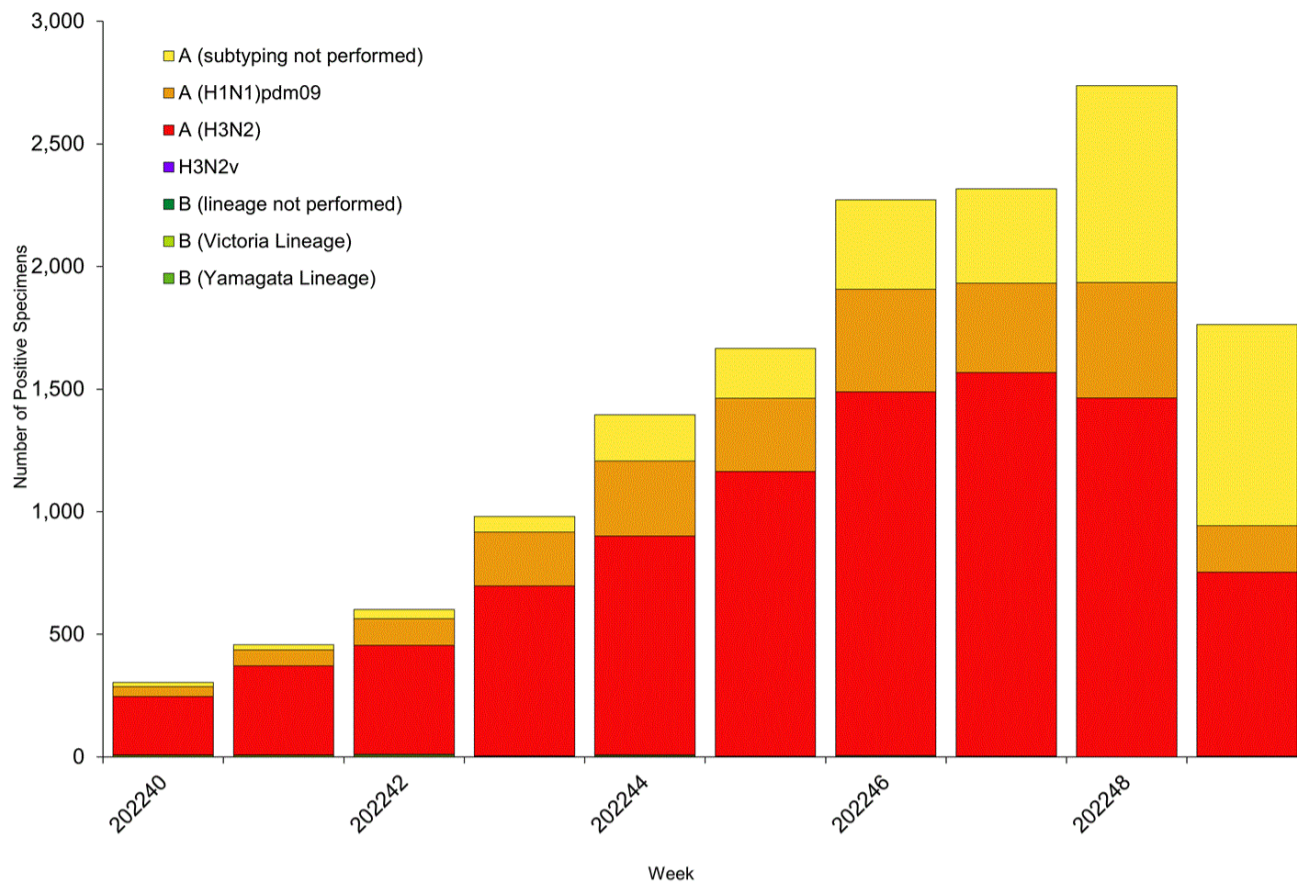
(<https://web/20221220000255/https://www.cdc.gov/flu/weekly/WeeklyArchives2022-2023/WHONPHL49.html>)

Public Health Laboratories

The results of tests performed by public health laboratories nationwide are summarized below. Data from public health laboratories are used to monitor the proportion of circulating viruses that belong to each influenza subtype/lineage.

	Week 49	Data Cumulative since October 2, 2022 (Week 40)
No. of specimens tested	8,996	96,317
No. of positive specimens	1,763	14,494
<i>Positive specimens by type/subtype</i>		
Influenza A	1,760 (99.8%)	14,440 (99.6%)
(H1N1)pdm09	190 (20.2%)	2,480 (21.5%)
H3N2	750 (79.8%)	9,054 (78.5%)
H3N2v	0	1 (<0.1%)
Subtyping not performed	820	2,905
Influenza B	3 (0.2%)	54 (0.4%)
Yamagata lineage	0	0
Victoria lineage	1 (100%)	30 (100%)
Lineage not performed	2	24

Influenza Positive Tests Reported to CDC by U.S. Public Health Laboratories, National Summary, October 2, 2022 – December 10, 2022



<https://web.archive.org/web/20221220000255/http://gis.cdc.gov/grasp/fluview/fluportaldashboard.html>

[View Chart Data](#) (https://web/20221220000255/https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/data/whoAllregt_phl49.html) | [View Full Screen](#) (<https://web/20221220000255/https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/WhoPHL49.html>)

Additional virologic surveillance information for current and past seasons:

[Surveillance Methods](#) (<https://web/20221220000255/https://www.cdc.gov/flu/weekly/overview.htm#LabSurveillance>) | [FluView Interactive: National, Regional, and State Data](#) (<https://web.archive.org/web/20221220000255/http://gis.cdc.gov/grasp/fluview/fluportaldashboard.html>) or [Age Data](#) (https://web.archive.org/web/20221220000255/https://gis.cdc.gov/grasp/fluview/flu_by_age_virus.html)

Influenza Virus Characterization

[\(/web/20221220000255/https://www.cdc.gov/flu/weekly/overview.htm#VirusCharacterization\)](https://web/20221220000255/https://www.cdc.gov/flu/weekly/overview.htm#VirusCharacterization)

CDC performs [genetic](https://web.archive.org/web/20221220000255/https://www.cdc.gov/flu/about/professionals/genetic-characterization.htm) (<https://web.archive.org/web/20221220000255/https://www.cdc.gov/flu/about/professionals/genetic-characterization.htm>) and [antigenic](https://web.archive.org/web/20221220000255/https://www.cdc.gov/flu/about/professionals/antigenic.htm) (<https://web.archive.org/web/20221220000255/https://www.cdc.gov/flu/about/professionals/antigenic.htm>) characterization of U.S. viruses submitted from state and local public health laboratories according to the Right Size Roadmap submission guidance. These data are used to compare how similar the currently circulating influenza viruses are to the reference viruses representing viruses contained in the current influenza vaccines. The data are also used to monitor evolutionary changes that continually occur in influenza viruses circulating in humans.

CDC genetically characterized 1,010 influenza viruses collected since May 1, 2022.

Virus Subtype or Lineage	Genetic Characterization				
	Total No. of Subtype/Lineage Tested	HA Clade	Number (% of subtype/lineage tested)	HA Subclade	Number (% of subtype/lineage tested)
A/H1	214	6B.1A	214 (100%)	5a.1	5 (2.3%)
				5a.2	209 (97.7%)
A/H3	784	3C.2a1b	784 (100%)	1a	0
				1b	0
				2a	0
				2a.1	1 (0.1%)
				2a.2	783 (99.9%)
				3C.3a	0

Virus Subtype or Lineage	Genetic Characterization				
	Total No. of Subtype/Lineage Tested	HA Clade	Number (% of subtype/lineage tested)	HA Subclade	Number (% of subtype/lineage tested)
B/Victoria	12				
		V1A	12 (100%)	V1A	0
				V1A.1	0
				V1A.3	0
				V1A.3a	0
				V1A.3a.1	0
				V1A.3a.2	12 (100%)
B/Yamagata	0				
		Y3	0		

CDC antigenically characterizes (<https://web.archive.org/web/20221220000255/https://www.cdc.gov/flu/about/professionals/antigenic.htm>) influenza viruses by hemagglutination inhibition (HI) (<https://web.archive.org/web/20221220000255/https://www.cdc.gov/flu/about/professionals/antigenic.htm>) (H1N1pdm09, B/Victoria, and B/Yamagata viruses) or neutralization-based HINT (<https://web.archive.org/web/20221220000255/https://www.cdc.gov/flu/spotlights/2018-2019/new-lab-method-test-flu.html>) (H3N2 viruses) using antisera that ferrets make after being infected with reference viruses representing the 2022-2023 Northern Hemisphere recommended egg-based and cell- or recombinant-based vaccine viruses. Antigenic differences between viruses are determined by comparing how well the antibodies made against the vaccine reference viruses recognize the circulating viruses that have been grown in cell culture. Ferret antisera are useful because antibodies raised against a particular virus can often recognize small changes in the surface proteins of other viruses. In HI assays, viruses with similar antigenic properties have antibody titer differences of less than or equal to 4-fold when compared to the reference (vaccine) virus. In HINT, viruses with similar antigenic properties have antibody neutralization titer differences of less than 8-fold. Viruses selected for antigenic characterization are a subset representing the genetic changes in the surface proteins seen in genetically characterized viruses.

Influenza A Viruses

- **A (H1N1)pdm09:** Sixty-five A(H1N1)pdm09 viruses were antigenically characterized by HI, and 63 (97%) were well recognized (reacting at titers that were within 4-fold of the homologous virus titer) by ferret antisera to cell-grown A/Wisconsin/588/2019-like reference viruses representing the A(H1N1)pdm09 component for the cell- and recombinant-based influenza vaccines and 63 (97%) were well recognized by ferret antisera to egg-grown A/Victoria/2570/2019-like reference viruses representing the A(H1N1)pdm09 component for the egg-based influenza vaccines.
- **A (H3N2):** Sixty A(H3N2) viruses were antigenically characterized by HINT; all were well-recognized (reacting at titers that were within 8-fold of the homologous virus titer) by ferret antisera to cell-grown A/Darwin/6/2021-like reference viruses representing the A(H3N2) component for the cell- and recombinant-based influenza vaccines and 58 (97%) were well-recognized by ferret antisera to egg-grown A/Darwin/9/2021-like reference viruses representing the A(H3N2) component for egg-based influenza vaccines.

Influenza B Viruses

- **B/Victoria:** Eight influenza B/Victoria-lineage virus were antigenically characterized by HI; all were well-recognized (reacting at titers that were within 4-fold of the homologous virus titer) by ferret antisera to cell-grown B/Austria/1359417/2021-like reference viruses representing the B/Victoria component for the cell- and recombinant-based influenza vaccines and by ferret antisera to egg-grown B/Austria/1359417/2021-like reference viruses representing the B/Victoria component for the egg-based influenza vaccines.
- **B/Yamagata:** No influenza B/Yamagata-lineage viruses were available for antigenic characterization.

Assessment of Virus Susceptibility to Antiviral Medications

CDC assesses susceptibility of influenza viruses to antiviral medications including the neuraminidase inhibitors (oseltamivir, zanamivir, and peramivir) and the PA endonuclease inhibitor baloxavir using next generation sequence analysis supplemented by laboratory assays. Information about antiviral susceptibility test methods can be found at [U.S. Influenza Surveillance: Purpose and Methods | CDC](https://www.cdc.gov/flu/weekly/overview.htm) (<https://web.archive.org/web/20221220000255/https://www.cdc.gov/flu/weekly/overview.htm>).

Viruses collected in the U.S. since October 2, 2022, were tested for antiviral susceptibility as follows:

Antiviral Medication	Total Viruses	A/H1	A/H3	B/Victoria	B/Yamagata

Antiviral Medication			Total Viruses	A/H1	A/H3	B/Victoria	B/Yamagata
Neuraminidase Inhibitors	Oseltamivir	Viruses Tested	519	171	338	10	0
		Reduced Inhibition	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
		Highly Reduced Inhibition	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	Peramivir	Viruses Tested	519	171	338	10	0
		Reduced Inhibition	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
		Highly Reduced Inhibition	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	Zanamivir	Viruses Tested	519	171	338	10	0
		Reduced Inhibition	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
		Highly Reduced Inhibition	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
PA Cap-Dependent Endonuclease Inhibitor	Baloxavir	Viruses Tested	501	162	330	9	0
		Reduced Susceptibility	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)

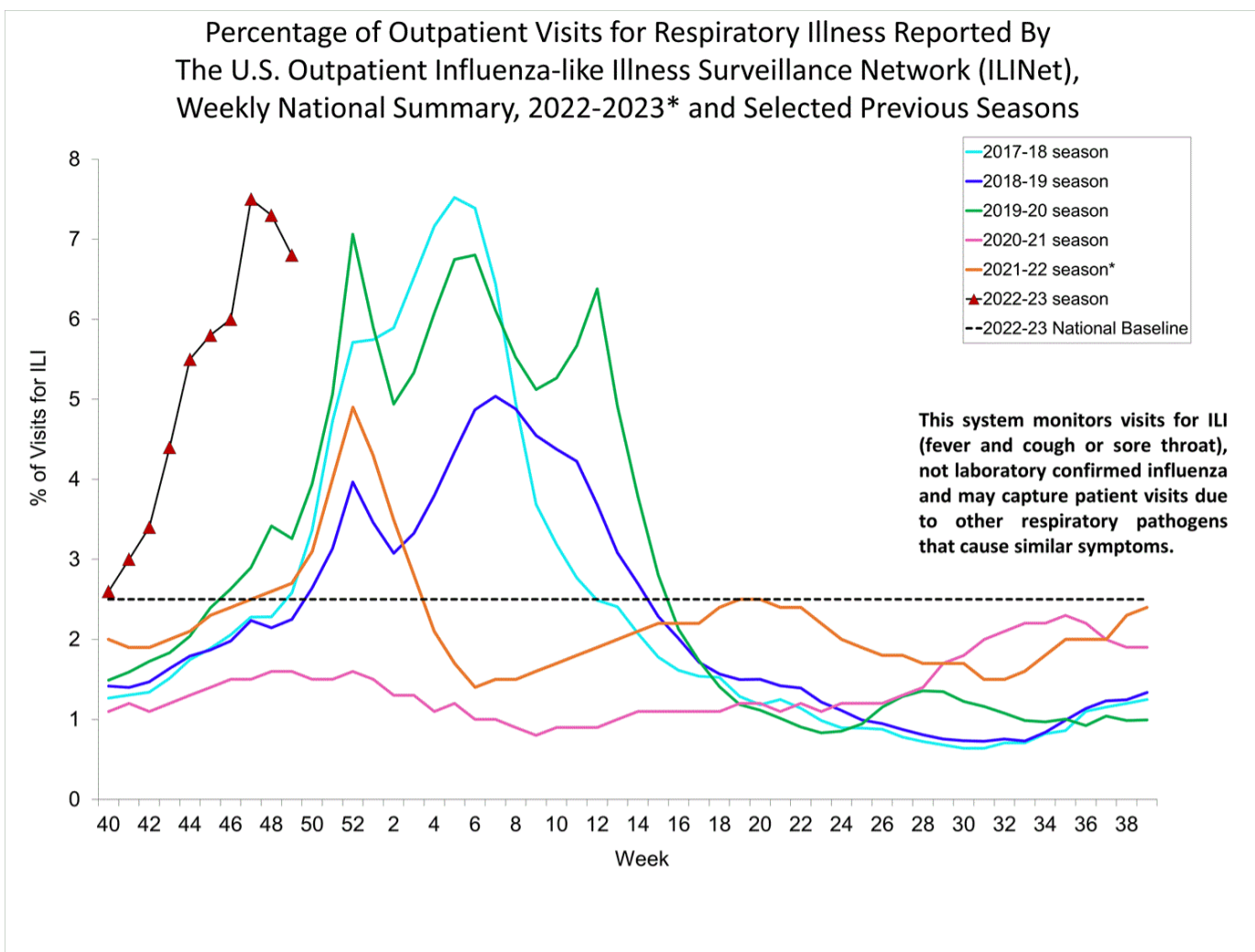
Outpatient Respiratory Illness Surveillance

(<https://web.archive.org/web/20221220000255/https://www.cdc.gov/flu/weekly/overview.htm#ILINet>)

The U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet) monitors outpatient visits for respiratory illness referred to as influenza-like illness [ILI (fever plus cough or sore throat)], not laboratory-confirmed influenza, and will therefore capture respiratory illness visits due to infection with any pathogen that can present with similar symptoms, including influenza, SARS-CoV-2, and RSV. Due to the COVID-19 pandemic, health care-seeking behaviors have changed, and people may be accessing the health care system in alternative settings not captured as a part of ILINet or at a different point in their illness than they might have before the pandemic. Therefore, it is important to evaluate syndromic surveillance data, including that from ILINet, in the context of other sources of surveillance data to obtain a complete and accurate picture of influenza, SARS-CoV-2, and other respiratory virus activity. CDC is tracking the COVID-19 pandemic in a weekly publication called [COVID Data Tracker Weekly Review](https://web.archive.org/web/20221220000255/https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html) (<https://web.archive.org/web/20221220000255/https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html>). Information about other respiratory virus activity can be found on CDC's National Respiratory and Enteric Virus Surveillance System (NREVSS) website (<https://web.archive.org/web/20221220000255/https://www.cdc.gov/surveillance/nrevss/index.html>).

Outpatient Respiratory Illness Visits

Nationwide during week 49, 6.9% of patient visits reported through ILINet were due to respiratory illness that included fever plus a cough or sore throat, also referred to as ILI. This is above the national baseline of 2.5%. All 10 HHS regions are above their respective baselines. The percent of patient visits for respiratory illness increased in regions 1, 7, and 8, decreased in regions 2, 3, 4, 6, 9, and 10, and remained stable in region 5 during week 49 compared to week 48. Multiple respiratory viruses are co-circulating, and the relative contribution of influenza virus infection to ILI varies by location.



<https://web.archive.org/web/20221220000255/http://gis.cdc.gov/grasp/fluview/fluportaldashboard.html>

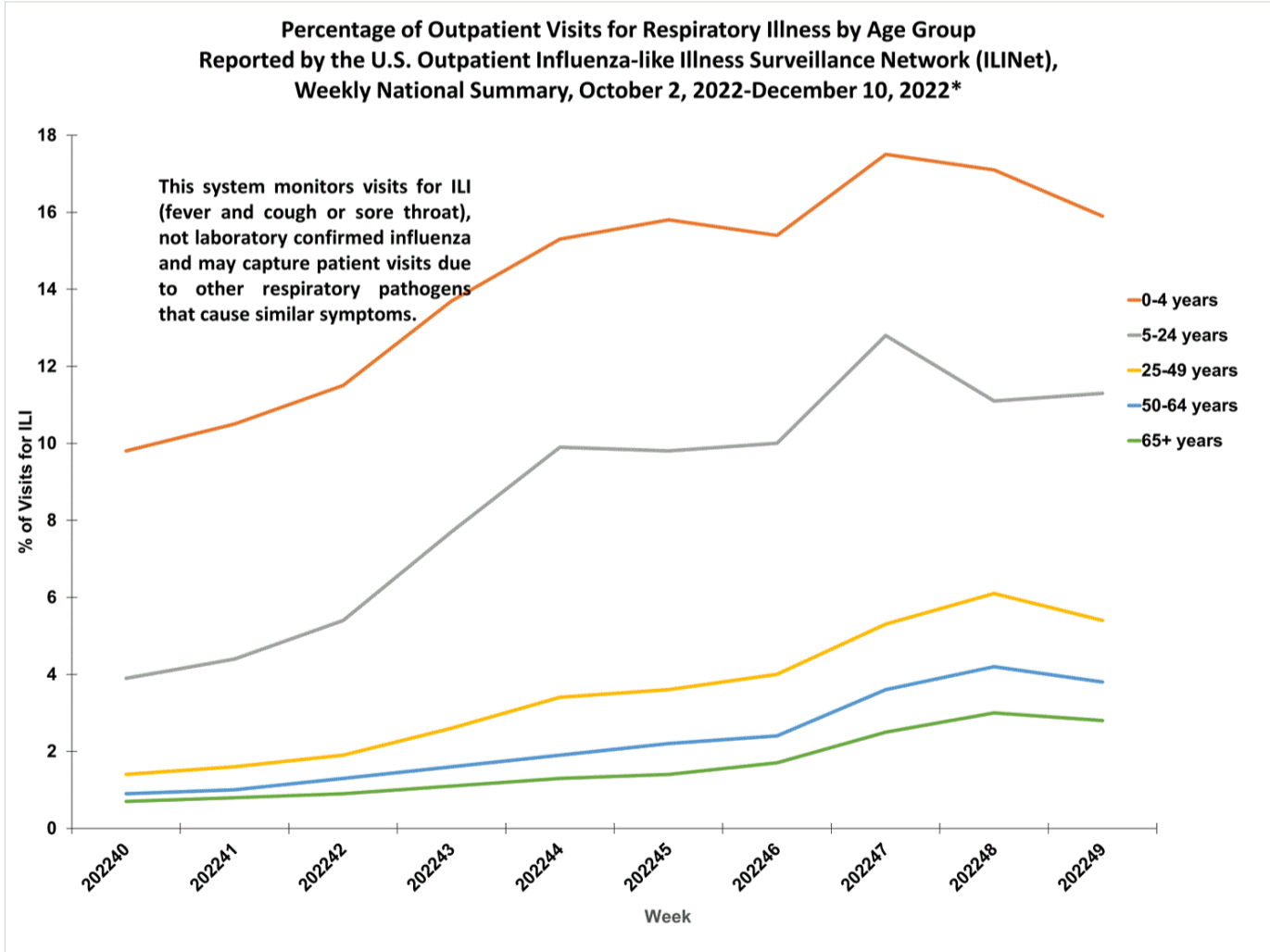
* Effective October 3, 2021 (week 40), the ILI definition (fever plus cough or sore throat) no longer includes "without a known cause other than influenza."

[View Chart Data \(current season only\)](#) (<https://web/20221220000255/https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/data/senAllregt49.html>) | [View Full Screen](#) (<https://web/20221220000255/https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/ILI49.html>)

Outpatient Respiratory Illness Visits by Age Group

More than 70% of ILINet participants provide both the number of patient visits for respiratory illness and the total number of patient visits for the week broken out by age group. Data from this subset of providers are used to calculate the percentages of patient visits for respiratory illness by age group.

The percentage of visits for respiratory illness reported in ILINet increased in 5-24 years age group and decreased in all other age groups (0-4 years, 25-49 years, 50-64 years, and 65+ years).



<https://web.archive.org/web/20221220000255/http://gis.cdc.gov/grasp/fluview/fluportaldashboard.html>

[View Chart Data](#) (<https://web/20221220000255/https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/data/iliage49.html>) | [View Full Screen](#) (<https://web/20221220000255/https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/ILIAge49.html>)

Outpatient Respiratory Illness Activity Map

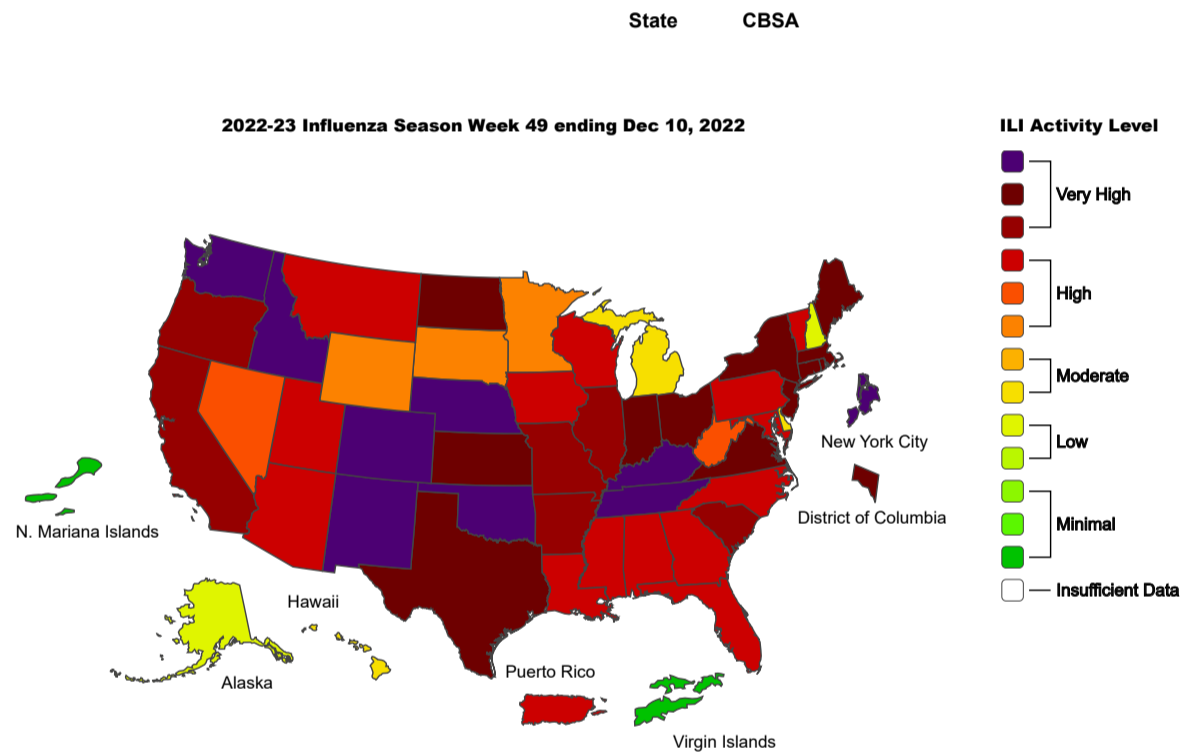
Data collected in ILINet are used to produce a measure of ILI activity* (https://web.archive.org/web/20221220000255/https://www.cdc.gov/flu/weekly/overview.htm#anchor_1633697504110) by state/jurisdiction and Core Based Statistical Areas (CBSA).

Activity Level	Number of Jurisdictions		Number of CBSAs	
	Week 49 (Week ending Dec. 10, 2022)	Week 48 (Week ending Dec. 3, 2022)	Week 49 (Week ending Dec. 10, 2022)	Week 48 (Week ending Dec. 3, 2022)
Very High	28	32	85	115
High	20	14	228	224
Moderate	3	3	150	113
Low	2	3	114	126
Minimal	2	3	118	119
Insufficient Data	0	0	234	232

A Weekly Influenza Surveillance Report Prepared by the Influenza Division

Outpatient Respiratory Illness Activity Map Determined by Data Reported to ILINet

This system monitors visits for respiratory illness that includes fever plus a cough or sore throat, also referred to as ILI, not laboratory confirmed influenza and may capture patient visits due to other respiratory pathogens that cause similar symptoms.



Season: 2022-23 ▾

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(<https://web.archive.org/web/20221220013141/https://www.cdc.gov/flu/weekly/fluereport.xml>)View Full Screen
 (<https://web.archive.org/web/20221220013141/http://gis.cdc.gov/grasp/fluview/main.html>)

*Data collected in ILINet may disproportionately represent certain populations within a jurisdiction or CBSA, and therefore, may not accurately depict the full picture of influenza activity for the entire jurisdiction or CBSA. Differences in the data presented here by CDC and independently by some health departments likely represent differing levels of data completeness with data presented by the health department likely being the more complete.

Additional information about medically attended visits for ILI for current and past seasons:

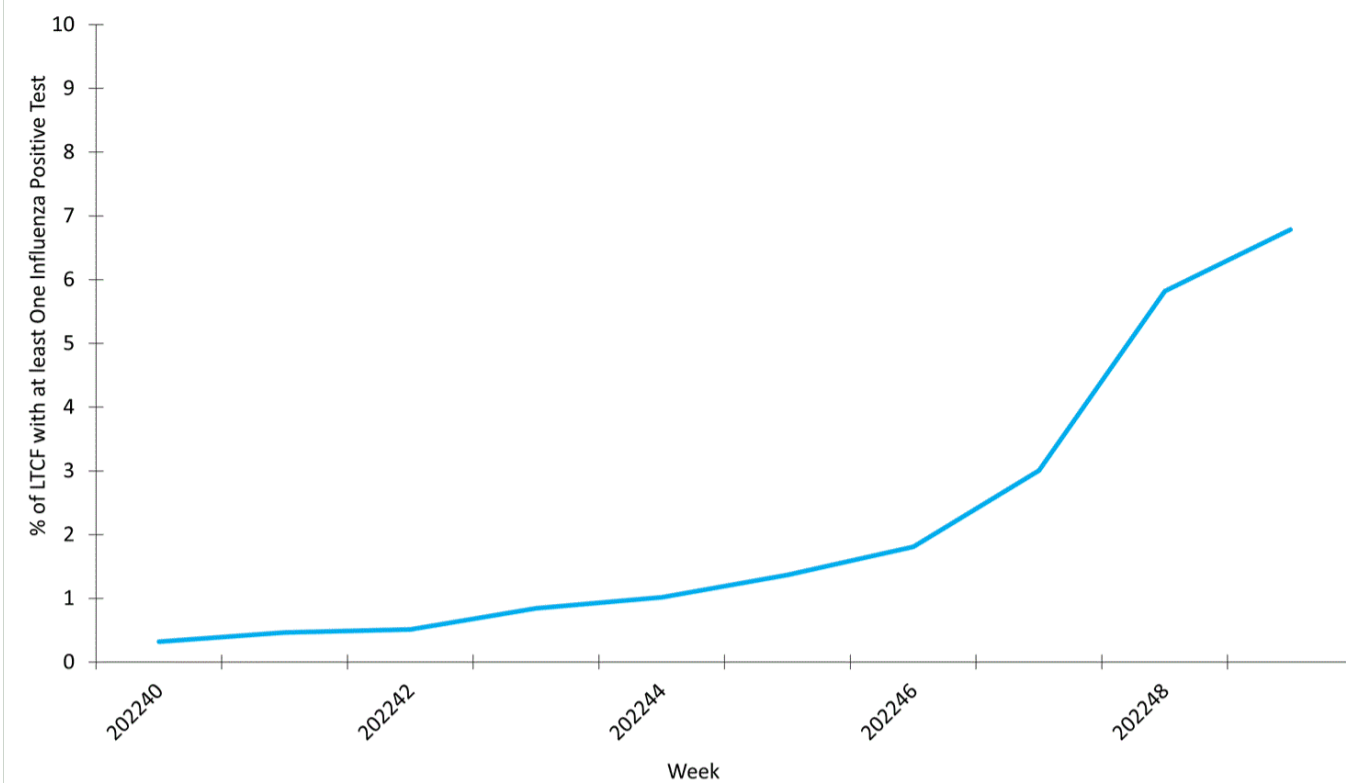
[Surveillance Methods \(https://www.cdc.gov/flu/weekly/overview.htm#ILINet\)](https://www.cdc.gov/flu/weekly/overview.htm#ILINet) | [FluView Interactive: National, Regional, and State Data \(https://www.cdc.gov/flu/weekly/overview.htm#LongTermCare\)](https://www.cdc.gov/flu/weekly/overview.htm#LongTermCare) or [ILI Activity Map \(https://gis.cdc.gov/grasp/fluview/main.html\)](https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html)

Long-term Care Facility (LTCF) Surveillance

(<https://www.cdc.gov/flu/weekly/overview.htm#LongTermCare>)

LTCFs (e.g., nursing homes/skilled nursing, long-term care for the developmentally disabled, and assisted living facilities) from all 50 states and U.S. territories report data on influenza virus infections among residents through the [National Healthcare Safety Network \(NHSN\) Long-term Care Facility Component \(https://www.cdc.gov/nhsn/ltc/index.html\)](https://www.cdc.gov/nhsn/ltc/index.html). During week 49, 971 (6.8%) of 14,315 reporting LTCFs reported at least one influenza positive test among their residents.

Percent of Long-term Care Facilities (LTCF) with at Least One Confirmed Influenza Positive Test among Residents, Reported to CDC National Healthcare Safety Network (NHSN), National Summary, October 3, 2022 – December 11, 2022



[View Chart Data](https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/LTCF49.html) | [View Full Screen](https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/data/LTCFData49.csv)

Additional information about long-term care facility surveillance:

[Surveillance Methods](https://www.cdc.gov/flu/weekly/overview.htm#LongTermCare) | [Additional Data](https://web.archive.org/web/20221220000255/https://data.cms.gov/covid-19/covid-19-nursing-home-data)

Hospitalization Surveillance

<https://web.archive.org/web/20221220000255/http://www.cdc.gov/flu/weekly/overview.htm#HospitalizationSurv>

FluSurv-NET

The Influenza Hospitalization Surveillance Network (FluSurv-NET) conducts population-based surveillance for laboratory-confirmed influenza-related hospitalizations in select counties in 13 states and represents approximately 9% of the U.S. population. FluSurv-NET hospitalization data are preliminary. As data are received each week, prior case counts and rates are updated accordingly.

A total of 9,567 laboratory-confirmed influenza-associated hospitalizations were reported by FluSurv-NET sites between October 1, 2021, and December 10, 2022. The weekly hospitalization rate observed in week 49 was 4.5 per 100,000 population. The weekly rate observed during week 48 (8.0 per 100,000 population), the highest so far this season, is the third highest peak weekly rate observed during all seasons going back to 2010-2011 following the 2014-15 and 2017-18 seasons.

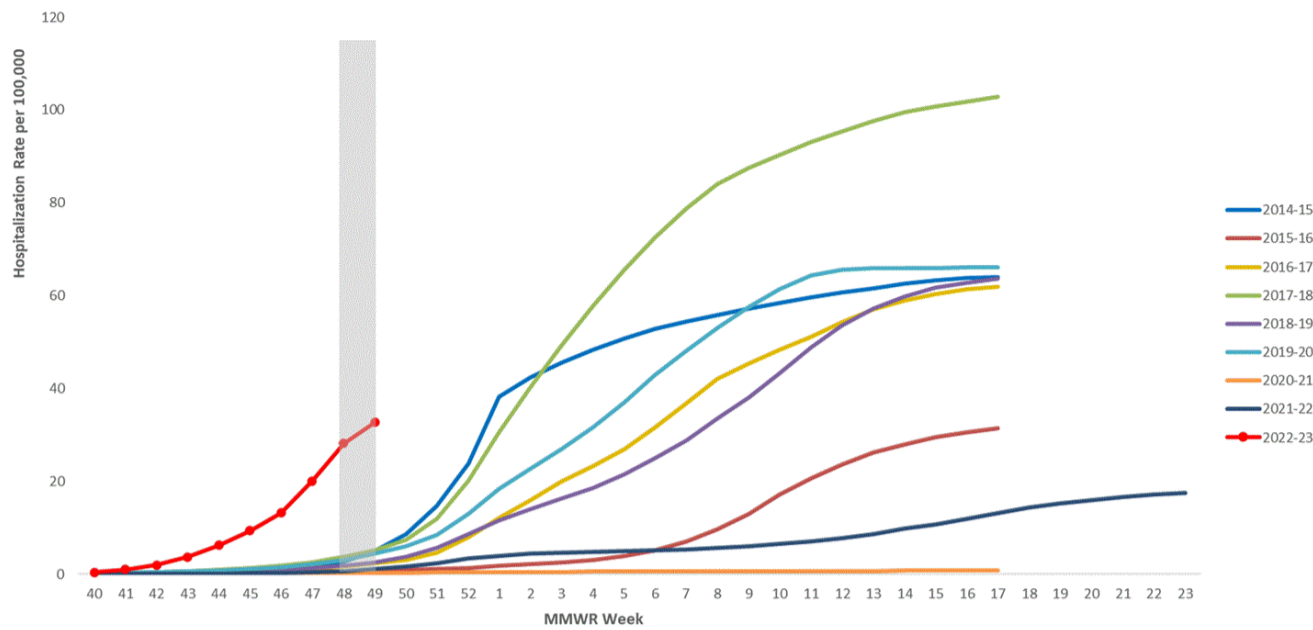
The overall cumulative hospitalization rate was 32.7 per 100,000 population. This cumulative hospitalization rate is 7.6 times higher than the highest cumulative in-season hospitalization rate observed in week 49 during previous seasons going back to 2010-2011 (prior season rates ranged from 0.2 per 100,000 to 4.3 per 100,000).

When examining rates by age, the highest rate of hospitalization per 100,000 population was among adults aged 65 and older (88.4). Among adults aged 65 and older, rates were highest among adults aged 85 and older (160.2). Among persons aged <65 years, hospitalization rates per 100,000 population were highest among children aged 0-4 years (49.6) followed by adults aged 50-64 years (33.6). When examining rates by race and ethnicity, the highest rate of hospitalization per 100,000 population was among non-Hispanic Black persons (47.9), followed by non-Hispanic American Indian or Alaska Native persons (35.9), followed by Hispanic/Latino persons (22.5), followed by non-Hispanic White persons (20.7) and followed by non-Hispanic Asian/Pacific Islander persons (13.5).

Among 9,567 hospitalizations, 9,287 (97.1%) were associated with influenza A virus, 150 (1.6%) with influenza B virus, 13 (0.1%) with influenza A virus and influenza B virus co-infection, and 117 (1.2%) with influenza virus for which the type was not determined. Among 1761 hospitalizations with influenza A subtype information, 1,394 (79.2%) were A(H3N2) and 367 (20.8%) were A(H1N1)pdm09. Based on preliminary data, of the 1,047 laboratory-confirmed influenza-associated hospitalizations with more complete data, 3.2% (95% CI: 2.18%-4.40%) also tested positive for SARS-CoV-2.

Among 846 hospitalized adults with information on underlying medical conditions, 96.8% had at least one reported underlying medical condition, the most commonly reported were hypertension, cardiovascular disease, metabolic disorder, and obesity. Among 237 hospitalized children with information on underlying medical conditions, 70.5% had at least one reported underlying medical condition; the most commonly reported was asthma, followed by obesity, and neurologic disease.

Cumulative Rate of Laboratory-Confirmed Influenza Hospitalizations among cases of all ages, 2014-15 to 2022-23, MMWR Week 49

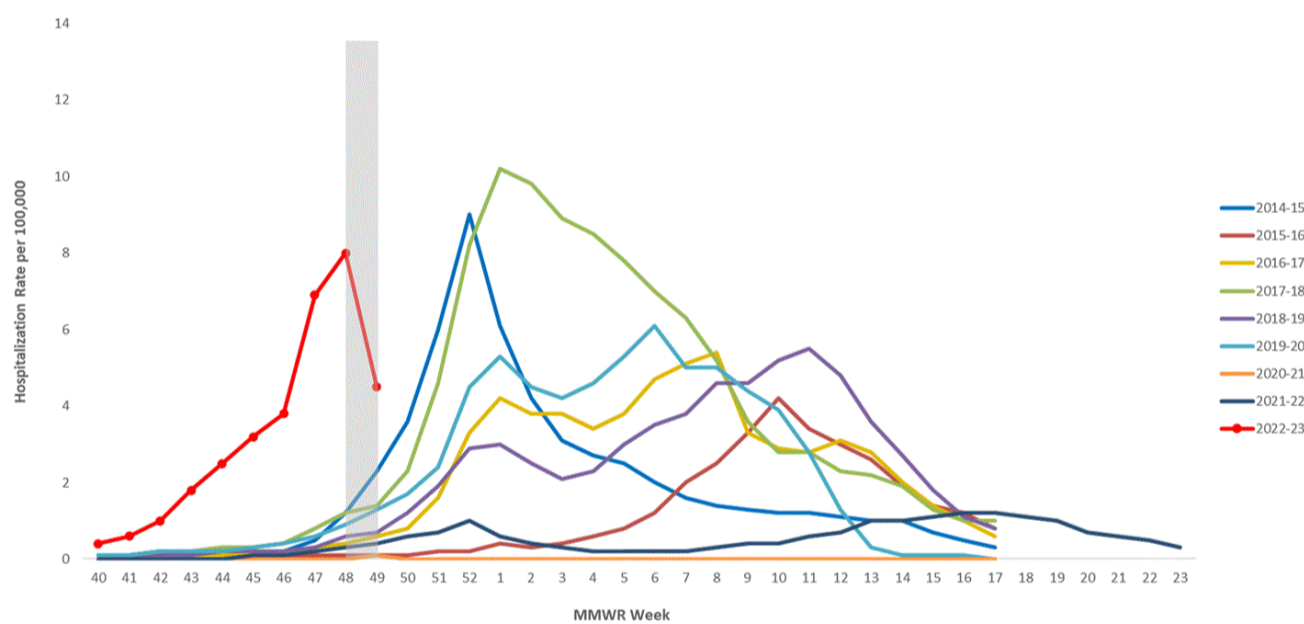


**In this figure, weekly rates for all seasons prior to the 2022-23 season reflect end-of-season rates. For the 2022-23 season, rates for recent hospital admissions are subject to reporting delays, as shown in the shaded area. As hospitalization data are received each week, prior case counts and rates are updated accordingly.

<https://web.archive.org/web/20221220000255/https://gis.cdc.gov/grasp/fluview/FluHospRates.html>

[View Full Screen \(https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/EIPRates49.html\)](https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/EIPRates49.html)

Weekly Rate of Laboratory-Confirmed Influenza Hospitalizations among cases of all ages, 2014-15 to 2022-23, MMWR Week 49



**In this figure, weekly rates for all seasons prior to the 2022-23 season reflect end-of-season rates. For the 2022-23 season, rates for recent hospital admissions are subject to reporting delays, as shown in the shaded area. As hospitalization data are received each week, prior case counts and rates are updated accordingly.

<https://web.archive.org/web/20221220000255/https://gis.cdc.gov/grasp/fluview/FluHospChars.html>

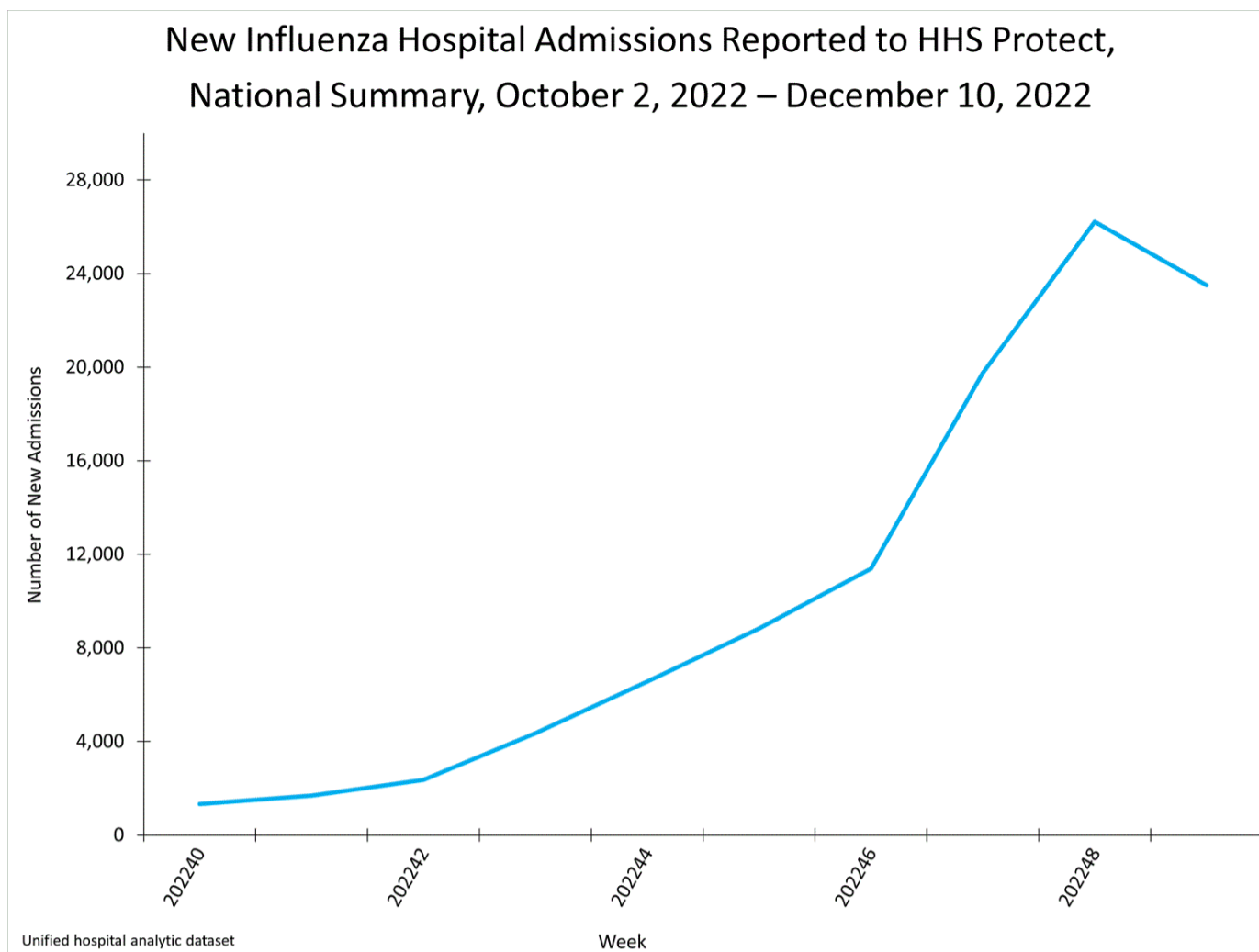
[View Full Screen \(https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/EIPConditions49.html\)](https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/EIPConditions49.html)

Additional FluSurv-NET hospitalization surveillance information for current and past seasons and additional age groups:

Surveillance Methods (<https://web.archive.org/web/20221220000255/https://www.cdc.gov/flu/weekly/overview.htm#FluSurvNet>) | FluView Interactive: Rates by Age, Sex, and Race/Ethnicity (<https://web.archive.org/web/20221220000255/http://gis.cdc.gov/GRASP/Fluview/FluHospRates.html>) or Data on Patient Characteristics (<https://web.archive.org/web/20221220000255/http://gis.cdc.gov/grasp/fluview/FluHospChars.html>)

HHS Protect Hospitalization Surveillance

Hospitals report to HHS Protect the number of patients admitted with laboratory-confirmed influenza. During week 49, 23,503 patients with laboratory-confirmed influenza were admitted to a hospital.



[View Chart Data](https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/Protect49.html) | [View Full Screen](https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/data/ProtectData49.csv)

Additional HHS Protect hospitalization surveillance information:

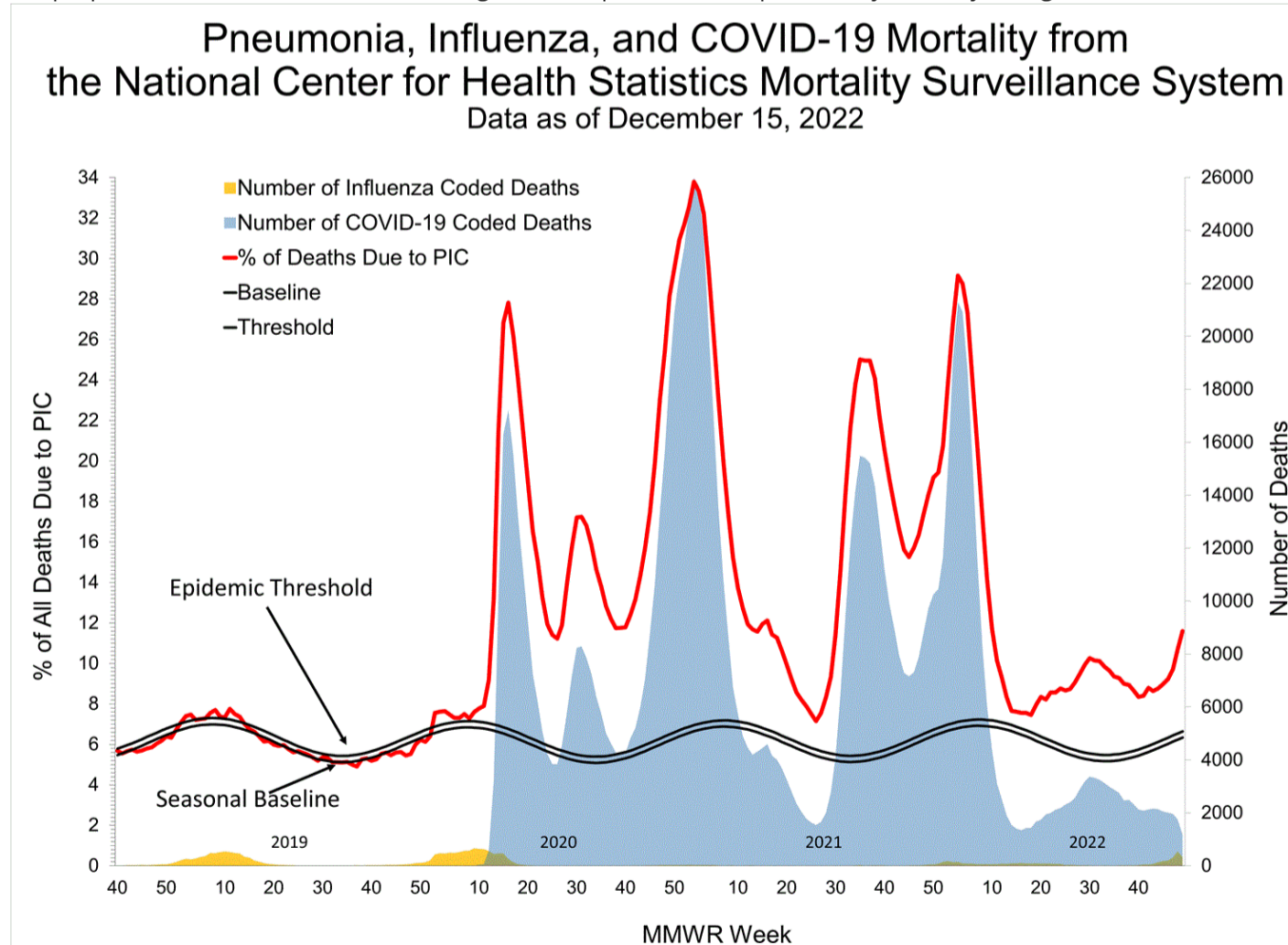
Surveillance Methods (<https://www.cdc.gov/flu/weekly/overview.htm#HHSProtect>) | [Additional Data](https://healthdata.gov/Hospital/COVID-19-Reported-Patient-Impact-and-Hospital-Capa/anag-cw7u)

Mortality Surveillance

<https://www.cdc.gov/flu/weekly/overview.htm#MortalitySurveillance>

National Center for Health Statistics (NCHS) Mortality Surveillance

Based on NCHS mortality surveillance data available on December 15, 2022, 11.6% of the deaths that occurred during the week ending December 10, 2022 (week 49), were due to pneumonia, influenza, and/or COVID-19 (PIC). This percentage is above the epidemic threshold of 6.6% for this week. Among the 2,913 PIC deaths reported for this week, 1,179 had COVID-19 listed as an underlying or contributing cause of death on the death certificate, and 331 listed influenza. While current PIC mortality is due primarily to COVID-19, the proportion due to influenza is increasing. The data presented are preliminary and may change as more data are received and processed.



[View Chart Data](https://gis.cdc.gov/GRASP/Fluview/mortality.html) | [View Full Screen](https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/data/NCHSData49.csv)

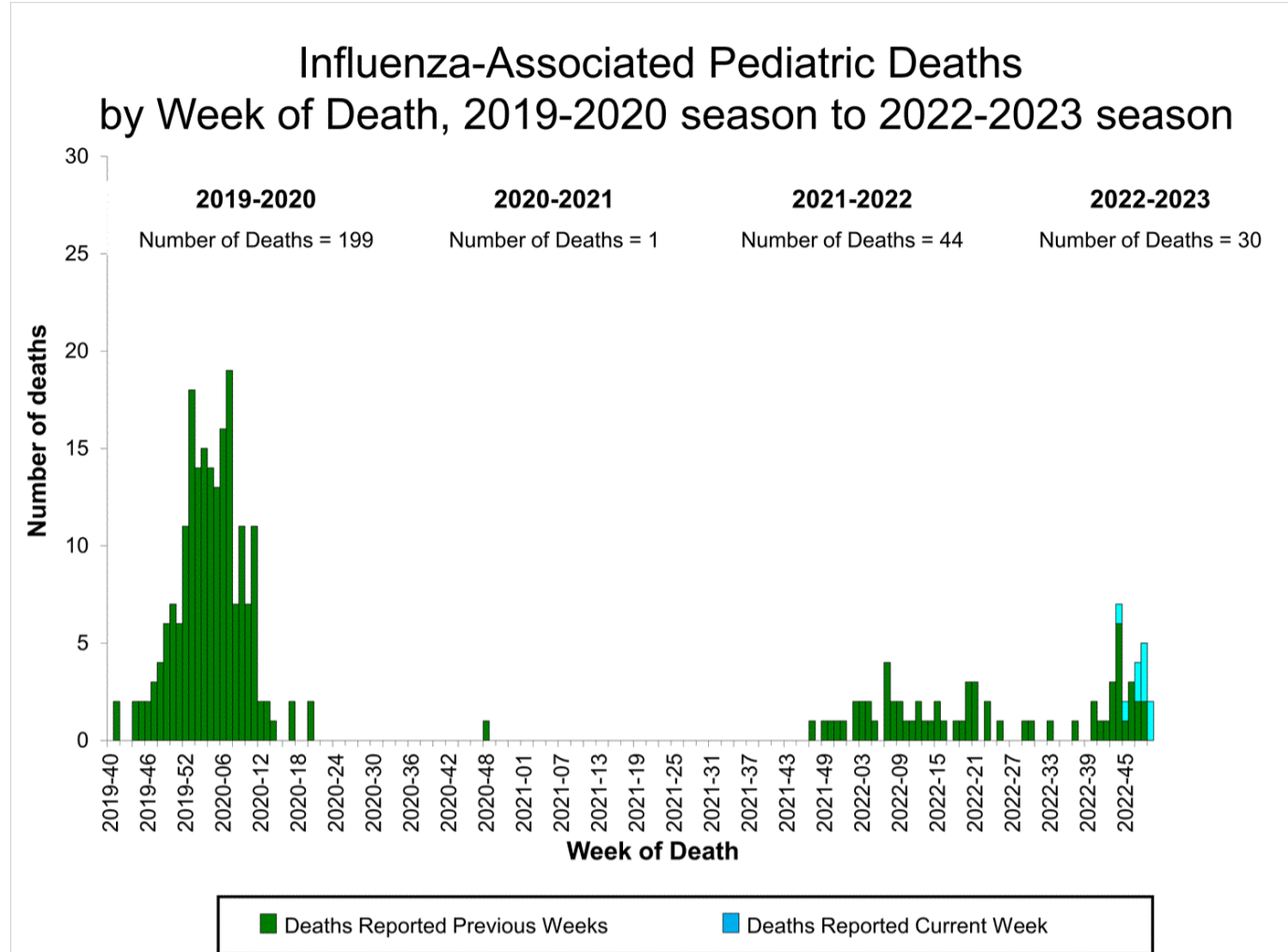
Additional pneumonia, influenza and COVID-19 mortality surveillance information for current and past seasons:

Surveillance Methods (<https://web.archive.org/web/20221220000255/https://www.cdc.gov/flu/weekly/overview.htm#NCHSMortality>) | [FluView Interactive](#) (<https://web.archive.org/web/20221220000255/https://gis.cdc.gov/grasp/fluview/mortality.html>)

Influenza-Associated Pediatric Mortality

Nine influenza-associated pediatric deaths occurring during the 2022-2023 season were reported to CDC during week 49. The deaths occurred between week 44 (the week ending November 5, 2022) and week 49 (the week ending December 10, 2022). Eight deaths were associated with influenza A viruses and one death was associated with an influenza B virus with no lineage determined. Five of the influenza A viruses had subtyping performed; all five were A(H3) viruses.

A total of 30 influenza-associated pediatric deaths occurring during the 2022-2023 season have been reported to CDC.



<https://web.archive.org/web/20221220000255/http://gis.cdc.gov/GRASP/Fluview/PedFluDeath.html>

[View Full Screen \(/web/20221220000255/https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/PedFlu49.html\)](/web/20221220000255/https://www.cdc.gov/flu/weekly/weeklyarchives2022-2023/PedFlu49.html)

Additional pediatric mortality surveillance information for current and past seasons:

Surveillance Methods (<https://web.archive.org/web/20221220000255/https://www.cdc.gov/flu/weekly/overview.htm#PediatricMortality>) | [FluView Interactive](#) (<https://web.archive.org/web/20221220000255/https://gis.cdc.gov/GRASP/Fluview/PedFluDeath.html>)

Additional National and International Influenza Surveillance Information

FluView Interactive: FluView includes enhanced web-based interactive applications that can provide dynamic visuals of the influenza data collected and analyzed by CDC. These [FluView Interactive applications](https://web.archive.org/web/20221220000255/http://www.cdc.gov/flu/weekly/fluviewinteractive.htm) allow people to create customized, visual interpretations of influenza data, as well as make comparisons across flu seasons, regions, age groups and a variety of other demographics.

National Institute for Occupational Safety and Health: Monthly surveillance data on the prevalence of health-related workplace absenteeism among full-time workers in the United States are available from NIOSH (<https://web.archive.org/web/20221220000255/https://www.cdc.gov/niosh/topics/absences/default.html>).

U.S. State and local influenza surveillance: Select a jurisdiction below to access the latest local influenza information.

Alabama	Alaska
Colorado	Connecticut
Georgia	Hawaii
Iowa	Kansas
Maryland	Massachusetts
Missouri	Montana
New Jersey	New Mexico

Ohio (<https://web.archive.org/web/20221220000255/http://www.flu.ohio.gov/>)

Oklahoma (<https://web.archive.org/web/20221220000255/https://oklahoma.gov/education/acute-disease-service/disease-information/influenza-home-page.html>)

South Carolina

(<https://web.archive.org/web/20221220000255/http://www.scdhec.gov/Health/DiseasesandConditions/InfectiousDiseases/Flu/FluData/>)

South Dakota

(<https://web.archive.org/web/20221220000255/https://doh.sd.gov/diseases/infec>)

Vermont (<https://web.archive.org/web/20221220000255/http://www.healthvermont.gov/immunizations-infectious-disease/influenza/flu-activity-and-surveillance>)

Virginia (<https://web.archive.org/web/20221220000255/http://www.vdh.virginia.gov/in-virginia/influenza-surveillance/>)

Wyoming (<https://web.archive.org/web/20221220000255/https://health.wyo.gov/publichealth/infectious-disease-epidemiology-unit/disease/influenza/>)

New York City (<https://web.archive.org/web/20221220000255/http://www1.nyc.gov/topics/flu-alerts.page>)

World Health Organization:

Additional influenza surveillance information from participating WHO member nations is available through

FluNet [FluNet](https://web.archive.org/web/20221220000255/https://www.who.int/tools/flunet) (<https://web.archive.org/web/20221220000255/https://www.who.int/tools/flunet>) and the Global Epidemiology Reports. [FluNet](https://web.archive.org/web/20221220000255/https://www.who.int/teams/global-influenza-programme/surveillance-and-monitoring/influenza-surveillance-outputs) (<https://web.archive.org/web/20221220000255/https://www.who.int/teams/global-influenza-programme/surveillance-and-monitoring/influenza-surveillance-outputs>)

WHO Collaborating Centers for Influenza:

Australia [FluNet](https://web.archive.org/web/20221220000255/http://www.influenzacentre.org/Surveillance_Samples_Received.html) (https://web.archive.org/web/20221220000255/http://www.influenzacentre.org/Surveillance_Samples_Received.html), China [FluNet](https://web.archive.org/web/20221220000255/http://www.chinaivdc.cn/cnic/) (<https://web.archive.org/web/20221220000255/http://www.chinaivdc.cn/cnic/>), Japan [FluNet](https://web.archive.org/web/20221220000255/http://idsc.nih.gov/index.html) (<https://web.archive.org/web/20221220000255/http://idsc.nih.gov/index.html>), the United Kingdom [FluNet](https://web.archive.org/web/20221220000255/https://www.crick.ac.uk/research/worldwide-influenza-centre/) (<https://web.archive.org/web/20221220000255/https://www.crick.ac.uk/research/worldwide-influenza-centre/>), and the United States (<https://web.archive.org/web/20221220000255/http://www.cdc.gov/flu/>) (CDC in Atlanta, Georgia)

Europe:

The most up-to-date influenza information from Europe is available from WHO/Europe and the European Centre for Disease Prevention and Control [FluNet](https://web.archive.org/web/20221220000255/http://www.flunewseurope.org/) (<https://web.archive.org/web/20221220000255/http://www.flunewseurope.org/>).

Public Health Agency of Canada:

The most up-to-date influenza information from Canada is available in Canada's weekly FluWatch report [FluNet](https://web.archive.org/web/20221220000255/http://www.phac-aspc.gc.ca/fluwatch/) (<https://web.archive.org/web/20221220000255/http://www.phac-aspc.gc.ca/fluwatch/>).

Public Health England:

The most up-to-date influenza information from the United Kingdom is available from Public Health England [FluNet](https://web.archive.org/web/20221220000255/http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SeasonalInfluenza/) (<https://web.archive.org/web/20221220000255/http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/SeasonalInfluenza/>).

Any links provided to non-Federal organizations are provided solely as a service to our users. These links do not constitute an endorsement of these organizations or their programs by CDC or the Federal Government, and none should be inferred. CDC is not responsible for the content of the individual organization web pages found at these links.⁹

A description of the CDC influenza surveillance system, including methodology and detailed descriptions of each data component is available on the [surveillance methods](https://web.archive.org/web/20221220000255/http://www.cdc.gov/flu/weekly/overview.htm) [surveillance methods](https://web.archive.org/web/20221220000255/http://www.cdc.gov/flu/weekly/overview.htm) (<https://web.archive.org/web/20221220000255/http://www.cdc.gov/flu/weekly/overview.htm>) page.

Last Reviewed: December 16, 2022, 11:00 AM