

# FLUWATCH

December 4 to December 10, 2022  
(Week 49)



## Weekly Highlights

- At the national level, influenza continues to circulate at peak levels. Most surveillance indicators are steady, with some reporting small decreases from the previous week. Almost all indicators are still above expected levels typical of this time of year.

### Virologic

- In week 49, a total of 9,393 laboratory detections (9,365 influenza A and 28 influenza B) were reported.
- Among subtyped influenza A detections in week 49, 95% (1,685) were influenza A(H3N2) and 5% (87) were influenza A(H1N1).
- Among detections for which age information was reported in week 49 (5,690), 38% (2,156) of detections were in individuals aged 0-19 years old, down slightly from 41% (2,454) in week 48.

### Syndromic

- The percentage of visits for influenza-like illness (ILI) was 4.0% in week 49. The percentage visits for ILI is above levels typical of this time of year.
- The percentage of FluWatchers reporting fever and cough was 2.7% in week 49. The percentage of FluWatchers reporting cough and fever is within expected seasonal levels.

### Outbreaks

- From August 28, 2022 to December 10, 2022 (weeks 35 to 49), 349 laboratory-confirmed influenza outbreaks have been reported.

### Severe Outcomes

- The IMPACT network continues to report elevated weekly numbers of influenza-associated hospitalizations among the pediatric population. In week 49, 208 influenza-associated hospitalizations were reported.
- The highest cumulative hospitalization rates are among children under 5 years of age (76/100,000 population) and adults 65 years of age and older (71/100,000 population).

### Other Notes

- This is the last FluWatch report of the 2022 calendar year. The next FluWatch report will be published on January 6, 2023 and will include data for weeks 50-52.
- The [Respiratory Virus Detection Report](#) for week 50 will be available December 22, 2022.

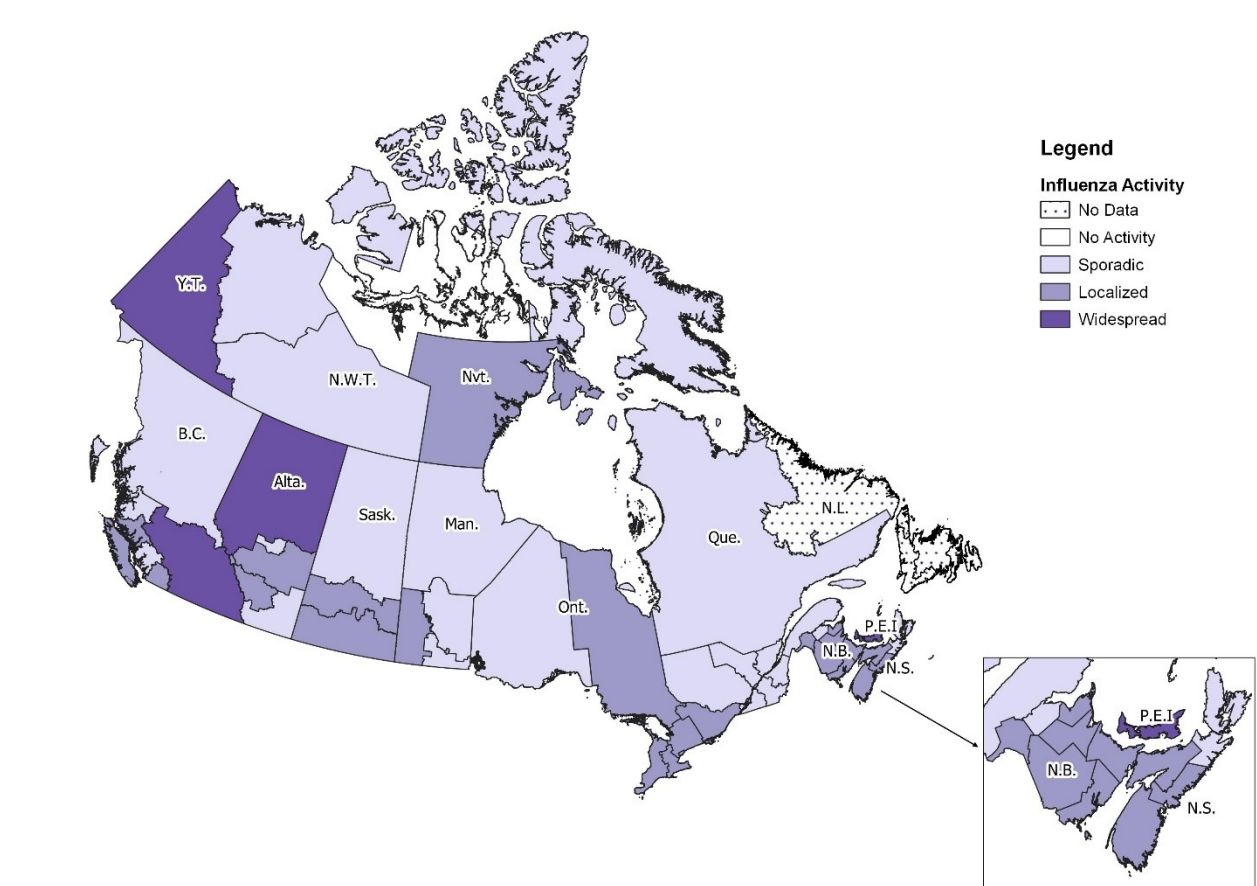


# Influenza/Influenza-like Illness Activity – Geographic Spread

In week 49, almost all regions in Canada reported influenza activity with four regions in four provinces (P.E.I., Alta., B.C., and Y.T.) reporting widespread activity (Figure 1).

**Figure 1 – Map of influenza/ILI activity by province and territory, Canada, week 2022-49**

Number of Regions Reporting in Week 49: 49 out of 53



## Laboratory-Confirmed Influenza Detections

In week 49, a total of 9,393 laboratory detections (9,365 influenza A and 28 influenza B) were reported.

The following results were reported from sentinel laboratories across Canada in week 49 (Figures 2 and 3):

- The weekly percentage of tests positive for influenza has decreased from the previous week (23.7% in week 48 to 21.5% in week 49) and remains slightly above expected pre-pandemic levels.
- Among subtyped influenza A detections, 95% (1,685) were influenza A(H3N2) and 5% (87) were influenza A(H1N1).
- Among detections for which age information was reported (5,690), 2,156 (38%) of detections were in individuals aged 0-19 years old. The proportion of detections among individuals aged 0-19 years old has been slowly decreasing, whereas the proportion among adults, particularly seniors aged 65+ (27%) has been increasing in recent weeks.

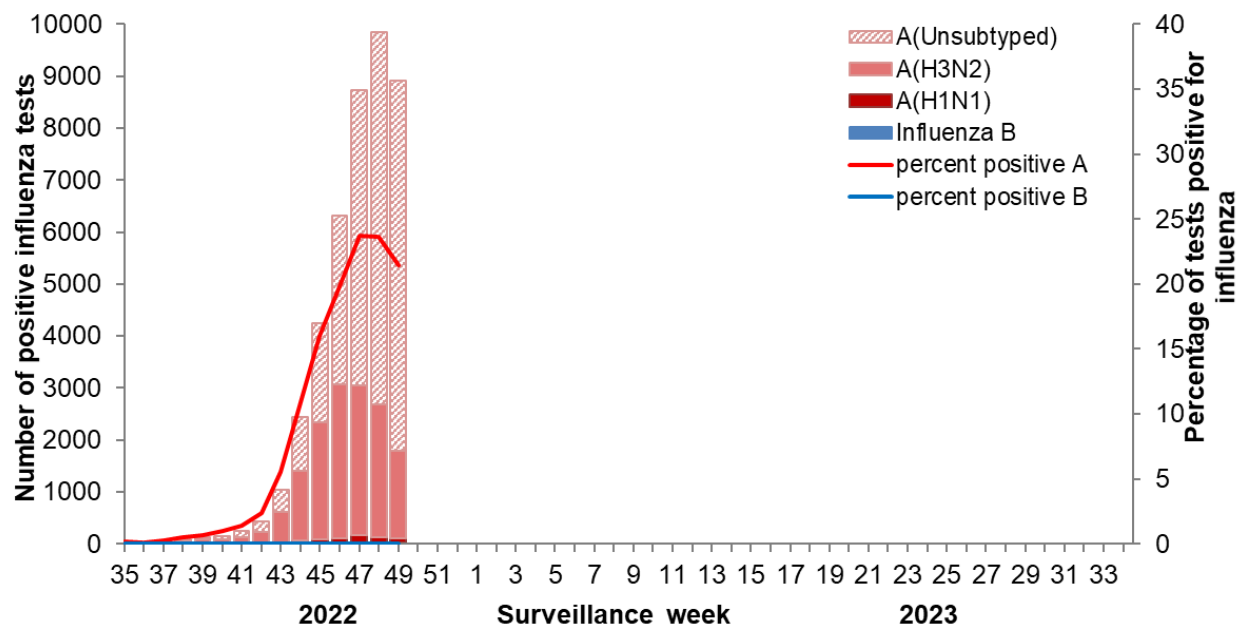
To date this season (August 28, 2022 to December 10, 2022):

- 44,354 influenza detections were reported, of which 99% (44,225) were influenza A and among subtyped influenza A detections (15,472), influenza A(H3N2) accounted for 96% of detections.
- 27,160 laboratory-confirmed influenza detections with age information were reported, of which 12,309 (45%) were in individuals aged 0-19 years old (Figure 4).

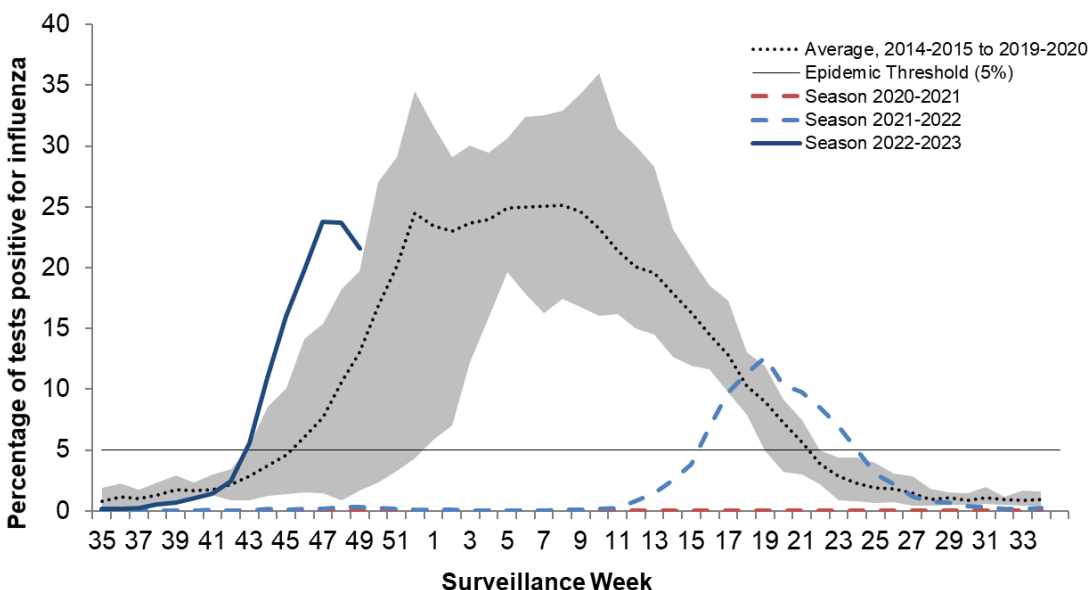
For more detailed weekly and cumulative influenza data, see the text descriptions for [Figures 2 and 3](#) or the [Respiratory Virus Detections in Canada Report](#).

**Figure 2 – Number of positive influenza tests and percentage of tests positive, by type, subtype and report week, Canada, week 2022-35 to 2022-49**

Number of Laboratories Reporting in Week 49: 34 out of 35



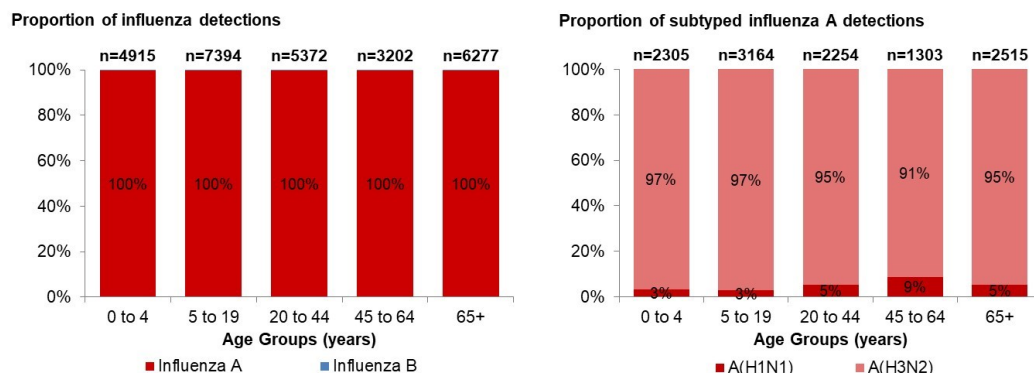
**Figure 3 –Percentage of tests positive in Canada compared to previous seasons, week 2022-35 to 2022-49**



The shaded area represents the maximum and minimum number of influenza tests or percentage of tests positive reported by week from seasons 2014-2015 to 2019-2020. Data from week 11 of the 2019-2020 season onwards are excluded from the historical comparison due to the COVID-19 pandemic.

The epidemic threshold is 5% tests positive for influenza. When it is exceeded, and a minimum of 15 weekly influenza detections are reported, a seasonal influenza epidemic is declared.

**Figure 4 – Proportion of positive influenza specimens by type or subtype and age-group reported through case-based laboratory reporting, Canada, week 2022-35 to 2022-49**



**Laboratory data notes:**

Testing for influenza and other respiratory viruses has been influenced by the current COVID-19 pandemic. Changes in laboratory testing practices may affect the comparability of data to previous seasons.

Due to different testing protocols of laboratories across Canada, some influenza A subtype detection counts may not be included in total influenza A detection counts and percent positivity calculations.



# Syndromic / Influenza-like Illness Surveillance

## Healthcare Practitioners Sentinel Surveillance

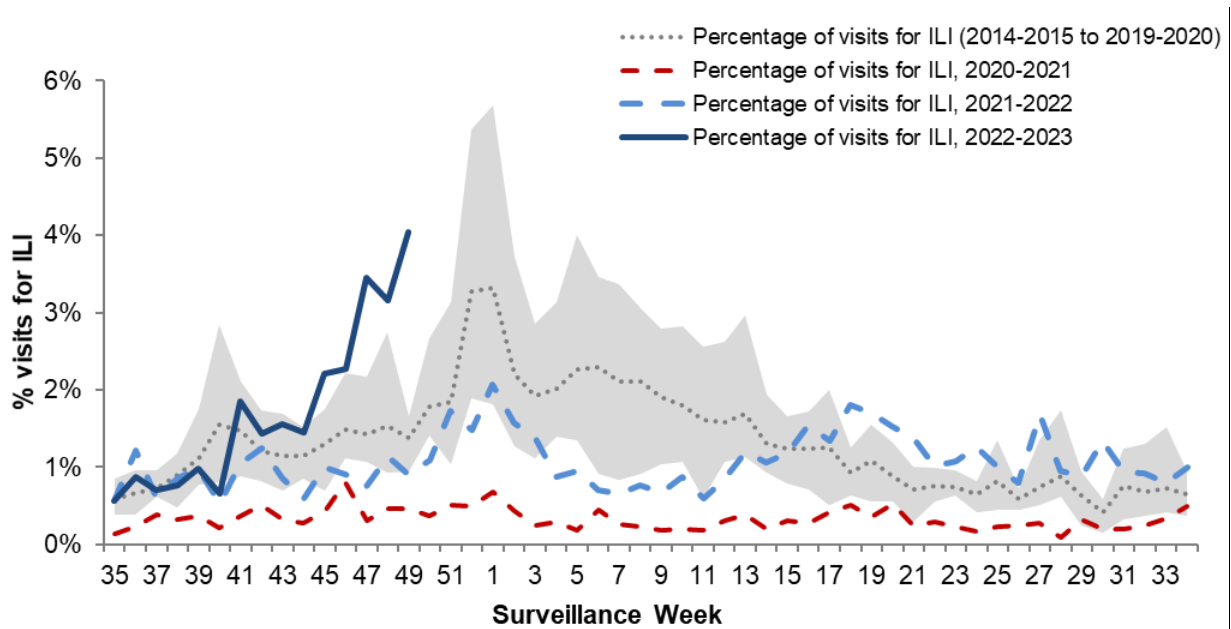
In week 49, 4.0% of visits to healthcare professionals were due to influenza-like illness (ILI) (Figure 5). The percentage of visits for ILI remains above expected levels for this time of year.

ILI symptoms are not specific to any one respiratory pathogen and can be due to influenza, or other respiratory viruses, including respiratory syncytial virus and SARS-CoV-2, the virus that causes COVID-19. This makes the percentage of visits for ILI an important indicator of overall respiratory illness morbidity in the community in the presence of co-circulating viruses.

This indicator should be interpreted with caution as there have been changes in healthcare seeking behavior of individuals and a smaller number of sentinels reporting compared to previous seasons.

**Figure 5 – Percentage of visits for ILI reported by sentinels by report week, Canada, weeks 2022-35 to 2022-49**

Number of Sentinels Reporting in Week 49: 41



The shaded area represents the maximum and minimum percentage of visits for ILI reported by week from seasons 2014-2015 to 2019-2020. Data from week 11 of the 2019-2020 season onwards are excluded from the historical comparison due to the COVID-19 pandemic.

## FluWatchers

In week 49, 10,772 participants reported to FluWatchers, of which 2.7% reported symptoms of cough and fever (Figure 6). The percentage of FluWatchers who have reported cough and fever is within seasonal levels.

The reports of cough and fever are not specific to any one respiratory pathogen and can be due to influenza, or other respiratory viruses, including respiratory syncytial virus, rhinovirus, and SARS-CoV-2, the virus that causes COVID-19. This makes the proportion of individuals reporting cough and fever an important indicator of overall respiratory illness activity in the community in the presence of co-circulating viruses.

FluWatchers reporting is not impacted by changes in health services or health seeking behaviours.

Among the 287 participants who reported cough and fever:

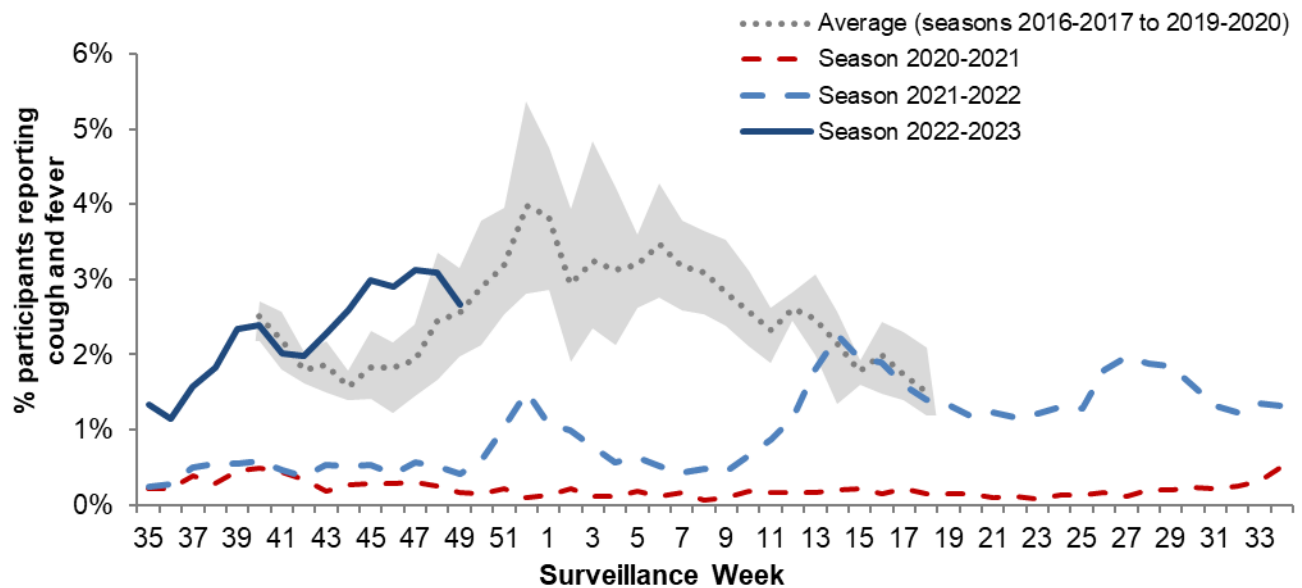
- 26% consulted a healthcare professional;
- 84% reported days missed from work or school, resulting in an average of 3.1 missed days from work or school among those 242 participants.

The Northwest Territories had the highest participation rate this week (51 participants per 100,000 population) and the neighbourhood with postal code, K0A had the highest number of participants (148). See what is happening in your [neighbourhood](#)! Downloadable datasets are also available on [Open Maps](#).

If you are interested in becoming a [FluWatcher](#), [sign up today](#).

**Figure 6 – Percentage of FluWatchers reporting cough and fever, Canada, week 2022-35 to 2022-49**

Number of Participants Reporting in Week 49: 10,772



The shaded area represents the maximum and minimum percentage of percentage of participants reporting cough and fever by week, from seasons 2014-2015 to 2019-2020. Data from week 11 of the 2019-2020 season onwards are excluded from the historical comparison due to the COVID-19 pandemic

## Influenza Outbreak Surveillance

In week 49, 58 laboratory-confirmed influenza outbreaks were reported in Canada (35 in long-term care facilities (LTC), 15 in facilities categorized as ‘other’, and 8 in acute care facilities). All but one outbreaks were due to influenza A. 28 ILI outbreaks were reported (26 in schools/daycares and 2 in facilities categorized as ‘other’).

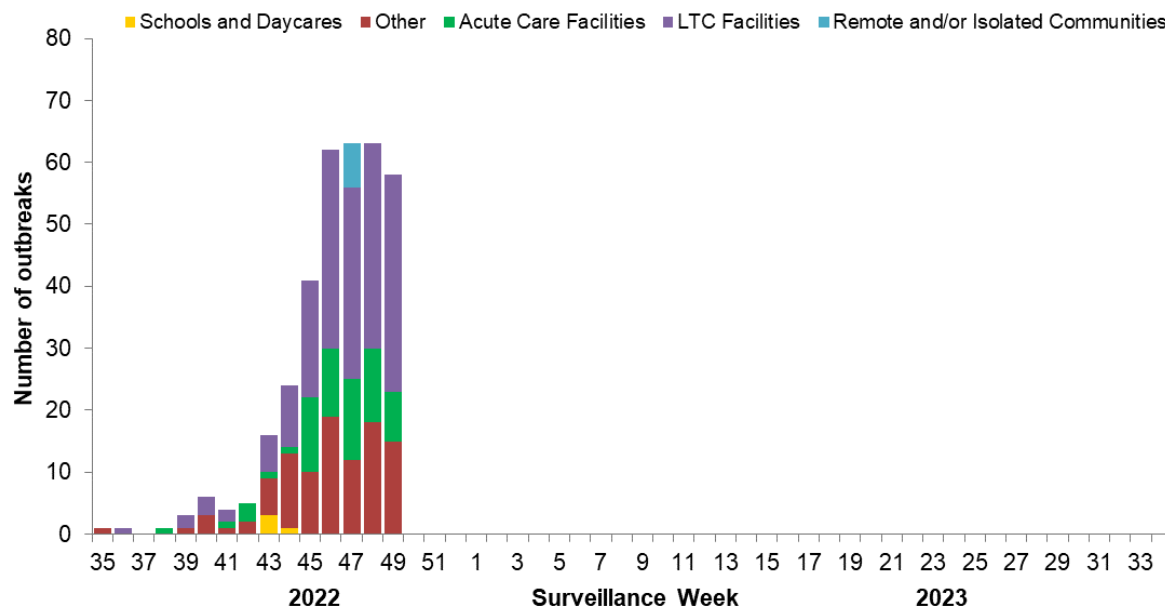
To date this season (August 28, 2022 to December 10, 2022):

- 349 laboratory-confirmed influenza outbreaks have been reported
  - 175 were in LTC facilities (50%)
  - 100 were in facilities categorized as ‘other’ (29%)
  - 63 were in acute care facilities (18%)
  - 7 were in remote and/or isolated communities (2%)
  - 4 were in schools/daycares (1%)
  - All but one outbreak was due to influenza A
- 213 ILI outbreaks have been reported
  - All but 2 ILI outbreaks have been reported in schools and/or daycares.

Outbreaks of ILI are not specific to any one respiratory pathogen and can be due influenza, or other respiratory viruses, including respiratory syncytial virus, rhinovirus, COVID-19, or a mixture of viruses. Many respiratory viruses in addition to the flu commonly circulate during the fall and winter, and can cause clusters of cases with respiratory illness which could be captured as ILI.

Number of provinces and territories<sup>1</sup> reporting in week 49: 12 out of 13

**Figure 7: Number of new outbreaks of laboratory-confirmed influenza by report week, Canada, weeks 2022-35 to 2022-49**



<sup>1</sup>All Provinces and Territories (PTs) participate in the FluWatch outbreak surveillance system. This outbreak system monitors influenza and ILI outbreaks in long-term care facilities (LTCF), acute care facilities, schools and daycares, remote and/or isolated communities, and facilities categorized as ‘other’. Not all reporting PTs report outbreaks in all these settings. All PTs report laboratory confirmed outbreaks in LTCF. Four PTs (NB, NL, NS and YK) report ILI outbreaks in schools and/or daycares and other facilities.

# Influenza Severe Outcomes Surveillance

## Provincial/Territorial Influenza Hospitalizations and Deaths

In week 49, 303 influenza-associated hospitalizations and 24 ICU admissions were reported by participating provinces and territories<sup>2</sup>. This week, nine influenza-associated deaths were reported.

To date this season 2,297 influenza-associated hospitalizations were reported (August 28, 2022 to December 10, 2022) by participating provinces and territories:

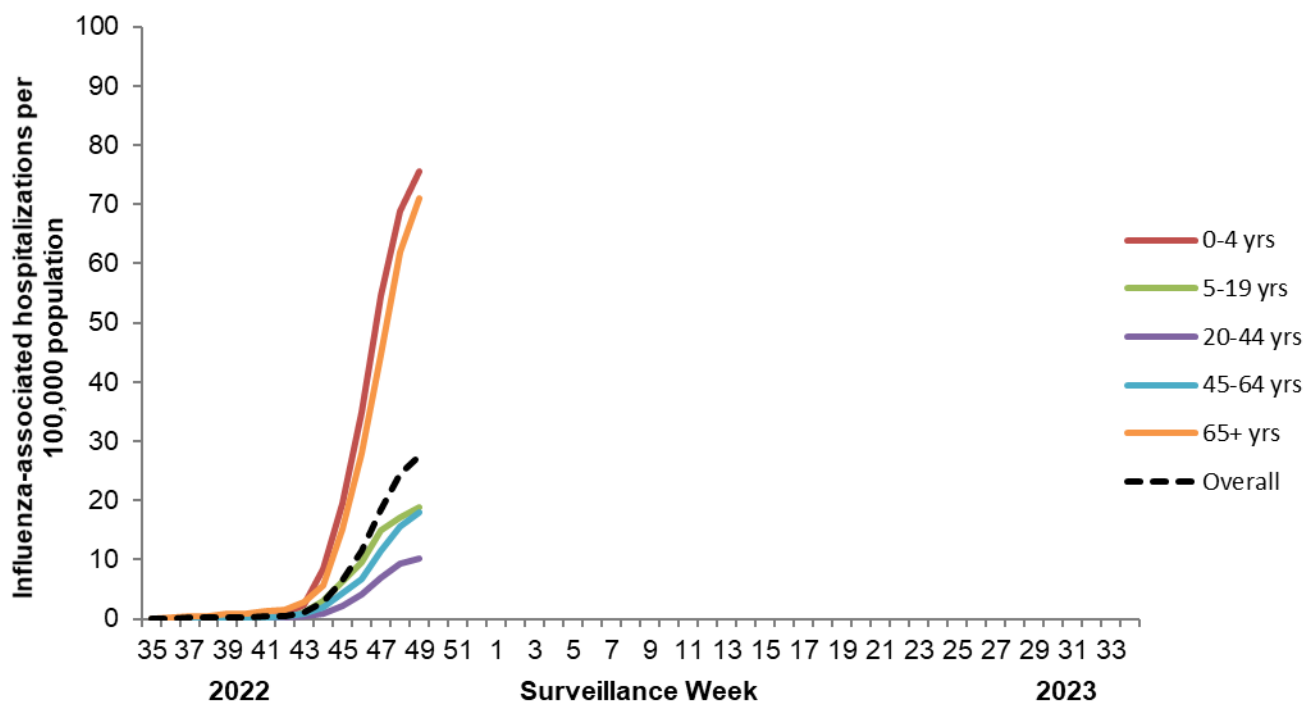
- >99% of the hospitalizations were associated with influenza A.
- Of the cases with subtype information (1,335), 93% were associated with influenza A(H3N2)
- The highest cumulative hospitalization rates up to week 49 were among children under 5 years of age (76/100,000 population) and adults 65 years of age and older (71/100,000 population).

To date this season (August 28, 2022 to December 10, 2022), 214 ICU admissions and 99 influenza-associated deaths were reported.

Number of provinces and territories reporting in week 49: 9 out of 9

<sup>2</sup>Influenza-associated hospitalizations are reported by Alberta, Manitoba, New Brunswick, Newfoundland and Labrador, Northwest Territories, Nova Scotia, Prince Edward Island and Yukon. Only hospitalizations that require intensive medical care are reported by Saskatchewan.

**Figure 8 – Cumulative rates of influenza-associated hospitalizations by age-group and surveillance week, Canada, participating provinces and territories, week 2022-35 to 2022-49**





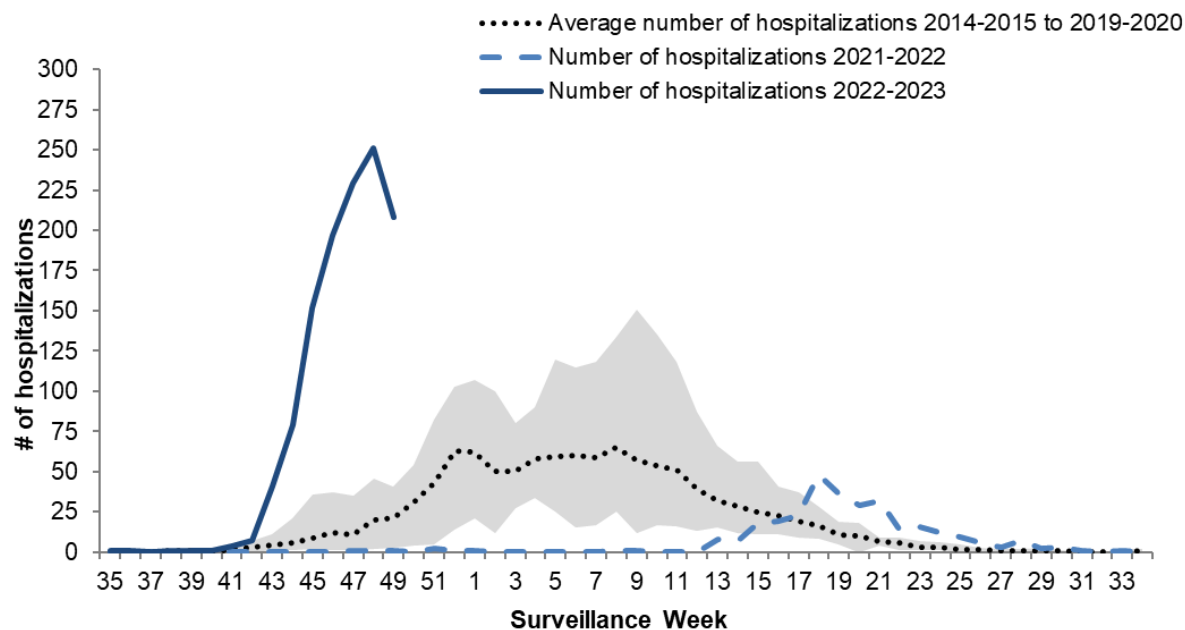
## Pediatric Influenza Hospitalizations and Deaths

In week 49, 208 influenza-associated pediatric ( $\leq 16$  years of age) hospitalizations and 21 ICU admissions were reported by the Immunization Monitoring Program Active (IMPACT) network. The number of weekly influenza-associated hospitalizations remains well above levels typical of this time of year but has decreased from the previous week (from 251 in week 48) (Figure 9). All but two hospitalisations reported in week 49 were associated with influenza A.

To date this season (August 28, 2022 to December 10, 2022):

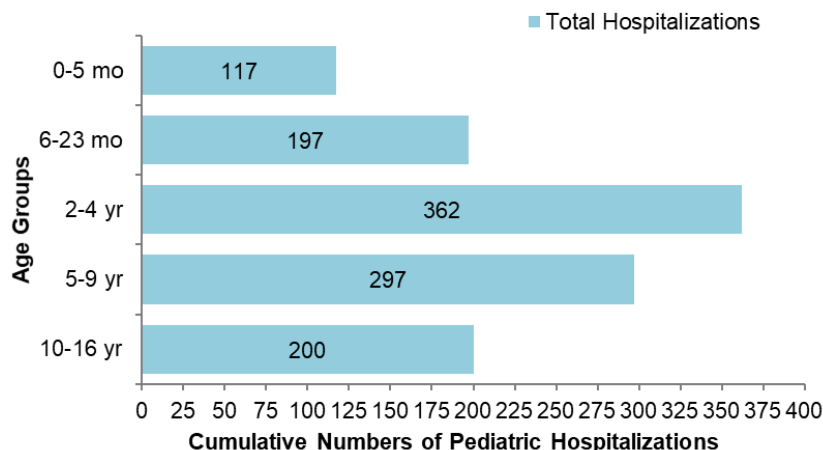
- 1,173 pediatric influenza-associated hospitalizations have been reported.
- Children aged between 2-4 years and 5-9 years account for more than 55% of the reported pediatric hospitalizations (Figure 10).
- 154 ICU admissions were reported; children aged between 2-4 years and 5-9 years account for more than 50% of the reported pediatric ICU admissions.
- 5 influenza-associated pediatric deaths have been reported.

**Figure 9 – Number of pediatric ( $\leq 16$  years of age) hospitalizations reported by the IMPACT network, by week, Canada, week 2022-35 to 2022-49**



The shaded area represents the maximum and minimum number of hospitalizations, from seasons 2014-2015 to 2019-2020. Data from week 11 of the 2019-2020 season onwards are excluded from the historical comparison due to the COVID-19 pandemic.

**Figure 10 – Cumulative numbers of pediatric hospitalizations (≤16 years of age) with influenza by age-group reported by the IMPACT network, Canada, week 2022-35 to 2022-49**



## Influenza Strain Characterization

Since September 1, 2022, the National Microbiology Laboratory (NML) has characterized 134 influenza viruses (122 A(H3N2), 12 A(H1N1)) received from Canadian laboratories.

### Genetic Characterization of Influenza A(H3N2)

One influenza A(H3N2) virus did not grow to sufficient hemagglutination titers for antigenic characterization by hemagglutination inhibition (HI) assays. Therefore, NML has performed genetic characterization to determine the genetic group identity of this virus.

Sequence analysis of the HA gene of the virus showed that it belonged to genetic group 3C.2a1b.2a2.

A/Darwin/6/2021 (H3N2)-like virus is an influenza A/H3N2 component of the 2022-23 Northern Hemisphere influenza vaccine and belongs to genetic group 3C.2a1b.2a2.

### Antigenic Characterization

#### Influenza A(H3N2)

- 122 influenza A (H3N2) viruses were characterized as antigenically similar to A/Darwin/6/2021 (H3N2)-like virus with antisera raised against cell-grown A/Darwin/6/2021 (H3N2)-like virus.
  - A/Darwin/6/2021 (H3N2)-like virus is an influenza A/H3N2 component of the 2022-23 Northern Hemisphere influenza vaccine.
- Of the 122 influenza A (H3N2) viruses characterized, 106 belonged to genetic group 3C.2a1b.2a2. Sequences are pending for the remaining viruses.

#### Influenza A(H1N1)

- 12 influenza A (H1N1) viruses were characterized as antigenically similar to A/Wisconsin/588/2019-like with ferret antisera produced against cell-propagated A/Wisconsin/588/2019.
  - A/Wisconsin/588/2019 is the influenza A/H1N1 component of the 2022-23 Northern Hemisphere influenza vaccine.

## Antiviral Resistance

The NML also tests influenza viruses received from Canadian laboratories for antiviral resistance.

### Oseltamivir

122 influenza viruses (112 A(H3N2) and 10 A(H1N1)) were tested for resistance to oseltamivir and it was found that:

- All influenza viruses were sensitive to oseltamivir.

### Zanamivir

122 influenza viruses (112 A(H3N2) and 10 A(H1N1)) were tested for resistance to zanamivir and it was found that:

- All influenza viruses were sensitive to zanamivir.

## Influenza Vaccine Monitoring

Vaccine monitoring refers to activities related to the monitoring of influenza vaccine coverage and effectiveness.

### Vaccine Coverage

Influenza vaccine coverage estimates for the 2022-2023 season are anticipated to be available in February or March 2023.

### Vaccine Effectiveness

Influenza vaccine effectiveness estimates for the 2022-2023 season are anticipated to be available in February or March 2023.

## Provincial and International Surveillance Links

- British Columbia – [Influenza Surveillance; Vaccine Effectiveness Monitoring](#)
- Alberta – [Respiratory Virus Surveillance](#)
- Saskatchewan – [Influenza Reports](#)
- Manitoba – [Seasonal Influenza Reports](#)
- Ontario – [Ontario Respiratory Pathogen Bulletin](#)
- Québec – [Système de surveillance de la grippe \(available in French only\)](#)
- New Brunswick – [Influenza Surveillance Reports](#)
- Prince Edward Island – [Influenza Summary](#)
- Nova Scotia – [Respiratory Watch Report](#)
- Newfoundland and Labrador – [Surveillance and Disease Reports](#)
- Yukon – [Influenza \(the Flu\)](#)
- Northwest Territories – [Influenza/ Flu Information](#)
- Nunavut – [Influenza Information](#)
- World Health Organization – [Global Influenza Programme](#)
- Pan American Health Organization – [Influenza situation report](#)
- U.S. Centers for Disease Prevention & Control (CDC) - [Weekly Influenza Summary Update](#)
- European Centre for Disease Prevention and Control – [Surveillance reports and disease data on seasonal influenza](#)
- United Kingdom – [National influenza surveillance reports](#)
- Hong Kong Centre for Health Protection - [Flu Express](#)
- Australia – [Influenza Surveillance Report and Activity Updates](#)
- New Zealand – [Influenza Dashboard](#)

## Notes

The data in the FluWatch report represent surveillance data available at the time of writing. All data are preliminary and may change as updates are received.

To learn more about the FluWatch program, see the [Overview of influenza monitoring in Canada](#) page.

For more information on the flu, see our [Flu \(influenza\)](#) web page.

***We would like to thank all the FluWatch surveillance partners participating in this year's influenza surveillance program.***

This [report](#) is available on the Government of Canada Influenza webpage.

Ce [rapport](#) est disponible dans les deux langues officielles.