

FLUWATCH

January 22 to January 28, 2023
(Week 4)



Weekly Highlights

- At the national level, influenza activity is low and continues to decline. Influenza activity is at levels typically seen in late spring/early summer.

Virologic

- In week 4, the percentage of tests positive for influenza was 1.0% and a total of 290 laboratory detections (249 influenza A and 41 influenza B) were reported. Among subtyped influenza A detections, 54% (34) were influenza A(H3N2) and 46% (29) were influenza A(H1N1).
- Among detections for which age information was reported in week 4, similar proportions of detections (26%) were in individuals aged 20 to 44 years old and 65+ years old.

Syndromic

- The percentage of visits for influenza-like illness (ILI) was 1.2% in week 4. The percentage visits for ILI is below levels typical of this time of year.
- The percentage of FluWatchers reporting fever and cough was 1.2% in week 4. The percentage of FluWatchers reporting cough and fever is below levels typical of this time of year.

Outbreaks

- From August 28, 2022 to January 28, 2023 (weeks 35 to 4), 619 laboratory-confirmed influenza outbreaks have been reported (two new laboratory-confirmed influenza outbreaks were reported in week 4).

Severe Outcomes

- The highest cumulative hospitalization rate up to week 4 is among adults 65 years of age and older (127/100,000 population) and children under 5 years of age (118/100,000 population). The overall cumulative hospitalization rate this season to date is 46/100,000 population.

Other Notes

- The [Sentinel Practitioner Surveillance Network \(SPSN\)](#) has published [interim estimates of vaccine effectiveness \(VE\)](#). The 2022-2023 influenza vaccine reduced the risk of medically attended illness from the dominant circulating influenza A(H3N2) strains by 54% (95% CI: 38 to 66) This estimate is higher than what is typically reported for influenza A(H3N2) dominant seasons, where VE is often < 40%.

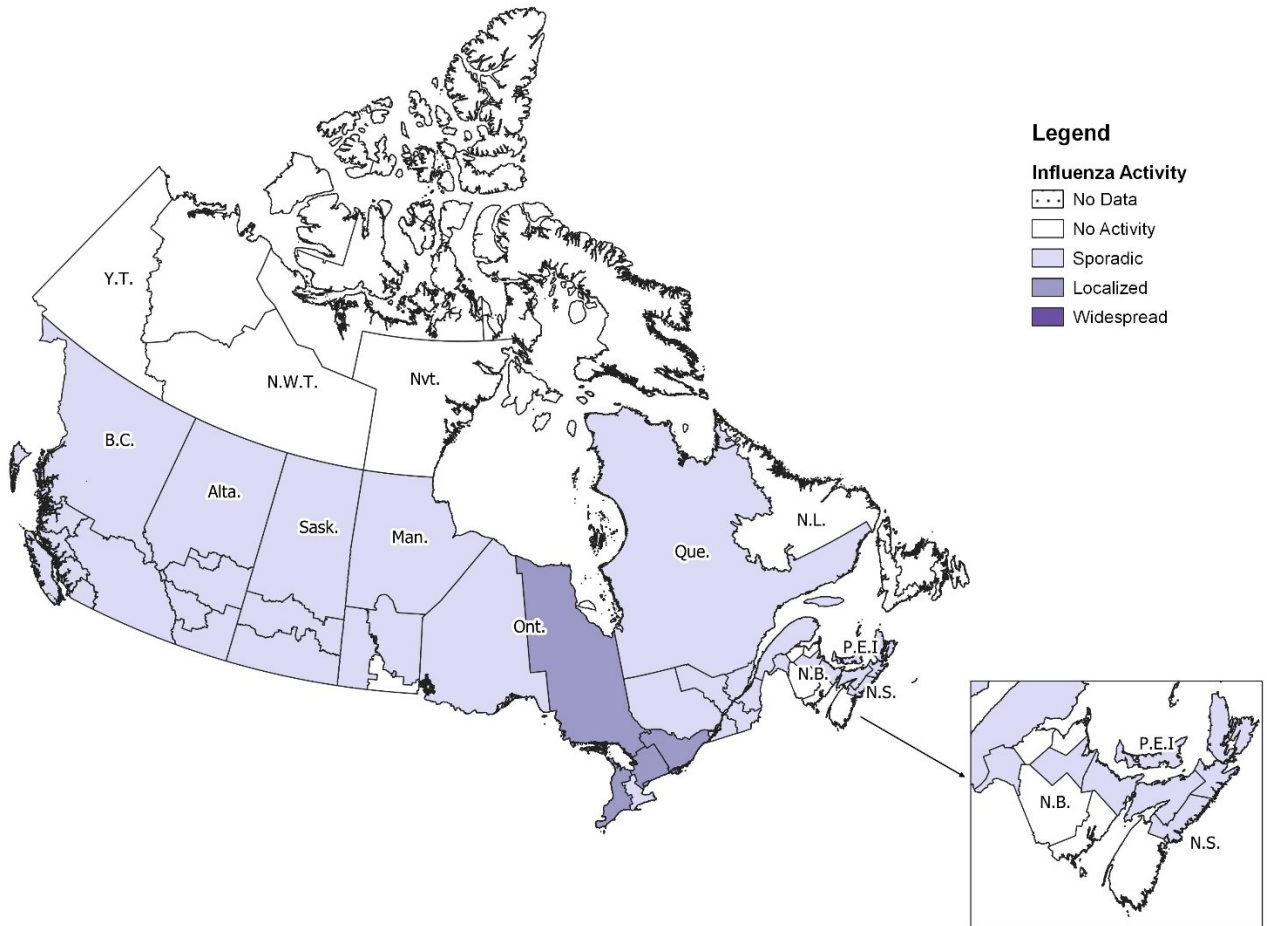


Influenza/Influenza-like Illness Activity – Geographic Spread

In week 4, 37 regions across Canada reported either sporadic or localized influenza activity (Figure 1). The number of regions reporting influenza activity and the intensity of reported activity continues to decrease week to week. A total of 16 regions in four provinces (N.S., N.L., N.B. and Man.) and territories reported no activity.

Figure 1 – Map of influenza/ILI activity by province and territory, Canada, week 2023-04

Number of Regions Reporting in Week 4: 53 out of 53



Laboratory-Confirmed Influenza Detections

In week 4, the weekly percentage of tests positive for influenza decreased from the previous week (1.5% in week 3 to 1.0% in week 4) and is at interseasonal levels.

The following results were reported from sentinel laboratories across Canada in week 4 (Figures 2 and 3):

- A total of 290 laboratory detections (249 influenza A and 41 influenza B) were reported.
- Among subtyped influenza A detections (63), 54% (34) were influenza A(H3N2) and 46% (29) were influenza A(H1N1).
- Among detections for which age information was reported (189), individuals aged 20-44 years and 65+ years old each accounted for 26% of detections.

To date this season (August 28, 2022 to January 28, 2023):

- 64,619 influenza detections were reported, of which 99% (64,281) were influenza A and among subtyped influenza A detections (20,161), influenza A(H3N2) accounted for 93% of detections.
- 45,578 laboratory-confirmed influenza detections with age information were reported, of which 18,692 (41%) 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 2023-04

Number of Laboratories Reporting in Week 4: 34 out of 35

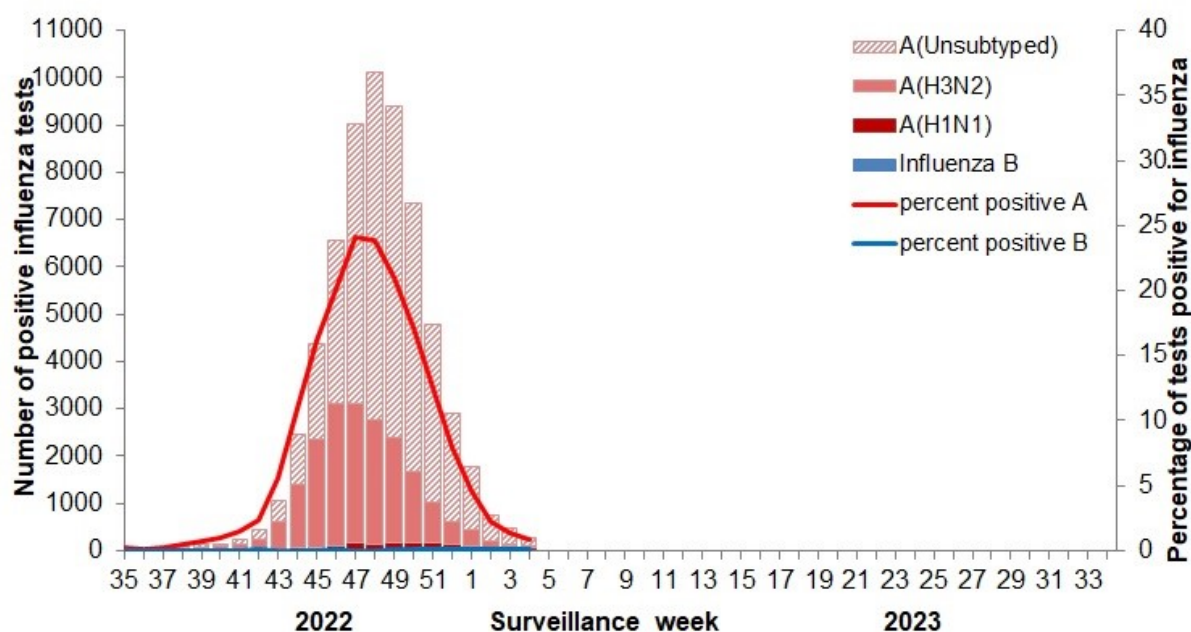
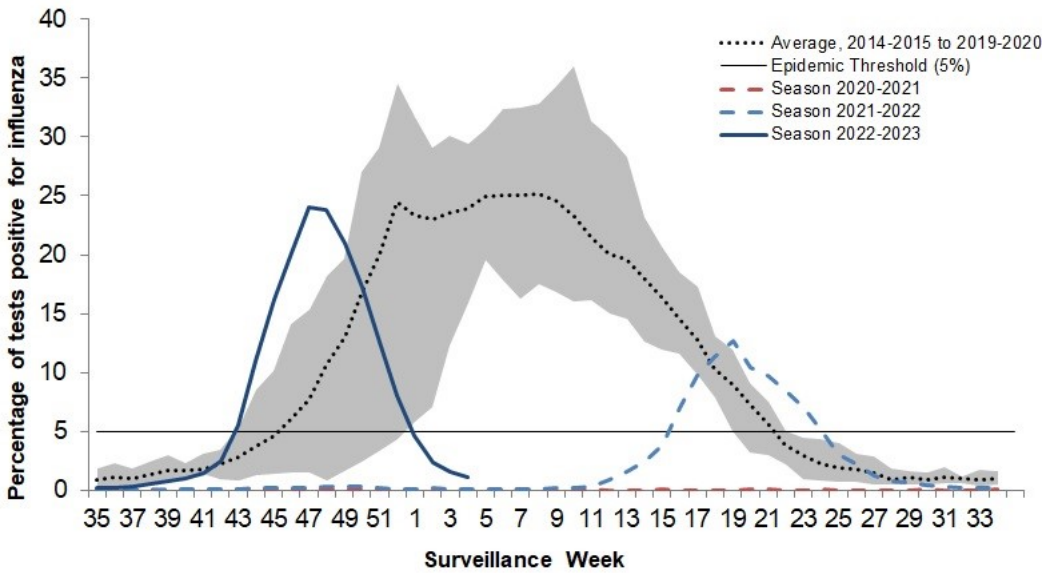


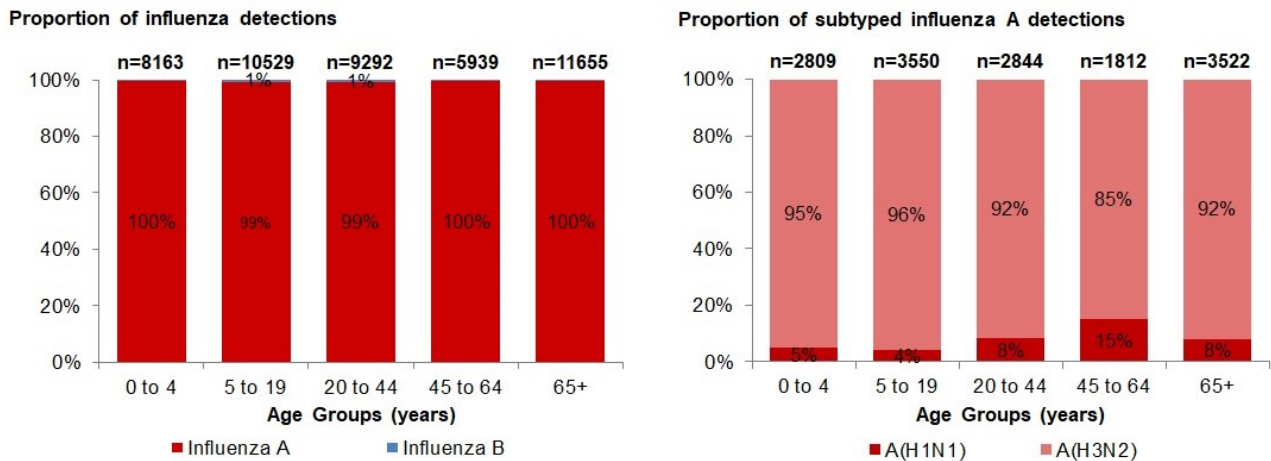
Figure 3 –Percentage of tests positive in Canada compared to previous seasons, week 2022-35 to 2023-04



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 2023-04



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

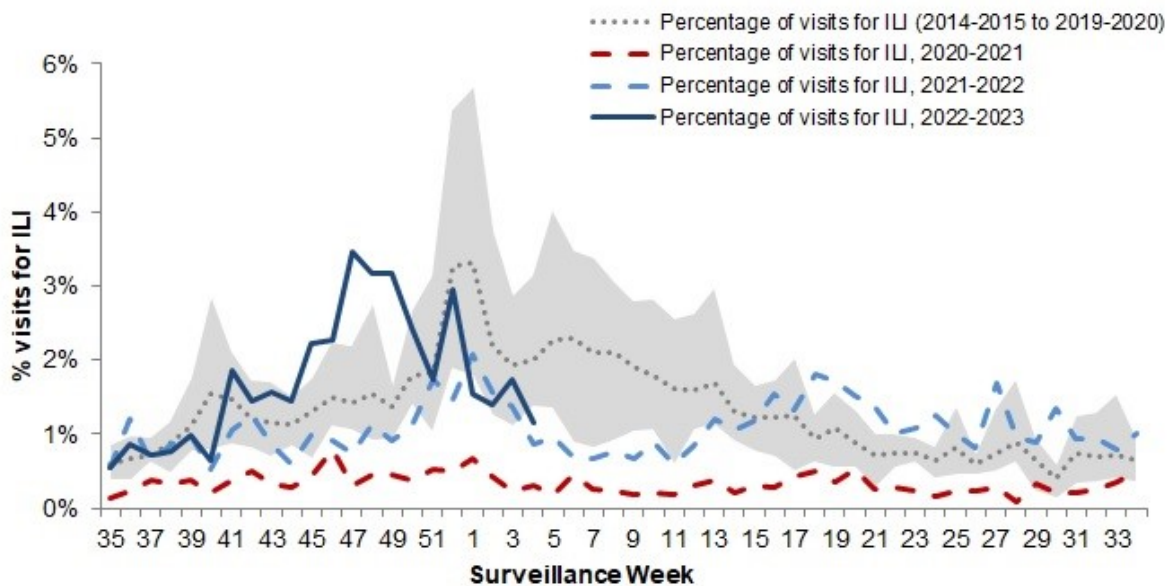
In week 4, 1.2% of visits to healthcare professionals were due to influenza-like illness (ILI) (Figure 5). The percentage of visits for ILI is below expected levels for this time of year.

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 2023-04

Number of Sentinels Reporting in Week 4: 38



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 4, 10,396 participants reported to FluWatchers, of which 1.2% reported symptoms of cough and fever (Figure 6). The percentage of FluWatchers who have reported cough and fever is well below 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 127 participants who reported cough and fever:

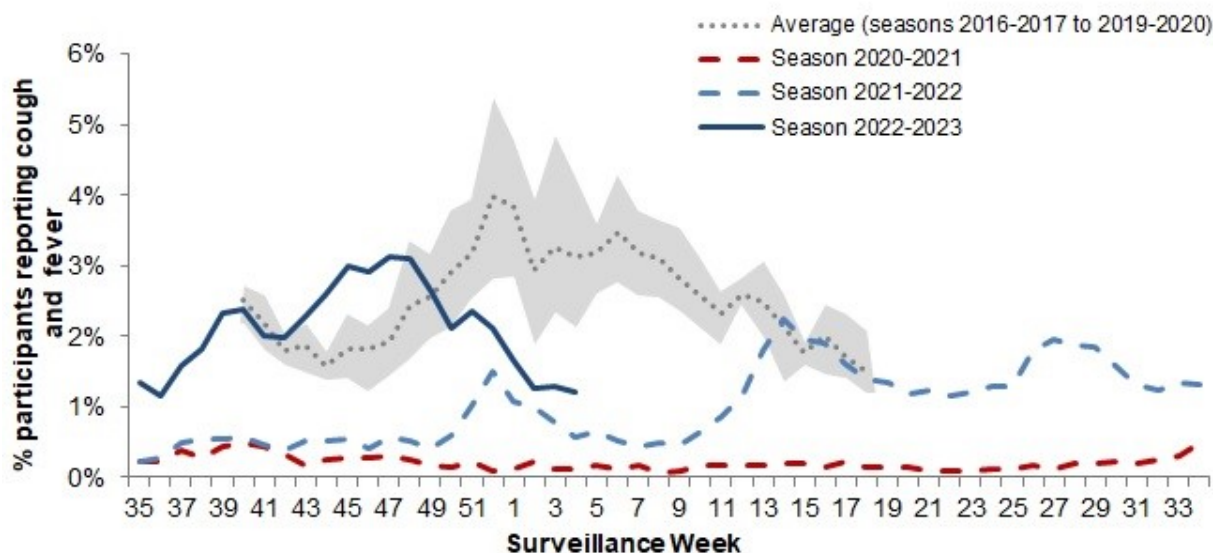
- 21% consulted a healthcare professional;
- 78% reported days missed from work or school, resulting in an average of 2.7 missed days from work or school among those 99 participants.

The Northwest Territories had the highest participation rate this week (53 participants per 100,000 population) and the neighbourhood with postal code, KOA had the highest number of participants (126). 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 2023-04

Number of Participants Reporting in Week 4: 10,396



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 4, two laboratory-confirmed influenza outbreaks due to influenza A were reported (one in an acute care facility and one in a facility categorized as ‘other’).

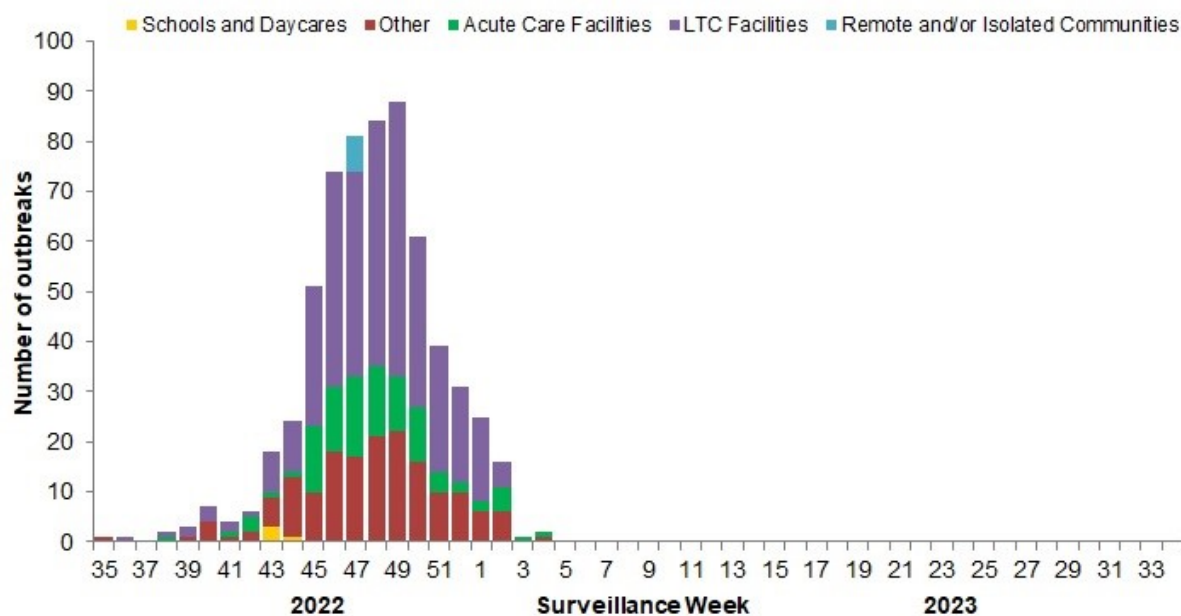
To date this season (August 28, 2022 to January 28, 2023):

- 619 laboratory-confirmed influenza outbreaks have been reported
 - 344 were in LTC facilities (56%)
 - 164 were in facilities categorized as ‘other’ (27%)
 - 100 were in acute care facilities (16%)
 - 7 were in remote and/or isolated communities (1%)
 - 4 were in schools/daycares (<1%)
 - All but two outbreaks were due to influenza A and among those with subtyping information (203), 94% were due to influenza A(H3N2)
- 254 ILI outbreaks have been reported
 - All but 3 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 territories¹ reporting in week 4: 13 out of 13

Figure 7: Number of new outbreaks of laboratory-confirmed influenza by report week, Canada, weeks 2022-35 to 2023-04



¹All 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 4, 12 influenza-associated hospitalizations and less than five ICU admissions were reported by participating provinces and territories².

To date this season 3,866 influenza-associated hospitalizations were reported (August 28, 2022 to January 28, 2023) by participating provinces and territories:

- >99% of the hospitalizations were associated with influenza A.
- Of the cases with subtype information (1,986), 89% were associated with influenza A(H3N2)
- The highest cumulative hospitalization rates up to week 4 were among adults 65 years of age and older (127/100,000 population) and children under 5 years of age (118/100,000 population).

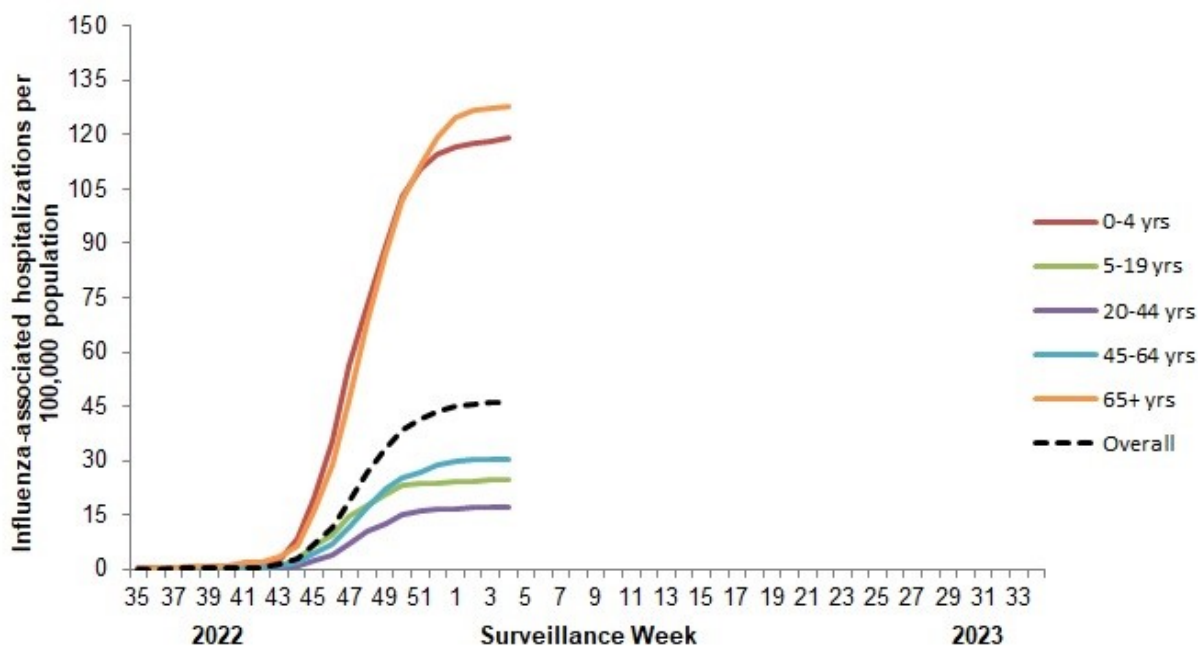
To date this season (August 28, 2022 to January 28, 2023), 327 ICU admissions and 249 influenza-associated deaths were reported.

- Adults aged 45-64 years of age and 65 years of age and older accounted for 29% and 32% of reported ICU admissions respectively.
- Adults aged 65 years of age and older accounted for 77% of reported deaths.

Number of provinces and territories reporting in week 4: 9 out of 9

²Influenza-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 2023-04



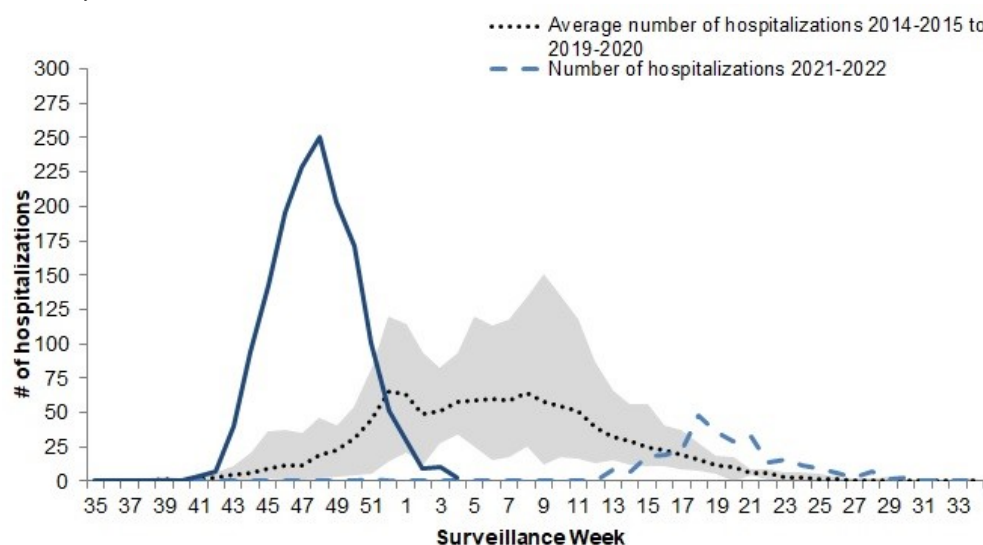
Pediatric Influenza Hospitalizations and Deaths

In week 4, less than five influenza-associated pediatric (≤ 16 years of age) hospitalizations and less than five ICU admissions were reported by the Immunization Monitoring Program Active (IMPACT) network (Figure 9). All but one hospitalization reported in week 4 was associated with influenza A. No influenza-associated pediatric deaths have been reported since week 51 (end of December).

To date this season (August 28, 2022 to January 28, 2023):

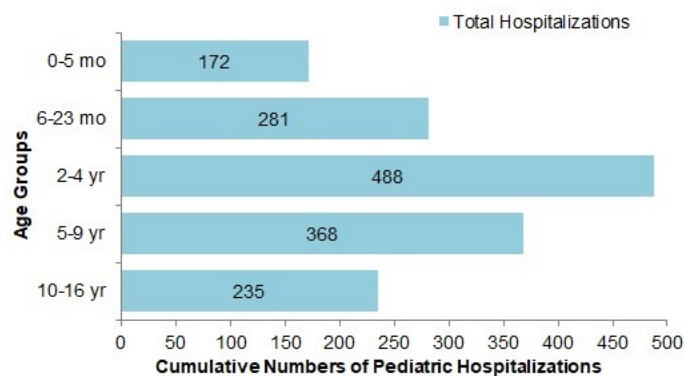
- 1,544 pediatric influenza-associated hospitalizations have been reported.
- Children aged between 2-4 years and 5-9 years account for 55% of the reported pediatric hospitalizations (Figure 10).
- 197 ICU admissions were reported; children aged between 2-4 years and 5-9 years account 52% of the reported pediatric ICU admissions.
- 8 influenza-associated pediatric deaths have been reported.

Figure 9 – Number of pediatric (≤ 16 years of age) hospitalizations reported by the IMPACT network, by week, Canada, week 2022-35 to 2023-04



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 2023-04



Influenza Strain Characterization

Since September 1, 2022, the National Microbiology Laboratory (NML) has characterized 295 influenza viruses (273 A(H3N2), 22 A(H1N1)) received from Canadian laboratories.

Genetic Characterization of Influenza A(H3N2)

Four influenza A(H3N2) viruses 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 these viruses.

Sequence analysis of the HA genes of the viruses showed that they 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)

- Of the 269 influenza A (H3N2) viruses characterized, 263 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. Six viruses showed reduced titer 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.
- The 269 influenza A(H3N2) viruses characterized belonged to genetic group 3C.2a1b.2a2.

Influenza A(H1N1)

- 22 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

261 influenza viruses (241 A(H3N2) and 20 A(H1N1)) were tested for resistance to oseltamivir and it was found that:

- All influenza viruses were sensitive to oseltamivir.

Zanamivir

261 influenza viruses (241 A(H3N2) and 20 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

The Canadian [Sentinel Practitioner Surveillance Network](#) (SPSN) provides estimates of the effectiveness of the seasonal influenza vaccine in preventing medically-attended illness due to laboratory-confirmed influenza among Canadians.

Based on data collected between November 1, 2022 and January 6, 2023, vaccine effectiveness (VE) was estimated to be 54% against influenza A(H3N2). Due to the dominant circulation of influenza A(H3N2) this season, the VE estimate was only available for one influenza subtype. By age group, VE was 47% (95% CI 11 to 69) for individuals under the age of 19 years, 58% (95% CI 33 to 73) for adults aged 20-64 years and 59% (95% CI 15 to 80) for adults 65 years and older. The SPSN interim estimates are published and available [online](#).

Updated influenza VE estimates, if available, will be published at the end of the 2022-2023 influenza season.

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.

