FLUWATCH

December 11 to December 31, 2022
(Weeks 50-52)

Weekly Highlights

- At the national level, influenza continues to circulate but has declined sharply from the peak that occurred in week 47 (end of November). Most surveillance indicators are decreasing and almost all indicators are within expected levels typical of this time of year.

Virologic

- In week 52, a total of 2,841 laboratory detections (2,818 influenza A and 23 influenza B) were reported.
- Among subtyped influenza A detections in week 52, 81% (360) were influenza A(H3N2) and 19% (85) were influenza A(H1N1).
- Among detections for which age information was reported in week 52 (1,949), 40% (784) of detections were in individuals aged 65+ years old, an increase from 32% (1,062) in week 51.

Syndromic

- The percentage of visits for influenza-like illness (ILI) was 3.2% in week 52. The percentage visits for ILI is within levels typical of this time of year.
- The percentage of FluWatchers reporting fever and cough was 2.1% in week 52. The percentage of FluWatchers reporting cough and fever is below seasonal levels for the first time this season.

Outbreaks

- From August 28, 2022 to December 31, 2022 (weeks 35 to 52), 534 laboratory-confirmed influenza outbreaks have been reported.

Severe Outcomes

- The weekly number of influenza-associated hospitalizations among the pediatric population reported by the IMPACT network has declined sharply from the peak that occurred in week 48 and is within levels typical of this time of year. In week 52, 49 influenza-associated hospitalizations were reported.
- The highest cumulative hospitalization rates are among children under 5 years of age (112/100,000 population) and adults 65 years of age and older 109/100,000 population).

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Public Health Agency of Canada | Agence de la santé publique du Canada

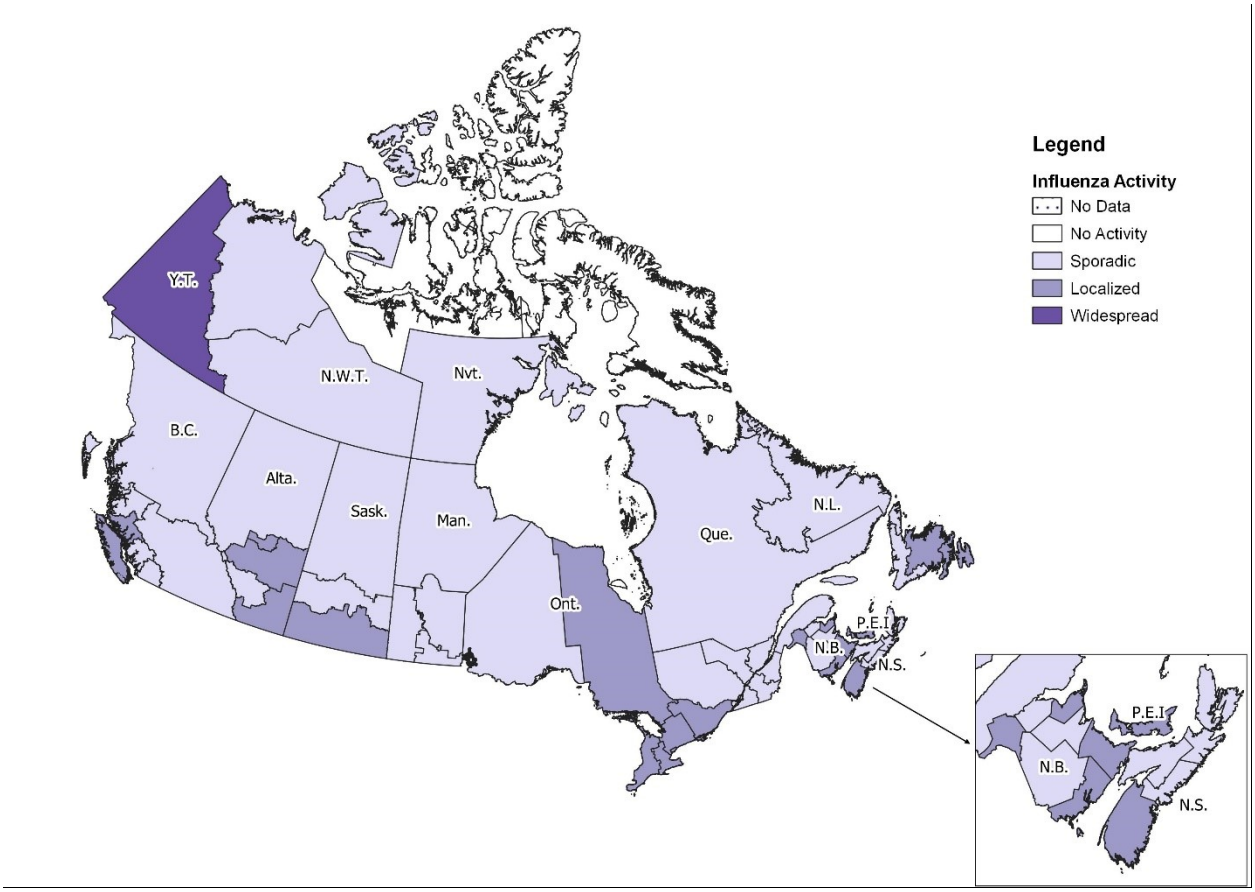
Canada

Influenza/Influenza-like Illness Activity – Geographic Spread

In week 52, almost all regions in Canada reported influenza activity with one territory (Y.T.) reporting widespread activity (Figure 1).

Figure 1 – Map of influenza/ILI activity by province and territory, Canada, week 2022-52

Number of Regions Reporting in Week 52: 53 out of 53



Laboratory-Confirmed Influenza Detections

Data for weeks 51 and 52 are considered preliminary; retroactive data updates are expected.

In week 52, a total of 2,841 laboratory detections (2,818 influenza A and 23 influenza B) were reported.

The following results were reported from sentinel laboratories across Canada in week 52 (Figures 2 and 3):

- The weekly percentage of tests positive for influenza has decreased from the previous week (13.3% in week 51 to 8.6% in week 52) and is within expected pre-pandemic levels.
- Among subtyped influenza A detections, 81% (360) were influenza A(H3N2) and 19% (85) were influenza A(H1N1).
- Among detections for which age information was reported (1,949), 784 (40%) of detections were in individuals aged 65+ years old. The proportion among adults, particularly seniors aged 65+, has increased (from 32% in week 51), whereas the proportion of detections among individuals aged 0-19 years old has decreased (33% in week 51 to 25% in week 52).

To date this season (August 28, 2022 to December 31, 2022):

- 59,459 influenza detections were reported, of which 99% (57,225) were influenza A and among subtyped influenza A detections (18,969), influenza A(H3N2) accounted for 94% of detections.
- 37,670 laboratory-confirmed influenza detections with age information were reported, of which 15,750 (42%) 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 2022-52

Number of Laboratories Reporting in Week 52: 33 out of 35

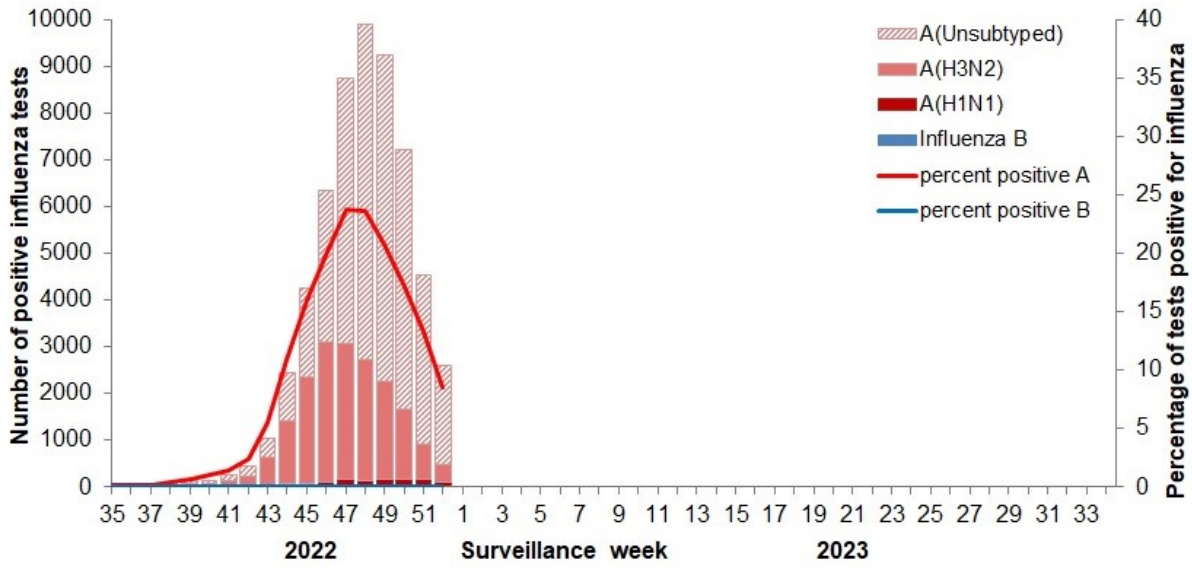
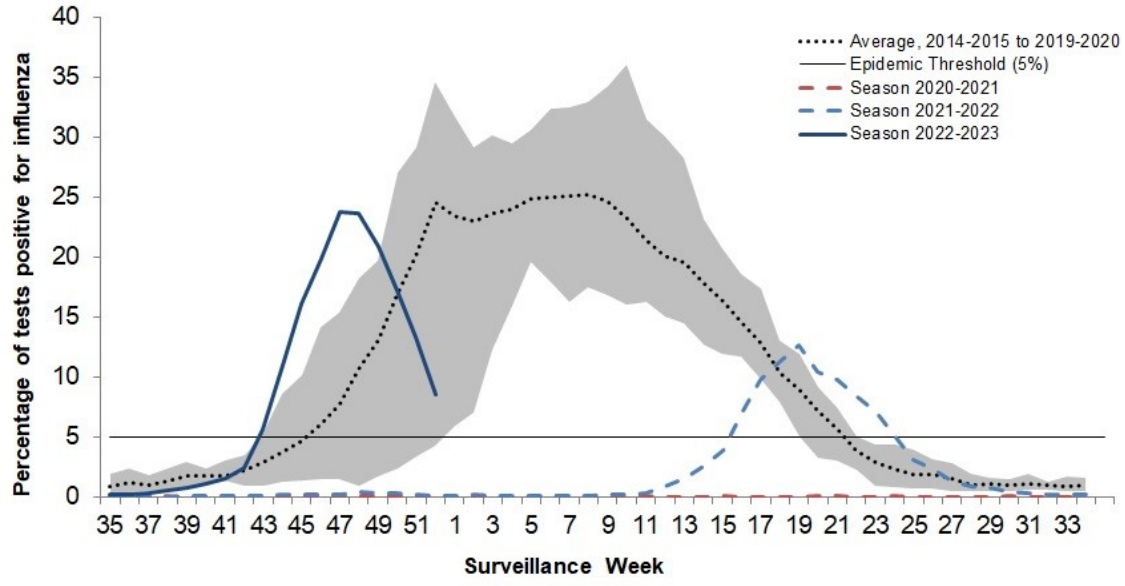


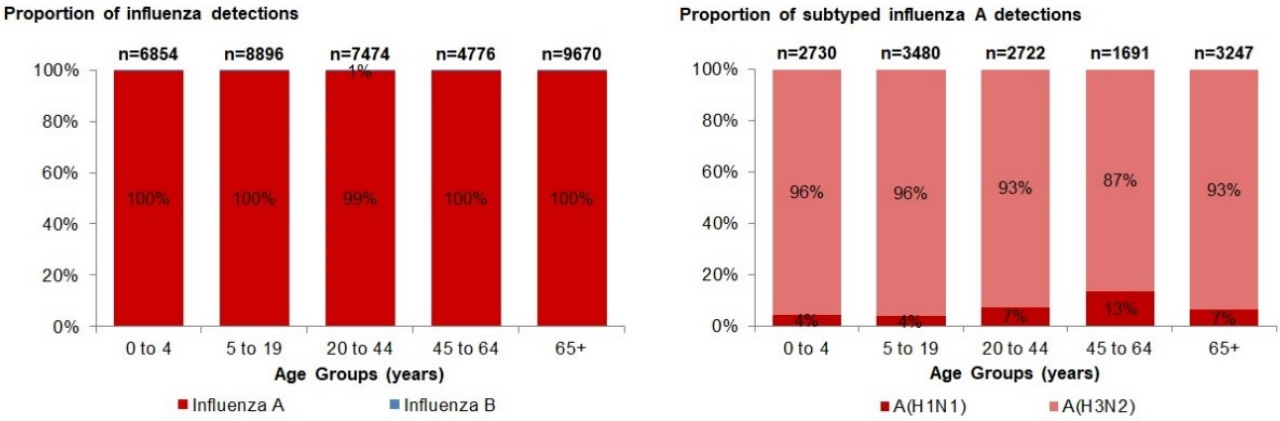
Figure 3 –Percentage of tests positive in Canada compared to previous seasons, week 2022-35 to 2022-52



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 2022-52



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

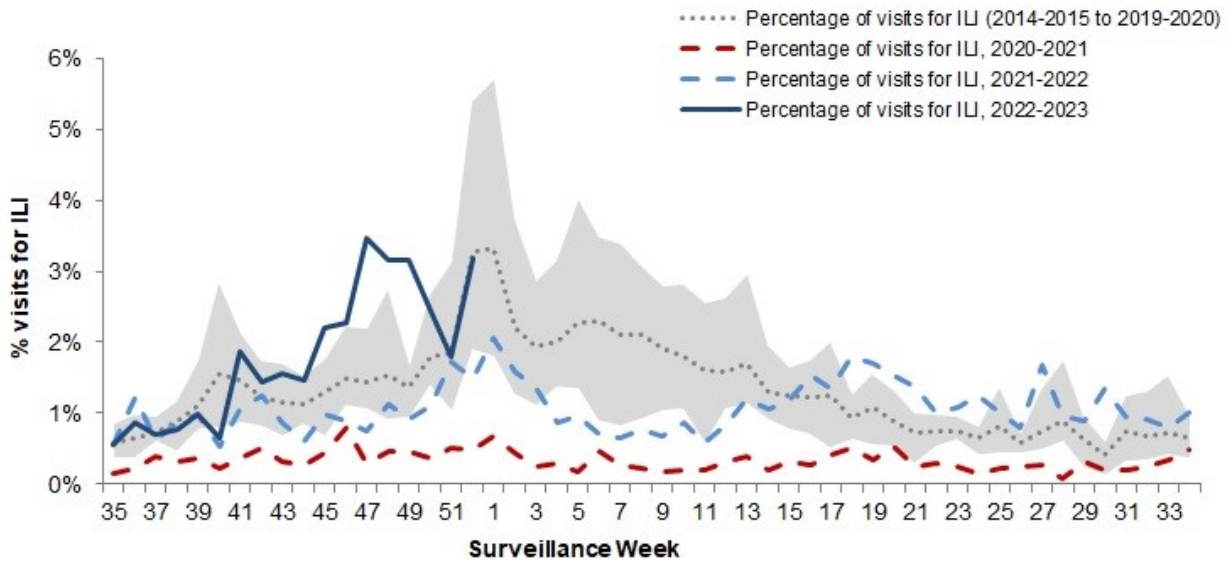
In week 52, 3.2% of visits to healthcare professionals were due to influenza-like illness (ILI) (Figure 5). The percentage of visits for ILI is within expected levels for this time of year.

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 2022-52

Number of Sentinels Reporting in Week 52: 31



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 52, 10,488 participants reported to FluWatchers, of which 2.1% reported symptoms of cough and fever (Figure 6). The percentage of FluWatchers who have reported cough and fever is below seasonal levels for the first time this season.

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 217 participants who reported cough and fever:

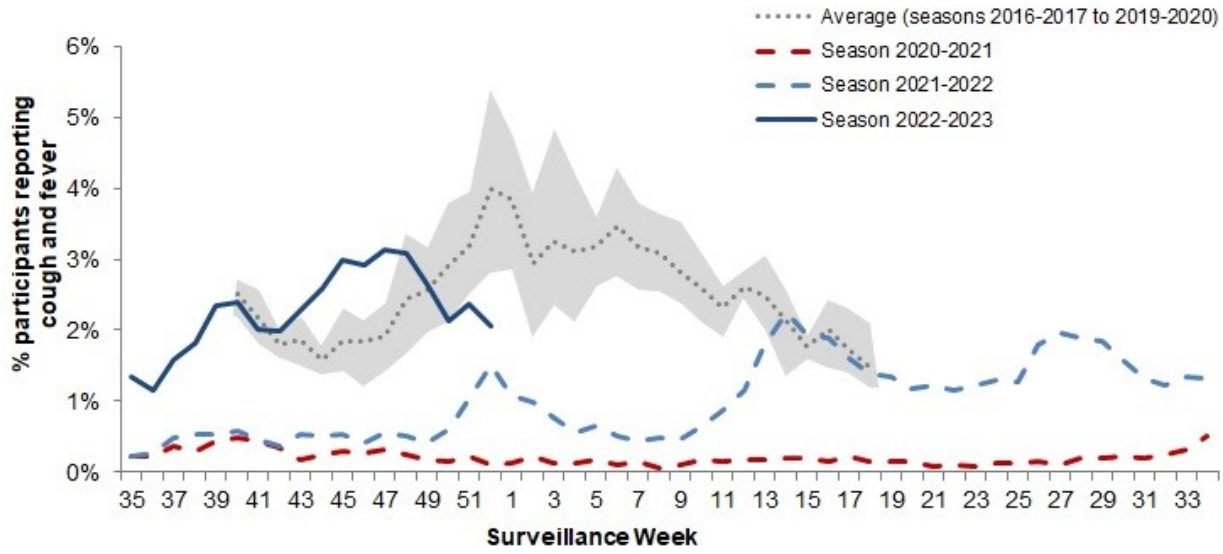
- 21% consulted a healthcare professional;
- 65% reported days missed from work or school, resulting in an average of 2.6 missed days from work or school among those 142 participants.

The Northwest Territories had the highest participation rate this week (57 participants per 100,000 population) and the neighbourhood with postal code, K0A had the highest number of participants (137). 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 2022-52

Number of Participants Reporting in Week 52: 10,488



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 52, 19 laboratory-confirmed influenza outbreaks were reported in Canada (13 in long-term care facilities (LTC), 5 in facilities categorized as 'other', and 1 in an acute care facility). All outbreaks were due to influenza A.

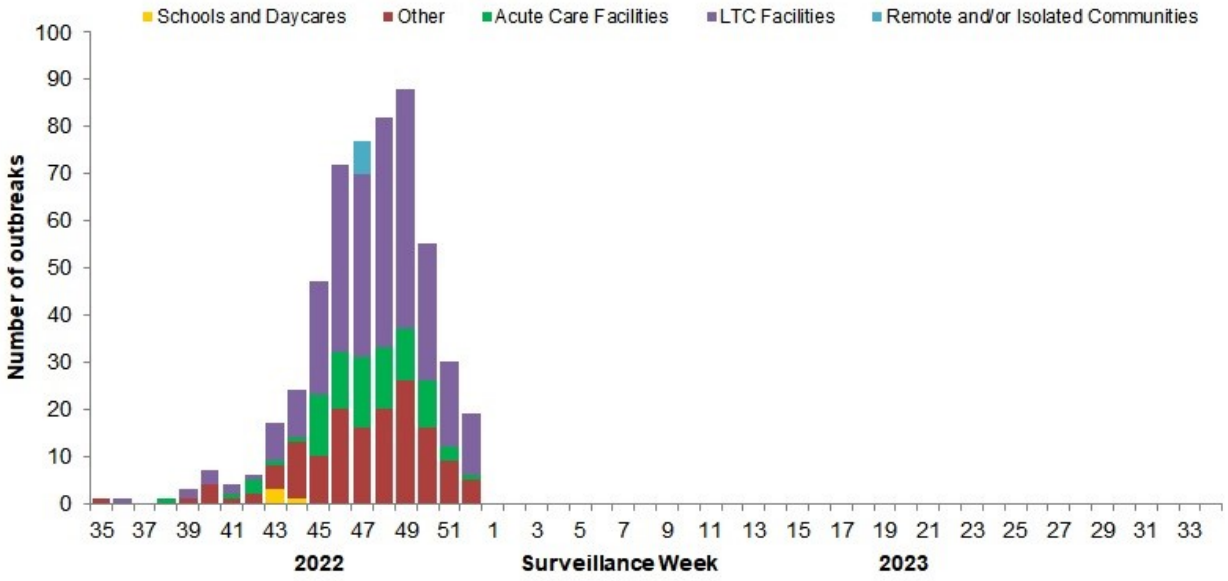
To date this season (August 28, 2022 to December 31, 2022):

- 534 laboratory-confirmed influenza outbreaks have been reported
    - 290 were in LTC facilities (54%)
    - 148 were in facilities categorized as 'other' (28%)
    - 85 were in acute care facilities (16%)
    - 7 were in remote and/or isolated communities (<1%)
    - 4 were in schools/daycares (<1%)
    - All but one outbreak was due to influenza A
- 231 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 territories[1] reporting in week 52: 13 out of 13

Figure 7: Number of new outbreaks of laboratory-confirmed influenza by report week, Canada, weeks 2022-35 to 2022-52



[1]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 52, 74 influenza-associated hospitalizations and 4 ICU admissions were reported by participating provinces and territories[2]. This week, 6 influenza-associated deaths were reported.

To date this season 3,411 influenza-associated hospitalizations were reported (August 28, 2022 to December 31, 2022) by participating provinces and territories:

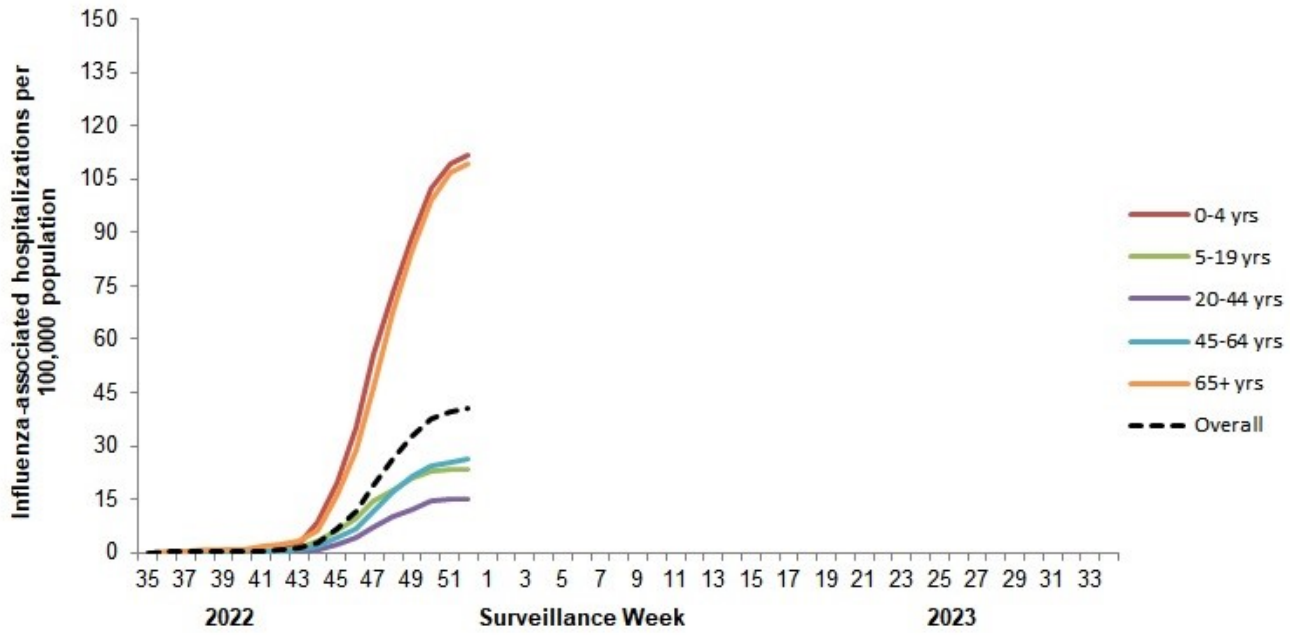
- >99% of the hospitalizations were associated with influenza A.
- Of the cases with subtype information (1,758), 92% were associated with influenza A(H3N2)
- The highest cumulative hospitalization rates up to week 52 were among children under 5 years of age (112/100,000 population) and adults 65 years of age and older (109/100,000 population).

To date this season (August 28, 2022 to December 31, 2022), 301 ICU admissions and 182 influenza-associated deaths were reported.

Number of provinces and territories reporting in week 52: 9 out of 9

[2]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 2022-52



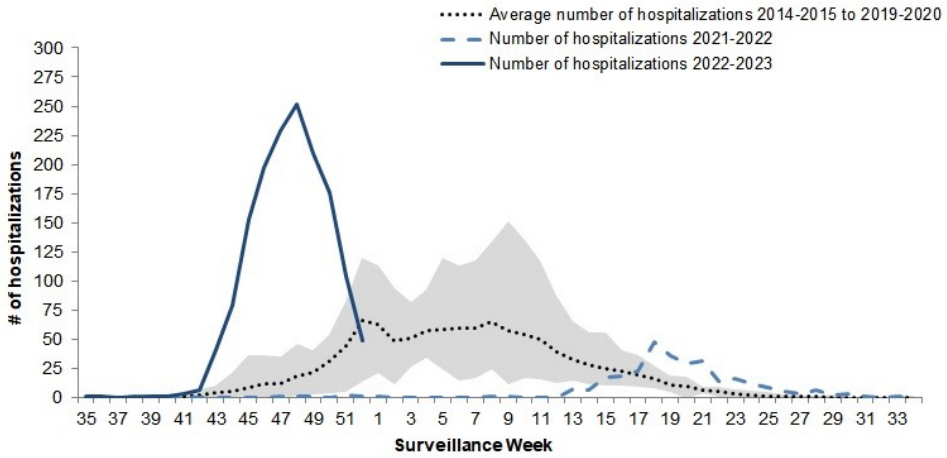
Pediatric Influenza Hospitalizations and Deaths

In week 52, 49 influenza-associated pediatric (≤16 years of age) hospitalizations and 2 ICU admissions were reported by the Immunization Monitoring Program Active (IMPACT) network. The number of weekly influenza-associated hospitalizations has declined sharply from the peak that occurred in week 48 (252 hospitalizations) and is within levels typical of this time of year (Figure 9). All but one hospitalisation reported in week 52 were associated with influenza A. This week, no influenza-associated pediatric deaths were reported.

To date this season (August 28, 2022 to December 31, 2022):

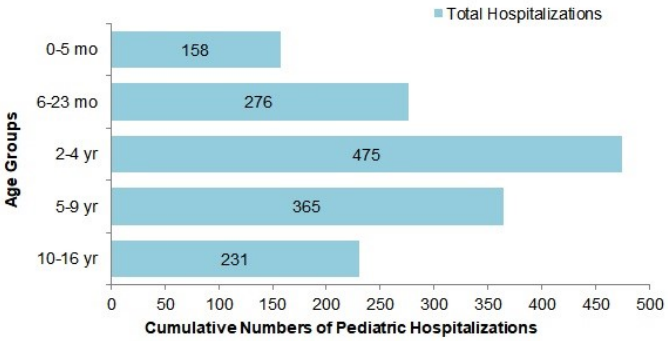
- 1,505 pediatric influenza-associated hospitalizations have been reported.
- Children aged between 2-4 years and 5-9 years account for more than 55% of the reported pediatric hospitalizations (Figure 10).
- 183 ICU admissions were reported; children aged between 2-4 years and 5-9 years account for more than 50% of the reported pediatric ICU admissions.
- 6 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 2022-52



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 2022-52



Influenza Strain Characterization

Since September 1, 2022, the National Microbiology Laboratory (NML) has characterized 168 influenza viruses (150 A(H3N2), 18 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)

- Of the 149 influenza A (H3N2) viruses characterized, 148 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. One virus showed reduced titer with antisera raised against cell-grown A/Darwyn/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.
- All 149 influenza A (H3N2) viruses characterized belonged to genetic group 3C.2a1b.2a2.

Influenza A(H1N1)

- 18 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

140 influenza viruses (128 A(H3N2) and 12 A(H1N1)) were tested for resistance to oseltamivir and it was found that:

- All influenza viruses were sensitive to oseltamivir.

Zanamivir

140 influenza viruses (128 A(H3N2) and 12 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.