

FLUWATCH

February 11 to February 17, 2024
(Week 07)



Weekly Highlights

At the national level, most indicators of influenza activity remained similar compared to the previous week. All surveillance indicators are within or below expected levels typical of this time of year.

Virologic

- In week 7, the percentage of tests positive for influenza was 11.6% and a total of 3,784 laboratory detections (3,099 influenza A and 685 influenza B) were reported.

Syndromic

- The percentage of visits for influenza-like illness (ILI) was 2.1% in week 7. The percentage of visits for ILI is within expected levels typical of this time of year.
- The percentage of FluWatchers reporting cough and fever was 1.6% in week 7. The percentage of FluWatchers reporting cough and fever remains below expected for this time of year.

Outbreaks

- From August 27, 2023 to February 17, 2024 (weeks 35 to 7), 905 laboratory-confirmed influenza outbreaks have been reported (46 laboratory-confirmed influenza outbreaks were reported in week 7).

Severe Outcomes

- From August 27, 2023 to February 17, 2024 (weeks 35 to 7), 3,652 influenza-associated hospitalizations were reported by participating provinces and territories. Adults aged 65 years of age and older accounted for 48% of reported hospitalizations. The highest cumulative hospitalization rates were among adults 65 years of age and older (120/100,000) and children under 5 years of age (72/100,000).
- From October 1, 2023 to February 17, 2024 (weeks 40 to 7), 623 influenza-associated pediatric hospitalizations were reported from a total of 2,570 positive influenza tests across eight sentinel hospital sites.

Other Notes

- The [Sentinel Practitioner Surveillance Network \(SPSN\)](#) has [published interim estimates of 2023/24 influenza vaccine effectiveness \(VE\)](#). The 2023-2024 influenza vaccine reduced the risk of medically attended outpatient illness due to the dominant circulating influenza A(H1N1) subtype by 63% (95% CI: 51 to 72) and circulating A(H3N2) subtype by 40% (95% CI: 5 to 61). These estimates are within previously reported mid-season SPSN VE estimates for influenza A(H1N1), which have ranged between 45% to 75%, and for A(H3N2) which have typically been <50%.
- Weekly reporting of laboratory detections of influenza, SARS-CoV-2, and other seasonal respiratory viruses will continue via our [Respiratory Virus Detections Surveillance System](#).

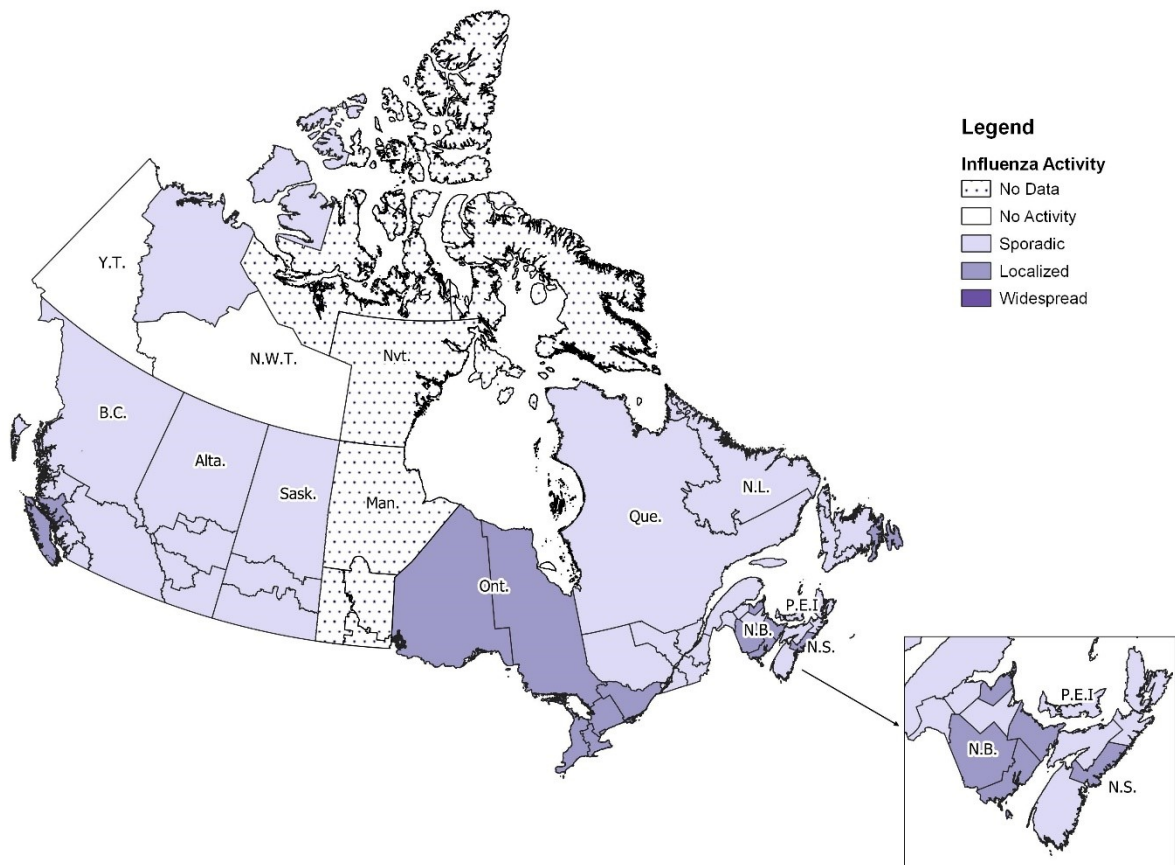


Influenza/Influenza-like Illness Activity – Geographic Spread

In week 7, 29 regions across Canada reported sporadic influenza activity and 14 regions in five provinces reported localized influenza activity (N.L., N.S., N.B., Ont., and B.C.). Two regions reported no activity this week (Y.T. and N.W.T.). (Figure 1). The proportion of regions reporting influenza activity and the intensity of reported activity has decreased this week.

Figure 1 – Map of influenza/ILI activity by province and territory, Canada, week 2024-07

Number of Regions Reporting in week 7: 45 out of 53



Laboratory-Confirmed Influenza Detections

The weekly percentage of tests positive for influenza (11.6% in week 7) has been stable over the past 6 weeks and remains below historical averages for this time of year. Influenza B detections have been steadily increasing over the past 6 weeks but remain low.

The following results were reported from sentinel laboratories across Canada in week 7 (Figures 2 and 3):

- A total of 3,784 laboratory detections (3,099 influenza A and 685 influenza B) were reported.
- Among subtyped influenza A detections (308), 70% (217) were influenza A(H1N1).
- Age information was reported for 2,941 detections. Adults over 65 years reported the highest proportion of detections, 32%. Detections across all age groups have remained stable this week.

To date this season (August 27, 2023 to February 17, 2024):

- 70,099 influenza detections were reported, of which 94% (66,174) were influenza A and among subtyped influenza A detections (23,708), influenza A(H1N1) accounted for 86% (20,433) of detections.
- 56,101 laboratory-confirmed influenza detections with age information were reported, of which 16,048 (28%) were in individuals aged 0-19 years old. Across adult age groups, adults over 65 years reported the highest detections, 30%, while similar proportions are being observed in adults 20-44 years old, 20% and adults 45-64 years, 21% (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 2023-35 to 2024-07

Number of Laboratories Reporting in Week 7: 35 out of 35

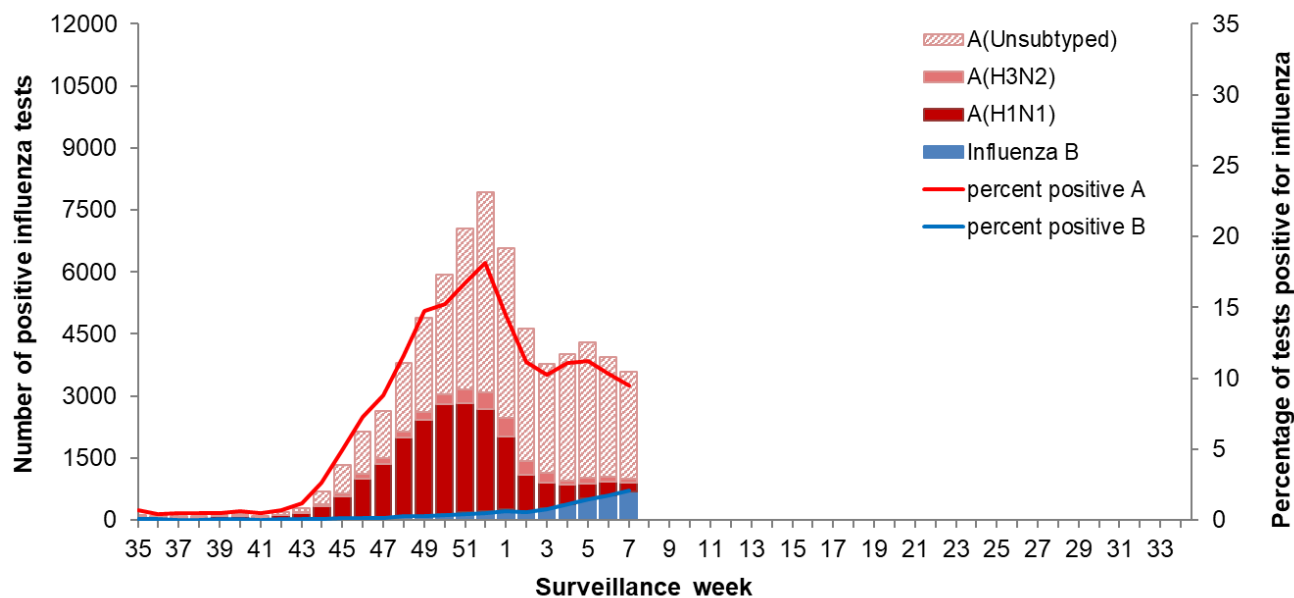
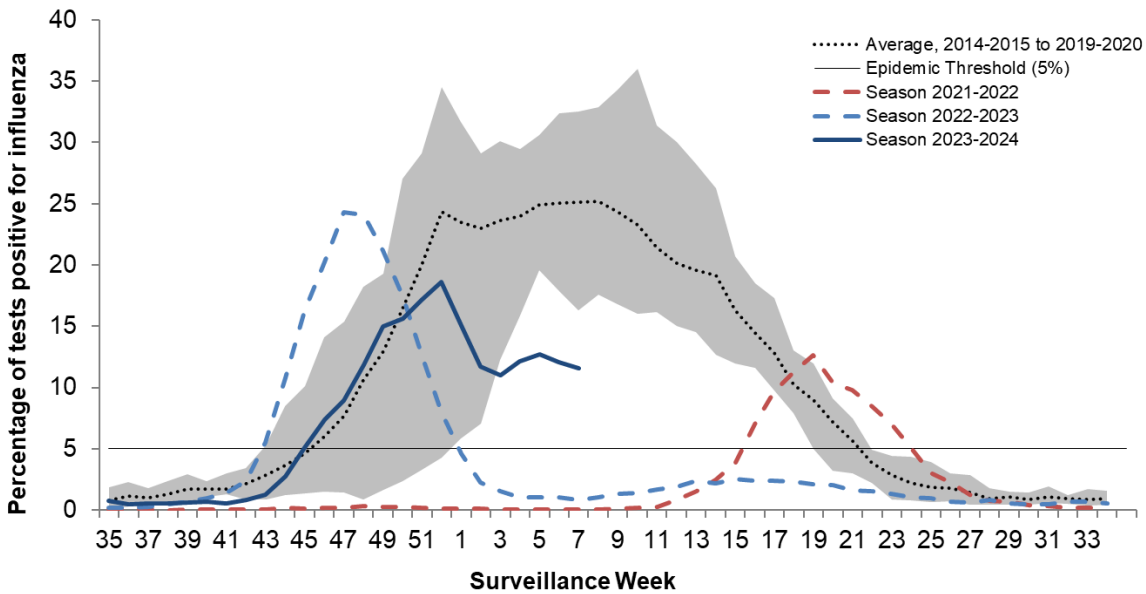


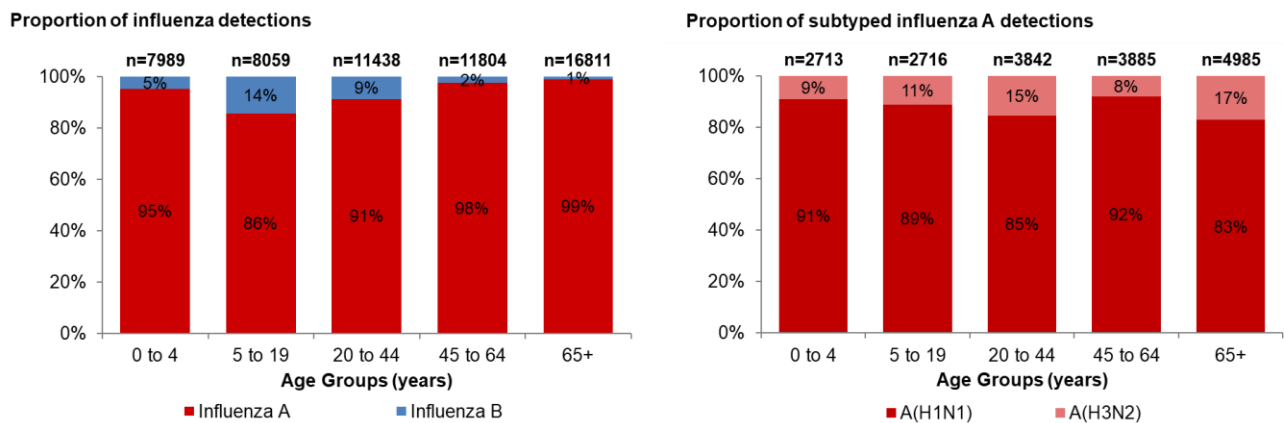
Figure 3 –Percentage of tests positive in Canada compared to previous seasons, week 2023-35 to 2024-07



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 2023-35 to 2024-07



Laboratory data notes:

Testing for influenza and other respiratory viruses has been influenced by the 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

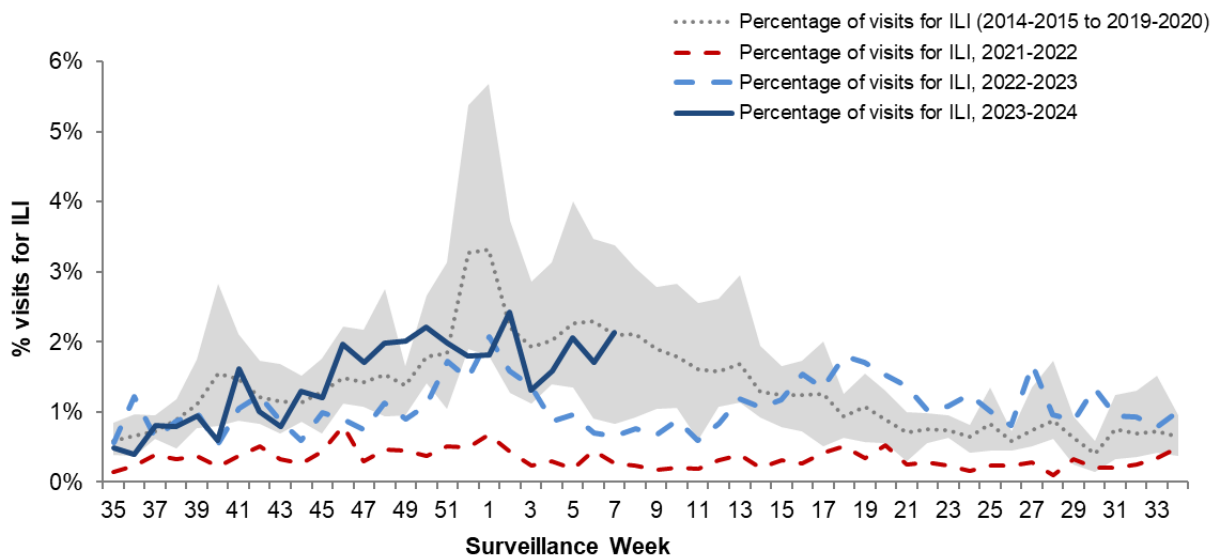
In week 7, 2.1% of visits to healthcare professionals were due to influenza-like illness (ILI) (Figure 5). The percentage of visits for ILI is within expected levels for this time of year.

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 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 2023-35 to 2024-07

Number of Sentinels Reporting in Week 7: 33



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 7, 8,736 participants reported to FluWatchers, of which 1.6% reported symptoms of cough and fever (Figure 6). The percentage of FluWatchers reporting cough and fever increased this week but remains below expected levels for this time of year.

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 139 participants who reported cough and fever:

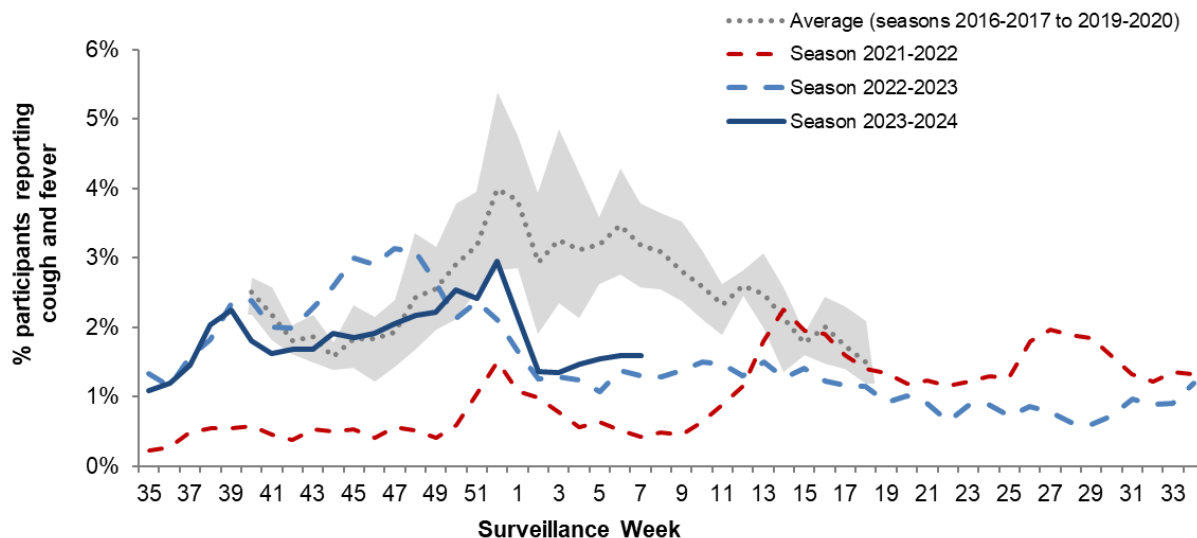
- 23% consulted a healthcare professional.
- 73% reported days missed from work or school, resulting in an average of 2.5 missed days from work or school among those 101 participants.

Yukon had the highest participation rate this week (55 participants per 100,000 population) and the neighbourhood with postal code K0A had the highest number of participants (113). 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 2023-35 to 2024-07

Number of Participants Reporting in Week 7: 8,736



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 7, 46 laboratory-confirmed influenza outbreaks were reported. All outbreaks were associated with influenza A.

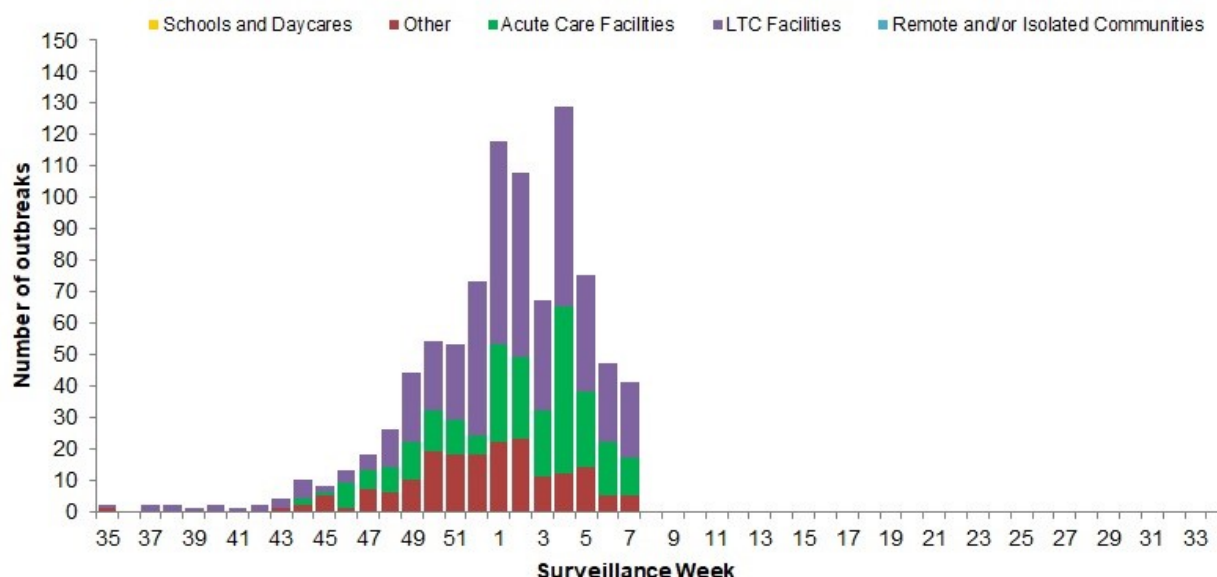
To date this season (August 27, 2023 to February 17, 2024):

- 905 laboratory-confirmed influenza outbreaks have been reported
 - 473 were in LTC facilities (52%)
 - 252 were in acute care facilities (28%)
 - 180 were in a facility categorized as ‘other’ (20%)
 - 888 outbreaks were due to influenza A and 6 outbreaks were due to influenza B; an additional 4 outbreaks were due to a mix of influenza A and influenza B and 7 outbreaks were untyped.
 - Among outbreaks with subtyping information (188), influenza A(H1N1) was detected in 91% of the outbreaks
- 75 ILI outbreaks have been reported
 - All 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.

Figure 7 – Number of new outbreaks of laboratory-confirmed influenza by report week, Canada, weeks 2023-35 to 2024-07

Number of provinces and territories¹ reporting in week 7: 11 out of 13



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. Six PTs (AB, SK, NB, NS, PEI, and NL) report ILI outbreaks in schools and/or daycares and other facilities.

Influenza Severe Outcomes Surveillance

Provincial/Territorial Influenza Hospitalizations and Deaths

In week 7, 37 influenza-associated hospitalizations, 5 ICU admissions, and less than five influenza-associated deaths were reported by participating provinces and territories².

To date this season (August 27, 2023 to February 17, 2024), 3,652 influenza-associated hospitalizations were reported by participating provinces and territories:

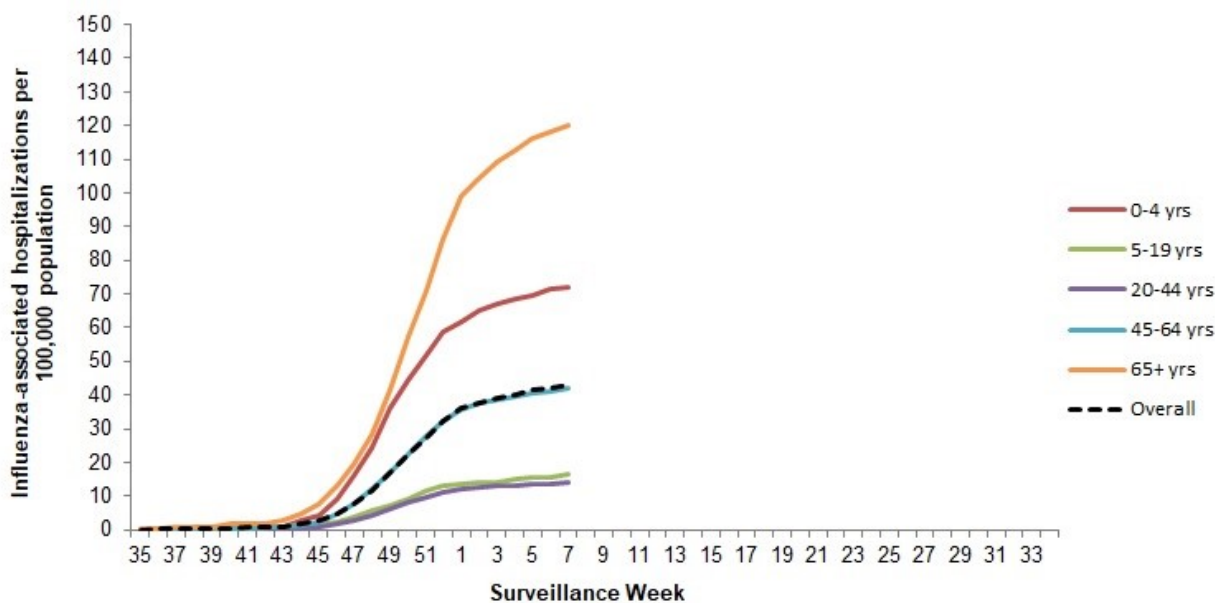
- 97% of the hospitalizations were associated with influenza A.
- Of the cases with subtype information (2,576), 95% were associated with influenza A(H1N1).
- Adults aged 65 years of age and older accounted for 48% of reported hospitalizations. The highest cumulative hospitalization rates were among adults 65 years of age and older (120/100,000) and children under 5 years of age (72/100,000).

To date this season (August 27, 2023 to February 17, 2024), 413 ICU admissions and 215 influenza-associated deaths were reported.

- Adults aged 45-64 years of age and 65 years of age and older accounted for 40% and 31% of reported ICU admissions respectively.
- Adults aged 65 years of age and older accounted for 71% of reported deaths.

Figure 8 – Cumulative rates of influenza-associated hospitalizations by age-group and surveillance week, Canada, participating provinces and territories, week 2023-35 to 2024-07

Number of provinces and territories reporting in week 7: 8 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.

Sentinel Pediatric Influenza Severe Outcomes

For the 2023-2024 season, data on pediatric influenza associated [severe outcomes](#) are provided by the Surveillance Program for Rapid Identification and Tracking of Infectious Diseases in kids (SPRINT-KIDS) Network³. The SPRINT-KIDS sentinel pediatric (≤ 18 years) hospital network provides severe outcome monitoring in both the emergency department and inpatient facilities and consists of 15 pediatric hospitals across 8 provinces in Canada (all provinces with the exception of New Brunswick and Prince Edward Island).

Emergency and Inpatient Influenza Testing

In week 7, 983 tests were conducted for influenza in emergency departments and inpatient wards from 6/15 sites:

- 159 tests (16.2%) were positive for influenza.
- The majority were influenza A (n=120, 75%).

To date this season (October 1, 2023 to February 17, 2024):

- 20,077 tests have been conducted for influenza across 12 sites⁴.
- 2,668 tests were positive for influenza.
- The majority were influenza A (n=2,486, 93%).

Hospitalizations

In week 7, 46 influenza-associated pediatric hospitalizations were reported from a total of 159 positive influenza tests from 6/15 sites:

- The majority were influenza A (n=38, 83%).

To date this season (October 1, 2023 to February 17, 2024):

- 623 influenza-associated pediatric hospitalizations were reported from a total of 2,570 positive influenza tests across 8 sites⁴.
- The majority were influenza A (n=593, 95%).

³ Sentinel pediatric severe outcome surveillance data was previously provided by the Immunization Monitoring Program ACTive (IMPACT) network. The change in the sentinel network will affect the comparability of pediatric hospitalization data from the 2023-2024 season to previous seasons as the number of hospitalizations (weekly and cumulative) may appear higher due to a greater number of sentinel sites.

⁴ Represents total number of sites reporting this data to date this season; some sites may not have reported data every week.

Influenza Strain Characterization

Since September 1, 2023, the National Microbiology Laboratory Branch (NMLB) has characterized 791 influenza viruses (131 A(H3N2), 553 A(H1N1), and 107 influenza B) received from Canadian laboratories.

Antigenic Characterization

Changes in circulating influenza viruses are monitored by antigenic characterization. Antigenic characterization results show how similar the circulating viruses are to reference viruses. Reference viruses represent strains included in the current seasonal influenza vaccine.

Influenza A(H1N1)

A/Wisconsin/67/2022 is the influenza A(H1N1) component of the 2023-2024 Northern Hemisphere influenza vaccine.

- 542 H1N1 viruses were characterized as antigenically similar to A/Wisconsin/67/2022-like with antisera produced against cell-grown A/Wisconsin/67/2022.
- 11 influenza A(H1N1) showed reduced titer with antisera raised against cell-grown A/Wisconsin/67/2022.

Influenza A(H3N2)

A/Darwin/6/2021 (H3N2)-like virus is the influenza A(H3N2) component of the 2023-2024 Northern Hemisphere influenza vaccine.

- 127 influenza A(H3N2) were antigenically similar to A/Darwin/6/2021 (H3N2)-like virus using antisera raised against cell-grown A/Darwin/6/2021 (H3N2)-like virus.
- 4 influenza A(H3N2) showed reduced titer with antisera raised against cell-grown A/Darwin/6/2021 (H3N2)-like virus.

Influenza B

Influenza B viruses can be divided into two antigenically distinct lineages represented by B/Yamagata/16/88 and B/Victoria/2/87 viruses. The recommended influenza B components for the 2023-2024 Northern Hemisphere influenza vaccine are B/Austria/1359417/2021 (Victoria lineage) and B/Phuket/3073/2013 (Yamagata lineage)

- 107 viruses characterized were antigenically similar to B/Austria/1359417/2021.

Genetic Characterization

Genetic characterization is used to determine how similar gene sequences of circulating influenza viruses are to the sequences of the vaccine components used in the current seasonal influenza vaccine.

Since September 1, 2023, NML has genetically characterized 783 influenza viruses.

Table 1: Genetic Characterizations results of influenza A(H3N2), influenza A(H1N1) and Influenza B, Canada, season 2023-2024

Virus Subtype or Lineage	HA Clade	Number of Viruses Characterized	HA Subclade	Number of viruses Characterized	HA genetic clades and subclades of the 2023-2024 Northern Hemisphere influenza vaccine components
A(H1N1)					The A(H1N1) component belongs to genetic clade 6B.1A.5a.2a.1
	6B.1A.5a	567	2a	259	
			2a.1	308	
A(H3N2)					The A(H3N2) component belongs to genetic clade 3C.2a1b.2a.2a
	3C.2a1b.2a	124	2a.1b	3	
			2a.3a	1	
			2a.3a.1	120	
B/Victoria					The B/Victoria component belongs to genetic clade V1A.3
	V1A	92	3a.2	92	
B/Yamagata					The B/Yamagata component belongs to genetic clade Y3
	Y3	0	Y3	0	

Antiviral Resistance

The National Microbiology Laboratory Branch also tests influenza viruses received from Canadian laboratories for antiviral resistance.

Oseltamivir

755 influenza viruses (122 H3N2, 542 H1N1 and 91 influenza B) were tested for resistance to oseltamivir.

- One of the 542 influenza A (H1N1) viruses was resistant to oseltamivir
- All influenza A(H3N2) viruses and B viruses were sensitive to oseltamivir.

Zanamivir

755 influenza viruses (122 H3N2, 542 H1N1 and 91 influenza B) were tested for resistance to zanamivir.

- All influenza viruses were sensitive to zanamivir.

Influenza Vaccine Monitoring

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

Vaccination Coverage

Influenza vaccine coverage estimates for the 2023-2024 season are anticipated to be available in February or March 2024.

Vaccine Effectiveness

The Canadian Sentinel Practitioner Surveillance Network (SPSN) provided mid-season 2023/24 vaccine effectiveness (VE) estimates for the multivalent influenza and monovalent Omicron XBB.1.5 vaccines in preventing medically-attended illness due to laboratory-confirmed influenza and COVID-19 among Canadians.

During the analysis period, influenza A made up >95% of influenza viruses. Among influenza A viruses, 80% were H1N1 and 20% were H3N2. The SPSN applied whole genome sequencing (WGS) to genetically characterize about 70% of all contributing influenza viruses. Among characterized H1N1 viruses they found a roughly equal proportion of vaccine matched clade 5a.2a.1 and alternate 5a.2a viruses. Among H3N2 detections, virtually all belonged to clade 2a.3a.1, genetically distinct from the clade 2a vaccine strain.

Based on data collected between October 29, 2023 and January 13, 2024, VE was estimated to be 63% (95% CI: 51-72) overall against influenza A(H1N1) and 40% (95% CI: 15-61) against influenza A(H3N2). VE was lower for H1N1 viruses belonging to clade 5a.2a.1 than 5a.2a and the SPSN provides possible reasons for that in the publication. Influenza A (H1N1) VE estimates were higher in children <20 years at 68% (95% CI: 42 to 83) and older adults 65 years and older at 72% (95% CI: 47 to 85), compared to adults 20-64 years at 56% (95% CI: 38 to 69); however, confidence intervals in age-stratified analyses broadly overlapped. Owing to limited detection of influenza A(H3N2) or influenza B viruses, age-stratified A(H3N2) and influenza B VE estimates were not reported in mid-season analyses.

The SPSN interim estimates are published and available [online](#). Updated influenza VE estimates, inclusive of further age stratification and for influenza B will be published, if feasible, at the end of the 2023-2024 influenza season.

Provincial and International Surveillance Links

- British Columbia – [Influenza Surveillance; Vaccine Effectiveness Monitoring](#)
- Alberta – [Respiratory Virus Surveillance](#)
- Saskatchewan – [CRISP \(Community Respiratory Illness Surveillance Program\) Reports](#)
- Manitoba – [Seasonal Influenza Reports](#)
- Ontario – [Ontario Respiratory Virus Tool \(ORVT\)](#)
- Québec – [Système de surveillance de la grippe \(available in French only\)](#)
- New Brunswick – [Respiratory Watch \(gnb.ca\)](#)
- Prince Edward Island – [PEI Respiratory Illness Summary 2023-2024 Season | Government of Prince Edward Island](#)
- Nova Scotia – [CDPC - Respiratory Watch Report | novascotia.ca](#)
- Newfoundland and Labrador – [Newfoundland and Labrador Multi Respiratory Application \(arcgis.com\)](#)
- Yukon – [Respiratory surveillance report](#)
- 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.