

September 22 to October 5, 2019 (Weeks 39 & 40)

## Overall Summary

- Influenza activity remains at interseasonal levels at the national level.
- The majority of regions in Canada are reporting no influenza activity. However, regions in western Canada have reported increased influenza detections, and localized or sporadic activity in week 40.
- Influenza A(H3N2) is the most common influenza virus circulating in Canada.
- FluWatch reports will resume a weekly publication cycle starting on October 18, 2019. Weekly reporting of laboratory detections of respiratory viruses continues via our [Respiratory Virus Detections Surveillance System](#).

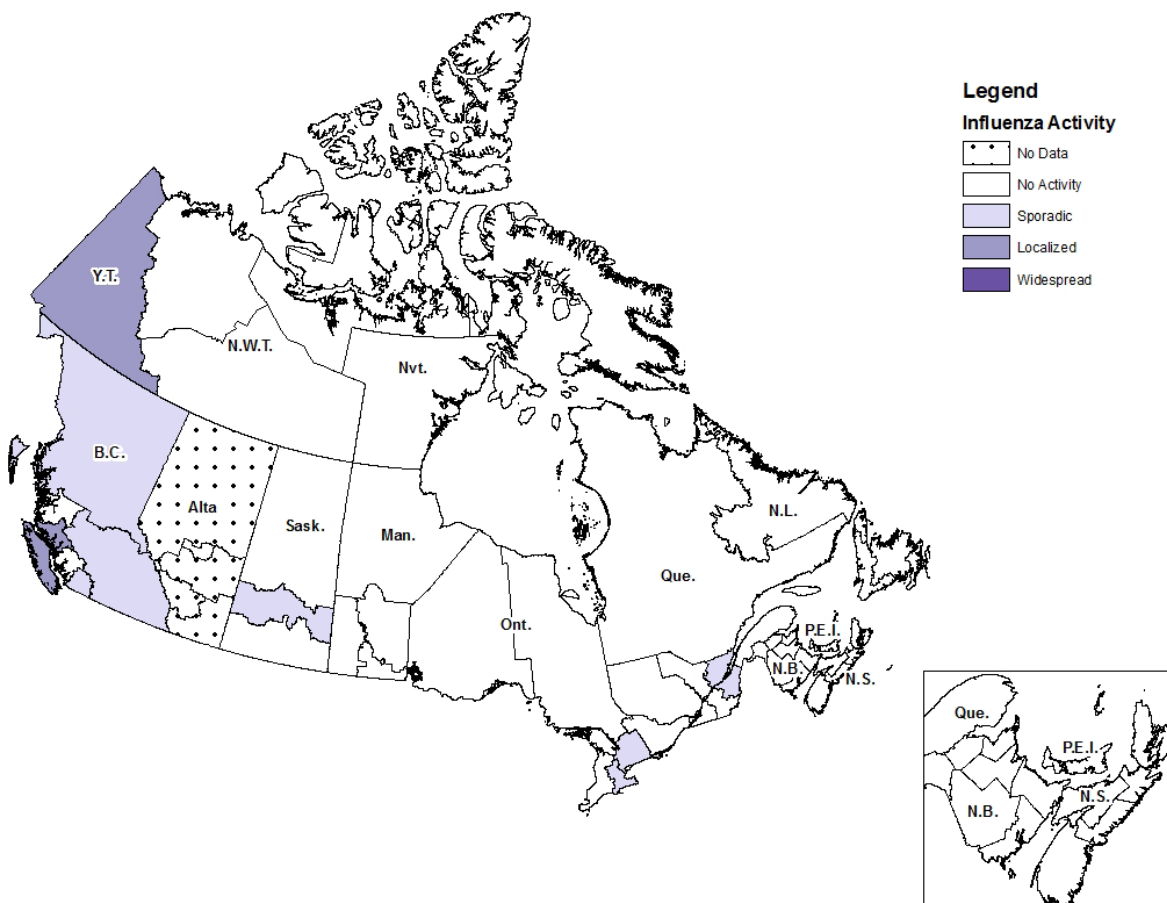
## Influenza/Influenza-like Illness (ILI) Activity (geographic spread)

During week 40, the following influenza activity levels were reported (Figure 1):

- 2 regions (4%) reported localized activity, within BC and YT.
- 8 regions (17%) reported sporadic activity, within BC, SK, ON and QC.

**Figure 1 – Map of influenza/ILI activity by province and territory, Canada, week 2019-40**

Number of Regions Reporting in Week 40: 48 out of 53



## Laboratory-Confirmed Influenza Detections

In weeks 39 and 40, the following results were reported from sentinel laboratories across Canada (Figures 2 and 3):

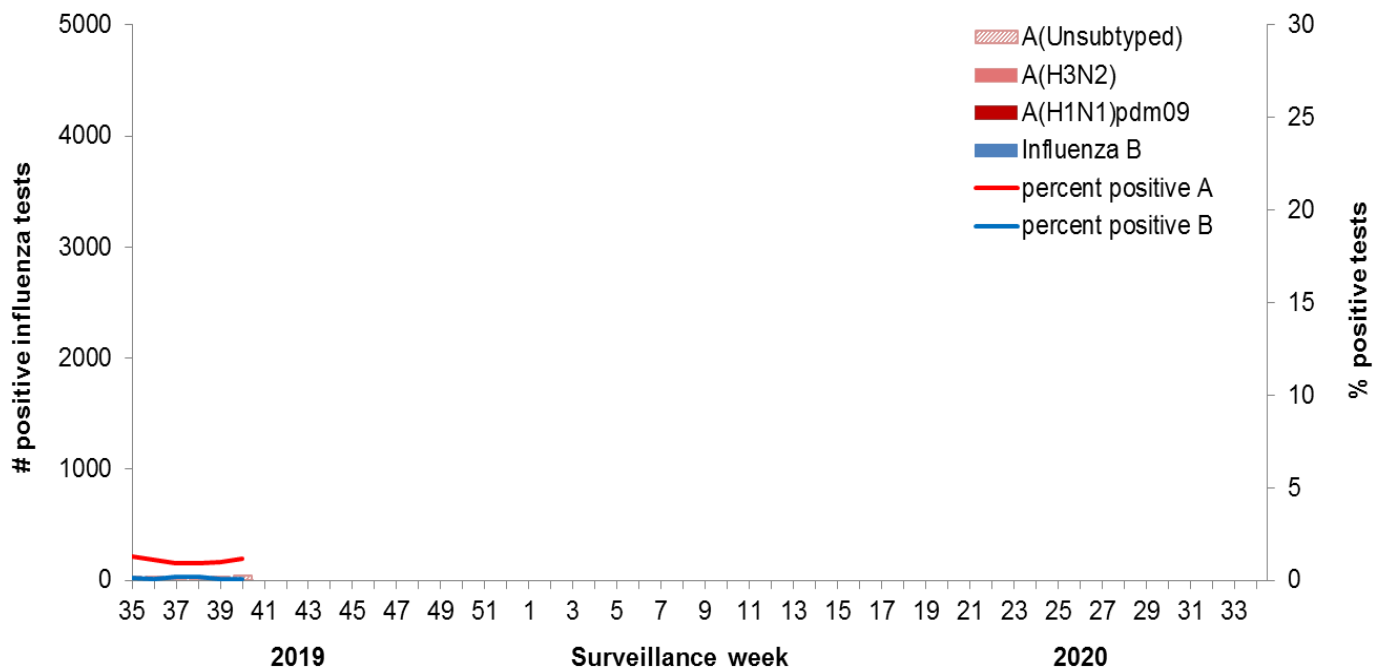
- A total of 82 laboratory detections of influenza were reported, of which 94% (77) were influenza A.
- The percentage of tests positive for influenza remains at interseasonal levels, at 1.1% in week 39 and 1.2% in week 40.
- Influenza A(H3N2) accounted for 94% (30 of 32) subtyped influenza A detections during this 2-week period.

To date this season (weeks 35 to 40), detailed information on age and type/subtype has been received for 126 laboratory-confirmed influenza cases: 113 (90%) influenza A and 13 (10%) influenza B. Among the 63 subtyped influenza A detections, 89% of cases were A(H3N2). The majority of cases reported to date were in adults; 41% of cases were 20-64 years of age, and 42% were over 65 years of age.

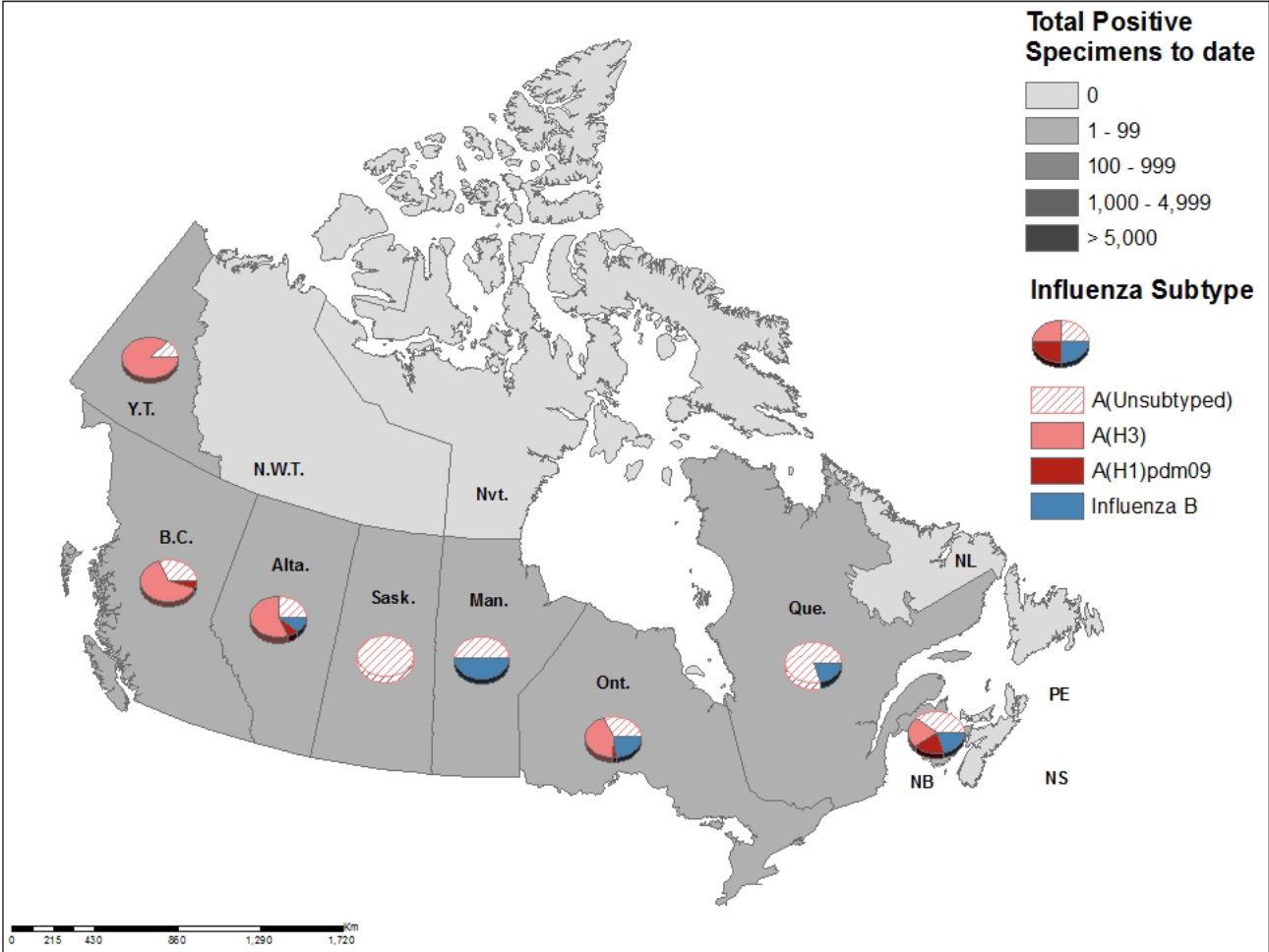
For more detailed weekly and cumulative influenza data, see the text descriptions for [Figures 2 and 3](#) or the [Respiratory Virus Detections in Canada Report](#).

**Figure 2 – Number of positive influenza tests and percentage of tests positive, by type, subtype and report week, Canada, weeks 2019-35 to 2019-40**

Number of Laboratories Reporting in Week 40: 30 out of 33



**Figure 3 – Distribution of positive influenza specimens by type/subtype and province/territory\*, Canada, weeks 2019-35 to 2019-40**



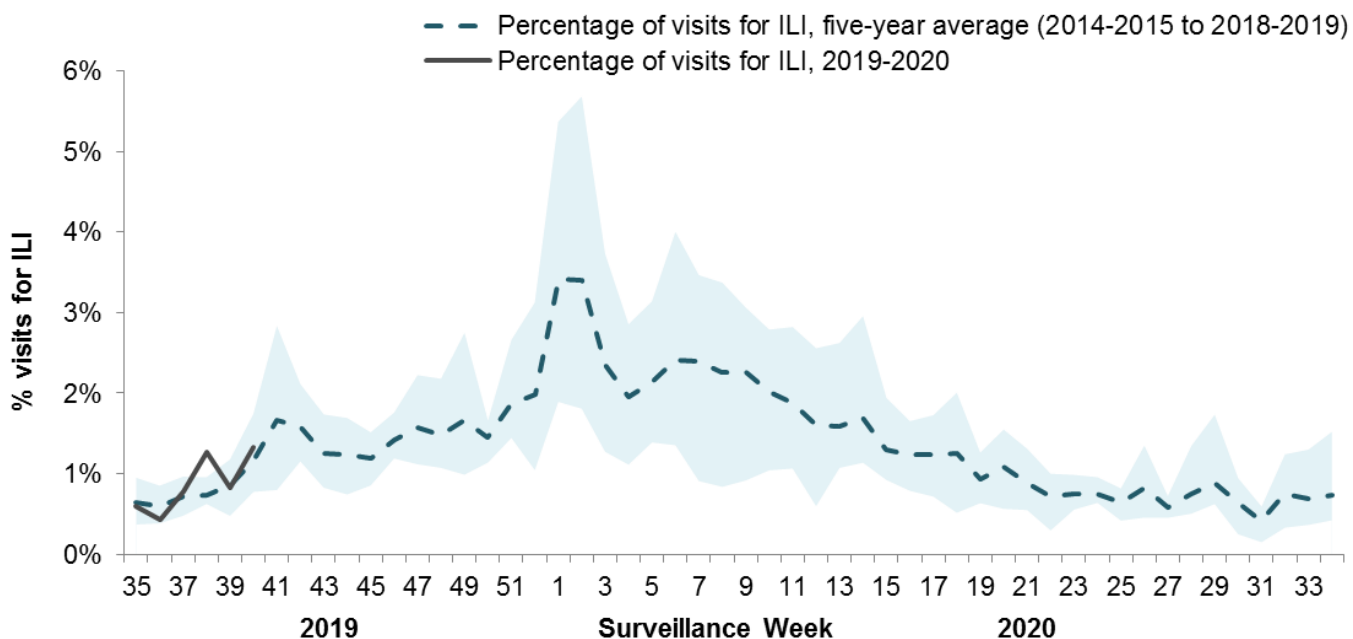
## Syndromic / Influenza-like Illness Surveillance

### Healthcare Practitioners Sentinel Syndromic Surveillance

In week 39, 0.8% and in week 40, 1.3%, of visits to healthcare professionals were due to influenza-like illness (ILI) which is similar to the average for this time of year (Figure 4).

**Figure 4 – Percentage of visits for ILI reported by sentinels by report week, Canada, weeks 2019-35 to 2019-40**

Number of Sentinels Reporting in Week 40: 69



The shaded area represents the maximum and minimum percentage of visits for ILI reported by week from seasons 2014-2015 to 2018-2019

### FluWatchers

FluWatchers reporting for the 2019-20 season began on October 7th, 2019. In week 40, 2,768 participants reported to FluWatchers, of which 59 (2.1%) reported symptoms of cough and fever (Figure 5).

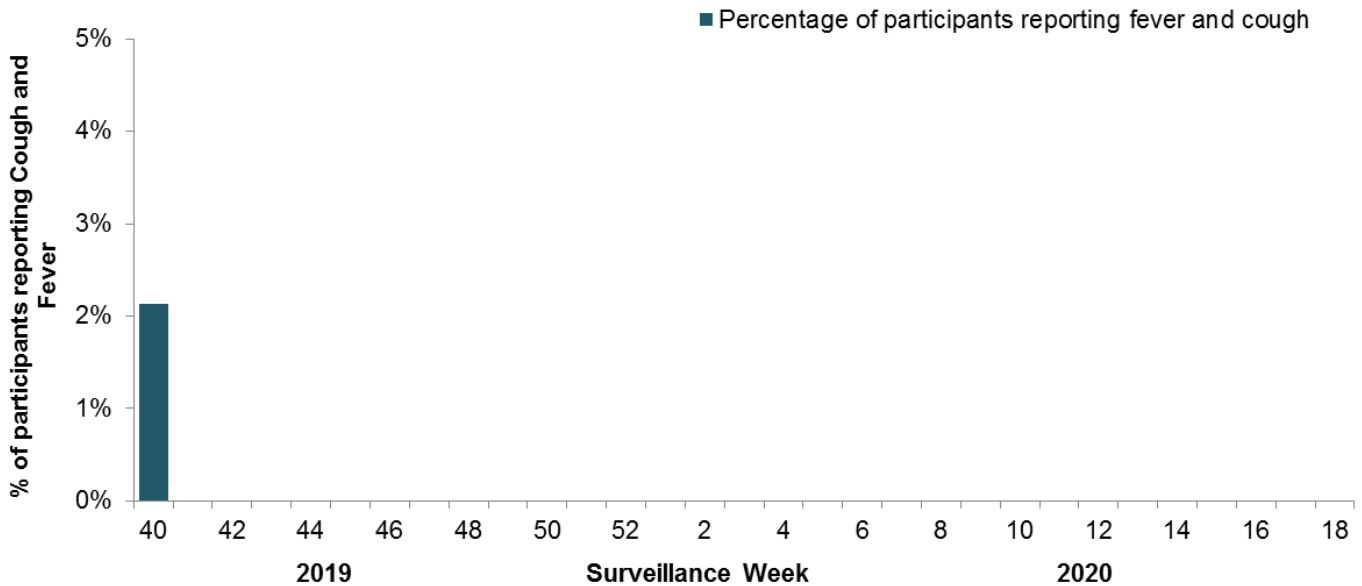
Among the 59 participants who reported cough and fever:

- 14% consulted a healthcare professional;
- 73% reported days missed from work or school, resulting in a combined total of 97 missed days of work or school.

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

**Figure 5 – Percentage of FluWatchers participants reporting cough and fever, Canada, weeks 2019-40 to 2019-40**

Number of Participants Reporting in Week 40: 2,768



**Online Figure – Geographic distribution of FluWatchers participants reporting cough and fever, Canada, week 2019-40**

Click on the map to access the link



### Influenza Outbreak Surveillance

In weeks 39 and 40, 3 laboratory-confirmed influenza outbreaks were reported in long-term care facilities. All outbreaks were due to influenza A. No ILI outbreaks were reported.

To date this season, a total of 3 laboratory-confirmed influenza outbreaks in long-term care facilities and two ILI outbreaks in schools and daycares have been reported.

Number of provinces and territories reporting in weeks 39 and 40: 12 out of 13

## Severe Outcomes Influenza Surveillance

### **Provincial/Territorial Influenza Hospitalizations and Deaths**

In weeks 39 and 40 less than five influenza-associated hospitalizations were reported by participating provinces and territories<sup>1</sup>.

To date this season, 7 influenza-associated hospitalizations were reported by participating provinces and territories<sup>1</sup>. All case except one were associated with influenza A. Less than five ICU admissions and no deaths have been reported.

Number of provinces and territories reporting in weeks 39 and 40: 8 out of 9

<sup>1</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.

### **Pediatric Influenza Hospitalizations and Deaths**

In weeks 39 and 40, no new pediatric ( $\leq 16$  years of age) laboratory-confirmed influenza-associated hospitalizations were reported by the Immunization Monitoring Program Active (IMPACT) network.

To date this season, fewer than five pediatric hospitalizations have been reported by the IMPACT network.

### **Adult Influenza Hospitalizations and Deaths**

Surveillance of laboratory-confirmed influenza-associated adult ( $\geq 16$  years of age) hospitalizations by the Canadian Immunization Research Network (CIRN) Serious Outcomes Surveillance (SOS) network has not yet begun for the 2019-20 season.

## Influenza Strain Characterizations

From September 1 to October 10, 2019, the National Microbiology Laboratory (NML) has characterized 5 influenza viruses (3 A(H3N2), 1 A(H1N1) and 1 influenza B) that were received from Canadian laboratories.

### **Influenza A(H3N2)**

Over recent years, circulating strains of A(H3N2) have evolved, and are increasingly difficult to characterize by hemagglutination inhibition (HI) assay. Genetic characterization is established by sequencing the hemagglutinin (HA) gene of the influenza viruses to compare their genetic properties.

#### **Antigenic Characterization:**

- Two influenza A(H3N2) viruses were antigenically characterized as A/Kansas/14/2017-like by HI assay using antiserum raised against cell culture-propagated A Kansas/14/2017.

#### **Genetic Characterization:**

All three A(H3N2) viruses this season have been genetically characterized, based on sequence analysis of the HA gene.

- One A(H3N2) virus did not grow to sufficient hemagglutination titer for antigenic characterization by HI assay.
  - This virus belonged to genetic subclade 3C.2a1b.
- Two A(H3N2) viruses were antigenically characterized as A/Kansas/14/2017-like by HI testing.
  - These two viruses belonged to genetic group 3C.2a1b.

A/Kansas/14/2017 belongs to genetic group 3C.3a and is the influenza A(H3N2) component of the 2019-20 Northern Hemisphere influenza vaccine.

## Influenza A(H1N1)

- One A(H1N1) virus characterized was antigenically similar to A/Brisbane/02/2018 by HI testing using antiserum raised against egg-propagated A/Brisbane/02/2018.

A/Brisbane/02/2018 is the influenza A(H1N1) component of the 2019-20 Northern Hemisphere influenza vaccine.

## Influenza B

- One influenza B virus showed reduced titer with ferret antisera raised against cell culture-propagated B/Colorado/06/2017.
- Sequence analysis showed that the virus had a three amino acid deletion (162-164) in the HA gene.

The recommended influenza B components for the 2019-20 Northern Hemisphere influenza vaccine are B/Colorado/06/2017 (Victoria lineage) and B/Phuket/3073/2013 (Yamagata lineage). B/Phuket/3073/2013 is included in the quadrivalent influenza vaccine.

## [Antiviral Resistance](#)

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

### **Antiviral Resistance - Oseltamivir:**

Seven influenza viruses (4 H3N2, 1 H1N1 and 2 B) were tested for resistance to oseltamivir and it was found that:

- All 7 influenza viruses were sensitive to oseltamivir.

### **Antiviral Resistance – Zanamivir:**

Seven influenza viruses (4 H3N2, 1 H1N1 and 2 B) were tested for resistance to zanamivir and it was found that:

- All 7 influenza viruses were sensitive to zanamivir.

### **Antiviral Resistance – Amantadine:**

High levels of resistance to amantadine persist among influenza A(H1N1) and influenza A(H3N2) viruses, therefore amantadine resistance results are not presented.

## [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 2019-20 season are anticipated to be available in February or March 2020.

### **Vaccine Effectiveness**

Influenza vaccine effectiveness estimates for the 2019-20 season are anticipated to be available in February or March 2020.

## Provincial and International Surveillance Links

- British Columbia – [Influenza Surveillance; Vaccine Effectiveness Monitoring](#)
- Alberta – [Influenza 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 – [Information on Pandemic, Influenza, Seasonal Flu, Avian Flu and H1N1](#)
- Northwest Territories – [Influenza/ Flu Information](#)
- Nunavut – [Influenza Information](#)
- World Health Organization – [FluNet \(Global Influenza Surveillance Network\)](#)
- Pan American Health Organization – [Influenza situation report](#)
- U.S. Centers for Disease Prevention & Control (CDC) - [Weekly Influenza Summary Update](#)
- ECDC – [Surveillance reports and disease data on seasonal influenza](#)
- United Kingdom – [Weekly Influenza Activity Reports](#)
- Hong Kong Centre for Health Protection - [Flu Express](#)
- Australia – [Influenza Surveillance Report and Activity Updates](#)
- New Zealand – [Influenza Weekly Update](#)

## Notes

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