FluWatch

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

October 20 to 26, 2019 (Week 43)

Overall Summary

- Influenza activity remains at interseasonal levels at the national level.
- The number of regions in Canada reporting influenza activity in week 43 increased compared to the previous week.
- Influenza A(H3N2) is the most common influenza virus circulating in Canada.
- Weekly reporting of laboratory detections of respiratory viruses continues via our Respiratory Virus Detections Surveillance System.

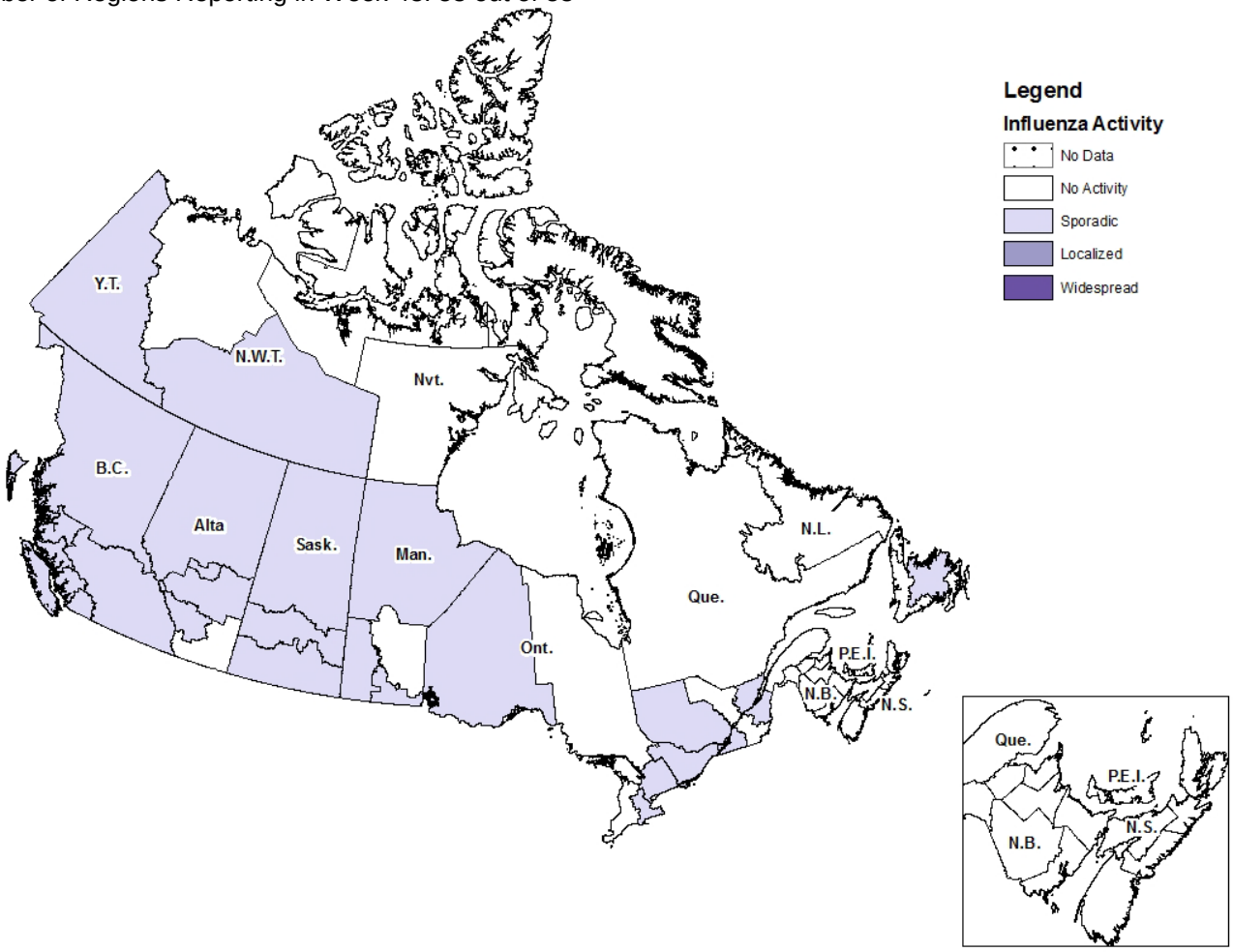
Influenza/Influenza-like Illness (ILI) Activity (geographic spread)

During week 43, the number of regions reporting influenza activity increased compared to the previous week. The following influenza activity levels were reported (Figure 1):

- 26 regions (49%) reported sporadic activity, within 9 provinces and territories.

Figure 1 – Map of influenza/ILI activity by province and territory, Canada, week 2019-43

Number of Regions Reporting in Week 43: 53 out of 53



Laboratory-Confirmed Influenza Detections

In week 43, the number of detections of influenza was similar to the previous week. The following results were reported from sentinel laboratories across Canada (Figures 2 and 3):

- The percentage of tests positive for influenza remains at interseasonal levels, at 1.9%.
- A total of 96 laboratory detections of influenza were reported, of which 82% (79) were influenza A. The proportion of detections of influenza B increased in week 43.
- Among subtyped influenza A detections 12 out of 18 were influenza A(H3N2).

To date this season (weeks 35 to 43), 455 laboratory detections of influenza were reported:

- 88% (399) were influenza A.
- Among subtyped influenza A detections (150), 89% were influenza A(H3N2).

Detailed information on age and type/subtype has been received for more than 335 laboratory-confirmed influenza cases (Table 1).

To date this season (weeks 35 to 43):

- 86% (292) were cases of influenza A.
- Among the 129 cases of influenza A for which the subtype was known, 88% of cases were A(H3N2).
- The majority of influenza A cases reported to date were in adults 65 years of age and older (49%). The majority of cases of influenza B were in younger age-groups; 80% of cases (37 of more than 43) were under 45 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 2019-43

Number of Laboratories Reporting in Week 43: 33 out of 34

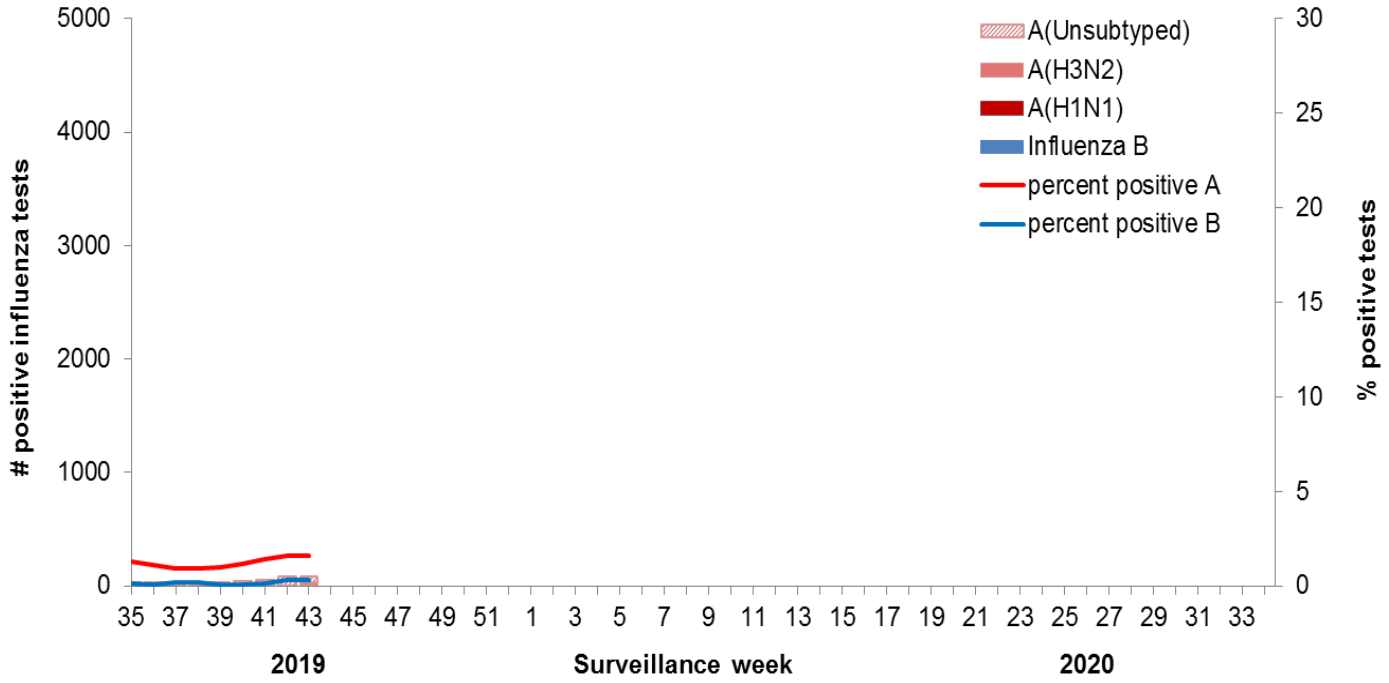


Figure 3 – Distribution of positive influenza specimens by type/subtype and province/territory*, Canada, weeks 2019-35 to 2019-43

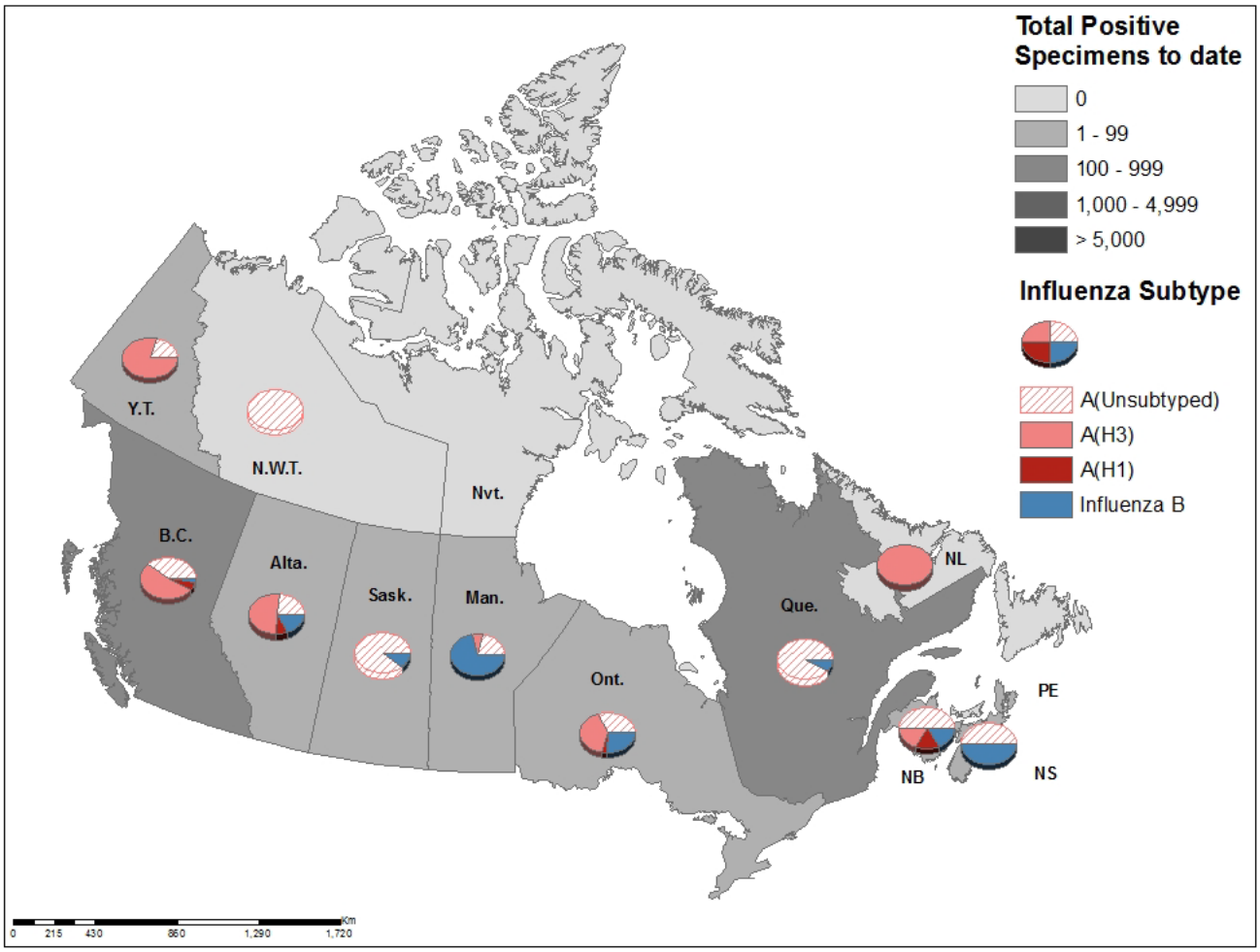


Table 1 – Cumulative number of positive influenza specimens by type, subtype and age-group reported through case-based laboratory reporting, Canada, weeks 2019-35 to 2019-43

Age groups (years)	Cumulative (August 25, 2019 to October 26, 2019)						
	Influenza A				B	Influenza A and B	
	A Total	A(H1N1)	A(H3N2)	A (Un subtyped)[1]	Total	#	%
0-4	>22	<5	8	14	11	37	11%
5-19	18	0	9	9	9	27	8%
20-44	>42	<5	14	28	17	60	18%
45-64	63	8	25	30	<5	>63	20%
65+	>140	<5	58	82	6	148	44%
Total	292	15	114	163	>43	>335	100%

[1]Unsubtyped: The specimen was typed as influenza A, but no result for subtyping was available.

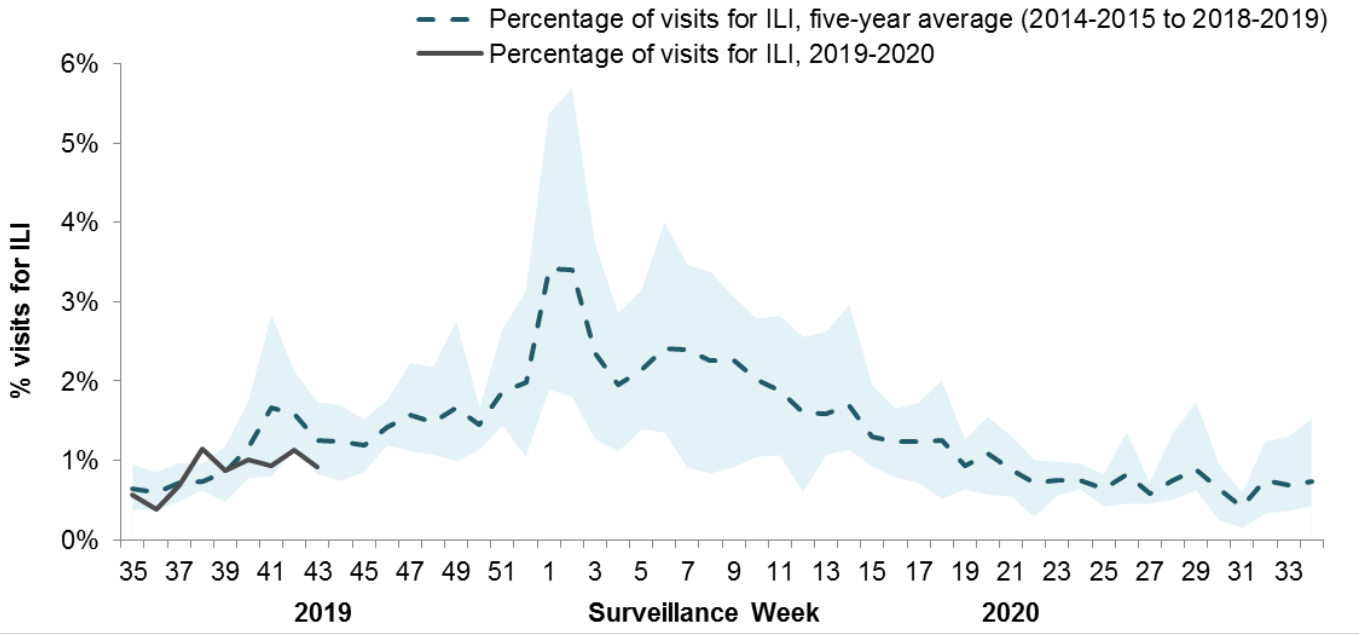
Syndromic / Influenza-like Illness Surveillance

Healthcare Practitioners Sentinel Syndromic Surveillance

In week 43, 0.9%, of visits to healthcare professionals were due to influenza-like illness (ILI) which is slightly below 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 2019-43

Number of Sentinels Reporting in Week 43: 80



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

FluWatchers

In week 43, 2,875 participants reported to FluWatchers, of which 2.2% (64) reported symptoms of cough and fever (Figure 5).

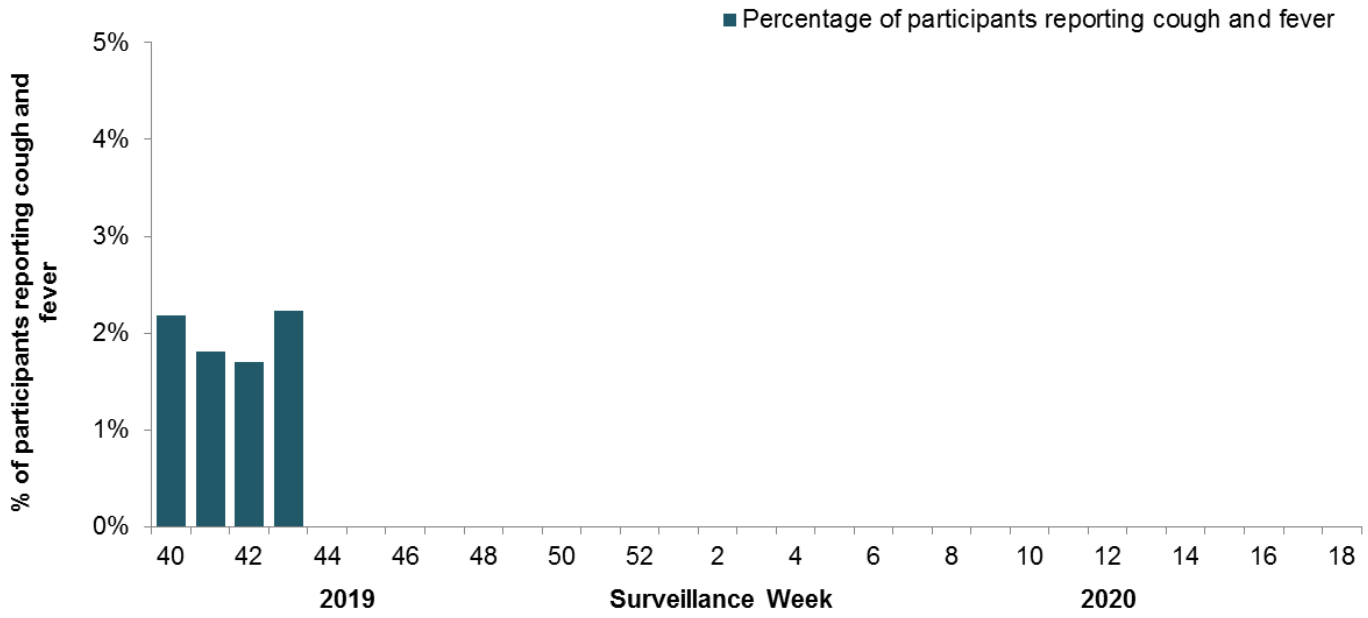
Among the 64 participants who reported cough and fever:

- 16% consulted a healthcare professional;
- 77% reported days missed from work or school, resulting in a combined total of 121 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 2019-43

Number of Participants Reporting in Week 43: 2,875



Online Figure – Geographic distribution of FluWatchers participants reporting cough and fever, Canada, week 2019-43

Click on the map to access the link

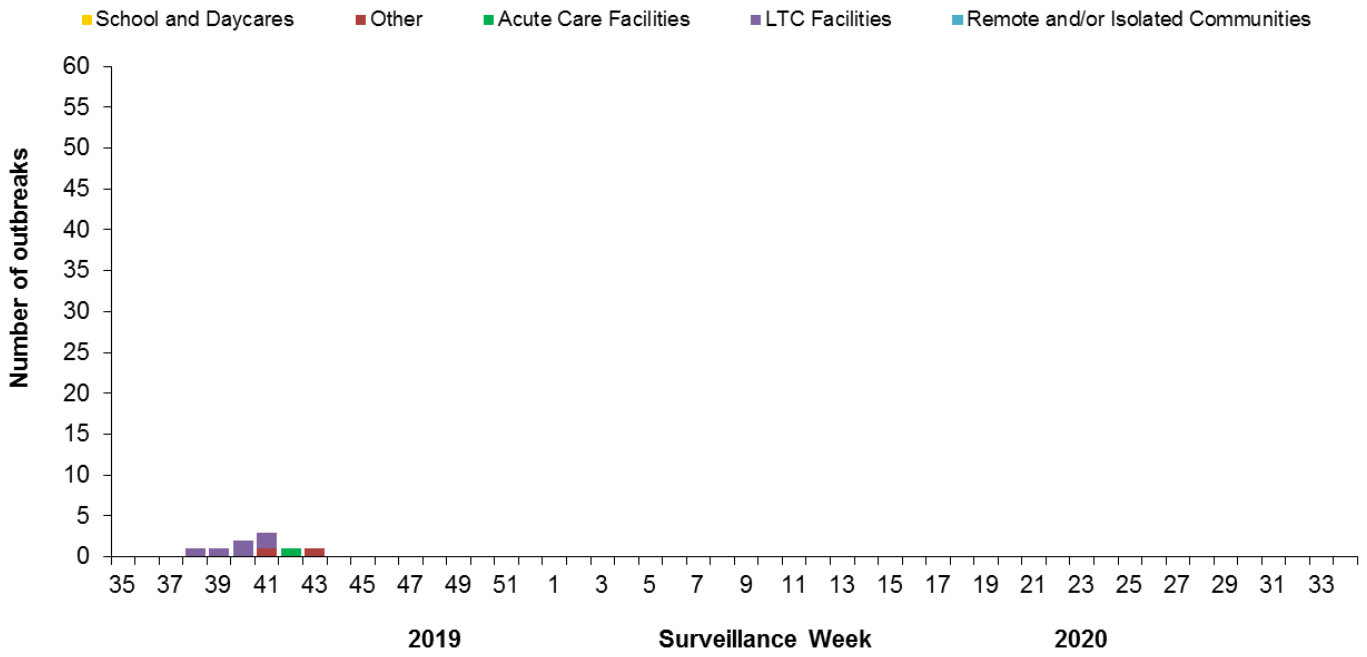
Influenza Outbreak Surveillance

In week 43, one new outbreak was reported in a facility type categorized as 'other' (Figure 6).

To date this season, a total of 9 laboratory-confirmed influenza outbreaks have been reported; six in long-term care facilities, one in an acute care facility and two in a facility type categorized as 'other'. All but one of the reported outbreaks were due to influenza A. One ILI outbreak in a school/daycare has also been reported.

Figure 6 – Number of new outbreaks of laboratory-confirmed influenza by report week, Canada, weeks 2019-35 to 2019-43

Number of provinces and territories reporting in week 43: 13 out of 13



Severe Outcomes Influenza Surveillance

Provincial/Territorial Influenza Hospitalizations and Deaths

In week 43, less than 5 influenza-associated hospitalizations were reported by participating provinces and territories[1].

To date this season, 32 influenza-associated hospitalizations were reported by participating provinces and territories[1].

- 78% of the cases were influenza A.
- Of the cases for which subtype was reported (25), 84% were associated with influenza A(H3N2).
- The majority of cases (53%) were ≥ 65 years of age.

Less than five ICU admissions and no deaths have been reported.

Number of provinces and territories reporting in week 43: 9 out of 9

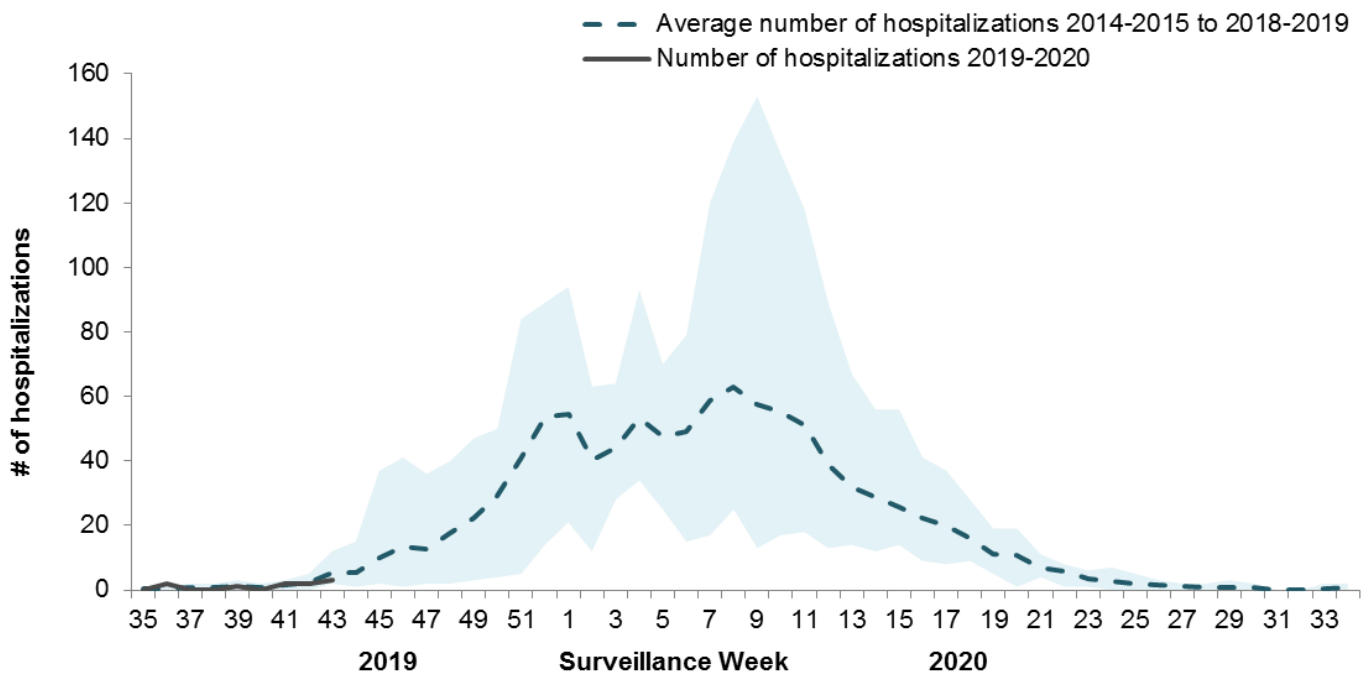
[1]Influenza-associated hospitalizations are reported by Alberta, Manitoba, New Brunswick, Newfoundland and Labrador, Northwest Territories, Nova Scotia, Prince Edward Island and Yukon. Only hospitalizations that require intensive medical care are reported by Saskatchewan.

Pediatric Influenza Hospitalizations and Deaths

In week 43, less than five pediatric (≤16 years of age) laboratory-confirmed influenza-associated hospitalizations were reported by the Immunization Monitoring Program Active (IMPACT) network (Figure 7).

To date this season, 10 pediatric hospitalizations have been reported by the IMPACT network; four cases associated with influenza A and six with influenza B.

Figure 7 – Number of pediatric (≤16 years of age) hospitalizations reported by the IMPACT network, by week, Canada, weeks 2018-35 to 2019-43



Adult Influenza Hospitalizations and Deaths

Surveillance of laboratory-confirmed influenza-associated adult (≥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 31, 2019, the National Microbiology Laboratory (NML) has characterized 19 influenza viruses (10 A(H3N2), 4 A(H1N1) and 5 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:

- Four 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 10 A(H3N2) viruses this season have been genetically characterized, based on sequence analysis of the HA gene.

- Among the four A(H3N2) viruses antigenically characterized as A/Kansas/14/2017-like by HI testing.
    - All viruses belonged to genetic group 3C.2a1b.
- Among the six A(H3N2) viruses which did not grow to sufficient hemagglutination titer for antigenic characterization by HI assay:
    - All viruses belonged to genetic subclade 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)

- Four A(H1N1) viruses characterized were 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 characterized was antigenically similar to B/Colorado/06/2017 by HI assay using antiserum raised against cell culture-propagated B/Colorado/06/2017.
- Four influenza B viruses showed reduced titer by HI assay. Sequence analysis showed that :
    - All of these viruses 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.

Oseltamivir:

Fourteen influenza viruses (9 H3N2, 2 H1N1 and 3 B) were tested for resistance to oseltamivir:

- All influenza viruses tested were sensitive to oseltamivir.

Zanamivir:

Fourteen influenza viruses (9 H3N2, 2 H1N1 and 3 B) were tested for resistance to zanamivir:

- All influenza viruses tested were sensitive to zanamivir.

Amantadine:

High levels of resistance to amantadine persist among influenza A(H1N1) and influenza A(H3N2) viruses. All viruses tested this season were resistant.

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.