

October 21 to 27, 2018 (Week 43)

Overall Summary

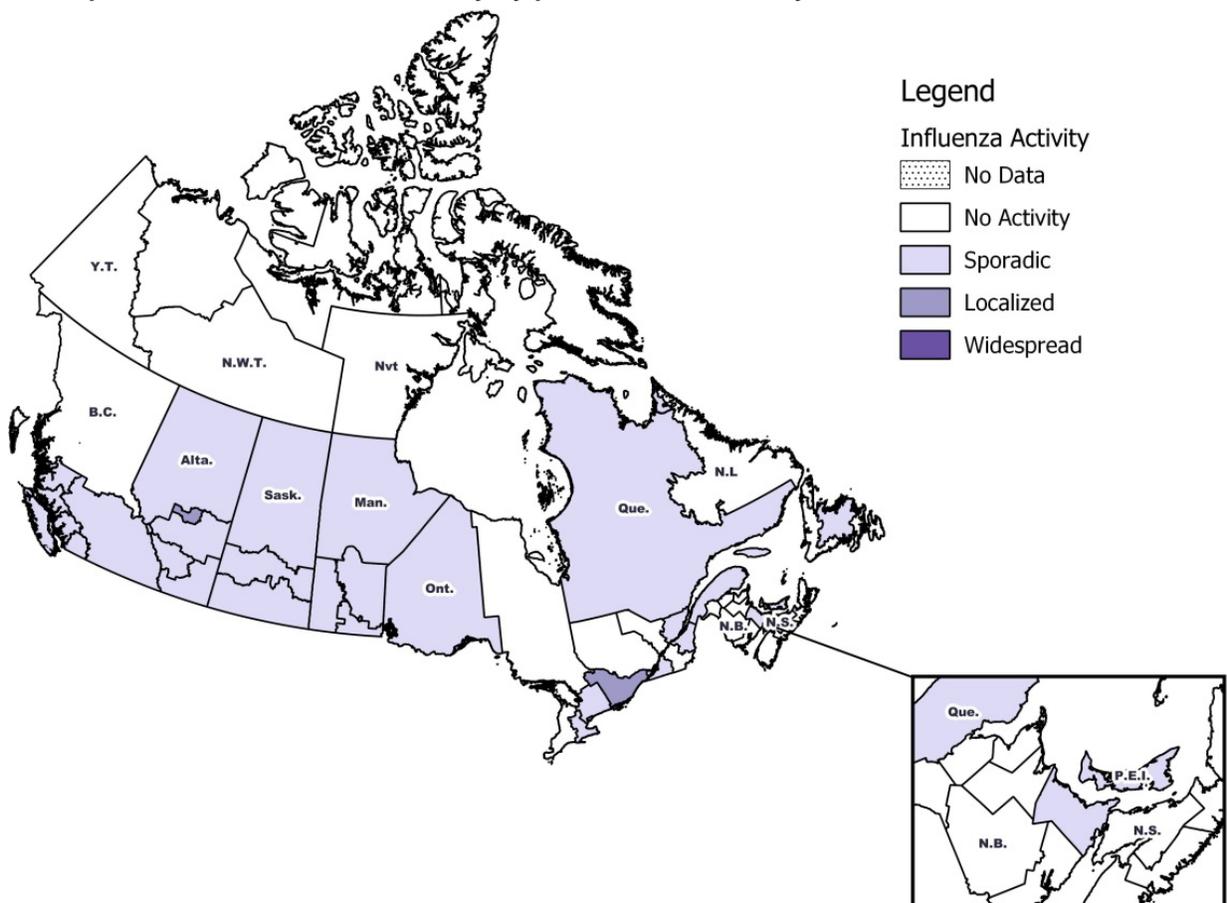
- Influenza activity crossed the seasonal threshold in week 43, indicating the beginning of the influenza season at the national level. This is an earlier start than in recent years.
- The majority of regions in Canada reported sporadic or localized influenza activity in week 43.
- Influenza A is the most common influenza virus circulating in Canada. Currently A(H1N1)pdm09 appears to be the most common circulating subtype. The A(H1N1)pdm09 viruses characterized this season are similar to the strain used in the vaccine.
- The number of influenza-associated hospitalizations is increasing. Primary care visits for ILI and influenza outbreaks remain within expected levels.

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

During week 43, the following influenza activity levels were reported (Figure 1):

- Three regions in Alta.(1) and Ont.(2) reported localized activity.
- Sporadic activity was reported by 26 regions, in B.C.(4), Alta.(4), Sask.(3), Man.(5), Ont.(3), Que.(4), N.B.(1), N.L.(1) and P.E.I.(1).
- No activity was reported by 24 regions.

Figure 1 – Map of overall influenza/ILI activity by province and territory, Canada, week 2018-43



Laboratory-Confirmed Influenza Detections

In week 43, the following results were reported from sentinel laboratories across Canada (Figure 2):

- The percentage of tests positive for influenza crossed the seasonal threshold of 5% of tests positive to 5.2%.
- The percentage of influenza A tests positive is higher for this time of year compared to the same period during the previous eight seasons. Laboratory detections of influenza have entered seasonal levels three weeks earlier than the median over the previous eight seasons.
- In week 43, 220 laboratory detections of influenza were reported. All but three of these detections were influenza A.

To date this season 513 laboratory-confirmed influenza detections have been reported (Figure 3):

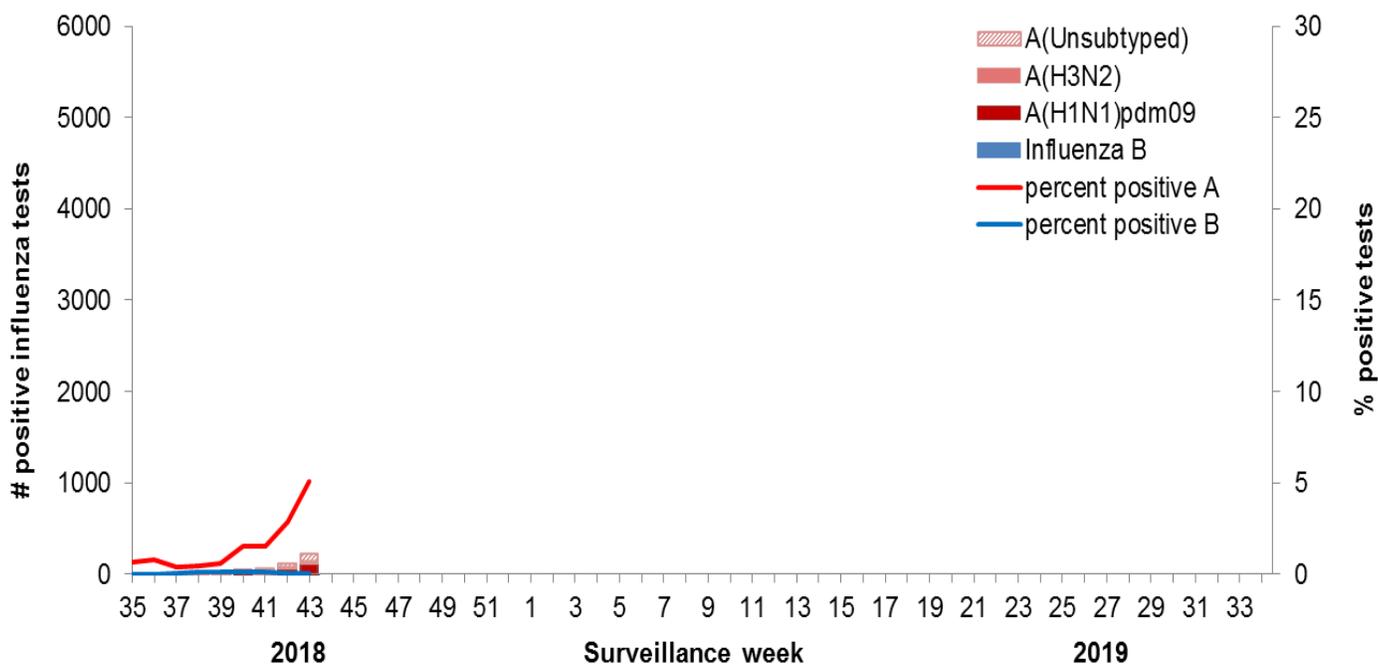
- 96% have been influenza A
- Among the 307 influenza A viruses subtyped, 78% have been A(H1N1)pdm09

To date this season, detailed information on age and type/subtype has been received for 436 laboratory-confirmed influenza cases (Table 1):

- Adults 20-64 years of age represent the largest proportion of cases (47%), followed by children 0-19 years of age (34%).

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 2018-35 to 2018-43



The shaded area indicates weeks where the positivity rate was at least 5% and a minimum of 15 positive tests were observed, signalling the period of [seasonal influenza activity](#).

Figure 3 – Cumulative numbers of positive influenza specimens by type/subtype and province/territory, Canada, weeks 2018-35 to 2018-43

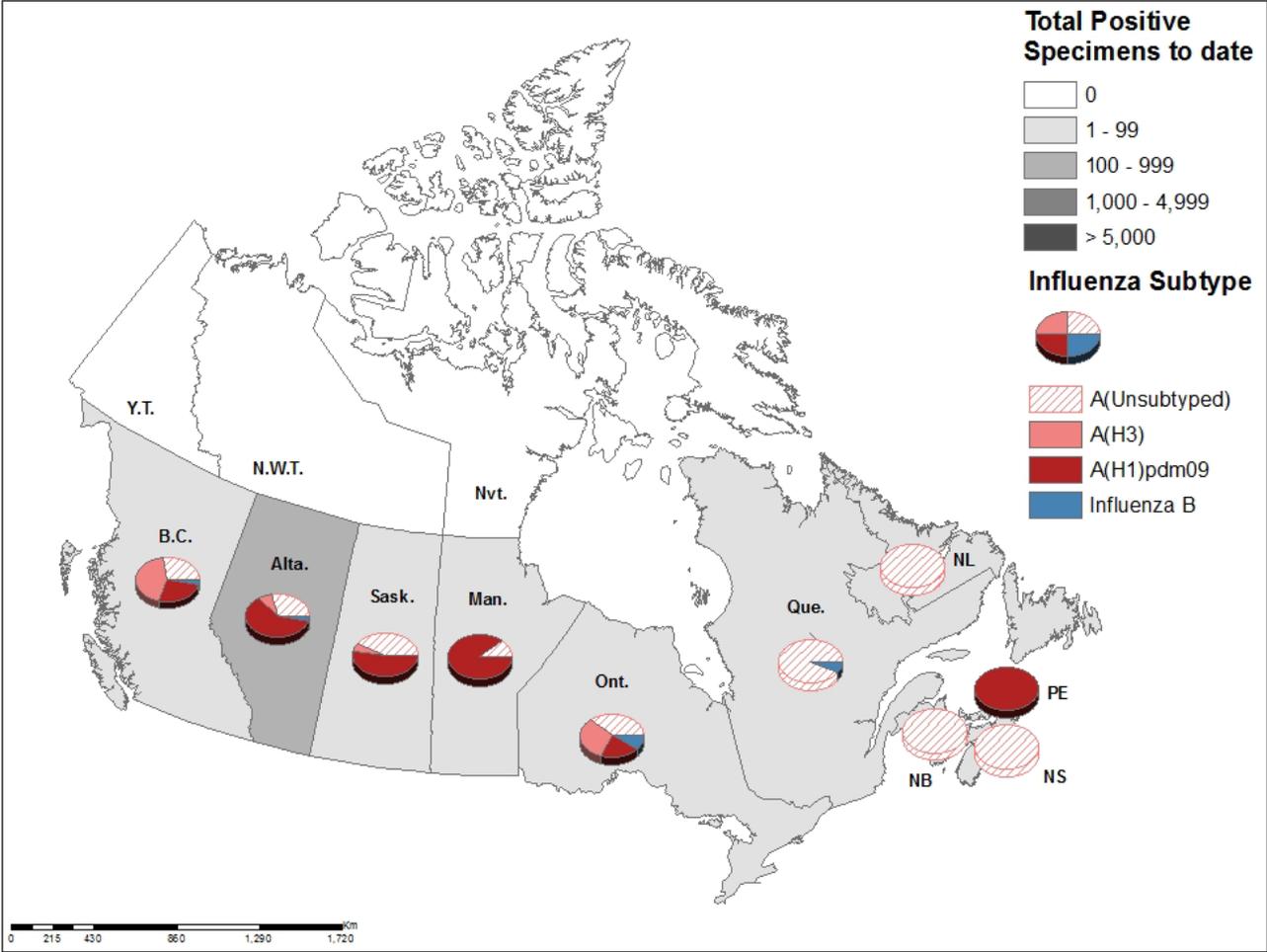


Table 1 – Cumulative numbers of positive influenza specimens by type, subtype and age-group reported through case-based laboratory reporting, Canada, weeks 2018-35 to 2018-43

Age groups (years)	Cumulative (August 26, 2018 to October 27, 2018)						
	Influenza A				B	Influenza A and B	
	A Total	A(H1N1) pdm09	A(H3N2)	A (UnS) ¹	Total	#	%
0-4	>64	34	<5	30	0	>64	-
5-19	>76	39	<5	37	<5	>76	-
20-44	106	57	6	43	5	111	-
45-64	93	52	12	29	<5	>93	-
65+	78	32	29	17	<5	>78	-
Total	422	214	52	156	14	436	-

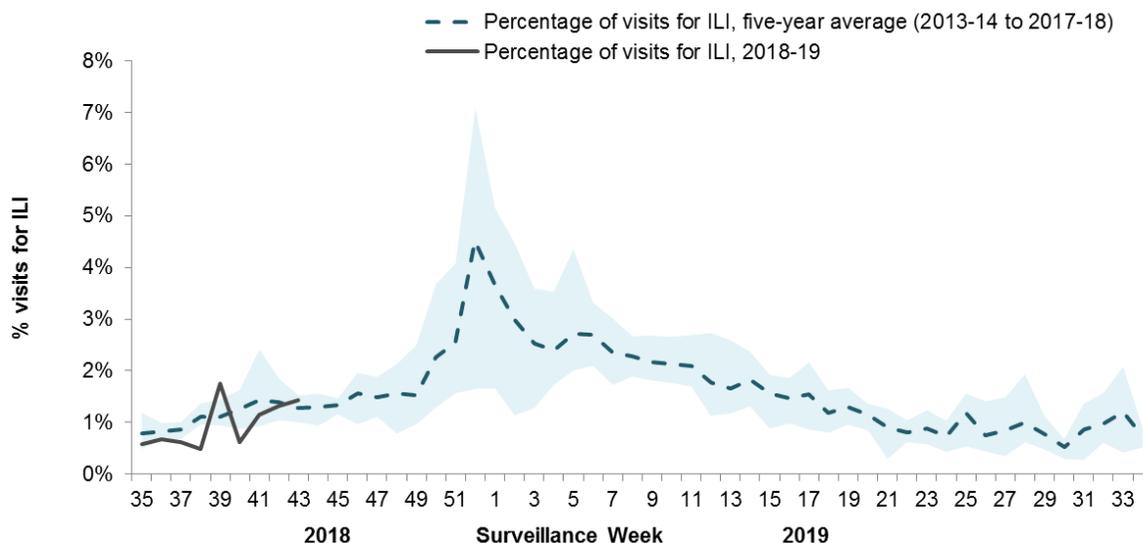
¹UnS: unsubtyped: The specimen was typed as influenza A, but no result for subtyping was available.

Syndromic / Influenza-like Illness Surveillance

Healthcare Practitioners Sentinel Syndromic Surveillance

In week 43, 1.4% of visits to healthcare professionals were due to influenza-like illness (ILI) (Figure 4). The percentage of visits for ILI is within expected levels.

Figure 4 – Percentage of visits for ILI reported by sentinels by report week, Canada, weeks 2018-35 to 2018-43
 Number of Sentinels Reporting in Week 43: 101



The shaded area represents the maximum and minimum percentage of visits for ILI reported by week from seasons 2013-14 to 2017-18

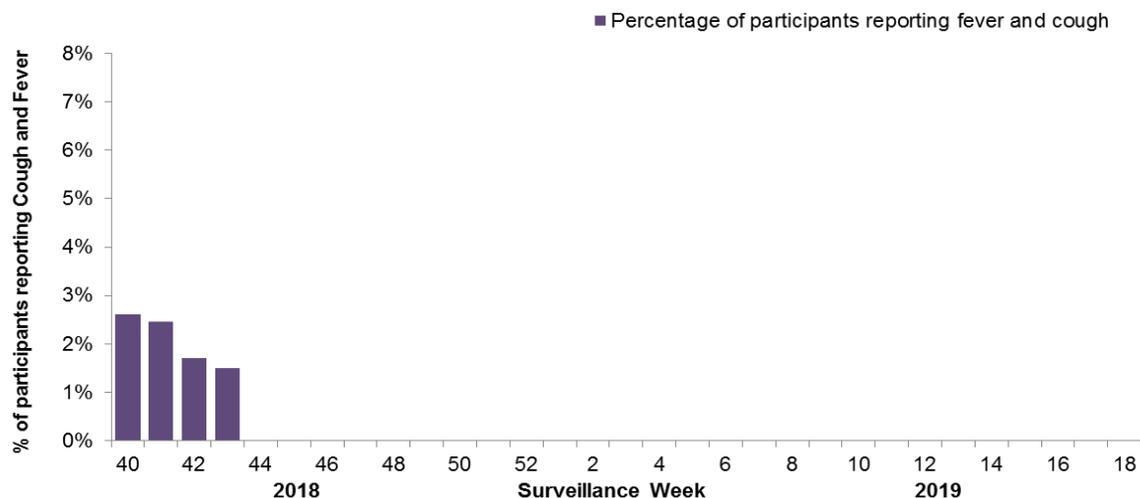
Participatory Syndromic Surveillance

In week 43, 2,013 participants reported to FluWatchers, of which 30 (1.5%) reported symptoms of cough and fever (Figure 5).

Among the 30 participants who reported fever and cough:

- 20% consulted a healthcare professional
- 77% reported days missed from work or school, resulting in a combined total of 42 missed days of work or school.

Figure 5 – Percentage of participants reporting cough and fever, Canada, weeks 2018-40 to 2018-43
 Number of Participants Reporting in Week 43: 2,013



Influenza Outbreak Surveillance

influenza A(H1N1).

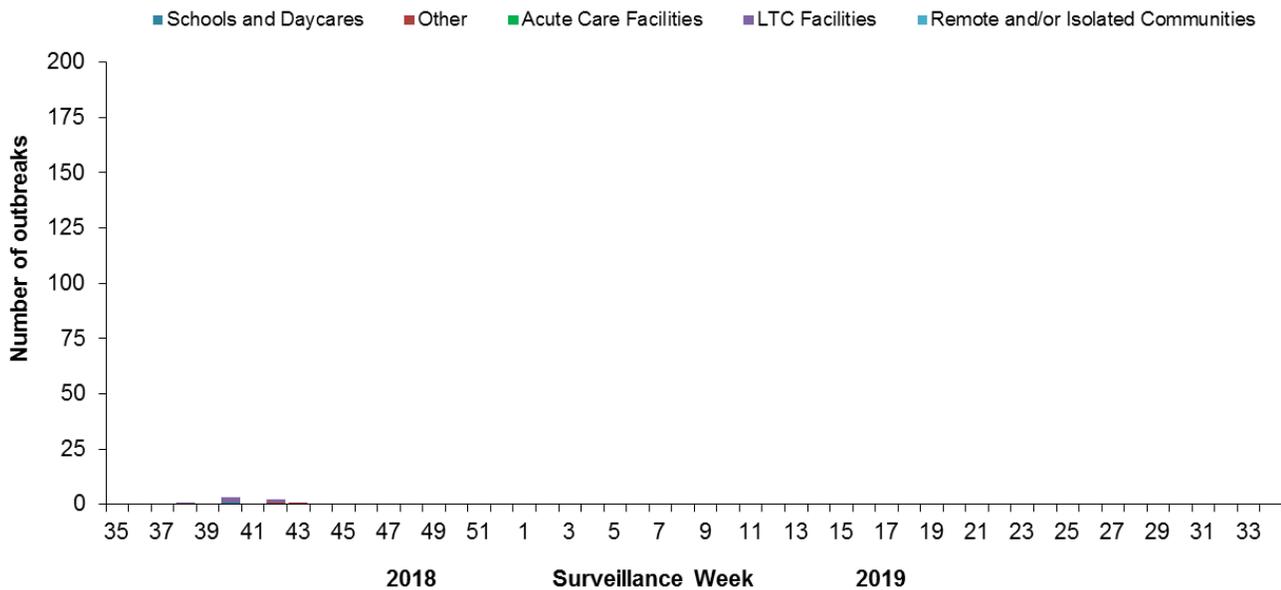
To date this season, 7 influenza outbreaks have been reported (Figure 6):

- Four outbreaks were in long-term care facilities, one was in a school, and two were in other settings.
- An equal number of outbreaks were associated with influenza A(H1N1)pdm09 and A(H3N2) the type/subtype was not available for two outbreaks.

No new ILI outbreaks were reported in week 43.

To date this season, 19 ILI outbreaks have been reported; 18 occurred in LTC facilities, and one in a school.

Figure 6 – Number of new outbreaks of laboratory-confirmed influenza by report week, Canada, weeks 2018-35 to 2018-43



Severe Outcomes Influenza Surveillance

Provincial/Territorial Influenza Hospitalizations and Deaths

To date this season, 56 influenza-associated hospitalizations have been reported by participating provinces and territories¹.

Hospitalizations (Table 2):

- 96% (54) were associated with influenza A
- Adults 20-64 years of age represent the largest proportion of hospitalizations (48%), followed by adults 65 years of age and older (29%).

Intensive Care Unit (ICU) cases and deaths:

- To date this season 7 ICU admissions and <5 deaths have been reported.

Table 2 – Cumulative number of hospitalizations by age-group reported by participating provinces and territories¹, Canada, weeks 2018-35 to 2018-43

Age Groups	Cumulative (August 26, 2018 to October 27, 2018)
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(years)	Total	%
0-4	5	9%
5-19	8	14%
20-44	10	18%
45-64	17	30%
65+	16	29%
Total	56	100%

¹Influenza-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

To date this season, 17 pediatric hospitalizations have been reported by the Immunization Monitoring Program Active (IMPACT) network.

- All 17 cases have been associated with influenza A.
- Among the 12 for which the influenza subtype was available, 11 were associated with A(H1N1)pdm09.
- 15 of the 17 cases were between 6 months and 9 years of age.

To date this season, <5 ICU admissions, and no deaths have been reported.

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 2018-19 season.

Influenza Strain Characterizations

Since September 1, 2018, the National Microbiology Laboratory (NML) has characterized 18 influenza viruses (2 A(H3N2) and 16 A(H1N1)) that were received from Canadian laboratories.

Genetic Characterization of Influenza A(H3N2):

One influenza A(H3N2) virus did not grow to sufficient hemagglutination titer for antigenic characterization by hemagglutination inhibition (HI) assay. Therefore, NML has performed genetic characterization to determine the genetic group identity of this virus.

Sequence analysis of the HA gene of this virus showed that:

- The A(H3N2) virus belonged to genetic group 3C.2a1.
- A/Singapore/INFIMH-16-0019/2016-like virus belongs to genetic group 3C.2a1 and is the influenza A(H3N2) component of the 2018-19 Northern Hemisphere influenza vaccine

Antigenic Characterization:

Influenza A (H3N2):

- One influenza A(H3N2) virus was antigenically characterized as A/Singapore/INFIMH-16-0019/2016-like by HI testing using antiserum raised against egg-propagated A/Singapore/INFIMH-16-0019/2016.
- A/Singapore/INFIMH-16-0019/2016-like virus is the influenza A(H3N2) component of the 2018-19 Northern Hemisphere influenza vaccine.
- The influenza A (H3N2) virus characterized belonged to genetic group 3C.2a1.

Influenza A(H1N1):

- Sixteen A(H1N1) viruses characterized were antigenically similar to A/Michigan/45/2015, which is the influenza A(H1N1) component of the 2018-19 Northern Hemisphere influenza vaccine.

Antiviral Resistance

Antiviral Resistance – Amantadine:

Seventeen influenza A (3 A(H3N2) and 14 A(H1N1)) viruses were tested for resistance to amantadine and it was found that:

- The three A(H3N2) viruses tested were resistant to amantadine.
- The 14 A(H1N1) viruses tested were resistant to amantadine.

Antiviral Resistance – Oseltamivir:

Nineteen influenza viruses (4 A(H3N2) and 15 A(H1N1)) were tested for resistance to oseltamivir and it was found that:

- The four A(H3N2) viruses tested were sensitive to oseltamivir
- The 15 A(H1N1) viruses tested were sensitive to oseltamivir

Antiviral Resistance – Zanamivir:

Nineteen influenza viruses (4 A(H3N2) and 15 H1N1) were tested for resistance to zanamivir and it was found that:

- The four A(H3N2) viruses were sensitive to zanamivir.
- The 15 A(H1N1) viruses were sensitive to zanamivir.

Provincial and International Surveillance Links

- Alberta – [Influenza Surveillance](#)
- British Columbia – [Influenza Surveillance](#)
- Manitoba - [Seasonal Influenza Reports](#)
- New Brunswick – [Influenza Surveillance Reports](#)
- Newfoundland and Labrador – [Surveillance and Disease Reports](#)
- Nova Scotia – [Respiratory Watch Report](#)
- Ontario – [Ontario Respiratory Pathogen Bulletin](#)
- Prince Edward Island – [Influenza Summary](#)
- Saskatchewan – [Influenza Reports](#)
- Québec – [Système de surveillance de la grippe](#)
- Australia – [Influenza Surveillance Report and Activity Updates](#)
- European Centre for Disease Prevention and Control – [Surveillance reports and disease data on seasonal influenza](#)
- New Zealand – [Influenza Weekly Update](#)
- United Kingdom -- [Weekly Influenza Activity Reports](#)
- Pan-American Health Organization – [Influenza Situation Report](#)
- United States Centres for Disease Control and Prevention – [Weekly Influenza Summary Update](#)
- World Health Organization – [FluNet](#)

Notes

To learn more about definitions, descriptions and the FluWatch program in general, see the [Overview of influenza monitoring in Canada](#) page. For more information on the flu, see our [Flu\(influenza\)](#) web page.

This [report](#) is available on the Government of Canada Influenza webpage.
Ce [rapport](#) est disponible dans les deux langues officielles.

We would like to thank all the Fluwatch surveillance partners who are participating in this year's influenza surveillance program.