# **British Columbia Influenza Surveillance Bulletin**

Influenza Season 2019-20, Number 1, Week 46 November 10 to November 16, 2019

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## Low-level sporadic influenza activity in BC

This is the first influenza bulletin of the season, delayed in relation to ongoing staffing shortage.

So far this season, influenza activity remains at low levels consistent with historical averages.

Provincially since week 40, <5% of tested specimens have been positive for influenza virus of which more than 90% have been influenza A. Among subtyped influenza A viruses since week 40, about 80% have been A(H3N2).

Since week 40, 4 laboratory-confirmed influenza outbreaks were reported. Three were in long term care facilities (2 A(H3N2) and 1 subtype unknown) and 1 was in an acute care facility (A(H3N2). One school influenza-like illness outbreak of unknown etiology has been reported.

Across Canada, influenza activity also remains at inter-seasonal levels with the majority of regions reporting sporadic, and a few regions reporting localized activity levels.

Please note that in reporting facility outbreaks this season, the <u>Facility Outbreak</u> <u>Report Form</u> was updated in July 2018 (attached). Older versions should no longer be used.

## Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

Report Disseminated: November 21, 2019







## **British Columbia**

## **Sentinel Physicians**

So far this season, influenza-like illness (ILI) rates among patients presenting to sentinel sites have been low overall. With some earlier fluctuation potentially reflecting small numbers, ILI rates in the past two weeks have been below the 10-year historical average (**Figure 1**). Seven (35%) of sentinel sites have reported data for week 46 and rates may be updated as reporting becomes more complete.



Figure 1: Percent of patient visits to sentinel physicians due to influenza-like illness (ILI) compared to historical average, British Columbia, 2019-20

\* Data are subject to change as reporting becomes more complete.

† 10-year historical average for 2019-20 season based on 2006-07 to 2018-2019 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality; CI=confidence interval.



## **BC Children's Hospital Emergency Room**

In week 46, the proportion of visits to BC Children's Hospital Emergency Room (ER) attributed to ILI (16.7%) was higher than the historical average (11.5%) for the past 5 seasons. This pattern warrants ongoing monitoring but may reflect expected variability with small numbers and/or the contribution of other respiratory viruses that are currently more predominant causes of ILI than influenza (see **Figure 9** below).



Figure 2: Percent of patients presenting to BC Children's Hospital ER attributed to influenza-like illness (ILI), British Columbia, 2019-20

Source: BCCH Admitting, Discharge, Transfer database (ADT). Data includes records with a triage chief complaint of "flu" or "influenza" or "fever/cough." \* 5-year historical average for 2019-20 season based on 2014-15 to 2018-19 seasons; CI=confidence interval.



#### **Medical Services Plan**

In week 46, BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, remains below the 10-year median (**Figure 3**) for this time of the year overall in the province and in the 5 regions (**Figure 4**).





\* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza).

Data for the period August 1, 2009 to July 31, 2010 have been excluded from the 10-year median calculation due to atypical seasonality during the 2009/2010 H1N1 pandemic year. MSP data beginning August 1, 2019 corresponds to sentinel ILI week 31; data are current to November 20, 2019.

Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services.







## Vancouver Coastal



Vancouver Island



Northern





#### British Columbia Laboratory Reports

The percentage influenza positivity is presented by influenza type based on primary specimens submitted for influenza testing at the BCCDC Public Health Laboratory (PHL) and other external sites that share complete testing data with the BCCDC PHL.

From week 40 of 2019, laboratory reports reflect British Columbia (BC)-wide influenza virus testing. Testing data are submitted and collated from sites at Children's & Women's Hospital Laboratory, Fraser Health Medical Microbiology Laboratory, Island Health, Northern Health Authority, Providence Health Care, Vancouver Coastal Health, Interior Health, and for primary influenza virus testing at the BCCDC Public Health Laboratory. Prior to week 40 of 2019, influenza reports represent only a portion of these testing sites.

The BCCDC PHL conducts the majority of influenza subtype characterization for the province, including for primary specimens submitted directly to the BCCDC PHL for influenza diagnosis, as well as for specimens that have tested positive for influenza at other external sites and for which secondary subtyping was requested.

#### Laboratory surveillance observations

Cumulatively since week 40 (starting September 29, 2019), of the 4684 specimens tested for influenza across BC, 143 (3%) tested positive for influenza A and 7 (0.1%) tested positive for influenza B.

In the most recent reporting week 46, 27/741 (3.6%) specimens tested positive for influenza A and 3/741 (0.4%) were positive for influenza B. Although higher than the prior week (week 45), where influenza A and B positivity dropped to 1.5% and 0.1% respectively, influenza positivity in week 46 otherwise remains comparable to recent prior weeks (**Figure 5**).

Since week 40, among all influenza viruses successfully typed/subtyped at the BCCDC PHL, 8/76 (11%) were A(H1N1)pdm09, 61/76 (80%) were A(H3N2), and 7/76 (9%) were influenza B. Influenza A(H3N2) has thus been the dominant subtype overall since week 40 (**Figure 6**). Note, however, that of the 8 influenza viruses typed/subtyped in week 46, 3 were influenza A(H3N2) and 5 were influenza B.

Since week 40, most (6/8) A(H1N1)pdm09 detections were adults over the age of 50 (**Figures 7 and 8**). Among A(H3N2) detections, 23/60 (38%) were adults over the age of 65.

The BCCDC PHL also conducts testing for other respiratory viruses (ORV) among specimens from select sites across the province. Other external sites perform their own ORV testing and this report does not include data from all sites across the province. Among ORV testing at the BCCDC PHL during week 46, entero/rhinoviruses (n=58) were the most commonly detected virus (**Figure 6**). However, entero/rhinoviruses detections have steadily decreased since week 39 (n=104) while RSV viruses have shown increase from week 39 (n=4) to week 46 (n=14).

# Figure 5: Flu positivity derived from influenza specimens submitted to participating laboratories across BC, 2019-20\*



\*Rates are subject to change with subsequent data reconciliation. Findings support trend analysis but note data for week 35-39 do not include all testing sites in BC. \*\*Reporting sites include: BC Children's and Women's Hospital, Children's and Women's Hospital Laboratory, Fraser Health Medical Microbiology Laboratory, Island Health, Providence Health Care, Powell River Hospital, St. Paul's Hospital, Vancouver General Hospital, Victoria General Hospital, Victoria Goastal Health, BCCDC Public Health Laboratory, Interior Health Authority sites and Northern Health Authority sites. \*\*\* Data from week 35-38 were derived manually from weekly FluWatch's Respiratory Virus Detection Surveillance System (RVDSS) report data and the Flu Data Mart. Influenza positivity data for week 39 came exclusively from the FluWatch's RVDSS Week 39 Report. \*\*\*\*Interior Health Authority sites reported data from week 44 (October 27, 2019 – November 2, 2019) and onwards. Source: Summary provided by the BCCDC Public Health Laboratory.





Source: BCCDC Public Health Laboratory (PHDRW); Data are current to November 21, 2019.





Source: BCCDC Public Health Laboratory (PHDRW); Data are current to November 21, 2019; figure includes cumulative influenza detections for specimens collected from weeks 40-46.

Figure 8: Age distribution of influenza detections (cumulative since week 36), BCCDC Public Health Laboratory, 2019-20



Source: BCCDC Public Health Laboratory (PHDRW); Data are current to November 21, 2019; figure includes cumulative influenza detections for specimens collected from weeks 40-46.



## BC Children's and Women's Health Centre Laboratory

In week 46, 119 tests for influenza and 119 tests for respiratory syncytial virus (RSV) were conducted at the BC Children's and Women's Health Centre laboratory. Of these, 4 were positive for influenza A (not subtyped), 1 was positive for influenza B, and 12 were positive for RSV. Compared to the prior week 45, influenza A (3.4% vs 1.9%), influenza B (0.8% vs 0%), and RSV (10.1% vs 8.7%) test positivity increased in week 46 (**Figure 9**).



Figure 9: Influenza and other virus detections among respiratory specimens submitted to BC Children's and Women's Health Centre Laboratory, 2019-20

\* Positive rates were calculated using aggregate data. The denominators for each rate represent the total number of tests; multiple tests may be performed for a single specimen and/or patient.



#### Influenza-like Illness (ILI) Outbreaks

In week 46, one laboratory-confirmed influenza outbreak was reported in a long-term care facility (LTCF). Since week 40, a total of 3 LTCF (2 A(H3N2) and 1 subtype unknown), 1 acute care facility (A(H3N2), and 1 school outbreaks have been reported (**Figures 10 and 11**).

This tally of LTCF outbreaks is comparable to recent prior seasons. Between weeks 40 and 46 of the 2017-18 and 2018-19 seasons, 2 and 1 confirmed LTCF outbreaks, respectively, were reported.



Figure 10: Number of influenza-like illness (ILI) outbreaks reported, British Columbia 2019-20

\* School-based ILI outbreak defined as >10% absenteeism on any day, most likely due to ILI onset.
 † Facility-based influenza outbreaks defined as 2 or more ILI cases within 7-day period, with at least one laboratory-confirmed case of influenza.





+ Facility-based influenza outbreaks defined as 2 or more ILI cases within 7-day period, with at least one laboratory-confirmed case of influenza.



## **National**

## FluWatch (weeks 45, November 3 to November 9, 2019)

Influenza activity remains at inter-seasonal levels across the country; activity was reported in 51% of the regions in week 45. The majority of regions reporting influenza activity reported sporadic levels (20 regions), while a few regions reported localized activity (2 regions). The number of influenza detections continued to increase in week 45. A total of 147 laboratory detections of influenza were reported, of which 76% (111) were influenza A. Among subtyped influenza A detections from sentinel laboratories from weeks 45, 71% (30/42) of cases were A(H3N2). Influenza A(H3N2) continues to be the most common influenza virus circulating in Canada. The percentage of laboratory tests positive for influenza in week 45 remained at inter-seasonal levels, at 3.1%. This is similar to the percentage (2.3%) observed in the week 44 FluWatch report.

FluWatch report (weeks 45) is available at:

https://www.canada.ca/en/public-health/services/publications/diseases-conditions/fluwatch/2019-2020/week-45-november-3-9-2019.html.

## National Microbiology Laboratory (NML): Strain Characterization

From September 1 to November 14, 2019, the National Microbiology Laboratory (NML) has characterized 39 influenza viruses [25 A(H3N2), 6 A(H1N1) and 8 influenza B] that were received from Canadian laboratories.

<u>Influenza A(H3N2)</u>: One influenza A(H3N2) virus was antigenically characterized as A/Kansas/14/2017like, the WHO-recommended A(H3N2) component of the 2019-20 northern hemisphere influenza vaccine. Among the 25 A(H3N2) viruses, 24 belonged to the genetic subclade 3C.2a1b and 1 belonged to the genetic subclade 3C.3a.

<u>Influenza A(H1N1)pdm09:</u> All 6 A(H1N1) viruses characterized were antigenically similar to A/Brisbane/02/2018. The latter is the WHO-recommended influenza A(H1N1) component of the 2019-20 northern hemisphere influenza vaccine.

<u>Influenza B:</u> Of the 8 influenza B viruses characterized, 2 influenza B viruses were antigenically similar to B/Colorado/06/2017. The latter belongs to the B Victoria lineage, recommended by the WHO as the influenza B component for the 2019-20 Northern Hemisphere *trivalent* influenza vaccine. Of note, the WHO recommended influenza B component of the *quadrivalent* vaccine is a B/Phuket/3073/2013-like virus of the B Yamagata lineage.

#### National Microbiology Laboratory (NML): Antiviral Resistance

From September 1, 2018, to November 14, 2019, the NML received influenza viruses from Canadian laboratories for drug susceptibility testing.

<u>Amantadine:</u> High levels of resistance to amantadine persist among influenza A(H1N1) and influenza A(H3N2) viruses. All viruses tested this season were resistant.

Oseltamivir: Of the 34 influenza viruses [19 H3N2, 6 H1N1 and 9 B] tested against oseltamivir, all were sensitive.

Zanamivir: Of the 34 influenza viruses [19 H3N2, 6 H1N1 and 9 B] tested against zanamivir, all were sensitive.



## **International**

#### USA (week 45, November 3 to November 9, 2019)

During week 45, influenza activity continues to increase, but still remains at low levels, in the United States. Since week 40, 627 (53%) influenza A and 558 (47.1%) influenza B viruses were detected by public health laboratories. From the 627 positive influenza A specimens, 223 (39.3%) were A(H1N1)pdm09, 344 (60.7%) were A(H3N2), and 60 were unsubtyped. From the 558 positive influenza B specimens, 17 (4%) belonged to the Yamagata lineage, 408 (96%) to the Victoria lineage, and 133 were not characterized as to lineage. For week 45, data from clinical laboratories was not available. The proportion of deaths attributed to pneumonia and influenza (P&I) during week 44 (4.9%) was below the epidemic threshold (6.0%). Three influenza-associated pediatric deaths were reported during the 2019-2020 season to the CDC. The proportion of outpatient visits for ILI was 2.3%, which is just below the national baseline of 2.4%. The US CDC has posted a summary of influenza activity in the United States and elsewhere, available at: <a href="https://www.cdc.gov/flu/weekly/index.htm">https://www.cdc.gov/flu/weekly/index.htm</a>.

## WHO (November 11, 2019, based on data up to October 27, 2019)

In the temperate zone of the northern hemisphere, influenza activity remained at inter-seasonal levels in most countries. Influenza activity is low in the temperate zone of the southern hemisphere. Worldwide, seasonal influenza A viruses accounted for the majority of detections, although the proportion of influenza B viruses increased in recent weeks.

From October 14 to October 27, 2019, the WHO GISRS laboratories tested more than 77,099 specimens. Of these, 4,227 were positive for influenza viruses including 2,939 (69.5%) typed as influenza A and 1,288 (30.5%) as influenza B. Of the subtyped influenza A viruses, 924 (42.7%) were influenza A(H1N1)pdm09 and 1239 (57.3%) were influenza A(H3N2). Of the characterized B viruses, 27 (4.8%) belonged to the B(Yamagata) lineage and 534 (95.2%) to the B(Victoria) lineage.

*In countries in the temperate zone of the southern hemisphere,* overall influenza activity appears to be low in most countries. After a second wave of influenza activity comprised predominantly of B viruses, influenza activity in Chile also appears to be decreasing.

*In countries in the tropical zone,* overall influenza activity is low, but with increased detection of influenza A (predominating subtype varies by country) and influenza B/Victoria lineage viruses in various countries. In Central American countries, influenza activity continued to increase in El Salvador and Nicaragua, with influenza A(H1N1)pdm09 and A(H3N2) viruses mostly detected, respectively. In Western Africa, influenza activity was elevated in some of the reporting countries. Severe acute respiratory infection (SARI) cases in Togo remained elevated. In Southern Asia and South East Asia, detection of influenza A(H3N2) predominated in Lao PDR and detection of influenza A(H1N1)pdm09 predominated in Iran and Malaysia.

## Details are available at: <u>https://www.who.int/influenza/surveillance\_monitoring/updates/latest\_update\_GIP\_surveillance/en/</u>.



## WHO Recommendations for Influenza Vaccines

#### WHO Recommendations for 2019-20 Northern Hemisphere Influenza Vaccine

On February 21, 2019, the WHO announced the recommended strain components for the 2019-20 northern hemisphere trivalent influenza vaccine (TIV)\*:

- an A/Brisbane/02/2018 (H1N1)pdm09-like virus [a clade 6B.1A1 virus]; +
- an A/Kansas/14/2017 (H3N2)-like virus [a clade 3C.3a virus]; ‡
- a B/Colorado/06/2017-like virus (B/Victoria/2/87 lineage) [a ∆2, 162-163 virus].

It is recommended that quadrivalent influenza vaccines (QIV) containing two influenza B viruses contain the above three viruses and a B/Phuket/3073/2013-like virus (B/Yamagata/16/88 lineage) [a clade 3 virus].

\* Recommended strains represent a change for two of the three components used for the 2018-19 northern hemisphere TIV † Recommended strain represents a change from the 2018-19 season vaccine which contained an A/Michigan/45/2015 (H1N1)pdm09-like virus [a clade 6B.1 virus]

‡ Recommended strain represents a change from the 2018-19 season vaccine which contained an A/Singapore/INFIMH-16-0019/2016 (H3N2)-like virus [a clade 3C.2a1 virus]

For further details: <u>https://www.who.int/influenza/vaccines/virus/recommendations/2019\_20\_north/en/</u>

## WHO Recommendations for the 2020 Southern Hemisphere Influenza Vaccine

On September 27, 2019, the WHO announced recommended strain components for the 2020 southern hemisphere trivalent influenza vaccine (TIV):\*

- an A/Brisbane/02/2018 (H1N1)pdm09-like virus [a clade 6B.1A1 virus]; †
- an A/South Australia/34/2019 (H3N2)-like virus [a clade 3C.2a1b virus];‡
- a B/Washington/02/2019-like (B/Victoria lineage) virus [a ∆3, 162-164 virus].§

It is recommended that quadrivalent influenza vaccines (QIV) containing two influenza B viruses contain the above three viruses and a B/Phuket/3073/2013-like virus (B/Yamagata lineage) [a clade 3 virus].

\* Recommended strains represent a change for three of the three components used for the 2019 southern hemisphere TIV. † Recommended strain represents a change from the 2019 season vaccine which contained an A/Michigan/45/2015 (H1N1)pdm09like virus [a clade 6B.1 virus]

‡ Recommended strain represents a change from the 2019 season vaccine which contained an A/Switzerland/8060/2017 (H3N2)like virus [a clade 3C.2a2 virus]

§ Recommended strain represents a change from the 2019 season vaccine which contained a B/Colorado/06/2017-like virus (B/Victoria/2/87 lineage) [a  $\Delta 2$ , 162-163 virus]

For further details: http://www.who.int/influenza/vaccines/virus/recommendations/2020 south/en/



## **Additional Information**

## **Explanatory Note:**

The surveillance period for the 2019-20 influenza season is defined starting in week 40. Weeks 36-39 of the 2018-19 season are shown on graphs for comparison purposes.

#### List of Acronyms:

ACF: Acute Care Facility AI: Avian influenza FHA: Fraser Health Authority HBoV: Human bocavirus HMPV: Human metapneumovirus HSDA: Health Service Delivery Area IHA: Interior Health Authority ILI: Influenza-Like Illness LTCF: Long-Term Care Facility MSP: BC Medical Services Plan
NHA: Northern Health Authority
NML: National Microbiological Laboratory
A(H1N1)pdm09: Pandemic H1N1 influenza (2009)
RSV: Respiratory syncytial virus
VCHA: Vancouver Coastal Health Authority
VIHA: Vancouver Island Health Authority
WHO: World Health Organization

## Current AMMI Canada Guidelines on the Use of Antiviral Drugs for

Influenza: <a href="http://www.ammi.ca/?ID=122&Language=ENG">www.ammi.ca/?ID=122&Language=ENG</a>

## Web Sites:

BCCDC Emerging Respiratory Pathogen Updates: <a href="http://www.bccdc.ca/health-professionals/data-reports/emerging-respiratory-virus-updates">www.bccdc.ca/health-professionals/data-reports/emerging-respiratory-virus-updates</a>

## Influenza Web Sites

Canada – Influenza surveillance (FluWatch): <u>https://www.canada.ca/en/public-health/services/diseases/flu-influenza/influenza-surveillance.html</u> Washington State Flu Updates: <u>http://www.doh.wa.gov/portals/1/documents/5100/420-100-fluupdate.pdf</u> USA Weekly Surveillance Reports: <u>www.cdc.gov/flu/weekly/</u> Joint ECDC – WHO/Europe weekly influenza update (Flu News Europe): <u>flunewseurope.org</u> WHO – Weekly Epidemiological Record: <u>www.who.int/wer/en/</u> WHO Collaborating Centre for Reference and Research on Influenza (Australia): <u>www.influenzacentre.org/</u> Australian Influenza Report: <u>www.health.gov.au/internet/main/publishing.nsf/content/cda-surveil-ozflu-flucurr.htm</u> New Zealand Influenza Surveillance Reports: <u>www.surv.esr.cri.nz/virology/influenza\_weekly\_update.php</u>

## Avian Influenza Web Sites

WHO – Influenza at the Human-Animal Interface: <u>www.who.int/csr/disease/avian\_influenza/en/</u> World Organization for Animal Health: <u>www.oie.int/eng/en\_index.htm</u>

## **Contact Us:**

Tel: (604) 707-2510 Fax: (604) 707-2516 Email: <u>InfluenzaFieldEpi@bccdc.ca</u>

Communicable Diseases & Immunization Service (CDIS) BC Centre for Disease Control 655 West 12<sup>th</sup> Ave, Vancouver BC V5Z 4R4

Online: www.bccdc.ca/health-professionals/data-reports/influenza-surveillance-reports

Link to fillable Facility Outbreak Report Form: <u>http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Forms/Epid/Influenza%20and%20Respiratory/Outbreak</u> ReportForm\_2018.pdf

# Influenza-Like Illness (ILI) Outbreak Summary Report Form

Please complete and email to *ilioutbreak@bccdc.ca* 

Note: This form is for provincial surveillance purposes. Please notify your local health unit per local guidelines/requirements.

ILI: Acute onset of respiratory illness with fever and cough and with one or more of the following: sore throat, arthralgia, myalgia, or prostration which could be due to influenza virus. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent. Schools and work site outbreak: greater than 10% absenteeism on any day, most likely due to ILI. Residential institutions (facilities) outbreak: two or more cases of ILI within a seven-day period. **Reporting Information** Person Reporting: Title: Contact Phone: Email: Health Authority: HSDA: Full Facility Name: Is this report: First Notification (complete section **B** below; section **D** if available) Outbreak Over (complete section **C** and section **D** below) Report Date (dd/mm/yyyy): **First Notification** Β Long Term Care Facilities, Nursing Homes Acute Care Facility Type of facility\*: Other Setting: If ward or wing, please specify name/number: Date of onset of first case of ILI (dd/mm/yyyy): Date outbreak declared (dd/mm/yyyy): \*Long Term Care Facilities, Nursing Homes: Facilities that provide living accommodation for people who require on-site delivery of 24 hour, 7 days a week supervised care, including professional health services, personal care and services such as meals, laundy and housekeeping or other residential care and services and the residential care and services such as meals, laundy and housekeeping or other residential care facilities with the residential care and services and the residential care and the res (e.g. retirement homes, assisted living or hospice settings, private hospitals/clinics, correctional facilities, colleges/universities, adult education centres, shelters, group homes, and workplaces). **Outbreak Declared Over** Date of onset for last case of ILI (dd/mm/yyyy): Date outbreak declared over (dd/mm/yyyy): Residents Numbers to date Total With ILI Hospitalized\* Died\* suspected to be linked to case of ILI **Laboratory Information** Specimen(s) submitted? Yes (location: No Don't know ) Don't know No If yes, organism identified? Yes Please specify organism/subtype: ) Influenza B Influenza A (subtype: Parainfluenza Entero/rhinovirus RSV Coronavirus HMPV Adenovirus Other: