BC Centre for Disease Control
An agency of the Provincial Health Services Authority

British Columbia Influenza Surveillance Bulletin

Influenza Season 2018-19, Number 18, Week 13
March 24 to March 30, 2019

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Influenza activity remains elevated: late season surge in influenza A(H3N2) continues

Influenza activity remains elevated in BC, attributed to an ongoing late-season wave of influenza A(H3N2).

Among influenza viruses typed since week 40, virtually all have been influenza A, with just under 70% subtyped as A(H1N1)pdm09 overall since season start. More recently, however, A(H3N2) viruses have comprised a greater share of influenza A detections, accounting for just over 70% of subtyped influenza A viruses in week 13.

For this second influenza A wave (due to A(H3N2)), the proportion of respiratory specimens testing positive for influenza A in week 13 (37%) is comparable to that during the peak of the first wave (due to A(H1N1)pdm09) in week 51 (34%). However, it remains too early to determine whether this second influenza A wave has peaked. Ongoing monitoring is required.

In week 13, eight laboratory-confirmed long-term care facility (LTCF) outbreaks of influenza A (7 with subtype still pending and 1 influenza B) were reported. The number of LTCF outbreaks reported in weeks 8 through 13 represents more than a 60% increase over the cumulative tally of LTCF outbreaks reported since the beginning of the season (week 40 to week 7), consistent with the increase in influenza A(H3N2) in recent weeks.

While this late-season A(H3N2) wave is ongoing, clinicians are reminded to maintain a high index of suspicion for influenza. Early empiric treatment with influenza antiviral medication should be considered for high-risk, severely ill, or hospitalized patients with suspected influenza illness, regardless of the patient's influenza vaccination status and without awaiting laboratory confirmation.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

Report Disseminated: April 4, 2019

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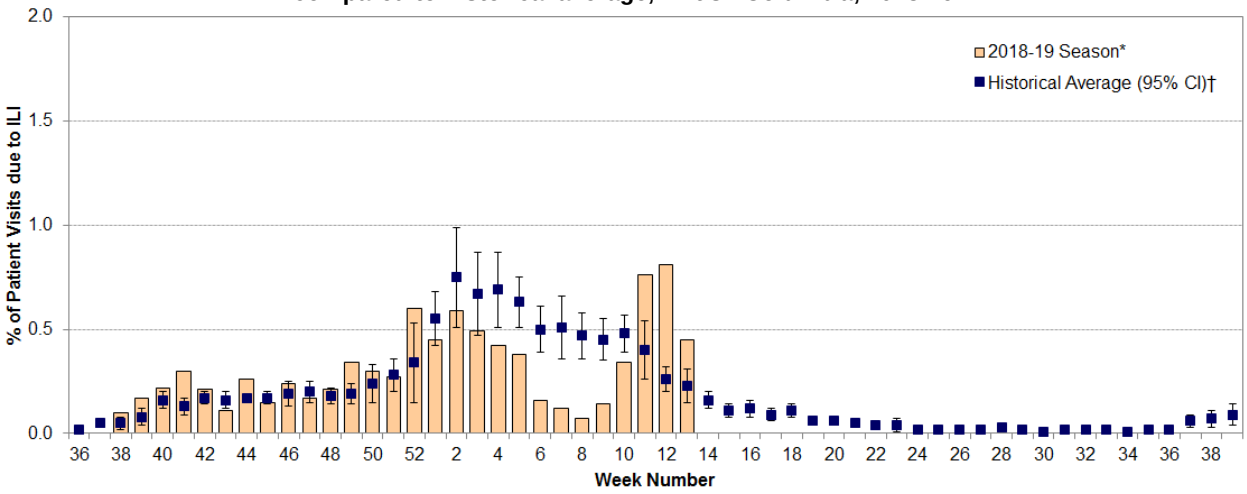
British Columbia

Sentinel Physicians

Following a peak in week 52, a gradual decline thereafter, and a secondary increase in weeks 10, 11 and 12, the rate of influenza-like illness (ILI) among patients presenting to sentinel sites reported in week 13 decreased to 0.5% compared to week 12 (0.8%), but remains above expected levels for this time of the season. Nine (35%) sentinel sites reported data for week 13 and rates are subject to change as reporting becomes more complete (**Figure 1**).

Figure 1: Percent of patient visits to sentinel physicians due to influenza-like illness (ILI) compared to historical average, British Columbia, 2018-19

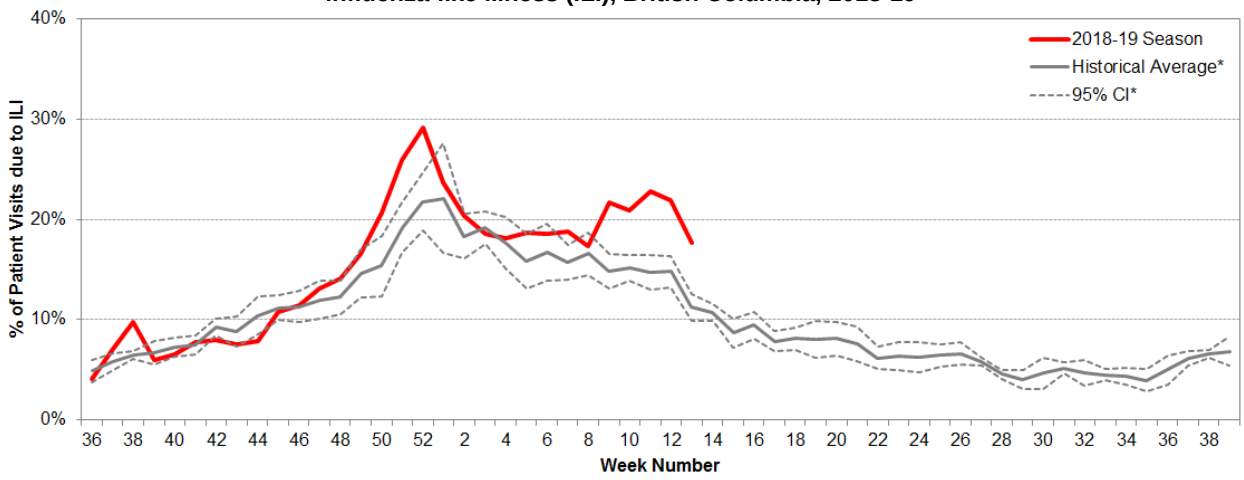


* Data are subject to change as reporting becomes more complete.
† 10-year historical average for 2018-19 season based on 2005-06 to 2017-2018 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality; CI=confidence interval.

BC Children's Hospital Emergency Room

Following a peak in week 52 and a secondary wave of activity between weeks 9 and 12, the proportion of visits to BC Children's Hospital Emergency Room (ER) attributed to ILI has decreased in week 13 (18%), but still remains well above the historical average for this time of year (**Figure 2**).

Figure 2: Percent of patients presenting to BC Children's Hospital ER attributed to influenza-like illness (ILI), British Columbia, 2018-19

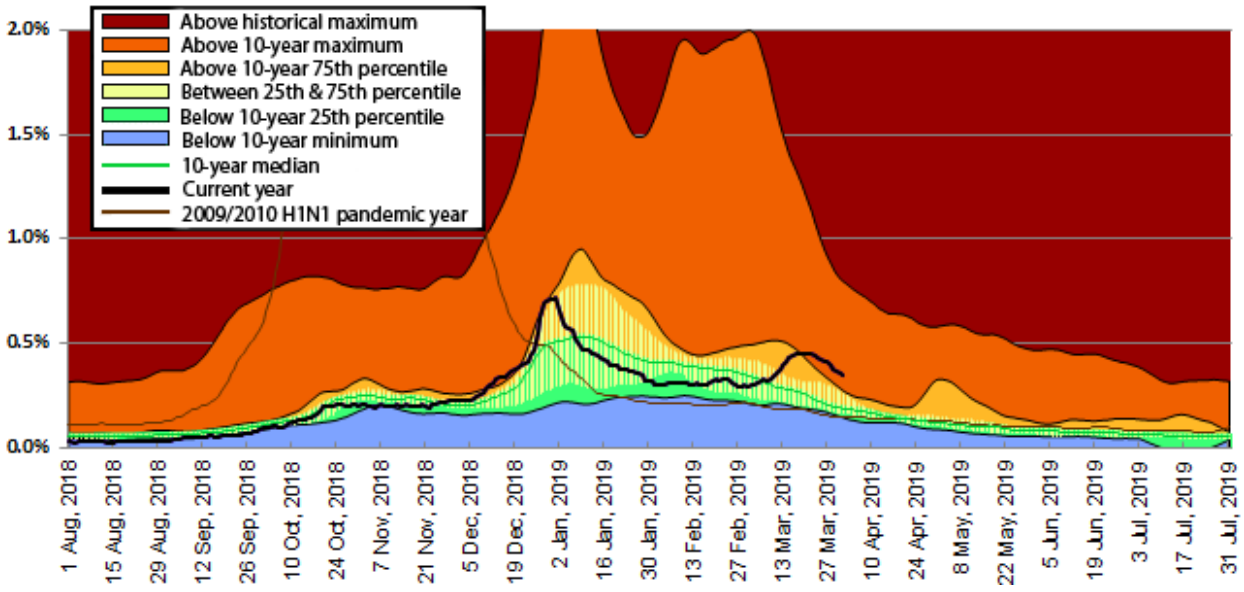


Source: BCCH Admitting, Discharge, Transfer database (ADT). Data includes records with a triage chief complaint of "flu" or "influenza" or "fever/cough."
* 5-year historical average for 2018-19 season based on 2012-13 to 2017-18 seasons; CI=confidence interval.

Medical Services Plan

The Medical Services Plan (MSP) indicator monitors general practitioner claims for influenza illness (II) as a percentage of all submitted MSP claims. Following a provincial peak around week 52 and a secondary peak around week 12, this indicator has decreased slightly in week 13 but continues to trend above the 10-year maximum overall (**Figure 3**) with some regional variation (**Figure 4**).

Figure 3: Service claims submitted to MSP for influenza illness (II)* as a proportion of all submitted general practitioner service claims, British Columbia, 2018-19



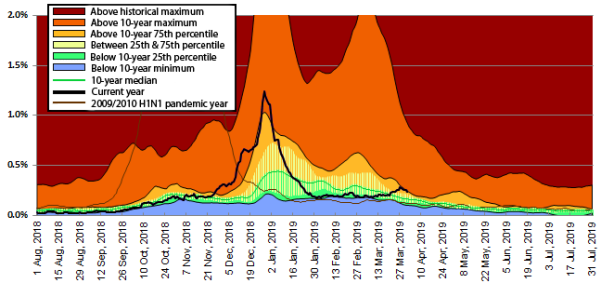
* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza).

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, 2018 corresponds to sentinel ILI week 31; data are current to April 1, 2019.

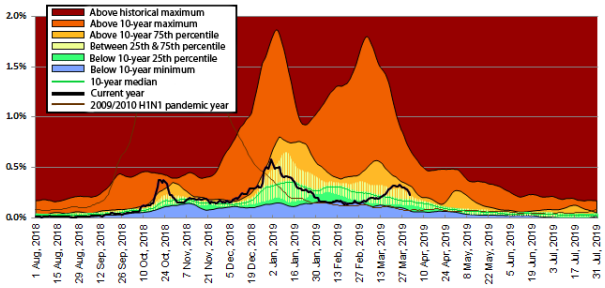
Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services.

Figure 4

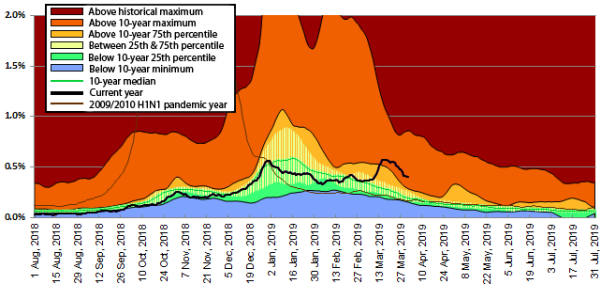
Interior



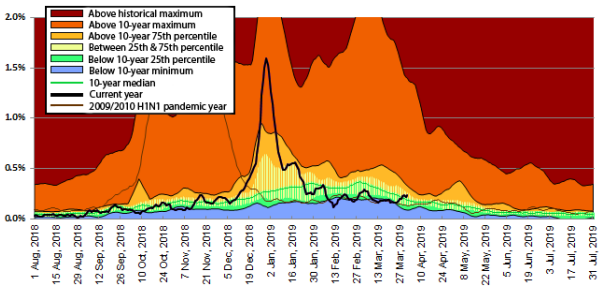
Vancouver Island



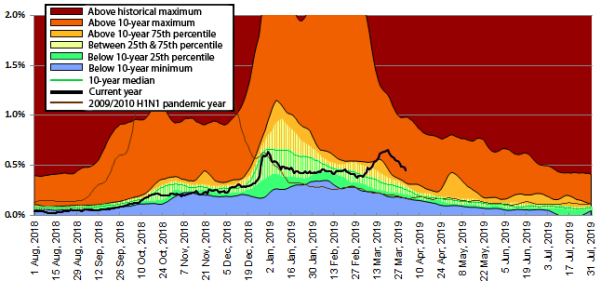
Fraser



Northern



Vancouver Coastal



British Columbia Laboratory Reports

Methodological explanation

With expanded influenza testing by additional laboratories across British Columbia (BC), adjustments to data analysis methods have been required in order to reliably interpret trends in laboratory findings. Derivation of the percentage of respiratory specimens testing influenza positive has been revised to enable more reliable comparison from week to week. The percentage influenza positivity is now 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. It should be recognized that this report does not include data from all influenza testing sites across the province.

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 is requested of the BCCDC PHL.

Laboratory surveillance observations

To date, of 14,033 known specimens tested for influenza across BC since week 40 (starting October 1, 2018), 3563 (25%) tested positive for influenza A and just 92 (0.7%) tested positive for influenza B. Virtually all (97%) influenza detections have therefore been influenza A so far this season.

In week 13, 246/658 (37%) specimens tested positive for influenza A, an increase compared to week 12 (309/951; 32%) and consistent with an unusual late-season wave of influenza A. In week 13, influenza B positivity remained stable at 2% (15/658), maintaining the unusually low levels of influenza B observed this season (**Figure 5**).

Since week 40, among influenza A viruses successfully subtyped at the BCCDC PHL, 2773/4112 (67%) were A(H1N1)pdm09, a slight decrease compared to week 12 (2728/3951; 69%) and consistent with increasing A(H3N2) contribution in recent weeks. Since week 40, 3 influenza A/B co-infections have been detected (1 A(H1N1)pdm09, 1 A(H3N2), and 1 subtype pending). Of the 343 influenza viruses typed in week 13, 323 (94%) were influenza A and 20 (6%) were influenza B. In week 13, among the influenza A viruses, 116 (36%) were identified as A(H3N2), 45 (14%) as A(H1N1)pdm09, and for 162 (50%) subtype was still pending. Among subtyped influenza A viruses in week 13, therefore, the majority (116/323; 72%) were A(H3N2), a slight increase from week 12 (220/313; 70%) (**Figure 6**). Note that subtype remains pending for half of influenza A specimens in week 13; therefore, these proportions may change as subtyping becomes more complete. Nevertheless, these findings continue the trend of greater A(H3N2) contribution relative to A(H1N1)pdm09 observed in recent weeks.

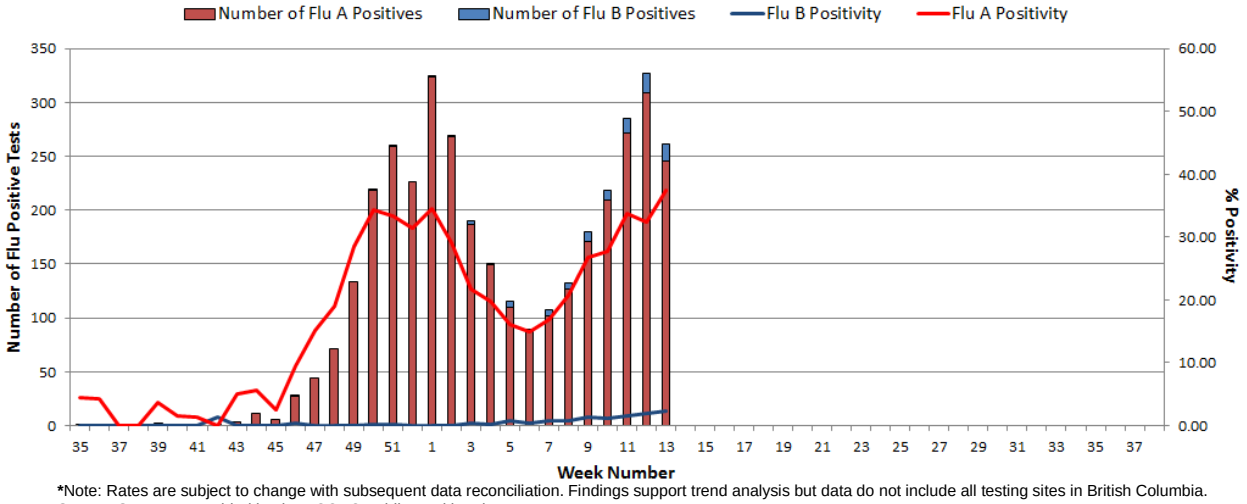
Of note, the proportion of respiratory specimens testing influenza A positive in week 13 (37%) of this second back-to-back influenza A wave (predominantly A(H3N2) subtype) is comparable to that during the peak of the earlier influenza A wave (predominantly A(H1N1)pdm09 subtype) in week 51 (34%). It remains too early to determine whether this second influenza A wave has peaked. Ongoing monitoring is needed.

Since week 40, approximately half (52%) of A(H1N1)pdm09 detections were among adults 20-64 years of age (**Figure 8**). Twenty-one percent of A(H1N1)pdm09 detections were observed among children ≤9 years who comprise about 10% of the BC population[1]. Children aged 10-19 years comprised a smaller proportion of cases (5%). Twenty two percent of A(H1N1)pdm09 detections have been among elderly adults ≥65 years of age. Conversely, the majority (57%) of A(H3N2) detections have been among elderly adults ≥65 years of age, despite comprising about 18% of the population in BC[1].

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 13, respiratory syncytial viruses (n=38) were the most commonly detected (excluding influenza) (**Figure 6**).

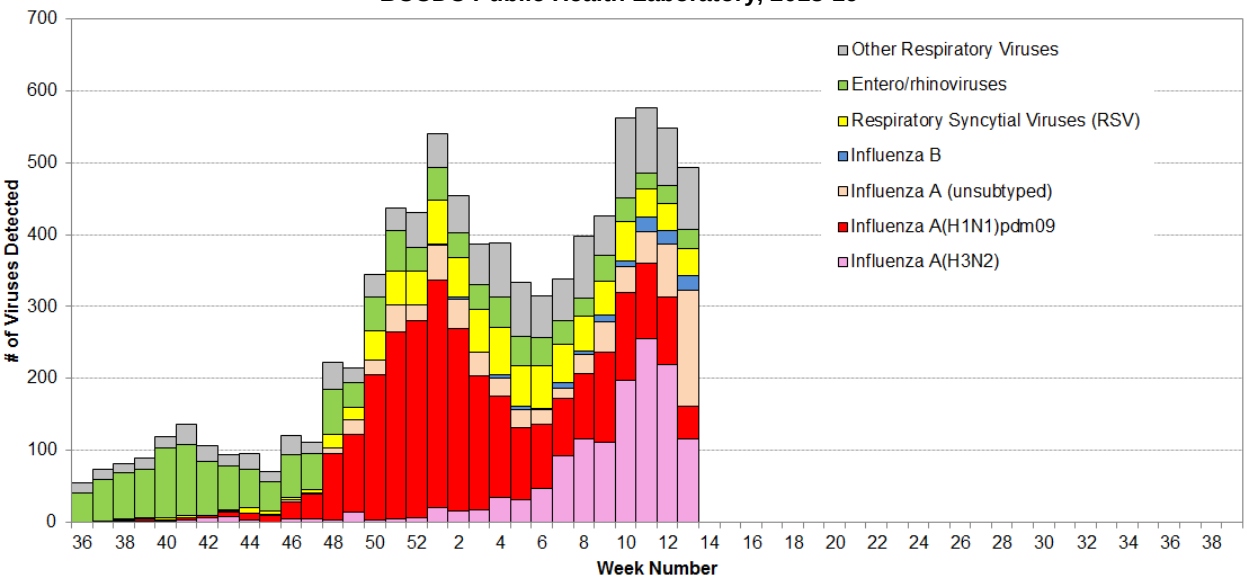
1 Government of British Columbia, BC Stats. Population Estimates 2017. URL: https://www.bcstats.gov.bc.ca/apps/PopulationEstimates.aspx. Date accessed: December 13, 2018.

Figure 5: Flu positivity derived from influenza specimens submitted to participating laboratories across BC, 2018-19*



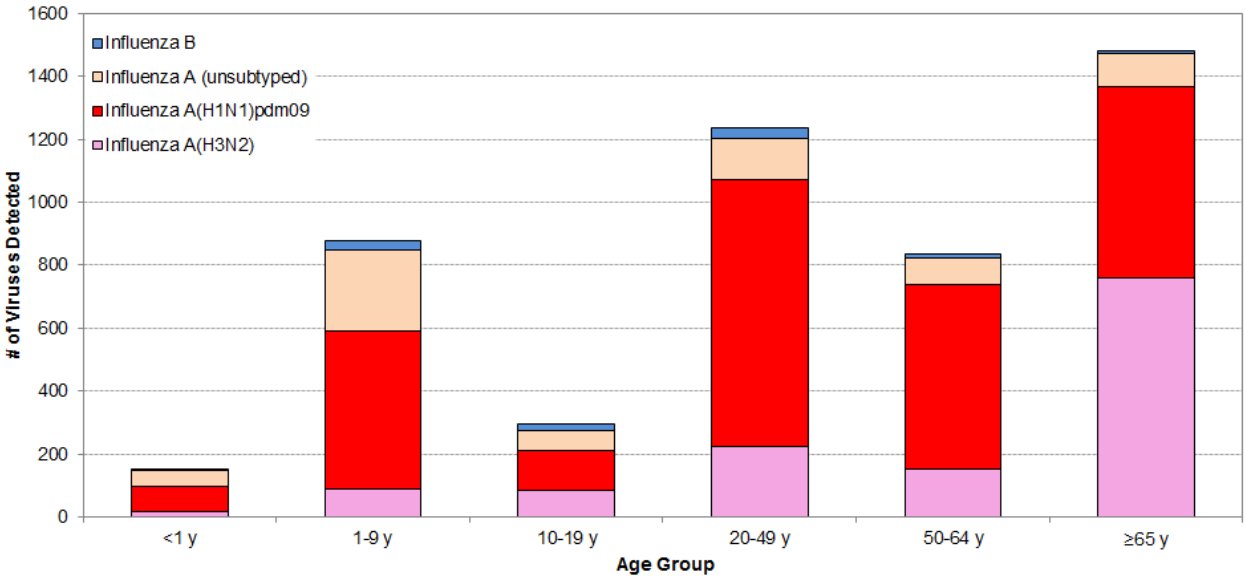
*Note: Rates are subject to change with subsequent data reconciliation. Findings support trend analysis but data do not include all testing sites in British Columbia.
Source: Summary provided by the BCCDC Public Health Laboratory.

Figure 6: Influenza and other virus detections among respiratory specimens submitted to BCCDC Public Health Laboratory, 2018-19*



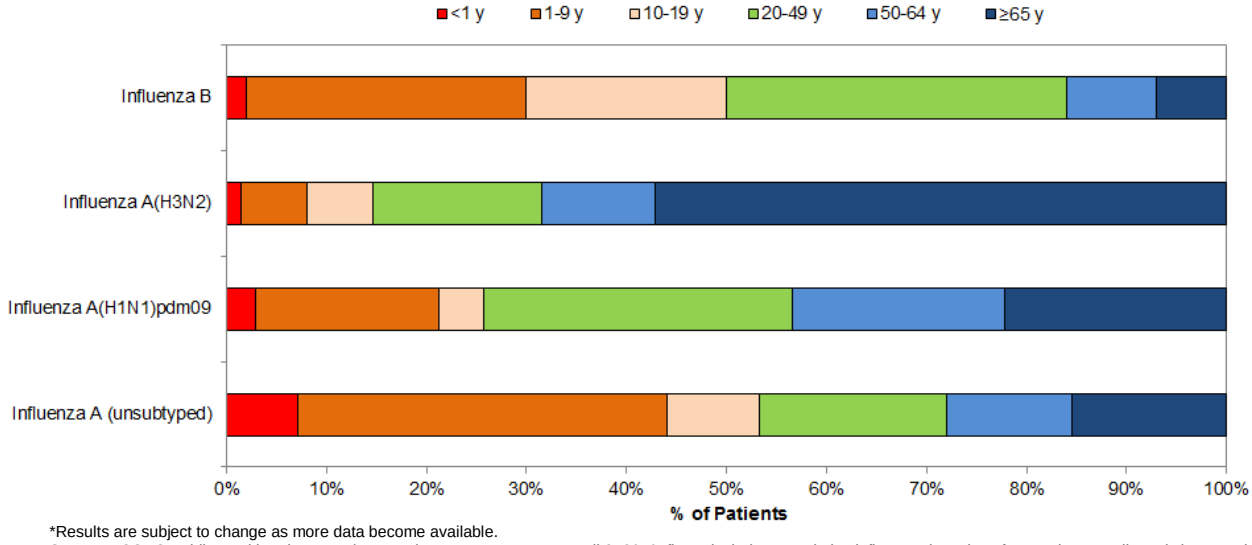
*Results are subject to change as more data become available, particularly for the most recent reporting weeks.
Source: BCCDC Public Health Laboratory (PHDRW); Data are current to April 3, 2019.

Figure 7: Cumulative number (since week 40) of influenza detections by type, subtype, and age group, BCCDC Public Health Laboratory, 2018-19*



*Results are subject to change as more data become available.
Source: BCCDC Public Health Laboratory (PHDRW); Data are current to April 3, 2019; figure includes cumulative influenza detections for specimens collected since week 40.

Figure 8: Age distribution of influenza detections (cumulative since week 40), BCCDC Public Health Laboratory, 2018-19*

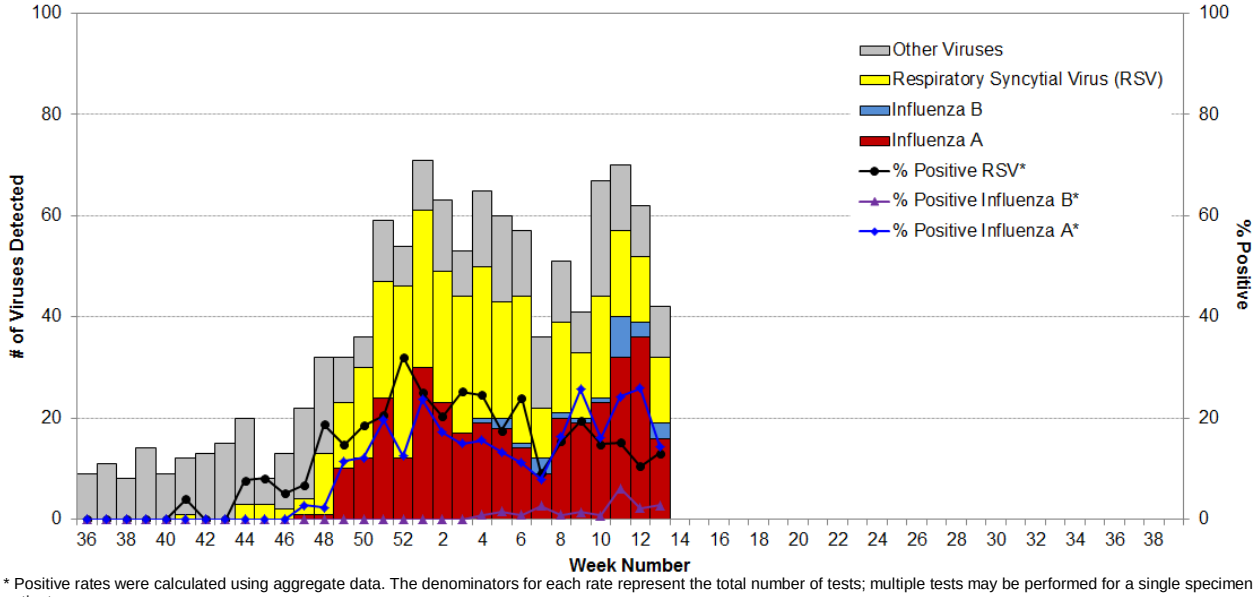


*Results are subject to change as more data become available.
Source: BCCDC Public Health Laboratory (PHDRW); Data are current to April 3, 2019; figure includes cumulative influenza detections for specimens collected since week 40.

BC Children's and Women's Health Centre Laboratory

In week 13, 111 tests for influenza and 100 tests for respiratory syncytial virus (RSV) were conducted at the BC Children's and Women's Health Centre laboratory. Of these, 16 (14%) were positive for influenza A (not subtyped), 3 (3%) were positive for influenza B, and 13 (13%) were positive for RSV. Influenza A positivity has decreased considerably between weeks 12 and 13 (26% versus 14%, respectively) while RSV positivity has remained relatively stable (11% vs 13%, respectively) as has influenza B positivity at around 3% (**Figure 9**).

Figure 9: Influenza and other virus detections among respiratory specimens submitted to BC Children's and Women's Health Centre Laboratory, 2018-19



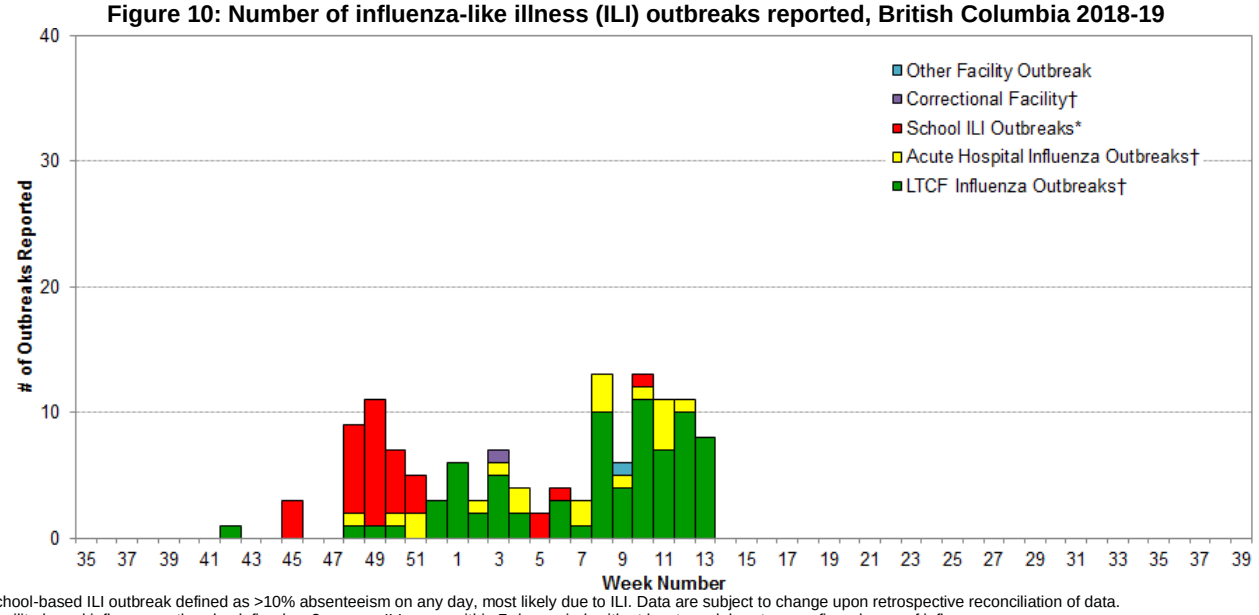
* Positive rates were calculated using aggregate data. The denominators for each rate represent the total number of tests; multiple tests may be performed for a single specimen and/or patient.

Influenza-like Illness (ILI) Outbreaks

Eight laboratory-confirmed long-term care facility (LTCF) outbreaks of influenza A (7 subtype unknown and 1 influenza B) were reported in week 13. Since week 40, a total of 76 LTCF outbreaks (22 A(H3N2), 18 A(H1N1)pdm09, 34 subtype unknown, and 2 B), 20 acute care facility outbreaks, 32 school outbreaks, 1 correctional facility outbreak, and 1 mental health facility outbreak have been reported (**Figures 10 and 11**).

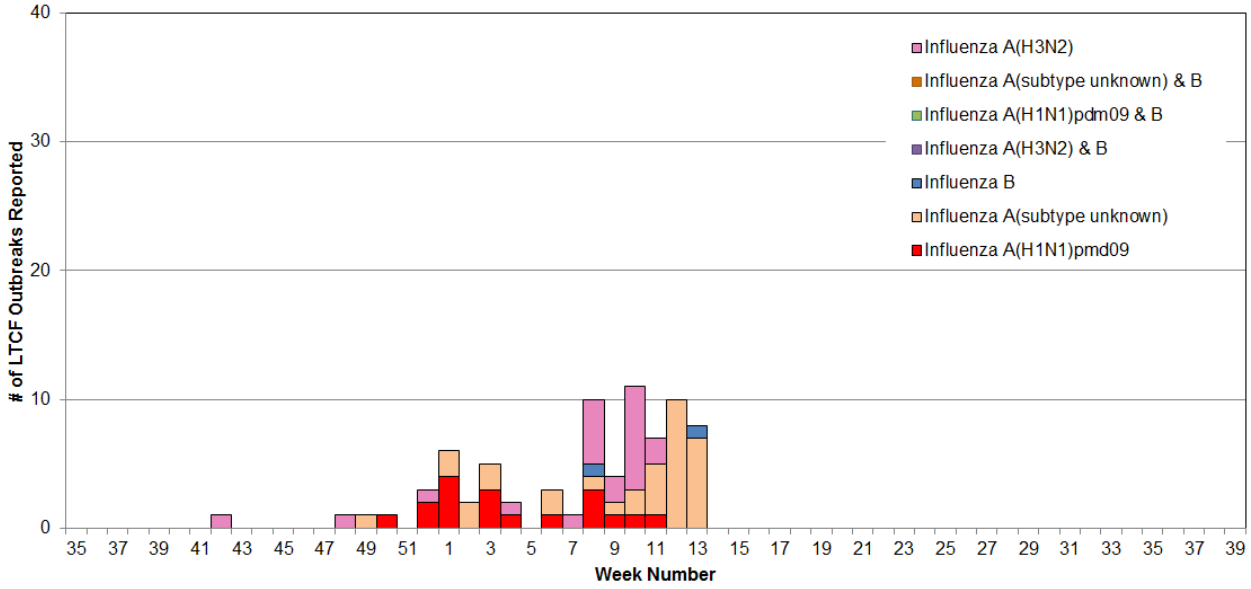
The cumulative tally of LTCF influenza outbreaks to date this A(H1N1)pdm09-dominant season has been far below that of prior A(H3N2)-dominant seasons in 2017-18 and 2016-17 (76, 176, and 193 outbreaks, respectively). However, the number of LTCF outbreaks reported between weeks 8 and 13 represent more than a 60% increase over the cumulative tally of LTCF outbreaks reported since the beginning of the season (week 40 to week 7), consistent with increased A(H3N2) contribution in recent weeks.

Figure 10: Number of influenza-like illness (ILI) outbreaks reported, British Columbia 2018-19



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

Figure 11: Number of influenza outbreaks by type/subtype in long-term care facilities (LTCF), British Columbia 2018-19†



† Facility-based influenza outbreaks defined as 2 or more ILI cases within 7-day period, with at least one laboratory-confirmed case of influenza. Data are subject to change upon retrospective reconciliation of data.

National

FluWatch (week 12, March 17 to March 23, 2019)

Influenza activity continues to be reported in almost all regions in Canada, but is circulating at higher levels in eastern areas. In week 12, the proportion of laboratory tests that were positive for influenza remained stable in comparison to week 11 at 21.8%. To date, influenza A is the most common influenza virus detected in Canada (98%); the vast majority of these viruses are A(H1N1)pdm09 (81% of subtyped influenza A viruses). However, detections of influenza A(H3N2) have been steadily increasing since mid-January and accounted for the majority (72%) of subtyped influenza A detections in week 12. There is currently very little influenza B circulation compared to previous seasons. The majority (84%) of lab-confirmed A(H1N1)pdm09 detections have been reported among individuals under the age of 65. Conversely, the majority (57%) of influenza A(H3N2) detections have been reported among adults 65 years of age and older. Details are available at: https://www.canada.ca/en/public-health/services/diseases/flu-influenza/influenza-surveillance/weekly-influenza-reports.html.

National Microbiology Laboratory (NML): Strain Characterization

From September 1, 2018, to April 4, 2019, the National Microbiology Laboratory (NML) has characterized 1745 influenza viruses [244 A(H3N2), 1445 A(H1N1)pdm09 and 56 B (22 Yamagata lineage and 34 Victoria lineage)] received from Canadian laboratories.

Influenza A(H3N2): 85 influenza A(H3N2) viruses were considered antigenically similar to A/Singapore/INFIMH-16-0019/2016, the WHO-recommended A(H3N2) component of the 2018-19 northern hemisphere influenza vaccine. However, 29 viruses showed reduced titer with ferret antisera raised against egg-propagated A/Singapore/INFIMH-16-0019/2016.

64 influenza A (H3N2) viruses characterized belonged to genetic group 3C.2a1, 17 belonged to genetic group 3C.2a, and 32 belonged to genetic group 3C.3a. Sequencing is pending for the remaining isolate.

Influenza A(H1N1)pdm09: 1404 A(H1N1)pdm09 viruses antigenically characterized were found to be similar to the A/Michigan/45/2015 virus: the WHO-recommended influenza A(H1N1) component of the 2018-19 northern hemisphere influenza vaccine. However, 41 viruses showed reduced titer with ferret antisera raised against cell culture-propagated A/Michigan/45/2015.

Influenza B: 22 influenza B viruses antigenically characterized were considered similar to the B/Phuket/3073/2013 virus, which belongs to the B Yamagata lineage: the WHO-recommended influenza B component of the 2018-19 northern hemisphere *quadrivalent* influenza vaccine. The WHO-recommended influenza B component of the *trivalent* vaccine is a B/Colorado/06/2017-like virus of the B Victoria lineage. 15 influenza B viruses characterized were antigenically similar to B/Colorado/06/2017. 19 viruses showed reduced titer with ferret antisera raised against cell culture-propagated B/Colorado/06/2017.

National Microbiology Laboratory (NML): Antiviral Resistance

From September 1, 2018, to April 4, 2019, the NML received influenza viruses from Canadian laboratories for drug susceptibility testing.

Amantadine: Of the 412 influenza A viruses [71 A(H3N2), 341 A(H1N1)pdm09] tested against amantadine, all were resistant.

Oseltamivir: Of the 1057 influenza viruses [109 A(H3N2), 903 A(H1N1)pdm09, and 45 B] tested against oseltamivir, 1053 were sensitive, and 4 A(H1N1)pdm09 viruses with an H275Y mutation were resistant.

Zanamivir: Of the 1056 influenza viruses [109 A(H3N2), 902 A(H1N1)pdm09, and 45 B] tested against zanamivir, all were sensitive.

International

USA (week 12, March 17 to March 23, 2019)

In week 12, influenza activity decreased but remained elevated in the United States (US). While influenza A(H1N1)pdm09 predominated from October to mid-February, influenza A(H3N2) has been more frequently reported since mid-February. Very little influenza B activity has been reported throughout the season. The majority of influenza viruses characterized antigenically are considered similar to the cell-grown reference viruses of the 2018-19 northern hemisphere influenza vaccine; however, an increasing proportion of influenza A(H3N2) viruses are antigenically distinguishable from the A(H3N2) component of the 2018-19 northern hemisphere influenza vaccine. All tested viruses showed susceptibility to zanamivir and greater than 99% of the viruses tested showed susceptibility to oseltamivir and peramivir. In week 12, the proportion of deaths attributed to pneumonia and influenza increased above the system-specific epidemic threshold. One influenza-associated pediatric death was reported in week 12. The proportion of outpatient visits for ILI decreased from 4.4% in week 11 to 3.8% in week 12, but remains above the national baseline of 2.2%.The US CDC has posted a summary of influenza activity in the United States and elsewhere, available at: https://www.cdc.gov/flu/weekly/index.htm

Given this late-season surge in A(H3N2) - against which the vaccine is typically less effective than other kinds of influenza viruses - on March 28th, the US CDC issued an official health advisory reminding clinicians to maintain a high index of suspicion for influenza and reinforcing early empiric antiviral use among high-risk, severely ill, or hospitalized patients with suspected or confirmed influenza illness. The full advisory can be read here: https://emergency.cdc.gov/han/han00419.asp

WHO (April 1, 2019, based on data up to March 17, 2019)

In the temperate zones of the northern hemisphere, influenza activity decreased overall. While increased detections of influenza A(H3N2) and B(Victoria-lineage) have been reported in recent weeks in East Asia, influenza activity has appeared to decrease overall in the United States, Europe, Southern Asia, and most countries of Western Asia. Activity continued to be reported in some countries in North Africa and was generally low in the Caribbean, Central America, and in tropical countries of South America. In the temperate zones of the southern hemisphere, influenza activity remained at inter-seasonal levels, with the exception of some parts of Australia where influenza circulation remained above inter-seasonal levels. Worldwide, influenza A has accounted for the majority of detections. Influenza A(H1N1)pdm09 has predominated in East Asia and in North America; however, a shift towards A(H3N2) dominance has been observed in recent weeks. Influenza A(H1N1)pdm09 predominated in Southern Asia and both A viruses have circulated in Europe.

From March 4 2019 to March 17 2019, the WHO GISRS laboratories tested more than 176,726 specimens. Of these, 43,084 were positive for influenza viruses, of which 39,652 (92%) were typed as influenza A and 3,432 (8%) as influenza B. Of the subtyped influenza A viruses, 8,769 (49.9%) were influenza A(H1N1)pdm09 and 8,795 (50.1%) were influenza A(H3N2). Of the characterized B viruses, 119 (5.1%) belonged to the B-Yamagata lineage and 2,193 (94.9%) to the B-Victoria lineage.

The full WHO report is available at: https://www.who.int/influenza/surveillance_monitoring/updates/en/

On 11th March 2019, the WHO released a Global Influenza Strategy for 2019-2030 aimed at protecting people in all countries from the threat of influenza. The strategy aims to reduce the burden of seasonal influenza, minimize the risk and control the spread of zoonotic influenza, and prepare for (and mitigate the impact of) the next influenza pandemic.

The report, *Global Influenza Strategy 2019-2030*, is available at: https://apps.who.int/iris/bitstream/handle/10665/311184/9789241515320-eng.pdf

2018/19 Vaccine Effectiveness Estimates

Canadian Mid-Season 2018-19 Vaccine Effectiveness Estimates

On January 24th, 2019, the Canadian Sentinel Practitioner Surveillance Network (SPSN) published the first mid-season estimates of influenza vaccine effectiveness (VE) for the 2018-19 season in the northern hemisphere. The Canadian SPSN reported substantial VE of 72% (95% confidence interval (CI): 60-81%) against medically-attended outpatient A(H1N1)pdm09 illness. Substantial vaccine protection was observed across all age groups, notably young children, who also appeared to be disproportionately affected by this year's A(H1N1)pdm09-dominant epidemic. The Canadian interim estimate for 2018-19 is comparable to preliminary estimates of VE against A(H1N1)pdm09 using the same vaccine component reported from Australia (78%; 95%CI: 51-91%) for their 2018 season. It is substantially higher than reported for Canada during last year's A(H3N2)-dominant epidemic (for which VE against A(H3N2) viruses was less than 20%). Consistent with global trends, sequencing analysis of viruses collected by the Canadian SPSN showed considerable genetic diversity among circulating clade 6B.1 viruses of A(H1N1)pdm09; however, a dominant drift (immunologic escape) variant was not identified.

The full report is available as an open-access publication in the online journal *Eurosurveillance*: https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2019.24.4.1900055

Hong Kong Early Season Estimates – 2018/19 Vaccine Effectiveness Against Pediatric Hospitalization

On January 31st, 2019, interim VE estimates for the 2018-19 northern hemisphere influenza vaccine were reported from Hong Kong for the prevention of influenza A(H1N1)pdm09 hospitalization in children. Authors report substantial VE of 92% (95%CI: 82-96%) against A(H1N1)pdm09-attributed hospitalisation in children (aged 6 months-17 years). This estimate is comparable to the VE estimate reported earlier by the Canadian SPSN for the prevention of medically attended outpatient A(H1N1)pdm09 illness in children 1-8 years of age (91%; 95%CI: 67-98%).

The full report is available as an open-access publication in the online journal *Eurosurveillance*: https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2019.24.5.1900056

United States (US) Interim Estimates of 2018-19 Seasonal Influenza Vaccine Effectiveness

On February 14th, 2019, mid-season VE estimates for the prevention of laboratory-confirmed influenza associated with medically-attended acute respiratory illness (ARI) were reported from the US CDC. Authors report an overall VE of 46% (95% CI: 30-58%) against influenza A(H1N1)pdm09, which is lower than the recently reported interim VE estimates against A(H1N1)pdm09 of 72% in Canada during the 2018-19 season and 78% in Australia during the 2018 southern hemisphere influenza season (see above). A higher VE of 62% (95% CI: 40-75%) against A(H1N1)pdm09 among those aged 6 months to 17 years was reported in this study. Discrepancies in VE estimates across studies may be attributed to multiple factors including differences in the stage of the influenza epidemic relative to the initiation of the immunization campaign, variation in circulating viruses, as well as methodological differences including contributing sample sizes (and statistical power), participant profiles, and clinical outcomes assessed.

The full report is available as an open-access publication in *Morbidity and Mortality Weekly Report:* https://www.cdc.gov/mmwr/volumes/68/wr/mm6806a2.htm?s_cid=mm6806a2_w

European Interim Estimates of 2018-19 Seasonal Influenza Vaccine Effectiveness

On February 21, 2019, mid-season VE estimates were also reported from Europe, where there has been co-circulation of both influenza A(H1N1)pdm09 and A(H3N2) viruses this season. VE estimates were generally higher against A(H1N1)pdm09 than against A(H3N2) for which no vaccine protection was suggested among 3/4 studies in the outpatient setting; however, wide confidence intervals require cautious interpretation.

The full report is available as an open-access publication in the online journal *Eurosurveillance*: https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2019.24.1900121

WHO Recommendations for Influenza Vaccines

WHO Recommendations for 2018-19 Northern Hemisphere Influenza Vaccine

On February 22, 2018, the WHO announced the recommended strain components for the 2018-19 northern hemisphere trivalent influenza vaccine (TIV)*:

- an A/Michigan/45/2015 (H1N1)pdm09-like virus;
- an A/Singapore/INFIMH-16-0019/2016 (H3N2)-like virus; †
- a B/Colorado/06/2017-like virus (B/Victoria/2/87 lineage) ‡.

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).

* Recommended strains represent a change for two of the three components used for the 2017-18 northern hemisphere TIV

† Recommended strain represents a change from the 2017-18 season vaccine which contained an A/Hong Kong/4801/2014 (H3N2)-like virus

‡ Recommended strain represents a change from the 2017-18 season vaccine which contained a B/Brisbane/60/2008-like virus.

For further details: http://www.who.int/influenza/vaccines/virus/recommendations/2018_19_north/en/

WHO Recommendations for the 2019-20 Northern Hemisphere Influenza Vaccine

On February 20, 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; †
- an A/Kansas/14/2017 (H3N2)-like virus; ‡
- a B/Colorado/06/2017-like virus (B/Victoria/2/87 lineage);

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).

* Recommended strains represent a change for at least one 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

‡The A(H3N2) component was announced on March 21 2019. The recommended strain represents a change from the 2018-19 season vaccine which contained an A/Singapore/INFIMH-16-0019/2016 (H3N2)-like virus.

For further details: https://www.who.int/influenza/vaccines/virus/recommendations/201902_recommendation.pdf?ua=1

Additional Information

Explanatory Note:

The surveillance period for the 2018-19 influenza season is defined starting in week 40. Weeks 36-39 of the 2017-18 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: www.ammi.ca/?ID=122&Language=ENG

Web Sites:

BCCDC Emerging Respiratory Pathogen Updates:
www.bccdc.ca/health-professionals/data-reports/emerging-respiratory-virus-updates

Influenza Web Sites

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

Avian Influenza Web Sites

WHO – Influenza at the Human-Animal Interface: www.who.int/csr/disease/avian_influenza/en/
World Organization for Animal Health: www.oie.int/eng/en_index.htm

Contact Us:

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

Communicable Disease Prevention and Control Services (CDPACS)
BC Centre for Disease Control
655 West 12th Ave, Vancouver BC V5Z 4R4

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

Link to fillable Facility Outbreak Report Form: http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Forms/Epid/Influenza%20and%20Respiratory/OutbreakReportForm_2018.pdf

Communicable Diseases & Immunization Service
655 W. 12th Ave. Vancouver BC V5Z 4R4
Phone: (604) 707-2510; Fax: (604) 707-2516

Reset Form

Submit By Email

Version: 30 Jul 2018

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.

A — 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):

B — First Notification

Type of facility*: ☐ Long Term Care Facilities, Nursing Homes ☐ Acute Care 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, laundry and housekeeping or other residential care facilities where provincial/territorial public health is responsible for outbreak management under provincial legislation; **Acute Care Facility:** Publicly funded facilities providing medical and/or surgical treatment and acute nursing care for sick or injured people, through inpatient services. (i.e. hospitals including inpatient rehabilitation and mental facilities); **Other Setting:** Any locations not otherwise specified here in which outbreaks of influenza or ILI may occur (e.g. retirement homes, assisted living or hospice settings, private hospitals/clinics, correctional facilities, colleges/universities, adult education centres, shelters, group homes, and workplaces).

C — Outbreak Declared Over

Date of onset for last case of ILI (dd/mm/yyyy):
Date outbreak declared over (dd/mm/yyyy):

Numbers to date	Residents
Total	
With ILI	
Hospitalized*	
Died*	

*suspected to be linked to case of ILI

D — Laboratory Information

Specimen(s) submitted? ☐ Yes (location:) ☐ No ☐ Don't know
If yes, organism identified? ☐ Yes ☐ No ☐ Don't know

Please specify organism/subtype: ☐ Influenza A (subtype:) ☐ Influenza B
☐ Parainfluenza ☐ Entero/rhinovirus ☐ Coronavirus ☐ RSV
☐ HMPV ☐ Adenovirus ☐ Other: