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

British Columbia Influenza Surveillance Bulletin

Influenza Season 2018-19, Number 12, Week 7
February 10 to February 16, 2019

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Stable or declining influenza activity in BC, but A(H3N2) warrants monitoring

In BC, overall influenza activity levels in week 7 remain stable following a trend of gradual decline from the A(H1N1)pdm09 epidemic peak around week 52. Influenza B remains at low levels but influenza A(H3N2) may be contributing more and warrants ongoing monitoring.

Among influenza viruses typed since week 40, virtually all have been influenza A and, among those subtyped at the BCCDC Public Health Laboratory, about 90% overall have been A(H1N1)pdm09. However, among influenza A viruses that were subtyped in week 7, the proportion that were A(H3N2) increased to 44% from 32% in week 6.

While children under 10 years of age and non-elderly adults have comprised 75% of all A(H1N1)pdm09 detections to date in BC, elderly adults comprise 60% of A(H3N2) detections thus far in BC.

In week 7, one laboratory-confirmed influenza A(H1N1)pdm09 outbreak in an acute care facility was reported. The cumulative tally of long-term care facility influenza outbreaks during the predominant A(H1N1)pdm09 epidemic in 2018-19 is below that of prior A(H3N2)-dominant seasons in 2017-18 and 2016-17 (22, 127, and 169 outbreaks, respectively), but this also warrants ongoing monitoring.

On February 20th, the WHO announced the recommended components for the 2019-20 northern hemisphere influenza vaccine, changing the A(H1N1)pdm09 strain but retaining the same influenza B strain(s) for the trivalent and quadrivalent vaccines compared to 2018-19. Decision regarding the A(H3N2) component has been deferred to March 21st 2019 to enable an extended period of monitoring of the evolving A(H3N2) contribution.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

Report Disseminated: February 22, 2019

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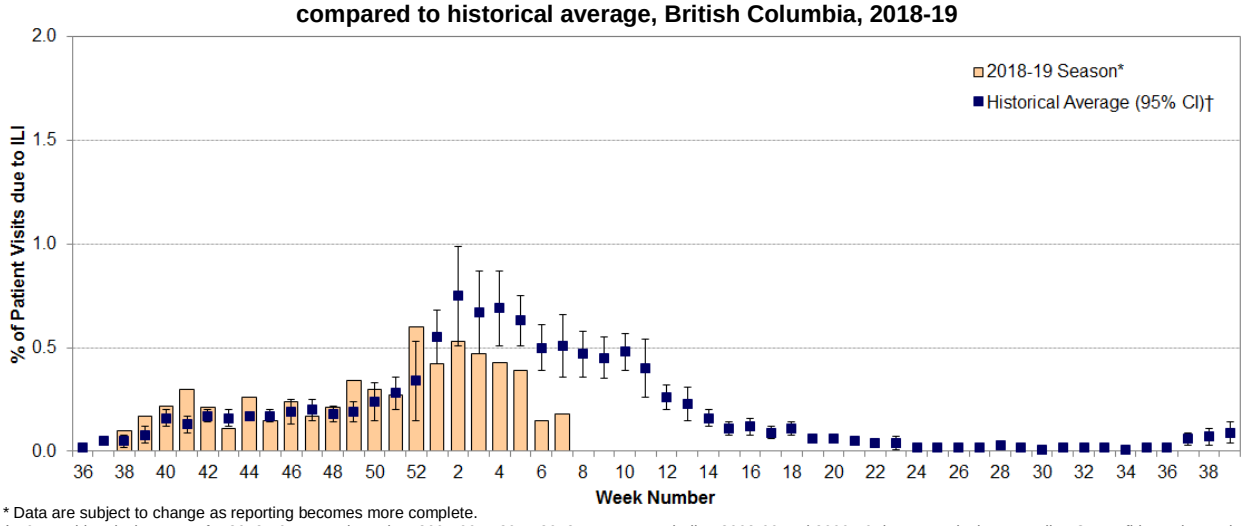
British Columbia

Sentinel Physicians

Following a peak in week 52, and a decline thereafter, influenza-like illness (ILI) rates among patients presenting to sentinel sites remained substantially lower than the historical average in week 7 (**Figure 1**). Eleven (41%) sentinel sites reported data for week 7; rates are subject to change 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, 2018-19

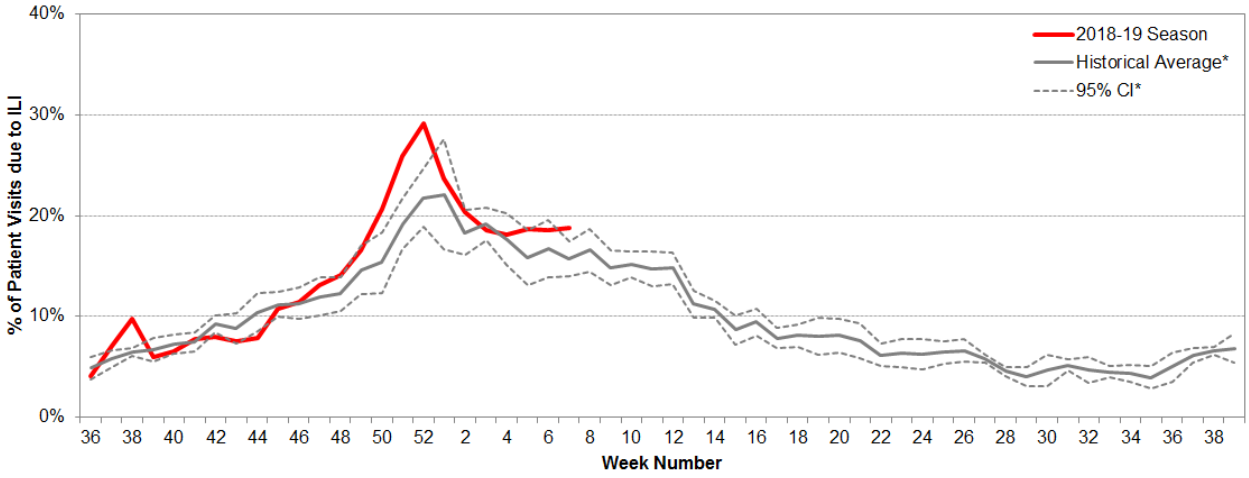


* Data are subject to change as reporting becomes more complete.
† 10-year historical average for 2018-19 season based on 2005-06 to 2017-2018 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality; CI=confidence interval.

BC Children's Hospital Emergency Room

Following a peak in week 52, and a decline thereafter, the proportion of visits to BC Children's Hospital Emergency Room (ER) attributed to ILI has remained stable but slightly above the historical average since week 4, with rates fluctuating between 18% and 19%. (**Figure 2**).

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

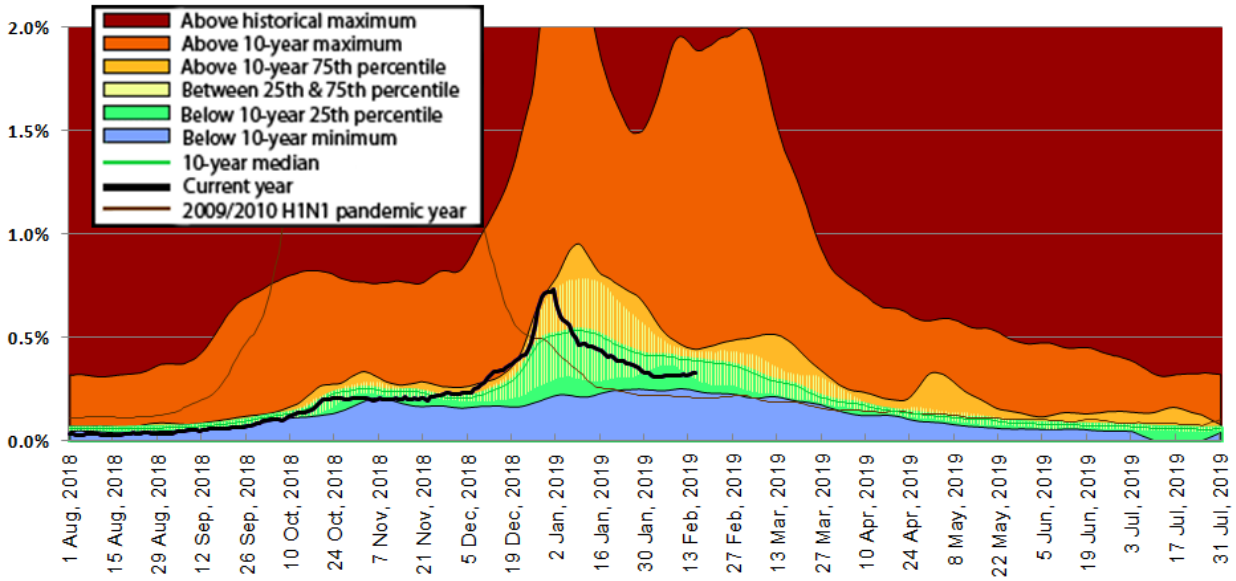


Source: BCCH Admitting, Discharge, Transfer database (ADT). Data includes records with a triage chief complaint of "flu" or "influenza" or "fever/cough."
* 5-year historical average for 2018-19 season based on 2012-13 to 2017-18 seasons; CI=confidence interval.

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 an overall provincial peak around week 52, with gradual decline thereafter, this indicator remained stable and within expected levels in week 7 (**Figure 3**).

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



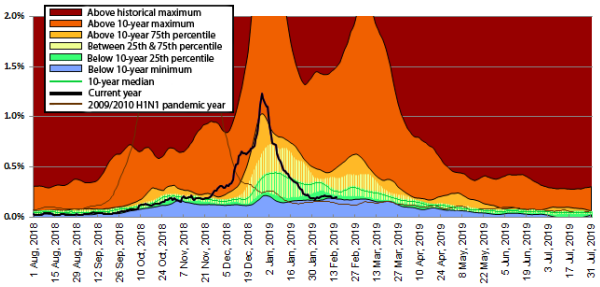
* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza).

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 February 11, 2019.

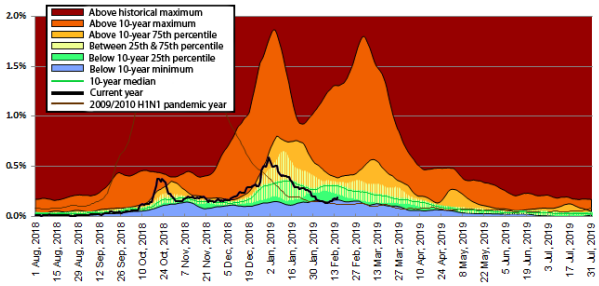
Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services.

Figure 4

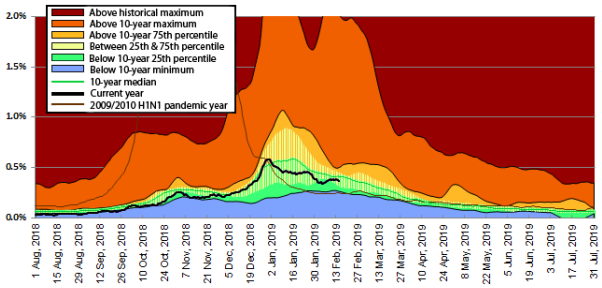
Interior



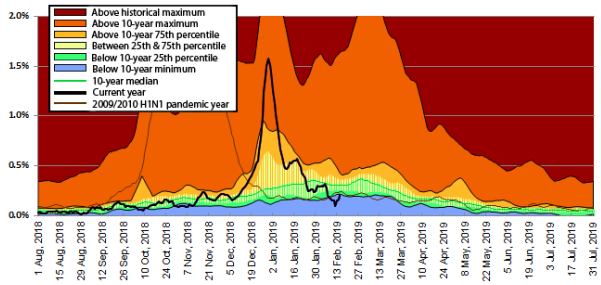
Vancouver Island



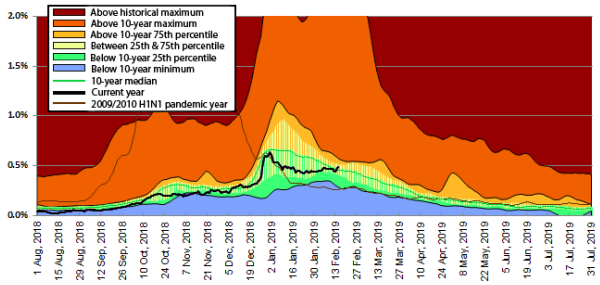
Fraser



Northern



Vancouver Coastal



British Columbia Laboratory Reports

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.

With the above specifications, to date this season 2235/9803 (23%) contributing specimens tested positive for influenza A and 23/9803 (0.2%) tested positive for influenza B since week 40 (starting October 1, 2018). Virtually all (99%) influenza detections to date this season were therefore influenza A. In week 7, 104/608 (17%) specimens tested positive for influenza A which is comparable to week 6. Conversely, just 5/608 (0.8%) specimens tested positive for influenza B in week 7, maintaining the very low levels of influenza B detection since season start (**Figure 5**).

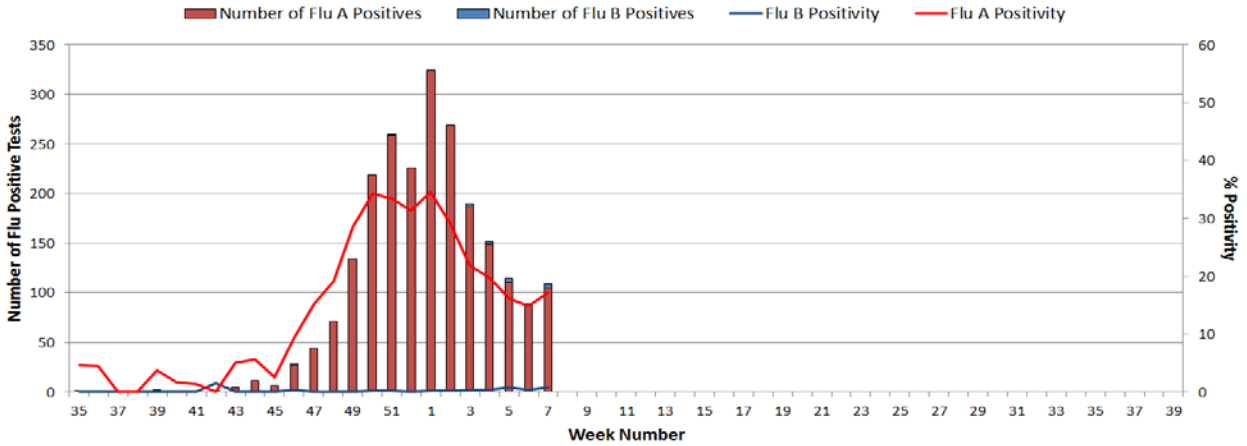
The BCCDC PHL conducts the majority of influenza subtype characterization for the province, including for primary specimens submitted directly to the BCCDC PHL for influenza diagnosis, as well as for specimens that have tested positive for influenza at other external sites and for which secondary subtyping is requested of the BCCDC PHL. Since week 40, among influenza A viruses that were subtyped at the BCCDC PHL, 2130/2386 (89%) were A(H1N1)pdm09. Of 139 typed influenza viruses in week 7, 132 (95%) were typed as influenza A and 7 (5%) were typed as influenza B. In week 7, among the influenza A viruses, 47 (36%) were identified as A(H3N2), 61 (46%) as A(H1N1)pdm09, and for 24 (18%) subtype was still unknown. Among subtyped influenza A viruses in week 7, therefore, 61/108 (57%) influenza A viruses subtyped were A(H1N1)pdm09, a decrease compared to week 6 (81/119; 68%) (**Figure 6**). Conversely influenza A(H3N2) comprised 44% (47/108) of subtyped influenza detections in week 7, which is an increase compared to week 6 (38/119; 32%) and warrants ongoing monitoring.

Since week 40, approximately half (52%) of A(H1N1)pdm09 detections were among adults 20-64 years of age (**Figure 8**). Twenty-three percent of A(H1N1)pdm09 detections were observed among children ≤ 9 years who comprise about 10% of the BC population[1], suggesting they remain disproportionately affected this season. Children aged 10-19 years comprised a smaller proportion of cases (5%). Twenty percent of A(H1N1)pdm09 detections have been among elderly adults ≥ 65 years of age. Conversely, the majority (60%) 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 7, respiratory syncytial viruses (n=46) were the most commonly detected (excluding influenza) (**Figure 6**).

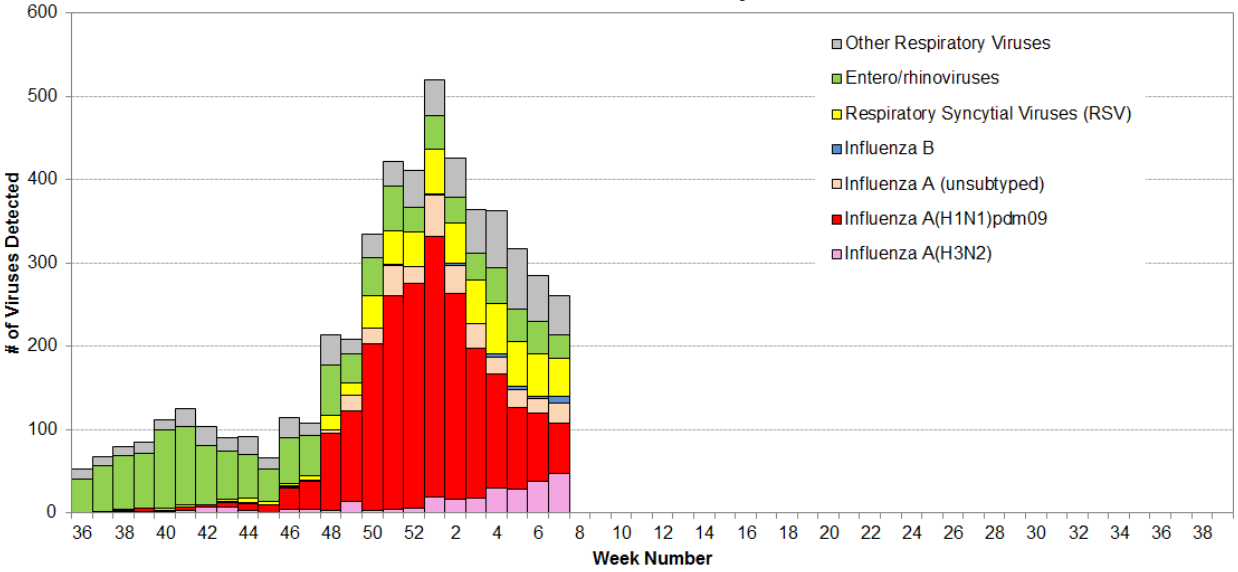
1 Government of British Columbia, BC Stats. Population Estimates 2017. URL: https://www.bcstats.gov.bc.ca/apps/PopulationEstimates.aspx. Date accessed: December 13, 2018.

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



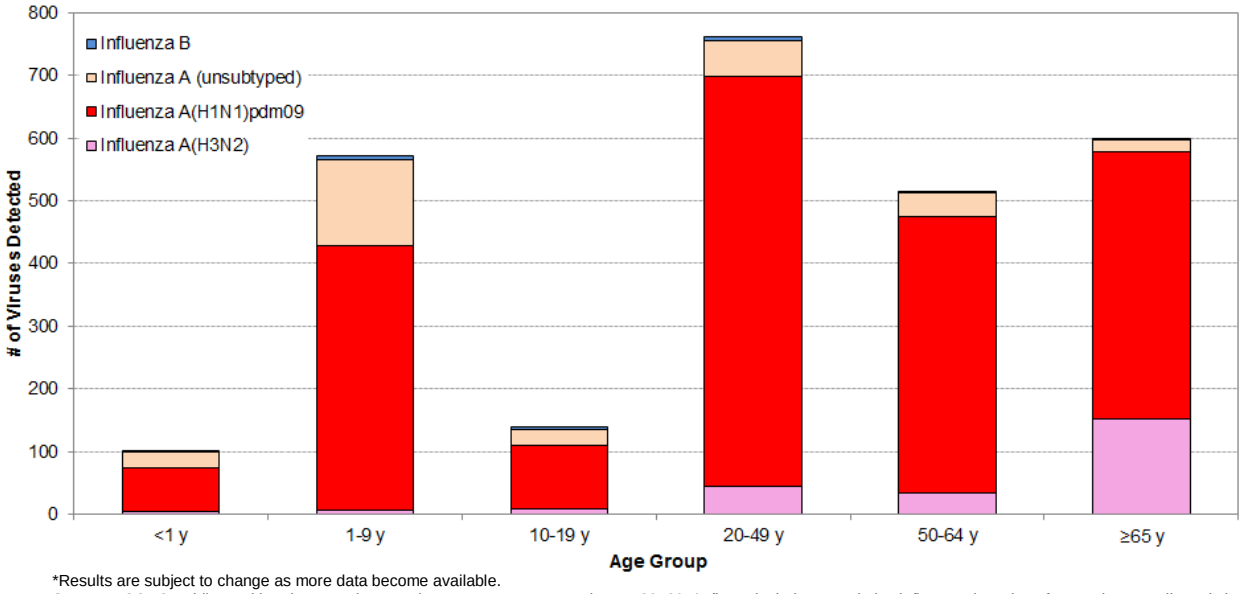
*Note: Rates are subject to change with subsequent data reconciliation. Findings support trend analysis but data do not include all testing sites in British Columbia.
Source: Summary provided by the BCCDC Public Health Laboratory.

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



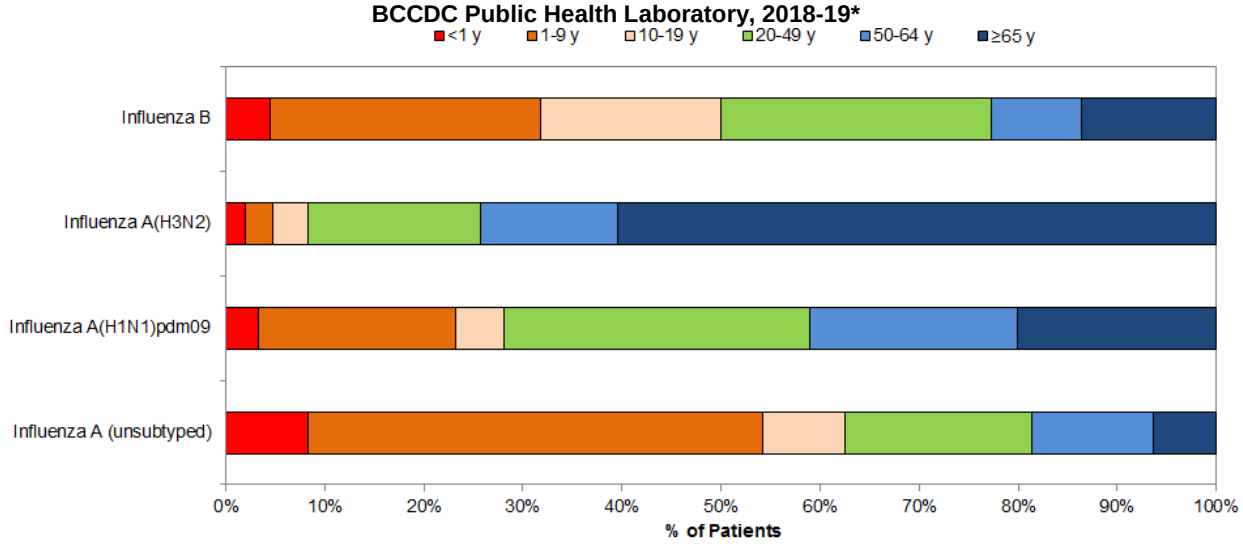
*Results are subject to change as more data become available, particularly for the most recent reporting weeks.
Source: BCCDC Public Health Laboratory (PHDRW); Data are current to February 20, 2019.

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 February 20, 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*

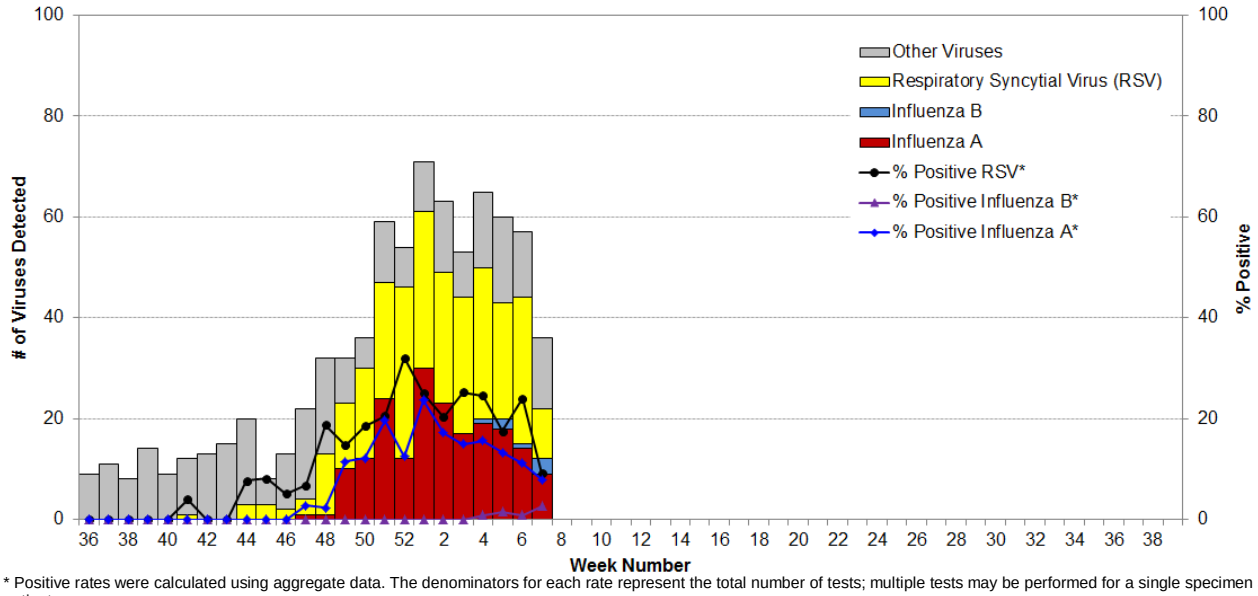


*Results are subject to change as more data become available.
Source: BCCDC Public Health Laboratory (PHDRW); Data are current to February 20, 2019; figure includes cumulative influenza detections for specimens collected since week 40.

BC Children's and Women's Health Centre Laboratory

In week 7, 114 tests for influenza and 110 tests for respiratory syncytial virus (RSV) were conducted at the BC Children's and Women's Health Centre laboratory. Of these, 9 (8%) were positive for influenza A (not subtyped), 3 (3%) were positive for influenza B, and 10 (9%) were positive for RSV. Influenza A positivity has continued to steadily decrease since week 4, while RSV test positivity has decreased substantially from 24% in week 6 to 9% in week 7. Influenza B positivity remains at low levels; however, it has increased slightly from 1% in week 6 to 3% in week 7 (**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.

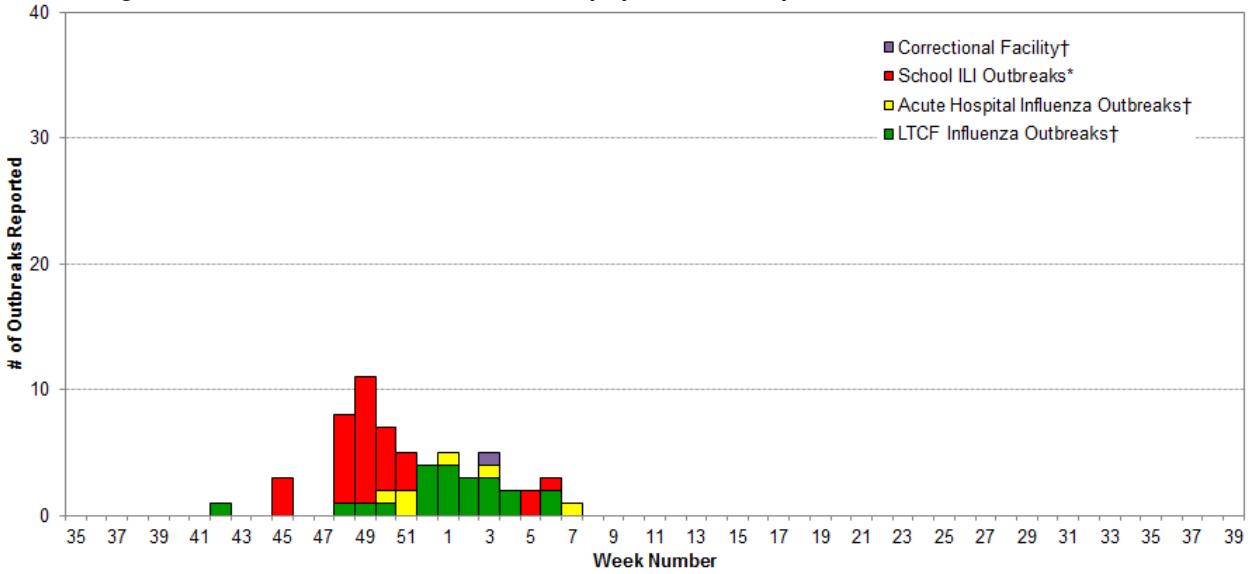
Influenza-like Illness (ILI) Outbreaks

One laboratory-confirmed acute care facility outbreak of influenza A (subtype unknown) was reported in week 7.

Since week 40, a total of 22 LTCF outbreaks (4 A(H3N2), 13 A(H1N1)pdm09, and 5 subtype unknown), 6 acute care facility outbreaks, 31 school outbreaks, and 1 correctional facility outbreak have been reported (**Figures 10 and 11**).

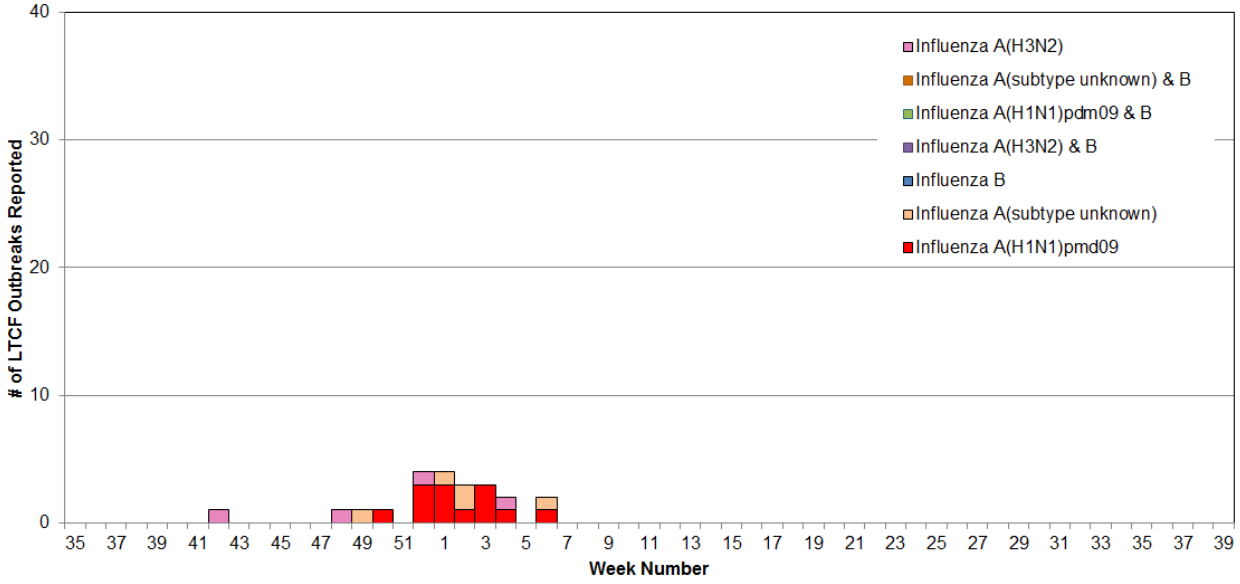
By way of comparison, between weeks 40 and 7 of the A(H3N2) dominant 2017-18 and 2016-17 seasons, 127 and 169 lab-confirmed LTCF outbreaks, respectively, were reported.

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.

Emerging Respiratory Viruses

Cases of acute flaccid myelitis (AFM) – possibly associated with enterovirus D68 (EV-D68)

Since September 2018, the US CDC has reported an increase in paediatric cases of acute flaccid myelitis (AFM), a subset of acute flaccid paralysis (AFP) (often referred to as "polio-like illness" in the media).

As of February 15th 2019, the CDC has confirmed 215 cases of AFM across 40 states in 2018– predominantly affecting children under 5 years of age. A further 156 reports from 2018 are currently under investigation. One case has been confirmed so far in 2019, with a further 10 patients under investigation. Patients have presented with neurological features, specifically single or multi-limb weakness, with most requiring hospitalization. More than 90% of AFM cases reported a mild respiratory or febrile illness - consistent with a viral infection - in the weeks preceding symptom onset. AFM has a variety of possible causes, including non-polio enterovirus infection. Among 71 confirmed cases tested in 2018, just over half (54%) tested positive for enterovirus or rhinovirus at the time of AFM diagnosis (37% for enterovirus D68 (EV-D68), 29% for enterovirus A71 (EV-A71)).

In the US, the number of confirmed cases in 2018 surpassed that of their previous high in 2016 (when 149 confirmed cases were detected). These reports indicate that 2018 represented another biennial peak, similar to that observed during EV-D68 epidemics in 2014 and 2016. The latter EV-D68 epidemics were noteworthy for including cases with severe respiratory manifestations (less prominently noted in 2018); however, neurological complications were also identified.

An increase in reported cases of AFP has also been detected outside of North America. Public Health England is currently investigating an apparent increase in reports of AFP in England (40 cases in 2018 (with a peak in October) as of January 21st 2019, compared to an annual expected number of less than 10). The majority of these cases have been children and have arisen since September 2018. Over half of these AFP cases reported acute respiratory tract illness prior to onset of neurological symptoms. Non-polio enteroviruses were detected in 15 (38%) cases, with EV-D68 implicated in 9/15 (60%) of these cases.

In Canada, a possible uptick in reports of AFP was also noted in 2018; as of January 31st 2019, 49 confirmed cases have been documented in 2018, with a further 27 cases under investigation. The annual expected number of cases reported to the Public Health Agency of Canada ranges between 27-51 cases.

While EV-D68 has been detected at low levels in BC this 2018-19 autumn-winter period, we are aware of a single report of laboratory-confirmed EV-D68 infection associated with neurological features. This AFM report (a young child) presented in December 2018 with acute flaccid paralysis of an upper limb following a mild respiratory illness.

General information related to AFP/AFM and EV-D68 is available from the following sources:

US CDC AFM webpage: https://www.cdc.gov/acute-flaccid-myelitis/index.html

US CDC factsheet on EV-D68: https://www.cdc.gov/non-polio-enterovirus/about/ev-d68.html

PHAC information sheet on AFM in Canada: https://www.canada.ca/en/public-health/services/diseases/acute-flaccid-myelitis.html

A summary of the 2014 experience in BC was published in Euro Surveillance, available from: https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2015.20.43.30047

National

FluWatch (week 6, February 3 to February 9, 2019)

Influenza activity in Canada continued to slowly decline in week 6. While most western regions have past peak activity, influenza continues to circulate in eastern regions. In week 6, 18.1% of laboratory tests were positive for influenza, representing a slight decrease from 19.7% in week 5. To date, influenza A is the most common influenza virus detected in Canada (99%); the vast majority of these viruses are A(H1N1)pdm09 (91% of subtyped influenza A viruses). There is currently very little influenza B circulation compared to previous seasons. The majority (85%) of lab-confirmed A(H1N1)pdm09 detections have been reported among individuals under the age of 65. Conversely, the majority (61%) 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 February 21, 2019, the National Microbiology Laboratory (NML) has characterized 1287 influenza viruses [119 A(H3N2), 1142 A(H1N1)pdm09 and 26 B (17 Yamagata lineage and 9 Victoria lineage)] received from Canadian laboratories.

Influenza A(H3N2): 43 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, 15 viruses showed reduced titer with ferret antisera raised against egg-propagated A/Singapore/INFIMH-16-0019/2016. 27 influenza A (H3N2) viruses belonged to genetic group 3C.2a1, 9 belonged to genetic group 3C.2a, and 9 belonged to genetic group 3C.3a. Sequencing is pending for the remaining isolate.

Influenza A(H1N1)pdm09: 1112 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, 30 viruses showed reduced titer with ferret antisera raised against cell culture-propagated A/Michigan/45/2015.

Influenza B: 17 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. Eight influenza B viruses characterized were antigenically similar to B/Colorado/06/2017. One virus 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 February 21, 2019, the NML received influenza viruses from Canadian laboratories for drug susceptibility testing.

Amantadine: Of the 351 influenza A viruses [51 A(H3N2), 300 A(H1N1)pdm09] tested against amantadine, all were resistant.

Oseltamivir: Of the 793 influenza viruses [71 A(H3N2), 697 A(H1N1)pdm09, and 25 B] tested against oseltamivir, 792 were sensitive, and 1 A(H1N1)pdm09 virus with an H275Y mutation was resistant.

Zanamivir: Of the 794 influenza viruses [71 A(H3N2), 698 A(H1N1)pdm09, and 25 B] tested against zanamivir, all were sensitive.

International

USA (week 6, February 3 to February 9, 2019)

In week 6, influenza activity continued to increase in the United States (US), with influenza A(H1N1)pdm09, influenza A(H3N2), and influenza B viruses continuing to co-circulate. Influenza A(H1N1)pdm09 viruses have predominated in most areas of the country; however, influenza A(H3N2) viruses have prevailed in the southeastern US. The majority of influenza viruses characterized antigenically are considered similar to the cell-grown reference viruses 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 6, the proportion of deaths attributed to pneumonia and influenza was below the system-specific epidemic threshold. Six influenza-associated pediatric deaths were reported. The proportion of outpatient visits for ILI increased slightly from 4.3% in week 5 to 4.8% in week 6, and 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

WHO (February 18, 2019, based on data up to February 3, 2019)

In the temperate zones of the northern hemisphere, influenza activity has continued to increase overall. While influenza activity appears to have peaked in East Asia and most countries of the Arabian Peninsula and has decreased in Iran, detections in Europe, North Africa, and some countries in Western Asia have increased. 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, with A(H3N2) and A(H1N1)pmd09 viruses co-circulating in Europe, influenza A(H1N1)pdm09 predominating in North Africa, East Asia, and North America, and influenza A(H3N2) predominating in Iran.

From January 21 2019 to February 3 2019, the WHO GISRS laboratories tested more than 213,440 specimens. Of these, 69,007 were positive for influenza viruses, of which 67,733 (98.2%) were typed as influenza A and 1274 (1.8%) as influenza B. Of the subtyped influenza A viruses, 25,052 (72%) were influenza A(H1N1)pdm09 and 9,734 (28%) were influenza A(H3N2). Of the characterized B viruses, 83 (27.8%) belonged to the B-Yamagata lineage and 216 (72.2%) to the B-Victoria lineage.

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

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 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(H3N2) virus to be announced on 21 March 2019; ‡
- 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

‡In light of recent changes in the proportions of genetically and antigenically diverse A(H3N2) viruses, the recommendation for the A(H3N2) component has been postponed.

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: