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

British Columbia Influenza Surveillance Bulletin

Influenza Season 2017-18, Number 1, Week 40
October 1 to October 7, 2017

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Early Sporadic Influenza A(H3N2) Activity Continues in BC

This is the first bulletin of the 2017-18 surveillance period. During week 40 (October 1 to 7, 2017), overall low level, sporadic influenza activity mostly due to the A(H3N2) subtype was observed in BC. No new influenza outbreaks have been reported since week 38.

At the BCCDC Public Health Laboratory, influenza positivity remained steady around 8% in week 40. Among sporadic detections, influenza A(H3N2) has been the predominant subtype throughout the inter-seasonal period in BC.

Community influenza-like illness indicators (e.g. MSP claims) increased slightly in week 40 but remained at expected levels for this time of year.

Influenza activity remains elevated in the southern hemisphere. In Australia, higher than usual influenza activity, predominately due to A(H3N2), persists. In some Southeast Asian countries, high levels of influenza activity continue to be reported.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

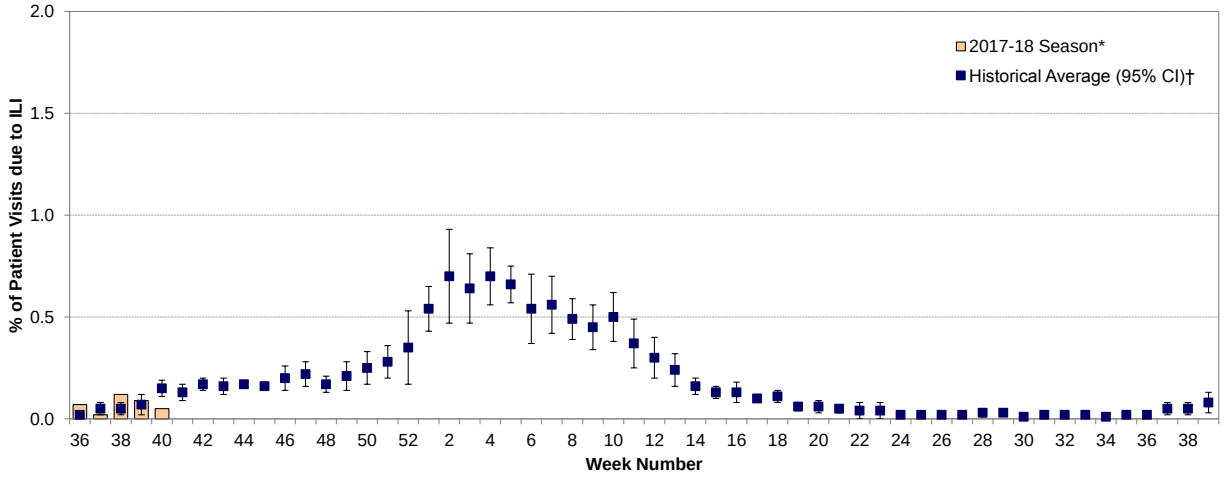
Report Disseminated: October 12, 2017

British Columbia

Sentinel Physicians

In week 40, the proportion of patients with influenza-like illness (ILI) among those presenting to sentinel sites remained at inter-seasonal levels and was below the historical average. Rates are subject to change as reporting becomes more complete.

Percent of patient visits to sentinel physicians due to influenza-like illness (ILI) compared to historical average, British Columbia, 2017-18

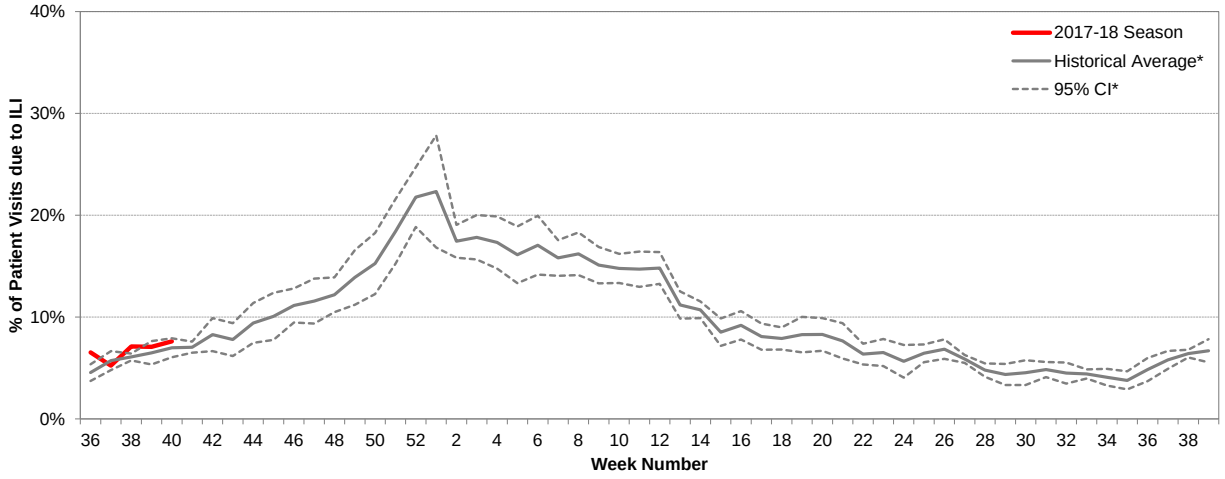


* Data are subject to change as reporting becomes more complete.
† 10-year historical average for 2017-18 season based on 2005-06 to 2016-2017 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality; CI=confidence interval.

BC Children's Hospital Emergency Room

In week 40, the proportion of visits to BC Children's Hospital Emergency Room (ER) attributed to ILI was generally consistent with the historical average for the past 5 seasons.

Percent of patients presenting to BC Children's Hospital ER attributed to influenza-like illness (ILI), British Columbia, 2017-18

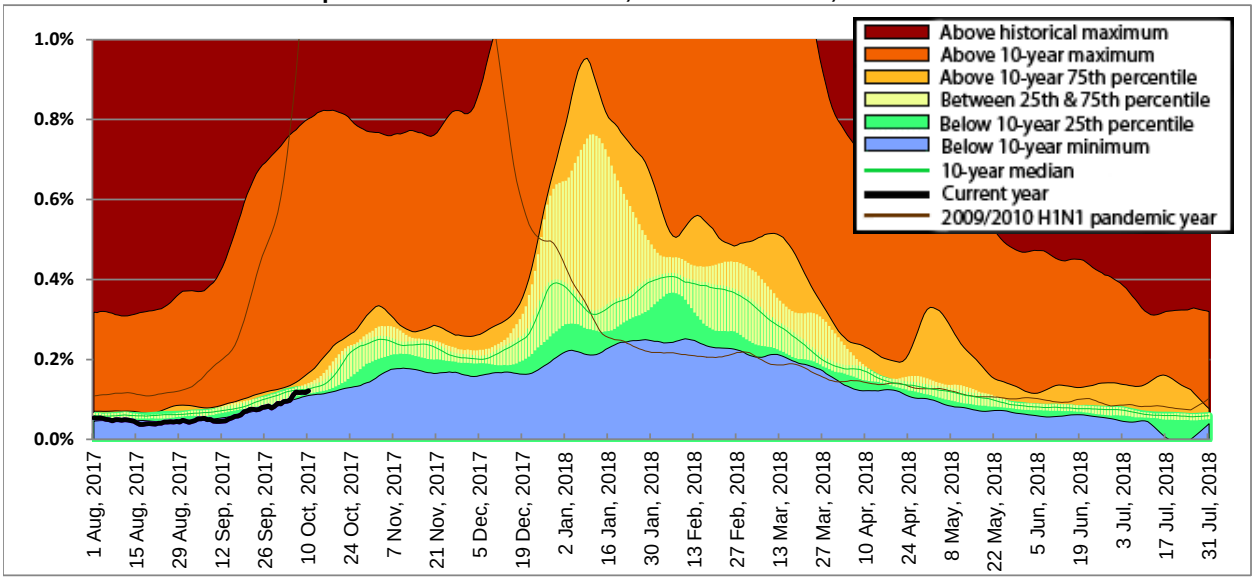


Source: BCCH Admitting, Discharge, Transfer database (ADT). Data includes records with a triage chief complaint of "flu" or "influenza" or "fever/cough."
* 5-year historical average for 2017-18 season based on 2012-13 to 2016-17 seasons; CI=confidence interval.

Medical Services Plan

In week 40, BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, increased slightly but remained at or below expected median levels for this time of year in all regions of the province.

Service claims submitted to MSP for influenza illness (II)* as a proportion of all submitted general practitioner service claims, British Columbia, 2017-18

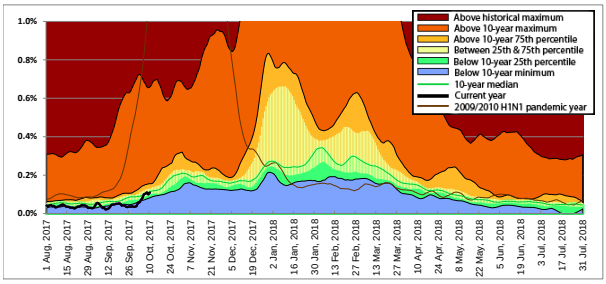


* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza).

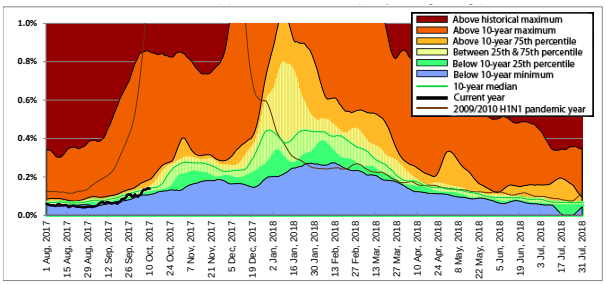
Data for the period August 1, 2009 to July 31, 2010 have been excluded from the 10-year median calculation due to atypical seasonality during the 2009/2010 H1N1 pandemic year. MSP data beginning August 1, 2017 corresponds to sentinel ILI week 31; data are current to October 10, 2017.

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

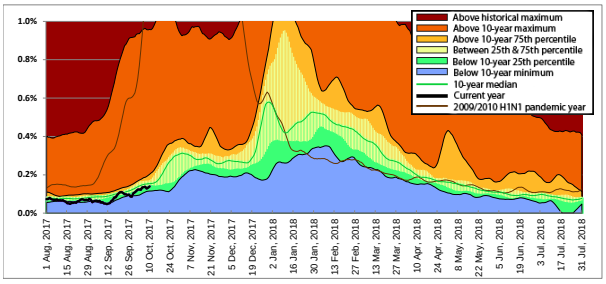
Interior



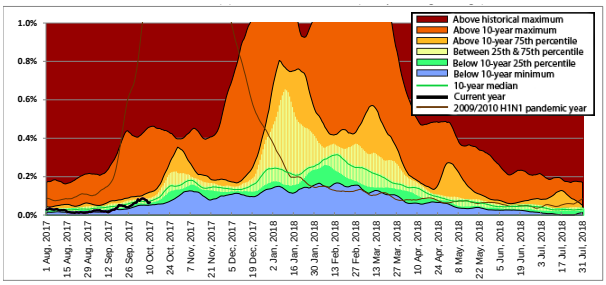
Fraser



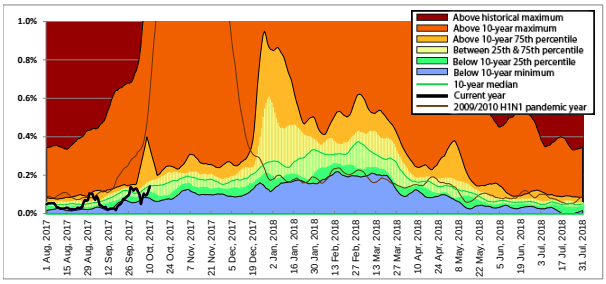
Vancouver Coastal



Vancouver Island



Northern



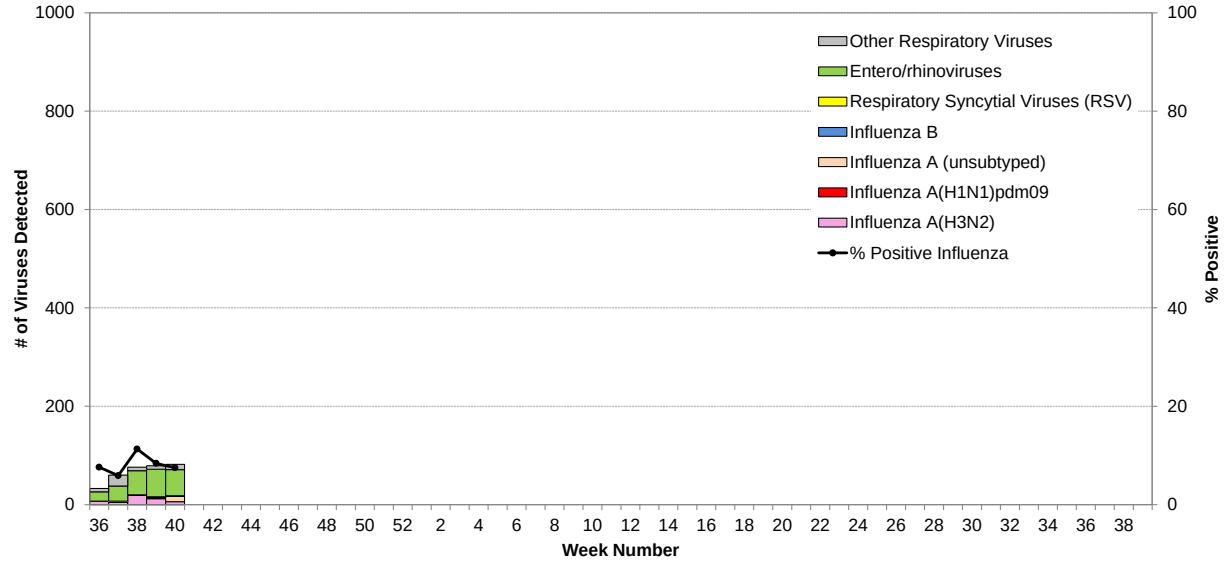
Laboratory Reports

BCCDC Public Health Laboratory

In week 40, 18 (8%) patients tested positive for influenza at the BCCDC Public Health Laboratory (PHL), including 17 (94%) with influenza A [6 A(H3N2), and 11 A(subtype pending)] and 1 (6%) with influenza B. Influenza positivity was 8% in week 40; sporadic influenza detections, mostly belonging to the A(H3N2) subtype, have continued at low levels during the early fall period. One-third of A(H3N2) detections from week 40 were among elderly adults aged 65+ while the remaining A(H3N2) detections were among 50-64 year olds.

These A(H3N2) detections are consistent with prior recent seasons; sporadic detections, during this period, have occurred since the 2012-13 season but represent an elevated level of detections as compared to pre-2012-13 seasons. Entero/rhinoviruses were the most commonly detected respiratory virus in week 40 but were also detected at low levels; these detections have increased slightly in recent weeks.

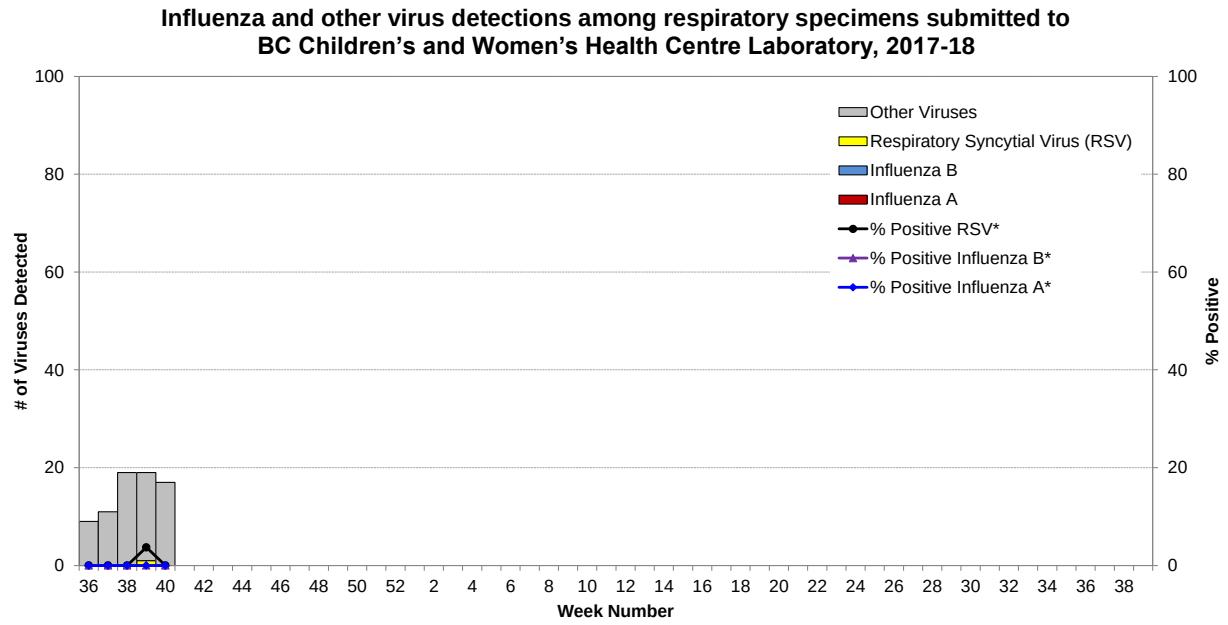
Influenza and other virus detections among respiratory specimens submitted to BCCDC Public Health Laboratory, 2017-18



Data are current to October 10, 2017.

BC Children's and Women's Health Centre Laboratory

In week 40, 27 tests for respiratory viruses were conducted at the BC Children's and Women's Health Centre laboratory. Of these, none were positive for influenza A, influenza B, or respiratory syncytial virus (RSV). One was positive for RSV (out of 27 tests) in week 39. Rhinovirus and parainfluenza were the most commonly detected respiratory viruses during this period.

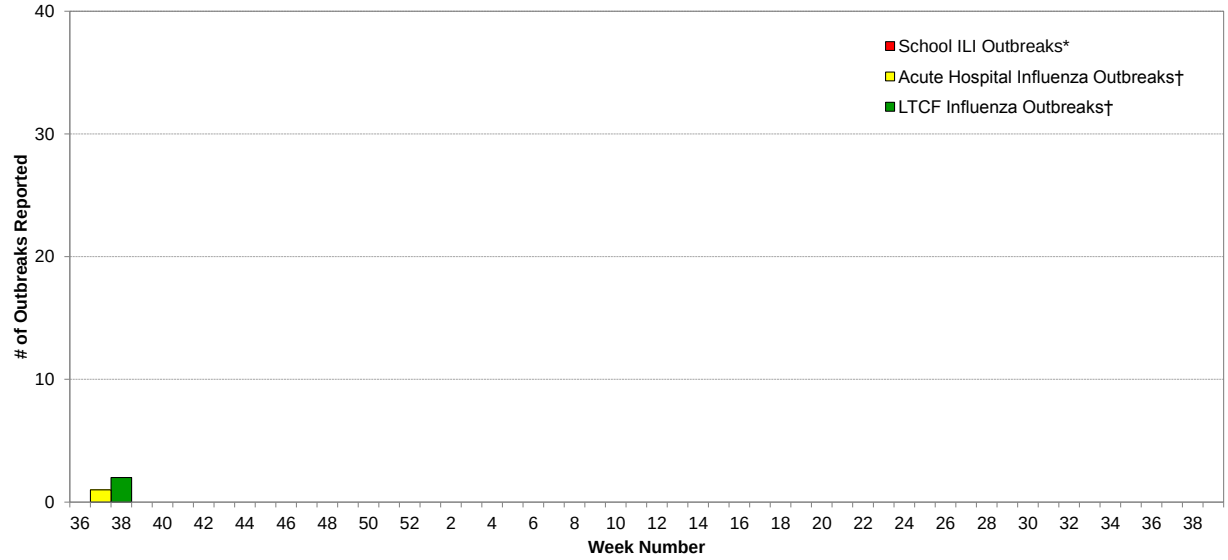


* Positive rates were calculated using aggregate data. The denominators for each rate represent the total number of tests; multiple tests may be performed for a single specimen and/or patient.

Influenza-like Illness (ILI) Outbreaks

No new ILI outbreaks have been reported since our last bulletin. Three outbreaks were previously reported in the late summer/early fall leading up to the 2017-18 surveillance period. Two outbreaks were reported in LTCFs with onset in week 38; 1 influenza B outbreak in FHA and 1 influenza A (H3N2) outbreak in VIHA. Additionally, an influenza A outbreak was reported in week 37 from an acute care facility in FHA. Since the 2014-15 season, sporadic facility influenza outbreaks have previously been reported as early as week 37; current sporadic outbreak reports are not exceptional in that regard.

Number of influenza-like illness (ILI) outbreaks reported, British Columbia 2017-18



* School-based ILI outbreak defined as >10% absenteeism on any day, most likely due to ILI.
† 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 37-38, September 10 to 23, 2017)

Influenza activity remains at inter-seasonal levels across the country. However, several indicators are above expected levels compared to previous seasons. In weeks 37-38, the majority of influenza detections continued to be A(H3N2). The percentage of laboratory tests positive for influenza is higher for this time of year compared to previous seasons. 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, 2017 to October 12, 2017, the National Microbiology Laboratory (NML) received 21 influenza viruses [12 A(H3N2), 5 A(H1N1)pdm09 and 4 B] from Canadian laboratories for antigenic characterization.

Influenza A(H3N2): Of the 12 influenza A(H3N2) viruses, only 4 (33%) had sufficient haemagglutination titre for antigenic characterization by haemagglutination inhibition (HI) assay. Of the 4 viruses characterized by HI assay, all were considered antigenically similar to A/Hong Kong/4801/2014, the WHO-recommended A(H3N2) component for the 2017-18 northern hemisphere influenza vaccine. Of the 3 viruses that were antigenically characterized with available sequencing information, all 3 belonged to genetic group 3C.2a; 1 is pending for sequencing. Genetic characterization was performed to infer antigenic properties on the remaining 8 viruses that did not grow to sufficient haemagglutination titre for HI assay. Of the 8 viruses genetically characterized, all were reported to belong to genetic group 3C.2a, which includes the A/Hong Kong/4801/2014 vaccine strain.

Influenza A(H1N1)pdm09: All of the 5 A(H1N1)pdm09 viruses characterized were antigenically similar to A/Michigan/45/2015, the WHO-recommended influenza A(H1N1) component for the 2017-18 northern hemisphere influenza vaccine.

Influenza B: Of the 4 influenza B viruses characterized, all were antigenically similar to a B/Phuket/3073/2013(Yamagata lineage)-like virus, the WHO-recommended influenza B component for the 2017-18 northern hemisphere quadrivalent influenza vaccine containing two influenza B strains.

National Microbiology Laboratory (NML): Antiviral Resistance

From September 1, 2017 to October 12, 2017, the NML received influenza viruses from Canadian laboratories for drug susceptibility testing.

Amantadine: Of the 2 influenza A(H3N2) viruses tested against amantadine, all were resistant.

Oseltamivir: Of the 23 influenza viruses [14 A(H3N2), 5 A(H1N1)pdm09, and 4 B] tested against oseltamivir, all were sensitive.

Zanamivir: Of the 23 influenza viruses [14 A(H3N2), 5 A(H1N1)pdm09, and 4 B] tested against zanamivir, all were sensitive.

International

USA (week 39, September 24 to September 30, 2017)

During week 39, influenza activity was at inter-seasonal levels in the United States. The most frequently identified influenza subtype reported by public health laboratories during week 39 was influenza A(H3N2). The percentage of respiratory specimens testing positive for influenza in clinical laboratories remained at low levels. The proportion of deaths attributed to pneumonia and influenza (P&I) was below the system-specific epidemic threshold. One influenza-associated pediatric death was reported; the death was associated with an unsubtyped influenza A virus and occurred during week 23. The proportion of outpatient visits for ILI was 1.2%, which is below the national baseline of 2.2%. The US CDC has also posted a summary of influenza activity in the US and elsewhere for the period May 21 to September 23, 2017, available at: https://www.cdc.gov/mmwr/volumes/66/wr/mm6639a3.htm

Sporadic detections of novel influenza A viruses associated with swine exposure at agriculture fairs in Maryland and Michigan have also been reported to the US CDC since September 1, 2017. Details are available at: www.cdc.gov/flu/weekly/.

WHO (October 2, 2017)

Influenza activity remained at low levels in the temperate zone of the northern hemisphere. High levels of influenza activity continued to be reported in the temperate zone of the southern hemisphere and in some countries of South and South East Asia. In Central America and the Caribbean, low influenza activity was reported in a few countries. Worldwide, influenza A(H3N2) viruses predominated.

From September 4 to September 17, 2017, the WHO GISRS laboratories tested more than 56,011 specimens. Of these, 5856 were positive for influenza viruses including 4839 (83%) typed as influenza A and 1017 (17%) as influenza B. Of the subtyped influenza A viruses, 3305 (89%) were influenza A(H3N2) and 413 (11%) were influenza A(H1N1)pdm09. Of the characterized B viruses, 181 (65%) belonged to the B(Yamagata) lineage and 96 (35%) to the B(Victoria) lineage.

In countries in the temperate zone of the southern hemisphere, influenza activity appeared to have peaked in Oceania, South America and South Africa. In Australia, ILI and influenza activity was reported to plateau at the national level with subnational variability. A sharp increase in influenza-associated pneumonia deaths was observed in the region of New South Wales in the recent weeks. In New Zealand, respiratory illness indicators and influenza activity continued to decrease to below seasonal threshold levels, with influenza A(H3N2) and B Yamagata lineage viruses predominantly detected. In Southern Africa, most of the season was dominated by influenza A(H3N2), however, a change in the proportion of circulating influenza subtype was observed in recent weeks, with influenza B most frequently detected.

In select countries in the tropical zone, influenza A(H1N1)pdm09 virus detections continued to be reported in India and Bhutan. However, ILI and SARI indicators appeared to be decreasing in Bhutan. Based on reports, low influenza activity was reported in Bangladesh in recent weeks, with influenza B viruses predominantly detected. ILI and influenza activity remained high in southern China and Thailand, with detection of predominantly influenza A(H3N2) viruses and all seasonal influenza subtypes, respectively.

Details are available at: www.who.int/influenza/surveillance_monitoring/updates/en/.

WHO Recommendations for Influenza Vaccines

WHO Recommendations for 2017-18 Northern Hemisphere Influenza Vaccine

On March 2, 2017, the WHO announced the recommended strain components for the 2017-18 northern hemisphere trivalent influenza vaccine (TIV):*

- an A/Michigan/45/2015 (H1N1)pdm09-like virus;†
- an A/Hong Kong/4801/2014 (H3N2)-like virus;
- a B/Brisbane/60/2008 (Victoria-lineage)-like 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 (Yamagata-lineage)-like virus.

* These recommended strains are the same as those recommended for the 2017 southern hemisphere TIV and represent a change for one of the three components used for the 2016-17 northern hemisphere TIV and 2016 southern hemisphere TIV.

† Recommended strain represents a change from an A/California/7/2009-like virus, which had been retained as the A(H1N1)pdm09 component since the 2009 pandemic, to an A/Michigan/45/2015-like virus belonging to the emerging phylogenetic subclade 6B.1.

For further details: www.who.int/influenza/vaccines/virus/recommendations/2017_18_north/en/.

WHO Recommendations for the 2018 Southern Hemisphere Influenza Vaccine

On September 28, 2017, the WHO announced recommended strain components for the 2018 southern 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/Phuket/3073/2013-like (Yamagata-lineage)virus.§

It is recommended that quadrivalent influenza vaccines (QIV) containing two influenza B viruses contain the above three viruses and a B/Brisbane/60/2008 (Victoria-lineage)-like virus.

* Recommended strains represent a change for two of the three components used for the 2017 southern hemisphere vaccines.

† Recommended strain is the same as recommended for the 2017 southern hemisphere and 2017-18 northern hemisphere vaccines. The A/Michigan/45/2015-like virus belongs to the emerging phylogenetic subclade 6B.1; it replaces the A/California/7/2009-like virus that had been retained as the previous A(H1N1) component since the 2009 pandemic.

‡ Recommended strain for the A(H3N2) component represents a phylogenetic clade-level change from a clade 3C.2a virus to a clade 3C.2a1 virus containing the amino acid substitution N121K in the HA which is found in the majority of recent A(H3N2) viruses.

§ Recommended strain for the influenza B component represents a lineage-level change from a B(Victoria)-lineage virus to a B(Yamagata)-lineage virus.

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

The European Centre for Disease Prevention and Control has also posted a useful summary of WHO recommendations for the 2018 southern hemisphere influenza season, including rationale, available at: https://ecdc.europa.eu/en/news-events/who-recommendations-influenza-virus-vaccine-composition-2018-southern-hemisphere

Additional Information

Explanatory Note:

The surveillance period for the 2017-18 influenza season is defined starting in week 40. Weeks 36-39 of the 2016-17 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

version: 26 Oct 2011

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

Health unit/medical health officer notified? ☐ *Yes* ☐ *No*

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)*

☐ Update *(complete section **C** below; Section **D** if available)*

☐ Outbreak Over *(complete section **C** below; Section **D** if available)*

B — First Notification

Type of facility: ☐ LTCF ☐ Acute Care Hospital ☐ Senior's Residence

(if ward or wing, please specify name/number: _____)

☐ Workplace ☐ School (grades:) ☐ Other (_____)

Date of onset of first case of ILI (dd/mm/yyyy): DD / MMM / YYYY

Numbers to date	Residents/Students	Staff
Total		
With ILI		
Hospitalized		
Died		

C — Update AND Outbreak Declared Over

Date of onset for most recent case of ILI (dd/mm/yyyy): DD / MMM / YYYY

If over, date outbreak declared over (dd/mm/yyyy): DD / MMM / YYYY

Numbers to date	Residents/Students	Staff
Total		
With ILI		
Hospitalized		
Died		

D — Laboratory Information

Specimen(s) submitted? ☐ Yes (location: _____) ☐ No ☐ Don't know

If yes, organism identified? ☐ Yes (specify: _____) ☐ No ☐ Don't know

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ilioutbreak@bccdc.ca