

British Columbia Influenza Surveillance Bulletin

Influenza Season 2015-16, Number 5, Weeks 48-49

November 29 to December 12, 2015

Table of Contents:

British Columbia:

Sentinel Physicians	Page 2
Children's Hospital ER	Page 2
Medical Services Plan	Page 3
Laboratory Surveillance	Page 5
ILI Outbreaks	Page 8

Canada:

FluWatch Activity levels	Page 9
NML Strain Characterization	Page 9
NML Antiviral Resistance	Page 9

International:

USA (CDC) Surveillance	Page 10
WHO	Page 10

Influenza Vaccine Components (WHO Recommendations)

2015-16 Northern Hemisphere	Page 11
2016 Southern Hemisphere	Page 11

Additional Information:

Explanatory note	Page 12
List of Acronyms	Page 12
Web Sites	Page 12
Outbreak Report Form	Page 13

Influenza Activity Remains Low in BC

As we enter the winter holiday period, most surveillance indicators in BC continue to suggest low-level influenza activity.

In weeks 48-49 (November 29 to December 12, 2015), influenza positivity remained $\leq 5\%$ at the BCCDC Public Health Laboratory, with a mix of influenza A(H3N2) and influenza B viruses detected. No influenza viruses were detected at the BC Children's and Women's Hospital Laboratory during this period. Enteroviruses continue to be the most commonly detected respiratory viruses, with increasing detection of respiratory syncytial virus (RSV) among pediatric patients.

Since our last bulletin 2 weeks ago, one new lab-confirmed influenza A(H3N2) outbreak was reported in a long-term care facility in FHA, bringing the cumulative seasonal tally (since mid-August) to 11 A(H3N2) facility outbreaks.

Other community-based surveillance indicators, including sentinel influenza-like illness (ILI) consultation rates and MSP claims for influenza illness (II), were within expected levels for this time of year based on 10-year historical averages.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

Contributors: Helen Guiyun Li, Catharine Chambers, Lisan Kwindt, Danuta Skowronski

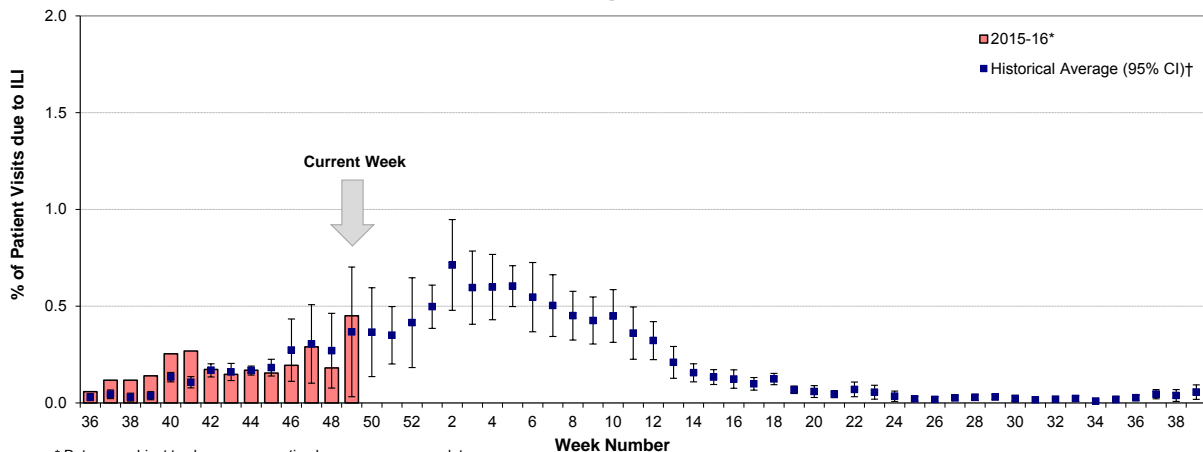
Report Disseminated: December 17, 2015

British Columbia

Sentinel Physicians

The proportion of patients with influenza-like illness (ILI) among those presenting to sentinel sites was within 10-year historical levels in both weeks 48 and 49, slightly lower than the historical average in week 48 (0.18%) but slightly higher in week 49 (0.45%). So far, 59% and 47% of sentinel sites have reported for weeks 48 and 49, respectively.

Percent of patient visits to sentinel physicians due to influenza-like illness (ILI) compared to historical average, British Columbia, 2015-16

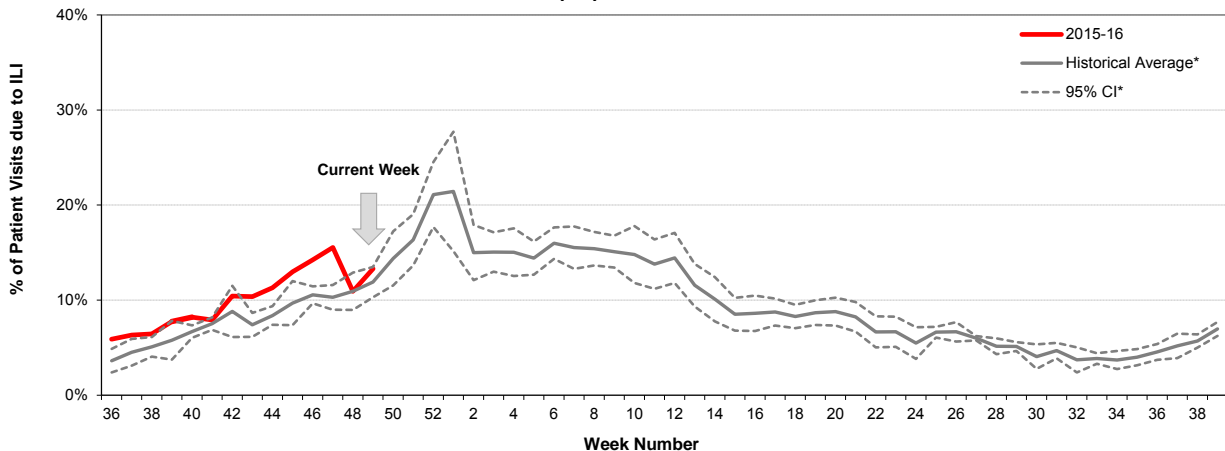


* Data are subject to change as reporting becomes more complete.
† 10-year historical average for 2015-16 season based on 2003-04 to 2014-15 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality; CI=confidence interval.

BC Children's Hospital Emergency Room

Following a higher than expected trend earlier this season, the proportion of visits to BC Children's Hospital Emergency Room (ER) attributed to ILI returned to 5-year historical average levels in weeks 48-49, decreasing from 16% in week 47 to 11-13% in weeks 48-49.

Percent of patients presenting to BC Children's Hospital ER attributed to influenza-like illness (ILI), British Columbia, 2015-16

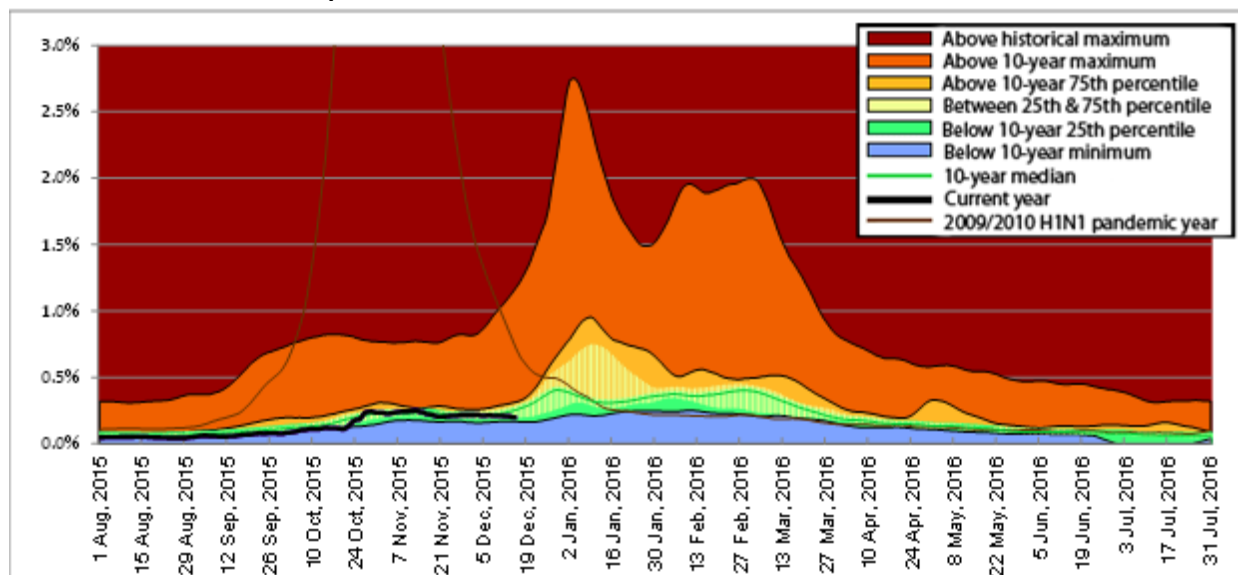


Source: BCCH Admitting, Discharge, Transfer database (ADT). Data includes records with a triage chief complaint of "flu" or "influenza" or "fever/cough."
* 5-year historical average for 2015-16 season based on 2010-11 to 2014-15 seasons; CI=confidence interval

Medical Services Plan

BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, continued a stable trend in weeks 48-49, remaining at or below 10-year median levels across the province.

Service claims submitted to MSP for influenza illness (II)* as a proportion of all submitted general practitioner service claims, British Columbia, 2015-16

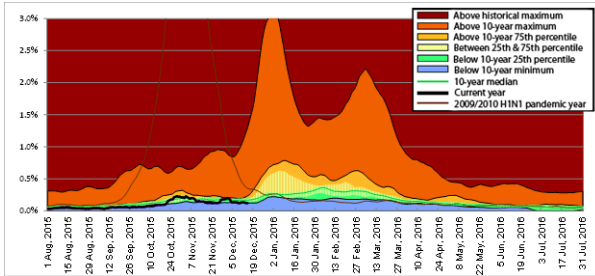


* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza).

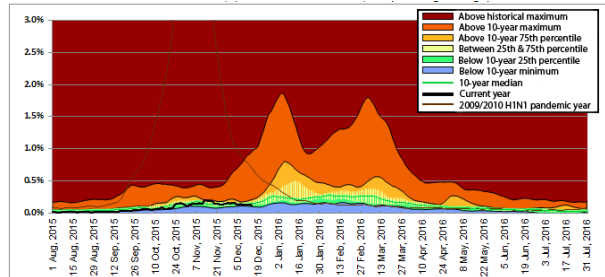
Data for the period August 1, 2009 to July 31, 2010 have been excluded from the 10-year median calculation due to atypical seasonality during the 2009/2010 H1N1 pandemic year. MSP week beginning August 1, 2015 corresponds to sentinel ILI week 30; data are current to December 15, 2015.

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

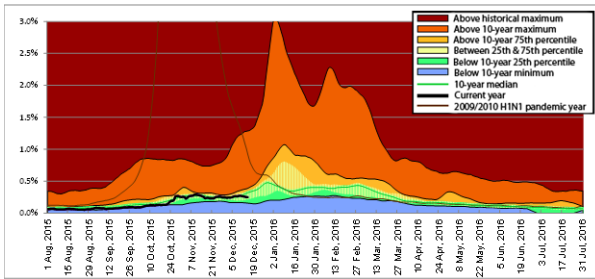
Interior



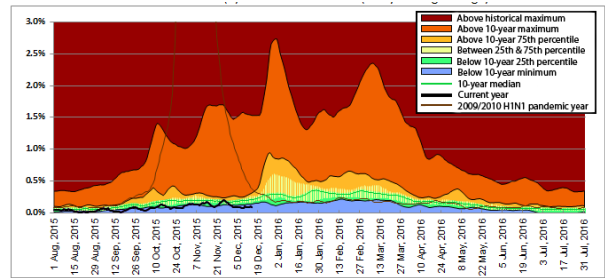
Vancouver Island



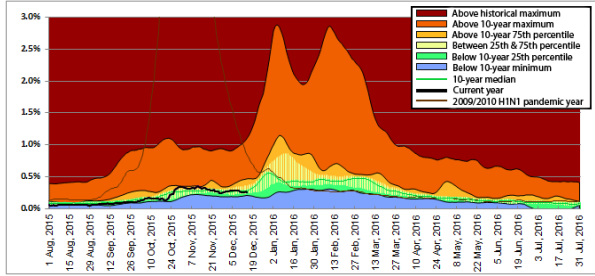
Fraser



Northern



Vancouver Coastal



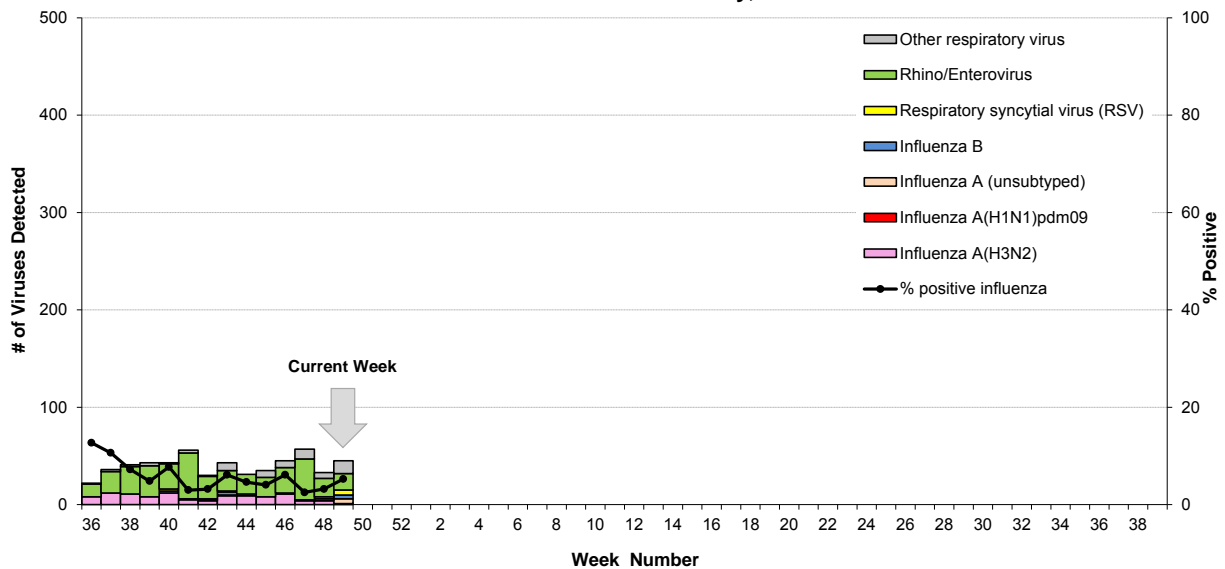
Laboratory Reports

BCCDC Public Health Laboratory

In weeks 48-49, 375 patients were tested for respiratory viruses at the BCCDC Public Health Laboratory. Of these, 16 (4%) tested positive for influenza, including 10 (63%) influenza A [5 A(H3N2) and 5 A untyped] and 6 (38%) influenza B. Influenza positivity remained $\leq 5\%$ in both weeks 48 and 49. Enteroviruses continued to be the most commonly detected respiratory viruses during this period.

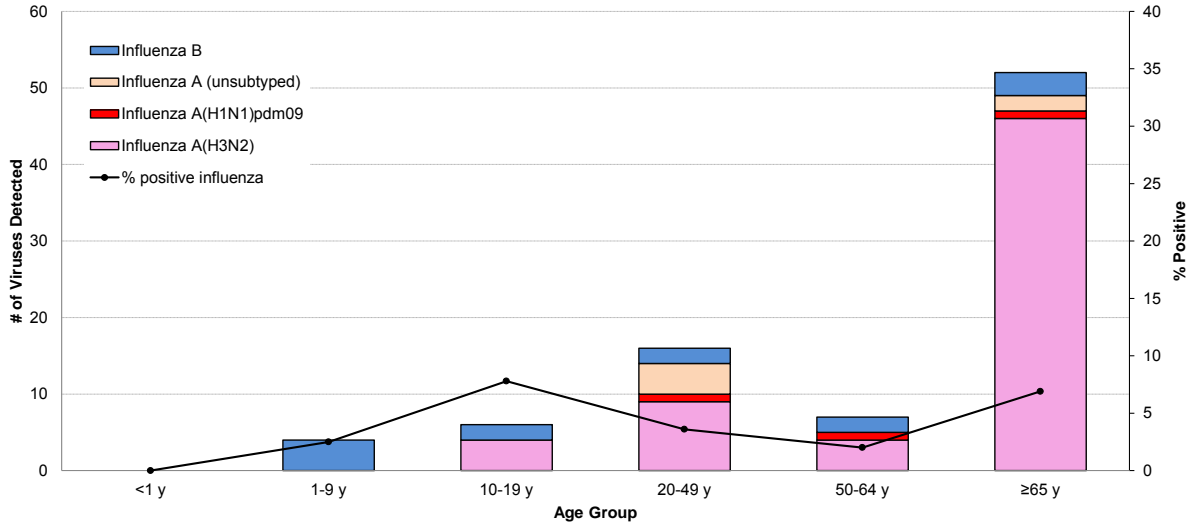
So far during the 2015-16 season (since week 40, starting October 4, 2015), 85 patients have tested positive for influenza at the BCCDC Public Health Laboratory, including 72 (85%) influenza A [64 A(H3N2), 3 A(H1N1)pdm09 and 5 A untyped] and 13 (15%) influenza B. The majority (62%) of influenza detections, predominately A(H3N2), continue to be in elderly adults aged ≥ 65 years so far this season.

Influenza and other virus detections among respiratory specimens submitted to BCCDC Public Health Laboratory, 2015-16



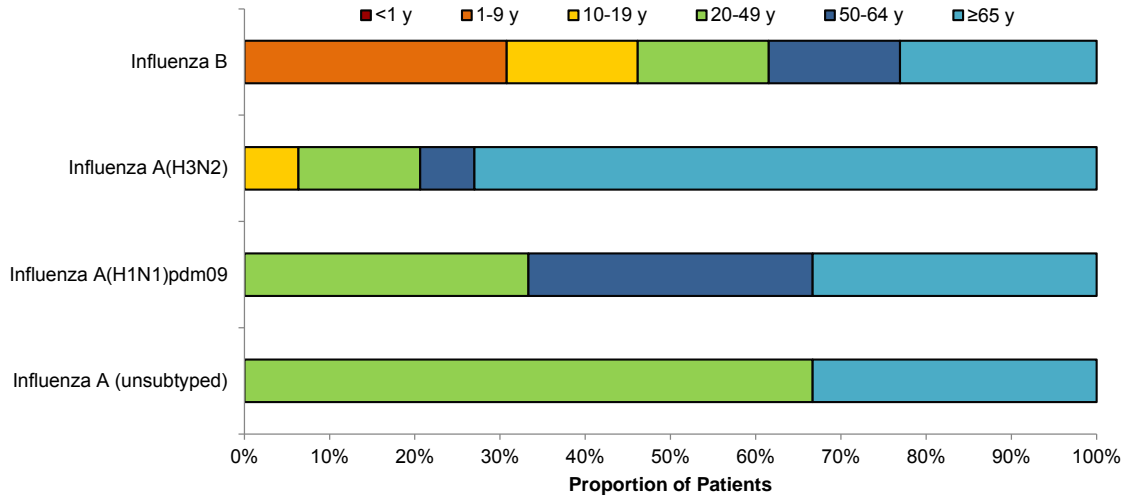
Data are current to December 16, 2015.

Cumulative number (since week 40) of influenza detections by type/subtype and age group, BCCDC Public Health Laboratory, 2015-16



Data are current to December 16, 2015; figure includes cumulative influenza detections for specimens collected from weeks 40-49.

Age distribution of influenza detections (cumulative since week 40) by type/subtype, BCCDC Public Health Laboratory, 2015-16

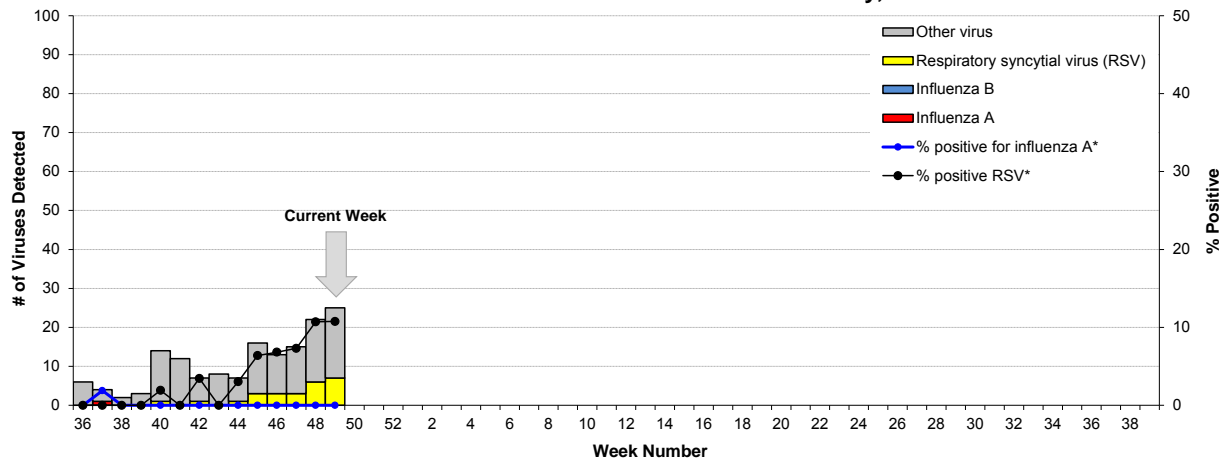


Data are current to December 16, 2015; figure includes cumulative influenza detections for specimens collected from weeks 40-49.

BC Children's and Women's Health Centre Laboratory

In weeks 48-49, the BC Children's and Women's Health Centre Laboratory conducted 121 tests for influenza; none were positive for influenza A or B. The proportion of tests positive for respiratory syncytial virus (RSV) increased from 7% in week 47 to 11% in both weeks 48 and 49. Parainfluenza viruses were also commonly detected over this period.

Influenza and other virus detections among respiratory specimens submitted to BC Children's and Women's Health Centre Laboratory, 2015-16



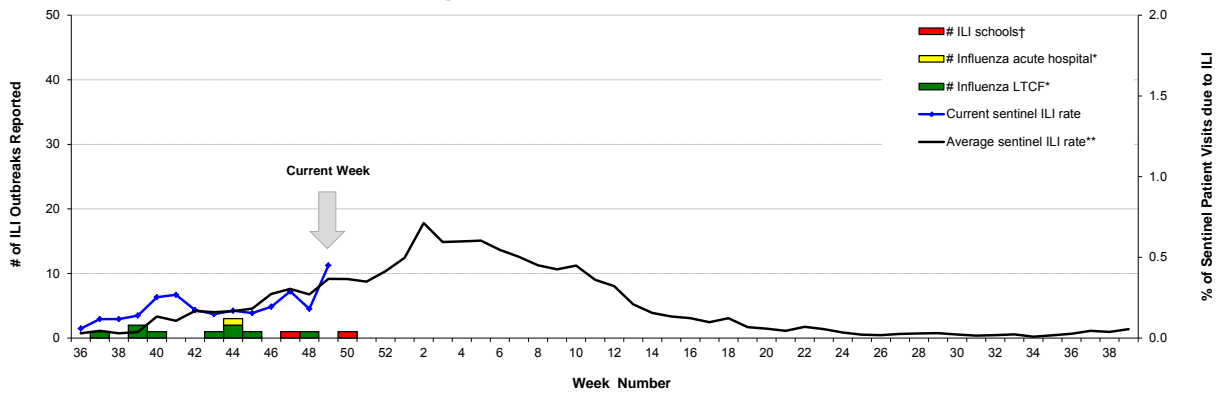
* Positive rates were calculated using aggregate data. The denominators for each rate represent the total number of tests; multiple tests may be performed for a single specimen and/or patient.

Influenza-like Illness (ILI) Outbreaks

Since our last bulletin 2 weeks ago, one new lab-confirmed influenza A(H3N2) outbreak was reported in FHA with onset in week 48. One new ILI outbreak in a school in IHA has been reported in week 50.

In total since mid-August (since week 32, starting August 9, 2015), 11 influenza A(H3N2) outbreaks have been reported from facilities, including 10 from long-term care facilities (LTCFs) and 1 from an acute care facility. Two school ILI outbreaks (one in week 47 and one in week 50) have been reported so far this season.

Number of influenza-like illness (ILI) outbreaks reported, compared to current sentinel ILI rate and historical average sentinel ILI rate, British Columbia 2015-16



* Facility-based influenza outbreaks defined as 2 or more ILI cases within 7-day period, with at least one laboratory-confirmed case of influenza.
 † School-based ILI outbreak defined as >10% absenteeism on any day, most likely due to ILI.
 ** 10-year historical average for 2015-16 season based on 2003-04 to 2014-15 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality.

National

FluWatch (week 48, November 29 to December 5, 2015):

Overall, influenza activity in Canada remained low with sporadic activity reported across Canada. Fifteen regions across Canada reported sporadic influenza/ILI activity in week 48; the remaining 38 regions reported no activity. Laboratory detections of influenza are below expected levels for this time of the year; in week 48, <1% of tests were positive for influenza compared to the expected range of 3-12% based on the previous five seasons. So far this season, influenza A(H3N2) has been the most common subtype affecting Canadians (89% of influenza A detections with known subtype). The majority of influenza laboratory detections and hospitalizations have been in seniors greater than 65 years of age. No new laboratory confirmed outbreaks were reported in week 48. Details are available at: healthycanadians.gc.ca/diseases-conditions-maladies-affections/disease-maladie/flu-grippe/surveillance/fluwatch-reports-rapports-surveillance-influenza-eng.php.

National Microbiology Laboratory (NML): Strain Characterization

From September 1 to December 17, 2015, the National Microbiology Laboratory (NML) received 91 influenza viruses [54 A(H3N2), 16 A(H1N1)pdm09 and 21 B] from Canadian laboratories for antigenic characterization.

Influenza A(H3N2): Of the 54 influenza A(H3N2) viruses, only 6 (11%) had sufficient titre for antigenic characterization by haemagglutination inhibition (HI) assay. Of the 6 viruses characterized by HI assay, all were considered antigenically similar to a cell-passaged A/Switzerland/9715293/2013-like virus, the WHO-recommended A(H3N2) component for the 2015-16 northern hemisphere influenza vaccine. Genetic characterization was performed to infer antigenic properties on the remaining 48 viruses that did not grow to sufficient titre for HI assay. Of the 48 A(H3N2) viruses genetically characterized, all were reported to belong to a genetic group in which most viruses were antigenically related to A/Switzerland/9715293/2013.

Influenza A(H1N1)pdm09: The 16 A(H1N1)pdm09 viruses characterized were antigenically similar to an A/California/7/2009-like virus, the WHO-recommended A(H1N1) component for the 2015-16 northern hemisphere influenza vaccine.

Influenza B: Of the 21 influenza B viruses characterized, 14 (67%) were antigenically similar to a B/Phuket/3073/2013-like (Yamagata lineage) virus, the recommended influenza B component for the 2015-16 northern hemisphere influenza vaccine. Seven (33%) were characterized as a B/Brisbane/60/2008-like (Victoria lineage) virus, the recommended influenza B component for the 2015-16 northern hemisphere quadrivalent influenza vaccine containing two influenza B components.

National Microbiology Laboratory (NML): Antiviral Resistance

From September 1 to December 17, 2015, the NML received influenza viruses from Canadian laboratories for drug susceptibility testing. Of the 83 influenza A viruses [68 A(H3N2) and 15 A(H1N1)pdm09] tested against amantadine, all were resistant with the exception of one A(H3N2) virus which was sensitive to amantadine. Of the 101 influenza viruses [64 A(H3N2), 16 A(H1N1)pdm09 and 21 B] tested against oseltamivir, all were sensitive. Of the 102 influenza viruses [65 A(H3N2), 16 A(H1N1)pdm09 and 21 B] tested against zanamivir, all were sensitive.

International

USA (week 48, November 29 to December 5, 2015): During week 48, influenza activity increased slightly in the United States but remained low overall. The most frequently identified influenza virus type reported by public health laboratories during week 48 was influenza A viruses, with influenza A (H3N2) viruses predominating. The percentage of respiratory specimens testing positive for influenza in clinical laboratories was low. The proportion of deaths attributed to pneumonia and influenza (P&I) was below their system-specific epidemic threshold. Two influenza-associated pediatric deaths were reported, including one influenza-associated pediatric death that occurred during the 2014-2015 season. The proportion of outpatient visits for ILI was 1.8%, which is below the national baseline of 2.1%. Four of 10 regions reported ILI at or above region-specific baseline levels. One state experienced high ILI activity; Puerto Rico and four states experienced low ILI activity; New York City and 45 states experienced minimal ILI activity; and the District of Columbia had insufficient data. Details are available at: www.cdc.gov/flu/weekly/.

WHO (as of December 14, 2015): Globally, influenza activity generally remained low in both hemispheres. In a few countries in Central Asia and Northern Europe, there were slight increases in influenza detections in recent weeks. In Eastern Asia, the rest of Europe, North Africa and North America, influenza activity continued at low, inter-seasonal levels. In western Asia, Oman reported increased influenza activity, predominantly due to influenza A(H1N1)pdm09 and influenza B viruses, while Bahrain reported a decline in influenza activity. Few influenza virus detections were reported by countries in tropical Africa. In tropical countries of the Americas, Central America and the Caribbean, respiratory virus activity remained at low levels, with the exception of Colombia, Costa Rica and Nicaragua. In tropical Asia, countries in Southern and South East Asia reported low influenza activity overall except Thailand where activity mainly due to B viruses continued to be reported. Iran reported elevated influenza activity, predominantly influenza A(H1N1)pdm09. In the temperate countries of the southern hemisphere, respiratory virus activity was generally low in recent weeks, with low levels of influenza A(H3N2) and B virus detections reported. From November 16 to 29, 2015, the WHO Global Influenza Surveillance & Response System (GISRS) laboratories tested more than 52,160 specimens, of which 1,615 (3%) were positive for influenza viruses: 1,162 (72%) were typed as influenza A and 453 (28%) as influenza B. Of the sub-typed influenza A viruses, 408 (43%) were influenza A(H1N1)pdm09 and 548 (57%) were influenza A(H3N2). Of the characterized B viruses, 182 (75%) belonged to the B/Yamagata lineage and 61 (25%) to the B/Victoria lineage. Details are available at: www.who.int/influenza/surveillance_monitoring/updates/en/.

WHO Recommendations for Influenza Vaccines

WHO Recommendations for 2015-16 Northern Hemisphere Influenza Vaccine

On February 26, 2015, the WHO announced the recommended strain components for the 2015-16 Northern Hemisphere trivalent influenza vaccine (TIV):*

- an A/California/7/2009(H1N1)pdm09-like virus;†
- an A/Switzerland/9715293/2013(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-like (Victoria-lineage) virus.

* These recommended strains are the same as those used for the 2015 Southern Hemisphere vaccine.

† Recommended strain has been retained as the A(H1N1) component since the 2009 pandemic and has been included in the Northern Hemisphere vaccine since 2010-11.

‡ A/South Australia/55/2014, A/Norway/466/2014, and A/Stockholm/6/2014 are A/Switzerland/9715293/2013-like viruses. Recommended strain is considered antigenically distinct from the A/Texas/50/2012-like virus recommended for the 2014-15 Northern Hemisphere vaccine and clusters within the emerging phylogenetic clade 3C.3a.

§ Recommended strain is the same influenza B-Yamagata lineage as the B/Massachusetts/2/2012-like virus recommended for the 2014-15 Northern Hemisphere vaccine but represents a phylogenetic clade-level change from clade 2 to clade 3.

For further details: www.who.int/influenza/vaccines/virus/recommendations/2015_16_north/en/.

WHO Recommendations for 2016 Southern Hemisphere Influenza Vaccine

On September 24, 2015, the WHO announced recommended strain components for the 2016 Southern Hemisphere trivalent influenza vaccine (TIV):*

- an A/California/7/2009 (H1N1)pdm09-like virus;†
- an A/Hong Kong/4801/2014(H3N2)-like virus;‡
- a B/Brisbane/60/2008-like (Victoria-lineage) virus.§

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

* Recommended strains represent a change for two of the three components used for the 2015 Southern Hemisphere and 2015-16 Northern Hemisphere vaccines.

† Recommended strain has been retained as the A(H1N1) component since the 2009 pandemic and has been included in the Southern Hemisphere vaccine since 2010 and in the Northern Hemisphere vaccine since 2010-11.

‡ Recommended strain for the A(H3N2) component represents a phylogenetic clade-level change from a clade 3C.3a virus to a clade 3C.2a virus. Most viruses belonging to A/Hong Kong/4801/2014-like (clade 3C.2a) viruses are considered antigenically related to cell-passaged A/Switzerland/9715293/2013-like (clade 3C.3a) viruses recommended for the 2015 Southern Hemisphere and 2015-16 Northern Hemisphere vaccines but are antigenically distinct from egg-passaged A/Switzerland/9715293/2013-like viruses used in vaccine manufacturing.

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

For further details: www.who.int/influenza/vaccines/virus/recommendations/2016_south/en/.

Additional Information

Explanatory Note:

The surveillance period for the 2015-16 influenza season is defined starting in week 40. Weeks 36-39 of the 2014-15 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/guidelines

Web Sites:

BCCDC Emerging Respiratory Pathogen Updates:

www.bccdc.ca/health-professionals/data-reports/emerging-respiratory-virus-updates

Influenza Web Sites

Canada – Flu Watch: www.phac-aspc.gc.ca/fluwatch/

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/

European Influenza Surveillance Scheme:

ecdc.europa.eu/EN/HEALTHTOPICS/SEASONAL_INFLUENZA/EPIDEMIOLOGICAL_DATA/Pages/Weekly_Influenza_Surveillance_Overview.aspx

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

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	<u>Reporting Information</u> Health unit/medical health officer notified? <input type="checkbox"/> Yes <input type="checkbox"/> No
	Person Reporting: _____ Title: _____
	Contact Phone: _____ Email: _____
	Health Authority: _____ HSDA: _____
	Full Facility Name: _____
	Is this report: <input type="checkbox"/> First Notification (<i>complete section B below; Section D if available</i>) <input type="checkbox"/> Update (<i>complete section C below; Section D if available</i>) <input type="checkbox"/> Outbreak Over (<i>complete section C below; Section D if available</i>)

B	<u>First Notification</u>
	Type of facility: <input type="checkbox"/> LTCF <input type="checkbox"/> Acute Care Hospital <input type="checkbox"/> Senior's Residence (if ward or wing, please specify name/number: _____)
	<input type="checkbox"/> Workplace <input type="checkbox"/> School (grades: _____) <input type="checkbox"/> Other (_____)
	Date of onset of first case of ILI (dd/mm/yyyy): <u>DD / MMM / YYYY</u>

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

C	<u>Update AND Outbreak Declared Over</u>
	Date of onset for most recent case of ILI (dd/mm/yyyy): <u>DD / MMM / YYYY</u>
	If over, date outbreak declared over (dd/mm/yyyy): <u>DD / MMM / YYYY</u>

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

D	<u>Laboratory Information</u>
	Specimen(s) submitted? <input type="checkbox"/> Yes (location: _____) <input type="checkbox"/> No <input type="checkbox"/> Don't know If yes, organism identified? <input type="checkbox"/> Yes (specify: _____) <input type="checkbox"/> No <input type="checkbox"/> Don't know