

British Columbia Influenza Surveillance Bulletin

Influenza Season 2015-16, Number 4, Weeks 46-47
November 15 to 28, 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 7

Canada:

FluWatch Activity levels	Page 8
NML Strain Characterization	Page 8
NML Antiviral Resistance	Page 8

International:

USA (CDC) Surveillance	Page 9
WHO	Page 9

Influenza Vaccine Components (WHO Recommendations)

2015-16 Northern Hemisphere	Page 10
2016 Southern Hemisphere	Page 10

Additional Information:

Explanatory note	Page 11
List of Acronyms	Page 11
Web Sites	Page 11
Outbreak Report Form	Page 12

Influenza Activity Remains Low in BC

In weeks 46-47 (November 15 to 28, 2015), most surveillance indicators continue to suggest low-level influenza activity in BC.

Since our last bulletin 2 weeks ago, no new lab-confirmed influenza outbreaks in facilities were reported. The first school ILI outbreak this season was reported with onset in week 47. In total since mid-August, 10 influenza facility outbreaks have been reported to date, all with influenza A(H3N2) detected, including 9 in LTCFs and 1 in an acute care facility.

The percent of patients who tested positive for influenza at the BCCDC Public Health Laboratory remained low at 6% and 3% in weeks 46 and 47, respectively. The majority of detections continue to be in elderly adults ≥ 65 years of age. Enteroviruses were the most commonly detected respiratory viruses during this period.

In weeks 46-47, MSP Influenza Illness consultation rates remained relatively stable at median levels across the province. The sentinel ILI consultation rate increased over this period but was within expected historical averages. The ILI consultation rate at BC Children's Hospital ER continued an increasing pattern and has remained higher than the historical average for 5 consecutive weeks.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team
Contributors: Helen Guiyun Li, Catharine Chambers, Lisan Kwindt, Danuta Skowronski

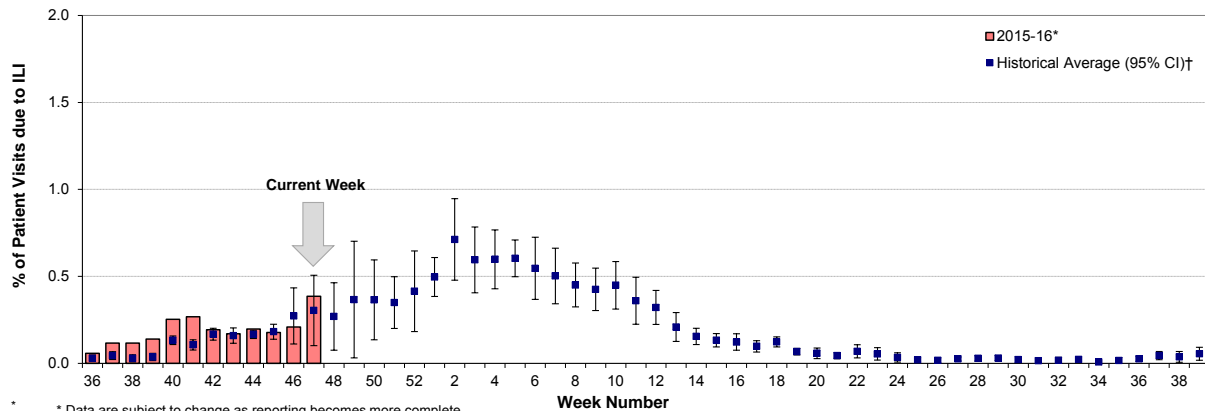
Report Disseminated: December 3, 2015

British Columbia

Sentinel Physicians

The proportion of patients with influenza-like illness (ILI) among those presenting to sentinel sites increased from 0.21% in week 46 to 0.39% in week 47, but remained within expected levels for this time of year. So far, 67% and 42% of sentinel sites have reported for weeks 46 and 47, respectively.

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

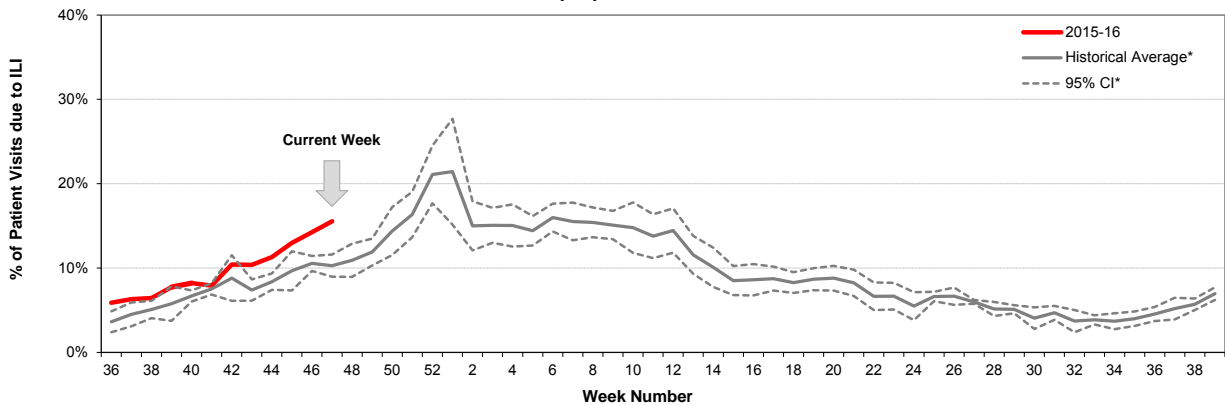


* Data are subject to change as reporting becomes more complete.
† 10-year historical average for 2015-16 season based on 2003-04 to 2014-15 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality; CI=confidence interval.

BC Children’s Hospital Emergency Room

As seen in previous weeks this season, the proportion of visits to BC Children’s Hospital Emergency Room (ER) attributed to ILI remained significantly higher than the 5-year historical average in weeks 46-47 and continued an increasing trend from 14% in week 46 to 16% in week 47.

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

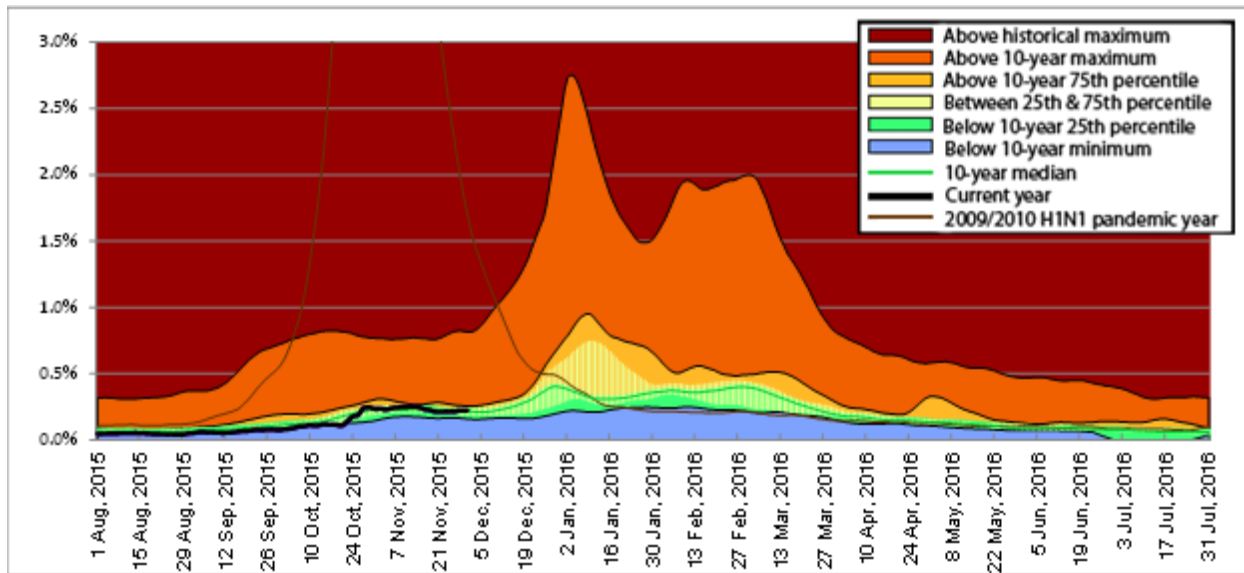


Source: BCCH Admitting, Discharge, Transfer database (ADT). Data includes records with a triage chief complaint of "flu" or "influenza" or "fever/cough."
* 5-year historical average for 2015-16 season based on 2010-11 to 2014-15 seasons; CI=confidence interval

Medical Services Plan

BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, remained relatively stable within 10-year median levels across the province in weeks 46-47.

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

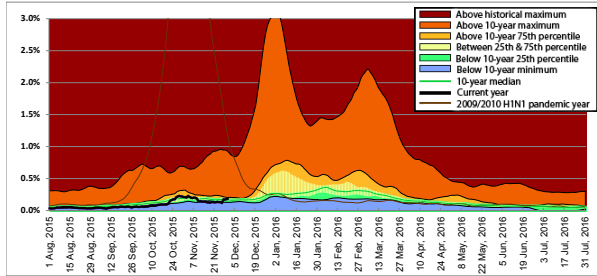


* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza).

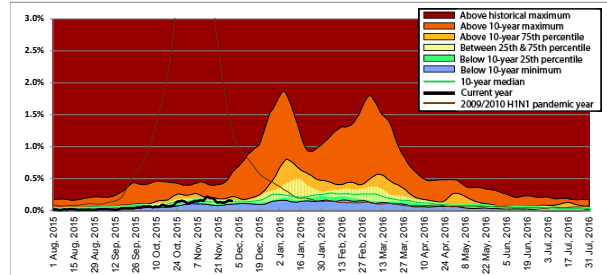
Data for the period August 1, 2009 to July 31, 2010 have been excluded from the 10-year median calculation due to atypical seasonality during the 2009/2010 H1N1 pandemic year. MSP week beginning August 1, 2015 corresponds to sentinel ILI week 30; data are current to November 30, 2015.

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

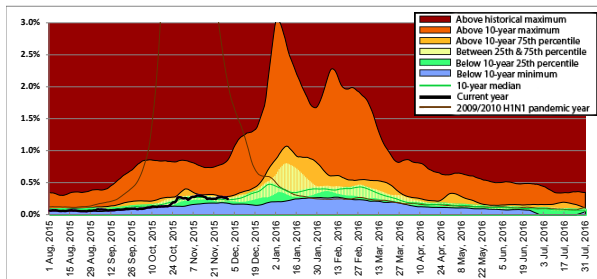
Interior



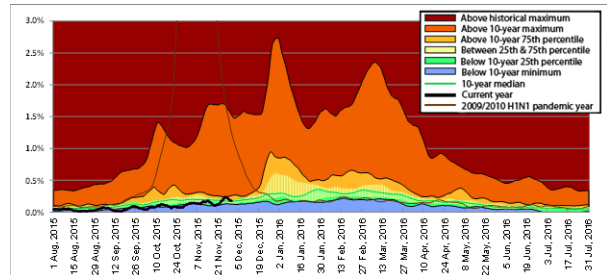
Vancouver Island



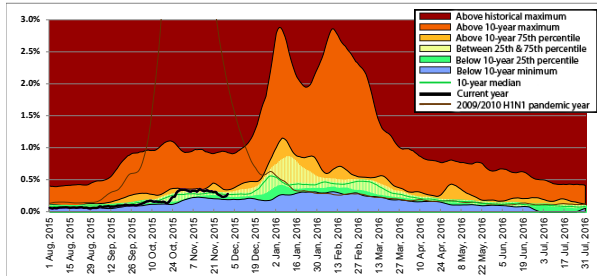
Fraser



Northern



Vancouver Coastal



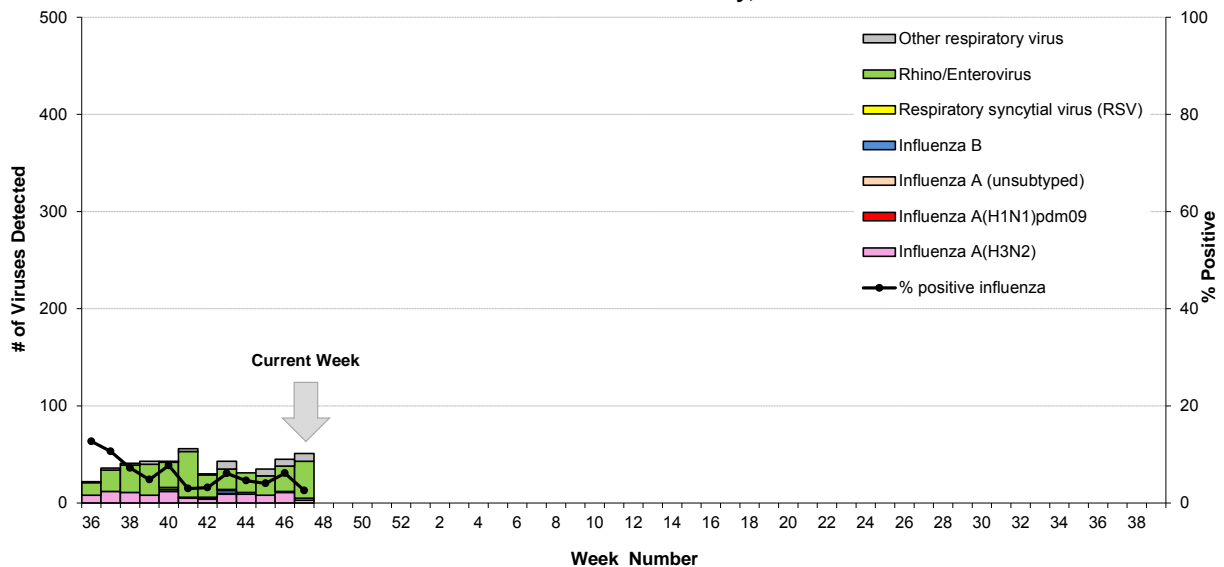
Laboratory Reports

BCCDC Public Health Laboratory

In weeks 46-47, 387 patients were tested for respiratory viruses at the BCCDC Public Health Laboratory. Of these, 16 (4%) tested positive for influenza, including 15 (94%) influenza A [14 A(H3N2) and 1 A un-subtyped] and 1 (6%) influenza B. Influenza positivity was 6% and 3% in weeks 46 and 47, respectively. Enteroviruses continued to be the most commonly detected respiratory viruses during this period.

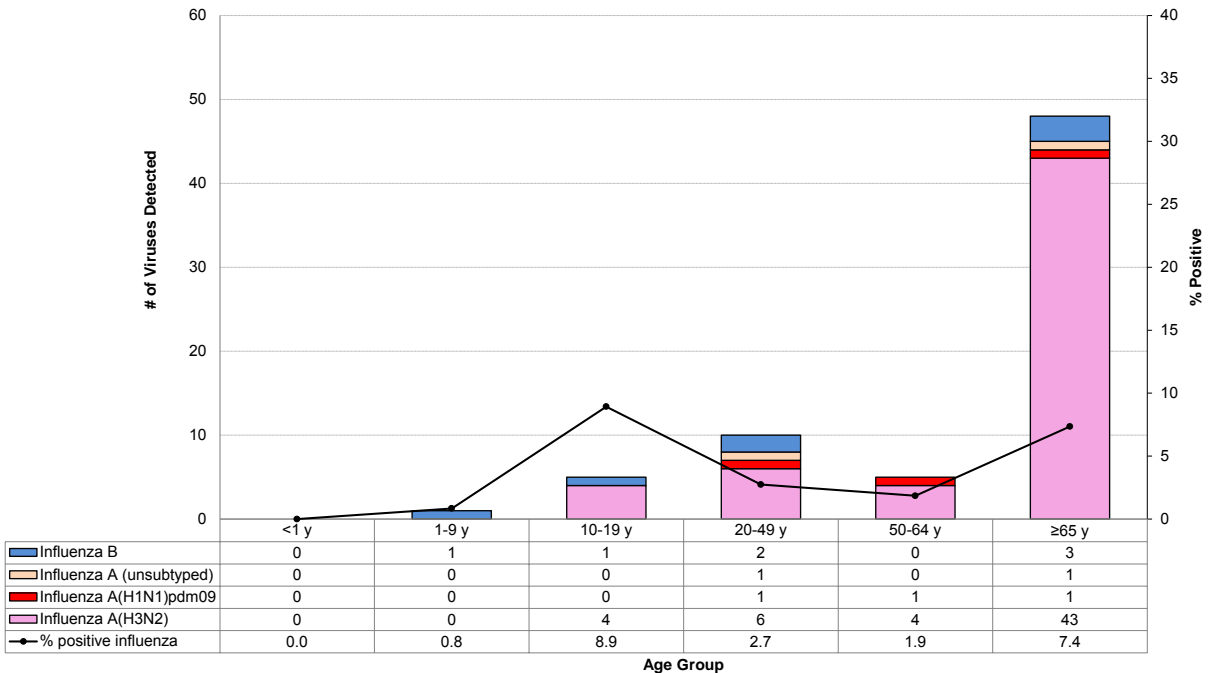
So far during the 2015-16 season (since week 40, starting October 4, 2015), 69 patients have tested positive for influenza at the BCCDC Public Health Laboratory, including 62 (90%) influenza A [58 A(H3N2), 3 A(H1N1)pdm09 and 1 A un-subtyped] and 7 (10%) influenza B. The majority (~70%) of influenza detections, 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 2, 2015.

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

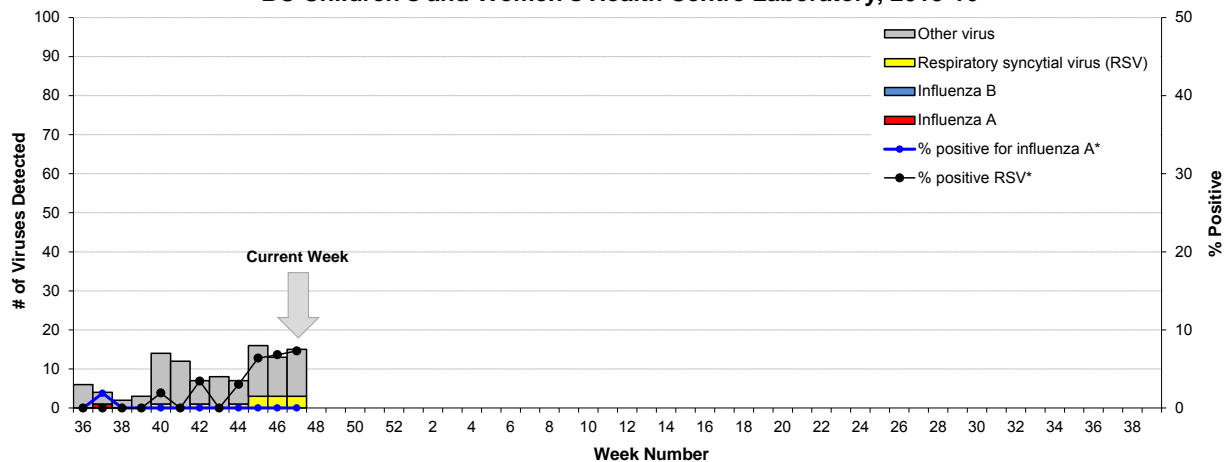


Data are current to December 2, 2015. The figure shows cumulative counts for specimens collected from week 40-47.

BC Children's and Women's Health Centre Laboratory

In weeks 46-47, BC Children's and Women's Health Centre Laboratory conducted 85 tests for influenza; none were positive for influenza A or B. Other respiratory viruses, including RSV, parainfluenza, and rhinoviruses, were detected sporadically.

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



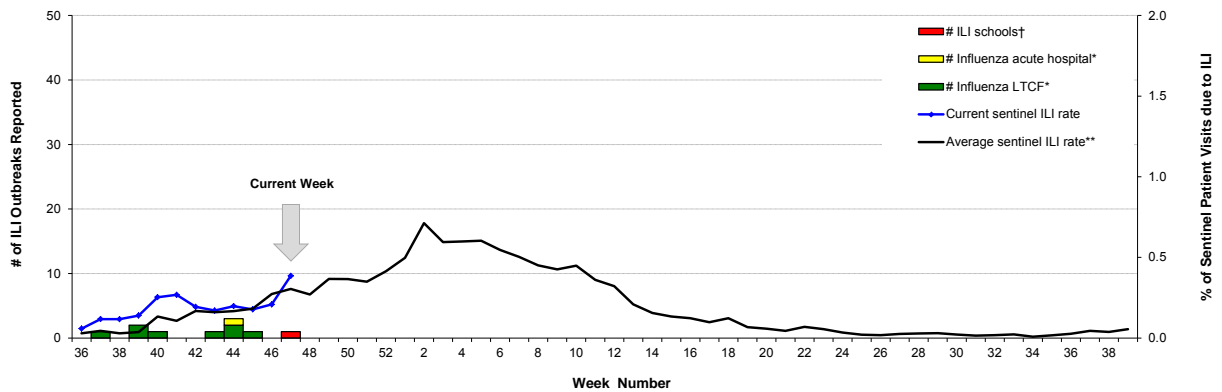
* Positive rates were calculated using aggregate data. The denominators for each rate represent the total number of tests; multiple tests may be performed for a single specimen and/or patient.

Influenza-like Illness (ILI) Outbreaks

Since our last bulletin 2 weeks ago, no new lab-confirmed influenza outbreaks have been reported. The first ILI outbreak in a school this season was reported with onset in week 47.

In total since mid-August (weeks 32-45), 10 influenza A(H3N2) outbreaks have been reported from facilities, including 9 from long-term care facilities (LTCFs) and 1 from an acute care facility.

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 46, November 15 to 21, 2015):

Based on several indicators, influenza activity in Canada was low in week 46. Only 12 of 43 regions across Canada reported any influenza/ILI activity; the majority of regions reported no activity. The percent positive for influenza detections remained low at 1.5% in week 46, below the five-year average for that week in previous seasons but within expected levels (range 1.48% - 4.74%). In week 46, there were 49 (1.5%) laboratory detections of influenza reported; BC and ON accounted for 71% of influenza detections in week 46. To date, 91% of influenza detections have been influenza A and the majority (86%) of those subtyped have been A(H3N2). Among the influenza cases with reported age, the largest proportion was in those ≥ 65 years of age (50%). In week 46, two outbreaks of ILI were reported in schools; no new laboratory confirmed outbreaks were reported. 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 3, 2015, the National Microbiology Laboratory (NML) received 45 influenza viruses [34 A(H3N2), 2 A(H1N1)pdm09 and 9 B] from Canadian laboratories for antigenic characterization.

Influenza A(H3N2): Of the 34 influenza A(H3N2) viruses, only one (3%) grew to sufficient titre for antigenic characterization by haemagglutination inhibition (HI) assay and was characterized as 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 on the remaining 33 viruses that did not grow to sufficient titre for HI assay to infer antigenic properties. Of the 33 A(H3N2) viruses genetically characterized, all 33 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 two A(H1N1)pdm09 viruses characterized were antigenically similar to a A/California/7/2009-like virus, the WHO-recommended A(H1N1) component for the 2015-16 northern hemisphere influenza vaccine.

Influenza B: Of the nine influenza B viruses characterized, seven 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. Two 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 3, 2015, the NML received influenza viruses from Canadian laboratories for drug susceptibility testing. Of the 40 influenza A viruses [39 A(H3N2) and 1 A(H1N1)pdm09] tested against amantadine, all were resistant with the exception of one A(H3N2) virus which was sensitive to amantadine. Of the 48 influenza viruses [37 A(H3N2), 2 A(H1N1)pdm09 and 9 B] tested against oseltamivir, all were sensitive. Of the 48 influenza viruses [37 A(H3N2), 2 A(H1N1)pdm09 and 9 B] tested against zanamivir, all were sensitive.

International

USA (week 46, ending November 21, 2015): During week 46, influenza activity increased slightly in the United States. The most frequently identified influenza virus type reported by public health laboratories during week 46 was influenza A viruses, with influenza A(H3N2) viruses predominating. The percentage of respiratory specimens testing positive for influenza in clinical laboratories was low (~1%). The proportion of outpatient visits for ILI was 1.6%, which is below the national baseline of 2.1%. The proportion of deaths attributed to pneumonia and influenza (P&I) was below their system-specific epidemic threshold. One influenza-associated pediatric death was reported. The geographic spread of influenza in Guam was reported as widespread; Puerto Rico reported regional activity; five states reported local activity; 39 states reported sporadic activity; and the District of Columbia, the U.S. Virgin Islands, and six states reported no influenza activity. Details are available at: www.cdc.gov/flu/weekly/.

WHO (as of November 30, 2015): Globally, influenza activity generally remained low in both hemispheres. In Central and Eastern Asia, Europe, North Africa and North America, influenza activity continued at low, inter-seasonal levels with sporadic detections. In western Asia, Bahrain, Oman and Qatar reported increased influenza activity, predominantly due to influenza A(H1N1)pdm09. Few influenza virus detections were reported by countries in Africa. In tropical countries of the Americas, Central America and the Caribbean, influenza activity remained at low levels, with the exception of Cuba. In tropical Asia, countries in Southern and South East Asia reported low influenza activity overall except India, Lao People's Democratic Republic and Thailand where activity mainly due to A(H1N1)pdm09 viruses continued to be reported. In temperate South America, respiratory virus activity was generally low in recent weeks, with mostly influenza B viruses circulating. A few countries reported fluctuations in respiratory illness indicators. In Australia and South Africa, only sporadic influenza detections were reported. From November 2 to 15, 2015, the WHO Global Influenza Surveillance and Response System (GISRS) laboratories tested more than 75,360 specimens. Of these, 1,663 were positive for influenza viruses: 1,125 (68%) were typed as influenza A and 538 (32%) as influenza B. Of the sub-typed influenza A viruses, 393 (49%) were influenza A(H1N1)pdm09 and 417 (52%) were influenza A(H3N2). Of the characterized B viruses, 168 (72%) belonged to the B-Yamagata lineage and 67 (29%) 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 <i>(if ward or wing, please specify name/number: _____)</i> <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>														
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Numbers to date</th> <th style="width: 25%;">Residents/Students</th> <th style="width: 25%;">Staff</th> </tr> </thead> <tbody> <tr> <td>Total</td> <td></td> <td></td> </tr> <tr> <td>With ILI</td> <td></td> <td></td> </tr> <tr> <td>Hospitalized</td> <td></td> <td></td> </tr> <tr> <td>Died</td> <td></td> <td></td> </tr> </tbody> </table>	Numbers to date	Residents/Students	Staff	Total			With ILI			Hospitalized			Died	
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>														
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Numbers to date</th> <th style="width: 25%;">Residents/Students</th> <th style="width: 25%;">Staff</th> </tr> </thead> <tbody> <tr> <td>Total</td> <td></td> <td></td> </tr> <tr> <td>With ILI</td> <td></td> <td></td> </tr> <tr> <td>Hospitalized</td> <td></td> <td></td> </tr> <tr> <td>Died</td> <td></td> <td></td> </tr> </tbody> </table>	Numbers to date	Residents/Students	Staff	Total			With ILI			Hospitalized			Died	
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