

British Columbia Influenza Surveillance Bulletin

Influenza Season 2015-16, Number 3, Weeks 43-45

October 25 to November 14, 2015

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Ongoing Reports of A(H3N2) Outbreaks in BC Long-term Care Facilities

In weeks 43-45 (October 25 to November 14, 2015), most surveillance indicators continue to suggest low-level influenza activity in BC. However, the BCCDC has received ongoing reports of A(H3N2) outbreaks in long-term care facilities (LTCFs), signalling early-season activity.

Since our last bulletin 3 weeks ago, 5 new lab-confirmed influenza A outbreaks have been reported, including 4 from LTCFs and one from an acute care facility. In total since mid-August, 10 influenza outbreaks have been reported to date, comparable to the number reported for the same period during the prior 2014-15 season of dominant A(H3N2) activity (n=10).

In weeks 43-45, the percent of patients who tested positive for influenza at the BCCDC Public Health Laboratory remained relatively stable around 4-5%. The majority of detections continue to be in elderly adults ≥ 65 years of age, consistent with ongoing reports of influenza outbreaks in LTCFs and the epidemiologic profile observed last season with the same dominant A(H3N2) strain. Enteroviruses were the most commonly detected respiratory virus during this period.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

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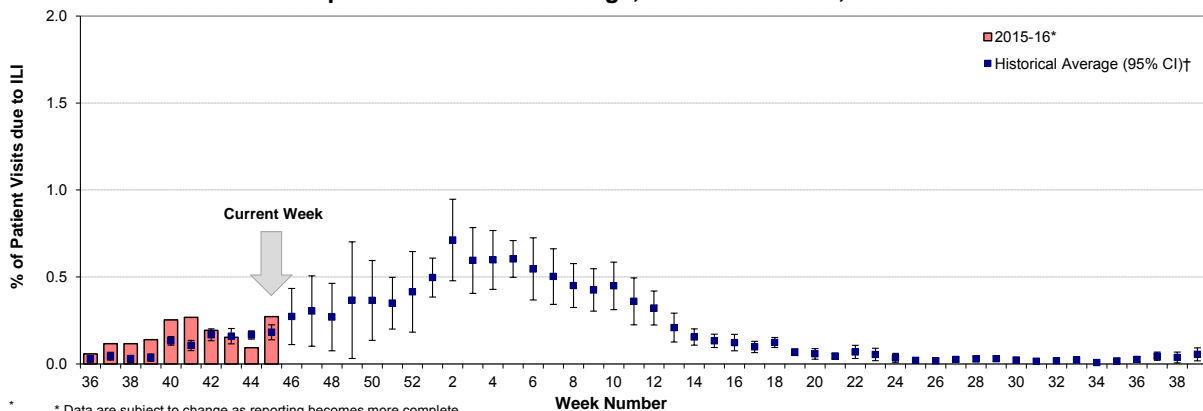
Report Disseminated: November 19, 2015

British Columbia

Sentinel Physicians

The proportion of patients with influenza-like illness (ILI) among those presenting to sentinel sites was consistent with the 10-year historical average in week 43 (0.15%), but significantly lower than the historical average in week 44 (0.09%) and significantly higher in week 45 (0.27%). The proportion of sentinel sites reporting data during this period ranged from 67% in week 43 to 45% in week 45.

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

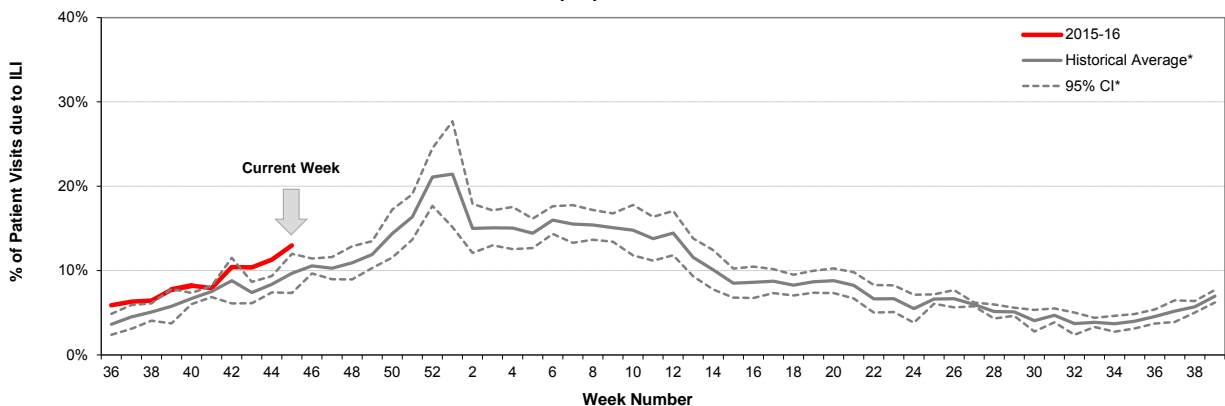


* Data are subject to change as reporting becomes more complete.
† 10-year historical average for 2015-16 season based on 2003-04 to 2014-15 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality; CI=confidence interval.

BC Children's Hospital Emergency Room

The proportion of visits to BC Children's Hospital Emergency Room (ER) attributed to ILI was significantly higher than the 5-year historical average in weeks 43-45 and continued an increasing trend from 10% in week 43 to 13% in week 45.

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

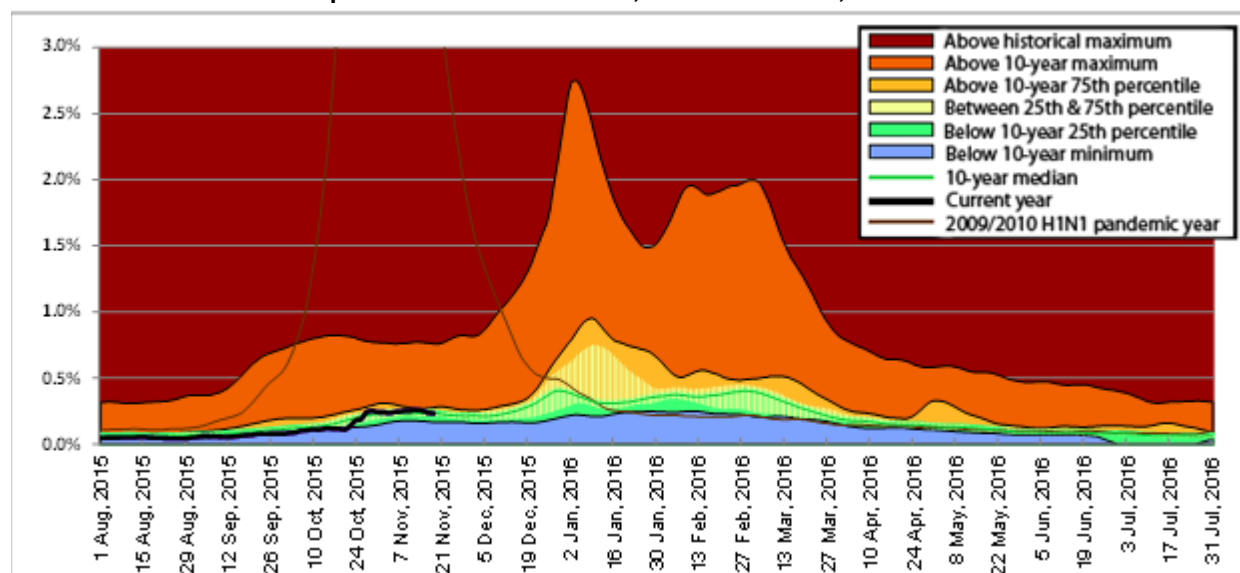


Source: BCCH Admitting, Discharge, Transfer database (ADT). Data includes records with a triage chief complaint of "flu" or "influenza" or "fever/cough."
* 5-year historical average for 2015-16 season based on 2010-11 to 2014-15 seasons; CI=confidence interval

Medical Services Plan

BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, remained stable at 10-year median levels in weeks 44-45, following a slight increase in week 43. Some regional variation was observed, with rates above 10-year maximum levels in VIHA, but below the 10-year 25th percentiles in IHA and NHA in week 45.

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

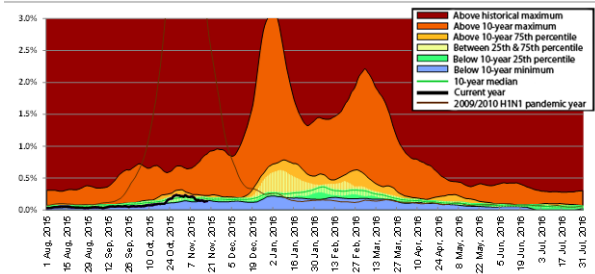


* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza).

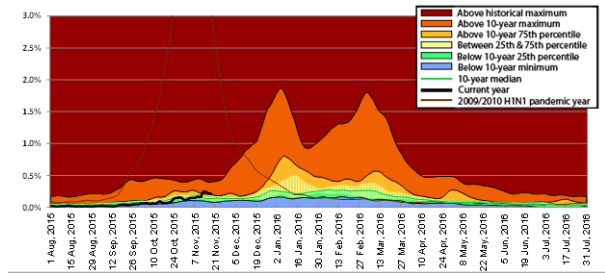
Data for the period August 1, 2009 to July 31, 2010 have been excluded from the 10-year median calculation due to atypical seasonality during the 2009/2010 H1N1 pandemic year. MSP week beginning August 1, 2015 corresponds to sentinel ILI week 30; data are current to November 18, 2015.

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

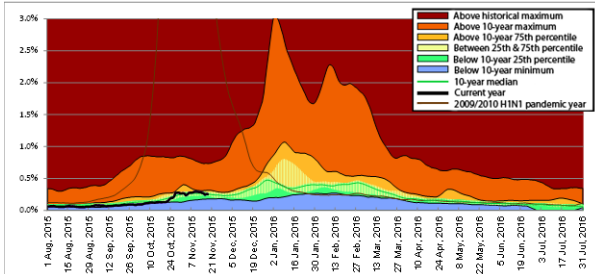
Interior



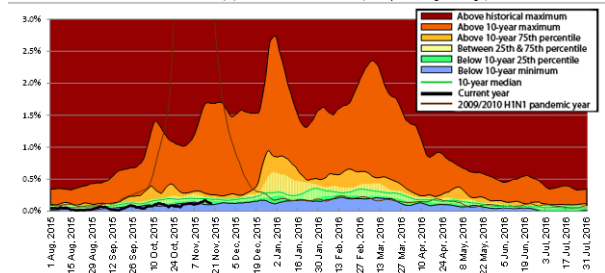
Vancouver Island



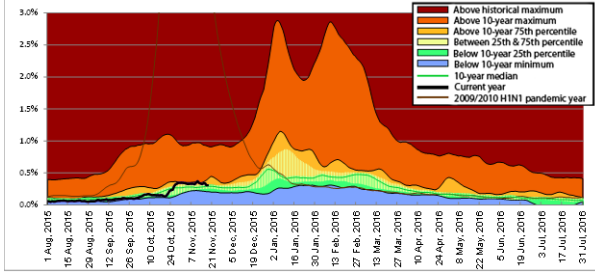
Fraser



Northern



Vancouver Coastal



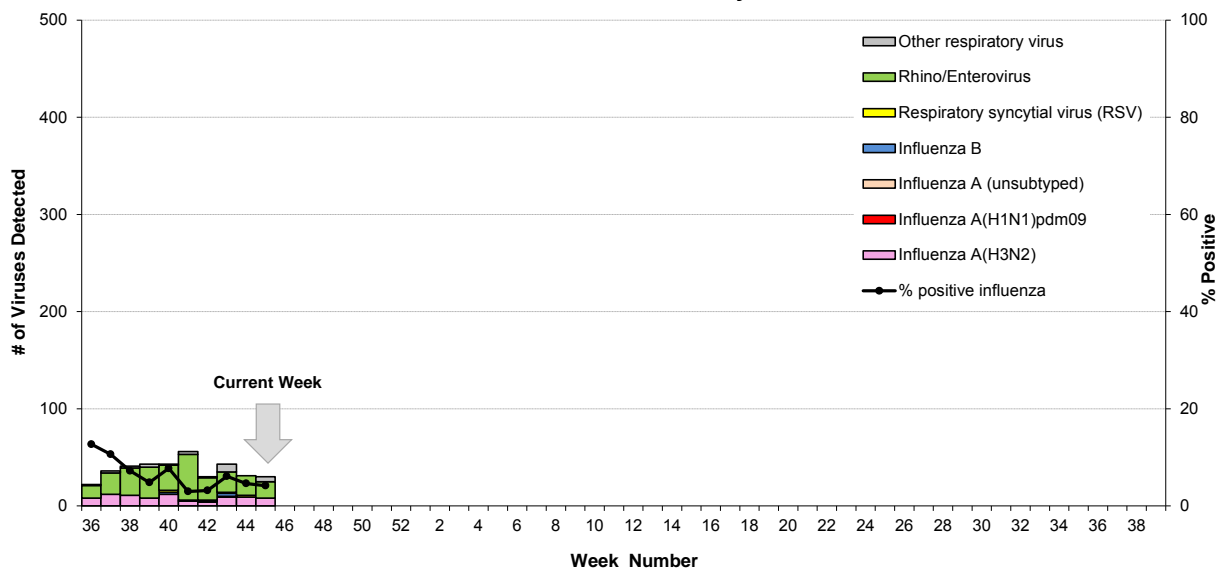
Laboratory Reports

BCCDC Public Health Laboratory

In weeks 43-45, 586 patients were tested for respiratory viruses at the BCCDC Public Health Laboratory. Of these, 29 (5%) tested positive for influenza, including 26 (90%) influenza A [25 A(H3N2) and 1 A(H1N1)pdm09] and 3 (10%) influenza B. Influenza positivity remained relatively stable during this period ranging from 5% in weeks 43-44 to 4% in week 45. Enteroviruses continued to be the most commonly detected respiratory viruses during this period.

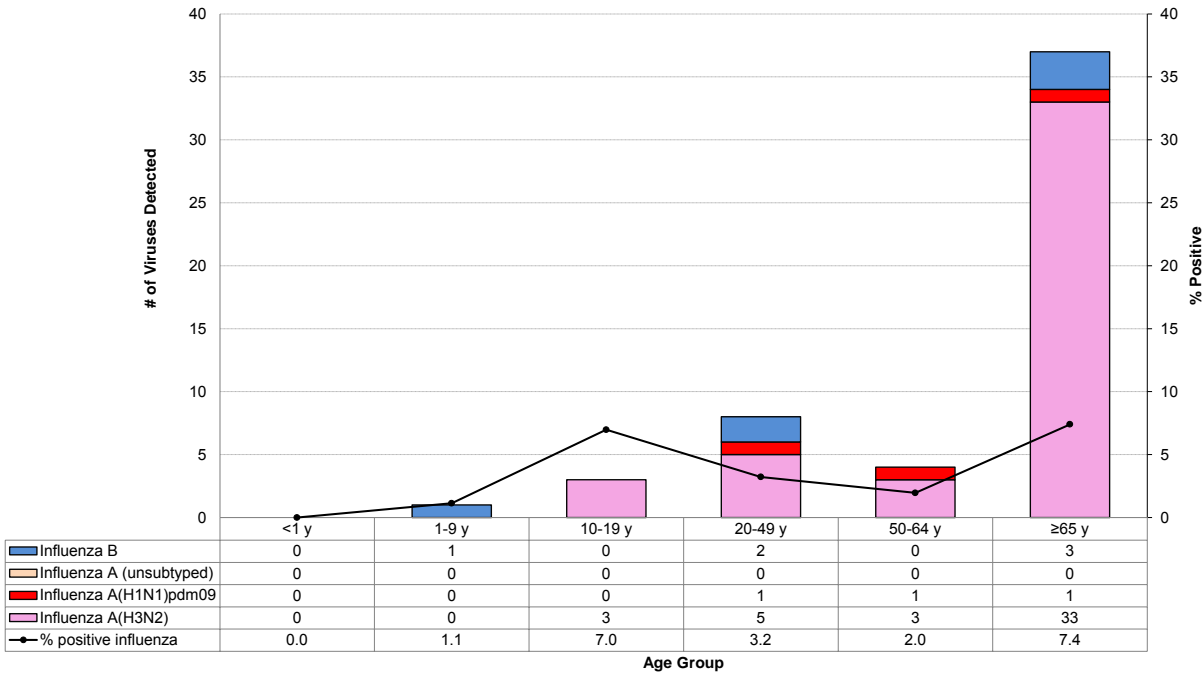
So far during the 2015-16 season (since week 40, starting October 4, 2015), 54 patients have tested positive for influenza at the BCCDC Public Health Laboratory, including 48 (89%) influenza A [45 A(H3N2) and 3 A(H1N1)pdm09] and 6 (11%) influenza B. This tally is higher than the total number of influenza detections over the same period in any prior season of the past 10 years, with the exception of the 2009 pandemic and last season's A(H3N2)-dominant 2014-15 season with which the tallies are comparable (n=54), suggesting early seasonal activity again for the 2015-16 season. The majority (~70%) of influenza detections, predominately A(H3N2), continue to be in elderly adults aged ≥65 years so far this season, driven in part by influenza outbreaks in long-term care facilities (LTCFs).

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



Note: Data current to November 18, 2015.

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

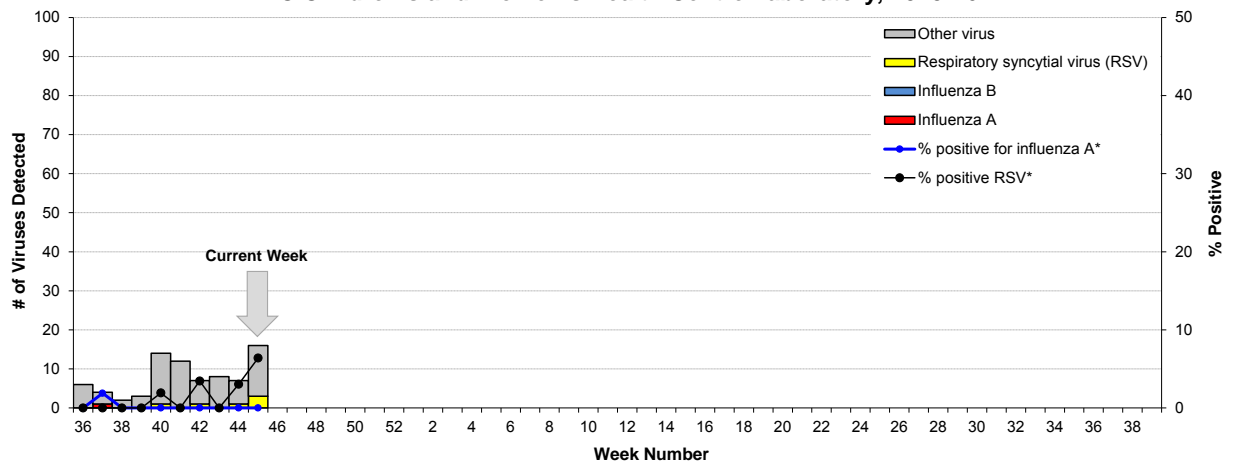


Note: Data current to November 18, 2015.

BC Children's and Women's Health Centre Laboratory

In weeks 43-45, BC Children's and Women's Health Centre Laboratory conducted 114 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.

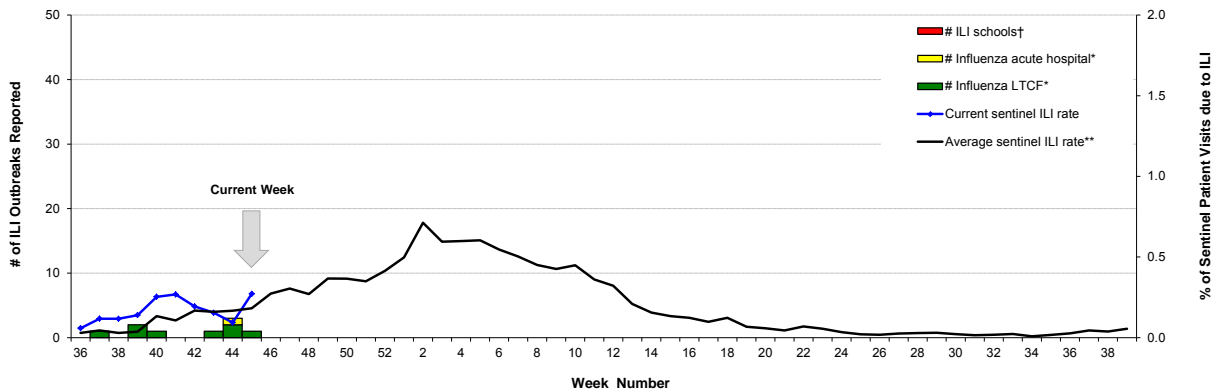
Influenza-like Illness (ILI) Outbreaks

Since our last bulletin 3 weeks ago, 5 new lab-confirmed influenza A outbreaks have been reported, including 4 from LTCFs in VCHA [1 with onset in week 43, 2 in week 44, and 1 in week 45] and 1 from an acute care facility in FHA with onset in week 44.

In total since mid-August (weeks 32-45), 10 influenza A outbreaks have been reported from facilities, including 9 from LTCFs and 1 from an acute care facility. Of the 8 outbreaks where subtype information is available, all had influenza A(H3N2) detected.

Summer and/or early fall reporting of LTCF influenza outbreaks is atypical. In no other season since the 2009 pandemic have influenza outbreaks in LTCFs been reported this early in the season, with the exception of the A(H3N2)-dominant 2014-15 season for which a comparable number of 10 influenza outbreaks [9 A(H3N2) and 1 B] were reported over the same time period. It should be noted that in 2014-15 low-level reporting of LTCF outbreaks (0-3 per week) began early in the season and continued at low levels until mid-to-late December when the number of reported facility outbreaks per week surged to >5 per week, peaking during the holiday period and in early January when >20-30 outbreaks per week were reported. Given similar early but low-level reporting of LTCF outbreaks this season, contingency planning for a similar pattern of upswing may be warranted.

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 44, November 1 to November 7, 2015):

Canada continues to experience low influenza activity. In week 44, sporadic influenza activity was reported in a few regions across Canada (NS, ON, AB and BC). Overall, the majority of regions in Canada reported no influenza activity. In week 44, there were 40 (1.2%) laboratory detections of influenza reported. To date, 91% of influenza detections have been influenza A and the majority of those subtyped have been A(H3N2) (87%). Among influenza cases with reported age, the largest proportion was in those ≥65 years of age (49%). Two new laboratory-confirmed outbreaks in the Atlantic region were reported in week 44. 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 November 19, 2015, the National Microbiology Laboratory (NML) received 34 influenza viruses [26 A(H3N2), 1 A(H1N1)pdm09 and 7 B] from Canadian laboratories for antigenic characterization.

Influenza A(H3N2): Of the 26 influenza A(H3N2) viruses, only one (4%) grew to sufficient titre for antigenic characterization by haemagglutination inhibition (HI) assay and was characterized as antigenically similar to a cell-propagated 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 25 viruses that did not grow to sufficient titre for HI assay to infer antigenic properties. Of the 25 A(H3N2) viruses genetically characterized, all 25 were reported to belong to a genetic group in which most viruses were antigenically related to cell-propagated A/Switzerland/9715293/2013.

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

Influenza B: Of the 7 influenza B viruses characterized, 6 were antigenically similar to a cell-propagated B/Phuket/3073/2013-like (Yamagata lineage) virus, the recommended influenza B component for the 2015-16 northern hemisphere influenza vaccine. One was characterized as a cell-propagated 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 November 19, 2015, the NML received influenza viruses from Canadian laboratories for drug susceptibility testing. Of the 28 influenza A viruses [27 A(H3N2) and 1 A(H1N1)pdm09] tested against amantadine, all were resistant. Of the 33 influenza viruses [25 A(H3N2), 1 A(H1N1)pdm09 and 7 B] tested against oseltamivir, all were sensitive. Of the 33 influenza viruses [25 A(H3N2), 1 A(H1N1)pdm09 and 7 B] tested against zanamivir, all were sensitive.

International

USA (week 44, ending November 7, 2015): During week 44, influenza activity was low in the United States. The most frequently identified influenza virus type in week 44 was influenza A, with A(H3N2) viruses predominating. The percentage of respiratory specimens testing positive for influenza in clinical laboratories is low. The proportion of outpatient visits for ILI was 1.4%, which was below the national baseline of 2.1%. The proportion of deaths attributed to pneumonia and influenza (P&I) was below their epidemic threshold. No influenza-associated pediatric deaths were reported. The geographic spread of influenza in Guam was reported as widespread; Puerto Rico reported regional activity; four states reported local activity; the District of Columbia and 39 states reported sporadic activity; and the U.S. Virgin Islands and seven states reported no influenza activity. Details are available at: www.cdc.gov/flu/weekly/.

WHO (as of November 16, 2015): Globally, influenza activity generally remained low in both hemispheres. In the Northern Hemisphere, influenza activity continued at low, inter-seasonal levels with sporadic detections. 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, where high numbers of severe acute respiratory infections (SARI), associated with influenza A(H1N1)pdm09 virus and RSV, continued to be reported. In Colombia, acute respiratory activity again remained slightly elevated with ongoing RSV and influenza A(H3N2) detections. In western Asia, Bahrain and Qatar reported increased influenza activity, predominantly due to influenza A(H1N1)pdm09. 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 virus continued to be reported. Influenza activity declined in southern China. Iran reported increased influenza detections, mostly due to influenza A(H3N2). In temperate South America, respiratory virus activity continued to decrease in recent weeks. In Chile, ILI activity decreased but remained above expected levels in recent weeks with decreased detections of influenza viruses and RSV. In Australia, New Zealand, and South Africa, influenza activity continued to decrease to low levels of virus detections with the end of the influenza season in these countries. During the period from October 19, 2015 to November 1, 2015, the WHO Global Influenza Surveillance Response System (GISRS) laboratories tested more than 52,883 specimens. Of these, 1,343 were positive for influenza viruses: 1,049 (78%) were typed as influenza A and 294 (22%) as influenza B. Of the sub-typed influenza A viruses, 517 (68%) were influenza A(H1N1)pdm09 and 241 (32%) were influenza A(H3N2). Of the characterized B viruses, 42 (53%) belonged to the B/Yamagata lineage and 37 (47%) 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: www.doh.wa.gov/Portals/1/Documents/5100/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>

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