British Columbia Influenza Surveillance Bulletin

Influenza Season 2014-15, Number 8, Week 47 November 16 to 22, 2014

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Increasing Influenza A(H3N2) Activity

In week 47 (November 16-22, 2014), several surveillance indicators suggest increasing influenza activity in BC, following an earlier than usual start to the season.

At the BC provincial laboratory, influenza detections increased from 5% in week 46 to 10% in week 47, driven in part by influenza outbreaks in long-term care facilities (LTCFs). Influenza A(H3N2) continues to be the predominant influenza subtype, with increasing co-circulation of respiratory syncytial virus (RSV).

Two lab-confirmed influenza A(H3N2) outbreaks were reported in week 47, one each from VCHA with onset in week 46 and from VIHA with onset in week 47. In addition, two lab-confirmed influenza A(H3N2) outbreaks have been further reported so far in week 48, both from FHA. To date this season, 11 lab-confirmed influenza outbreaks, 10 due to A(H3N2), have been reported in LTCFs.

Severe cases of enterovirus D68 (EV-D68) requiring hospitalization continue to show a declining trend in week 47; however, ongoing monitoring is required. Although enteroviruses typically show epidemic activity in late summer/autumn, community circulation may continue through the early winter.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

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Report Disseminated: November 27, 2014



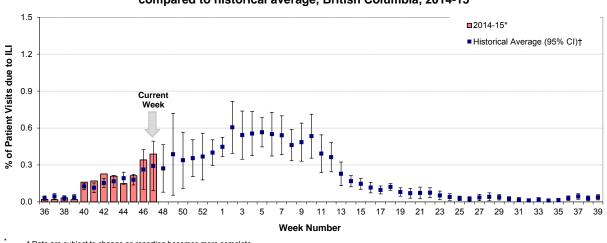




British Columbia

Sentinel Physicians

The proportion of patients with influenza-like illness (ILI) among those presenting to sentinel physicians continued an increasing trend in week 47 but remained within expected ranges for this time of year at 0.4%. So far in week 47, 47% of sentinel sites have reported data.

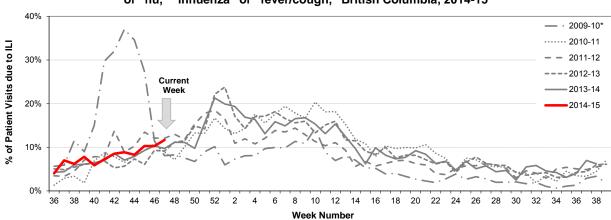


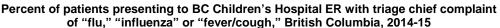
Percent of patient visits to sentinel physicians due to influenza-like illness (ILI) compared to historical average, British Columbia, 2014-15

* Data are subject to change as reporting becomes more complete. † Historical average based on 2002-03 to 2013-14 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality; CI=confidence interval.

BC Children's Hospital Emergency Room

In week 47, the proportion of visits to BC Children's Hospital Emergency Room (ER) attributed to ILI continued a gradual increasing trend since week 40 but remained consistent with rates observed in previous seasons for this time of year at 12%.





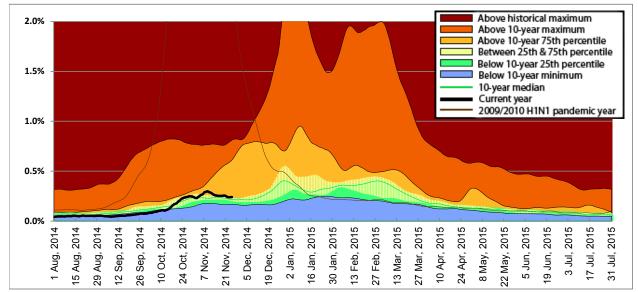
Source: BCCH Admitting, discharge, transfer database, ADT

* Data from 2010-11 to 2014-15 are based on new variable (Triage Chief Complaint) for capturing ILI symptoms and are not directly comparable to data for 2009-10. In week 9 of the 2011-12 season, the BCCH ER implemented a new data collection system, the National Ambulatory Care Reporting System (NACRS); data are not directly comparable to data collected using old system.



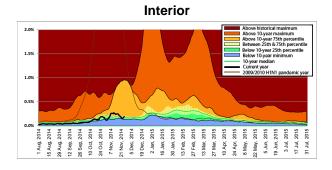
Medical Services Plan

In week 47, BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, plateaued or decreased slightly in some regional Health Authorities following sharp increases earlier this season. For the province overall and in FHA, rates remained above the 10-year 75th percentiles for this time of year. In all other regions, rates were within expected levels for this time of year, with the exception of NHA where rates remain below 10-year minimums.

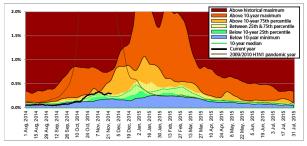


Service claims submitted to MSP for influenza illness (II)* as a proportion of all submitted general practitioner service claims, British Columbia, 2014-15

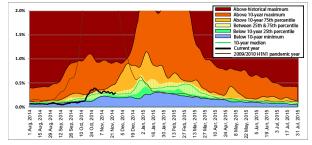
* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza). Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services. Note: MSP week beginning 3 August 2014 corresponds to sentinel ILI week 32; data current to November 25, 2014.



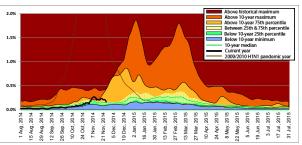




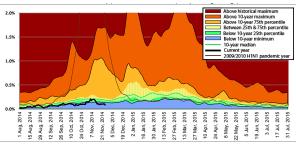
Vancouver Coastal



Vancouver Island



Northern



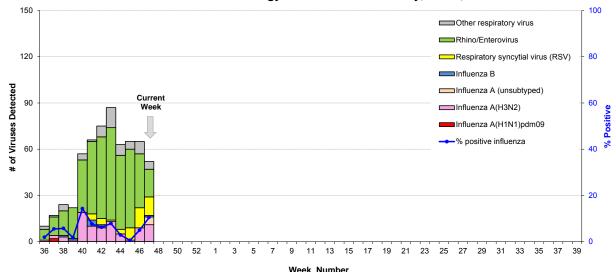


Laboratory Reports

BC Public Health Microbiology & Reference Laboratory (PHMRL)

In week 47, the BC Public Health Microbiology & Reference Laboratory (PHMRL) tested 163 patients for respiratory viruses. Of these, 17 (10%) had laboratory-confirmed influenza, including 16 (94%) influenza A [11 A(H3N2) and 5 with subtype pending] and 1 (6%) influenza B. The influenza percent positivity continued a rising trend, increasing from 5% in week 46 to 10% in week 47 and followed a period of early activity in weeks 40-44. Among other respiratory virus detections, 7% of patients were positive for respiratory syncytial virus (RSV) in week 47, consistent with the previous week. Entero/rhinoviruses were also detected during this period; however, compared to previous weeks this season, the number of entero/rhinovirus-positive patients showed signs of decrease.

Cumulatively, during the 2014-15 influenza season (since week 40, starting September 28, 2014), 88 (7%) patients have tested positive for influenza at the BC PHMRL, including 81 (92%) influenza A [76 A(H3N2) and 5 with subtype pending] and 7 (8%) influenza B. So far this season since week 40, A(H3N2) has been the dominant subtype, with no detection of A(H1N1)pdm09 in BC. The majority of influenza detections continue to be in elderly adults (\geq 65 years of age).



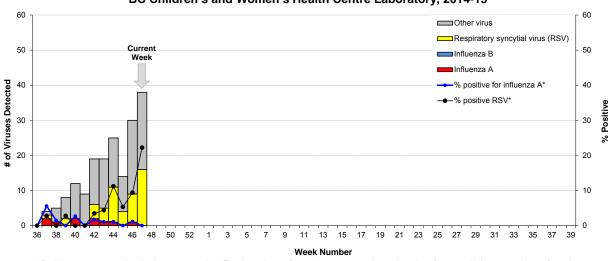
Influenza and other virus detections among respiratory specimens submitted to BC Public Health Microbiology & Reference Laboratory, PHSA, 2014-15

Note: Data current to November 26, 2014.



BC Children's and Women's Health Centre Laboratory

In week 47, none of the 72 tests conducted at the BC Children's and Women's Health Centre Laboratory were positive for influenza A or influenza B. The proportion of tests positive for RSV increased from <10% in weeks 45-46 to 22% in week 47.



Influenza and other virus detections among respiratory specimens submitted to BC Children's and Women's Health Centre Laboratory, 2014-15

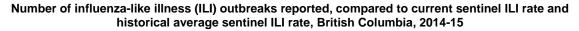
* Positive rates were caculated using aggregate data. The denominators for each rate represent the total number of tests; multiple tests may be performed for a single specimen and/or patient.

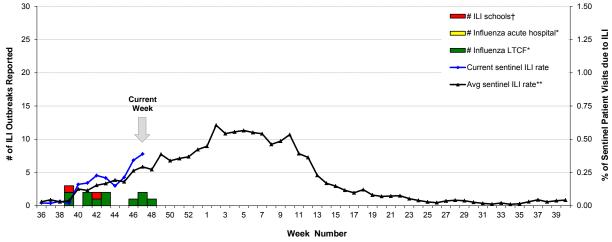


Influenza-like Illness (ILI) Outbreaks

As previously reported, 2 ILI outbreaks in LTCFs were reported in week 47 with symptom onset in weeks 46 and 47 from VCHA (1) and VIHA (1), respectively; both were laboratory confirmed as influenza A(H3N2). So far in week 48, 2 further laboratory-confirmed influenza A(H3N2) outbreaks have been reported with symptom onset in weeks 47 and 48, both from FHA.

Cumulatively, since week 39 (starting September 21, 2014), 11 laboratory-confirmed influenza outbreaks have been reported from LTCFs, including 10 due to influenza A(H3N2) and 1 due to influenza B, suggesting unusually early seasonality dominated by A(H3N2) activity. In no other season since the 2009 pandemic have LTCF influenza outbreaks been reported prior to week 45. To date, all but one of the reported laboratory-confirmed influenza outbreaks have occurred in FHA or VCHA, with one reported from VIHA.





* 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. ** Historical values exclude 2008-09 and 2009-10 seasons due to atypical seasonality.



National

FluWatch (week 46)

In week 46, overall influenza activity increased from the previous week with sporadic or localized activity reported in six provinces (BC, AB, SK, MB, ON, and QC) and one territory (YT). Low-level activity started earlier this season than in the previous two years, but the geographic spread of influenza is as expected, with regions of western and central Canada most affected to date. The number of positive influenza tests continued an increasing trend in week 46, predominantly due to influenza A. In week 46, 143 (5%) influenza viruses were detected, including 136 (95%) influenza A [80 A(H3N2), 1 A(H1N1)pdm09 and 55 unsubtyped] and 7 (5%) influenza B. Influenza A(H3N2) continues to be the most common influenza subtype affecting Canadians. To date, 40-50% of influenza laboratory detections and hospitalizations have been in seniors ≥65 years of age. In week 46, 2 new LTCF outbreaks of influenza and one school outbreak of ILI were reported. To date, 18 outbreaks in LTCFs have been reported. Details are available at: www.phac-aspc.gc.ca/fluwatch/14-15/index-eng.php.

National Microbiology Laboratory (NML): Strain Characterization

From September 1, 2014, to November 27, 2014, the National Microbiology Laboratory (NML) has antigenically characterized 22 influenza viruses [10 A(H3N2) and 12 influenza B] that were received from Canadian laboratories. Of the viruses characterized, 8/10 (80%) A(H3N2) viruses and 3/12 (25%) influenza B/Yamagata-lineage viruses showed reduced titres with antiserum raised against 2014-15 influenza vaccine reference virus, signalling possible antigenic drift in circulating virus.

Influenza viruses were characterized as antigenically similar to:

- 2 A/Texas/50/2012(H3N2)-like*
- 8 Reduced titre with antiserum raised against A/Texas/50/2012(H3N2)
- 0 A/California/07/2009(H1N1)pdm09-like[†]
- 9 B/Massachusetts/02/2012-like (Yamagata lineage)[‡]
- 3 Reduced titre with antiserum raised against B/Massachusetts/02/2012
- 0 B/Brisbane/60/2008-like (Victoria lineage)[§]
- * WHO-recommended influenza A(H3N2) component for the 2014-15 Northern Hemisphere influenza vaccine.
- ⁺ WHO-recommended influenza A(H1N1) component for the 2014-15 Northern Hemisphere influenza vaccine.
- [‡] WHO-recommended influenza B component for the 2014-15 Northern Hemisphere influenza vaccine.

[§] WHO-recommended influenza B component for the 2011-2012 Northern Hemisphere influenza vaccine; for quadrivalent vaccine, a B/Brisbane/60/2008-like virus is recommended as the second influenza B component.

National Microbiology Laboratory (NML): Antiviral Resistance

From September 1, 2014, to November 27, 2014, the NML received influenza viruses from Canadian laboratories for drug susceptibility testing:

Amantadine

- 46 influenza A(H3N2) viruses were tested;
- All tested viruses were resistant.

Oseltamivir

- 37 influenza viruses [27 A(H3N2) and 10 influenza B] were tested;
- All tested viruses were susceptible.

<u>Zanamivir</u>

- 37 influenza viruses [27 A(H3N2) and 10 influenza B] were tested;
- All tested viruses were susceptible.



International

USA (week 46)

During week 46, influenza activity was low in the United States. Of 10,304 specimens tested, 955 (9%) were positive for influenza, including 836 (88%) influenza A [257 A(H3N2) and 579 with subtyping not performed] and 119 (13%) influenza B. Of the 34 A(H3N2) influenza viruses collected since October 1, 2014, and characterized by haemagglutination inhibition (HI) assay, 19 (56%) were characterized as A/Texas/50/2012-like, the A(H3N2) component of the 2014-15 Northern Hemisphere influenza vaccine, and 15 (44%) showed reduced titres with antiserum raised against A/Texas/50/2012 but were antigenically similar to A/Switzerland/9715293/2013, the A(H3N2) component of the 2015 Southern Hemisphere influenza vaccine. The proportion of outpatient visits for ILI remained below the national baseline, and the proportion of deaths attributed to pneumonia and influenza remained below the epidemic threshold. No new influenza-associated paediatric deaths were reported. Details are available at: www.cdc.gov/flu/weekly/.

WHO

There have been no updates to the WHO influenza summary since our previous bulletin. For previous updates: www.who.int/influenza/surveillance monitoring/updates/en/.



Emerging Respiratory Pathogens

Enterovirus D68 (EV-D68), British Columbia

Since September, the BCCDC has been collecting enhanced surveillance information on laboratoryconfirmed cases of enterovirus D68 (EV-D68) in collaboration with the Public Health Agency of Canada.

Severe cases of EV-D68 infection requiring hospitalization continue to show a declining trend in week 47, as expected for this time of year and concurrent with increased circulation of other seasonal respiratory viruses, such as influenza and RSV. As of November 26, there have been 207 EV-D68 detections in BC, of which 133 were associated with hospitalization including reports from all regional Health Authorities in BC. Hospitalization status is unknown for a further 12 cases. Hospitalized cases continue to be predominately children <10 years of age (62%), with males over-represented (59%). Although enteroviruses typically show epidemic activity in late summer/autumn, community circulation may continue through the early winter and a small proportion of cases may experience severe outcomes.

In total since mid-August, four cases of neurologic illness (two paediatric, two adult) and two deaths (one young adult, one elderly) associated with EV-D68 infection have been reported in BC. However, it remains unclear to what extent EV-D68 infection caused or contributed to these severe manifestations. As with other respiratory viruses, including enteroviruses, a proportion of all EV-D68 cases may experience more severe sequelae although the risk for most individuals remains low.

The BCCDC will continue to monitor EV-D68 and other seasonal respiratory virus activity in the coming weeks. For more information on EV-D68: www.bccdc.ca/dis-cond/a-z/ e/EnterovirusD68/default.htm.

WHO Recommendations for Influenza Vaccines

WHO Recommendations for 2014-15 Northern Hemisphere Influenza Vaccine

On February 20, 2014, the WHO announced the recommended strain components for the 2014-15Northern Hemisphere trivalent influenza vaccine (TIV):

- an A/California/7/2009(H1N1)pdm09-like virus;
- an A/Texas/50/2012(H3N2)-like virus;
- aB/Massachusetts/2/2012-like (Yamagata-lineage) virus.

*These recommended strains are the same as those used for the 2013-14 Northern Hemisphere vaccine.

For further details: www.who.int/influenza/vaccines/virus/recommendations/2014 15 north/en/.

WHO Recommendations for 2015 Southern Hemisphere Influenza Vaccine

On September 25, 2014, the WHO announced the recommended strain components for the 2015Southern 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.[‡]

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 since2010-11.

[†]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 theA/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 south/en/.

Additional Information

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/dis-cond/DiseaseStatsReports/EmergingRespiratoryVirusUpdates.htm

Influenza Web Sites

Canada – Flu Watch: <u>www.phac-aspc.gc.ca/fluwatch/</u> Washington State Flu Updates: <u>www.doh.wa.gov/Portals/1/Documents/5100/fluupdate.pdf</u> USA Weekly Surveillance Reports: <u>www.cdc.gov/flu/weekly/</u> European Influenza Surveillance Scheme: <u>ecdc.europa.eu/EN/HEALTHTOPICS/SEASONAL_INFLUENZA/EPIDEMIOLOGICAL_DATA/Pages/Weekly Influenza Surveillance_Overview.aspx</u> WHO – Weekly Epidemiological Record: <u>www.who.int/wer/en/</u> WHO Collaborating Centre for Reference and Research on Influenza (Australia): <u>www.influenzacentre.org/</u> Australian Influenza Report: <u>www.health.gov.au/internet/main/publishing.nsf/content/cda-surveil-ozflu-flucurr.htm</u> New Zealand Influenza Surveillance Reports: <u>www.surv.esr.cri.nz/virology/influenza_weekly_update.php</u>

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/csr/disease/avian_influenza/en/

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/dis-cond/DiseaseStatsReports/influSurveillanceReports.htm

Influenza-Like Illness (ILI) Outbreak Summary Report Form

Please complete and email to <u>ilioutbreak@bccdc.ca</u>

Note: This form is for provincial surveillance purposes. Please notify your local health unit per local guidelines/requirements.

arthralgia,	myalgia, or prostration	n which <i>could</i> be due to	gh and with one or more of th influenza virus. In children u 5 and older, fever may not be	nder 5, gastrointestinal	
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 Inform Person Reporting: Contact Phone: Health Authority: Full Facility Name: Is this report:	☐First Notification (☐Update (complete	Ith unit/medical health offic Title: Email: HSDA: complete section B below section C below; Section complete section C below;	; Section D if available) D if available)	
В	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): <u>DD/MMM/YYYY</u>				
		Numbers to date	Residents/Students	Staff	
		Total			
		With ILI Hospitalized			
		Died			
С	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	
		With ILI Hospitalized			
		Died			
	Laboratory Infor	mation			
D	Specimen(s) subm	itted?	ation:) [(specify:) [