

British Columbia Influenza Surveillance Bulletin

Influenza Season 2014-15, Number 6, Week 44

October 26 to November 1, 2014

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Ongoing low-level activity in BC

In week 44 (October 26 – November 1, 2014), low-level influenza activity, predominantly influenza A(H3N2) was detected. Surveillance indicators were within expected levels for this time of year, following a sharp increase and higher than expected levels during recent weeks earlier in the fall.

At the BC provincial laboratory, influenza A was detected in 4 of 176 (2%) patients tested, lower than week 43 (8%). One new influenza-like illness outbreak was reported in week 44 from a long-term care facility (LTCF) in VCHA; laboratory results are pending. In total since week 39, seven laboratory-confirmed influenza outbreaks in LTCFs have been reported, suggesting unusually early seasonality.

Entero/rhinoviruses continued to be the most commonly detected respiratory viruses in week 44. As of November 5, 2014, the BC provincial laboratory has confirmed 150 cases of enterovirus D68 (EV-D68), including additional confirmation among specimens collected in recent weeks. On average, about 25-30 EV-D68 cases have been confirmed each week since the beginning of October, an ongoing pattern as of this report.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

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

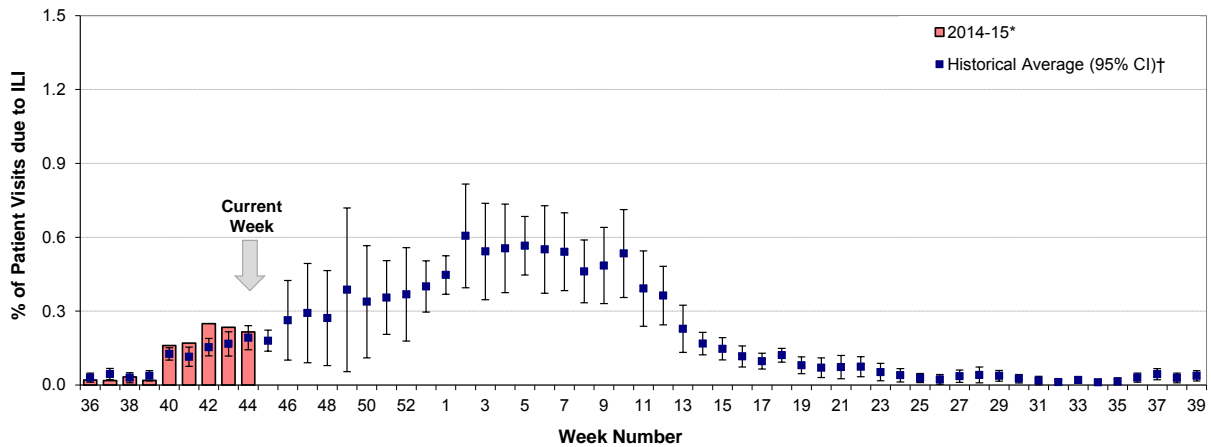
Report Disseminated: November 6, 2014

British Columbia

Sentinel Physicians

In week 44, the proportion of patients with influenza-like illness (ILI) among those presenting to sentinel physicians was within expected ranges for this time of year, following 3 consecutive weeks significantly above the historical average for the corresponding time of year. So far in week 44, 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

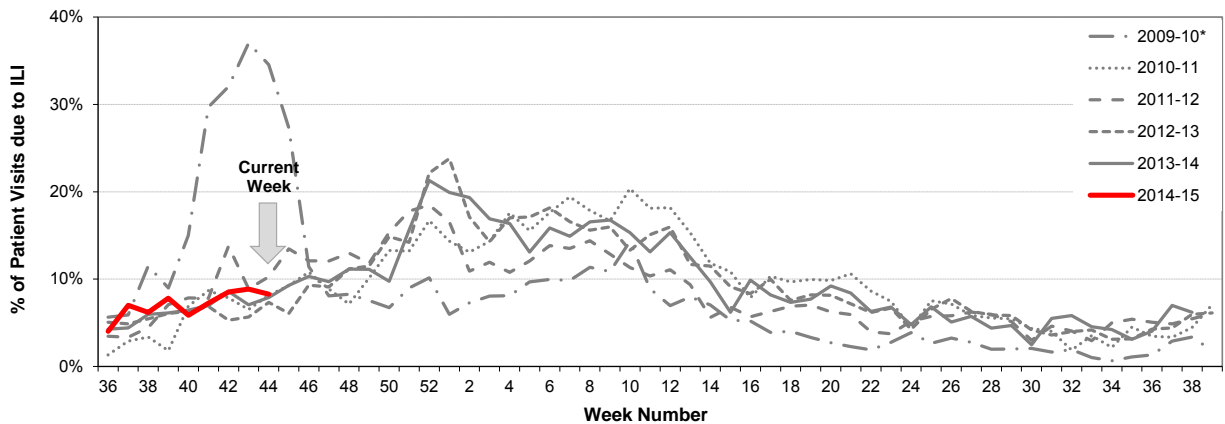


* Data are subject to change as reporting becomes more complete.
† Historical average based on 2002-03 to 2013-14 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality; CI=confidence interval.

BC Children’s Hospital Emergency Room

In week 44, the proportion of visits to BC Children’s Hospital Emergency Room (ER) attributed to ILI was 8%, consistent with rates observed in previous seasons for this time of year.

Percent of patients presenting to BC Children’s Hospital ER with triage chief complaint of “flu,” “influenza” or “fever/cough,” British Columbia, 2014-15

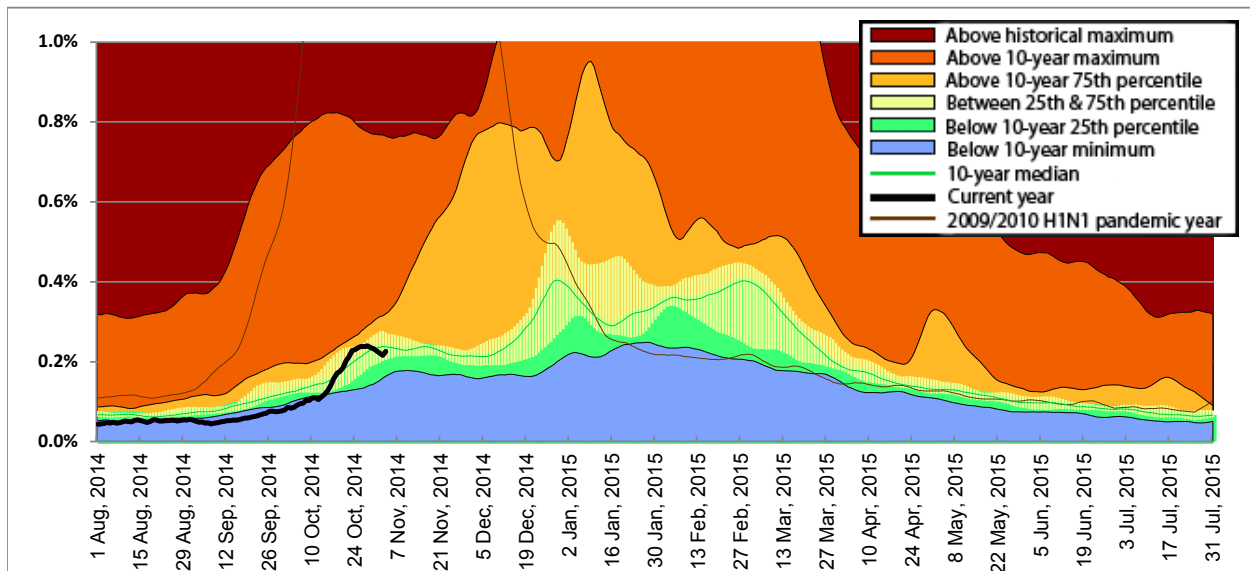


Source: BCCH Admitting, discharge, transfer database, ADT
* Data from 2010-11 to 2014-15 are based on new variable (Triage Chief Complaint) for capturing ILI symptoms and are not directly comparable to data for 2009-10. In week 9 of the 2011-12 season, the BCCH ER implemented a new data collection system,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

Medical Services Plan

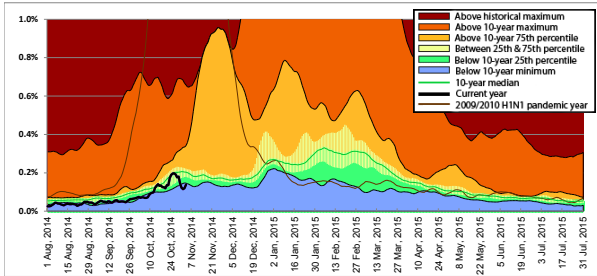
In week 44, BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, continued to plateau or, in some regions, showed signs of decrease following a sharp increase in mid-October, with the exception of VIHA where an increasing trend was still evident. In all regional Health Authorities and for the province overall, rates remained within or below expected levels for this time of year in week 44.

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

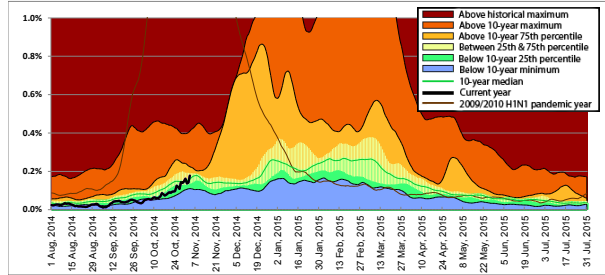


* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza). Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services. Note: MSP week beginning 3 August 2014 corresponds to sentinel ILI week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

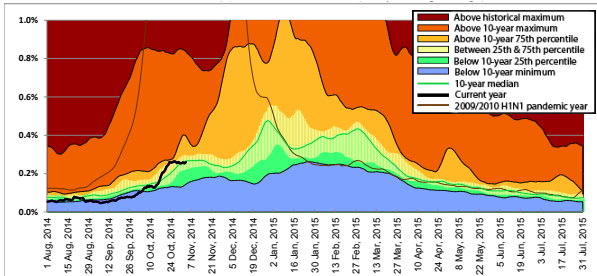
Interior



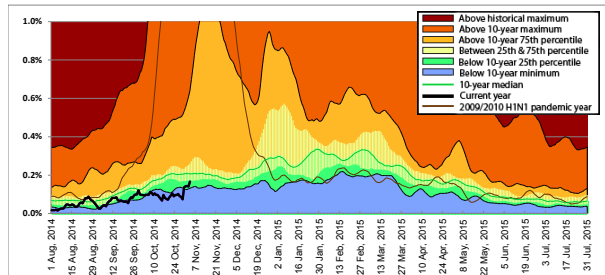
Vancouver Island



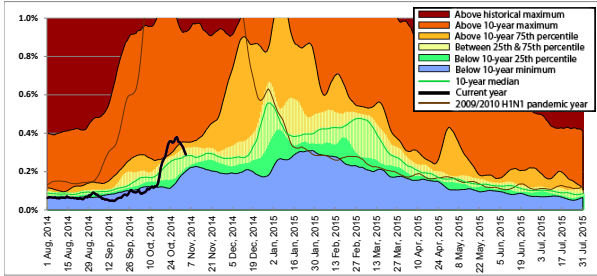
Fraser



Northern



Vancouver Coastal



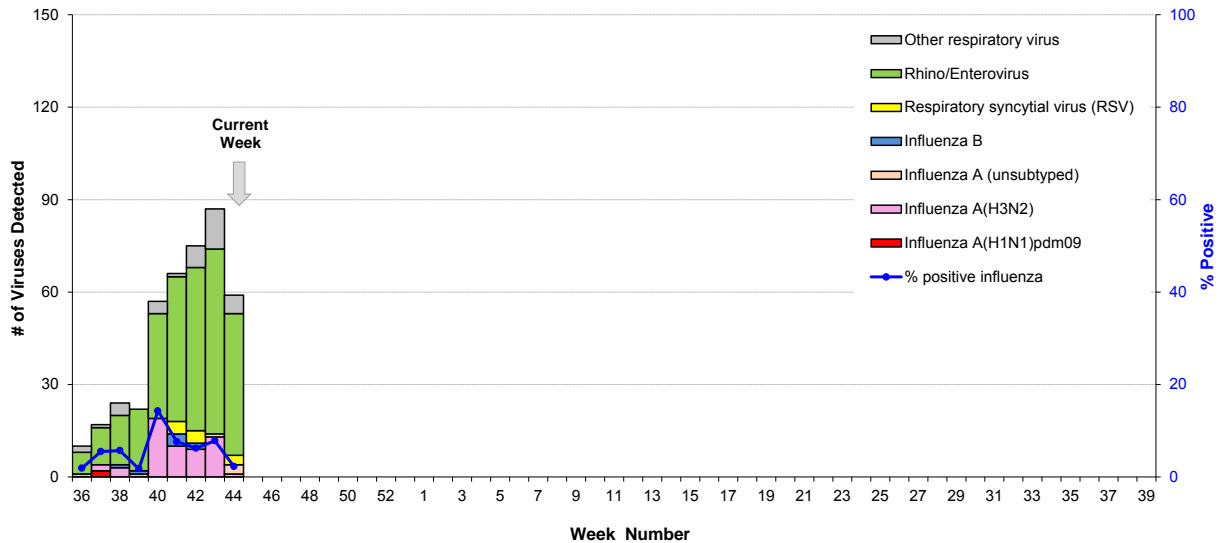
Laboratory Reports

BC Public Health Microbiology & Reference Laboratory (PHMRL)

In week 44, the BC Public Health Microbiology & Reference Laboratory (PHMRL) tested 176 patients for respiratory viruses. Of these, 4 (2%) were positive for influenza; all were influenza A [1 A(H3N2) and 3 subtype pending]. This percent positivity is lower in week 44 than in recent weeks. Enteroviruses continued to be the most commonly detected respiratory virus during this period.

Cumulatively, during the 2014-15 influenza season (since week 40, starting September 28, 2014), 60 (7%) patients have tested positive for influenza at the BC PHMRL, including 54 (90%) influenza A [51 A(H3N2) and 3 subtype pending] and 6 (10%) influenza B. So far this season, A(H3N2) has been the dominant subtype. The majority of influenza detections have been in elderly adults (≥ 65 years of age).

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

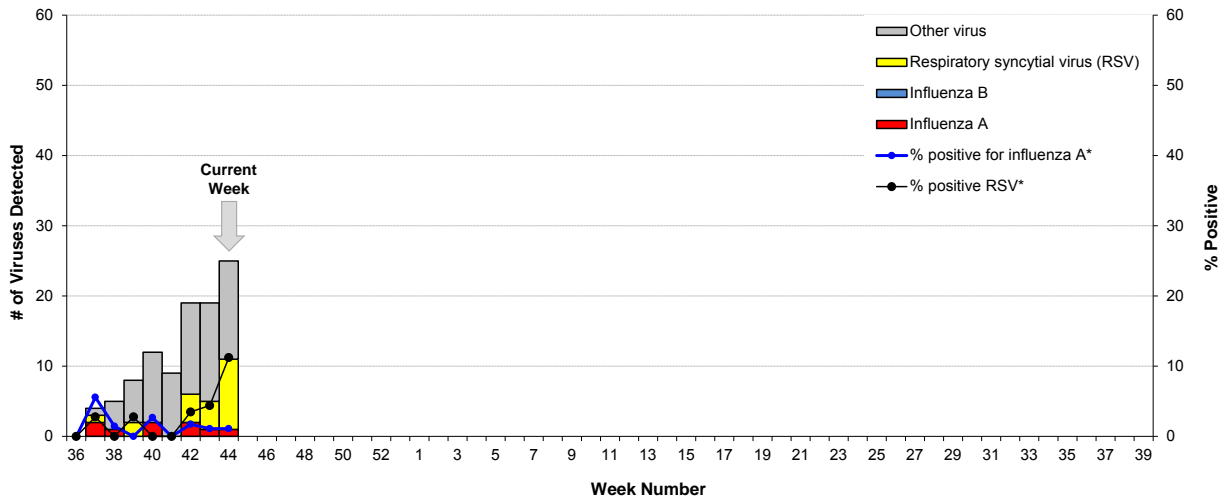


Note: Data current to November 5, 2014.

BC Children's and Women's Health Centre Laboratory

In week 44, the BC Children's and Women's Health Centre Laboratory conducted 91 tests for influenza A and 89 tests for influenza B. Of these, 1 (1%) was positive for influenza A; none were positive for influenza B. The proportion of tests positive for respiratory syncytial virus (RSV) increased from 4% in weeks 42-43 to 11% in week 44. Enteroviruses were also commonly detected during this period.

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



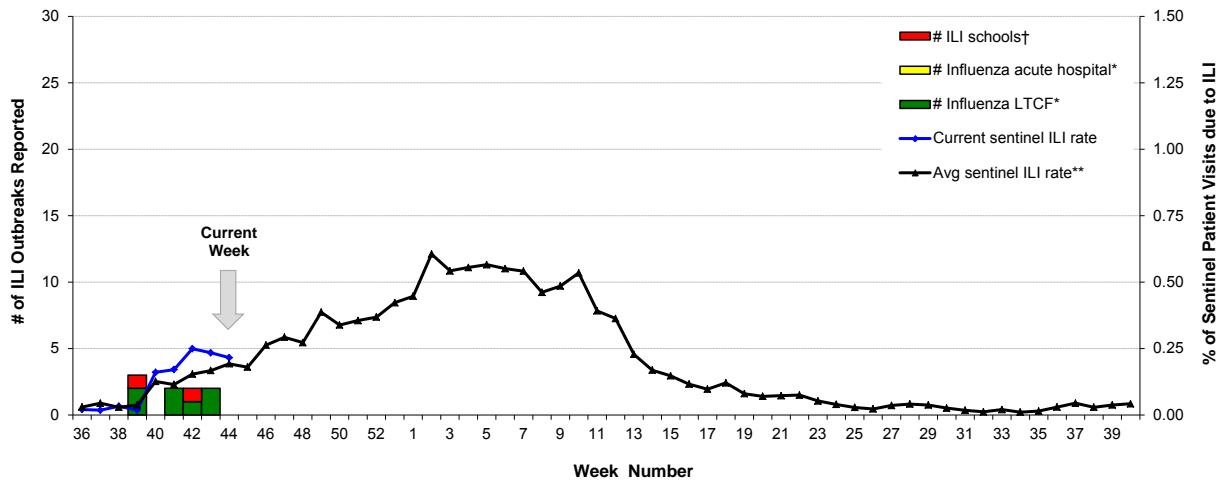
* Positive rates were calculated using aggregate data. The denominators for each rate represent the total number of tests; multiple tests may be performed for a single specimen and/or patient.

Influenza-like Illness (ILI) Outbreaks

In week 44, one new ILI outbreak with symptom onset in week 43 was reported from a long-term care facility (LTCF) in VCHA; laboratory results were pending at the time of writing.

Cumulatively, since week 39 (starting September 21, 2014), 7 laboratory-confirmed influenza outbreaks have been reported from LTCFs, including 6 due to influenza A [5 A(H3N2) and 1 subtype pending] and 1 due to influenza B, suggesting unusually early seasonality. In no other season since the 2009 pandemic have LTCF influenza outbreaks been reported prior to week 45. All reported laboratory-confirmed influenza outbreaks to date have occurred in FHA or VCHA in the Lower Mainland of BC.

Number of influenza-like illness (ILI) outbreaks reported, compared to current sentinel ILI rate and historical average sentinel ILI rate, British Columbia, 2014-15



* 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 43)

In week 43, influenza indicators (influenza detections, outbreaks and hospitalizations) continued to increase, mostly in the western and central provinces. The majority of regions in Canada reported no activity; however, sporadic or localized activity was reported in several regions in 7 provinces (BC, AB, SK, MB, ON, QC, and PEI). The number of positive influenza tests continued to increase in week 43; however, the percent positive for influenza detections remained at 2% overall. So far this season, influenza A(H3N2) has been the most common subtype affecting Canadians. In week 43, 66 influenza viruses were detected, including 61 (92%) influenza A [40 A(H3N2) and 21 untyped] and 5 (8%) influenza B. So far this season, the majority of influenza laboratory detections and hospitalizations were in seniors ≥65 years of age. In week 43, 2 new influenza A outbreaks were reported in LTCFs. 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 6, 2014, the National Microbiology Laboratory (NML) received 8 influenza viruses [3 A(H3N2) and 5 influenza B] from provincial laboratories for strain characterization. Of the 8 influenza viruses characterized, 2/3 A(H3N2) viruses and 1/5 influenza B viruses showed reduced titres with antiserum raised against vaccine reference virus, signalling possible antigenic drift in circulating virus.

Influenza viruses were characterized as antigenically similar to:

- 1 A/Texas/50/2012(H3N2)-like^{*}
- 2 Reduced titre with antiserum raised against A/Texas/50/2012(H3N2)
- 0 A/California/07/2009(H1N1)pdm09-like[†]
- 4 B/Massachusetts/02/2012-like (Yamagata lineage)[‡]
- 1 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 6, 2014, the NML received 10 influenza viruses [6 A(H3N2) and 4 influenza B] from provincial laboratories for drug susceptibility testing:

Amantadine

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

Oseltamivir

- 9 influenza viruses [5 A(H3N2) and 4 influenza B] were tested;
- All tested viruses were susceptible.

Zanamivir

- 9 influenza viruses [5 A(H3N2) and 4 influenza B] were tested;
- All tested viruses were susceptible.

International

USA (week 43)

During week 43, influenza activity was low in the United States. Of 7,449 specimens tested, 320 (4%) were positive for influenza, including 237 (74%) influenza A [79 A(H3N2), 3 A(H1N1)pdm09 and 155 with subtyping not performed] and 83 (26%) influenza B. Of the 10 influenza A(H3N2) viruses collected since October 1, 2014, and characterized by haemagglutination inhibition (HI) assay, 7 were characterized as A/Texas/50/2012-like, the A(H3N2) component of the 2014-15 Northern Hemisphere influenza vaccine, and 3 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 influenza-like illness (ILI) and the proportion of deaths attributed to pneumonia and influenza remained at inter-seasonal levels. No new influenza-associated pediatric deaths were reported. Details are available at: www.cdc.gov/flu/weekly/.

WHO (November 3, 2014)

Globally, influenza activity was low, with the exception of some Pacific Islands. In North America, influenza activity began to increase slightly but remained low. In Europe, overall influenza activity remained at inter-seasonal levels. In tropical countries of the Americas, influenza detections decreased with RSV causing most ILI and severe acute respiratory infections (SARI). In Africa and eastern Asia, influenza activity was low. In tropical Asia, influenza activity continued to decrease or remained low with influenza B predominant in India and Viet Nam. In the southern hemisphere, influenza activity reached inter-seasonal levels except in several Pacific Islands where ILI activity remained high. During weeks 41-42 (October 5-18, 2014), WHO Global Influenza Surveillance and Response System (GISRS) laboratories tested more than 31,820 specimens. Of these, 1,318 were positive for influenza viruses: 778 (59%) were typed as influenza A and 540 (41%) as influenza B. Of the sub-typed influenza A viruses, 46 (11%) were influenza A(H1N1)pdm09 and 374 (89%) were influenza A(H3N2). Of the characterized B viruses, 28 (100%) belonged to the B-Yamagata lineage. Details are available at: www.who.int/influenza/surveillance_monitoring/updates/en/.

Emerging Respiratory Pathogens

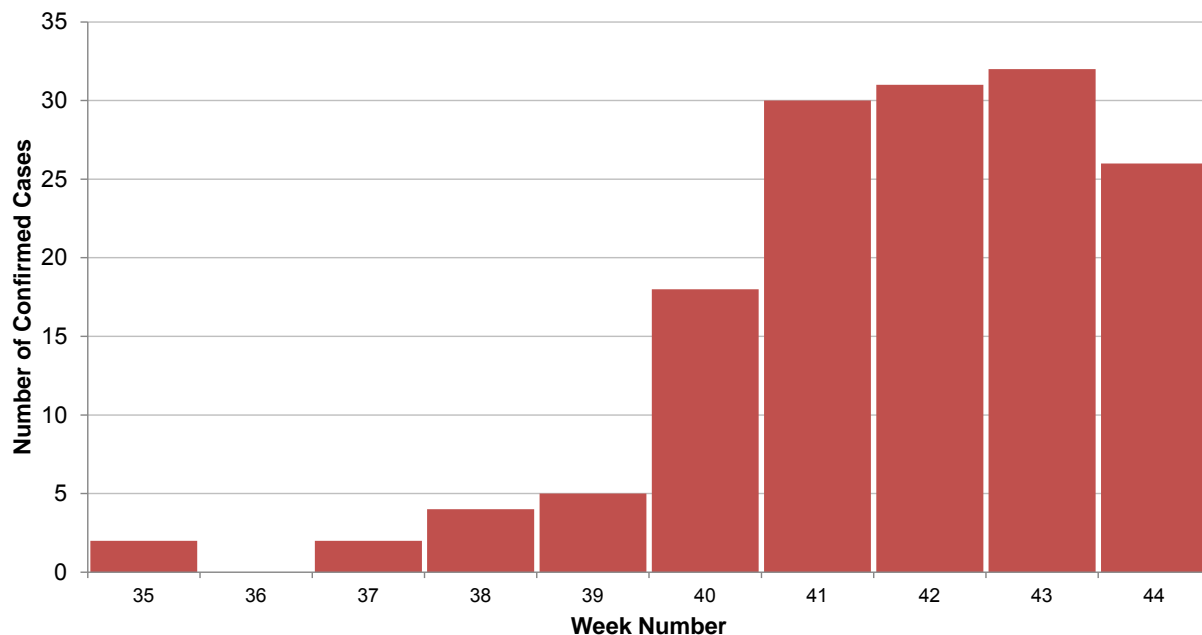
Enterovirus D68

As of November 5, the BC provincial laboratory has confirmed 150 cases of enterovirus D68 (EV-D68), including additional confirmation among specimens collected in recent weeks. Overall, 25-30 confirmed EV-D68 cases have been detected on average each week since the beginning of October; this pattern continues in week 44. The median age of cases is 8 years (range: <1 to >80 years); 57% of cases with known sex are male. By age group, 54 (36%) cases are <5 years, 39 (26%) are 5-9 years, 16 (11%) are 10-14 years, 5 (3%) are 15-19 years, and 36 (24%) are ≥20 years of age. Cases have been reported from all regional health authorities in BC, with one from out of province.

Since mid-August, three cases of neurologic illness and one death 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. BC is collaborating with the Public Health Agency of Canada to better understand the spectrum of illness associated with EV-D68 and participating in a national enhanced surveillance initiative.

For more information on EV-D68: www.bccdc.ca/dis-cond/a-z/_e/EnterovirusD68/default.htm.

Number of confirmed EV-D68 cases by week of specimen collection, British Columbia, August 28 to October 31, 2014*



* Counts are subject to change as testing becomes more complete. Data are current to November 5, 2014.

Note: Counts are based on number of patients; where multiple specimens per patient were collected, the earlier collection date was used if specimens were collected on different days.

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 2014-15 Northern Hemisphere trivalent influenza vaccine (TIV):^{*}

- an A/California/7/2009(H1N1)pdm09-like virus;
- an A/Texas/50/2012(H3N2)-like virus;
- a B/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 2015 Southern 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 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_south/en/.

Additional Information

List of Acronyms:

ACF: Acute Care Facility	MSP: BC Medical Services Plan
AI: Avian influenza	NHA: Northern Health Authority
FHA: Fraser Health Authority	NML: National Microbiological Laboratory
HBoV: Human bocavirus	A(H1N1)pdm09: Pandemic H1N1 influenza (2009)
HMPV: Human metapneumovirus	RSV: Respiratory syncytial virus
HSDA: Health Service Delivery Area	VCHA: Vancouver Coastal Health Authority
IHA: Interior Health Authority	VIHA: Vancouver Island Health Authority
ILI: Influenza-Like Illness	WHO: World Health Organization
LTCF: Long-Term Care Facility	

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: 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/dis-cond/DiseaseStatsReports/influSurveillanceReports.htm

Influenza-Like Illness (ILI) Outbreak Summary Report Form

Please complete and email to ilioutbreak@bccdc.ca

Note: This form is for provincial surveillance purposes.

Please notify your local health unit per local guidelines/requirements.

ILI: Acute onset of respiratory illness with fever and cough and with one or more of the following: sore throat, arthralgia, myalgia, or prostration which *could* be due to influenza virus. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

Schools and work site outbreak: greater than 10% absenteeism on any day, most likely due to ILI.

Residential institutions (facilities) outbreak: two or more cases of ILI within a seven-day period.

A	Reporting Information		Health unit/medical health officer notified? <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	First Notification																	
	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>																	
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Hospitalized																		
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D	Laboratory Information		
	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	