

British Columbia Influenza Surveillance Bulletin

Influenza Season 2014-15, Number 4, Week 42

October 12 to 18, 2014

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)	Page 9
WHO	Page 9

Emerging Respiratory Viruses

Enterovirus D68	Page 10
-----------------	-------------------------

Influenza Vaccine Components (WHO Recommendations)

2014-15 Northern Hemisphere	Page 11
2015 Southern Hemisphere	Page 11

Additional Information:

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

Early signs of increasing influenza-like illness in BC

In week 42 (October 12-18, 2014), community indicators (influenza-like illness consultations to sentinel physicians, MSP claims for influenza) show early signs of increase in BC, notably in the Lower Mainland. In addition, 2 new long-term care facility (LTCF) outbreaks due to laboratory-confirmed influenza A(H3N2) were reported from VCHA with onset in weeks 41 and 42. In total, 5 laboratory-confirmed influenza outbreaks [4 A(H3N2) and 1 influenza B] in LTCFs have been reported in BC since week 39, all within the Lower Mainland.

At the BC provincial laboratory, influenza positivity was 5% in week 42, lower than the prior two weeks but still higher than expected for this time of year and driven in part by LTCF outbreaks. Influenza A(H3N2) continues to be the predominant subtype.

Enteroviruses were the most commonly detected respiratory viruses in week 42, as expected for this time of year. As of October 22, 2014, the BC provincial laboratory has confirmed 56 cases of enterovirus D68, including a third confirmed case in association with neurologic findings.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

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

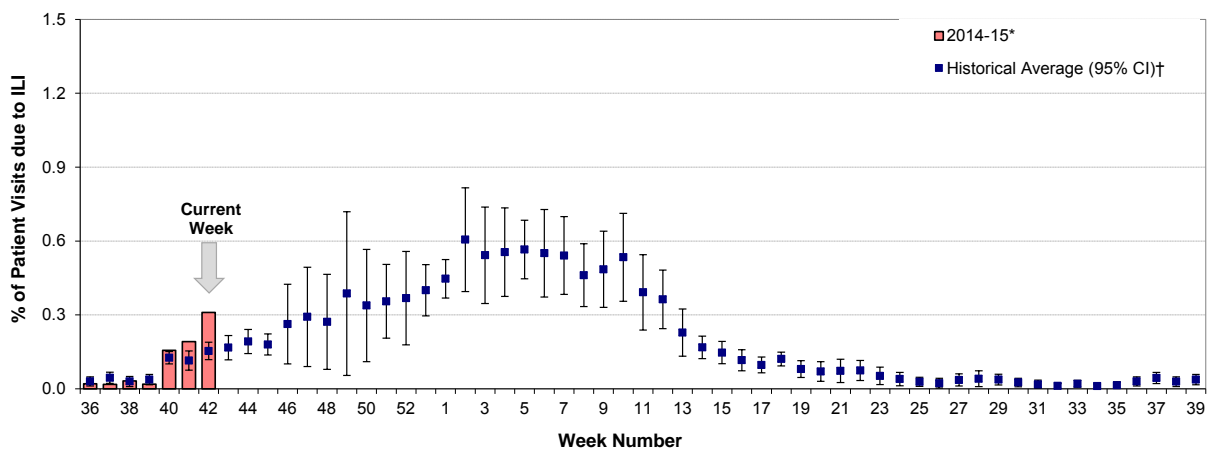
Report Disseminated: October 23, 2014

British Columbia

Sentinel Physicians

The proportion of patients with influenza-like illness (ILI) among those presenting to sentinel physicians remained significantly above the historical average for this time of year for the second consecutive week. In week 42, 0.3% of patients presenting to sentinel physicians had ILI based on 50% of sentinel sites reporting data.

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

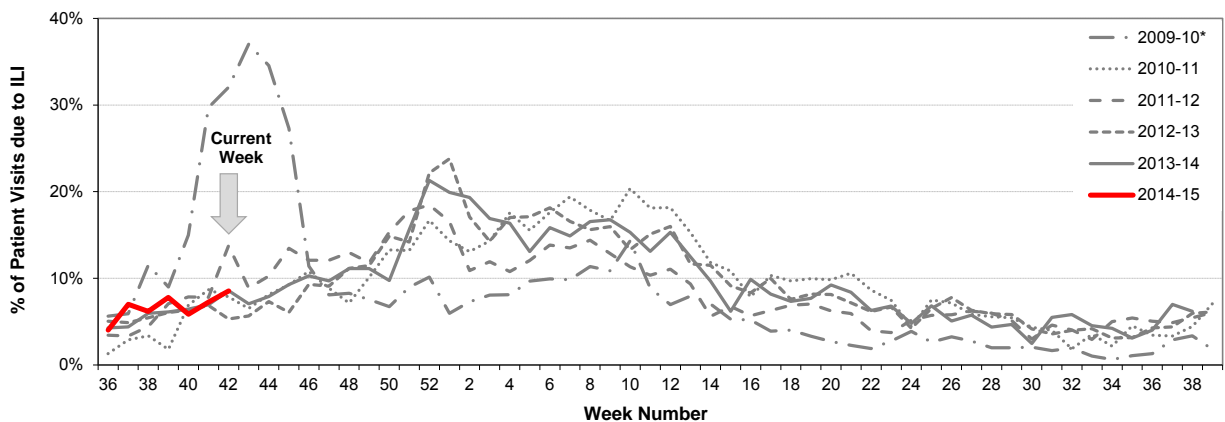


* Data are subject to change as reporting becomes more complete.
† Historical average based on 2002-03 to 2013-14 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality; CI=confidence interval.

BC Children’s Hospital Emergency Room

In week 42, the proportion of visits to BC Children’s Hospital Emergency Room (ER) attributed to ILI was 8% and remained 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

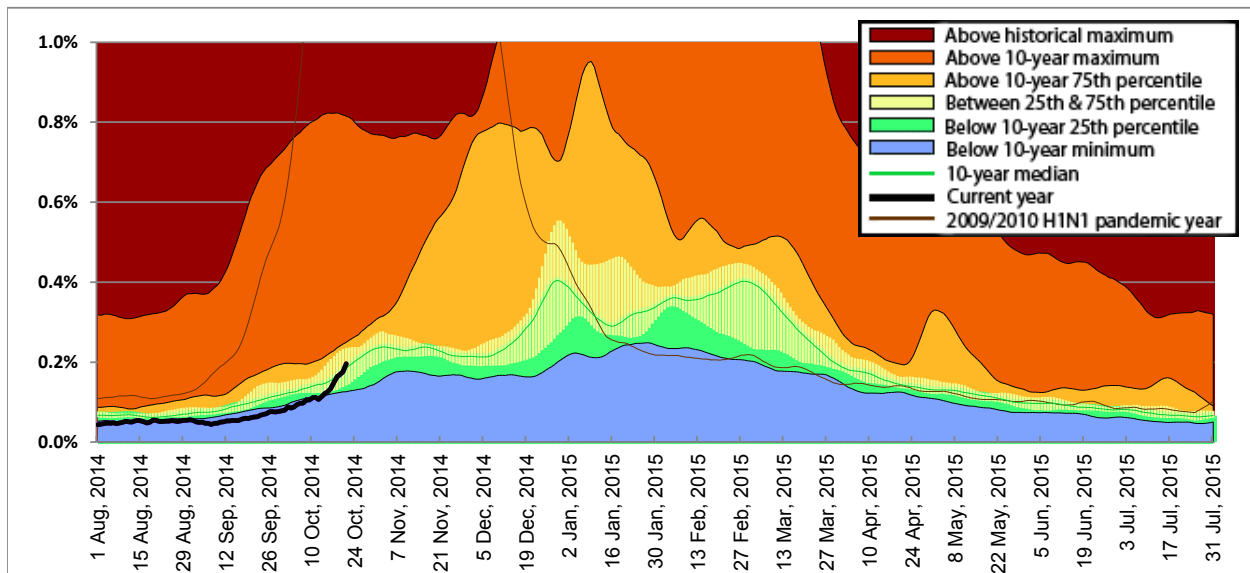


Source: BCCH Admitting, discharge, transfer database, ADT
* Data from 2010-11 to 2014-15 are based on new variable (Triage Chief Complaint) for capturing ILI symptoms and are not directly comparable to data for 2009-10. In week 9 of the 2011-12 season, the BCCH ER implemented a new data collection system,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

Medical Services Plan

In week 42, BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, showed a sharp increase. Although rates for the province overall remained within expected ranges, in the Lower Mainland, rates in Fraser approached 10-year 75th percentiles and rates in Vancouver Coastal exceeded 10-year maximum values for this time of year.

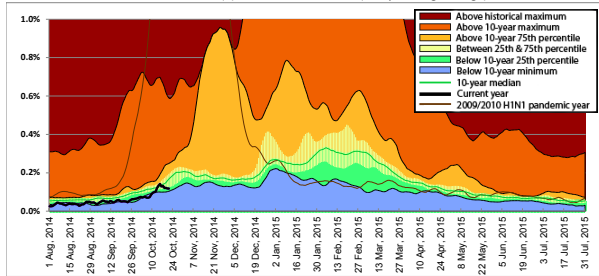
Service claims submitted to MSP for influenza illness (II)* as a proportion of all submitted general practitioner service claims, British Columbia, 2014-15



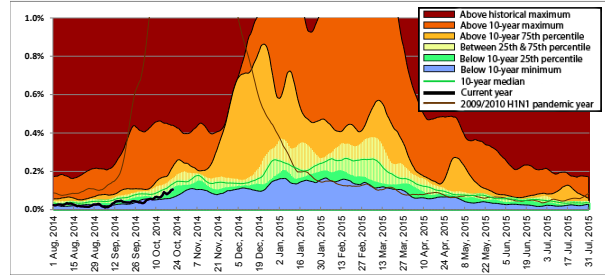
* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza). Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services.

Note: MSP week beginning 3 August 2014 corresponds to sentinel ILI week 32; data current to October 21, 2014.

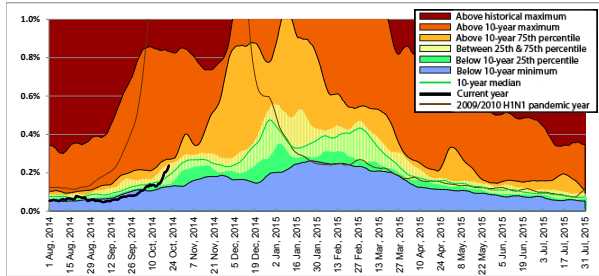
Interior



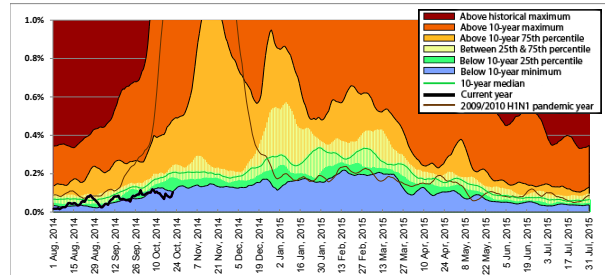
Vancouver Island



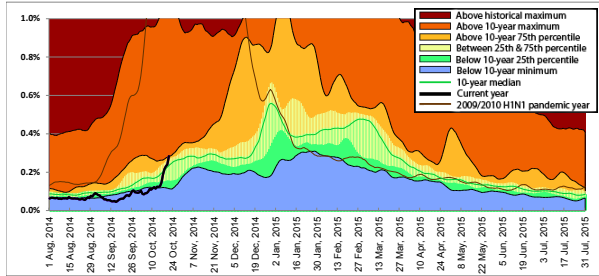
Fraser



Northern



Vancouver Coastal



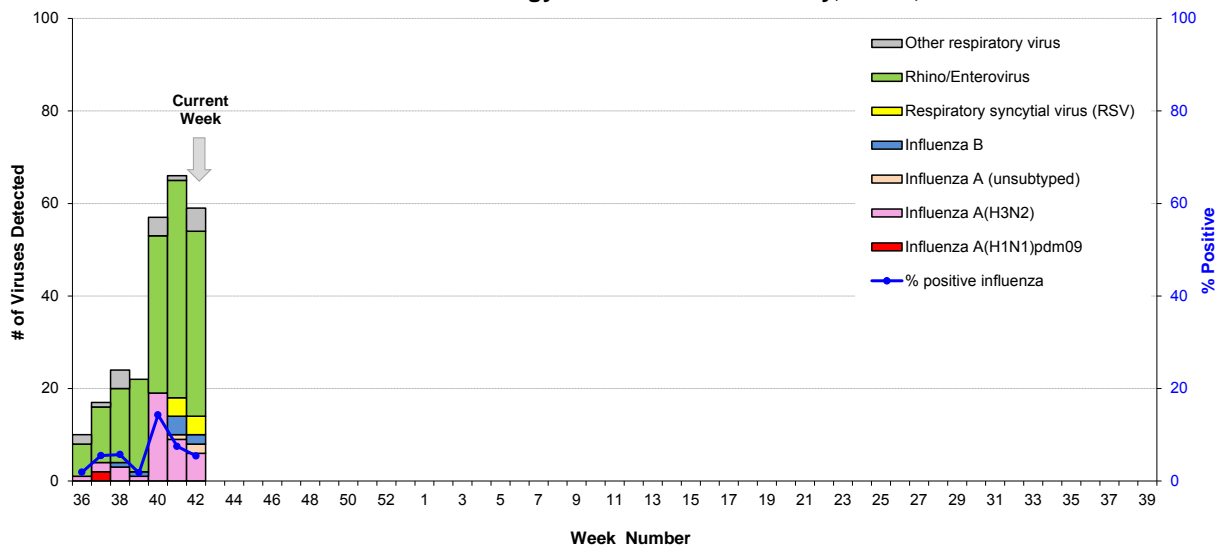
Laboratory Reports

BC Public Health Microbiology & Reference Laboratory (PHMRL)

In week 42, the BC Public Health Microbiology & Reference Laboratory (PHMRL) tested 185 patients for respiratory viruses. Of these, 10 (5%) were positive for influenza, including 8 (80%) influenza A [6 A(H3N2) and 2 subtype pending] and 2 (20%) influenza B. Influenza positivity in week 42 was lower than in recent weeks but still elevated compared to prior seasons for this time of year. As in previous weeks, influenza positivity was driven in part by reports of laboratory-confirmed outbreaks in long-term care facilities (LTCFs). Enteroviruses continued to be the most commonly detected respiratory virus during this period.

Cumulatively, during the 2014/15 influenza season (starting week 40, September 28 – October 4, 2014), 42 (8%) patients have tested positive for influenza at the BC PHMRL, including 36 (86%) influenza A [33 A(H3N2) and 3 subtype pending] and 6 (14%) influenza B. So far this season, 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

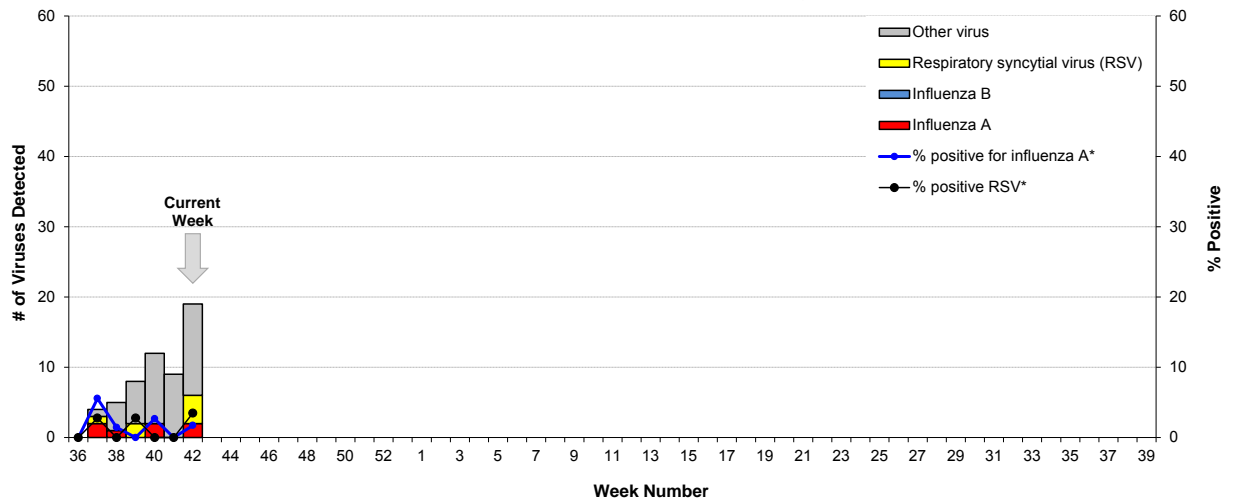


Note: Data current to October 22, 2014.

BC Children's and Women's Health Centre Laboratory

In week 42, the BC Children's and Women's Health Centre Laboratory conducted 116 tests for influenza A and 115 tests for influenza B. Of these, 2 (2%) were positive for influenza A and none were positive for influenza B. Enteroviruses continued to be the most commonly detected respiratory virus during this period.

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



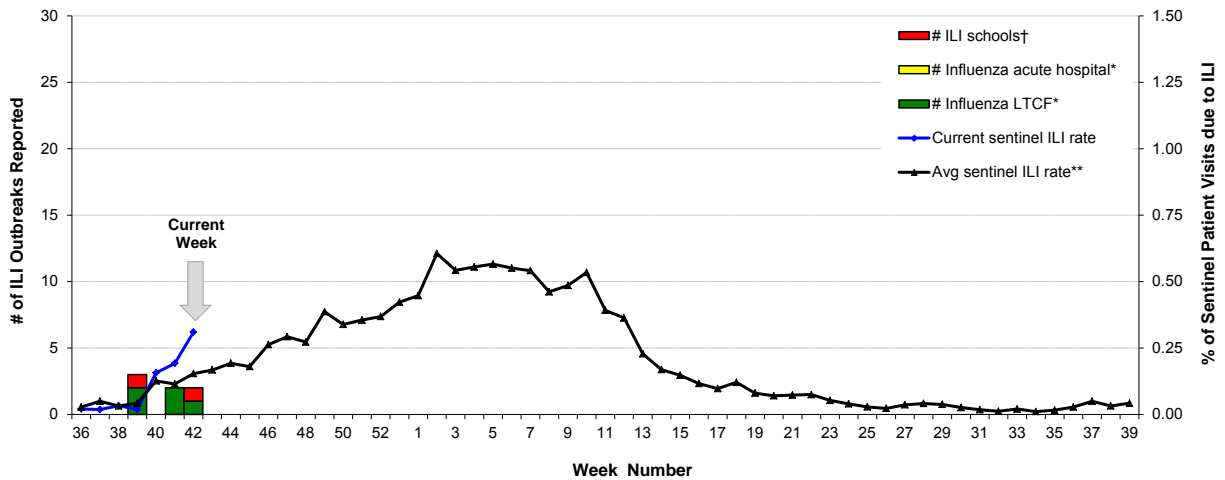
* Positive rates were calculated using aggregate data. The denominators for each rate represent the total number of tests; multiple tests may be performed for a single specimen and/or patient.

Influenza-like Illness (ILI) Outbreaks

Since our last surveillance bulletin, 2 new ILI outbreaks were reported from LTCFs in Vancouver Coastal, including one with ILI onset in week 41 and one with ILI onset in week 42. Both were laboratory-confirmed as influenza A(H3N2). One school outbreak was reported in week 42 in Northern.

Cumulatively, since week 39, 5 laboratory-confirmed influenza outbreaks have been reported from LTCFs, including 4 due to A(H3N2), 2 in week 39 and 1 each in weeks 41 and 42, and 1 due to influenza B in week 41, all within the Lower Mainland.

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 41)

Influenza indicators (activity levels, influenza detections, ILI and hospitalizations) in some regions across Canada continued to increase in week 41. Influenza activity was reported in several regions in 5 provinces (BC, AB, MB, ON, and QC). The number of positive influenza tests continued to increase in week 41; however, the percent positive for influenza detections remained <2%. So far this year, influenza A(H3N2) has been the most common strain affecting Canadians. In week 41, 50 influenza viruses were detected, including 45 (90%) influenza A [25 A(H3N2) and 20 untyped] and 5 (10%) influenza B. So far this season, the majority of influenza laboratory detections and hospitalizations were in seniors ≥65 years of age. In week 41, one new outbreak of influenza B was reported in a LTCF. 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 October 23, 2014, the National Microbiology Laboratory (NML) received 2 influenza viruses from provincial laboratories for strain characterization. Influenza viruses were characterized as antigenically similar to:

- 1 A/Texas/50/2012(H3N2)-like^{*}
- 0 A/California/07/2009(H1N1)pdm09-like[†]
- 1 B/Massachusetts/02/2012-like (Yamagata lineage)[‡]
- 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 October 23, 2014, the NML received 2 influenza viruses from provincial laboratories for drug susceptibility testing: 1 influenza A(H3N2) virus was tested and found to be resistant to amantadine but sensitive to oseltamivir and zanamivir; 1 influenza B virus was tested and found to be sensitive to oseltamivir and zanamivir.

International

USA (week 41)

During week 41, influenza activity was low in the United States. Of 7,655 specimens tested, 282 (4%) were positive for influenza, including 164 (58%) influenza A [28 A(H3N2), 2 A(H1N1)pdm09 and 134 with subtyping not performed] and 118 (42%) influenza B. 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 influenza-associated pediatric deaths were reported. Details are available at: www.cdc.gov/flu/weekly/.

WHO (as of October 20, 2014)

Globally, influenza activity remained low, with the exception of some tropical countries in the Americas and some Pacific Islands. In Europe and North America, overall influenza activity remained at inter-seasonal levels. In tropical countries of the Americas, influenza B co-circulated with respiratory syncytial virus (RSV). In Africa and western Asia, influenza activity was low. In eastern Asia, influenza activity in most countries remained low or decreased after some influenza A(H3N2) activity in August and September. In tropical Asia, influenza activity continued to decrease or remain low with influenza A(H3N2) predominant. In the southern hemisphere, influenza activity decreased in general except in several Pacific Islands where ILI activity remained high. In the temperate zone of South America, ILI activity decreased and continued to be associated with RSV. Influenza A(H3N2) was the most frequently detected influenza virus. In Australia and New Zealand Influenza activity also decreased. Details are available at: www.who.int/influenza/surveillance_monitoring/updates/en/.

Emerging Respiratory Pathogens

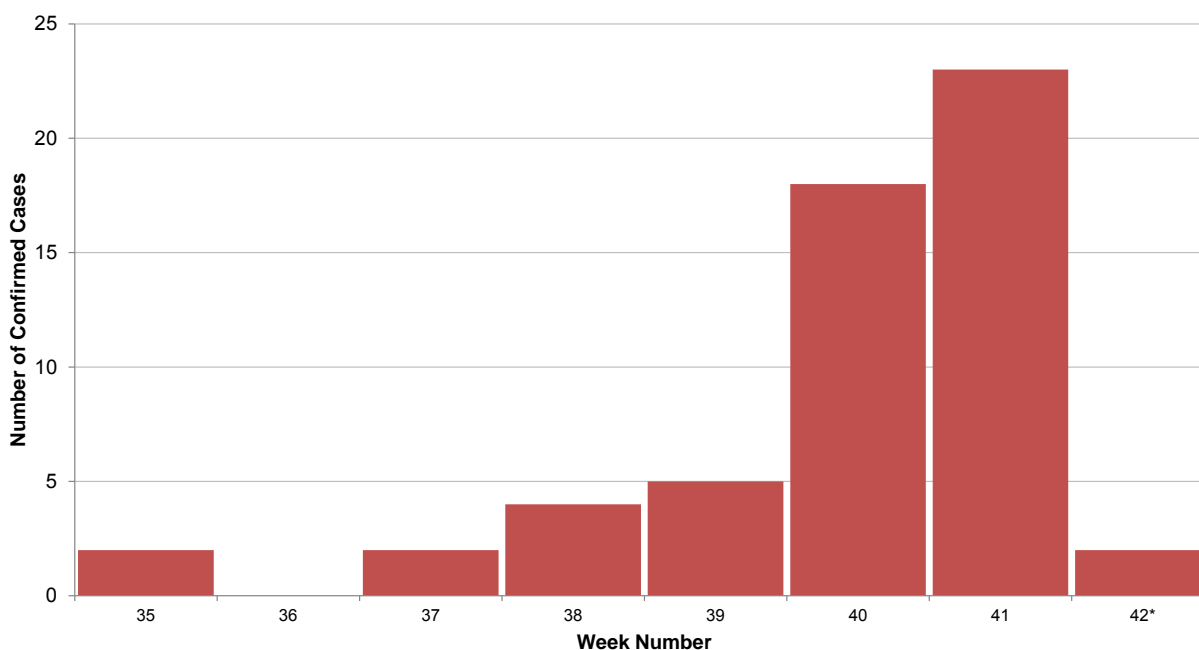
Enterovirus D68

As of October 22, the BC provincial laboratory has confirmed 56 cases of enterovirus D68 (EV-D68). Ages range from <1 year to >80 years, and more than two-thirds of cases are children <10 years of age. By age group, 17 cases are <5 years, 21 are 5-9 years, 9 are 10-14 years, 2 are 15-19 years, and 7 are ≥20 years of age. The majority of cases (68%) are male. Cases have been reported from all regional health authorities in BC, with one from out of province.

On October 22, the BC PHMRL confirmed EV-D68 infection in a child <5 years of age who developed acute flaccid paralysis of an upper limb, accompanied by respiratory illness, with onset earlier in October. The child did not have asthma or other known underlying comorbidity. Since mid-August, 3 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 12, 2014



* Counts are subject to change as testing becomes more complete; some specimens collected in week 42 and after were pending confirmatory testing at the time of writing.

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. Data are current to October 22, 2014.

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	<p><u>Reporting Information</u> Health unit/medical health officer notified? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Person Reporting: _____ Title: _____</p> <p>Contact Phone: _____ Email: _____</p> <p>Health Authority: _____ HSDA: _____</p> <p>Full Facility Name: _____</p> <p>Is this report: <input type="checkbox"/> First Notification (<i>complete section B below; Section D if available</i>)</p> <p style="margin-left: 20px;"><input type="checkbox"/> Update (<i>complete section C below; Section D if available</i>)</p> <p style="margin-left: 20px;"><input type="checkbox"/> Outbreak Over (<i>complete section C below; Section D if available</i>)</p>															
B	<p><u>First Notification</u></p> <p>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></p> <p><input type="checkbox"/> Workplace <input type="checkbox"/> School (grades: _____) <input type="checkbox"/> Other (_____)</p> <p>Date of onset of first case of ILI (dd/mm/yyyy): <u>DD/MMM/YYYY</u></p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <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	<p><u>Update AND Outbreak Declared Over</u></p> <p>Date of onset for most recent case of ILI (dd/mm/yyyy): <u>DD/MMM/YYYY</u></p> <p>If over, date outbreak declared over (dd/mm/yyyy): <u>DD/MMM/YYYY</u></p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <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	<p><u>Laboratory Information</u></p> <p>Specimen(s) submitted? <input type="checkbox"/> Yes (location: _____) <input type="checkbox"/> No <input type="checkbox"/> Don't know</p> <p>If yes, organism identified? <input type="checkbox"/> Yes (specify: _____) <input type="checkbox"/> No <input type="checkbox"/> Don't know</p>															