

British Columbia Influenza Surveillance Bulletin

Influenza Season 2013-14, Number 07, Weeks 51-52

December 15 to December 28, 2013

Table of Contents:

British Columbia:

Sentinel Physician	Page 2
Children's Hospital ER	Page 2
Medical Services Plan	Page 3
Laboratory Surveillance	Page 5
ILI Outbreaks	Page 6
Hospitalization	Page 7

Canada:

FluWatch Activity levels	Page 7
NML Strain Characterization	Page 7
NML Antiviral Resistance	Page 7

International:

Avian Influenza A(H7N9)	Page 8
MERS-CoV	Page 8
WHO 2013-14 Recommended Vaccine Components	Page 9

Additional Information:

List of Acronyms	Page 10
Web Sites	Page 10
Outbreak Report Form	Page 11

Ongoing, increased influenza activity in BC, predominantly A(H1N1)pdm09

In weeks 51-52 (December 15 to 28, 2013), influenza activity increased in BC. Influenza A(H1N1)pdm09 continues to be the predominant circulating strain, representing 51/61 (83.6%) of specimens with subtype information available during weeks 51-52. The proportion of respiratory specimens testing positive for influenza increased sharply from 17.3% in week 50 to 25.6% in week 51 and 42.5% in week 52. The BC Medical Services Plan (MSP) claims for influenza illness as a proportion of all claims increased throughout the province and were above 10-year maximum values. The proportion of patients with influenza-like illness among those presenting to sentinel physicians and the consultation rates attributed to ILI at BC Children's Hospital ER also increased significantly during this period after remaining stable for the past few weeks. Consistency across surveillance indicators suggests a real increase in influenza activity in BC, but may also reflect differences in health care seeking behaviours during the holiday period. Ongoing monitoring is required in the coming weeks.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

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

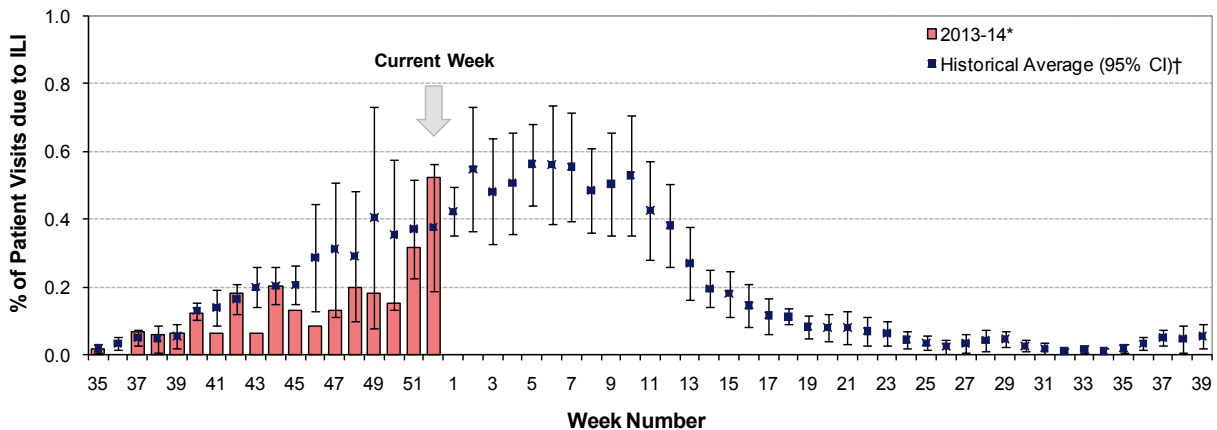
Report Disseminated: January 2, 2014

British Columbia

Sentinel Physicians

In weeks 51-52, the proportion of patients with influenza-like illness (ILI) among those presenting to sentinel physicians increased from $\leq 0.2\%$ in weeks 48-50 to 0.31% in week 51 and 0.52% in week 52. Consultation rates exceeded the historical average in week 52 but remained within the expected range for this time of year. Only 45% and 29% of sentinel sites reported data to date for weeks 51 and 52, respectively. Rates are subject to change as data become more complete following the holiday period.

Percent of patient visits to sentinel physicians due to influenza-like illness (ILI) compared to historical average, British Columbia, 2013-14



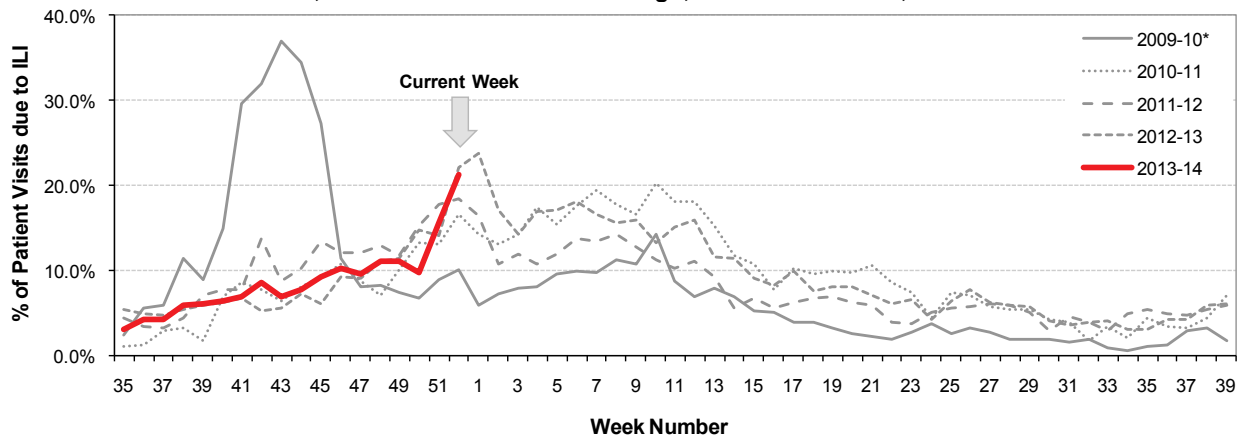
* Data are subject to change as reporting becomes more complete.

† Historical average based on 2001-02 to 2012-13 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality; CI=confidence interval.

BC Children's Hospital Emergency Room

In weeks 51-52, the proportion of visits to BC Children's Hospital Emergency Room (ER) attributed to ILI increased sharply from $\leq 11\%$ in weeks 48-50 to 15.6% in week 51 and 21.3% in week 52. Rates were slightly above past seasons for this time of year but comparable to the 2012-13 season.

Percent of patients presenting to BC Children's Hospital ER with triage chief complaint of "flu," or "influenza" or "fever/cough," British Columbia, 2013-14



Source: BCCH Admitting, discharge, transfer database, ADT

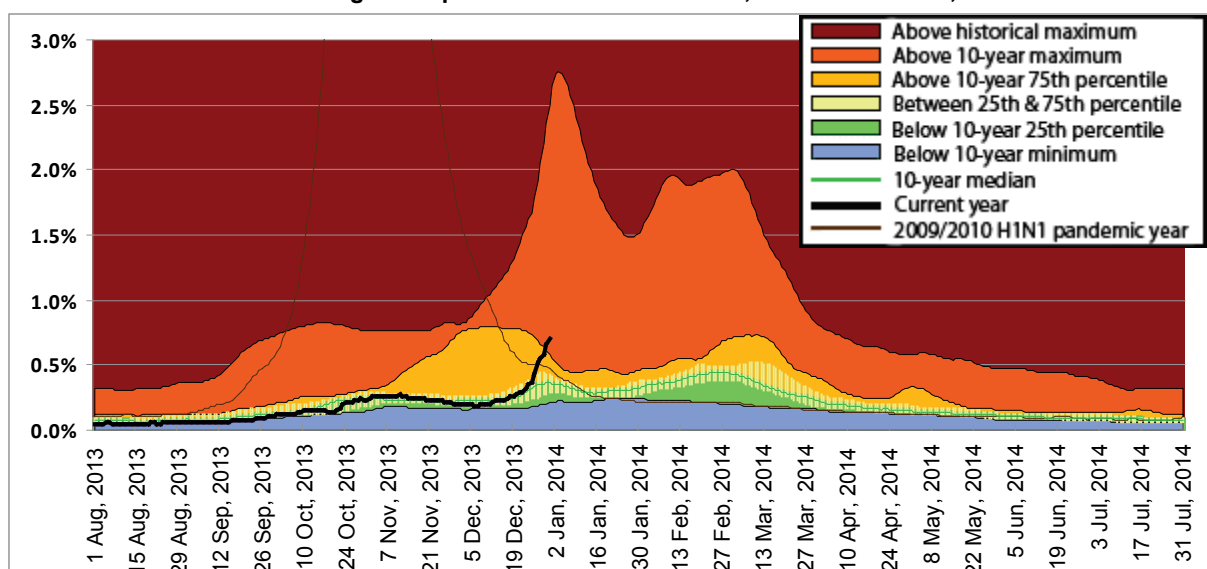
* Data from 2010-11 to 2013-14 is based on new system (Triage Chief Complaint) not directly comparable to data for 2009-10. In bulletins before week 9 of 2011-12 season, data is based on old system.

Medical Services Plan

In weeks 51-52, BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, increased throughout the province and were above 10-year maximum values in all health authorities, with the exception of VIHA where rates were between the 10-year 75th percentile and maximum values.

However, the increase over previous weeks may be exaggerated by surveillance artifact. During the holiday period, presentations for acute illness may continue while patients defer medical visits for other chronic or routine causes. This can cause an inflated estimate of medically attended II as a proportion of all services at this time of year.

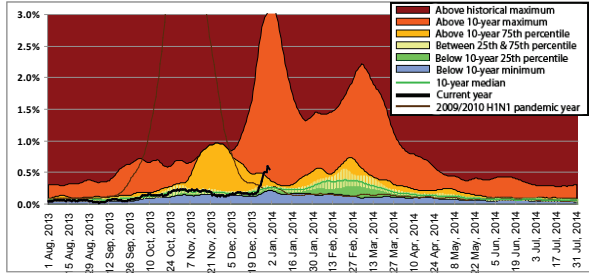
Service claims submitted to MSP for influenza illness (II)* as a proportion of all submitted general practitioner service claims, British Columbia, 2013-14



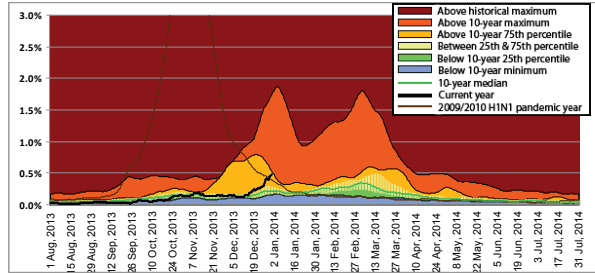
* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza). Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services

Note: MSP week beginning 1 August 2013 corresponds to sentinel ILI week 31; data current to 31 December 2013.

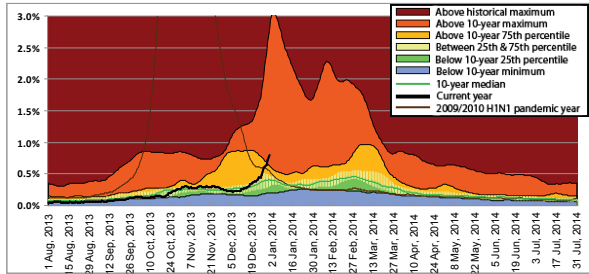
Interior



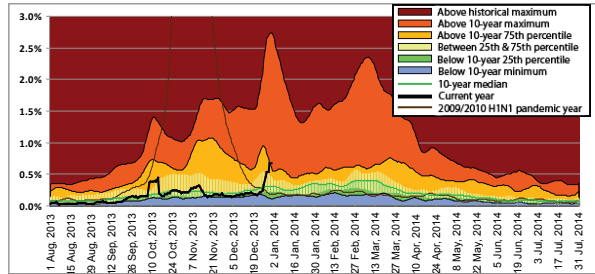
Vancouver Island



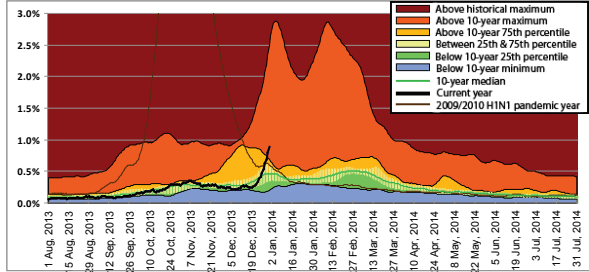
Fraser



Northern



Vancouver Coastal



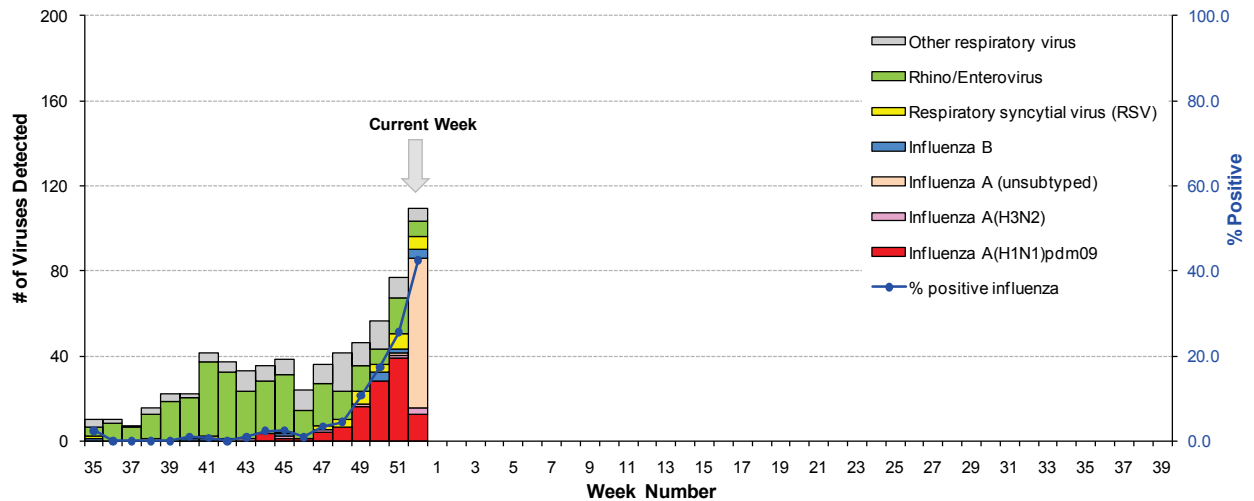
Laboratory Reports

To date since week 40 (September 29 – October 5, 2013), 203 specimens have tested positive for influenza at the BC Public Health Microbiology & Reference Laboratory (PHMRL). Of the 131/203 specimens with subtype information available, 110 (84.0%) were influenza A(H1N1)pdm09, 8 (6.1%) were influenza A(H3N2), and 13 (9.9%) were influenza B. The majority of these detections (133/203 or 65.5%) have occurred in weeks 51-52.

In weeks 51-52, 380 specimens (168 in week 51 and 212 in week 52) were tested for influenza at the BC PHMRL. In week 51, 43 (25.6%) were positive for influenza [39 A(H1N1)pdm09, 1 A(H3N2), 2 influenza B, and 1 influenza A (subtype pending)]. In week 52, 90 (42.5%) were positive for influenza [12 A(H1N1)pdm09, 3 A(H3N2), 4 influenza B, and 71 influenza A (subtype pending)]. The percent positivity continued to increase in both weeks compared to previous weeks from <5% in weeks 40-48, 10.6% in week 49 and 17.3% in week 50, to 25.6% in week 51 and 42.5% in week 52. As with previous weeks, influenza A(H1N1)pdm09 continued to predominate during this period. Of the 61 specimens with subtype information available, 51 (83.6%) were influenza A(H1N1)pdm09 in weeks 51-52.

Among other respiratory viruses, rhino/enteroviruses were the most commonly detected, followed by RSV during this period.

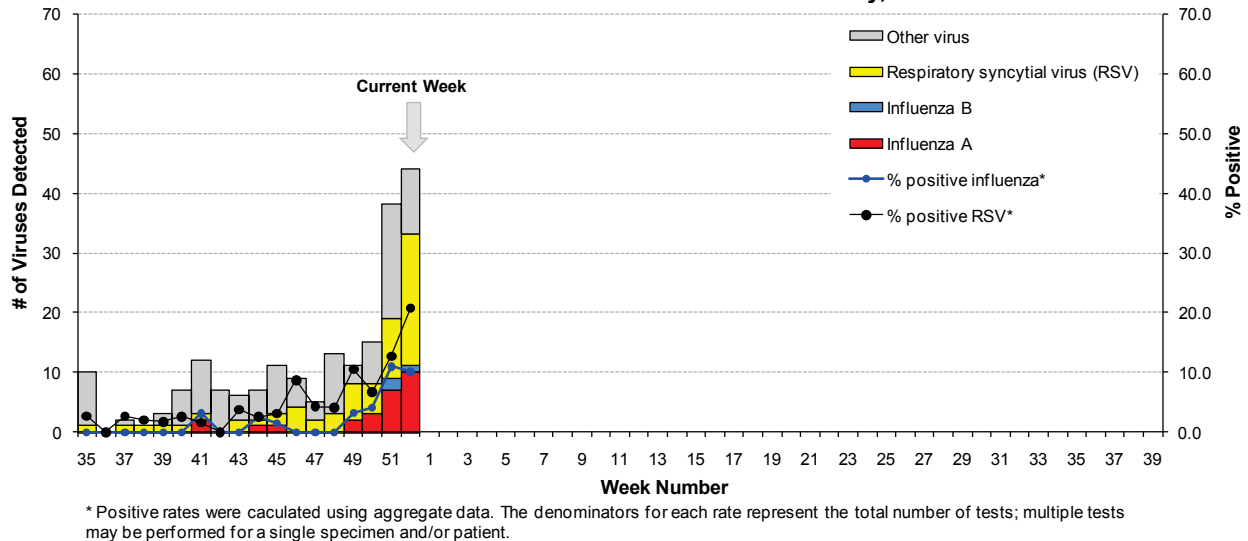
Influenza and other virus detections among respiratory specimens submitted to BC Public Health Microbiology & Reference Laboratory, PHSA, 2013-14*



*Data current to December 31, 2013

In weeks 51-52, 191 respiratory specimens were tested for influenza at the BC Children's and Women's Health Centre Laboratory. Of these, 20 (10.5%) were positive for influenza viruses, including 17 (85%) influenza A (un-subtyped) and 3 (18%) influenza B. RSV was the most commonly detected virus during this period. Other respiratory viruses were also sporadically detected.

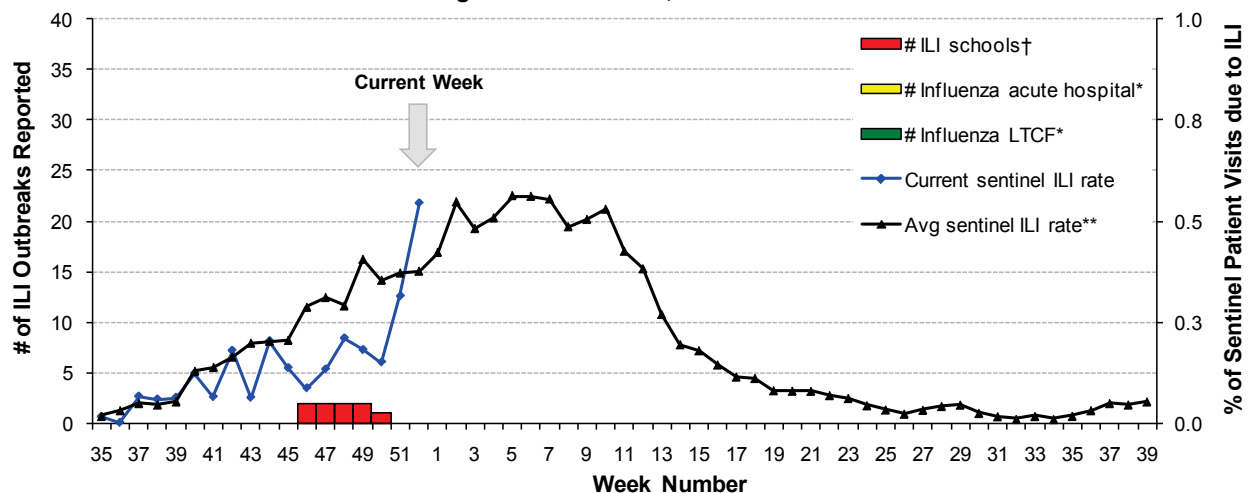
Influenza and other virus detections among respiratory specimens submitted to BC Children's and Women's Health Centre Laboratory, 2013-14



Influenza-like Illness (ILI) Outbreaks

In weeks 51-52, one ILI outbreak was reported from a long-term care facility (LTCF) in IHA; laboratory results are pending. So far during the 2013-14 season, there have been 12 ILI outbreaks reported in LTCFs and 9 in schools. Among these, one of the school outbreaks (in NHA in week 47) was laboratory-confirmed as influenza A(H1N1)pdm09.

Number of influenza-like illness (ILI) outbreaks reported, compared to current sentinel ILI rate and historical average sentinel ILI rate, British Columbia 2013-14



* 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.

BC Sentinel Hospital Influenza Surveillance (IMPACT)

In weeks 51-52, 7 laboratory-confirmed influenza-associated paediatric (≤ 16 years of age) hospitalizations were reported by BC Children's Hospital to the Immunization Monitoring Program Active (IMPACT) network in FluWatch, PHAC, including 5 influenza A (two 0-5 months of age, two 6-23 months of age, and one 2-4 years of age) and 2 influenza B (one 5-9 years of age and one 10-16 years of age). A total of 8 paediatric hospitalizations have been reported in BC so far this season including 6 influenza A (all less than five years of age) and 2 influenza B (both more than five years of age).

National

FluWatch (week 50):

National influenza activity continued to increase in week 50. Four regions in Canada (in AB, ON and QC) have reported localized activity, while 8 of 10 provinces are reporting sporadic activity. Influenza A(H1N1)pdm09 remained the predominant influenza virus type, representing 545/619 (88%) of subtyped influenza A viruses so far this season. The percent of positive influenza tests was 9.6% in week 50. RSV detections also continued to increase. After influenza, RSV was the most frequently detected virus in week 50, followed by parainfluenza. The number of paediatric hospitalizations with influenza continued to increase, while adult hospitalizations decreased slightly. In week 50, 14 new laboratory-confirmed influenza-associated paediatric hospitalizations and 8 new laboratory-confirmed influenza-associated adult hospitalizations were reported; 93% of paediatric cases and all adult cases from sentinel hospital surveillance were influenza A-associated, predominantly A(H1N1)pdm09. Details are available at: www.phac-aspc.gc.ca/fluwatch/13-14/w50_13/index-eng.php.

National Microbiology Laboratory (NML): Strain Characterization

From September 1 to December 24, 2013, 155 isolates were collected from provincial and hospital laboratories for antigenic characterization at the NML:

- 17 A/Texas/50/2012-like (H3N2)[¶] from ON, AB and BC
- 112 A/California/07/09-like [A(H1N1)pdm09]* from NL, NB, ON, MB, SK, AB and BC; of these, 2 viruses showed reduced titres with antiserum produced against A/California/7/2009 signalling possible antigenic change
- 21 B/Massachusetts/02/12-like[†] from QC, ON and AB
- 5 B/Brisbane/60/2008-like** from ON, MB, and AB

[¶] Virus most closely related to the recommended H3N2 reference virus for the 2013-14 northern hemisphere influenza vaccine.

* Virus most closely related to the recommended H1N1 reference virus for the 2013-14 northern hemisphere influenza vaccine.

[†] Virus most closely related to the recommended influenza B component for the 2013-14 northern hemisphere influenza vaccine; belongs to the B Yamagata lineage.

** Virus most closely related to the recommended influenza B component for the 2011-2012 northern hemisphere influenza vaccine; belongs to the B Victoria/02/87 lineage.

NML: Antiviral Resistance

From September 1 to December 24, 2013, 69 influenza A [14 A(H3N2) and 55 A(H1N1)pdm09] viruses were tested for resistance to amantadine at the NML; all tested viruses were found to be resistant. Also during this period, 135 influenza viruses [15 A(H3N2), 95 A(H1N1)pdm09, and 25 B] were tested for resistance to oseltamivir and 135 [15 A(H3N2), 95 A(H1N1)pdm09, and 25 B] were tested for resistance to zanamivir; all tested viruses were sensitive to both antiviral drugs.

International

USA (week 51): Influenza activity in the United States continued to increase in week 51. Of the 6,813 specimens tested, 1,639 (24.1%) were positive for influenza viruses, of which 98.2% were influenza A [56.8% A(H1N1)pdm09, 1.4% A(H3N2), 41.8% un-subtyped] and 1.8% were influenza B. Widespread influenza activity was reported from 10 states to the USA CDC, while 12 states reported local activity and 4 states reported sporadic activity. Details are available at: www.cdc.gov/flu/weekly/.

WHO (as of December 20, 2013): According to the WHO, the influenza season in North America has started. The predominant subtype of influenza viruses detected was influenza A(H1N1)pdm09. Influenza activity remained low in other parts of the northern hemisphere as well as in the southern hemisphere. Variable influenza activity was reported in tropical countries. Based on the FluNet reporting, during weeks 48 to 49 (24 November 2013 to 7 December 2013), the WHO Global Influenza Surveillance and Response System (GISRS) laboratories tested more than 42,360 specimens; 3,304 were positive for influenza viruses, of which 2,816 (85.3%) were typed as seasonal influenza A and 487 (14.7%) as influenza B. Of the subtyped seasonal influenza A viruses, 1,166 (66.4%) were influenza A(H1N1)pdm09 and 591 (33.6%) were influenza A(H3N2). Of the characterized B viruses, 39 (70.9%) belonged to the B-Yamagata lineage and 16 (29.1%) to the B-Victoria lineage. The most recent information is available at: www.who.int/influenza/surveillance_monitoring/updates/en/.

Avian Influenza A(H7N9) Virus: Since our last surveillance bulletin, one new human case of avian-origin influenza A(H7N9) has been reported in Taiwan: an 86-year-old male tourist from Jiangsu Province, China. This is the second imported case of H7N9 to be reported in Taiwan since the start of the outbreak in February 2013. Also, an 80-year-old man with underlying chronic conditions previously reported to be infected with H7N9 in Hong Kong has died. Once confirmed by the WHO, these latest case reports will bring the total number of laboratory-confirmed cases to 149 and deaths to 48. At this time, there is no evidence of sustained human-to-human transmission and the risk assessment remains unchanged. Clinicians should remain vigilant for patients presenting with severe acute respiratory illness (SARI) with recent travel or epidemiological links to affected areas. Details are available at: www.who.int/csr/don/2013_12_17/influenza/en/index.html

Avian Influenza A(H9N2) Virus: Within the context of enhanced surveillance for novel influenza subtypes in China, a single, sporadic human case of influenza A(H9N2) has been reported in an 86-year-old male with underlying chronic conditions. The patient is a citizen of Hong Kong SAR but was living in Guangdong Province, China, during his incubation period. The patient had no recent contact with poultry. Investigations of close contacts are ongoing; so far all have tested negative for the virus.

Middle East Respiratory Syndrome Coronavirus (MERS-CoV): Since our last bulletin, 12 new cases of MERS-CoV have been reported from Middle Eastern countries, including Saudi Arabia (9), the United Arab Emirates (UAE; 2), and Oman (1). Of these latest reported cases, 5 were health care workers (all in Saudi Arabia) who were asymptomatic contacts of confirmed cases and 2 (in UAE) were part of a family cluster involving a husband with underlying chronic conditions and his wife who was asymptomatic. As of 31 December 2013, the WHO has been informed of a total of 176 laboratory-confirmed cases and 74 deaths. The latest case reported today in Oman, once confirmed, would bring the total to 177 cases. Given ongoing activity in affected regions and an incubation period of 10 days or more, clinicians are reminded to stay alert for possible importations among patients presenting with severe acute respiratory illness (SARI) and links to the Middle East. Details are available at: www.who.int/csr/don/2013_12_27/en/index.html.

WHO Recommendations for 2013-14 Northern Hemisphere Influenza Vaccine

On February 21, 2013, the WHO announced the recommended strain components for the 2013-14 northern hemisphere vaccine:

A/California/7/2009 (H1N1)pdm09 virus

A/Victoria/361/2011 (H3N2)-like virus*

B/Massachusetts/2/2012-(Yamagata lineage)-like virus**

*For A/H3N2, it is recommended that A/Texas/50/2012 be used as the A(H3N2) vaccine component because of antigenic changes in earlier A/Victoria/361/2011-like vaccine viruses (such as IVR-165) resulting from adaptation to propagation in eggs.

** This one of the three recommended components is different from the northern hemisphere seasonal TIV vaccines produced and administered in 2012-13 (although remaining of the same lineage).

For further details, see:

www.who.int/influenza/vaccines/virus/recommendations/2013_14_north/en/index.html.

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

NEW – Updated 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	(if ward or wing, please specify name/number: _____)														
		<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</u> / <u>MMM</u> / <u>YYYY</u>																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Numbers to date</th> <th style="width: 33%;">Residents/Students</th> <th style="width: 33%;">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	Update AND Outbreak Declared Over																	
	Date of onset for most recent case of ILI (dd/mm/yyyy): <u>DD</u> / <u>MMM</u> / <u>YYYY</u>																	
	If over, date outbreak declared over (dd/mm/yyyy): <u>DD</u> / <u>MMM</u> / <u>YYYY</u>																	
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Numbers to date</th> <th style="width: 33%;">Residents/Students</th> <th style="width: 33%;">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	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