

British Columbia Influenza Surveillance Bulletin

Influenza Season 2013-14, Number 14, Weeks 8-9

February 16 to March 1, 2014

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Influenza at stable low levels in BC with increasing contribution from influenza B

In weeks 8-9 (February 16 to March 1, 2014), influenza activity remains at stable low levels in BC, with co-circulation of influenza A(H1N1)pdm09, A(H3N2), and B. At the BC provincial laboratory, the influenza positivity rate was 17% in weeks 8-9, well below the peak of 45% observed in week 1 but stable at around 20% since week 4. Consistent with prior weeks this season, influenza A(H1N1)pdm09 remained the dominant circulating strain in week 8 (62% of subtyped viruses); however, influenza B comprised an increasing proportion of detections (26% in week 8 and 47% in week 9), suggesting late-season circulation of this virus. An increasing number of tests were also positive for influenza B at the BC Children and Women's Health Centre Laboratory in week 9. The BC Medical Services Plan consultation rates for influenza illness remained below historic norms throughout the province. One laboratory-confirmed influenza A (un-subtyped) outbreak was reported from a long-term care facility in Interior Health Authority in week 8. No laboratory-confirmed influenza outbreaks were reported in week 9.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team
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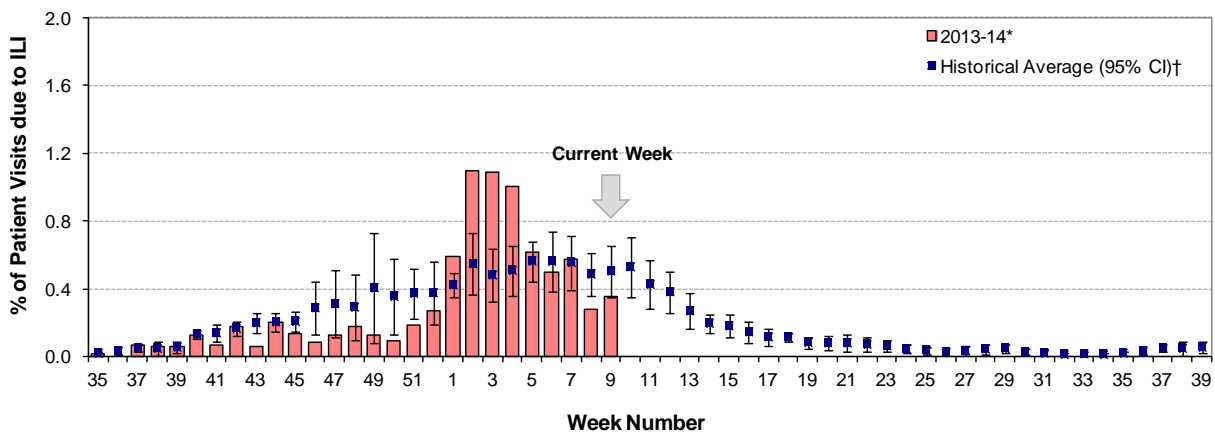
Report Disseminated: March 6, 2014

British Columbia

Sentinel Physicians

The proportion of patients with influenza-like illness (ILI) among those presenting to sentinel physicians was 0.3% and 0.4% in weeks 8 and 9, respectively, lower than previous weeks and below the historical average for this time of year. To date, 59% and 41% of sentinel sites have reported data for weeks 8 and 9, respectively.

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



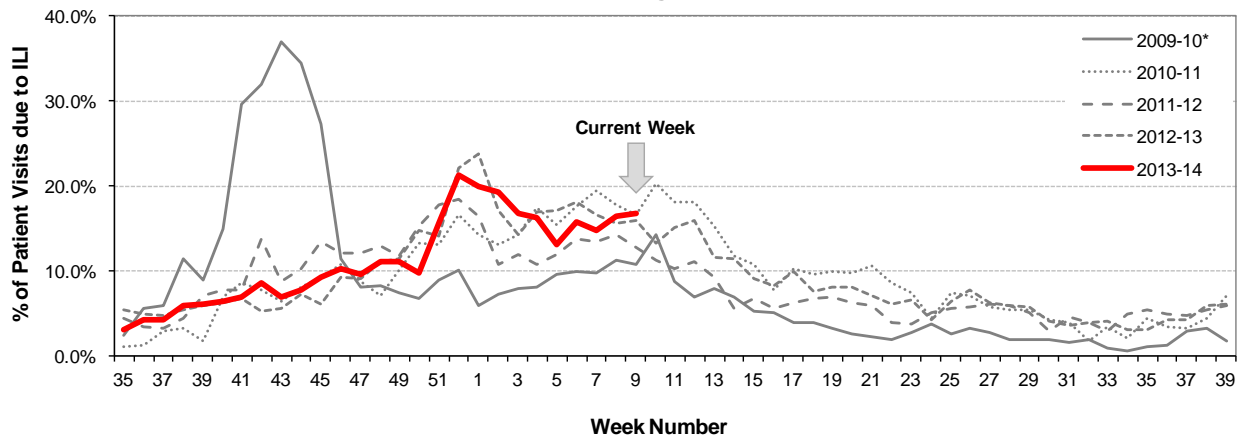
* Data are subject to change as reporting becomes more complete.

† 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

The proportion of visits to BC Children's Hospital Emergency Room (ER) attributed to ILI was 17% in weeks 8-9, below the peak of 21% observed in week 52 but relatively stable since week 6. So far this season, BC Children's Hospital ER consultation rates overall have been consistent with those from previous seasons.

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



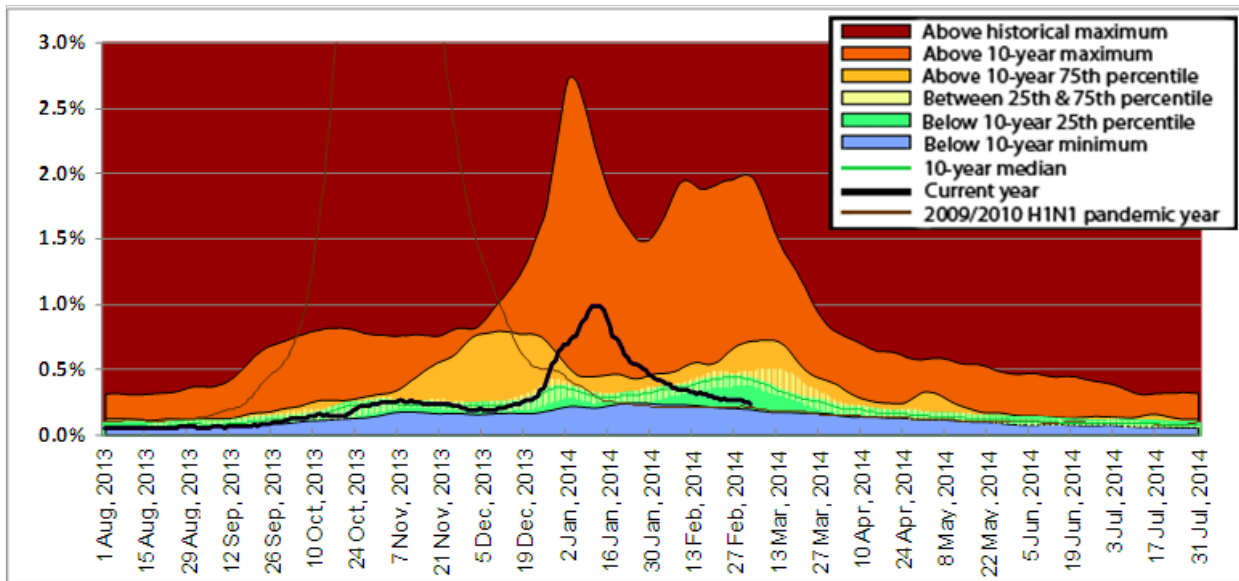
Source: BCCH Admitting, discharge, transfer database, ADT

* 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 8-9, BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, were below the 10-year 25th percentile throughout the province.

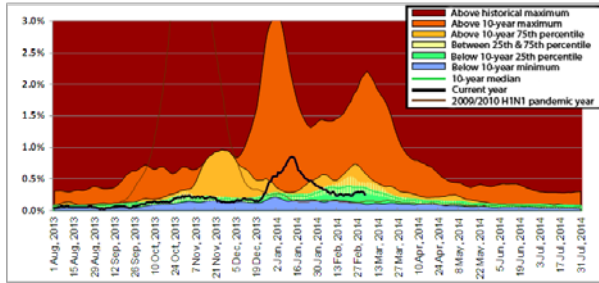
Service claims submitted to MSP for influenza illness (II)* as a proportion of all submitted general practitioner service claims, British Columbia, 2013-14



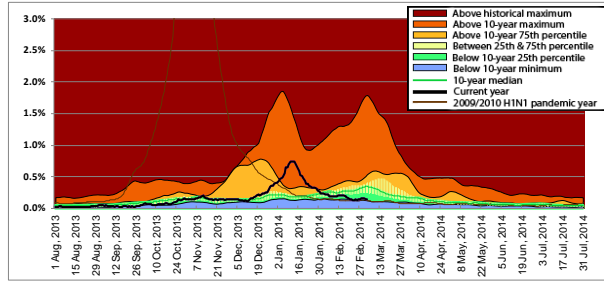
* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza). Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services

Note: MSP week beginning 1 August 2013 corresponds to sentinel ILI week 31; data current to 4 March 2014.

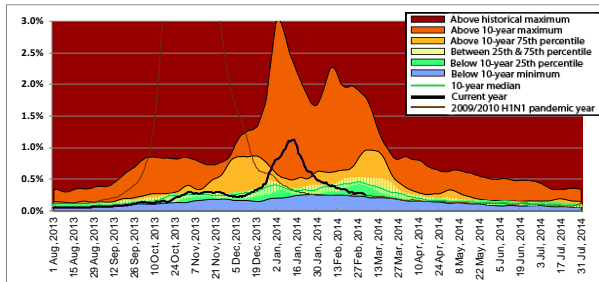
Interior



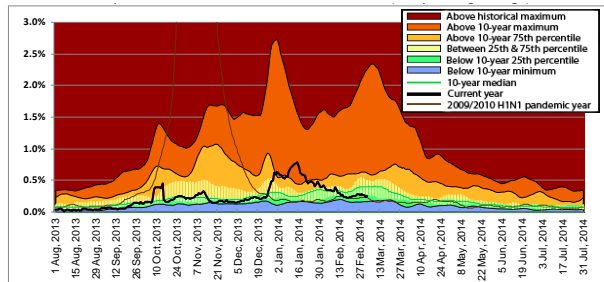
Vancouver Island



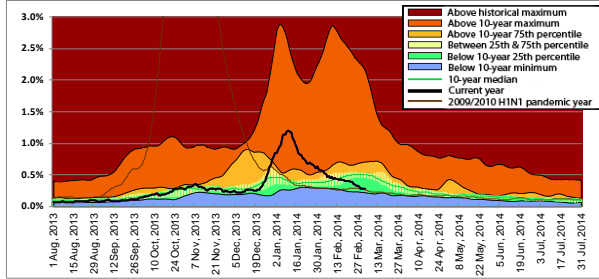
Fraser



Northern



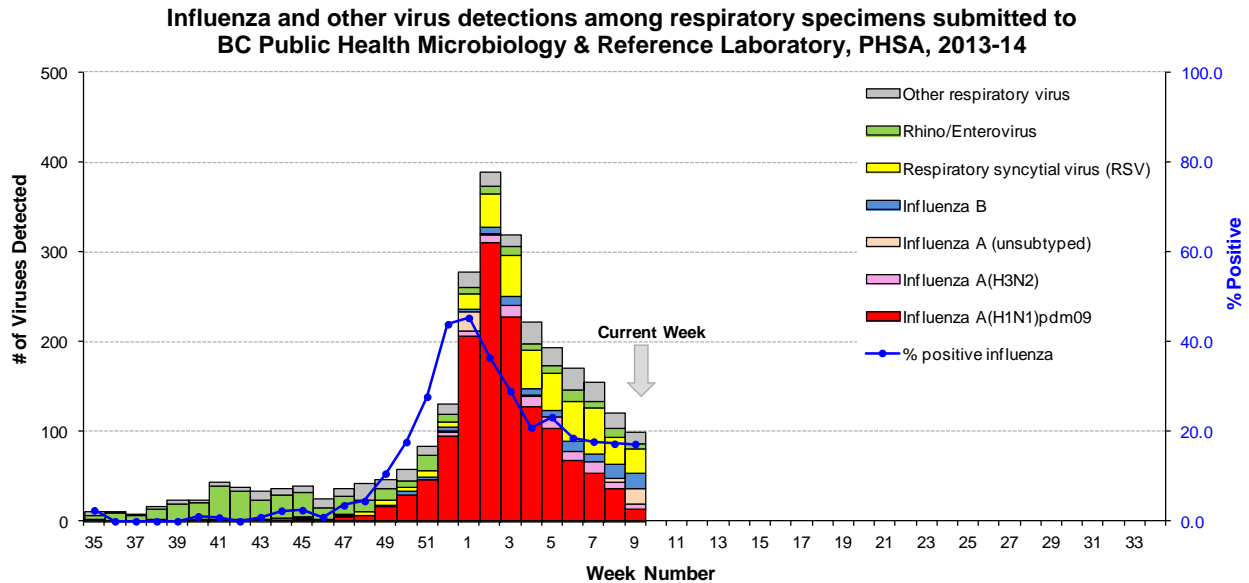
Vancouver Coastal



Laboratory Reports

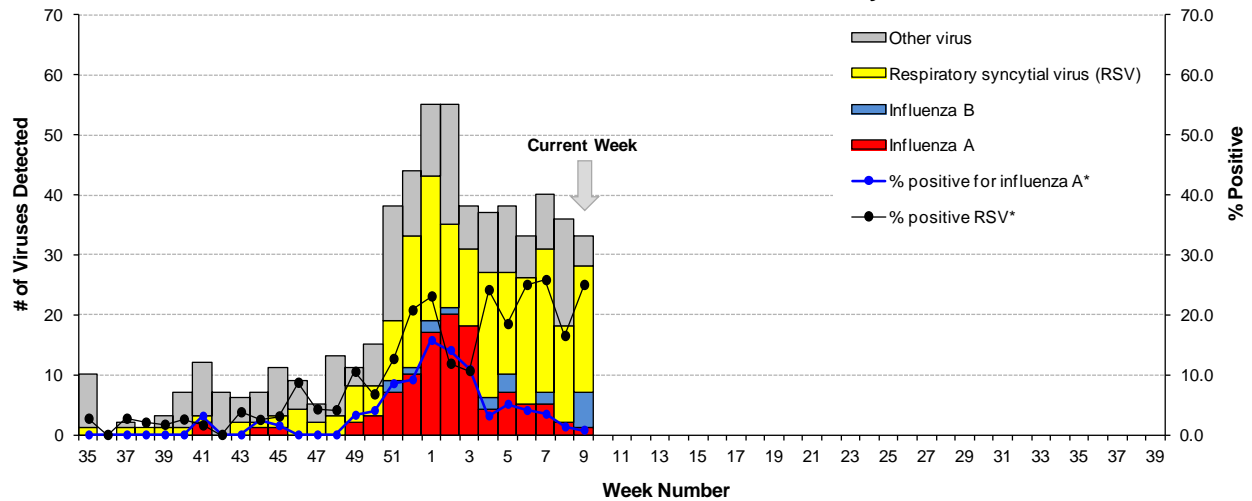
The proportion of specimens testing positive for influenza at the BC Public Health Microbiology & Reference Laboratory (PHMRL), PHSA, has remained stable at just under 20% since week 6, well below the peak of 45% observed in week 1. Of the 661 specimens tested in weeks 8-9, 114 (17%) were positive for influenza, including 62/359 (17%) in week 8 and 52/302 (17%) in week 9. By type/subtype, these included 82 influenza A [49 A(H1N1)pdm09, 13 A(H3N2), 20 A (subtype pending)] and 32 influenza B. Influenza A(H1N1)pdm09 remained the dominant circulating strain in week 8, representing 62% of subtyped viruses. However, influenza B comprised an increasing number of detections among all influenza positive specimens (24% in week 8 and 33% in week 9), as well as an increasing proportion of all tested respiratory specimens (4% in week 8 and 5% in week 9), suggesting a possible late-season circulation of this virus. Influenza A(H3N2) comprised 12% and 16% of subtyped viruses in weeks 8 and 9, respectively. Consistent with prior weeks this season, RSV was the most commonly detected other respiratory virus in weeks 8-9; 9% of all specimens tested positive for RSV over this period.

To date since week 40 (September 29 – October 5, 2013), 1,580 specimens have tested positive for influenza at the BC PHMRL. Of the 1,532 specimens with subtype information available, 1,339 (87%) were influenza A(H1N1)pdm09, 96 (6%) were influenza A(H3N2), and 97 (6%) were influenza B.



The proportion of tests positive for influenza A at the BC Children's and Women's Health Centre Laboratory decreased to 1% in weeks 8-9. While no tests were positive for influenza B in week 8, 7% were positive in week 9. RSV remained the most commonly detected respiratory virus over this period, with 16% and 25% of tests positive for this virus in weeks 8 and 9, respectively.

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



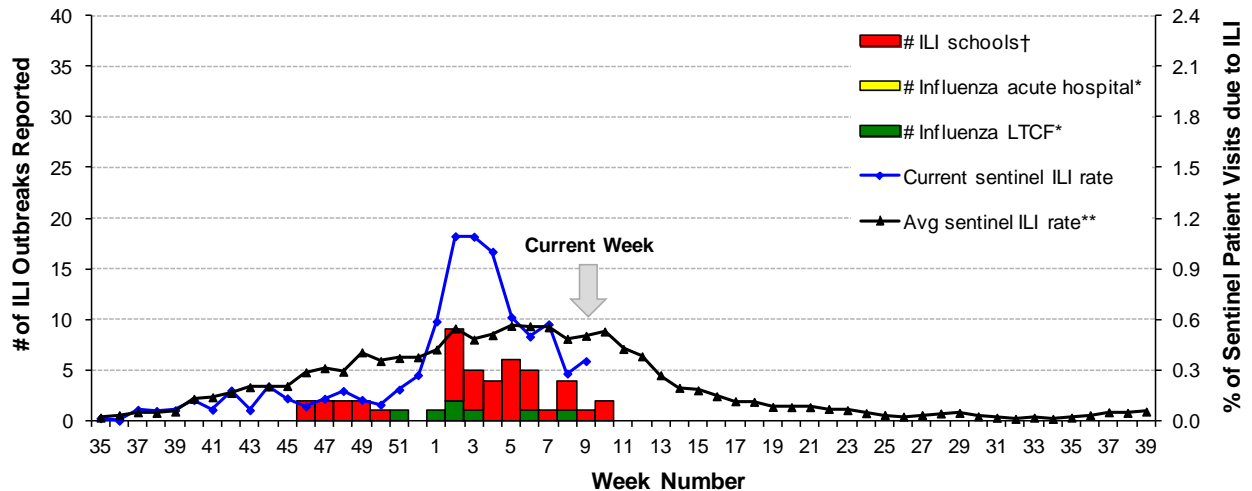
* Positive rates were calculated using aggregate data. The denominators for each rate represent the total number of tests; multiple tests may be performed for a single specimen and/or patient.

Influenza-like Illness (ILI) Outbreaks

In weeks 8-9, two ILI outbreaks were reported from long-term care facilities (LTCF) in IHA, including one due to influenza A (un-subtyped) and one due to RSV. Four school outbreaks were further reported over this period. So far in week 10, one LTCF outbreak from IHA with laboratory results pending, and two school outbreaks have been reported.

In total during the 2013-14 season, 30 LTCF outbreaks have been reported, including 7 outbreaks due to influenza viruses: 5 A(H1N1)pdm09 in FHA (2), IHA (2), and NHA (1); 1 influenza A (subtype unknown) in IHA; and 1 influenza B in FHA. In addition, 41 school outbreaks have been reported so far this season, including one due to A(H1N1)pdm09 in NHA in week 47.

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.

National

FluWatch (week 8):

In week 8, overall influenza activity continued to decrease in Canada, with the exception of eastern provinces that experienced a later start to the influenza season. The percentage of positive influenza tests decreased from 17% in week 7 to 14% in week 8. Cumulative influenza virus detections to date remain predominantly influenza A; however, the percentage of positive tests for influenza B has been rising slowly in recent weeks. In week 8, 71% of virus detections were influenza A and 29% were influenza B. Among influenza A viruses, A(H1N1)pdm09 remains the most common subtype circulating this season. Details are available at: www.phac-aspc.gc.ca/fluwatch/13-14/w08_14/index-eng.php.

National Microbiology Laboratory (NML): Strain Characterization

From September 1, 2013 to March 6, 2014, 1,248 isolates were collected from provincial and hospital laboratories for antigenic characterization at the NML:

- 55 A/Texas/50/2012-like A(H3N2)[¶] from NS, NB, ON, SK, AB, BC and YT
- 1,022 A/California/07/09-like [A(H1N1)pdm09]^{*} from NL, PE, NS, NB, QC, ON, MB, SK, AB, BC, NT and NU; of these, 2 viruses showed reduced titres with antiserum produced against A/California/7/2009 signalling possible antigenic change
- 158 B/Massachusetts/02/12-like[†] from NL, NB, QC, ON, SK, AB, and BC
- 13 B/Brisbane/60/2008-like^{**} from QC, ON, MB, AB, and BC

[¶] 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, 2013 to March 6, 2014, drug susceptibility testing was performed at the NML for influenza viruses: 1,104 influenza A [76 A(H3N2) and 1,028 A(H1N1)pdm09] viruses were tested for resistance to amantadine; 883 influenza viruses [48 A(H3N2), 742 A(H1N1)pdm09, and 93 B] were tested for resistance to oseltamivir; and 882 influenza viruses [48 A(H3N2), 741 A(H1N1)pdm09, and 93 B] were tested for resistance to zanamivir. All tested influenza A viruses were resistant to amantadine. All but two tested viruses were sensitive to oseltamivir, and all were sensitive to zanamivir. Both viruses resistant to oseltamivir were A(H1N1)pdm09 viruses with a H275Y mutation.

International

USA (week 8): Influenza activity in the United States decreased, but remained elevated in week 8. Of the 6,813 specimens tested, 738 (11%) were positive for influenza viruses, of which 83% were influenza A [55% A(H1N1)pdm09, 4% A(H3N2), 41% A (un-subtyped)] and 17% were influenza B. The proportion of deaths attributed to pneumonia and influenza was above the epidemic threshold, and the proportion of outpatient visits for ILI was above the national baseline. Widespread influenza activity was reported from 10 states over this period. Details are available at: www.cdc.gov/flu/weekly/.

WHO (as of 24 February 2014): In North America, influenza A(H1N1)pdm09 viruses remained predominant. Influenza activity continued to decrease in Canada, Mexico and the United States, but remained at elevated levels. In Europe, overall influenza activity remained elevated. Trends suggest the wave of influenza activity is moving from south to north overall, with both influenza A(H1N1)pdm09 and A(H3N2) viruses circulating. In Eastern Asia, influenza activity remained high with influenza A(H1N1)pdm09 predominant. In Northern Africa and Western Asia, influenza activity was variable, with Egypt reporting high activity of influenza A(H1N1)pdm09 and an increased number of severe cases. During weeks 5-6 (26 January to 8 February 2014), the WHO Global Influenza Surveillance and Response System (GISRS) laboratories tested more than 87,378 specimens: 20,777 were positive for influenza viruses, of which 18,487 (89%) were typed as influenza A and 2,290 (11%) as influenza B. Of the subtyped influenza A viruses, 9,141 (77%) were influenza A(H1N1)pdm09, 2,735 (23%) were influenza A(H3N2), and 1 (0%) was influenza A(H5N1). Of the characterized B viruses, 127 (75%) belong to the B-Yamagata lineage and 43 (25%) to the B-Victoria lineage. Details are available at: www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance/en/.

Avian Influenza A(H7N9) Virus: Since our last surveillance bulletin, 23 new cases of human infection with avian influenza A(H7N9) have been reported, increasing the number of second-wave cases to 248, almost double the number reported during the first wave of the outbreak from February to May 2013 (n=134). However, the number of reported cases has waned in recent weeks, suggesting a second-wave peak around mid-January 2014. Cumulatively to date (as of 5 March 2014), 384 cases and 116 deaths have been reported (case fatality: 30%). This total number of cases includes travel-related cases reported from Taiwan (2), Hong Kong (6), and Malaysia (1). To date, 15 provinces or municipalities in south-eastern China have been affected. On 21 February 2014, Jilin Province, the northernmost affected province to date, located northeast of Beijing and bordering North Korea and Russia, reported its first H7N9 case in a poultry farm worker. This week, a sixth travel-related case was also reported by Hong Kong. These latest travel-related H7N9 cases, along with the recent importation of an H5N1 case in Canada, although rare, highlight the potential for cases outside of affected areas in China. 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/en/.

Middle East Respiratory Syndrome Coronavirus (MERS-CoV): Since our last surveillance bulletin, 4 new cases of MERS-CoV have been reported from Saudi Arabia, of whom 1 died, 2 were admitted to ICU, and 1 was asymptomatic. All 3 symptomatic patients were adults ≥50 years of age with underlying chronic comorbidities. Since the emergence of this novel virus in April 2012, 190 MERS-CoV cases and 82 deaths have been reported. 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/en/.

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**

*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.

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 vaccine:

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

These recommended strains are the same as those used for the 2013-14 northern hemisphere vaccine.

For further details, see: www.who.int/influenza/vaccines/virus/recommendations/2014_15_north/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	

Recently 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	<u>Reporting Information</u> Health unit/medical health officer notified? <input type="checkbox"/> Yes <input type="checkbox"/> No
	Person Reporting: _____ Title: _____
	Contact Phone: _____ Email: _____
	Health Authority: _____ HSDA: _____
	Full Facility Name: _____
	Is this report: <input type="checkbox"/> First Notification (<i>complete section B below; Section D if available</i>) <input type="checkbox"/> Update (<i>complete section C below; Section D if available</i>) <input type="checkbox"/> Outbreak Over (<i>complete section C below; Section D if available</i>)

B	<u>First Notification</u>														
	Type of facility: <input type="checkbox"/> LTCF <input type="checkbox"/> Acute Care Hospital <input type="checkbox"/> Senior's Residence <i>(if ward or wing, please specify name/number: _____)</i> <input type="checkbox"/> Workplace <input type="checkbox"/> School (grades: _____) <input type="checkbox"/> Other (_____)														
	Date of onset of first case of ILI (dd/mm/yyyy): <u>DD</u> / <u>MMM</u> / <u>YYYY</u>														
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Numbers to date</th> <th style="width: 50%;">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	
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Total															
With ILI															
Hospitalized															
Died															

C	<u>Update AND Outbreak Declared Over</u>														
	Date of onset for most recent case of ILI (dd/mm/yyyy): <u>DD</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>														
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D	<u>Laboratory Information</u>
	Specimen(s) submitted? <input type="checkbox"/> Yes (location: _____) <input type="checkbox"/> No <input type="checkbox"/> Don't know If yes, organism identified? <input type="checkbox"/> Yes (specify: _____) <input type="checkbox"/> No <input type="checkbox"/> Don't know