

British Columbia Influenza Surveillance Bulletin

Influenza Season 2013-14, Number 15, Week 10

March 2 to 8, 2014

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Increasing influenza B activity in BC

In week 10 (March 2 to 8, 2014), influenza activity remained at stable, low levels in BC but with increasing contribution from influenza B.

At the BC provincial laboratory, the overall influenza positivity rate was 15% in week 10 with influenza B viruses now comprising about half of all influenza positive specimens (23/45), up from just 5% in weeks 3-5, and suggesting late-season circulation of this virus warranting further monitoring.

In week 10, 87% of subtyped influenza A viruses were A(H1N1)pdm09 and 13% were A(H3N2).

Relatively few influenza A(H3N2) viruses have been detected cumulatively this season, compared to the 2012/13 season when A(H3N2) viruses predominated.

In week 10, two long-term care facility outbreaks and three school outbreaks were reported with laboratory results pending or due to unknown pathogens.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

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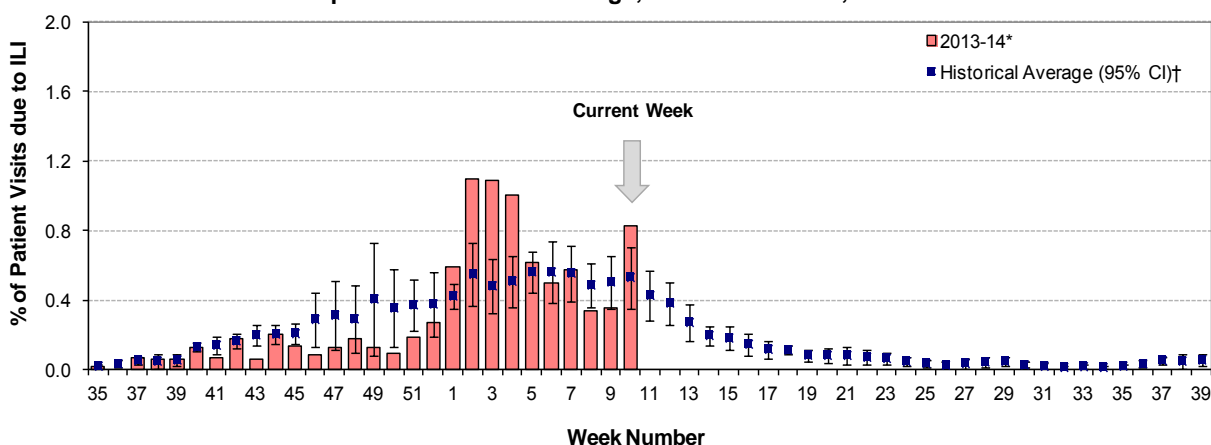
Report Disseminated: March 13, 2014

British Columbia

Sentinel Physicians

The proportion of patients with influenza-like illness (ILI) among those presenting to sentinel physicians increased to 0.8% in week 10, more than double the rate observed in weeks 8-9 and significantly above the expected range for this time of year. However, rates are subject to change as data become more complete; so far, only 49% of sentinel sites have reported data in week 10.

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



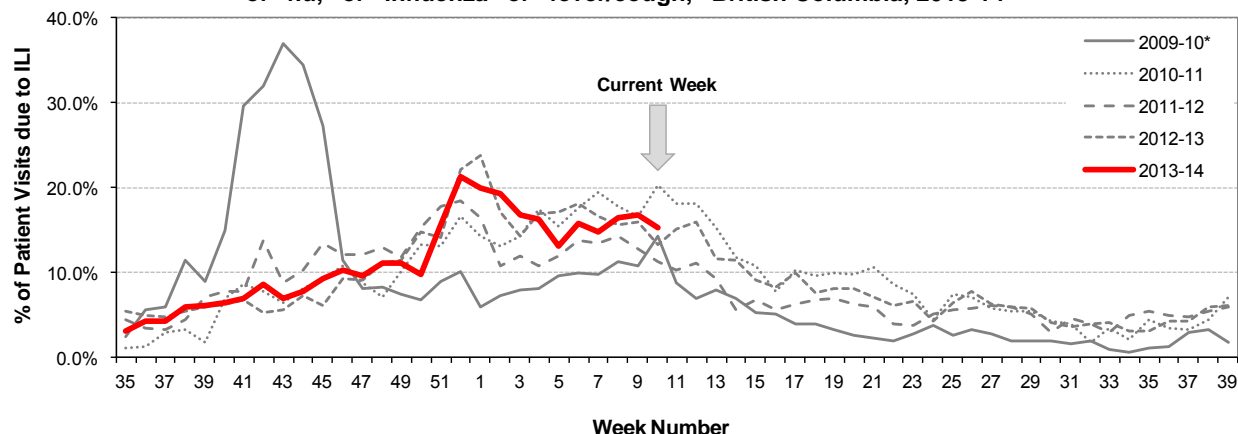
* Data are subject to change as reporting becomes more complete.

† 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 15% in week 10, 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



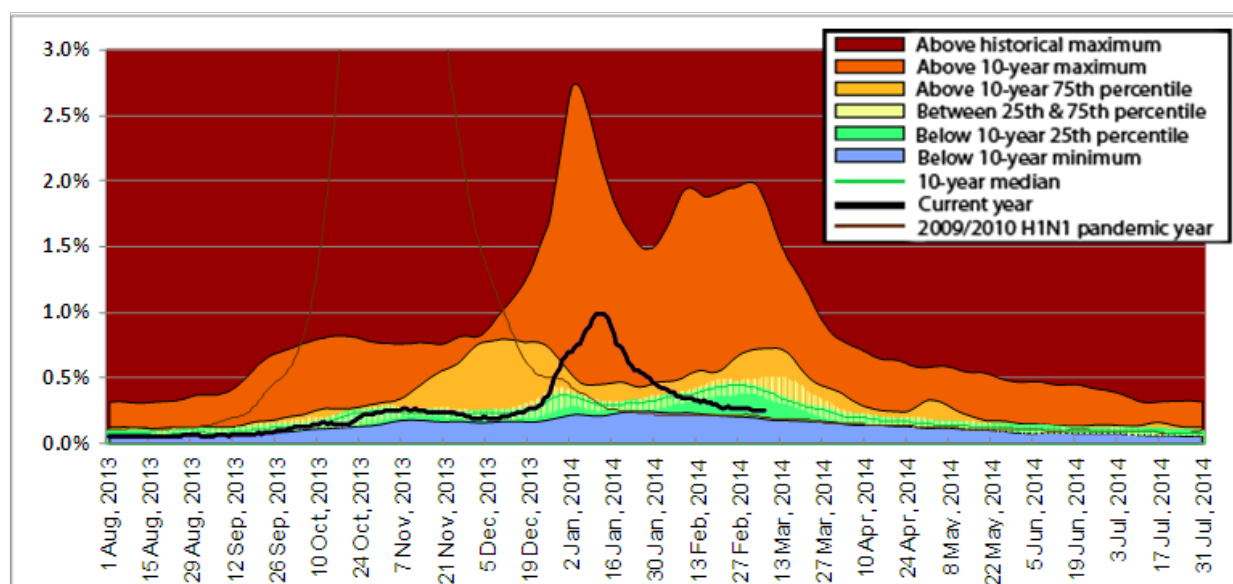
Source: BCCH Admitting, discharge, transfer database, ADT

* 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 week 10, BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, remained stable at below the 10-year 25th percentiles throughout the province.

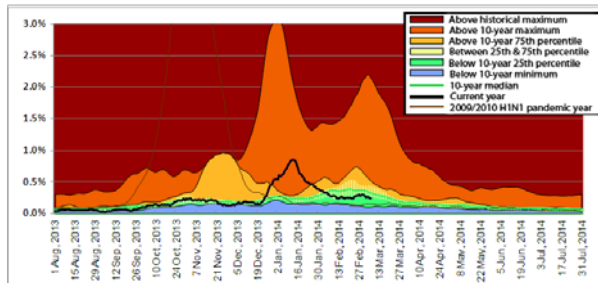
Service claims submitted to MSP for influenza illness (II)* as a proportion of all submitted general practitioner service claims, British Columbia, 2013-14



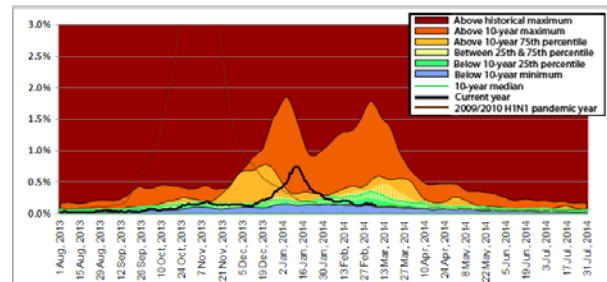
* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza). Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services

Note: MSP week beginning 1 August 2013 corresponds to sentinel ILI week 31; data current to 07 March 2014.

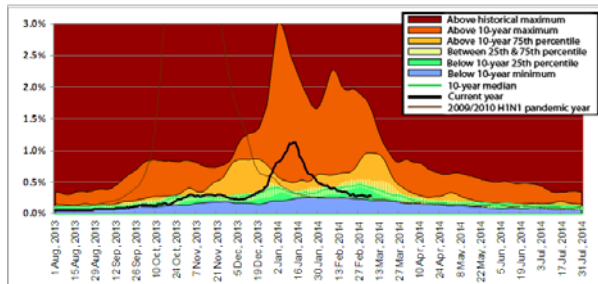
Interior



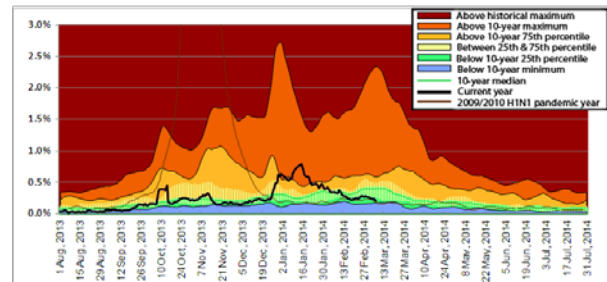
Vancouver Island



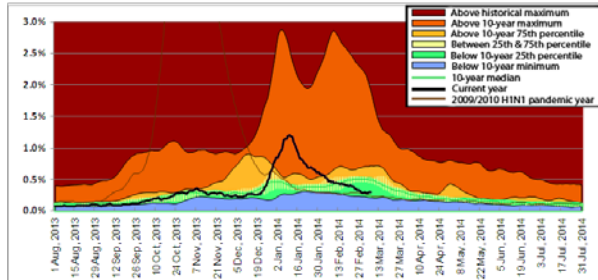
Fraser



Northern



Vancouver Coastal

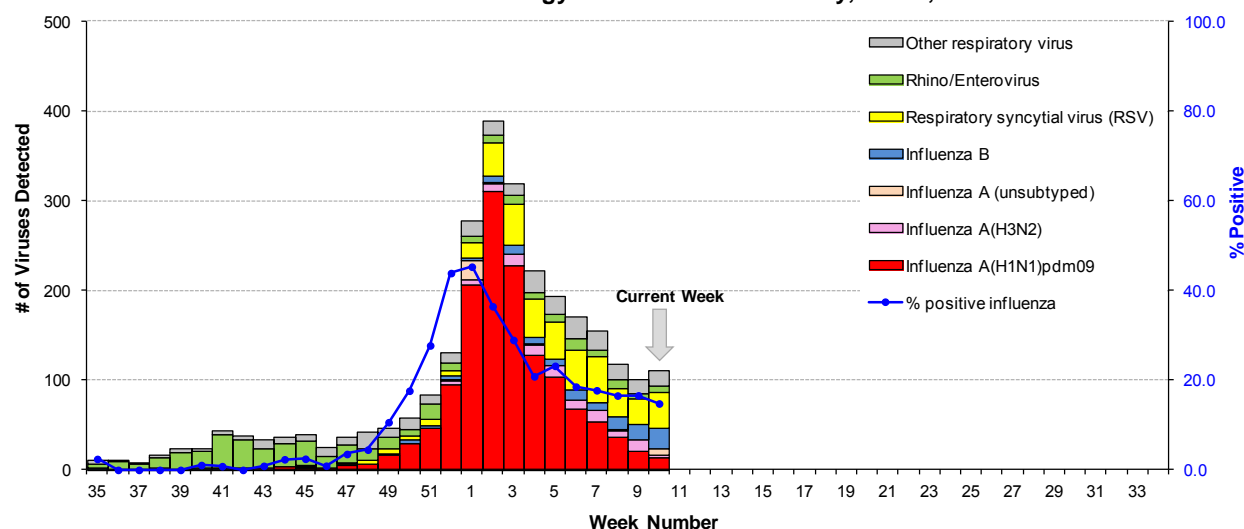


Laboratory Reports

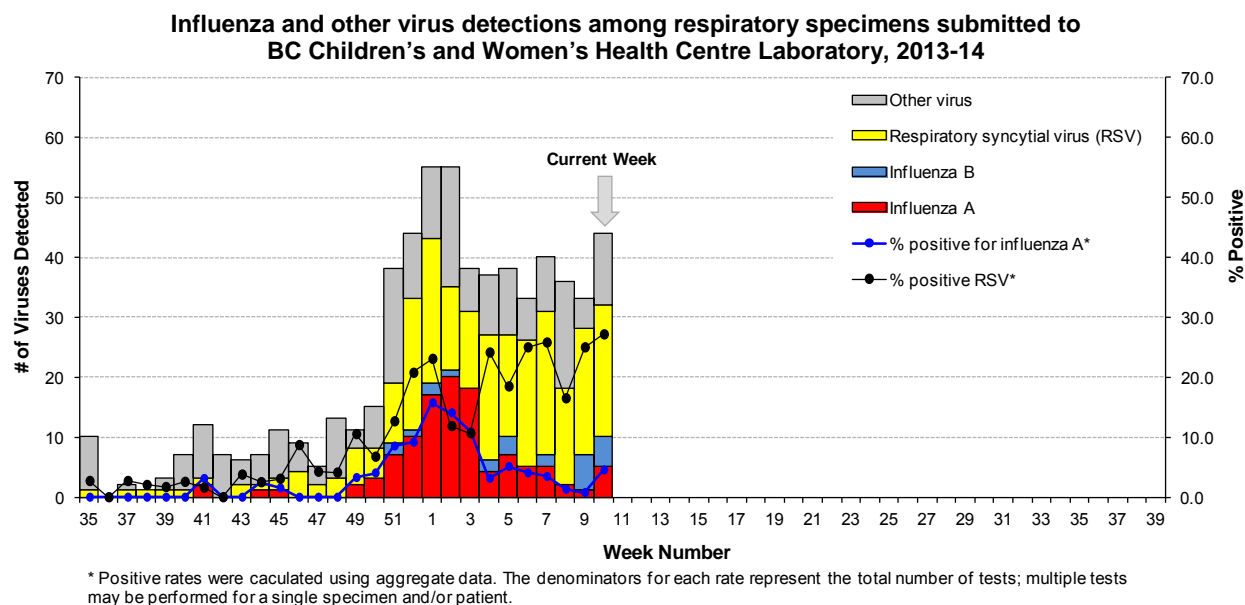
The proportion of specimens testing positive for influenza at the BC Public Health Microbiology & Reference Laboratory (PHMRL), PHSA, has remained stable at just below 20% since week 6 and was 15% in week 10. Influenza A(H1N1)pdm09 activity continued to decrease in week 10, while influenza B activity continued to increase. Influenza B viruses now comprise approximately half of all influenza-positive specimens. Of the 304 respiratory specimens tested in week 10, 45 (15%) were positive for influenza, including 22/45 (49%) influenza A [13 A(H1N1)pdm09, 2 A(H3N2), and 7 with subtype pending] and 23/45 (51%) influenza B. Among subtyped influenza A viruses, 13/15 (87%) were A(H1N1)pdm09 and 2/15 (13%) were A(H3N2) in week 10. RSV was the most commonly detected other respiratory virus in week 10; 13% of specimens tested positive for RSV over this period.

To date since week 40 (September 29 – October 5, 2013), 1,620 specimens have tested positive for influenza at the BC PHMRL. Of the 1,584 specimens with subtype information available, 1,359 (86%) were influenza A(H1N1)pdm09, 105 (7%) were influenza A(H3N2), and 120 (8%) were influenza B.

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



The proportion of tests positive for influenza A at the BC Children's and Women's Health Centre Laboratory increased from 1% in week 9 to 5% in week 10, although remaining well below the peak of 16% observed in week 1. The proportion of tests positive for influenza B was stable at around 6-7% in weeks 9 and 10. RSV remained the most commonly detected respiratory virus over this period, with 27% of tests positive for this virus in week 10.

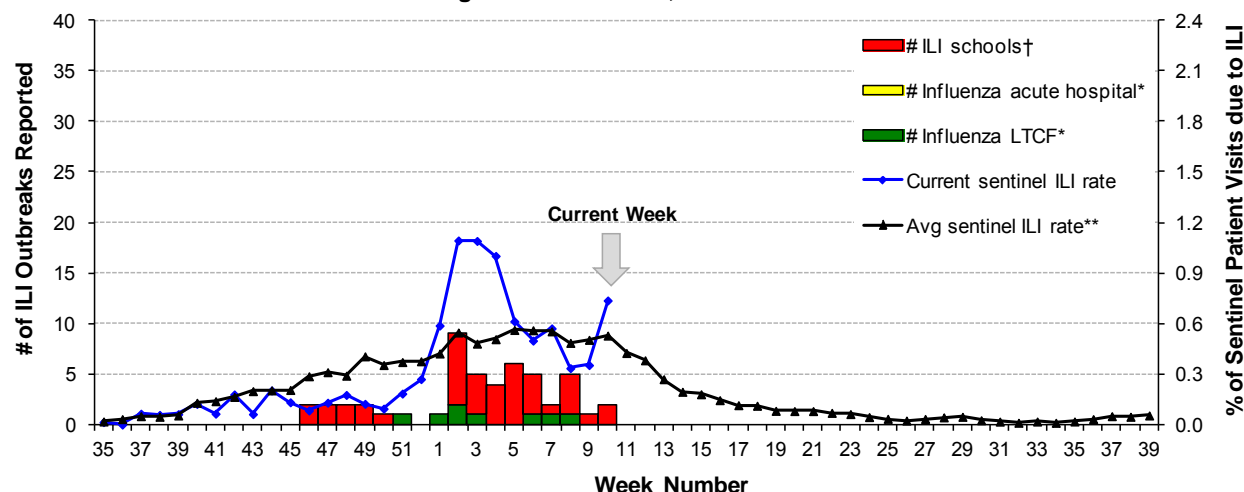


Influenza-like Illness (ILI) Outbreaks

In week 10, five ILI outbreaks were reported, including two in long-term care facilities (LTCF) and three in schools with laboratory results pending or due to unknown pathogens. So far in week 11, one LTCF outbreak was further reported.

In total during the 2013-14 season, 33 LTCF ILI outbreaks have been reported, including 8 outbreaks due to influenza viruses: 5 total A(H1N1)pdm09 in FHA (2), IHA (2), and NHA (1); 1 A(H3N2) in FHA; 1 influenza A (subtype unknown due to insufficient viral copies) in IHA; and 1 influenza B in FHA. In addition, 42 school outbreaks have been reported so far this season, including one due to A(H1N1)pdm09 in NHA.

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 9):

In week 9, overall influenza activity continued to decrease in Canada, following a pattern similar to the 2012-13 season. Only one region in Quebec reported widespread activity. The percentage of positive influenza tests was 13% in week 9. However, circulation of influenza B continued to increase in week 9, with influenza B comprising 37% of all influenza detections. Influenza A(H1N1)pdm09 virus remained the most common influenza A virus detected, representing 88% of subtyped influenza A viruses in week 9. Compared to last season, a greater proportion of adults 20-64 years of age have been affected. The number of sentinel paediatric and adult hospitalizations continues to decline. Compared to the same period last season, fewer hospitalizations but a similar number of deaths have been reported. Details are available at: http://www.phac-aspc.gc.ca/fluwatch/13-14/w09_14/index-eng.php.

National Microbiology Laboratory (NML): Strain Characterization

From September 1, 2013 to March 13, 2014, one thousand four hundred and one isolates were collected from provincial and hospital laboratories for antigenic characterization at the NML:

- 64 A/Texas/50/2012-like A(H3N2)[¶] from NS, NB, ON, SK, AB, BC and YT
- 1131 A/California/07/2009-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
- 192 B/Massachusetts/02/2012-like[†] from NL, NB, QC, ON, SK, AB, and BC
- 14 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 13, 2014, drug susceptibility testing was performed at the NML for influenza viruses: 1165 influenza A [88 A(H3N2) and 1077 A(H1N1)pdm09] viruses were tested for resistance to amantadine; 996 influenza viruses [53 A(H3N2), 833 A(H1N1)pdm09, and 110 B] were tested for resistance to oseltamivir; and 993 influenza viruses [53 A(H3N2), 830 A(H1N1)pdm09, and 110 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 9): Influenza activity in the United States continued to decrease in week 9. Of the 6,748 specimens tested, 587 (9%) were positive for influenza viruses, of which 80% were influenza A [43% A(H1N1)pdm09, 10% A(H3N2), 46% A (un-subtyped)] and 20% were influenza B. The proportion of deaths attributed to pneumonia and influenza was above the epidemic threshold. The proportion of outpatient visits for influenza-like illness (ILI) was at the national baseline of 2%. Widespread influenza activity was reported from 8 states over this period. Details are available at: www.cdc.gov/flu/weekly/.

WHO (as of 10 March 2014): In North America, influenza activity continued to decrease overall, but remained elevated in some regions. Influenza A(H1N1)pdm09 continued to be the predominant circulating virus, and influenza B detections increased slightly throughout the region. In Europe, influenza activity was variable between countries. Overall trends showed slight increases in activity in the northern and eastern regions, and decreases in the southwestern region. Influenza A(H1N1)pdm09 and A(H3N2) continued to co-circulate, with variable predominance of A(H1N1)pdm09 or A(H3N2) among countries. In Eastern Asia, influenza A(H1N1)pdm09 remained predominant and trends were inconsistent. Influenza activity in China began to decrease, while activity in Mongolia continued to increase. In Tropical Asia, influenza activity decreased, while Thailand reported increasing influenza A(H1N1)pdm09 activity. In Northern Africa and Western Asia, influenza activity varied, with Egypt continuing to report high activity of influenza A(H1N1)pdm09. During weeks 7-8 (9 to 22 February 2014), the WHO Global Influenza Surveillance and Response System (GISRS) laboratories tested more than 80,809 specimens: 16,409 were positive for influenza viruses, of which 13,869 (85%) were typed as influenza A and 2,540 (16%) as influenza B. Of the subtyped influenza A viruses, 6,283 (71%) were influenza A(H1N1)pdm09 and 2,612 (29%) were influenza A(H3N2). Of the characterized B viruses, 124 (85%) belonged to the B-Yamagata lineage and 22 (15%) 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, 5 new cases of human infection with avian influenza A(H7N9) have been reported in China as part of the ongoing second wave of cases since October 2013. Of these latest cases, 4 of 5 reported exposure to live poultry and all were adults ≥20 years of age. Cumulatively to date (as of 13 March 2014), 389 cases and 121 deaths have been reported (case fatality: 30%). 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, one new case of MERS-CoV has been reported from the United Arab Emirates in a patient with underlying medical conditions who had no contact with other known cases and no travel history. The patient had occupational exposure to farm animals, including camels. Since the emergence of this novel virus in April 2012, 191 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
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

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

Reporting Information

Health unit/medical health officer notified? ☐ Yes ☐ No

Person Reporting: _____ Title: _____

Contact Phone: _____ Email: _____

Health Authority: _____ HSDA: _____

Full Facility Name: _____

Is this report: ☐ First Notification (*complete section B below; Section D if available*)
☐ Update (*complete section C below; Section D if available*)
☐ Outbreak Over (*complete section C below; Section D if available*)

B

First Notification

Type of facility: ☐ LTCF ☐ Acute Care Hospital ☐ Senior's Residence
(if ward or wing, please specify name/number: _____)
☐ Workplace ☐ School (grades: _____) ☐ Other (_____)

Date of onset of first case of ILI (dd/mm/yyyy): DD / MMM / YYYY

| 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): DD / MMM / YYYY

If over, date outbreak declared over (dd/mm/yyyy): DD / MMM / YYYY

| Numbers to date | Residents/Students | Staff |
|---------------------|--------------------|-------|
| Total | | |
| With ILI | | |
| Hospitalized | | |
| Died | | |

D

Laboratory Information

Specimen(s) submitted? ☐ Yes (location: _____) ☐ No ☐ Don't know

If yes, organism identified? ☐ Yes (specify: _____) ☐ No ☐ Don't know