BC Centre for Disease Control
An agency of the Provincial Health Services Authority

British Columbia Influenza Surveillance Bulletin

Influenza Season 2013-14, Number 12, Week 5
January 26 to February 1, 2014

Table of Contents:

Declining influenza A(H1N1)pdm09 activity in BC

In week 5 (January 26 to February 1, 2014), medical visits for influenza-like illness showed significant decline since the apparent peak in consultations less than one month ago. The proportion of respiratory specimens testing positive for influenza overall at the BC provincial reference laboratory has decreased by about half from a peak of 45% in week 1 to 23% in week 5, comparable to week 4. Among influenza detections, the A(H1N1)pdm09 virus continues to predominate (82% of typed/subtyped viruses) but less so compared to its peak contribution in week 1 (96%) with A(H3N2) and influenza B now comprising 12% and 6%, respectively, of detections, an increase from 3% and 1%, respectively, in week 1. No laboratory-confirmed influenza outbreaks were reported in week 5. So far in week 6, one laboratory-confirmed influenza A outbreak was reported from IHA for which subtype information is pending.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team
Contributors: Helen Guiyun Li, Catharine Chambers, Danuta Skowronski, Lisan Kwindt

Report Disseminated: February 6, 2014

Provincial Health Services Authority
Province-wide solutions. Better health.

ACCREDITED • AGRÉÉ • CCHSA • CCASS

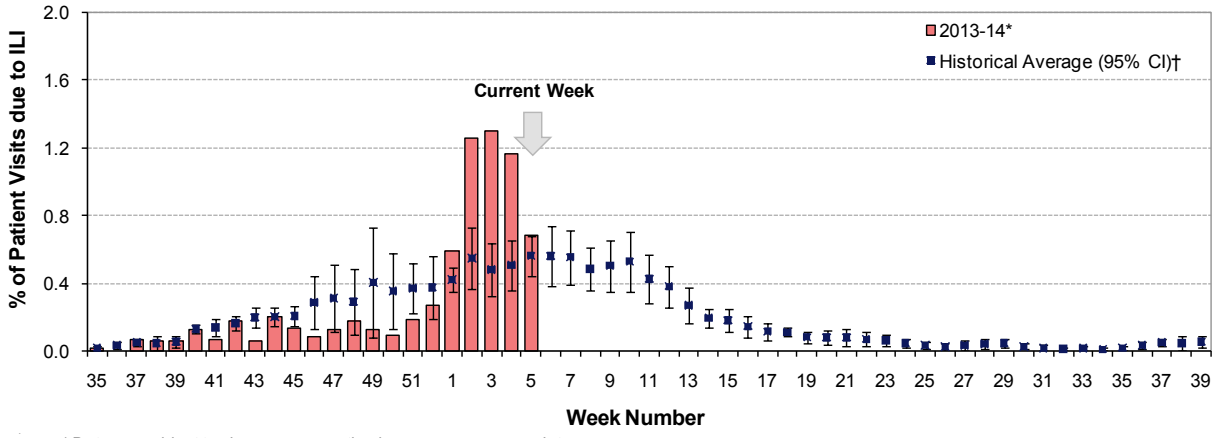
A research and teaching centre affiliated with UBC

British Columbia

Sentinel Physicians

The proportion of patients with influenza-like illness (ILI) among those presenting to sentinel physicians decreased from a peak of >1% in weeks 2-4 to 0.7% in week 5. ILI consultation rates approached the expected range for this time of year, after exceeding historical averages for the past four weeks and, in particular, weeks 2-4. To date in week 5, 51% of sentinel sites have reported data.

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

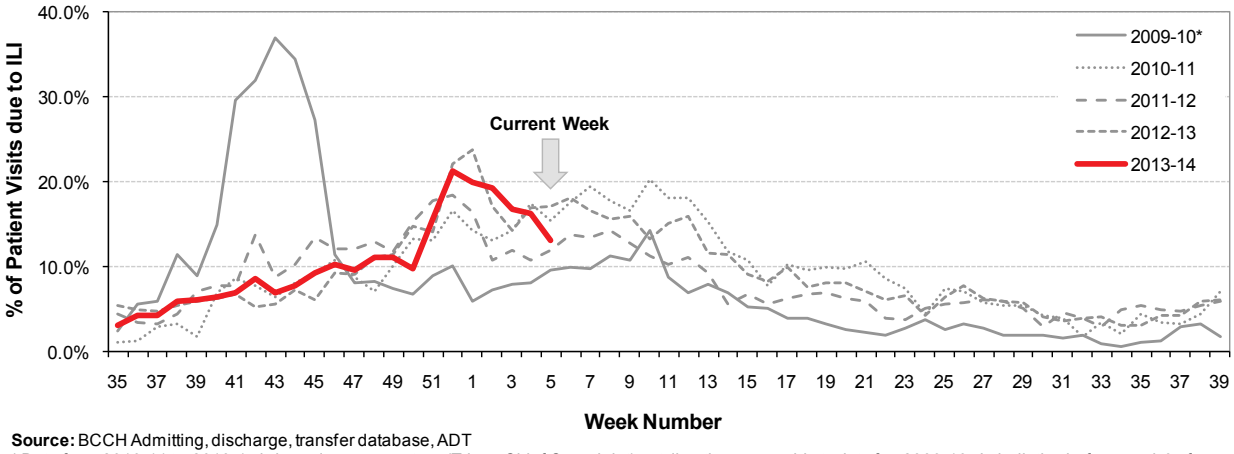


* Data are subject to change as reporting becomes more complete.
† Historical average based on 2001-02 to 2012-13 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality; CI=confidence interval.

BC Children's Hospital Emergency Room

The proportion of visits to BC Children's Hospital Emergency Room (ER) attributed to ILI continued to decrease from a peak of 21% in week 52 to 13% in week 5. Overall, rates were consistent with those from previous seasons for this time of year.

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

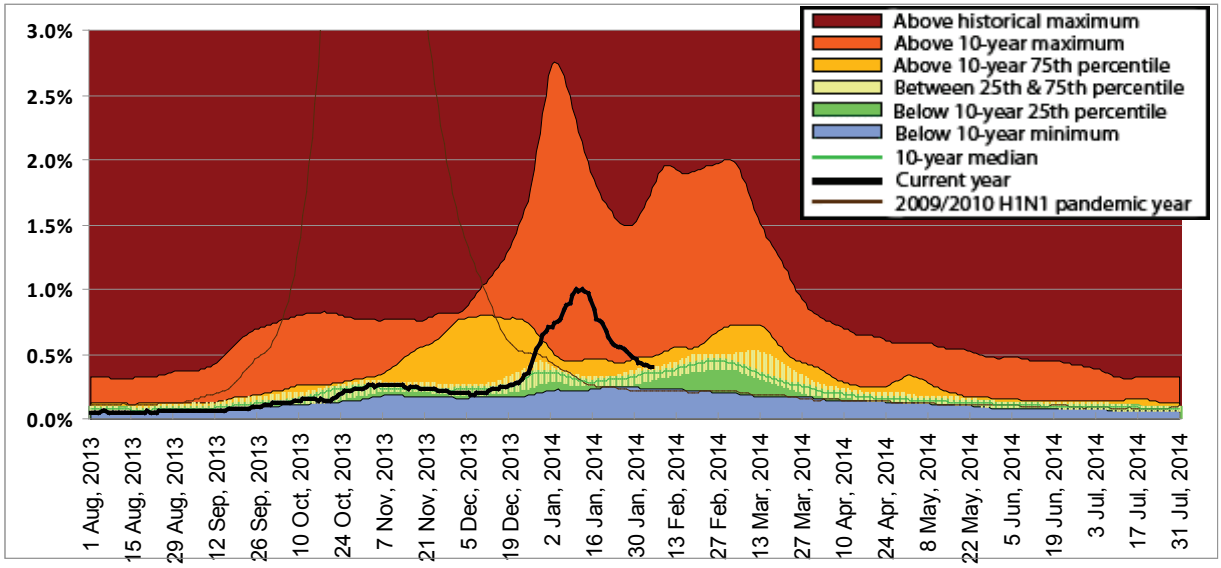


Source: BCCH Admitting, discharge, transfer database, ADT
* Data from 2010-11 to 2013-14 is based on new system (Triage Chief Complaint) not directly comparable to data for 2009-10. In bulletins before week 9 of 2011-12 season, data is based on old system.

Medical Services Plan

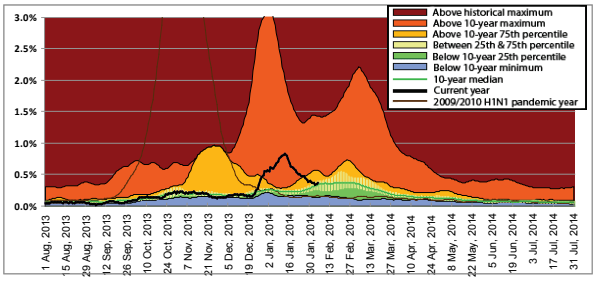
In week 5, BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, further decreased throughout the province, with rates at or approaching 10-year median levels in most regions.

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

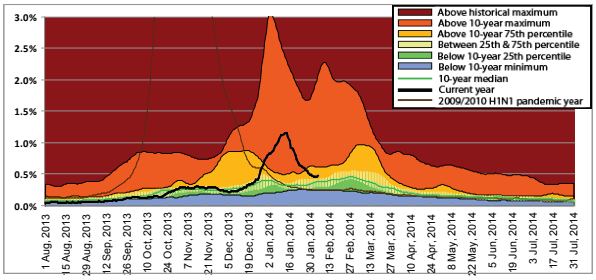


* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza).
Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services
Note: MSP week beginning 1 August 2013 corresponds to sentinel ILI week 31; data current to 5 February 2014.

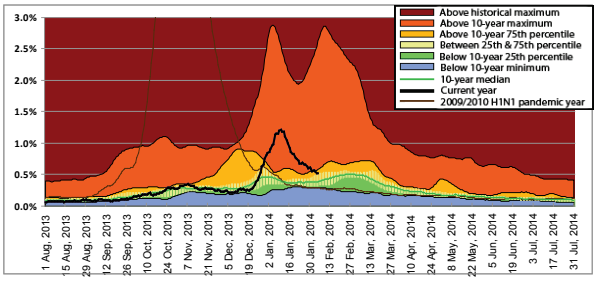
Interior



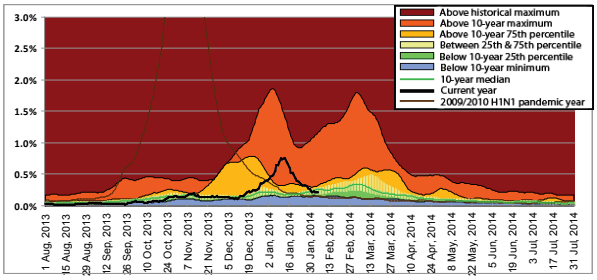
Fraser



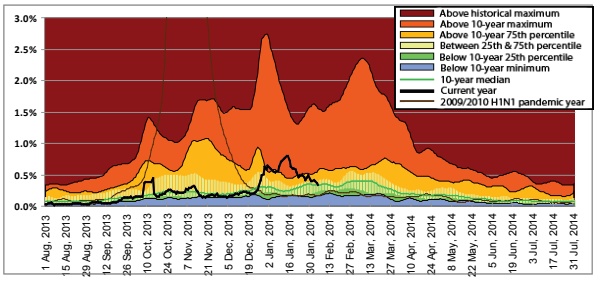
Vancouver Coastal



Vancouver Island



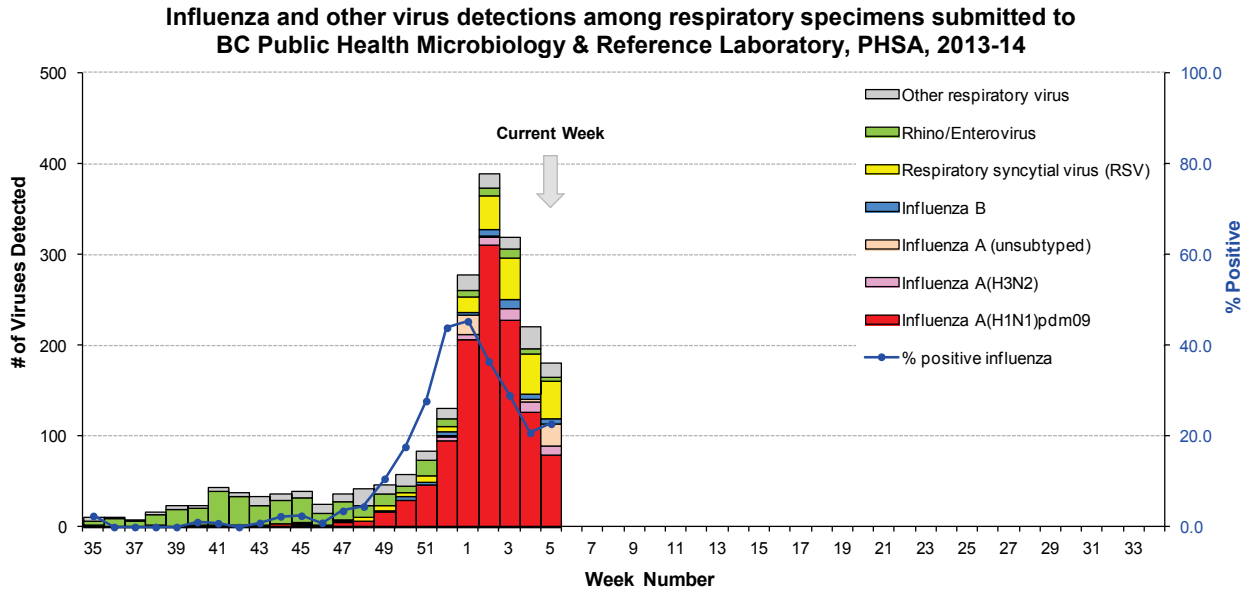
Northern



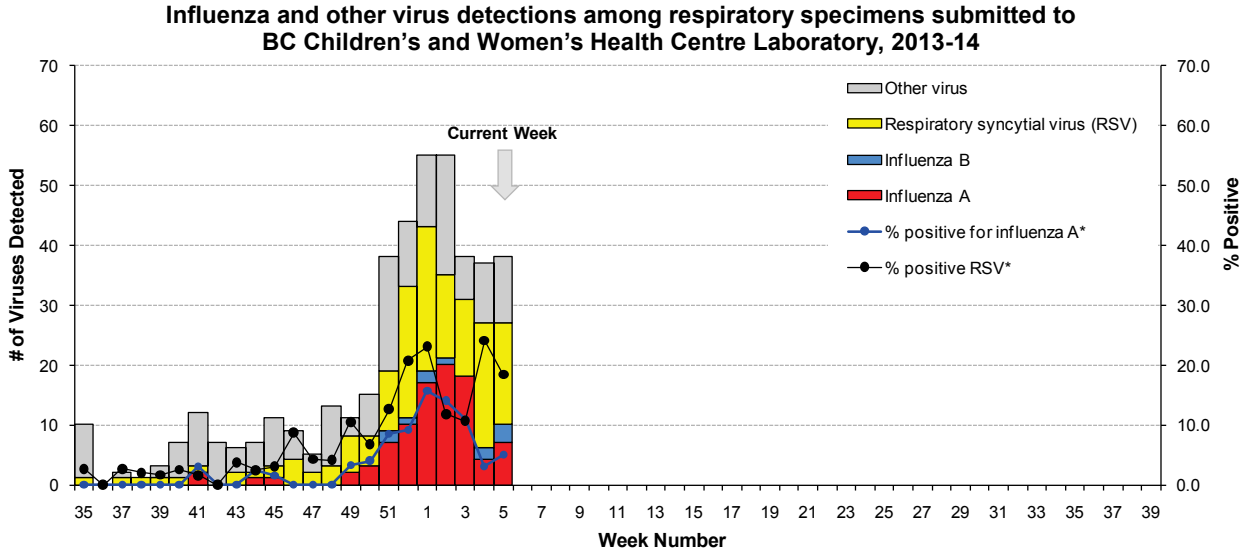
Laboratory Reports

To date since week 40 (September 29 – October 5, 2013), 1,299 specimens have tested positive for influenza at the BC Public Health Microbiology & Reference Laboratory (PHMRL), PHSA. Of the 1,248 specimens with type/subtype information available, 1,144 (92%) were influenza A(H1N1)pdm09, 58 (5%) were influenza A(H3N2), and 46 (4%) were influenza B so far this season.

Although the absolute number of specimens submitted to the BC PHMRL decreased from week 4 to week 5, the proportion of specimens testing positive for influenza remained relatively stable around 21-23%. Of the 519 specimens tested in week 5, 118 (23%) were positive for influenza, including 112 influenza A [78 A(H1N1)pdm09, 11 A(H3N2), 23 subtype pending] and 6 influenza B. Although influenza A(H1N1)pdm09 continued to predominate in week 5, representing 78 of 95 (82%) of influenza viruses with type/subtype information available, A(H1N1)pdm09 as a proportion of all influenza detections with type/subtype information available has decreased from a peak of 96% in week 1. Accordingly, proportional detections of influenza A(H3N2) and B have increased from 3% and 1%, respectively, in week 1, to 12% and 6% in week 5. RSV continues to be the most commonly detected virus among other respiratory viruses; in week 5, 8% of specimens tested positive for RSV.



In week 5, the proportion of tests positive for influenza A viruses at the BC Children's and Women's Health Centre Laboratory remained stable around 3-5% from week 4 to week 5. Similarly, the proportion positive for influenza B viruses remained at 2-3%. RSV remained the most commonly detected respiratory virus over this period, although the proportion of tests positive for RSV decreased slightly from 24% in week 4 to 19% in week 5.



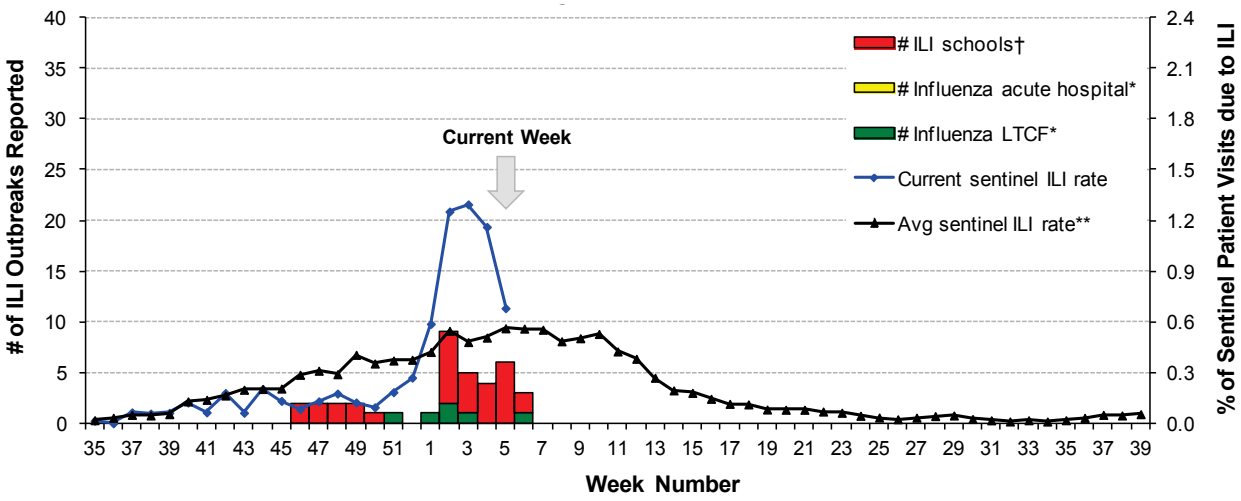
* Positive rates were caculated using aggregate data. The denominators for each rate represent the total number of tests; multiple tests may be performed for a single specimen and/or patient.

Influenza-like Illness (ILI) Outbreaks

In week 5, six ILI outbreaks were reported from schools, but none were reported from long-term care facilities (LTCF). So far in week 6, one LTCF outbreak due to laboratory confirmed influenza A (subtype pending) from IHA and two school outbreaks have been further reported.

In total during the 2013-14 season, 24 LTCF outbreaks, including 6 outbreaks due to influenza viruses [3 A(H1N1)pdm09, 2 influenza A (subtype unknown), and 1 influenza B] and 32 school outbreaks, including one due to A(H1N1)pdm09 in NHA in week 47, have been reported.

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

Mid-season 2013-14 Vaccine Effectiveness (VE) Estimates, Canada

Interim estimates of vaccine effectiveness (VE) from Canada's sentinel surveillance network, representing several hundred community-based sentinel practitioners in the five most populous Canadian provinces (British Columbia, Alberta, Manitoba, Ontario and Quebec), were published this week in *Eurosurveillance*. In this paper, VE against A(H1N1)pdm09, the predominant circulating strain to date this season in Canada, was 74% (95% CI: 58-83%), suggesting that the 2013-14 trivalent influenza vaccine (TIV) reduces the risk of medically-attended, laboratory-confirmed A(H1N1)pdm09 infection by about three quarters. Consistent with these VE findings, circulating A(H1N1)pdm09 viruses remained genetically and antigenically well conserved (i.e. well-matched) relative to the A(H1N1)pdm09 vaccine component used in the 2013-14 TIV and since 2009. Estimates were derived using a test-negative case-control design. For details, please see full-text article: http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20690.

FluWatch (week 4):

In week 4, overall influenza activity decreased in Canada, particularly in western Canada and Ontario, which experienced earlier starts to the influenza season compared to other regions. The number of positive influenza tests decreased for the second week in a row, from 3,313 in week 3 to 2,620 in week 4. The percentage of positive influenza tests decreased from 27% in week 3 to 24% in week 4. Influenza A(H1N1)pdm09 virus remains the most common influenza virus circulating this season, representing 89% of typed/subtyped influenza viruses. Overall influenza activity in Canada during the 2013-14 season has been similar to the 2012-13 season and is within expected levels for this time of year, although adults 20-64 years of age have been more affected by influenza this season compared with last season when influenza A(H3N2) viruses predominated. Details are available at: http://www.phac-aspc.gc.ca/fluwatch/13-14/w04_14/index-eng.php.

National Microbiology Laboratory (NML): Strain Characterization

From September 1, 2013 to February 6, 2014, 750 isolates were collected from provincial and hospital laboratories for antigenic characterization at the NML:

- 43 A/Texas/50/2012-like A(H3N2)[¶] from NS, NB, ON, AB, BC and YT
- 635 A/California/07/09-like [A(H1N1)pdm09]* from NL, 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
- 66 B/Massachusetts/02/12-like[†] from NL, QC, ON, SK and AB
- 6 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, 2013 to February 6, 2014, 418 influenza A [40 A(H3N2) and 378 A(H1N1)pdm09] viruses were tested for resistance to amantadine at the NML; 483 influenza viruses [34 A(H3N2), 404 A(H1N1)pdm09, and 45 B] were tested for resistance to oseltamivir; and 479 influenza viruses [34 A(H3N2), 400 A(H1N1)pdm09, and 45 B] were tested for resistance to zanamivir. All tested viruses were resistant to amantadine, while all tested viruses were sensitive to oseltamivir and zanamivir.

International

USA (week 4): Influenza activity in the United States remained high in week 4. Of the 9,514 specimens tested, 2,006 (21%) were positive for influenza viruses, of which 95% were influenza A [59% A(H1N1)pdm09, 2% A(H3N2), 40% un-subtyped] and 5% were influenza B. However, the proportion of specimens positive for influenza continued to decrease since the peak in week 52. Widespread influenza activity was reported from 38 states to the US CDC over this period. Details are available at: www.cdc.gov/flu/weekly/.

WHO: There have been no updates since our last bulletin. The most recent information is available at: www.who.int/influenza/surveillance_monitoring/updates/en/.

Avian Influenza A(H7N9) Virus: China continues to experience a second wave of infections with avian influenza A(H7N9) virus, with the number of human cases reported since October 2013 (n=179) now exceeding those reported during the first wave of the outbreak from February to May 2013 (n=134). The majority of recent cases (>90%) have been reported in 2014, with symptom onset dates ranging from late December to early February 2014. Cumulatively to date (as of 6 February 2014), 315 cases and 63 deaths have been reported from 14 provinces or municipalities in southeastern China, as well as the Taipei Centers for Disease Control (Taipei CDC) and Hong Kong Special Administrative Region (SAR). 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, additional cases of MERS-CoV have been reported from Saudi Arabia (1) and the United Arab Emirates (1). Both patients were adults aged 60-70 years with underlying chronic comorbidities. As of 6 February 2014, the WHO has been informed of 182 laboratory-confirmed cases of MERS-CoV and 79 deaths. 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.

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

version: 26 Oct 2011

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

Communicable Disease Prevention & Control Services
655 W. 12th Ave.
Vancouver BC V5Z 4R4

Phone: (604) 707-2510
Fax: (604) 707-2516
ilioutbreak@bccdc.ca