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

British Columbia Influenza Surveillance Bulletin

Influenza Season 2013-14, Number 11, Week 4
January 19 to January 25, 2014

Table of Contents:

Influenza A(H1N1)pdm09 activity continues to decrease in BC

In week 4 (January 19 to 25, 2014), influenza A(H1N1)pdm09 activity continued to decrease in BC, with most surveillance indicators suggesting peak activity around weeks 2-3. BC Medical Services Plan claims for influenza illness as a proportion of all claims continued to decrease but remained above 10-year 75th percentiles or maximums throughout the province. The percent of specimens positive for influenza viruses at the BC Provincial Health Microbiology & Reference Laboratory continued to decline from 29% in week 3 to 21% in week 4. Influenza A(H1N1)pdm09 continues to be the predominant circulating influenza virus, representing 86% of viruses with subtype information available over this period. The test positivity rate for influenza A also decreased at BC Children's and Women's Health Centre. No laboratory-confirmed influenza outbreaks were reported in week 4.

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Report Disseminated: January 30, 2014

Provincial Health Services Authority
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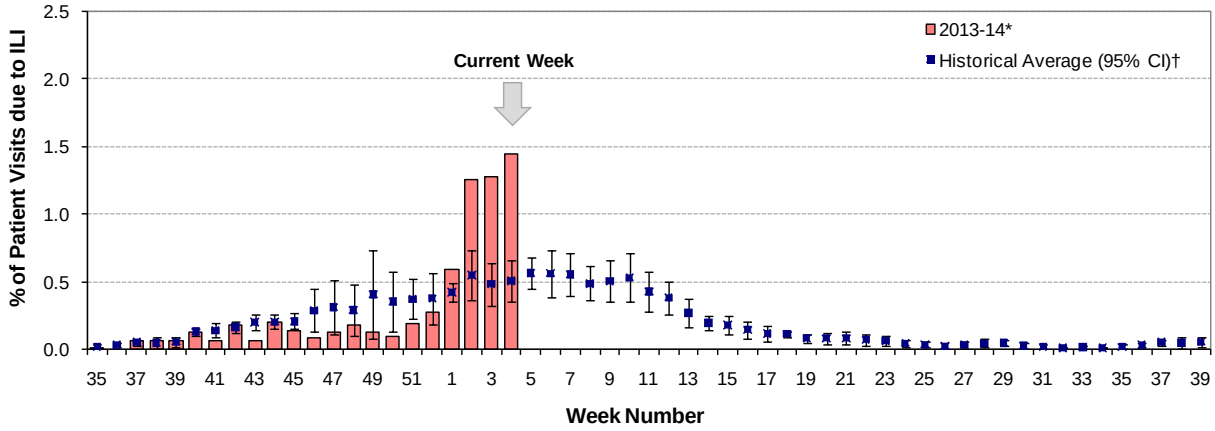
British Columbia

Sentinel Physicians

In week 4, the proportion of patients with influenza-like illness (ILI) among those presenting to sentinel physicians remained significantly above the expected range for this time of year for the fourth consecutive week. The ILI consultation rate was 1.45%. To date in week 4, 43% 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

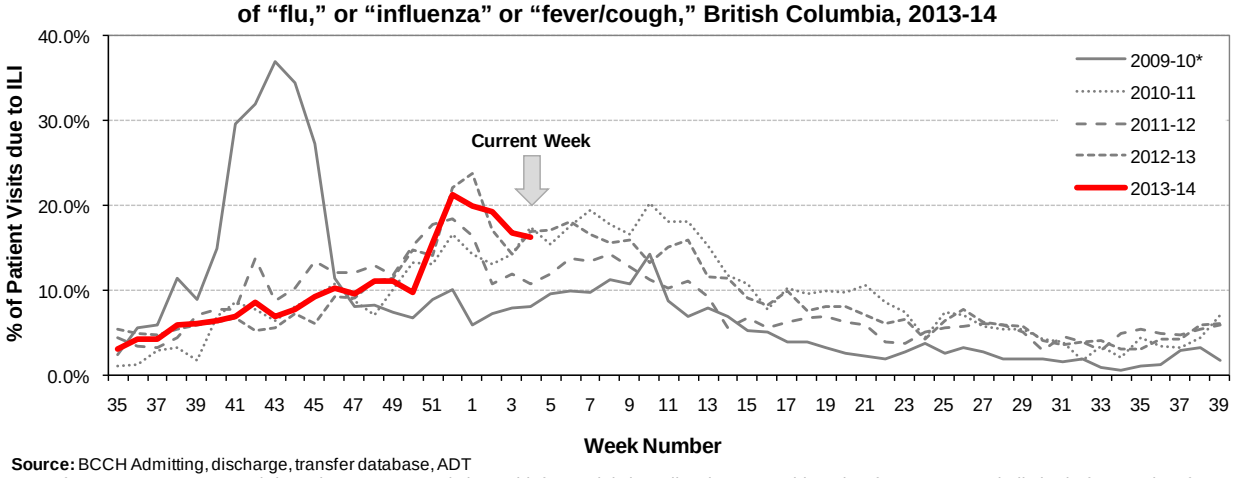


* Data are subject to change as reporting becomes more complete.
† Historical average based on 2001-02 to 2012-13 seasons, excluding 2008-09 and 2009-10 due to atypical seasonality; CI=confidence interval.

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 21.3% in week 52 to 16.4% in week 4. 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

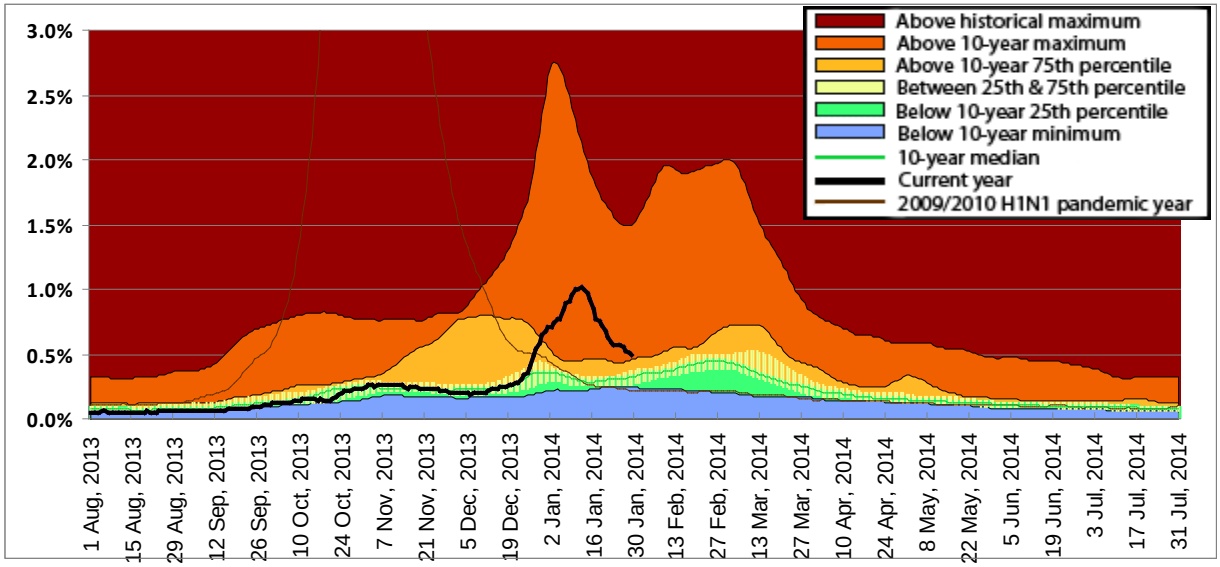


Source: BCCH Admitting, discharge, transfer database, ADT
* Data from 2010-11 to 2013-14 is based on new system (Triage Chief Complaint) not directly comparable to data for 2009-10. In bulletins before week 9 of 2011-12 season, data is based on old system.

Medical Services Plan

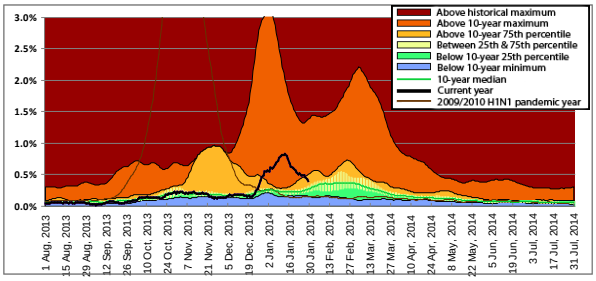
BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, continued to decrease in week 4 throughout the province but remained above 10-year 75th percentiles or maximums in all health authorities.

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

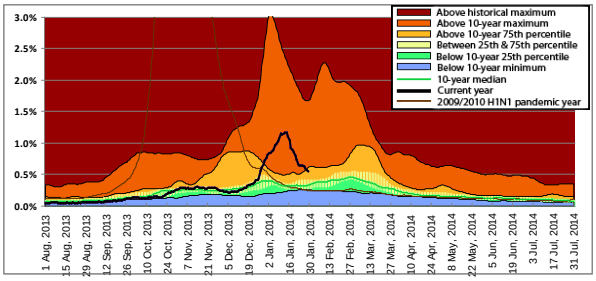


* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza).
Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services
Note: MSP week beginning 1 August 2013 corresponds to sentinel ILI week 31; data current to 29 January 2014.

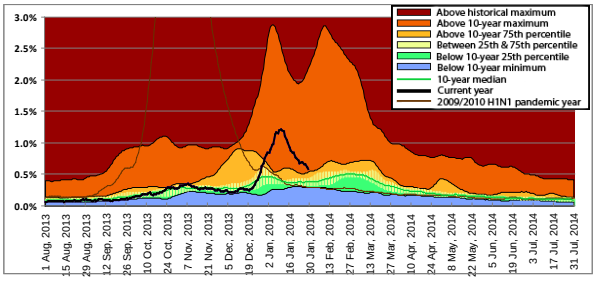
Interior



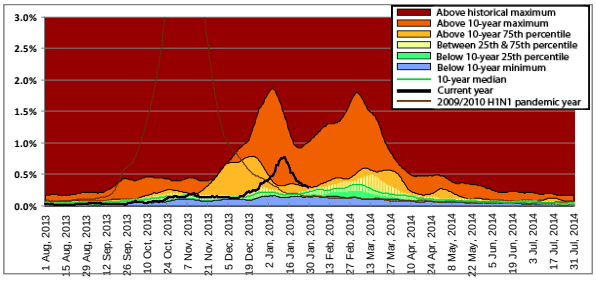
Fraser



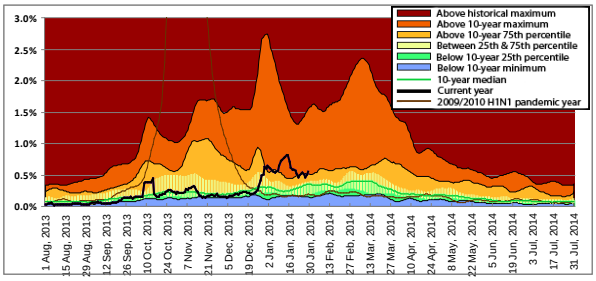
Vancouver Coastal



Vancouver Island



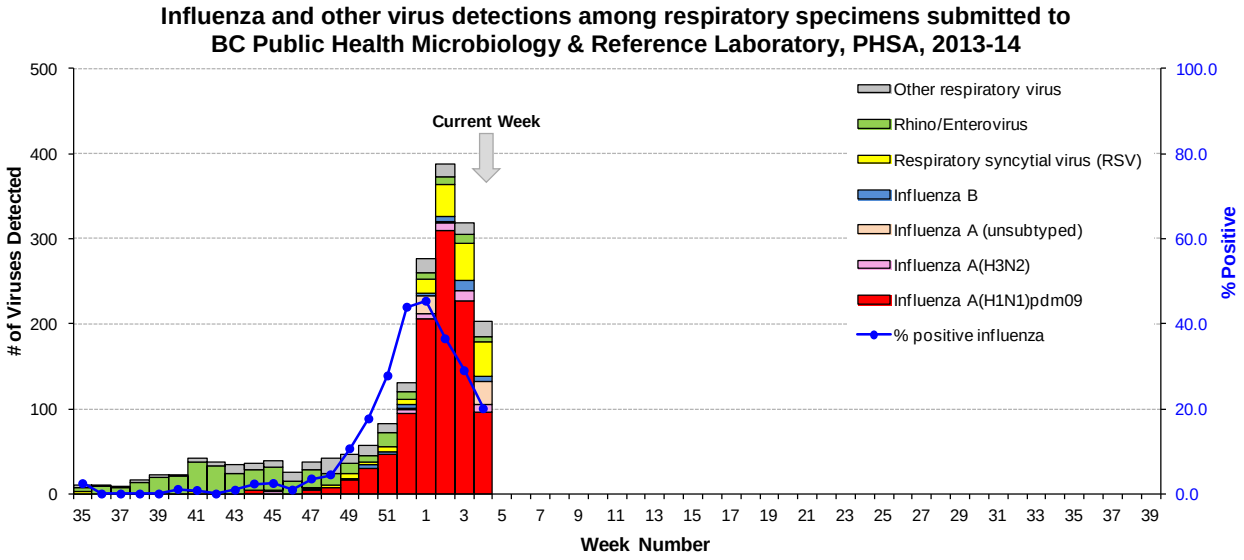
Northern



Laboratory Reports

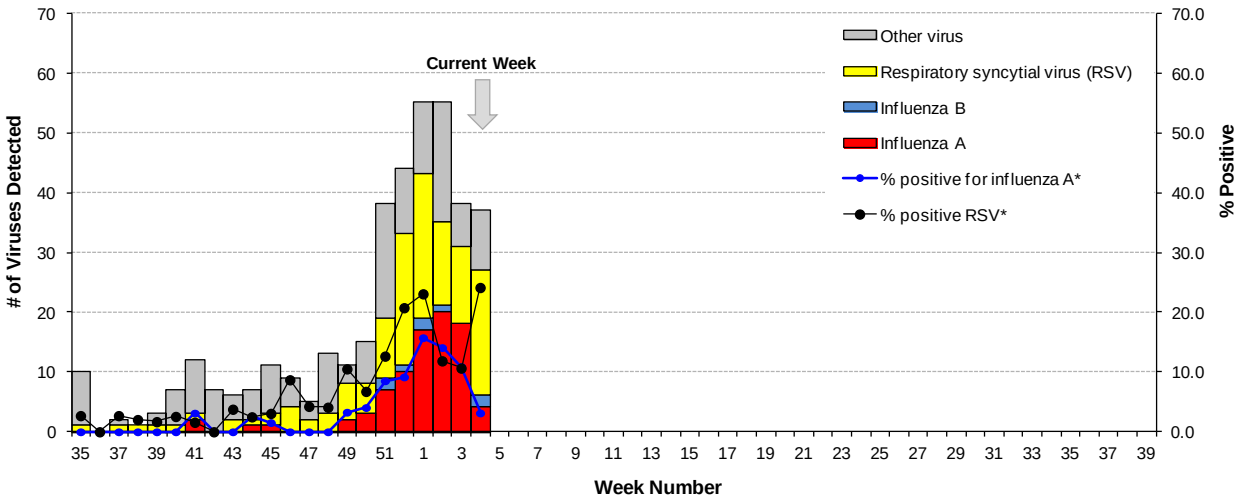
To date since week 40 (September 29 – October 5, 2013), 1,180 specimens have tested positive for influenza at the BC Public Health Microbiology & Reference Laboratory (PHMRL), PHSA. Of the 1,137 specimens with type/subtype information available, 1,050 (92%) were influenza A(H1N1)pdm09, 47 (4%) were influenza A(H3N2), and 40 (4%) were influenza B.

Both the absolute number of specimens submitted to the BC PHMRL and the proportion testing positive for influenza continued to decrease in week 4. Of the 704 specimens tested, 145 (21%) were positive for influenza, including 138 influenza A [110 A(H1N1)pdm09, 11 A(H3N2), 17 subtype pending] and 7 influenza B. Influenza A(H1N1)pdm09 continued to predominate in week 4, representing 110/128 (86%) of influenza viruses with type/subtype information available. Among other respiratory viruses, RSV continued to be the most commonly detected virus.



In week 4, the proportion of tests positive for influenza A at BC Children's and Women's Health Centre Laboratory decreased from 11% in week 3 to 3% in week 4, while the proportion of tests positive for RSV increased from 11% in week 3 to 24% in week 4. In week 4, 4/127 (3%) tests were positive for influenza A (un-subtyped), 2/87 (2%) tests were positive for influenza B, and 21/87 (24%) tests were positive for RSV. RSV was the most commonly detected respiratory virus over this period.

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



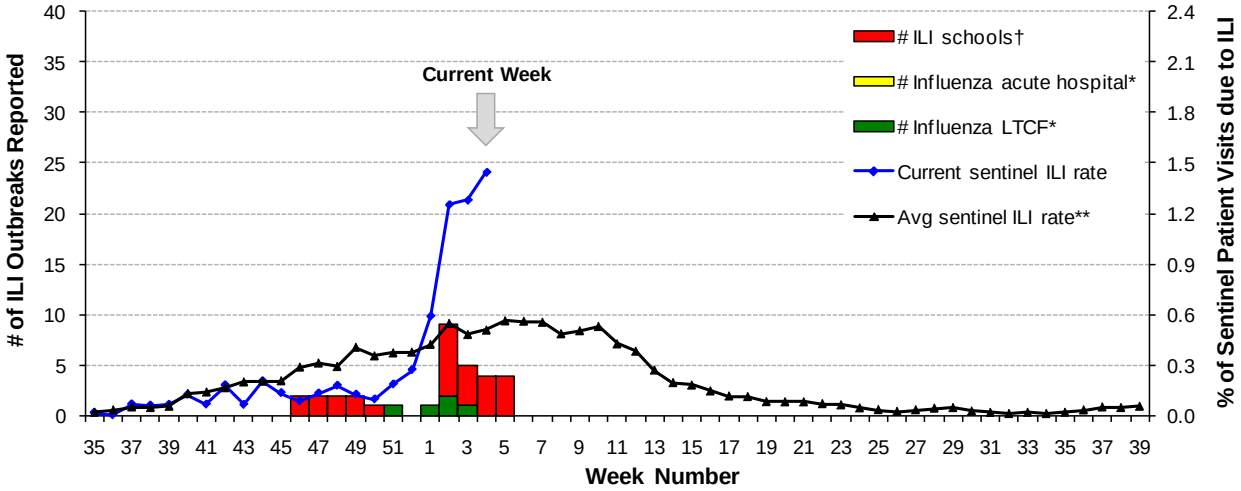
* Positive rates were caculated using aggregate data. The denominators for each rate represent the total number of tests; multiple tests may be performed for a single specimen and/or patient.

Influenza-like Illness (ILI) Outbreaks

In week 4, two ILI outbreaks from long-term care facilities (LTCF) in IHA with no pathogen identified, and four school outbreaks were reported. So far in week 5, four school outbreaks have been further reported.

In total during the 2013-14 season, 22 LTCF outbreaks, including 5 outbreaks due to influenza viruses [3 A(H1N1)pdm09, 1 influenza A (subtype unknown), and 1 influenza B] and 28 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.

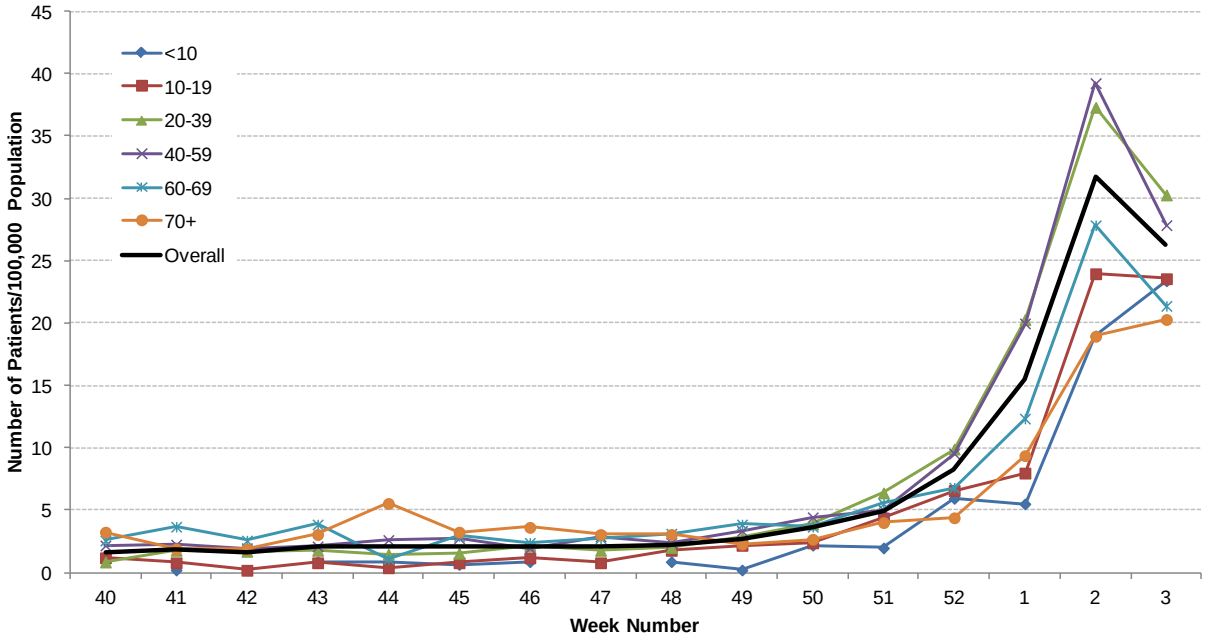
BC Sentinel Hospital Influenza Surveillance (IMPACT)

In week 3, seven new laboratory-confirmed influenza-associated paediatric (≤16 years of age) hospitalizations were reported by the BC Children's Hospital to the Immunization Monitoring Program Active (IMPACT) network, PHAC. Four occurred in children <2 years of age, two in children 2-4 years old, and one in a child 10-16 years old. All were influenza A, of which two were A(H1N1)pdm09, one was A(H3N2), and four were influenza A (subtype unknown).

Antiviral Prescriptions, PharmaNet

The aggregate weekly number of patients receiving antiviral prescriptions for influenza from community pharmacies in BC was obtained from PharmaNet. The overall weekly prescription rate increased from <2 patients per 100,000 population before week 50 to a peak of 31.7 patients per 100,000 in week 2, then declined slightly to 26.3 patients per 100,000 in week 4. The highest rates continued to be observed in adults 20-39 and 40-59 years of age.

Weekly prescription rate for neuraminidase inhibitors (Relenza, Tamiflu) by age group, PharmaNet, British Columbia, 2013-14*



* Data includes 5,179 prescription records, representing 5,087 unique patients, for the time period 29 September 2013 to 18 January 2014; 39 patients with missing data for age group were excluded.
Data provided by Pharmaceutical Services Division, BC Ministry of Health

National

FluWatch (week 3):

In week 3, laboratory detections of influenza decreased slightly overall in Canada, likely reflecting decreased activity in some regions that experienced an earlier start to the influenza season, but increased in other regions. The percentage of tests positive for influenza decreased slightly from week 2 to week 3 but remained high at 27%. Of the 3,364 specimens testing positive for influenza in week 3, 3,186 (94.7%) were influenza A [1,646 A(H1N1)pdm09, 32 A(H3N2), 1,508 un-subtyped] and 178 (5.3%) were influenza B. Among other respiratory viruses, RSV continued to be the most commonly detected virus over this period. Influenza A(H1N1)pdm09 virus continues to be the most common influenza virus detected thus far this season in Canada, accounting for more than 90% of influenza viruses. The national influenza-like illness consultation rate increased from 51.2/1,000 in week 2 to 66.8/1,000 in week 3 and remained above the expected range for this time of year. Adults 20-64 years of age have been the most impacted so far this influenza season, as reflected by laboratory detections of influenza, hospitalizations and antiviral prescriptions for treatment of influenza.
Details are available at: www.phac-aspc.gc.ca/fluwatch/13-14/w03_14/index-eng.php.

National Microbiology Laboratory (NML): Strain Characterization

From September 1, 2013 to January 30, 2014, 556 isolates were collected from provincial and hospital laboratories for antigenic characterization at the NML:

- 35 A/Texas/50/2012-like A(H3N2)[¶] from NS, NB, ON, AB, BC and YT
- 473 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
- 43 B/Massachusetts/02/12-like[†] from NL, QC, ON, SK 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, 2013 to January 30, 2014, 341 influenza A [37 A(H3N2) and 304 A(H1N1)pdm09] viruses were tested for resistance to amantadine at the NML; 397 influenza viruses [29 A(H3N2), 325 A(H1N1)pdm09, and 43 B] were tested for resistance to oseltamivir; and 390 influenza viruses [29 A(H3N2), 319 A(H1N1)pdm09, and 42 B] were tested for resistance to zanamivir. All tested viruses were found to be resistant to amantadine, while all tested viruses were sensitive to oseltamivir and zanamivir.

International

USA (week 3): Influenza activity in the United States remained high in week 3. Of the 12,108 specimens tested, 2,793 (23%) were positive for influenza viruses, of which 97% were influenza A [64% A(H1N1)pdm09, 2% A(H3N2), 34% un-subtyped] and 3% were influenza B. However, the proportion of tests positive for influenza has declined from a peak in week 52. Widespread influenza activity was reported from 41 states to the USA CDC over this period. Details are available at: www.cdc.gov/flu/weekly/.

WHO (as of 27 January 2014): In North America, influenza activity remained high in recent weeks with A(H1N1)pdm09 continuing to predominate. In Europe, a slight increase in influenza activity has been observed, which may indicate the start of the influenza season. In China, influenza activity continued to increase with influenza A(H1N1)pdm09, A(H3N2) and influenza B co-circulating. In the southern hemisphere, influenza activity remained low. In tropical countries, variable influenza activity was reported. In weeks 1-2 (29 December 2013 to 11 January 2014), WHO Global Influenza Surveillance and Response System (GISRS) laboratories tested more than 81,261 specimens. Of these, 24,494 were positive for influenza viruses: 22,425 (92%) were typed as influenza A and 2,069 (8%) as influenza B. Of the sub-typed influenza A viruses, 11,033 (81%) were influenza A(H1N1)pdm09 and 2,669 (20%) were influenza A(H3N2). Of the characterized B viruses, 220 (84%) belonged to the B-Yamagata lineage and 42 (16%) to the B-Victoria lineage. Details are available at: www.who.int/influenza/surveillance_monitoring/updates/en/.

Avian Influenza A(H7N9) Virus: The number of cases of human infection with avian influenza A(H7N9) has increased substantially in recent weeks, with upwards of 100 cases being reported since the start of the second wave in October 2013. As in the first wave, the majority of cases have been reported in middle-aged and older men, although the median age is slightly lower among recent cases compared to earlier cases. Although milder cases have been reported, the majority have presented with severe acute illness, rapidly progressing to severe pneumonia. Most human cases have reported a history of exposure to poultry or live bird markets. As of 30 January 2014, the WHO has been informed of a cumulative total of 265 laboratory-confirmed cases of H7N9, including 57 deaths. 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/.

Avian Influenza A(H10N8) Virus: This week, China reported a human case of avian-origin influenza A(H10N8) in a middle-aged woman from Jiangxi, China, who had exposure to live poultry markets. This is the second reported case of H10N8 from Jiangxi Province in recent months. While human infection with other H10 subtypes, notably H10N7, has been previously reported, these are the first reports of H10N8 infection in humans, although this virus has been detected in birds and environmental samples in China.

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 Jordan (1). As of 27 January 2014, the WHO has been informed of 180 laboratory-confirmed cases of MERS-CoV and 77 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**

*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

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

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