

British Columbia Influenza Surveillance Bulletin

Influenza Season 2013-14, Number 13, Weeks 6-7

February 2 to 15, 2014

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Influenza A(H1N1)pdm09 activity continues at reduced levels

In weeks 6-7 (February 2 to 15, 2014), most indicators suggest that influenza A(H1N1)pdm09 activity continued but at substantially reduced levels compared to previous weeks. At the BC provincial laboratory, the influenza positivity rate fell to below 20% in weeks 6-7 for the first time since week 50. Influenza A(H1N1)pdm09 continued to be the predominant influenza virus circulating in BC (73% of typed/subtyped viruses), but with far fewer detections overall than during the peak in week 2. In weeks 6-7, there were greater contributions of A(H3N2) and influenza B (14% and 13% of typed/subtyped viruses, respectively). The Medical Services Plan consultation rates for influenza illness decreased to below the 10-year 25th percentile throughout the province. One laboratory-confirmed influenza A(H1N1)pdm09 outbreak was reported from a long-term care facility in Interior Health Authority in week 6. No laboratory-confirmed influenza outbreaks were reported in week 7.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

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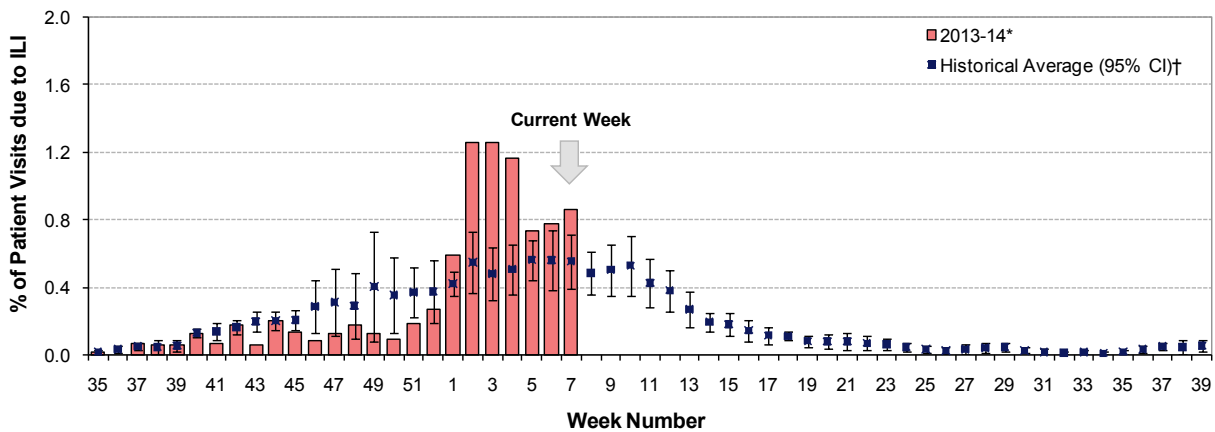
Report Disseminated: February 20, 2014

British Columbia

Sentinel Physicians

The proportion of patients with influenza-like illness (ILI) among those presenting to sentinel physicians was 0.8% and 0.9% in weeks 6 and 7, respectively; above historical averages for this time of year but substantially lower than the peak in weeks 2-4. To date only 54% and 46% of sentinel sites have reported data for weeks 6 and 7, respectively.

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



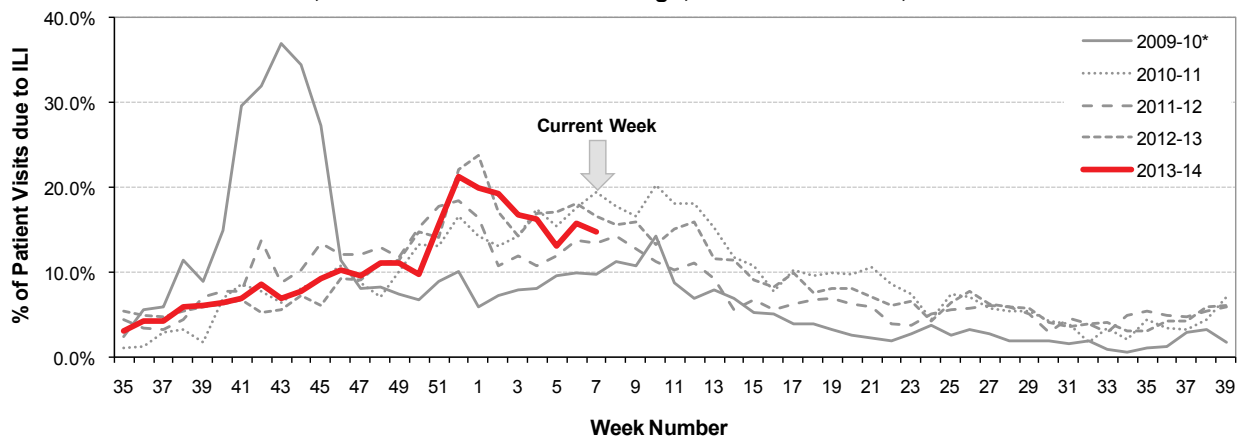
* Data are subject to change as reporting becomes more complete.

† 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 remained stable around 15-16% in weeks 6-7, below the peak of 21% observed in week 52. 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



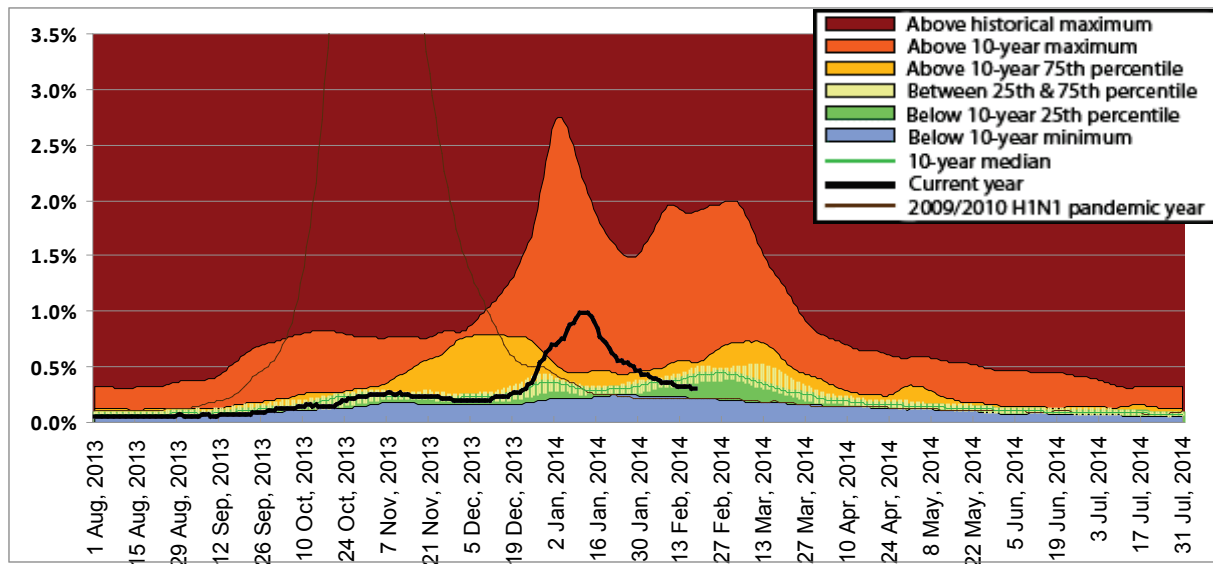
Source: BCCH Admitting, discharge, transfer database, ADT

* 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

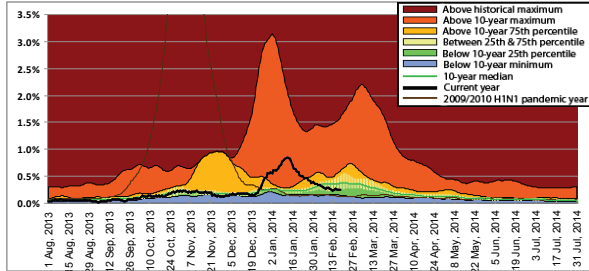
In weeks 6-7, BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, continued to decrease and fell to below the 10-year 25th percentile throughout the province, with the exception of VCHA where rates remained between 25th and 75th percentiles.

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

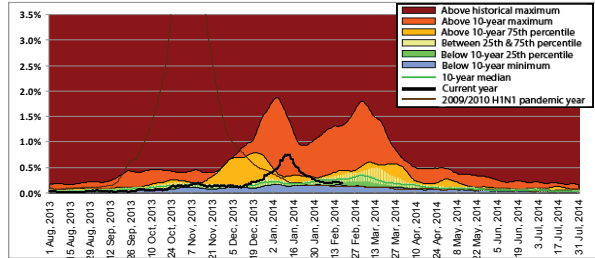


* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza). Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services
Note: MSP week beginning 1 August 2013 corresponds to sentinel ILI week 31; data current to 18 February 2014.

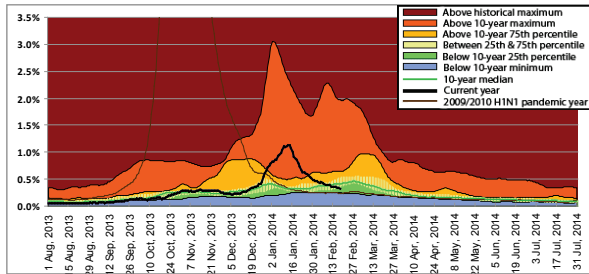
Interior



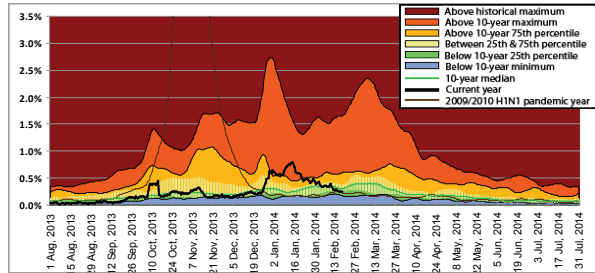
Vancouver Island



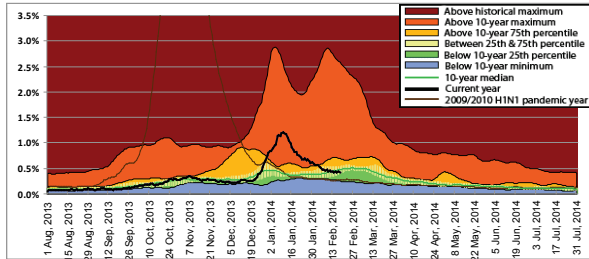
Fraser



Northern



Vancouver Coastal

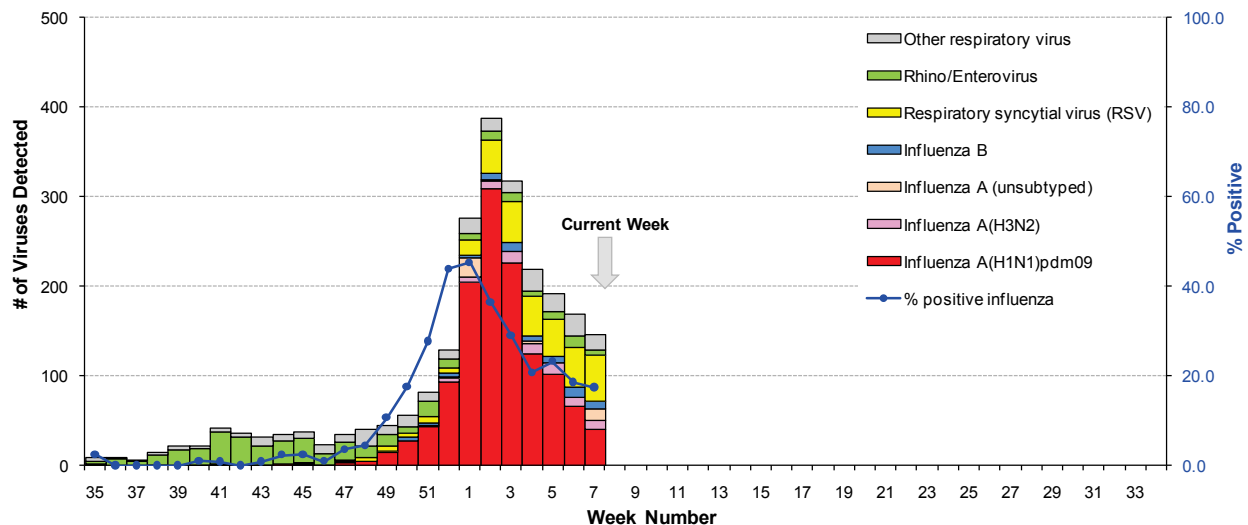


Laboratory Reports

In weeks 6-7, the proportion of specimens testing positive for influenza at the BC Public Health Microbiology & Reference Laboratory (PHMRL), PHSA, fell to below 20% for the first time since week 50. Of the 887 specimens tested, 160 (18%) were positive for influenza including 88/473 (19%) in week 6 and 72/414 (17%) in week 7. By type/subtype, these included 141 influenza A [108 A(H1N1)pdm09, 20 A(H3N2), 13 subtype pending] and 19 influenza B. Although influenza A(H1N1)pdm09 continued to predominate in weeks 6-7, representing 108/147 (73%) of influenza viruses with type/subtype information available, the number of A(H1N1)pdm09 detections in week 7 (n=41) was less than 20% of that identified during the peak in week 2 (n=309). A greater proportion of typed/subtyped influenza viruses were A(H3N2) (14%) and B (13%) in week 6-7 compared to previous weeks, when less than 5% were A(H3N2) or B. RSV continues to be the most commonly detected virus among other respiratory viruses over this period; 9% and 13% of specimens tested positive for RSV in weeks 6 and 7, respectively.

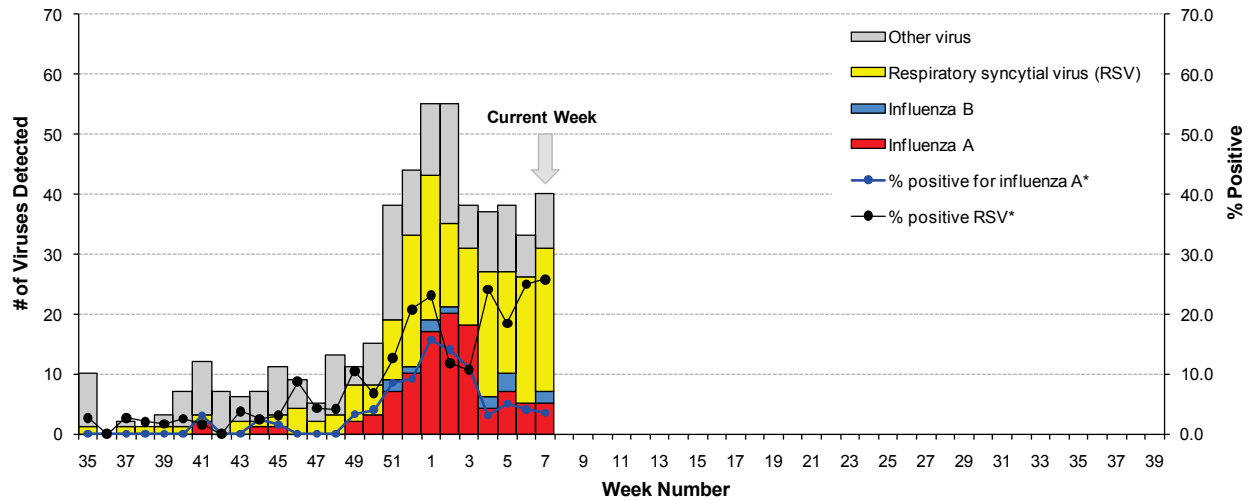
To date since week 40 (September 29 – October 5, 2013), 1,463 specimens have tested positive for influenza at the BC PHMRL. Of the 1,422 specimens with type/subtype information available, 1,277 (90%) were influenza A(H1N1)pdm09, 80 (6%) were influenza A(H3N2), and 65 (5%) were influenza B.

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 decreased to less than 5% in week 6-7 and remained relatively stable compared to weeks 4-5. No tests were positive for influenza B in week 6 but 2/93 (2%) were positive in week 7. In contrast, the proportion of tests positive for RSV increased to above 25% in weeks 6-7, following a low of 11-12% in weeks 2-3. RSV remained 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



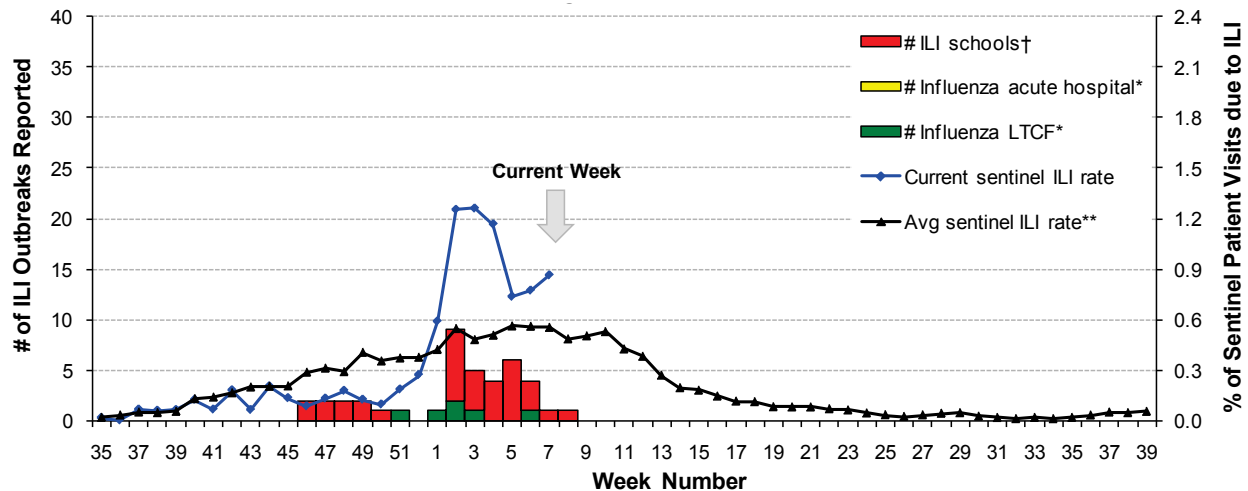
* Positive rates were calculated using aggregate data. The denominators for each rate represent the total number of tests; multiple tests may be performed for a single specimen and/or patient.

Influenza-like Illness (ILI) Outbreaks

In weeks 6-7, three ILI outbreaks were reported from long-term care facilities (LTCF), including one laboratory-confirmed A(H1N1)pdm09 in IHA, one human metapneumovirus (HMPV) also in IHA, and one with no pathogen identified in FHA. Four school outbreaks were further reported over this period. So far in week 8, one LTCF outbreak from IHA with laboratory results pending, and one school outbreak have been reported.

In total during the 2013-14 season, 27 LTCF outbreaks, including 6 outbreaks due to influenza viruses [4 A(H1N1)pdm09, 1 influenza A (subtype unknown), and 1 influenza B] and 35 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

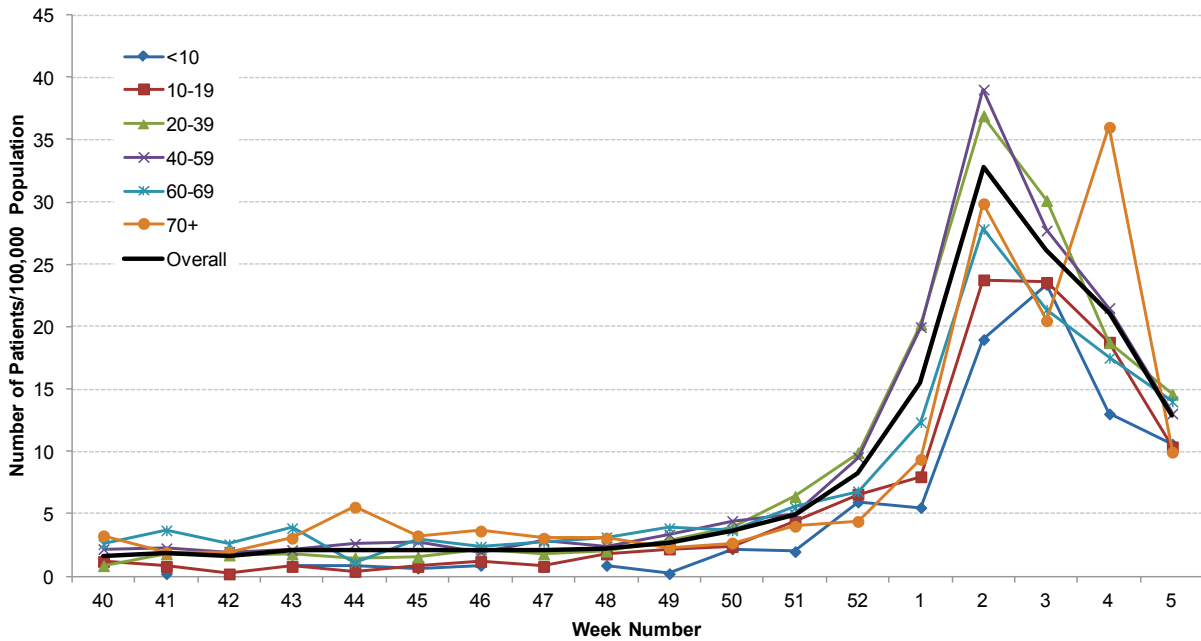


* Facility-based influenza outbreaks defined as 2 or more ILI cases within 7-day period, with at least one laboratory-confirmed case of influenza.
 † School-based ILI outbreak defined as >10% absenteeism on any day, most likely due to ILI.
 ** Historical values exclude 2008-09 and 2009-10 seasons due to atypical seasonality.

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 decreased to 12.9 per 100,000 in week 5 from a peak of 32.8 per 100,000 in week 2. The highest rates were observed in adults 20-39 and 40-59 years of age during peak activity from week 52 to week 3. However, a spike at 36.0 per 100,000 was also observed among adults aged 70+ years in week 4, possibly related to ILI clustering within LTCFs and presumptive control activities.

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



* Data includes 6,804 prescription records, representing 6,675 unique patients, for the time period 29 September 2013 to 1 February 2014; 56 patients with missing data for age group were excluded.
Data provided by Pharmaceutical Services Division, BC Ministry of Health

National

FluWatch (week 6):

In week 6, overall influenza activity continued to decrease in Canada, with the exception of ongoing activity in eastern provinces that experienced a later start to the influenza season. One region in Manitoba reported widespread activity in week 6. The percentage of positive influenza tests continued to decrease from 22% in week 5 to 20% in week 6. In week 6, 87% of virus detections were influenza A and 13% were influenza B. Influenza A(H1N1)pmd09 remains the most common influenza virus circulating this season, representing 67% of typed/subtyped viruses, although influenza B virus detections continue to increase. Adults 20-64 years of age continue to be more affected by influenza this season. 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. Details are available at: www.phac-aspc.gc.ca/fluwatch/13-14/w06_14/index-eng.php.

National Microbiology Laboratory (NML): Strain Characterization

From September 1, 2013 to February 20, 2014, 984 isolates were collected from provincial and hospital laboratories for antigenic characterization at the NML:

- 49 A/Texas/50/2012-like A(H3N2)[¶] from NS, NB, ON, SK, AB, BC and YT
- 833 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
- 92 B/Massachusetts/02/12-like[†] from NL, NB, QC, ON, SK and AB
- 10 B/Brisbane/60/2008-like^{**} from QC, 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 20, 2014, 766 influenza A [62 A(H3N2) and 704 A(H1N1)pdm09] viruses were tested for resistance to amantadine at the NML; 660 influenza viruses [45 A(H3N2), 551 A(H1N1)pdm09, and 64 B] were tested for resistance to oseltamivir; and 660 influenza viruses [45 A(H3N2), 551 A(H1N1)pdm09, and 64 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 6): Influenza activity in the United States decreased, but remained high in week 6. Of the 7,562 specimens tested, 1,268 (17%) were positive for influenza viruses, of which 91% were influenza A [61% A(H1N1)pdm09, 4% A(H3N2), 35% un-subtyped] and 9% were influenza B. The proportion of deaths attributed to pneumonia and influenza was 8%, above the epidemic threshold of 7%. In addition, the proportion of outpatient visits for ILI was 3%, also above the national baseline of 2%. Widespread influenza activity was reported from 24 states to the US CDC over this period. Details are available at: www.cdc.gov/flu/weekly/.

WHO (as of 10 February 2014): In North America, influenza activity decreased in the USA and Canada, but increased in Mexico, with A(H1N1)pdm09 virus predominating in all 3 countries. In Europe, influenza activity continued to increase, particularly in the south with both A(H1N1)pdm09 and A(H3N2) viruses circulating. In eastern Asia, influenza activity remained high with influenza A(H1N1)pdm09 predominating, with increases observed in some countries. In western Asia, influenza activity increased with mainly A(H3N2) circulating, while Egypt reported high activity of influenza A(H1N1)pdm09. In tropical countries, variable influenza activity was reported. In the southern hemisphere, influenza activity remained low. In weeks 3 to 4 (12 to 25 January 2014), WHO Global Influenza Surveillance and Response System (GISRS) laboratories tested more than 68,458 specimens. Of these, 19,547 were positive for influenza viruses, including 17,992 (92%) that were typed as influenza A and 1,555 (8%) as influenza B. Of the sub-typed influenza A viruses, 8,257 (80%) were influenza A(H1N1)pdm09, 2,096 (20%) were influenza A(H3N2), and 1 (0.01%) was influenza A(H5N1). Of the characterized B viruses, 200 (70%) belong to the B-Yamagata lineage and 87 (30%) to the B-Victoria lineage. Details are available at: www.who.int/influenza/surveillance_monitoring/updates/en/.

Avian Influenza A(H7N9) Virus: Since our last surveillance bulletin, 46 new cases of human infection with avian influenza A(H7N9) have been reported (median age: 61 years; 74% male). The number of cases reported during the second wave of the outbreak since October 2013 (n=225) now exceeds the number of cases reported during the first wave from February to May 2013 (n=134) by more than two-thirds; however, the number of new case reports may have begun to slow compared to earlier weeks in 2014. Cumulatively to date (as of 20 February 2014), 361 cases and 67 deaths have been reported from 14 provinces or municipalities in southeastern China, as well as Taiwan, Hong Kong, and Malaysia. To date, however, all known cases have resided in or traveled to mainland China during their exposure period. 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: Another fatal case of human infection with avian influenza A(H10N8) was reported this week from Jiangxi, China. The patient was an elderly adult male with underlying chronic disease who had exposure to live poultry. This is the third case and second fatality to be reported since the emergence of this novel virus in December 2013; all 3 cases were reported from Jiangxi Province, China. 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, 3 new cases of MERS-CoV have been reported from Saudi Arabia, of whom 2 died. All 3 patients were adults (age range: 22-81 years) with underlying chronic comorbidities. Since the emergence of this novel virus in April 2012, 186 MERS-CoV cases and 81 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 recommended 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	<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>

Numbers to date	Residents/Students	Staff
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>

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

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