

British Columbia Influenza Surveillance Bulletin

Influenza Season 2013-14, Number 06, Weeks 49-50

December 1 to December 14, 2013

Table of Contents:

British Columbia:

Sentinel Physician	Page 2
Children's Hospital ER	Page 2
Medical Services Plan	Page 3
Laboratory Surveillance	Page 5
ILI Outbreaks	Page 6

Canada:

FluWatch Activity levels	Page 7
NML Strain Characterization	Page 7
NML Antiviral Resistance	Page 7

International:

Avian Influenza A(H7N9)	Page 8
MERS-CoV	Page 8
WHO 2013-14 Recommended Vaccine Components	Page 9

Additional Information:

List of Acronyms	Page 10
Web Sites	Page 10
Outbreak Report Form	Page 11

Influenza activity increasing in BC, predominantly A(H1N1)pdm09

In weeks 49-50 (December 1 to 14, 2013), increasing but still low-level influenza activity was observed in BC. Although Medical Services Plan (MSP) claims for influenza illness remain within the expected range for this time of year, the proportion of respiratory specimens testing positive for influenza has been steadily increasing from 4.5% in week 48 to 10.6% in week 49 and 18.2% in week 50. Consistent with observations elsewhere in North America, our laboratory surveillance indicators suggest a recent increase in influenza activity in BC, with a predominance of A(H1N1)pdm09 (comprising >80% of subtyped viruses) and lesser co-circulation of influenza A(H3N2) and influenza B viruses.

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

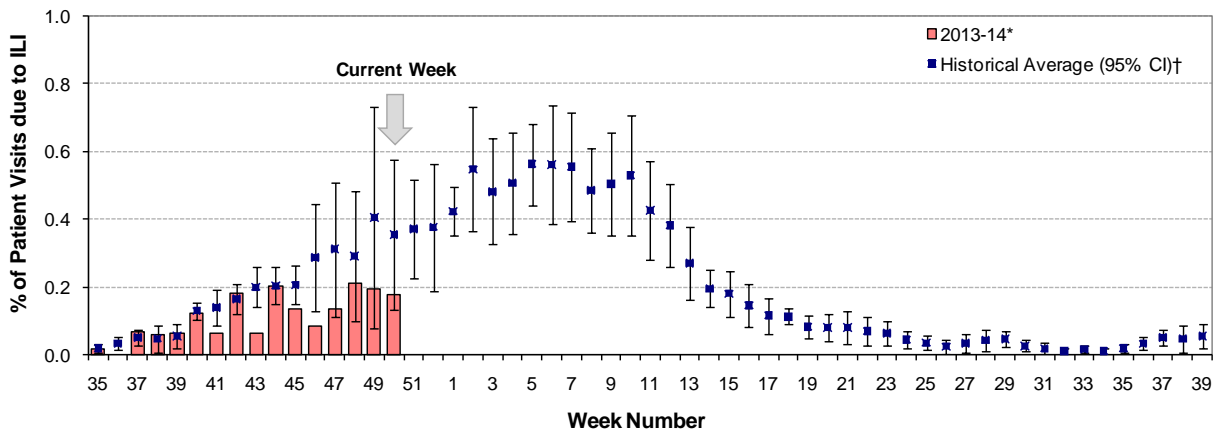
Report Disseminated: December 19, 2013

British Columbia

Sentinel Physicians

In weeks 49-50, the proportion of patients with influenza-like illness (ILI) among those presenting to sentinel physicians was below the historical average but within the expected range for this time of year, consistent with previous weeks. For the past three weeks, sentinel physician consultation rates have remained relatively stable around 0.2%. To date, 71% and 55% of sentinel physician sites reported data for weeks 49 and 50, respectively.

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



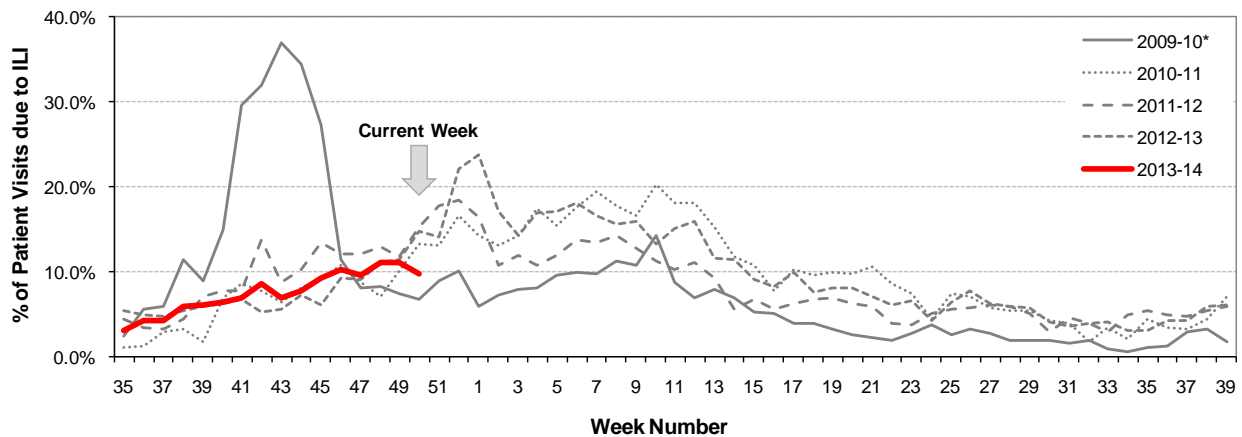
* Data are subject to change as reporting becomes more complete.

† 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

In weeks 49-50, the proportion of visits to BC Children's Hospital Emergency Room (ER) attributed to ILI was 11% and 10%, respectively, similar to previous weeks and consistent with past 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



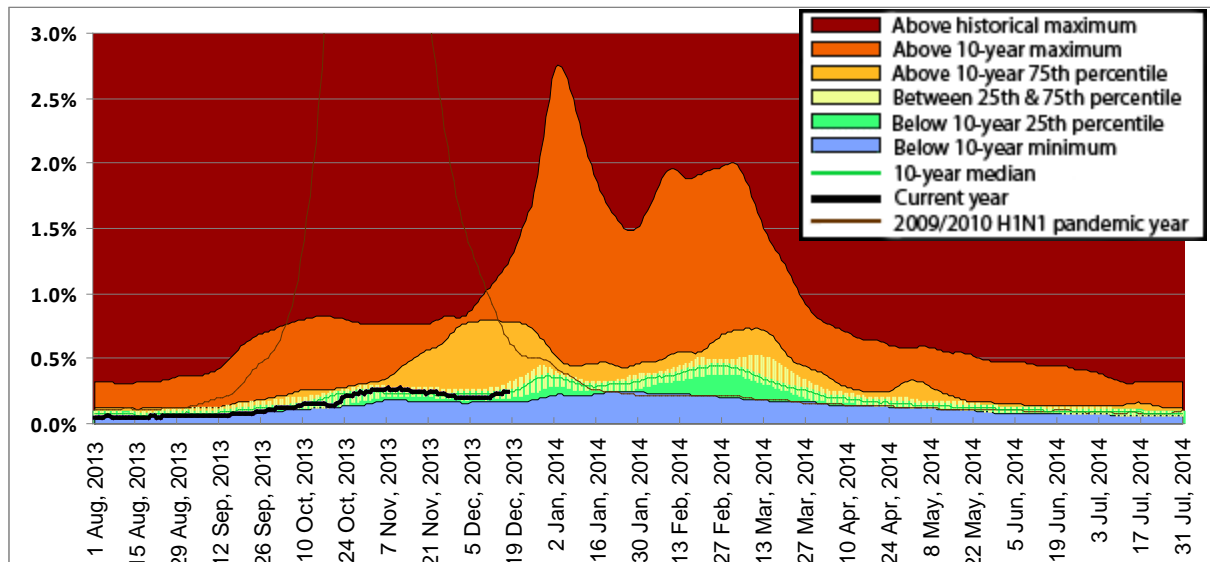
Source: BCCH Admitting, discharge, transfer database, ADT

* 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

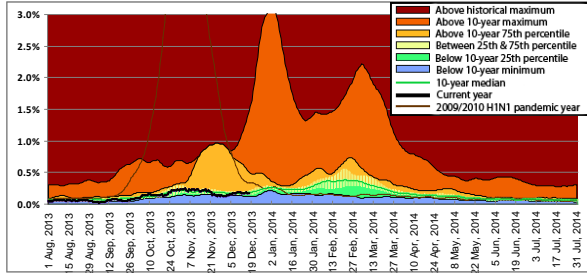
In weeks 49-50, BC Medical Services Plan (MSP) general practitioner claims for influenza illness (II), as a proportion of all submitted MSP claims, remained at or below 10-year median levels in all regions, with the exception of VIHA where rates were slightly above historical norms. The atypical spike in MSP claims in NHA in week 41 was attributed to a surveillance artefact.

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

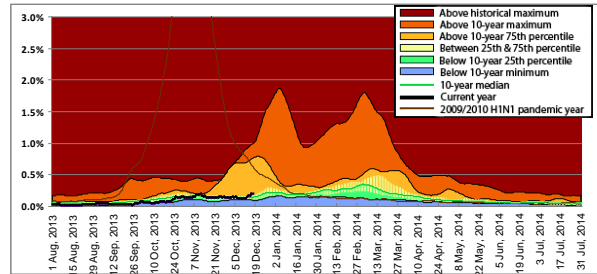


* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza). Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services
Note: MSP week beginning 1 August 2013 corresponds to sentinel ILI week 31; data current to 17 December 2013.

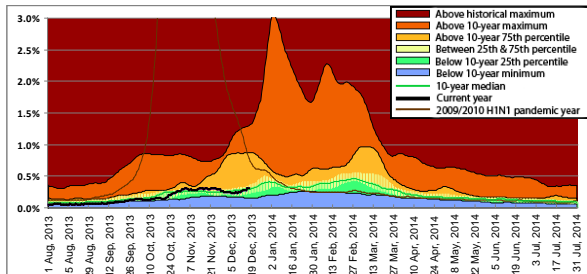
Interior



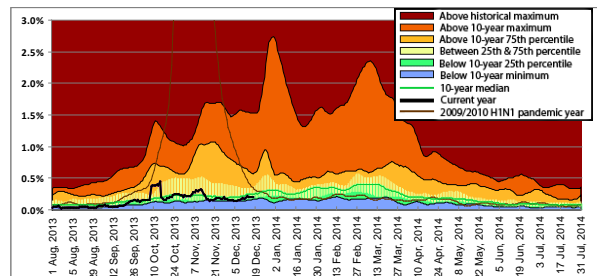
Vancouver Island



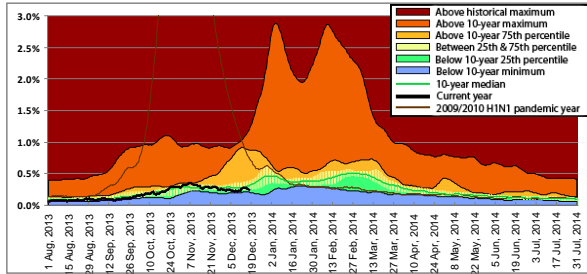
Fraser



Northern



Vancouver Coastal

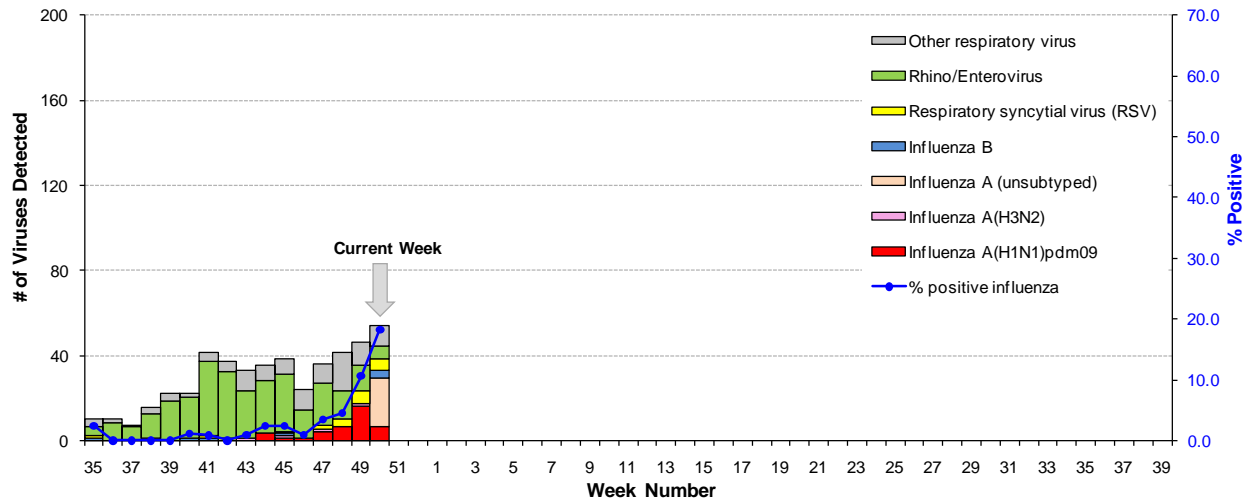


Laboratory Reports

To date since week 40 (September 29 – October 5), 71 specimens have tested positive for influenza at the BC PHMRL, and more than 70% of these (50/71) have occurred in the past two weeks. During weeks 49-50, 341 specimens were tested for influenza at the BC Public Health Microbiology & Reference Laboratory (PHMRL), PHSA. Of these, 17/160 (10.6%) were positive for influenza in week 49 and 33/181 (18.2%) in week 50. The percent positivity was elevated in both weeks compared to week 48 during which 4.5% of respiratory specimens tested positive for influenza. In weeks 49-50, there were 46 specimens positive for influenza A [22 A(H1N1)pdm09, 1 A(H3N2), 23 subtype pending] and 4 for influenza B, such that influenza A(H1N1)pdm09 viruses comprise 81% of viruses with type/subtype information available during this period.

Among other respiratory viruses, rhino/enteroviruses continued to be the most commonly detected in the past two weeks, although the number of RSV detections began to increase.

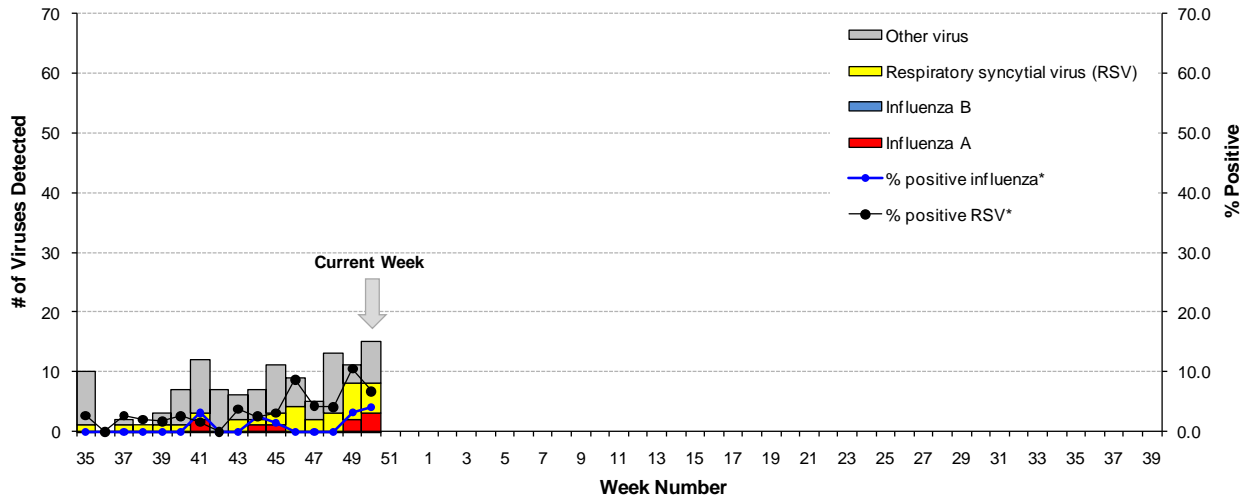
Influenza and other virus detections among respiratory specimens submitted to BC Public Health Microbiology & Reference Laboratory, PHSA, 2013-14*



*Data current to December 18, 2013.

After three consecutive weeks without any influenza detection at BC Children's and Women's Health Centre Laboratory, a total of 5 influenza A (un-subtyped) results were reported in weeks 49-50: 2 (3.3%) in week 49 and 3 (4.1%) in week 50. RSV was the most commonly detected respiratory virus during this period. Other respiratory viruses were also sporadically detected.

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

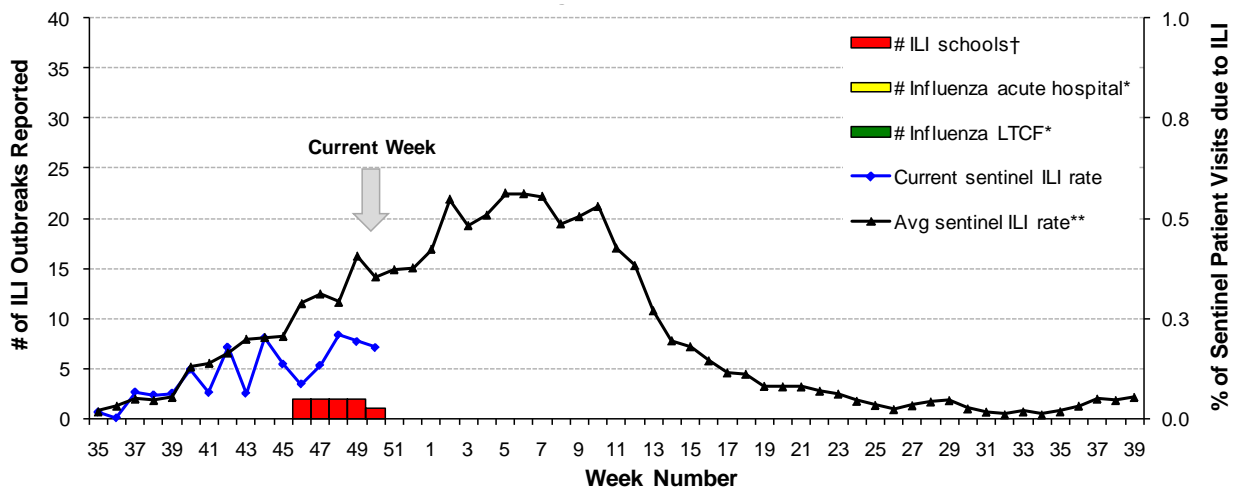


* Positive rates were calculated using aggregate data. The denominators for each rate represent the total number of tests; multiple tests may be performed for a single specimen and/or patient.

Influenza-like illness (ILI) Outbreaks

In weeks 49-50, one ILI outbreak was reported from a long-term care facility (LTCF) in IHA with no pathogen identified. Three school ILI outbreaks were also reported. So far during the 2013-14 season, there have been 11 ILI outbreaks reported in LTCFs and 9 in schools. Among these, one of the school outbreaks (in NHA in week 47) was laboratory-confirmed as influenza A(H1N1)pdm09.

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 49):

National influenza activity continued to increase in week 49. Influenza A continued to predominate, representing 87% of cumulative influenza virus detections to date this season. Among subtyped influenza A viruses, 83% (317/381) were A(H1N1)pdm09 and 17% (64/381) were A(H3N2). The percent of positive influenza tests increased to 6.1% in week 49. RSV detections continued to increase. RSV was the most frequently detected respiratory virus in week 49, followed by rhinovirus and parainfluenza. Compared to the previous weeks, the number of laboratory-confirmed influenza-associated paediatric and adult hospitalizations continued to increase in week 49. Ten new paediatric hospitalizations, of which 7 were A(H1N1)pdm09 and 3 were influenza A (un-subtyped), and 7 new adult hospitalizations, of which 3 were A(H1N1)pdm09, 3 were influenza A (un-subtyped), and 1 was influenza B, were reported in week 49. Details are available at: www.phac-aspc.gc.ca/fluwatch/13-14/w49_13/index-eng.php.

National Microbiology Laboratory (NML): Strain Characterization

From September 1 to December 19, 2013, 117 isolates were collected from provincial and hospital laboratories for antigenic characterization at the NML:

- 14 A/Texas/50/2012-like (H3N2)[¶] from ON, AB and BC;
- 79 A/California/07/09-like [A(H1N1)pdm09]^{*} from NL, NB, ON, MB, SK, AB and BC;
- 19 B/Massachusetts/02/12-like[†] from QC, ON 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 to December 19, 2013, 69 influenza A [14 A(H3N2) and 55 A(H1N1)pdm09] viruses were tested for resistance to amantadine at the NML; all tested viruses were found to be resistant. In total during this period, 118 influenza viruses [15 A(H3N2), 78 A(H1N1)pdm09, and 25 B] were tested for resistance to oseltamivir and 116 [15 A(H3N2), 76 A(H1N1)pdm09, and 25 B] were tested for resistance to zanamivir; all tested viruses were sensitive to both antiviral drugs.

International

USA (week 49): Influenza activity in the United States continued to increase in week 49. Of the 6,219 specimens tested, 830 (13.3%) were positive for influenza viruses, of which 94% were influenza A [48.8% A(H1N1)pdm09, 1.8% A(H3N2), 49.4% un-subtyped] and 6.0% were influenza B. Details are available at: www.cdc.gov/flu/weekly/.

WHO (as of December 7, 2013): Overall influenza activity worldwide remained low. Influenza activity in North America remained low in general. Low-level influenza activity also continued in the WHO European Region with sporadic detections of influenza viruses reported from a few countries. Influenza A was detected in the majority (87%) of cases testing positive for influenza in week 49 in Europe, with co-circulation of influenza A(H1N1)pdm09 (48% among subtyped viruses) and A(H3N2) (52% among subtyped viruses) (www.euroflu.org/cgi-files/bulletin_v2.cgi). In Asia, influenza activity slightly increased in Mongolia and China. In Southeast Asia, influenza activity decreased in Lao People's Democratic Republic, Thailand, and Viet Nam. In these areas, low levels of co-circulation of influenza A(H1N1)pdm09, influenza A(H3N2) and influenza B virus was reported. In the Caribbean region of Central America and tropical South America countries, reported cases of influenza A infection remained at low levels. According to the WHO, influenza activity in the southern hemisphere is largely over. The most recent information is available at: www.who.int/influenza/surveillance_monitoring/updates/en/.

Avian Influenza A(H7N9) Virus: In the past two weeks, four additional cases of human infection with avian-origin influenza A(H7N9) have been reported, all in Guangdong Province in southern China. These case reports follow two recently announced cases in Hong Kong, of which both reported recent travel to the adjacent Guangdong Province. A total of 148 human cases of A(H7N9) have been reported to date, including 47 deaths. Twelve cases have been reported so far this fall, following a period of inactivity in late August and September. At this time, there is no evidence of sustained human-to-human transmission and the risk assessment remains unchanged. However, the recent announcement of new cases, combined with the natural seasonality of influenza in temperate regions, raises concerns about a possible re-emergence of this virus during winter months. 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/influenza/human_animal_interface/influenza_h7n9.

Avian Influenza A(H10N8) Virus: This week, China reported a fatal human case of a novel avian-origin influenza A(H10N8) virus in an immunocompromised elderly woman from Jiangxi, China, who had exposure to live poultry markets. This is the first reported case of human infection with H10N8, although this virus has previously been detected in birds and environmental samples in China. Prior infections in humans with other H10 subtypes, notably H10N7, have also been previously reported.

Middle East Respiratory Syndrome Coronavirus (MERS-CoV): Since September 2012, the WHO has been informed of a total of 165 lab-confirmed cases of MERS-CoV and 71 deaths. In the past two weeks, two additional cases have been reported in Saudi Arabia, including one in an asymptomatic health care worker who was a contact of a known case and one in a woman in her 50s who had underlying medical conditions. Also this week, researchers reported in *Lancet Infectious Diseases* that three Qatari camels previously identified as positive for MERS-CoV as part of investigations around two human cases were infected with a nearly identical strain to one found in the two human cases. However, while this evidence provides virological confirmation of MERS-CoV in camels, their role in the transmission cycle for MERS-CoV, as well as the reservoir of infection, remain unknown at this time. Six countries in the Middle East have been affected, including the Kingdom of Saudi Arabia (which accounts for ~80% of case reports), the UAE, Jordan, Qatar, Oman, and Kuwait. 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/disease/coronavirus_infections/en/index.html.

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

RSV: Respiratory syncytial virus

VCHA: Vancouver Coastal Health Authority

VIHA: Vancouver Island Health Authority

WHO: World Health Organization

NEW – 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 (if ward or wing, please specify name/number: _____)
	<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