Highlights

In week 4 (January 24-30), surveillance indicators continued to suggest low levels of influenza activity in the province. The proportion of patients presenting to sentinel physicians with ILI and Medical Services Plan claims for influenza illness both remained lower than expected for this time of year. Two ILI outbreaks were reported in schools in IHA; no influenza outbreaks were reported in facilities. At the BC Provincial Laboratory, one of 98 respiratory specimens tested was positive for pH1N1, while 49% (19/39) of specimens tested for other respiratory viruses were positive for RSV (7), human metapneumovirus (5), rhino/enterovirus (3), coronavirus (3), or parainfluenza (1). Of 62 specimens tested at BC Children’s Hospital Laboratory, none were positive for influenza, 18 (29%) were positive for RSV, 2 (3%) for parainfluenza, and 1 (2%) for adenovirus. Thus, currently, acute respiratory illness for which respiratory virus testing is sought in BC is more likely to be due to a non-influenza cause. Globally, pH1N1 continues to be the predominant influenza virus in circulation, with increasing contribution of influenza B viruses reported in recent weeks in China. Monitoring for possible seasonal/pandemic influenza resurgence in BC continues.

Report written & disseminated: February 3, 2010
Contributors: Travis Hottes, Naveed Janjua, Danuta Skowronski
Sentinel Physicians
During week 4, 0.6% of patients presenting to sentinel physicians had ILI, which is below the expected range for this time of year. Fifty-three percent (27/51) of sentinel physician sites have reported to-date for week 4.

Percentage of Patient Visits due to Influenza Like Illness (ILI) per Week Compared to Average Percentage of ILI Visits for the Past 19 Seasons Sentinel Physicians, British Columbia, 2009-2010

*Data subject to change as reporting becomes increasingly complete

BC Children’s Hospital Emergency Room
The percentage of Emergency Room visits attributed to “fever and cough” or flu-like illness at BC Children’s Hospital during week 4 remained comparable to previous weeks (8.1%).

Percentage of Patients Presenting to BC Children’s Hospital ER with Presenting Complaint of “Flu,” “Influenza,” or “Fever/Cough”, by Week

Source: BCCH Admitting, discharge, transfer database, ADT

Emergency Room data kindly provided by Decision Support Services at BC Children’s Hospital
Medical Services Plan
Influenza illness as a proportion of all submitted BC Medical Services Plan (MSP) claims remained low in the last week, consistent with the decrease over the past few months, within the expected range for this time of year, and bordering on the 10-year minimum. Proportions in all 5 RHAs remain below the historical medians. Graphs presented below include two indicators: one reflecting in-person physician visits only with influenza illness claims (black) and one reflecting influenza illness claims whether in-person visits or phone consultations (purple). For surveillance purposes, however, these indicators show the same trend.

Influenza Illness Claims* British Columbia

* Influenza illness is tracked as the percentage of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza).

Notes: MSP week 27 Sep 2009 corresponds to sentinel ILI week 39.
Data current to February 2, 2010

Northern
Laboratory Reports

Ninety eight respiratory specimens were tested for influenza at the BC Provincial Laboratory in week 4. One (1%) was positive for pH1N1; none were positive for other influenza viruses. Since week 35 (September 1, 2009), >99% of all influenza detections in BC have been pH1N1. In week 4, 39 specimens were tested for other respiratory pathogens, of which 7 (18%) tested positive for RSV, 5 (13%) for human metapneumovirus, 3 (8%) for coronavirus, 3 (8%) for rhino/enterovirus, and 1 (3%) for parainfluenza. Currently, acute respiratory illness in BC for which a respiratory specimen is collected is more likely to be due to a cause other than influenza.

During week 4, BC Children’s and Women’s Health Centre Laboratory tested 62 respiratory specimens. None were positive for influenza. Sixteen (26%) specimens tested positive for RSV, 2 (3%) for parainfluenza, and 1 (2%) for adenovirus.

![Virus Detections and Percentage of Respiratory Specimens Submitted to BC Provincial Laboratory Diagnosed Positive for Influenza Virus, per Week, BC, 2009-2010](image-url)
**ILI Outbreaks**

In week 4, two ILI outbreaks were reported in schools in IHA. No lab-confirmed influenza outbreaks were reported in facilities in BC.

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**Influenza A (including pH1N1)**

**Influenza B**

**Respiratory Syncitial Virus**

**Other virus**

**% positive influenza**

**ILI Outbreaks Investigated or Reported, Compared to Current ILI Rate and Average ILI Rate for past 19 years, per Week**

British Columbia, 2009-2010

* Influ LTCF = Long-term care facility, influenza identified
* Other LTCF = Long-term care facility, other pathogen identified (including RSV, parainfluenza, adenovirus, and rhino/enterovirus)
* ILI (No Pathogen) LTCF = Long-term care facility, no pathogen identified

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*BRITISH COLUMBIA INFLUENZA SURVEILLANCE BULLETIN*

2009-10: Number 17, Week 04

*January 24-30, 2010*
**Pandemic H1N1 (pH1N1) Severe Outcomes**

As of February 1, 2010, and since April 2009, 1059 hospitalizations in patients with laboratory-confirmed pH1N1 have been reported in BC, one of which was reported in week 4. Sixty-six percent of hospitalized cases had at least one reported underlying medical condition (excluding pregnancy). Twenty-five percent of hospitalized cases have been admitted to the intensive care unit, and 8% have died. As shown in the mortality graph on the next page, the ratio of pH1N1 mortality to case detection is lowest in the young and highest in the old.

For further description of BC pH1N1 cases, visit: [www.bccdc.ca/dis-cond/DiseaseStatsReports/influSurveillanceReports.htm](http://www.bccdc.ca/dis-cond/DiseaseStatsReports/influSurveillanceReports.htm)

Resources for healthcare professionals: [www.bccdc.ca/resourcematerials/newsandalerts/healthalerts/H1N1FluVirusHumanSwineFlu.htm](http://www.bccdc.ca/resourcematerials/newsandalerts/healthalerts/H1N1FluVirusHumanSwineFlu.htm)
Cumulative Rate of pH1N1 Cases and Hospitalizations by Age, per 100,000 Population, BC April 17, 2009 - February 1, 2010

Case defined as any detection of pH1N1 at the BC provincial laboratory.

Cumulative Rate of pH1N1 Cases and Deaths by Age, per 100,000 Population, British Columbia, April 17, 2009 - February 1, 2010

Case defined as any detection of pH1N1 at the BC provincial laboratory.
**FluWatch**

During week 3, influenza activity in Canada remained low. The sentinel ILI consultation rate was 12 per 1000 patient visits, which is well below the expected range for this time of year. Less than one percent of respiratory specimens tested nationally were positive for influenza, compared to 22% positivity for RSV. Of the 8 influenza detections reported nationally, 7 were pH1N1, and 1 was influenza B (Ontario). [www.phac-aspc.gc.ca/fluwatch/](http://www.phac-aspc.gc.ca/fluwatch/)

**National Microbiology Laboratory**

Between September 1, 2009 and January 28, 2010, 744 influenza isolates (734 pandemic H1N1 and 10 seasonal influenza) were collected from provincial and hospital labs and characterized at the National Microbiology Laboratory (NML):

- 734 A/California/07/2009 (H1N1)-like from BC, AB, SK, MB, ON, QC, NB, NS, PEI, & NT;
- 2 A/Brisbane/59/2007 (H1N1)-like from AB & QC;
- 1 A/Brisbane/10/2007 (H3N2)-like from BC;
- 6 A/Perth/16/2009 (H3N2)-like from AB & QC;
- 1 B/Brisbane/60/2008 (Victoria lineage)-like from ON.

§ A/California/07/2009 (H1N1) is the variant reference virus (pH1N1) selected by WHO for the pandemic influenza A/H1N1 vaccine
† indicates a strain match to the 2009-10 northern hemisphere trivalent influenza vaccine
¶ indicates a strain match to the 2010 southern hemisphere trivalent influenza vaccine

**Antiviral Resistance**

Drug susceptibility testing at the NML between September 1, 2009 and January 28, 2010 indicated that 99% (935/945) of pH1N1 isolates were sensitive to oseltamivir. All influenza B isolates (n=1) and influenza A/H3N2 isolates (n=9) tested were sensitive to oseltamivir, and the 4 seasonal A/H1N1 isolates tested were oseltamivir-resistant. All pH1N1 (n=926), seasonal H1N1 (n=2), A/H3N2 (n=9), and influenza B (n=1) isolates were sensitive to zanamivir. All pH1N1 (n=992) and A/H3N2 (n=17) isolates were resistant to amantadine. Two seasonal H1N1 isolates were sensitive to amantadine, and one was resistant.

Global surveillance has shown that circulating pH1N1 viruses are resistant to amantadine but remain sensitive to zanamivir and oseltamivir, although sporadic cases of oseltamivir resistance have been observed worldwide.

**INTERNATIONAL**

During week 3 (January 17-23, 2010), influenza activity remained low in the United States ([http://www.cdc.gov/flu/weekly/](http://www.cdc.gov/flu/weekly/)). Five percent (164/3588) of respiratory specimens tested in reference laboratories were positive for influenza. All (98/98) subtyped influenza A viruses were pH1N1. Influenza B was detected in 2 specimens. The proportion of sentinel physician visits due to ILI remained low (1.7%) and below the national baseline.

In Europe, some Eastern European countries reported ongoing influenza activity due to pH1N1, but all other countries reported declining trends for the week of January 18-24. Fifteen percent of sentinel laboratory samples were positive for influenza, a decrease from the previous week. Of 122 sentinel influenza detections across Europe, 6 were influenza B, 116 were influenza A, and 100% of the sub-typed influenza A viruses were pH1N1. ([http://www.eiss.org/](http://www.eiss.org/))

Worldwide, pH1N1 continues to be the dominant influenza virus currently circulating. From January 10-16, 2010, 64% (1961/3044) of the influenza detections reported to WHO from various regions of the world were influenza A, and of those sub-typed, 95% (1637/1724) were pH1N1. Influenza B as a proportion of all influenza viruses detected globally has been increasing in recent weeks: 6% in week 51 (Dec 20-26, 2009), 11% in week 52 (Dec 27, 2009 – Jan 2, 2010), 18% (505/2771) in week 1 (Jan 3-9, 2010), and 36% (1083/3044) in week 2 (Jan 10-16, 2010). Most of the recent influenza B viruses have been reported from China, where 52% (1037/2031) of influenza detections in week 2 were type B virus. In temperate regions of the southern hemisphere, sporadic cases of pH1N1 continue to be detected; however, sustained community transmission has not been observed in recent weeks. ([http://www.who.int/csr/don/2010_01_22/en/index.html](http://www.who.int/csr/don/2010_01_22/en/index.html))
List of Acronyms

- ACF: Acute Care Facility
- AI: Avian Influenza
- FHA: Fraser Health Authority
- 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
- pH1N1: Pandemic H1N1 influenza or swine origin influenza
- RSV: Respiratory syncytial virus
- VCHA: Vancouver Coastal Health Authority
- VIHA: Vancouver Island Health Authority
- WHO: World Health Organization

Web Sites

1. Influenza Web Sites
   - Canada – Flu Watch: www.phac-aspc.gc.ca/fluwatch/
   - Washington State Flu Updates: www.doh.wa.gov/ehsphepidemiology/CD/HTML/FluUpdate.htm
   - USA Weekly Surveillance reports: www.cdc.gov/flu/weekly/
   - European Influenza Surveillance Scheme: www.eiss.org/index.cgi
   - WHO – Global Influenza Programme: www.who.int/csr/disease/influenza/mission/
   - WHO – Weekly Epidemiological Record: www.who.int/wer/en/
   - Influenza Centre (Australia): www.influenzacentre.org/

2. Avian Influenza Web Sites
   - World Organization for Animal Health: www.oie.int/eng/eng_index.htm

3. Pandemic H1N1 Influenza Web Sites
   - BCCDC: www.bccdc.ca/dis-cond/a-z/_h/HumanSwineFlu/default.htm
   - BC Provincial Government: http://www.gov.bc.ca/h1n1/
   - US CDC: www.cdc.gov/swineflu/index.htm

4. This Report On-line: www.bccdc.ca/dis-cond/DiseaseStatsReports/influSurveillanceReports.htm
**Influenza-Like Illness (ILI) Outbreak Summary Report Form**

*Please complete and email to ilioutbreak@bccdc.ca or fax to (604) 707-2516*

**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.

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### SECTION A: Reporting Information

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*)

### SECTION 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): __________ / _______ / ______

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<th>Numbers to date</th>
<th>Residents/Students</th>
<th>Staff</th>
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<tr>
<td>With ILI</td>
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<tr>
<td>Hospitalized</td>
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<tr>
<td>Died</td>
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### SECTION C: Update AND Outbreak Declared Over

Date of onset for most recent case of ILI (dd/mm/yyyy): __________ / _______ / ______

If over, date outbreak declared over (dd/mm/yyyy): ________ / _______ /_______

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<td>Died</td>
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### SECTION D: Laboratory Information

Specimen(s) submitted?  
- ☐ Yes (location: _______________ )  
- ☐ No  
- ☐ Don’t know

If yes, organism identified?  
- ☐ Yes (specify: _______________ )  
- ☐ No  
- ☐ Don’t know