Influenza Activity in BC Continues to Increase but within Historic Levels

Contents:
- Overview Page 1
- Sentinel Physicians Page 1
- ILI Outbreaks Page 1
- Laboratory Reports Page 1
- Oseltamivir Resistance Page 2
- Canadian Data Page 2
- International Data Page 2
- Avian Influenza Page 2
- Vaccine Composition Page 3
- Activity Level Definitions Page 3
- List of Acronyms Page 3
- Web Sites Page 3
- Weekly ILI Graph Page 4
- ILI by Health Authority Page 4
- ILI Outbreaks Graph Page 5
- Lab Summary Graphs Page 6
- ILI Outbreak Form Page 7

Highlights
During week 7 (February 15-21, 2009), 8 ILI outbreaks occurred in schools in FHA, IHA, and NHA, and 2 lab-confirmed influenza A/H3 outbreaks occurred in LTCFs in FHA and IHA. Twenty-seven percent (73 / 271) of respiratory specimens tested in BC laboratories (BCCDC and Children's and Women's Health Centre) during week 7 were positive for influenza, of which 71% were influenza A. Of those influenza A specimens that were sub-typed during week 7, 61% were A/H3. To date this season (February 24), 78% (294 / 379) of influenza isolates have been A/H1 identified in one outbreak, no pathogen identified in the others were reported during week 7. Two lab-confirmed influenza A/H3 outbreaks were reported in LTCFs in FHA and IHA. Since the start of the season (Sept 28), specimens have been submitted to BCCDC Laboratory Services in relation to 76 ILI outbreak investigations. Influenza was identified in 15 (20%), rhino/enterovirus was identified in 13 (17%) of the investigations, RSV in 6 (8%), human metapneumovirus (HMPV) in 5 (7%), parainfluenza in 3 (4%), coronavirus in 2 (3%), and adenovirus in 1 (1%). No pathogen was identified in the other 31 investigations. (See graph on page 5.)

Please remember to notify BCCDC if an outbreak of ILI occurs in your region, by emailing ilioutbreak@bccdc.ca and attaching the outbreak report form (a copy is found at the end of this report).

ILI Outbreaks
Eight ILI outbreaks in schools in FHA, IHA, and NHA (influenza A/H1 identified in one outbreak, no pathogen identified in the others) were reported during week 7. Two lab-confirmed influenza A/H3 outbreaks were reported in LTCFs in FHA and IHA. Since the start of the season (Sept 28), specimens have been submitted to BCCDC Laboratory Services in relation to 76 ILI outbreak investigations. Influenza was identified in 15 (20%), rhino/enterovirus was identified in 13 (17%) of the investigations, RSV in 6 (8%), human metapneumovirus (HMPV) in 5 (7%), parainfluenza in 3 (4%), coronavirus in 2 (3%), and adenovirus in 1 (1%). No pathogen was identified in the other 31 investigations. (See graph on page 5.)

Laboratory Reports
During week 7, BCCDC Laboratory Services tested 165 respiratory specimens. Thirty-nine (24%) specimens tested positive for influenza A, and 15 (9%) tested positive for influenza B. Thirty-three of the influenza A specimens received during week 7 have been sub-typed, of which 20 (61%) were A/H3 and 13 (39%) were A/H1. An additional 23 specimens tested positive for RSV, 9 for rhino/enterovirus, 2 for HMPV, 1 for adenovirus, and 1 for parainfluenza.

During week 7, Children's and Women's Health Centre Laboratory tested 106 respiratory specimens. Twenty-four (23%) specimens tested positive for RSV, 13 for influenza A, 6 for influenza B, and 2 for parainfluenza. (See graphs on page 6.)

To date this season (February 24), 78% (294 / 379) of influenza isolates tested at both laboratories have
been type A, and of those sub-typed, 58% (156 / 270) have been A/H3.

**Oseltamivir Resistance**

To date (February 24, 2009) during the 2008-09 season, BCCDC has assessed 96 A/H1N1 isolates for oseltamivir resistance; 86 show genotypic evidence of oseltamivir resistance, and the other 10 are indeterminate and undergoing further assessment through sequencing of the neuraminidase gene. Thus, all A/H1N1 specimens for which oseltamivir sensitivity could be determined have so far been found resistant to date in BC during the 2008-09 season.

Health care providers considering use of antivirals are advised to consult public health and surveillance updates and to stay informed about influenza activity and resistance patterns throughout the season. The BCCDC has shared interim guidelines for antiviral options in the context of evolving resistance patterns with local health authorities. Local health authorities may be consulted for more information. Given the continued increase in activity, it is not too late to get vaccinated.

**CANADA**

**Flu Watch**

During week 6 (Feb 8-14), influenza activity continued to increase in Canada with localized activity reported in most provinces (BC, AB, MB, ON, QC, NB, & NS). Nineteen ILI outbreaks were reported: 9 in LTCFs (BC, AB, & MB) and 10 in schools (BC, AB, MB, NS, & NB). The percentage of all reported tests for influenza in Canada that were positive continued to increase, from 11.7% in week 5 to 14.1% in week 6. Since August 24, 2008 provincial/territorial laboratories have detected 2491 cases of influenza, 1425 (57%) influenza A and 1066 (43%) influenza B. The national rate of ILI visits to sentinel physicians increased from 21 cases per 1,000 patient visits in the previous week to 34 per 1,000 in week 65, which is within the expected range for this time of the season.

http://www.phac-aspc.gc.ca/fluwatch/

**National Microbiology Laboratory**

Since Sept 1 and as of Feb 20, 317 influenza isolates from provincial and hospital labs have been characterized at the National Microbiology Laboratory (NML):

79 A/Brisbane/59/07(H1N1)-like* from BC, AB, SK, ON, QC, NS, & PEI;
39 A/Brisbane/10/07(H3N2)-like* from BC, AB, SK, ON, QC, PEI, & NL;
6 B/Florida/04/06(Yamagata)-like* from AB, ON, & QC;
and 193 B/Malaysia/2506/04(Victoria)-like from BC, AB, SK, MB, ON, QC, NB, NS, PEI, & NL.

* indicates a strain match to the vaccine component.

**INTERNATIONAL**

During week 6 (Feb 8-14), influenza activity continued to increase in the United States. The rate of ILI visits to sentinel physicians increased from 3.2% in the previous week to 3.6% in week 6, exceeding the national baseline. To date this season, US laboratories have detected influenza in 8120 respiratory specimens, of which 79% were influenza A. Of the influenza A isolates that have been sub-typed, 89% were A/H1. Two hundred and sixty-four of 268 (99%) A/H1 viruses tested were found to be resistant to oseltamivir. For more information, visit: http://www.cdc.gov/flu/weekly/.

During week 6 (Feb 8-14), influenza activity continued to increase across central Europe while generally decreasing in western Europe. Of the 19,033 influenza virus detections in Europe since the start of the season (week 40), 94% were influenza A, and of those sub-typed, 92% were A/H3. For more information, visit: http://www.eiss.org.

**Avian Influenza**

Since 2003 and to date (Feb 24, 2009), the WHO has confirmed 408 human avian influenza A/H5N1 cases and 255 deaths, with 2 recent human cases reported in Vietnam. For more information on human avian influenza cases please visit: http://www.who.int/csr/disease/avian_influenza
Avian influenza A/H5N2 was detected among two commercial poultry flocks in FHA over the course of the past 5 weeks. All affected birds have been culled, and surrounding farms are under enhanced surveillance. To date, there have been no reports of human illness attributed to this outbreak of avian influenza. Protective measures include personal protective equipment, vaccination, and antiviral prophylaxis for all persons who may be exposed to infected poultry. BCCDC, FHA, and other authorities continue to monitor the situation and ensure that all necessary outbreak control measures are taken.

For further information on confirmed avian influenza outbreaks in poultry, please visit: http://www.oie.int/downld/AVIAN%20INFLUENZA/A_Ai-Asia.htm.

Vaccine Composition
This year’s (2008-09) influenza vaccine contains the following virus antigens:
- A/Brisbane/59/2007(H1N1)-like
- A/Brisbane/10/2007(H3N2)-like
  Note: A/Uruguay/716/2007(H3N2) is antigenically equivalent to A/Brisbane/10/2007(H3N2) and may be included by vaccine producers.
- B/Florida/04/2006(Yamagata lineage)-like

The WHO has announced the recommended components of the 2009-10 northern hemisphere influenza vaccines:
- A/Brisbane/59/2007(H1N1)-like
- A/Brisbane/10/2007(H3N2)-like
- B/Brisbane/60/2008(Victoria lineage)-like
Thus, only the B component will be changed from the 2008-09 vaccine. Additional information can be found here: http://www.who.int/csr/disease/influenza/recommendations2009_10north/en/index.html.

Activity Level Definitions
Sporadic influenza activity: sporadically occurring ILI and laboratory-confirmed influenza during previous 4 weeks, with no outbreaks.

Localized influenza activity: as for sporadic activity, but with ILI outbreaks in schools and worksites, or laboratory-confirmed influenza outbreaks in residential institutions occurring in less than 50% of the influenza surveillance regions during the week of reporting.

Widespread influenza activity: as for localized activity, but with outbreaks occurring in greater than or equal to 50% of the influenza surveillance regions during the week of reporting.

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
NHA: Northern Health Authority
NML: National Microbiological Laboratory
OIE: World Organization for Animal Health
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: http://www.phac-aspc.gc.ca/fluwatch/
   USA Weekly Surveillance reports: http://www.cdc.gov/flu/weekly/
   European Influenza Surveillance Scheme: http://www.eiss.org/index.cgi
   WHO – Weekly Epidemiological Record: http://www.who.int/wer/en/
   Influenza Centre (Australia): http://www.influenzacentre.org/

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

3. This Report On-line
   http://www.bccdc.org/content.php?item=35

Contact Us:
Epidemiology Services
BC Centre for Disease Control (BCCDC)
655 W. 12th Ave, Vancouver BC V5Z 4R4
Tel: (604) 660-6061 / Fax: (604) 660-0197
InfluenzaFieldEpi@bccdc.ca
WEEKLY ILI

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, 2008-2009

INFLUENZA-LIKE ILLNESS BY HEALTH AUTHORITY

<table>
<thead>
<tr>
<th>HEALTH AUTHORITY</th>
<th>Week 7</th>
<th>Feb 15 – 21</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ILI Visits</td>
<td>Total Visits</td>
</tr>
<tr>
<td>Fraser</td>
<td>18</td>
<td>1,455</td>
</tr>
<tr>
<td>Interior</td>
<td>1</td>
<td>494</td>
</tr>
<tr>
<td>Northern</td>
<td>1</td>
<td>164</td>
</tr>
<tr>
<td>Vancouver Coastal</td>
<td>12</td>
<td>446</td>
</tr>
<tr>
<td>Vancouver Island</td>
<td>6</td>
<td>1,620</td>
</tr>
<tr>
<td>BC Total</td>
<td>38</td>
<td>4,179</td>
</tr>
</tbody>
</table>
ILI OUTBREAKS

Number of Influenza-Like Illness (ILI) Outbreaks Investigated or Reported, Compared to Current ILI Rate and Average ILI Rate for past 19 years, per Week
British Columbia, 2008-2009

* 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
LABORATORY SUMMARY

Virus Isolates and Percentage of Respiratory Specimens Submitted to BC Provincial Laboratory Diagnosed Positive for a Virus, per Week
British Columbia, 2008-2009

Virus Isolates and Percentage of Respiratory Specimens Submitted to Children and Women’s Health Centre Laboratory Diagnosed Positive for a Virus, per Week, British Columbia, 2008-2009
Influenza-Like Illness (ILI) Outbreak Summary Report Form

Please complete and email to ilioutbreak@bccdc.ca or fax to (604) 660-0197

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.

---

**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): __________ /_______ / ______

<table>
<thead>
<tr>
<th>Numbers to date</th>
<th>Residents/Students</th>
<th>Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With ILI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospitalized</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Died</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**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): __________ /_______ / ______

<table>
<thead>
<tr>
<th>Numbers to date</th>
<th>Residents/Students</th>
<th>Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With ILI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospitalized</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Died</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**SECTION D: Laboratory Information**

Specimen(s) submitted?  
- [ ] Yes (location: ______________)  
- [ ] No  
- [ ] Don’t know

If yes, organism identified?  
- [ ] Yes (specify: ______________)  
- [ ] No  
- [ ] Don’t know