Overall BC Influenza Activity Levels Remain Low in Week 16, while Surveillance is Strengthened in Context of Swine Influenza

In week 16, 0.27% of all patient visits to sentinel physicians were attributed to ILI. This is close to the average percentage for this time of year (0.26%). (See graph on page 4.)

MSP
As of April 28, 2009, influenza illness as a proportion of all submitted BC Medical Services Plan (MSP) claims has shown a consistent decline over the past few weeks. (See graphs on pages 4-6.)

ILI Outbreaks
In week 16, no influenza outbreaks were reported in BC. Since the start of the season (Sept 28), specimens have been submitted to BCCDC Laboratory Services in relation to 126 ILI outbreak investigations (108 in LTCFs, 11 in ACFs, 4 in schools, 2 in correctional facilities, and 1 in a substance abuse treatment centre). Influenza was identified in 49 (39%) of the investigations (38 in LTCFs, 7 in ACFs, and 4 in schools). Among the 38 influenza outbreaks in LTCFs this season, 34 (89%) were attributed to influenza A/H3, 1 to influenza A/H1, 2 to influenza A (sub-type not available), and 1 to influenza B. Rhino/enterovirus was furthermore identified in 13 (10%) of the investigations, RSV in 7 (6%), human metapneumovirus (HMPV) in 5 (4%), parainfluenza in 3 (2%), coronavirus in 2 (2%), and adenovirus in 1 (1%). No pathogen was identified in the other 46 investigations. (See graph on page 6.)

Please remember to notify BCCDC of any ILI outbreaks occurring in your region by sending an e-mail to ilioutbreak@bccdc.ca and attaching the outbreak report form (a copy is found at the end of this report).

The recent international spread of a novel strain of swine influenza A/H1N1 in humans, with confirmed cases in BC, has prompted the BCCDC to further strengthen its surveillance system. Surveillance indicators are being closely followed for trends in community activity. With increased awareness, some increase in ILI activity over the coming weeks is anticipated.
Laboratory Reports
During week 16, BCCDC Laboratory Services tested 75 respiratory specimens. Seven (9%) specimens tested positive for influenza A, and 3 (4%) tested positive for influenza B. Of the six influenza A specimens which were further assessed for sub-type or strain during week 16, 4 were A/H3 and 2 were swine influenza A/H1. An additional 11 (15%) specimens tested positive for rhino/enterovirus, 5 (7%) for parainfluenza, 2 (3%) for coronavirus, 2 (3%) for HMPV, 1 (1%) for RSV, and 1 (1%) for adenovirus.

During week 16, Children’s and Women’s Health Centre Laboratory tested 75 respiratory specimens. Eleven (3%) specimens tested positive for parainfluenza, 9 (12%) for RSV, 2 (3%) for influenza A, and 1 (1%) for adenovirus. (See graphs on page 7.)

To date this season (Apr 28), 76% (727 / 959) of influenza isolates tested at both laboratories have been type A, and of those sub-typed, 70% (450 / 645) have been A/H3.

Oseltamivir Resistance
To date (Apr 28) during the 2008-09 season, BCCDC has assessed 163 A/H1N1 isolates for oseltamivir resistance; 148 show genotypic evidence of oseltamivir resistance, and the other 15 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 posted interim guidelines, for clinician reference, concerning antiviral options in the context of evolving resistance patterns:  

Swine Influenza
For up-to-date information on confirmed cases of swine influenza in Canada, visit:  

BC-specific information, including resources for healthcare professionals, is available here:  
http://www.bccdc.org/news.php?item=290&PHPSESSID=23de71450ae7253c8bf8febbb6b4b8c

CANADA

FluWatch
During week 15 (Apr 12-18), influenza activity in Canada continued to decline, with mostly sporadic activity reported throughout the country. Six new ILI outbreaks were reported in LTCFs (BC, AB, ON, & NS). The proportion of tests that were positive for influenza decreased from 11% in week 14 to 9% in week 15. Since August 24, 2008, provincial/territorial laboratories have detected 9,049 cases of influenza, of which 5,475 (61%) were influenza A and 3,574 (39%) were influenza B. The national rate of ILI visits to sentinel physicians was 22 ILI consultations per 1,000 patient visits in week 15, 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 Apr 17, 828 influenza isolates from provincial and hospital labs have been characterized at the National Microbiology Laboratory (NML):  
202 A/Brisbane/59/07(H1N1)-like* † from BC, AB, SK, MB, ON, QC, NB, NS, & PEI;  
142 A/Brisbane/10/07(H3N2)-like* † from BC, AB, SK, MB, ON, QC, NB, PEI, & NL;  
9 B/Florida/04/06(Yamagata)-like* from AB, ON, QC, & NB;  
368 B/Malaysia/2506/04(Victoria)-like from all ten provinces; and, 107 B/ Brisbane/60/08(Victoria)-like † from BC, SK, MB, ON, QC, NB, and NL.

* indicates a strain match to the 2008-09 vaccine  
† indicates a strain match to the 2009-10 vaccine

Antiviral Resistance
Drug susceptibility testing at the NML as of Apr 9 indicated that all (n=225) H1N1 isolates tested to date were resistant to oseltamivir, while all H3N2 (n=154) and influenza B (n=460) isolates tested were sensitive to oseltamivir. Of those isolates tested for amantadine resistance, all (n=242) H1N1 isolates were found to be sensitive, and all (n=285) H3N2 isolates were found to be resistant. All 794 (176 H1N1, 152 H3N2, and 466 influenza B) isolates that have been tested for zanamivir resistance were sensitive.
INTERNATIONAL

As of week 15 (Apr 12-18), influenza activity in the United States and Europe continued to decrease, generally returning to baseline, end-of-season levels. Details are available at: http://www.cdc.gov/flu/weekly/ and http://www.eiss.org.

The international situation concerning swine influenza is rapidly evolving. For the most up-to-date information, visit the WHO website at: http://www.who.int/csr/disease/swineflu/en/index.html

Avian Influenza
Since 2003 and to date (Apr 23, 2009), the WHO has confirmed 421 human avian influenza A/H5N1 cases and 257 deaths. For more information on human avian influenza cases, please visit: http://www.who.int/csr/disease/avian_influenza.

For information on confirmed avian influenza outbreaks in poultry, please visit: http://www.oie.int/downld/AI сторia.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/Florida/08/2008(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.

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
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

4. Swine Influenza Web Sites
BCCDC: http://www.bccdc.org/news.php?item=290&PHPSESSID=23 de71450ae7253c8bf6febbb6b4b8cf

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

**NOTE:** MSP week 27 Sep 2008 corresponds to sentinel ILI week 40.
**Influenza Illness Claims* via BC Medical Services Plan (MSP)**

*By Regional Health Authority (RHA) – Current to April 28, 2009*

**Interior**

- Above historical maximum
- Above 10-year maximum
- Above 10-year 75th percentile
- Between 25th and 75th percentile
- Below 10-year 25th percentile
- Below 10-year minimum
- Historical median
- Current year

**Vancouver Coastal**

- Above historical maximum
- Above 10-year maximum
- Above 10-year 75th percentile
- Between 25th and 75th percentile
- Below 10-year 25th percentile
- Below 10-year minimum
- Historical median
- Current year

**Fraser**

- Above historical maximum
- Above 10-year maximum
- Above 10-year 75th percentile
- Between 25th and 75th percentile
- Below 10-year 25th percentile
- Below 10-year minimum
- Historical median
- Current year

**Vancouver Island**

- Above historical maximum
- Above 10-year maximum
- Above 10-year 75th percentile
- Between 25th and 75th percentile
- Below 10-year 25th percentile
- Below 10-year minimum
- Historical median
- Current year
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

-0.1 0.1 0.3 0.5 0.7 0.9 1.1 1.3 1.5

<table>
<thead>
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<th>% of sentinel patient visits due to ILI</th>
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<tbody>
<tr>
<td># Influ LTCF*</td>
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<tr>
<td># Other LTCF*</td>
</tr>
<tr>
<td># ILI (No Pathogen) LTCF*</td>
</tr>
<tr>
<td># ILI Acute Hospitals</td>
</tr>
<tr>
<td># ILI Schools</td>
</tr>
<tr>
<td>Avg ILI Rate</td>
</tr>
<tr>
<td>Current ILI Rate</td>
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</table>

* 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
- ☐ Workplace
- ☐ School (grades:________)
- ☐ Other (________)

(if ward or wing, please specify name/number: ______________________)

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>
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<td>Hospitalized</td>
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<tr>
<td>Died</td>
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</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): ______ / ______ / ______

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<tr>
<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