Influenza Activity Levels Decline while Detections of Swine-Origin Influenza A/H1N1 Continue in BC

Sentinel Physicians
During weeks 17-19, the proportion of patients presenting to sentinel physicians with ILI increased beyond the expected range for this time of year and subsequently decreased. This surge in ILI activity may at least in part be attributed to heightened public awareness of swine-origin influenza A/H1N1 since late April. (See graph on page 4.)

MSP
Influenza illness as a proportion of all submitted BC Medical Services Plan (MSP) claims also showed a sharp increase and subsequent decrease during weeks 17-19. Likewise, this sudden peak may be partially explained by heightened concern among the public, which has induced care-seeking among patients with mild illness who would not otherwise present to a physician. As of May 20, 2009, this indicator has returned to the expected range for this time of year. (See graphs on pages 4-6.)

ILLI Outbreaks
During weeks 17-19, three influenza A/H3N2 outbreaks were reported in LTCFs (two in VCHA and one in FHA), seven ILLI outbreaks were reported in schools throughout the province (one due to swine-origin influenza A/H1N1 and one due to influenza B; no pathogen identified in the others), and one swine-origin influenza A/H1N1 outbreak was reported in a correctional facility. Since April 20, when public health partners were first informed of the evolving situation in Mexico, specimens have been submitted to BCCDC Laboratory Services in relation to 23 ILLI outbreak investigations (14 in LTCFs, 1 in VCHA, 1 in ACFs, 2 in correctional facilities, and 1 in a workplace). Influenza A/H3N2 was identified in 3 of the investigations (two in LTCFs), swine-origin influenza A/H1N1 was identified in 2 (one school and one correctional facility), influenza B in 1 school, HMPV in...
1 LTCF, and coronavirus in a workplace. No pathogen was identified in the other 15. (See graph on page 6.)

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

Laboratory Reports
During weeks 17-19, BCCDC Laboratory Services tested 2594 respiratory specimens. Two-hundred thirty-two (9%) specimens tested positive for influenza A, and 10 (0.4%) tested positive for influenza B. Of those influenza A specimens which were further assessed for sub-type or strain during weeks 17-19, 47% were swine-origin influenza A/H1N1, 46% were human influenza A/H3N2, and 6% were human influenza A/H1N1. Although the volume of respiratory specimens submitted to BCCDC for testing increased dramatically over this period, the percentage of specimens which were positive for influenza steadily decreased, from 13% in week 16 (before notification or detection of swine-origin influenza A/H1N1 virus in BC) to 6% in week 19.

During weeks 17-19, Children’s and Women’s Health Centre Laboratory tested 206 respiratory specimens. Twenty-four (12%) specimens tested positive for parainfluenza, 13 (6%) for influenza A, 7 (3%) for adenovirus, 6 (3%) for RSV, and 1 (0.5%) for influenza B. (See graphs on page 7.)

Oseltamivir Resistance
To date (May 22) 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: http://www.bccdc.org/downloads/pdf/epid/reports/BC_Interim_Antiviral_Treatment_Guidelines_Influenza.pdf.

Swine Influenza
For up-to-date information on confirmed cases of swine influenza in Canada, visit: http://www.phac-aspc.gc.ca/alert-alerte/swine-porcine/surveillance-eng.php
BC-specific information, including resources for healthcare professionals, is available here: http://www.bccdc.org/news.php?item=290

CANADA

FluWatch
During weeks 17 and 18, influenza activity levels in Canada increased slightly, with most regions reporting sporadic or localized activity. The proportion of tests that were positive for influenza throughout Canada decreased from 5.1% in week 16 to 4.0% in week 17 and then increased slightly to 4.6% in week 18. The national rate of ILI visits to sentinel physicians has increased to 19 ILI consultations per 1,000 patient visits in week 18, which is above the expected range for this time of year. As explained above, increases in indicators of care-seeking are likely due to public concern about the novel swine influenza virus.
http://www.phac-aspc.gc.ca/fluwatch/

National Microbiology Laboratory
Since Sept 1 and as of May 6, 906 influenza isolates from provincial and hospital labs have been characterized at the National Microbiology Laboratory (NML):
226 A/Brisbane/59/07(H1N1)-like* † from BC, AB, SK, MB, ON, QC, NB, NS, & PEI;
154 A/Brisbane/10/07(H3N2)-like* † from BC, AB, SK, MB, ON, QC, NB, PEI, & NL;
11 B/Florida/04/06(Yamagata)-like* from AB, ON, QC, & NB;
368 B/Malaysia/2506/04(Victoria)-like from all ten provinces;
and, 147 B/ Brisbane/60/08(Victoria)-like † from BC, AB, SK, MB, ON, QC, NB, NS, & PEI.
* 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 23 indicated that all (n=252) H1N1 isolates tested to date were resistant to oseltamivir, while all H3N2 (n=156) and influenza B (n=511) isolates tested were sensitive to oseltamivir. Of those isolates tested for amantadine resistance, all (n=254) H1N1 isolates were found to be
sensitive, and all (n=304) H3N2 isolates were found to be resistant. All 875 (202 H1N1, 162 H3N2, and 511 influenza B) isolates that have been tested for zanamivir resistance were sensitive.

**INTERNATIONAL**

Influenza activity level in the United States during weeks 17 and 18 was higher than expected for this time of year, while influenza activity in Europe remains at low, end-of-season level. 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 (May 15, 2009), the WHO has confirmed 424 human avian influenza A/H5N1 cases and 261 deaths. For more information on human avian influenza cases, please visit: http://www.who.int/csr/disease/avian_influenza.

**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/Brussels/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.

**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

**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**


3. **This Report On-line**

   - http://www.bccdc.org/content.php?item=35

4. **Swine Influenza Web Sites**

**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

![Graph showing the percentage of patient visits due to ILI per week compared to the average percentage of ILI visits for the past 19 seasons.](image)

**INFLUENZA ILLNESS CLAIMS* VIA BC MEDICAL SERVICES PLAN (MSP)**
**ENTIRE PROVINCE – CURRENT TO MAY 20, 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 MAY 20, 2009

Interior

Vancouver Coastal

Fraser

Vancouver Island

% of all claims coded as influenza illness

[Graphs showing influenza illness claims by region from 27 Sep, 2008 to 18 Jul, 2009]
**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

Note: The increase in bars during weeks 17-19 above reflects the large surge in specimens submitted to BCCDC for testing (2594 specimens were tested, a 5-fold increase over the number of tests performed during the 3-week period of peak activity this season). Although volume increased, the % of specimens positive for influenza (blue line) remains low.

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:________ )  
  *(if other, please specify: _________ )*

Date of onset of first case of ILI (dd/mm/yyyy): __________ /_______ / ______

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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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### SECTION D: Laboratory Information

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

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