



Sporadic but Increasing Influenza Activity in BC

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Highlights

During weeks 53 and 1 (Dec 28, 2008 – January 10, 2009), BC laboratories reported 29 positive respiratory specimens for influenza A and 4 positive specimens for influenza B. To date this season (January 10), 90% (64/71) of influenza isolates have been type A, and of those sub-typed, 88% (37/42) have been A/H1. Oseltamivir resistance continues to be reported in a high proportion of A/H1N1 viruses. Thirty-seven percent of respiratory specimens tested at BC Children's and Women's Health Centre during weeks 53 and 1 were positive for RSV. No influenza outbreaks were reported in weeks 53 and 1, and the rate of ILI visits to physicians remains lower than average for this time of year.

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).

Sentinel Physicians

Based on the historic range for this time of year, the rate of ILI visits to sentinel physicians was lower than expected. In weeks 53 and 1, the percentages of all patient visits due to ILI were 0.13% and 0.38%, respectively. (See graph and table on page 4.)

ILI Outbreaks

Since the start of the season (Sept 28), specimens have been submitted to BCCDC Laboratory Services in relation to 32 ILI outbreak investigations. Rhino/enterovirus was identified in 11 (34%) of the investigations, parainfluenza in 3 (9%), and RSV in 2 (6%). No pathogen was identified in the other 16 investigations. (See graph on page 5.)

Laboratory Reports

During weeks 53 and 1, BCCDC Laboratory Services tested 144 respiratory specimens. Twenty-one specimens tested positive for influenza A (of which 10 have been sub-typed: 8 as A/H1 and 2 as A/H3), and 2 specimens tested positive for influenza B. An additional 21 specimens tested positive for RSV, 11 for rhino/enterovirus, and 6 for parainfluenza.

During weeks 53 and 1, Children's and Women's Health Centre Laboratory tested 202 respiratory specimens. Influenza was identified in 10 specimens (8 influenza A and 2 influenza B). Seventy-four (77%) specimens tested positive for RSV, 6 for parainfluenza, and 5 for adenovirus. (See graphs on page 6.)

To date this season (January 10), 90% (64/71) of influenza isolates tested at both laboratories have been type A, and of those sub-typed, 88% (37/42) have been A/H1.

Oseltamivir Resistance

During the 2007-08 season, oseltamivir resistance was identified among circulating



A/H1N1 viruses worldwide. Testing in Canada indicated that 26% of last season's A/H1N1 isolates were resistant to oseltamivir. To date (January 15), BCCDC has assessed 37 A/H1N1 isolates for oseltamivir resistance; 28 show genotypic evidence of oseltamivir resistance, and the other 9 are indeterminate and undergoing further assessment through sequencing of the neuraminidase gene. None of these specimens was associated with an outbreak. 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.

CANADA

Flu Watch

During weeks 53 and 1, sporadic activity was reported in NT, BC, AB, ON, QC, and NB, with localized activity in parts of AB, SK, and ON. One influenza outbreak was reported in a LTCF in AB during week 52, and 2 outbreaks (1 in ON and 1 in SK) were reported during week 1. Since August 24, 2008 provincial/territorial laboratories have detected 414 cases of influenza, 223 (54%) influenza A and 191 (46%) influenza B. The national rate of ILI visits to sentinel physicians (23 and 18 cases per 1,000 visits during weeks 53 and 1, respectively) 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 Jan 14, 69 influenza isolates from provincial and hospital labs have been characterized at the National Microbiology Laboratory (NML):

16 A/Brisbane/59/07(H1N1)-like* from NS, ON, AB, & BC,
2 A/Brisbane/10/07(H3N2)-like* from ON & BC,
4 B/Florida/04/06(Yamagata)-like* from AB & ON,
and 47 B/Malaysia/2506/04(Victoria)-like from ON, QC, & AB.

* indicates a strain match to the vaccine component.

Antiviral Resistance

Drug susceptibility testing at the NML as of Jan 14 showed that all (n=15) H1N1 isolates tested to date were resistant to oseltamivir, while all H3N2 (n=2) and influenza B (n=34) isolates tested were sensitive to oseltamivir. Of those isolates tested for amantadine resistance, all (n=16) H1N1 isolates were found to be sensitive, and all (n=7) H3N2 isolates were found to be resistant. All 47 (11 H1N1, 2 H3N2, and 34 influenza B) isolates that have been tested for zanamivir resistance were sensitive.

INTERNATIONAL

A low level of Influenza activity was reported during weeks 53 and 1 (Dec 28 – Jan 10) in the United States. Widespread activity was reported in one state (Virginia), localized activity was reported in fifteen states (included Montana, which borders BC to the southeast), and sporadic activity was reported in most other states. The rate of ILI visits to sentinel physicians remained below national baseline levels. To date this season, US laboratories have typed 1626 influenza-positive specimens: 1349 (83%) influenza A and 277 (17%) influenza B. Of the influenza A isolates, 548 have been sub-typed, of which 89% were A/H1. One hundred and one of 103 (98%) A/H1 viruses tested were found to be resistant to oseltamivir. For information, visit: <http://www.cdc.gov/flu/weekly/>.

Most European countries, including all western European countries reported widespread or localized influenza activity during week 1. Of the 5693 influenza virus detections in Europe since the start of the season (week 40), 5474 (96%) were influenza A, and of those subtyped, 94% were A/H3. For more information, please visit: <http://www.eiss.org>.



Avian Influenza

Three additional cases (Egypt, China, and Vietnam) of human H5N1 AI have been reported by the WHO in the past two weeks. Since 2003 and to date (Jan 14, 2009), the WHO has confirmed 394 human AI cases and 248 deaths. For more information on human avian influenza cases please visit:

http://www.who.int/csr/disease/avian_influenza

For further information on confirmed avian influenza outbreaks in poultry, please visit: http://www.oie.int/download/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

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.

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

AI: Avian Influenza
FHA: Fraser Health Authority
HPAI: Highly Pathogenic Avian Influenza
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/>

NACI Statement on Influenza Vaccination for the 2008-09 Season: <http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/08vol34/acs-3/index-eng.php>

Washington State Flu Updates:

<http://www.doh.wa.gov/ehsphl/epidemiology/CD/HTML/FluUpdate.htm>

USA Weekly Surveillance reports:

<http://www.cdc.gov/flu/weekly/>

European Influenza Surveillance Scheme:

<http://www.eiss.org/index.cgi>

WHO – Global Influenza Programme:

<http://www.who.int/csr/disease/influenza/mission/>

WHO – Weekly Epidemiological Record:

<http://www.who.int/wer/en/>

Influenza Centre (Australia):

<http://www.influenzacentre.org/>

2. Avian Influenza Web Sites

World Health Organization – Avian Influenza:

http://www.who.int/csr/disease/avian_influenza/en/

World Organization for Animal Health:

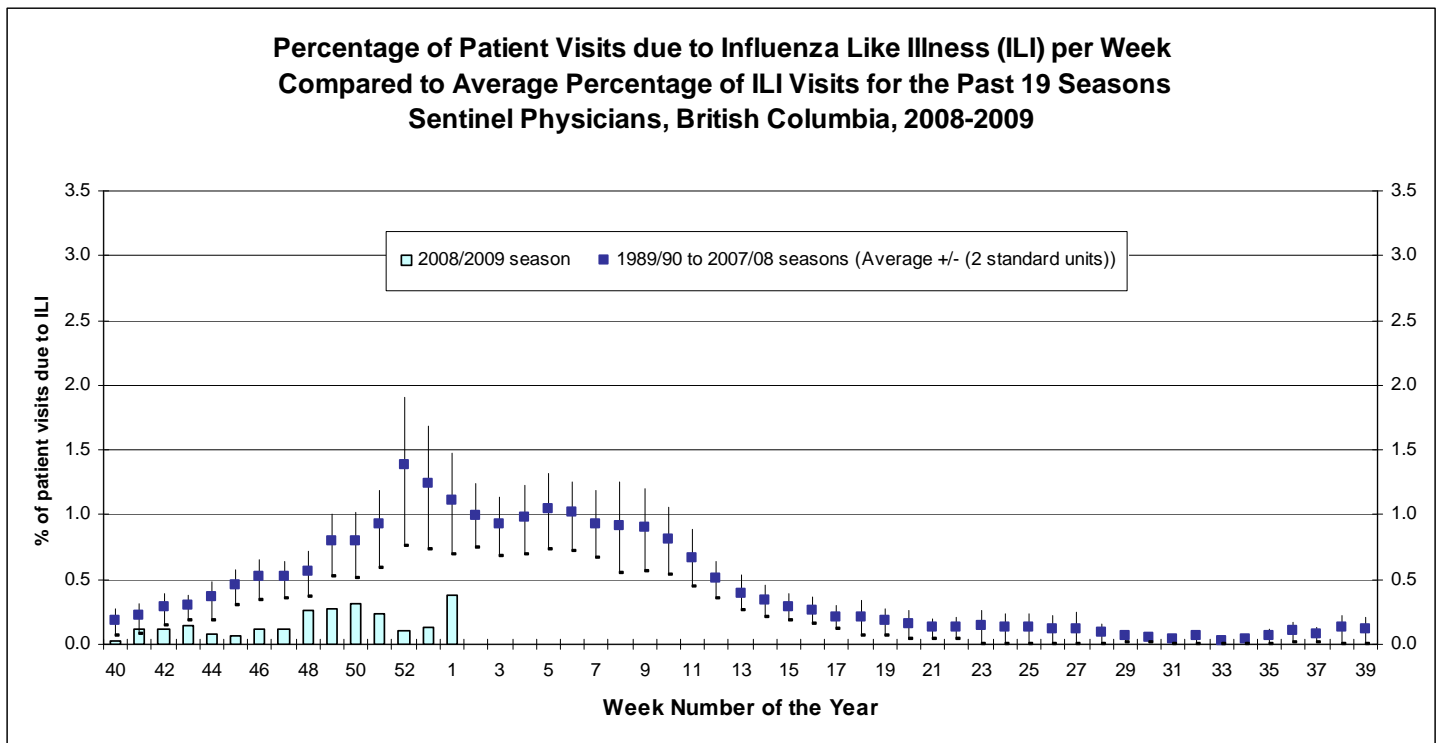
http://www.oie.int/eng/en_index.htm

3. This Report On-line

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

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

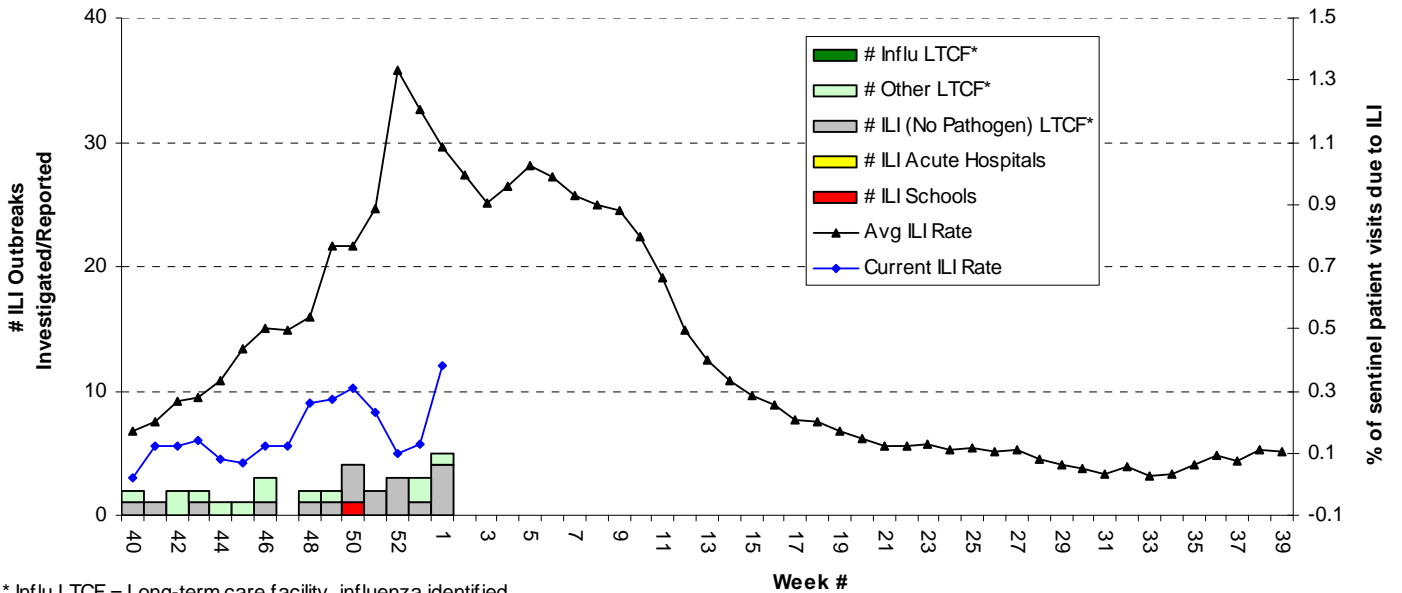


INFLUENZA-LIKE ILLNESS BY HEALTH AUTHORITY

HEALTH AUTHORITY	Week 53 Dec 28 – Jan 3			Week 1 Jan 4 – 10		
	ILI Visits	Total Visits	% ILI	ILI Visits	Total Visits	% ILI
Fraser	0	598	0.00%	2	1,075	0.19%
Interior	2	499	0.40%	1	471	0.21%
Northern	1	170	0.59%	1	367	0.27%
Vancouver Coastal	0	1,251	0.00%	5	1,211	0.41%
Vancouver Island	2	1,218	0.16%	8	1,292	0.62%
BC Total	5	3,736	0.13%	17	4,416	0.38%

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

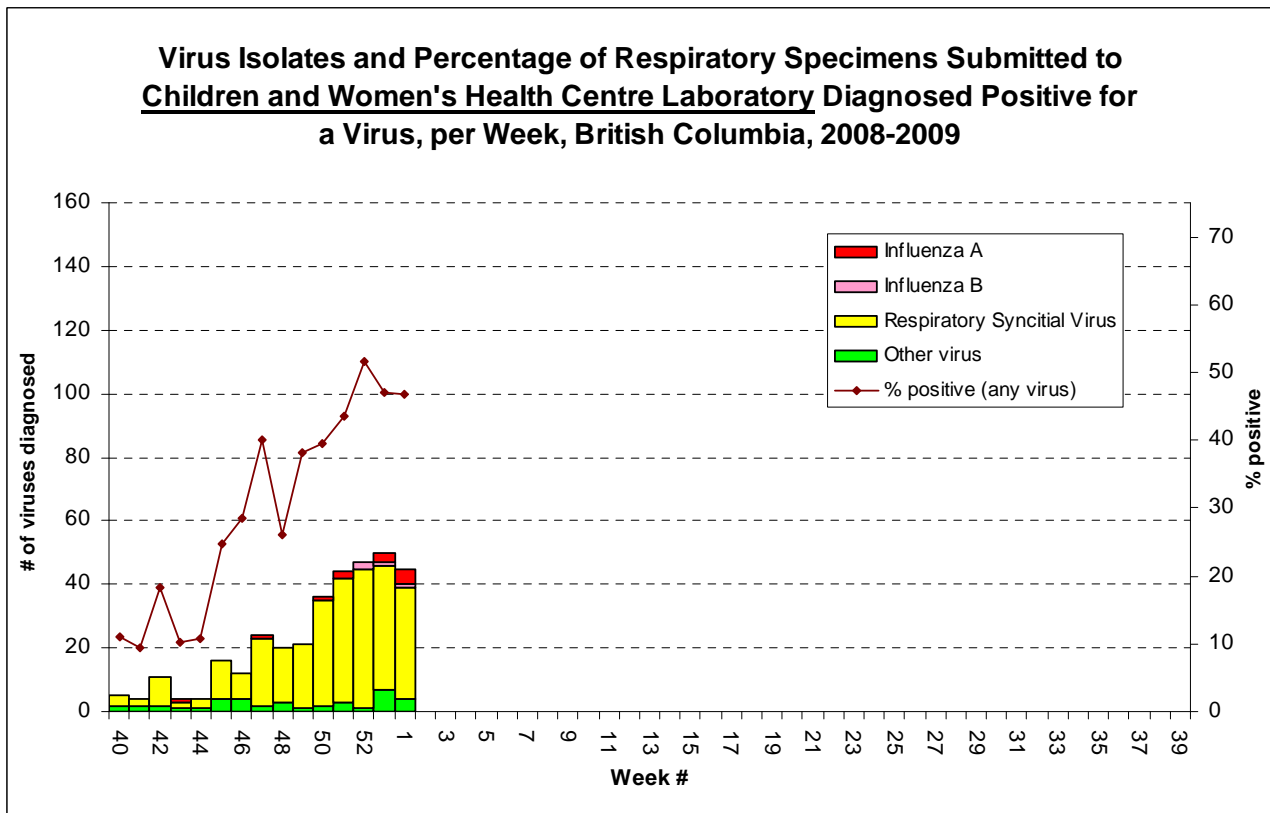
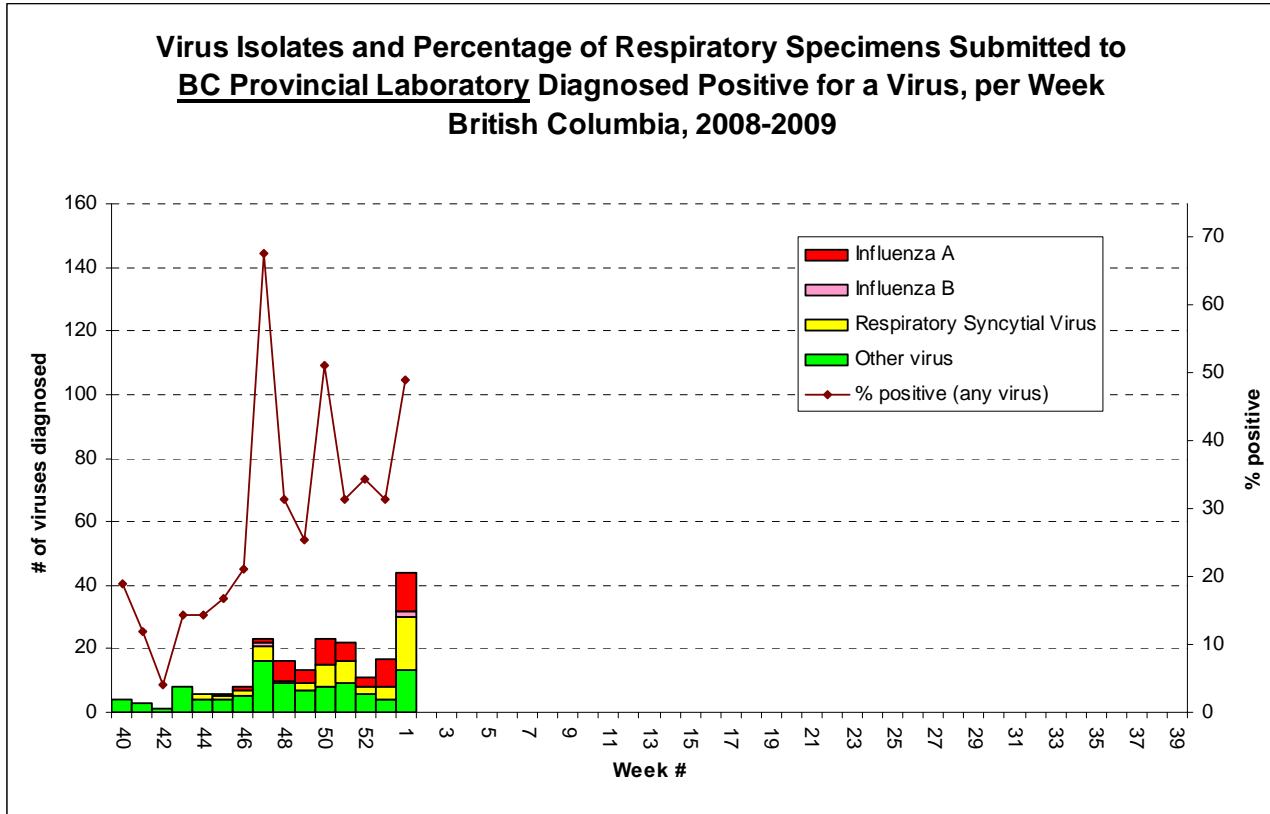


* Influenza LTCF = Long-term care facility, influenza identified

* 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





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): _____ / _____ / _____

Numbers to date	Residents/Students	Staff
Total		
With ILI		
Hospitalized		
Died		

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): _____ / _____ / _____

Numbers to date	Residents/Students	Staff
Total		
With ILI		
Hospitalized		
Died		

SECTION D: Laboratory Information

Specimen(s) submitted? Yes (location: _____) No Don't know
 If yes, organism identified? Yes (specify: _____) No Don't know