BRITISH COLUMBIA (BC) INFLUENZA SURVEILLANCE *2008-2009* BULLETIN

BC Centre for Disease Control
AN AGENCY OF THE PROVINCIAL HEALTH SERVICES AUTHORITY

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Number 26: Weeks 29-30
July 19 – August 1, 2009

Sustained Influenza Activity Levels Above Historical Average due to Novel Pandemic H1N1 in BC

Contents:

Highlights

In weeks 29-30 (July 19 – August 1), the proportion of patients presenting to sentinel physicians with ILI remained above the expected range for this time of year. Likewise, Medical Services Plan claims for influenza illness remain above historical average levels for this time of year, with no sign of significant increase or decrease over the last two weeks. No school or facility influenza outbreaks were reported during this period. Twenty-five percent (172/689) of respiratory specimens tested at the BC Provincial Laboratory during weeks 29-30 were positive for novel pandemic H1N1 virus (nH1N1), and 0.4% (3/689) were positive for human influenza viruses. To-date approximately 5% of nH1N1 cases in BC have been admitted to hospital. Together, BC surveillance indicators suggest ongoing, above average ILI activity, predominantly attributed to nH1N1.

Sentinel Physicians

During weeks 29 and 30, the percentage of patients presenting to sentinel physicians with ILI was 0.38% and 0.43%, respectively. These percentages are comparable to ILI percentages in the previous few weeks. (See graph on page 4.)

MSP

Influenza illness as a proportion of all submitted BC Medical Services Plan (MSP) claims also remained unchanged during weeks 29 and 30. (See graphs on pages 4-6.)

ILI Outbreaks

No influenza outbreaks were reported in schools or facilities during weeks 29-30. 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 33 ILI outbreak investigations (22 in LTCFs, 4 in schools, 2 in ACFs, 2 in correctional facilities, 2 in summer camps, and 1 in a workplace). Influenza A/H3N2 was identified in 4 of the investigations (all LTCFs), nH1N1 was identified in 4 (two summer camps, one school, one correctional facility), influenza B in 1 school, rhino/enterovirus in 3 LTCFs, HMPV in 2 LTCFs, and coronavirus in a workplace. No pathogen was identified in the other 18. (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).

Laboratory Reports

BCCDC Laboratory Services tested 689 respiratory specimens in weeks 29-30. Three (0.4%) specimens tested positive for human influenza viruses (2 human influenza A/H3 and 1 influenza A with sub-type unavailable). One hundred seventy-two (25%) tested positive for nH1N1. Other respiratory pathogens detected included: rhino/enterovirus (2% of specimens tested), adenovirus (1%), HMPV (0.4%), parainfluenza (0.6%), and coronavirus (0.1%).

During week 29, Children's and Women's Health Centre Laboratory tested 38 respiratory specimens. Two tested positive for nH1N1, and 2 tested positive for adenovirus. (See graphs on page 7.)

Novel pandemic H1N1

BCCDC continues to monitor the novel H1N1 virus pandemic. Approximately 5% of nH1N1 cases in BC have been admitted to a hospital, and 3 cases reported to-date have died. The age distribution of nH1N1 cases indicates that younger persons are disproportionately affected. An epidemic curve showing BC ambulatory and hospitalized cases as well as a graph showing the age-stratified cumulative case rates are presented on page 8. For further description of BC nH1N1 cases, visit: http://www.bccdc.ca/dis-cond/DiseaseStatsReports/influSurveillanceReports.htm

nH1N1-related information and resources for healthcare professionals, is available here: http://www.bccdc.ca/resourcematerials/newsandalerts/healthalerts/H1N1FluVirusHumanSwineFlu.htm

CANADA

FluWatch

During week 29, overall influenza activity in Canada remained higher than expected for this time of year but showed signs of decrease. The proportion of tests positive for influenza in Canada decreased for the 6th consecutive week from approximately 30% in week 23 to 10.1% in week 29. The ILI consultation rate likewise decreased from 41 per 1000 patient visits in week 23 to 19 per 1000 patient visits in week 29. http://www.phac-aspc.gc.ca/fluwatch/

National Microbiology Laboratory

Since Sept 1, 2008 and as of July 30, 1227 influenza isolates from provincial and hospital labs have been characterized at the National Microbiology Laboratory (NML):
250 A/Brisbane/59/07(H1N1)-like* † from BC, AB, SK, MB, ON, QC, NB, NS, & PEI;
173 A/Brisbane/10/07(H3N2)-like* † from all ten provinces;
11 B/Florida/04/06(Yamagata)-like* from AB, ON, QC, & NB;
379 B/Malaysia/2506/04(Victoria)-like from all ten provinces;
180 B/ Brisbane/60/08(Victoria)-like † from BC, AB, SK, MB, ON, QC, NB, NS, & NU;
And, 234 A/California/07/2009-like§ from BC, AB, SK, MB, ON, QC, NB, NS, NT, & NU;

* indicates a strain match to the 2008-09 vaccine
† indicates a strain match to the 2009-10 vaccine
§ A/California/07/2009 (H1N1) is the variant reference virus (nH1N1) selected by WHO as a potential candidate for a pandemic influenza A/H1N1 vaccine.

Antiviral Resistance

Drug susceptibility testing at the NML as of July 30 indicated that most (n=311) human influenza A/H1N1 isolates tested to date were resistant to oseltamivir (one human H1N1 isolate identified since mid-April was sensitive). All human H3N2 (n=194), influenza B (n=574), and nH1N1 (n=400) isolates tested at the NML were found to be sensitive to oseltamivir. Of the isolates tested for amantadine resistance, all (n=310) human H1N1 isolates were found to be sensitive, all (n=387) human H3N2 isolates were found to be resistant, and all (n=283) nH1N1 isolates were found to be resistant. All 1231 (248 human H1N1, 190 human H3N2, 578 influenza B, and 215 nH1N1) isolates that have been tested for zanamivir resistance were sensitive.

On July 21, Canada reported its first case of oseltamivir resistant nH1N1 in a patient from Quebec who received post-exposure prophylaxis following illness in a family member. Five other nH1N1 isolates (from Hong Kong (1), Japan (3) and Denmark (1)) have been identified in cases.

In summary, global surveillance has shown that circulating nH1N1 viruses are resistant to amantadine but remain sensitive to zanamivir and oseltamivir, although sporadic cases of oseltamivir resistance have been observed.

INTERNATIONAL

In the United States, influenza activity levels decreased during week 29 but remained higher than usual for this time of year. Sixteen percent of respiratory specimens tested in collaborating US reference laboratories during week 29 were positive for influenza, representing a steady decrease from the peak of 39% during week 24. Over 99% of the influenza detections during week 29 were nH1N1. Influenza activity in Europe remains low in most countries, with the exception of the UK, which reported high and widespread activity during week 29-30 and Ireland which reported medium activity for the first time in week 30, predominantly due to nH1N1. Details

are available at: http://www.cdc.gov/flu/weekly/ and http://www.eiss.org .

Several countries in the Southern Hemisphere have reported severe winter influenza activity, with nH1N1 accounting for the majority of detections in Australia, Chile, and Argentina. Notably, Australia has reported over 21,000 confirmed cases of nH1N1, as of Aug 1; a cumulative total of approximately 2555 (12%) nH1N1 cases have been admitted to hospital. In South Africa a different pattern is observed, for week 29, 84% of influenza isolates were H3N2 and 10% nH1N1. Southern Hemisphere laboratories are reporting the circulation of a drifted strain of the H3N2 virus, this raises the possibility for a vaccine mismatch for the Northern Hemisphere's flu season. For more information, see: http://www.healthemergency.gov.au/internet/healthemergency/publishing.nsf/Content/updates

For up-to-date information on nH1N1 globally, visit the WHO website at: http://www.who.int/csr/disease/swineflu/en/index.html

Vaccine Composition

The 2008-09 influenza vaccine contained 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 seasonal influenza vaccine:

- 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/200902_recommendation.pdf.

Contact Us:

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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

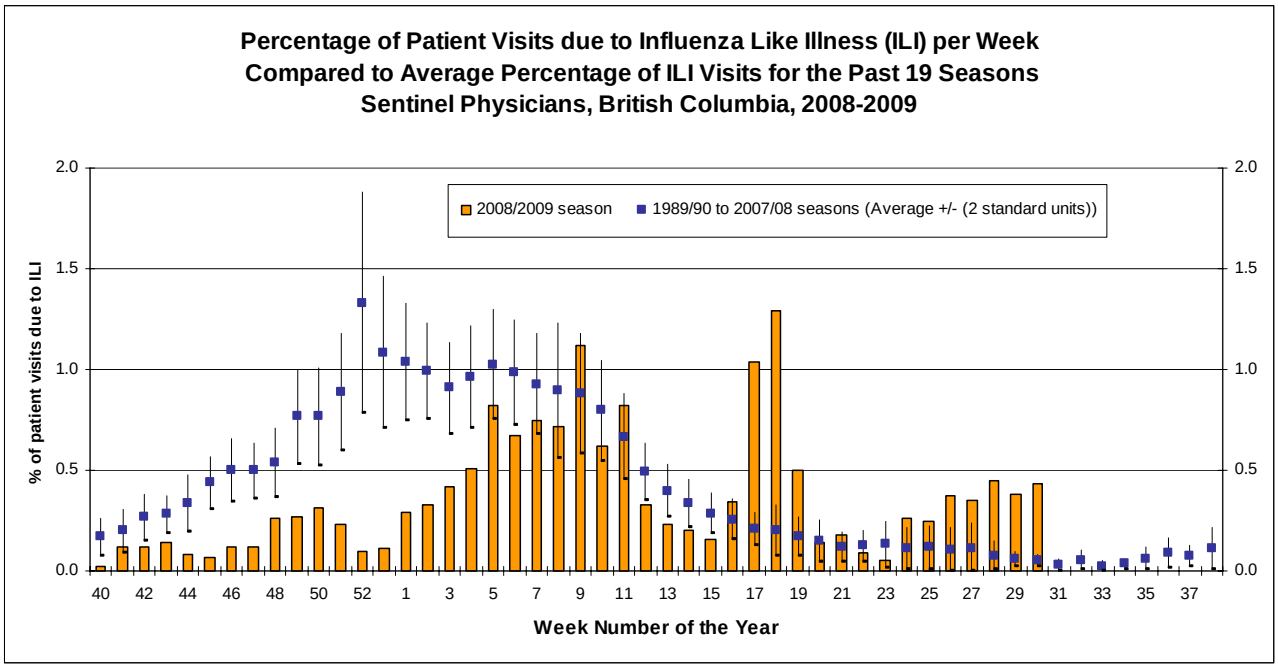
1. Influenza Web Sites
Canada – Flu Watch: http://www.phac-aspc.gc.ca/fluwatch/
NACI Statement on Influenza Vaccination for the 2008-09 Season: http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/08vol34/acs-3/index-eng.php
Washington State Flu Updates: http://www.doh.wa.gov/ehsphl/epidemiology/CD/HTML/FluUpdate.htm
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

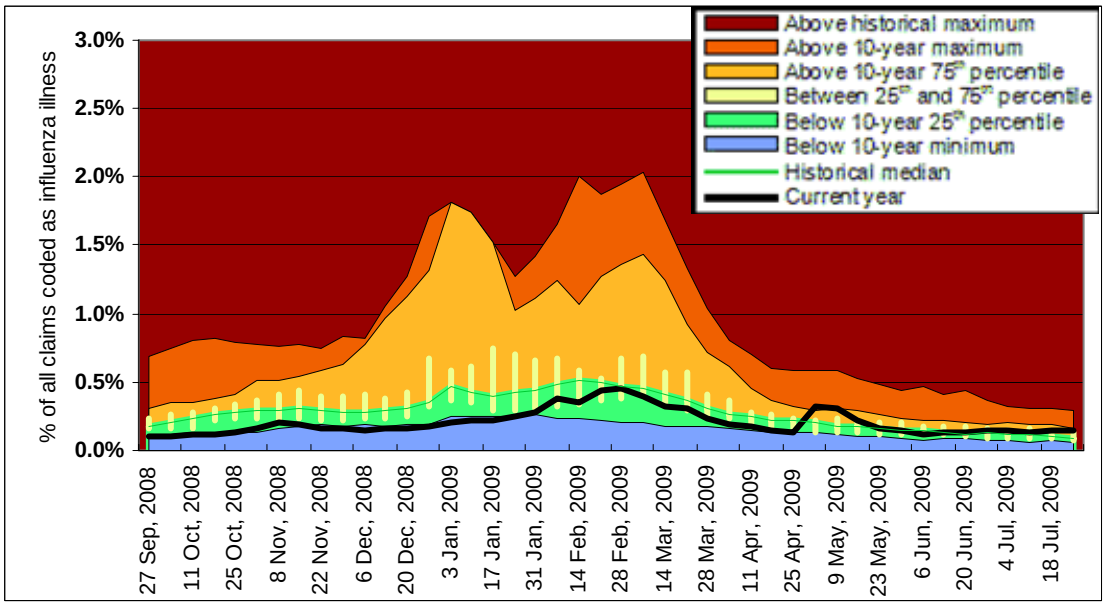
3. This Report On-line
http://www.bccdc.ca/dis-cond/DiseaseStatsReports/influSurveillanceReports.htm

4. Swine Influenza Web Sites
BCCDC: http://www.bccdc.ca/dis-cond/a-z/_h/HumanSwineFlu/default.htm
PHAC: http://www.phac-aspc.gc.ca/alert-alerte/swine_200904-eng.php
US CDC: http://www.cdc.gov/swineflu/index.htm
WHO: http://www.who.int/csr/disease/swineflu/en/index.html

WEEKLY SENTINEL ILI



INFLUENZA ILLNESS CLAIMS* VIA BC MEDICAL SERVICES PLAN (MSP)
ENTIRE PROVINCE – CURRENT TO JULY 30, 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.

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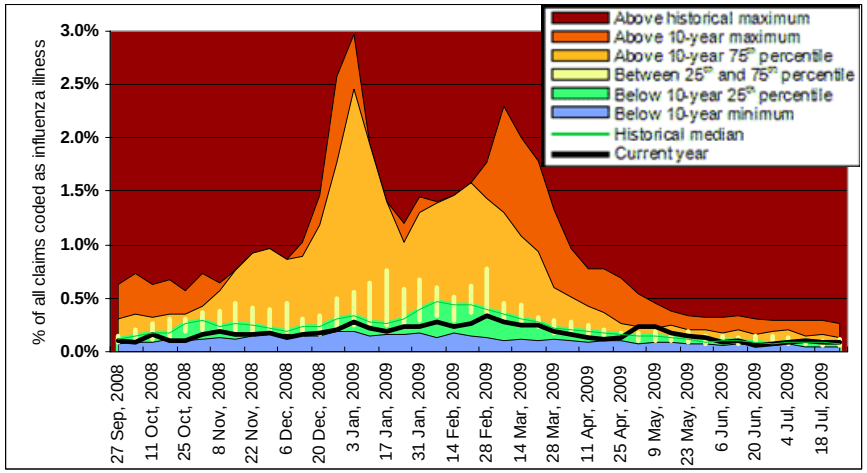
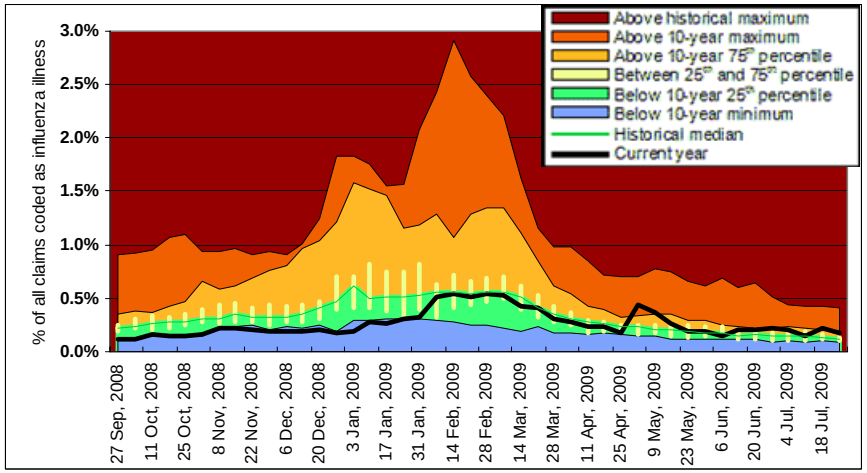
INFLUENZA ILLNESS CLAIMS* VIA BC MEDICAL SERVICES PLAN (MSP) BY REGIONAL HEALTH AUTHORITY (RHA) – CURRENT TO JULY 30, 2009

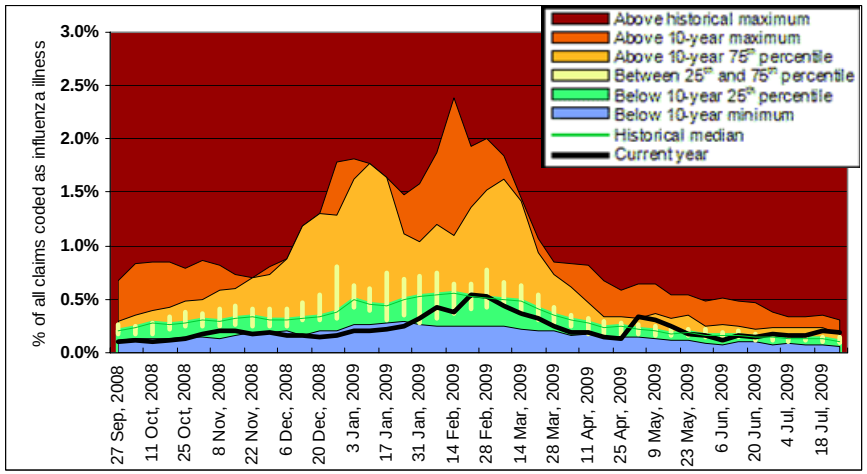
Interior



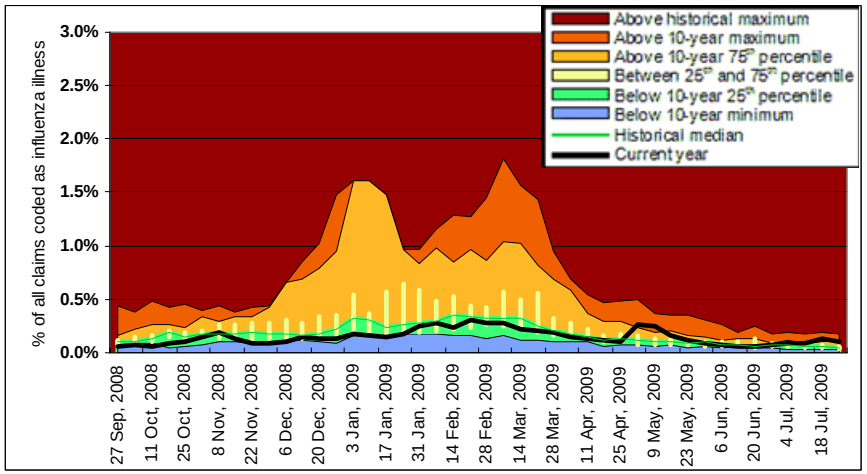
Vancouver Coastal



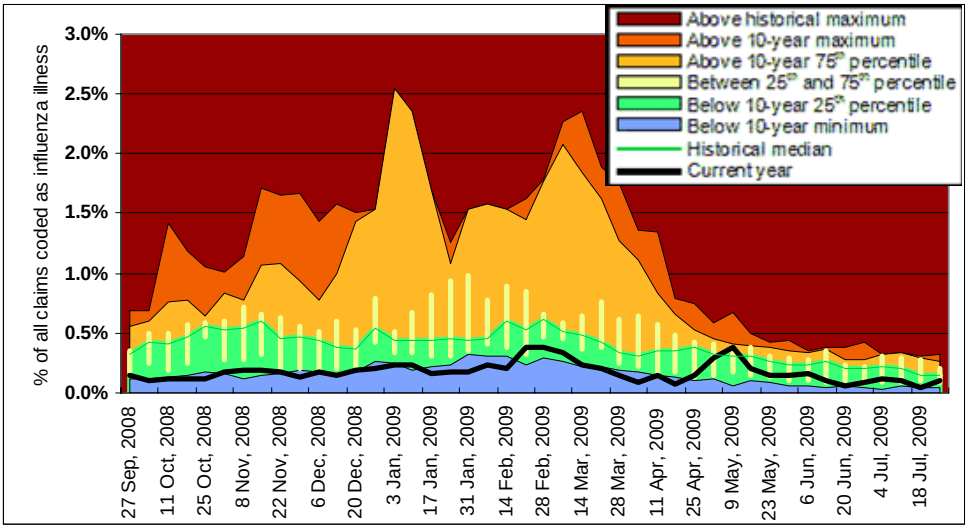
Fraser



Vancouver Island

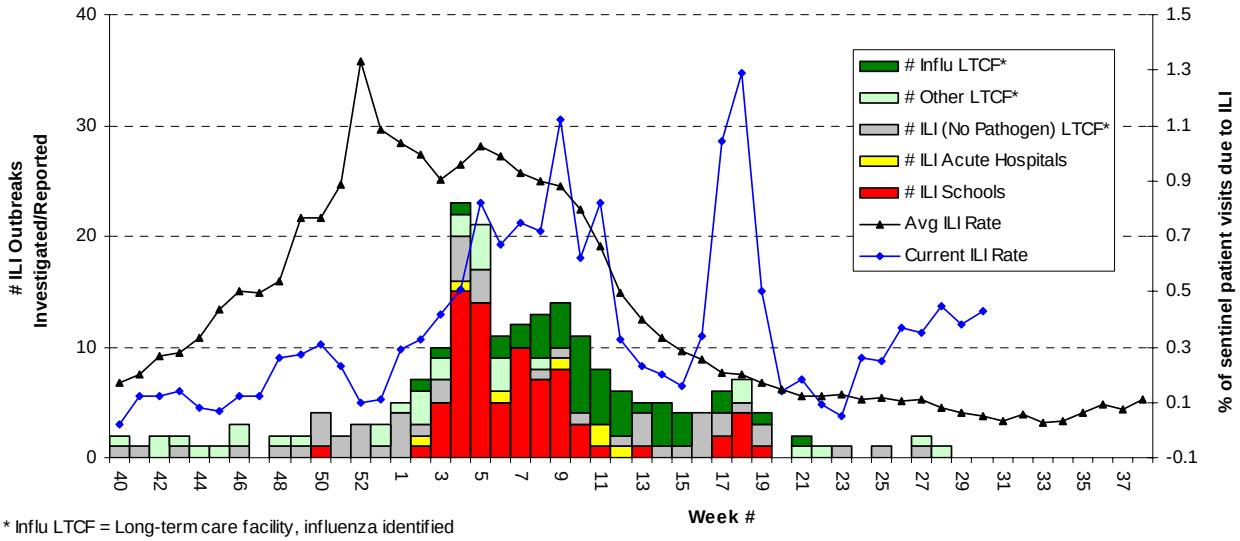


Northern



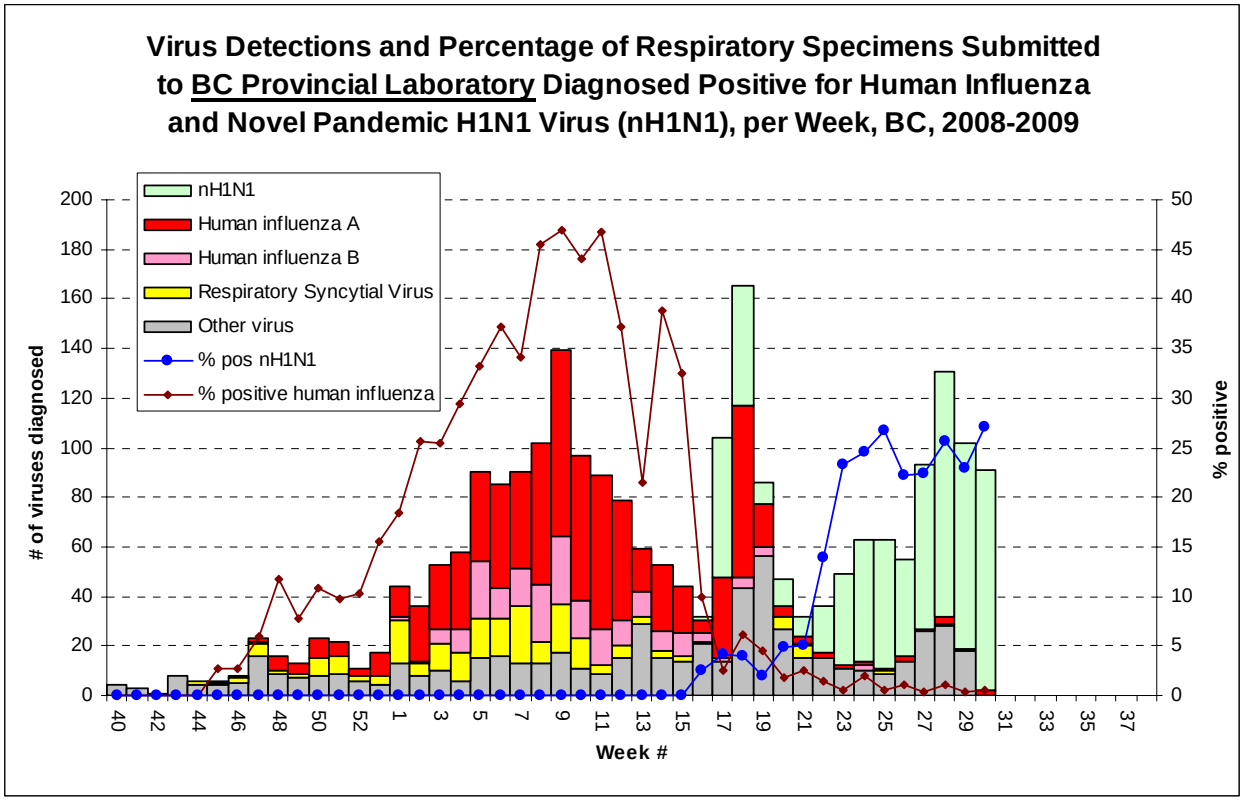
ILI OUTBREAKS

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

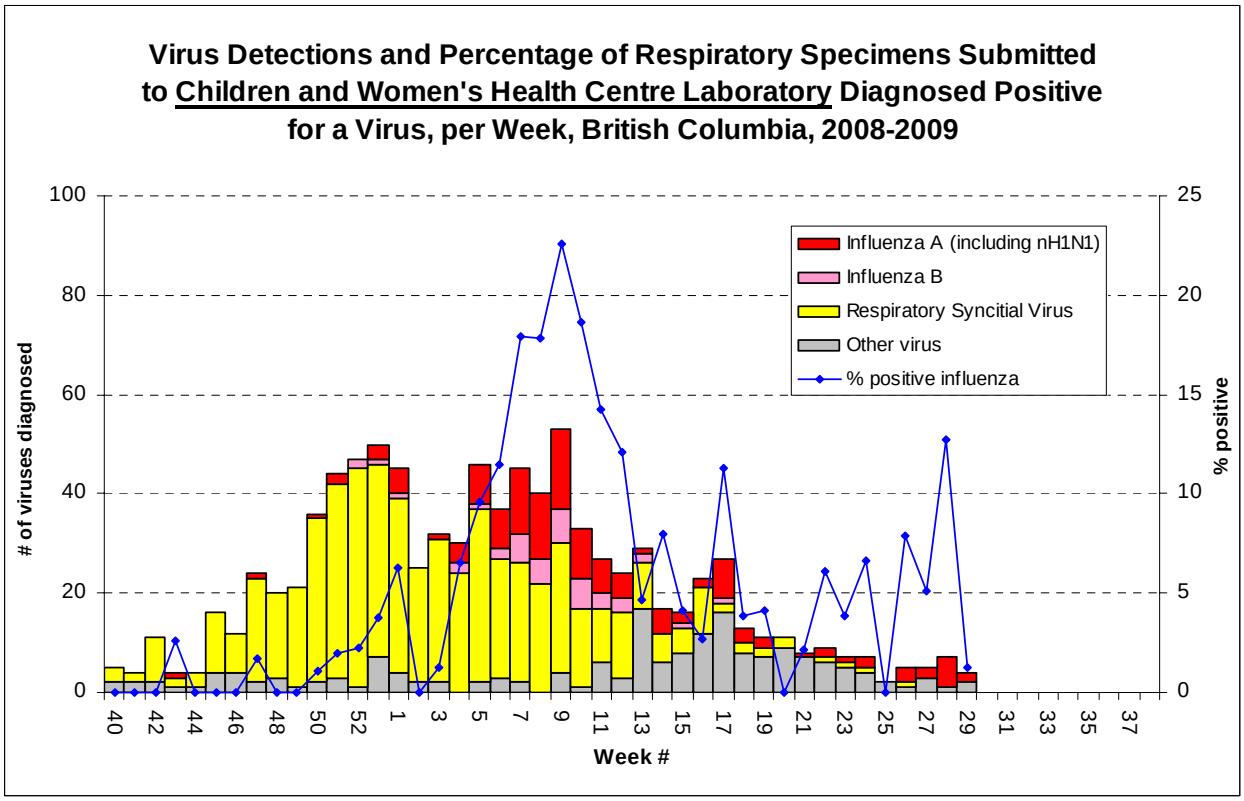


* Influ LTCF = Long-term care facility, influenza identified
* Other LTCF = Long-term care facility, other pathogen identified (including RSV, parainfluenza, adenovirus, and rhino/enterovirus)
* ILI (No Pathogen) LTCF = Long-term care facility, no pathogen identified

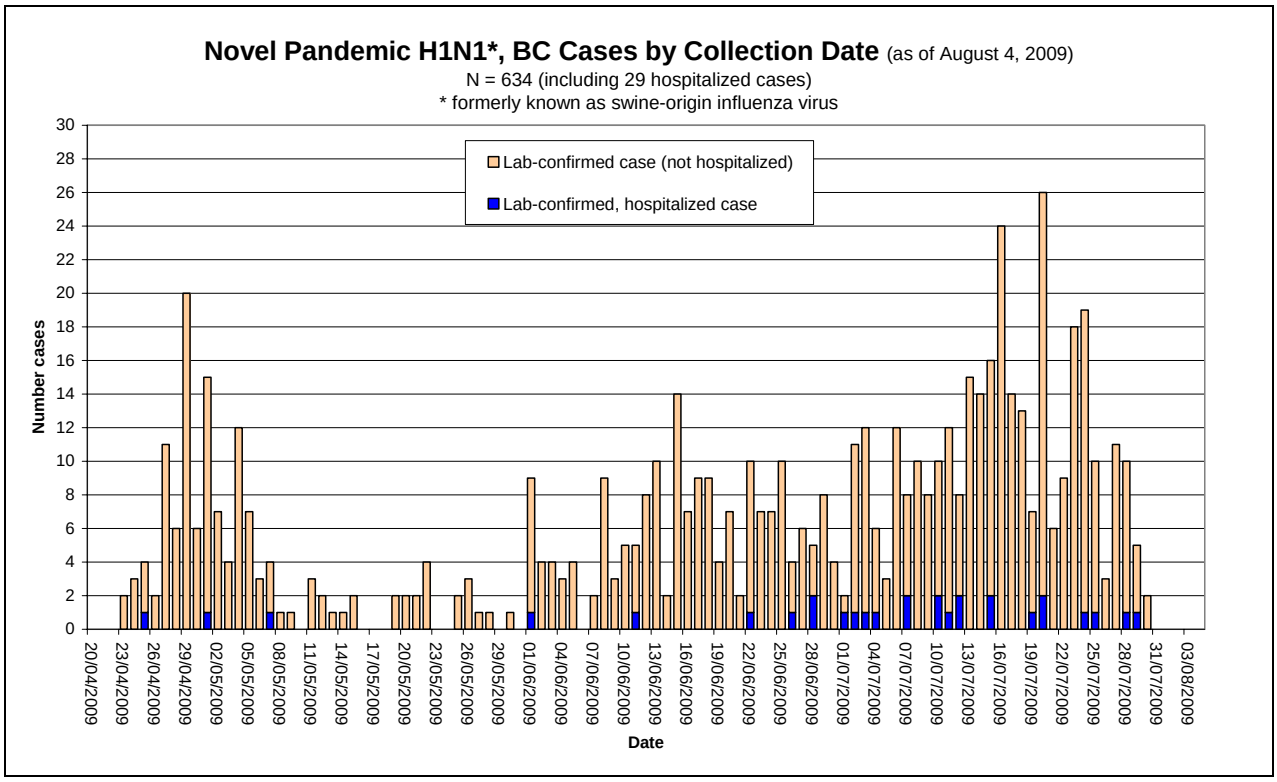
LABORATORY SUMMARY

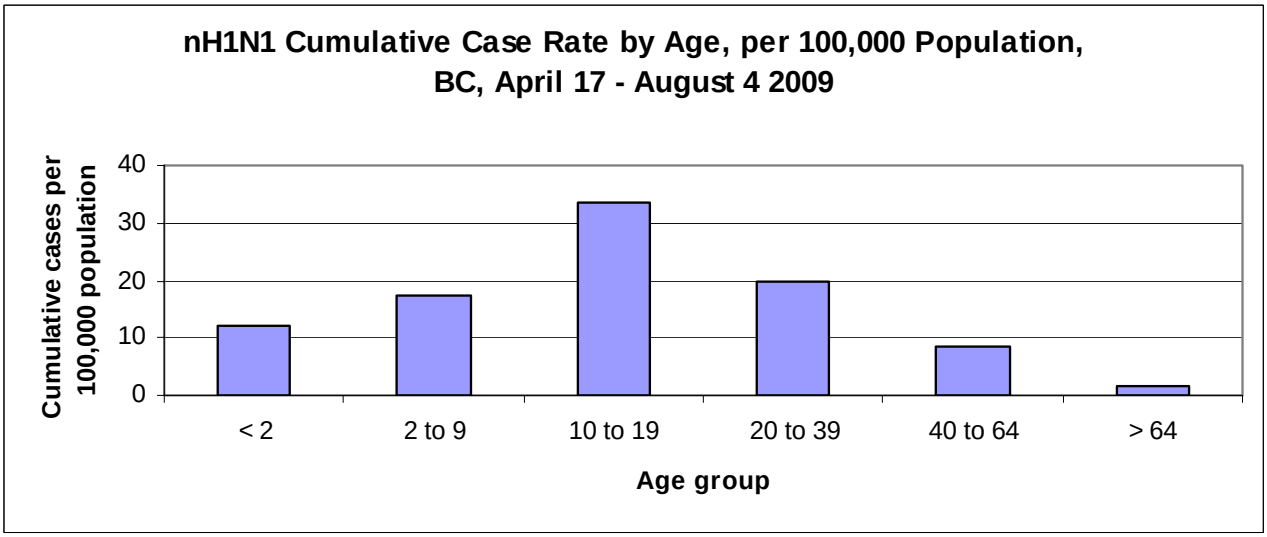


Note: The increase in bars during weeks 17-19 above reflects the large surge in specimens submitted to BCCDC for testing (2594 specimens were tested, a 5-fold increase over the number of tests performed during the 3-week period of peak activity this season). Data on detection of respiratory viruses are not yet available for week 30.



nH1N1 – RELATED GRAPHS





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