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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August 9 - 15, 2009

Declining, Above Historical Average Influenza Activity due to Novel Pandemic H1N1 in BC

Contents:

Highlights

In week 31 (Aug 2 - 8), the proportion of patients presenting to sentinel physicians with ILI showed a slight decrease, but remained above the expected range for this time of year. In week 32 (Aug 9-15), Medical Services Plan claims for influenza illness remained consistent with the historical median. No school or facility influenza outbreaks were reported during this period. Nineteen percent (60/310) of respiratory specimens tested at the BC Provincial Laboratory were positive for novel pandemic H1N1 virus (nH1N1) in week 32, a decrease from 27% in week 30. To-date approximately 5% of nH1N1 cases in BC have been admitted to hospital. Together, BC surveillance indicators suggest signs of decline in influenza activity though it is still above average for this time of year, predominantly attributed to nH1N1.

Sentinel Physicians

During week 31, the percentage of patients presenting to sentinel physicians with ILI was 0.24%. This is a decrease from 0.43% during week 30. (See graph on page 4.) Data for week 32 is not available yet.

MSP

Influenza illness as a proportion of all submitted BC Medical Services Plan (MSP) claims were at levels consistent with the historical median in week 32. On a regional level only VIHA maintained an elevated proportion of claims related to ILI compared to previous years (See graphs on pages 4-6.)

ILI Outbreaks

No influenza outbreaks were reported in schools or facilities during week 32. 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 310 respiratory specimens in week 32. No (0.0%) specimens tested positive for human influenza viruses. Sixty (19.4%) tested positive for nH1N1, a similar proportion compared to week 31 and decrease compared to earlier weeks. Other respiratory pathogens detected included: rhino/enterovirus (2.9% of specimens tested), adenovirus (0.3%) and parainfluenza (1.0%).

During week 32, Children's and Women's Health Centre Laboratory tested 50 respiratory specimens. Four tested positive for nH1N1, 2 tested positive for parainfluenza, 1 for RSV and 1 for adenovirus (See graphs on page 7.)

Novel pandemic H1N1

BCCDC continues to monitor the novel H1N1 virus pandemic. Approximately 5% of nH1N1 confirmed cases in BC have been admitted to a hospital, and 4 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: /www.bccdc.ca/dis-cond/DiseaseStatsReports/influSurveillanceReports.htm
nH1N1-related information and resources for healthcare professionals, is available at: www.bccdc.ca/resourcematerials/newsandalerts/healthalerts/H1N1FluVirusHumanSwineFlu.htm

CANADA

FluWatch

During week 32 (Aug 9-15), activity levels were similar to the previous week overall influenza activity in Canada remained higher than expected for this time of year but show signs of decline. Compared to week 31 the proportion of tests positive for influenza and ILI consultation rate remained approximately constant at 4.2% and 15 per 1000 patient visits respectively. These figures illustrate of a decline from 23% tests positive and 41 per 1000 patient visits in the week ending June 13. www.phac-aspc.gc.ca/fluwatch/

National Microbiology Laboratory

Since Sept 1, 2008 and as of August 20, 1287 influenza isolates from provincial and hospital labs have been characterized at the National Microbiology Laboratory (NML):
254 A/Brisbane/59/07(H1N1)-like* † from BC, AB, SK, MB, ON, QC, NB, NS, & PEI;
172 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
291 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 August 20 indicated that most (n=316) 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=573), and nH1N1 (n=465) isolates tested at the NML were found to be sensitive to oseltamivir. Of the isolates tested for amantadine resistance, all (n=319) human H1N1 isolates were found to be sensitive, all (n=396) human H3N2 isolates were found to be resistant, and all (n=340) nH1N1 isolates were found to be resistant. All 1260 (254 human H1N1, 190 human H3N2, 578 influenza B, and 238 nH1N1) isolates that have been tested for zanamivir resistance were sensitive.

On July 21, Canada reported its first case of oseltamivir resistant nH1N1 (aka: swine flu) in a patient from Quebec who received post-exposure prophylaxis following illness in a family member. Only five other nH1N1 isolates resistant to oseltamvir (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 were stable in week ending August 15 (week 32) but remained higher than usual for this time of year. Sixteen percent of respiratory specimens tested in reference laboratories during this week were positive for influenza, representing a steady decrease from the peak of 39% during week ending June 20. Ninety-eight percent of the subtyped influenza A viruses were nH1N1. Influenza activity in Europe remains low in most countries, with the exception of Ireland and the UK (Northern Ireland) which reported medium activity predominantly due to nH1N1 for the week ending August 16. 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, Argentina and Brazil. Notably as of August 7th in Australia about 83% of confirmed influenza A

isolates are nH1N1. Children under 5 years are the most frequently hospitalized age group, there is also a peak among the 50-60 year age group, but a decrease among those over 75. For this week, on average 27% of hospitalized cases were in the ICU. In New Zealand as of August 16, 58-81% of influenza viruses are nH1N1. Consultations with sentinel physicians have declined by approximately half compared to peak levels in early July, but remain elevated compared to previous years. The highest consultation rates are among children and teenagers under 19 years. Approximately 30% of cases have been hospitalized and of these hospitalized cases 1.5% have died; overall 0.4% of cases have died. In both Chile and Argentina peak was reached in the week ending July 11 and there has since been a marked downward trend in the number of cases. In South Africa a different pattern is observed, as of August 11, 71% of influenza isolates were AH3N2 and 22% nH1N1.
For more information, see:
http://www.health.gov.au/internet/main/publishing.nsf/Content/cda-surveil-ozflu-flucurr.htm
http://www.surv.esr.cri.nz/virology/influenza_weekly_update.php
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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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

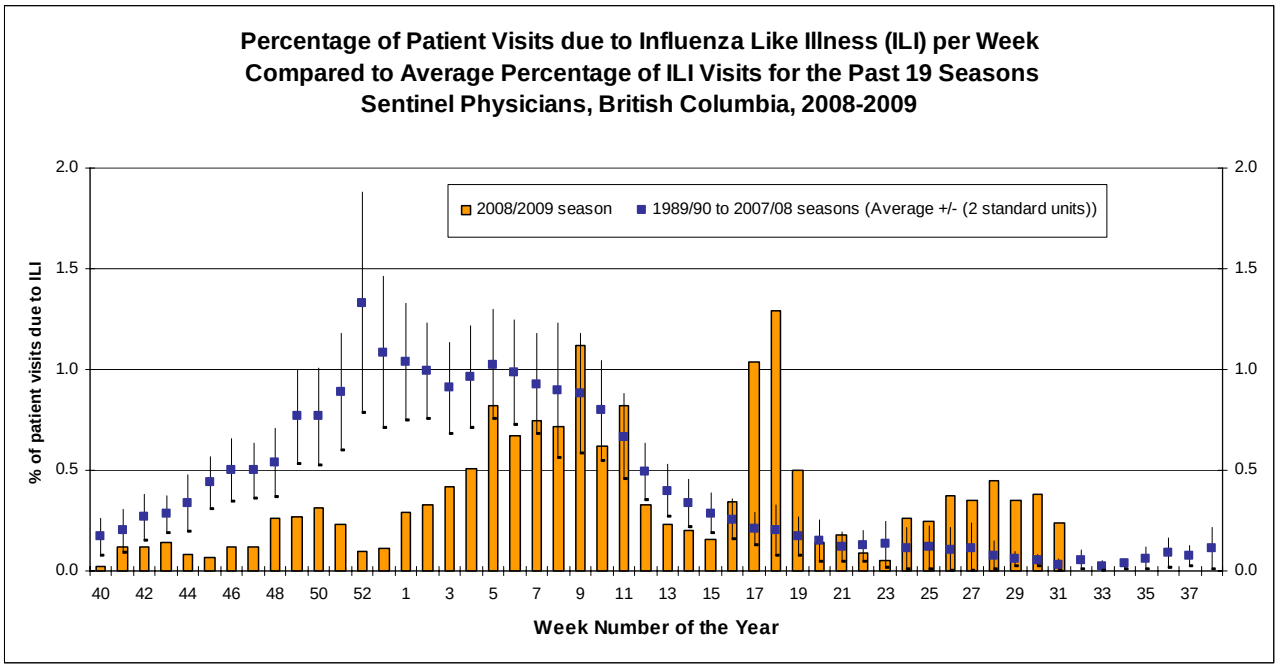
1. Influenza Web Sites
Canada – Flu Watch:
http://www.phac-aspc.gc.ca/fluwatch/
NACI Statement on Influenza Vaccination for the 2008-09 Season: http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/08vol34/acs-3/index-eng.php
Washington State Flu Updates:
http://www.doh.wa.gov/ehsphl/epidemiology/CD/HTML/FluUpdate.htm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

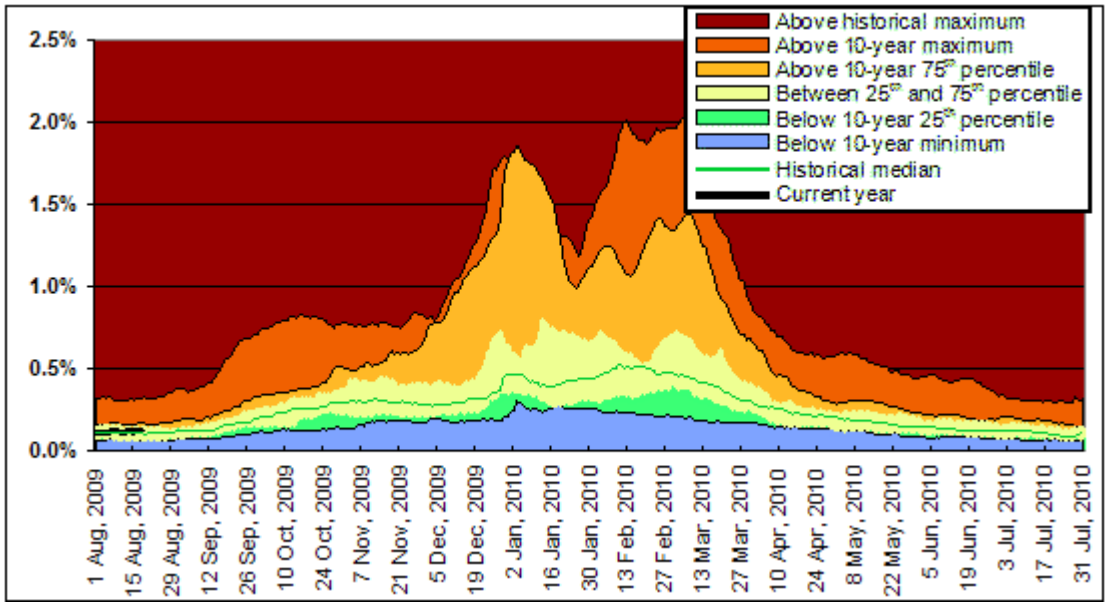
3. This Report On-line
http://www.bccdc.ca/dis-cond/DiseaseStatsReports/influSurveillanceReports.htm

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 AUGUST 18, 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.
- The MSP year begins (and was re-set) on August 1, for previous trends please the Influenza Bulletin from week 30

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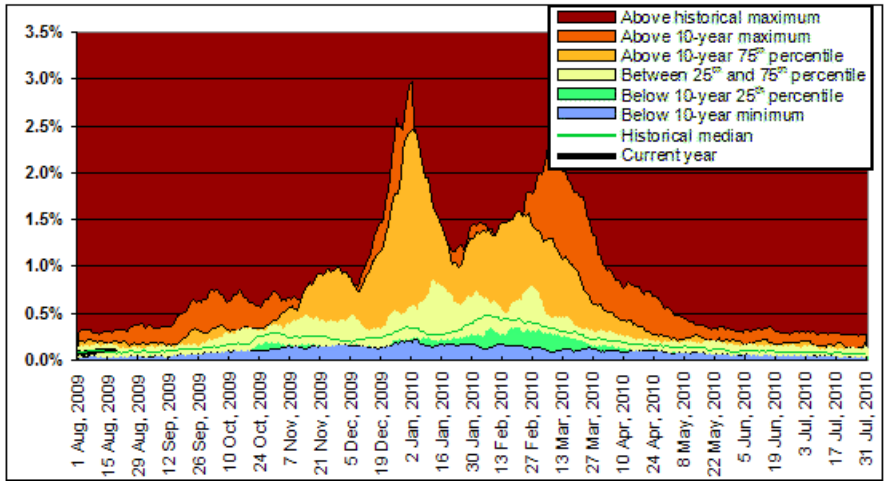
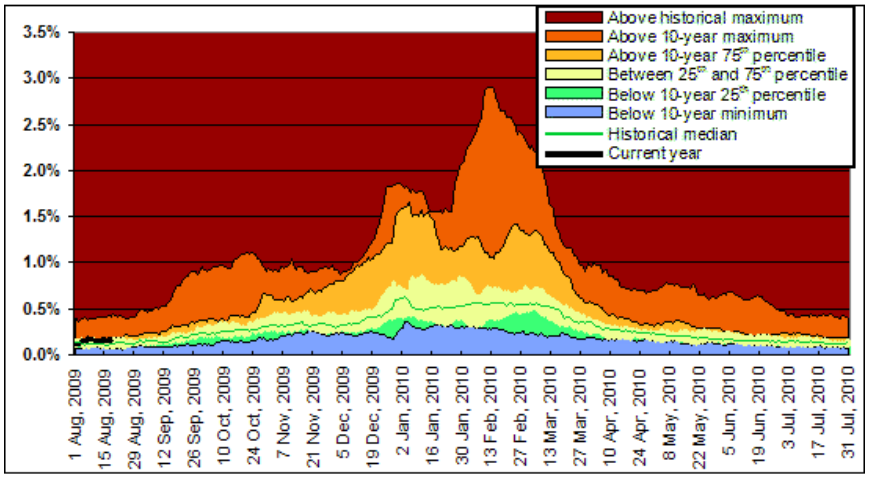
INFLUENZA ILLNESS CLAIMS* VIA BC MEDICAL SERVICES PLAN (MSP)
BY REGIONAL HEALTH AUTHORITY (RHA) – CURRENT TO AUGUST 18, 2009

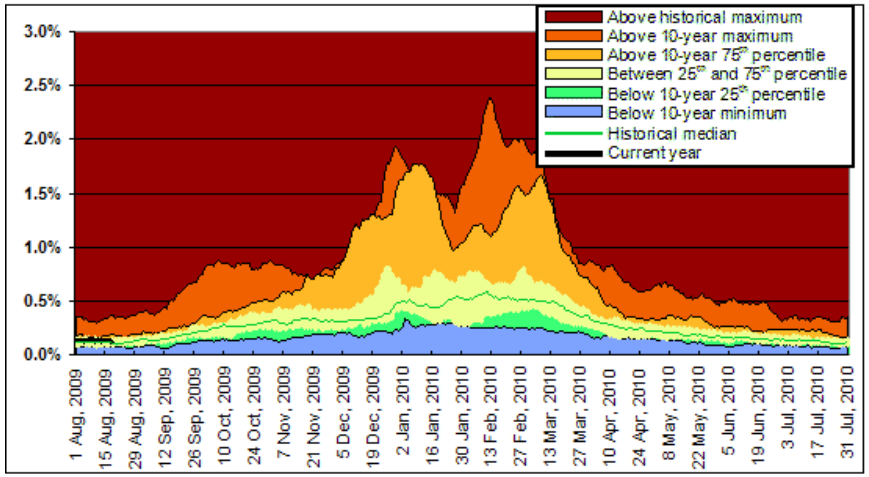
Interior



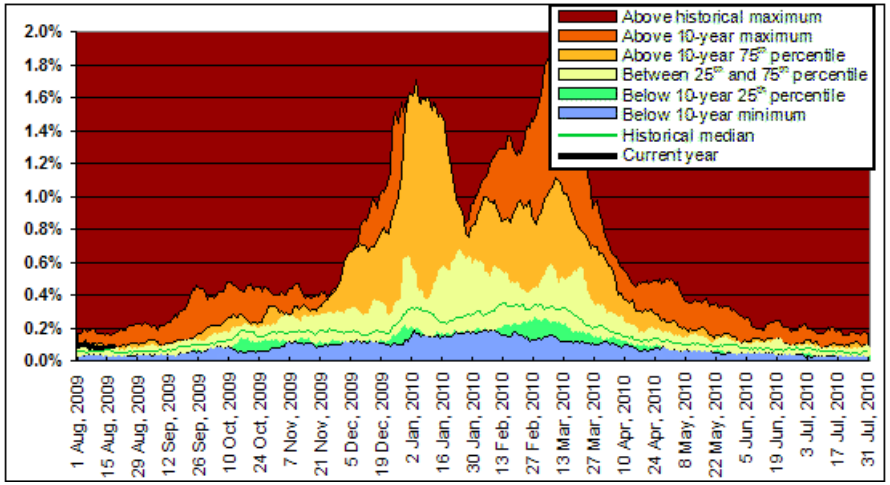
Vancouver Coastal



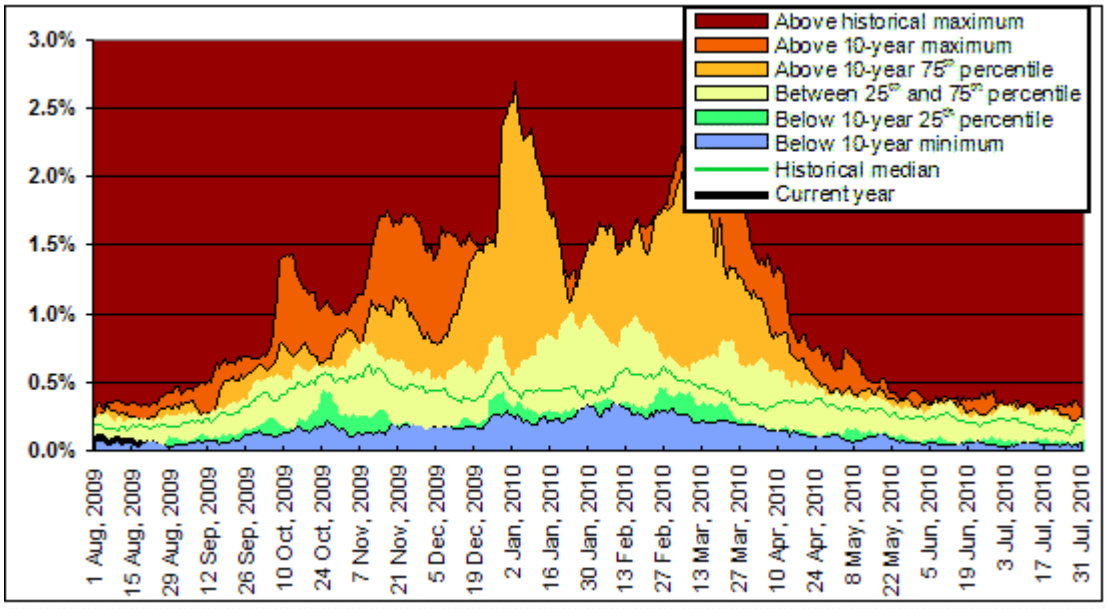
Fraser



Vancouver Island

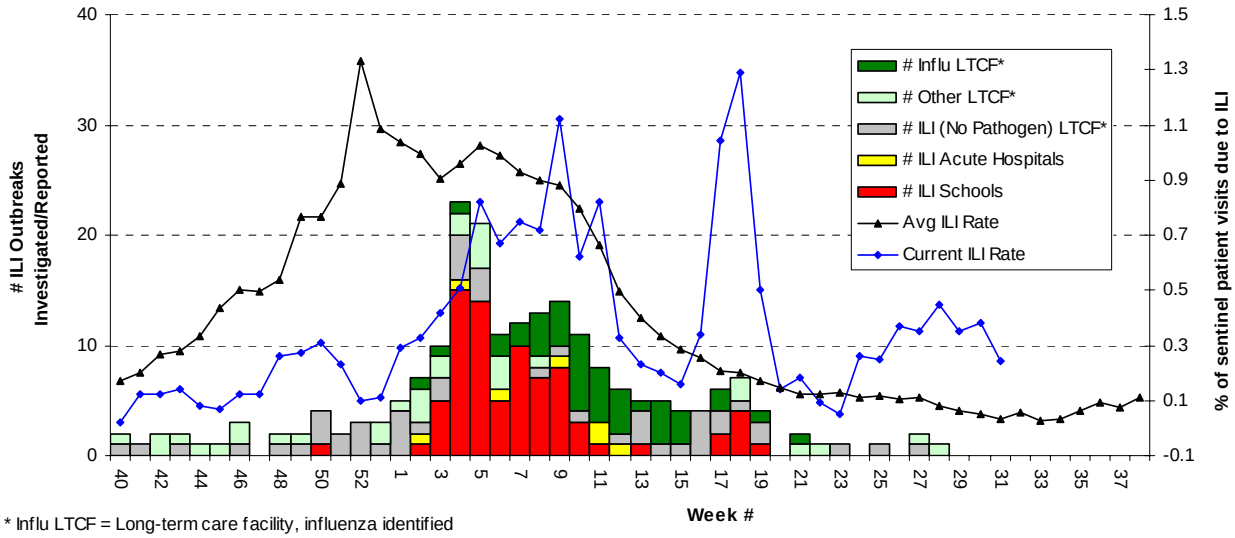


Northern



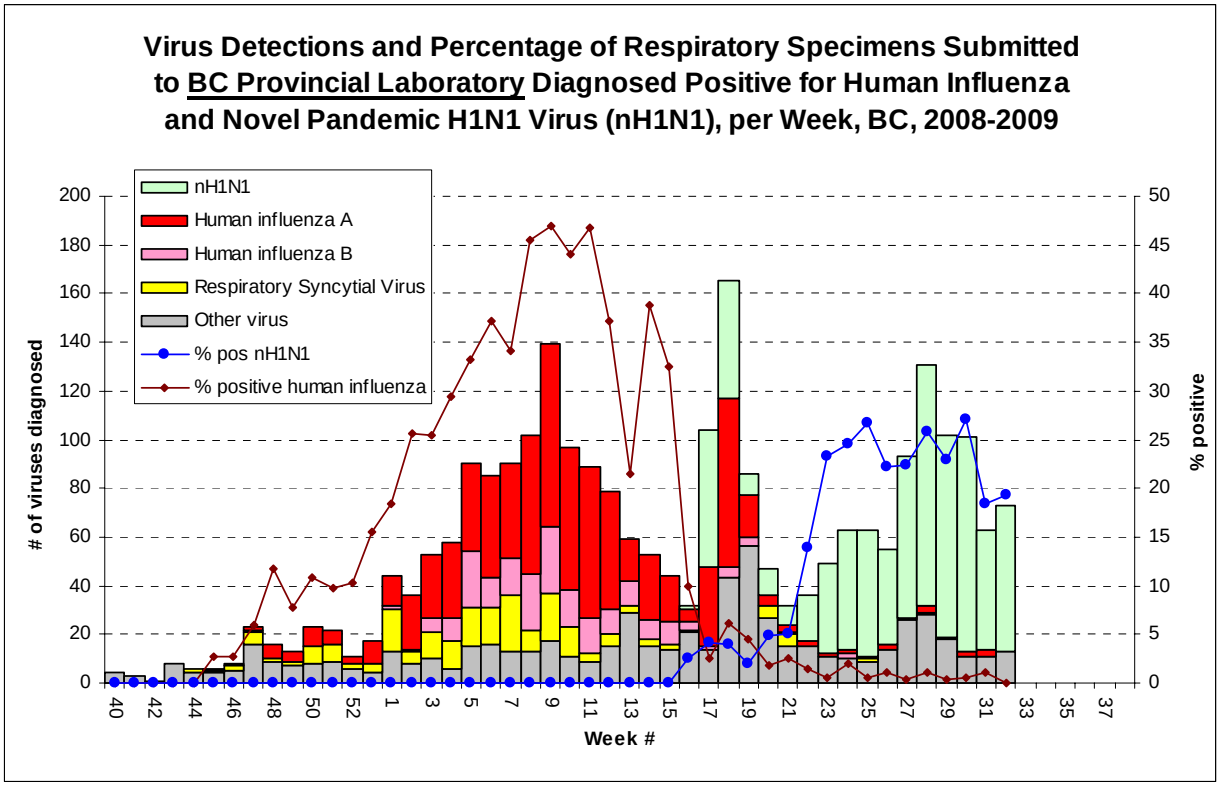
ILI OUTBREAKS

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

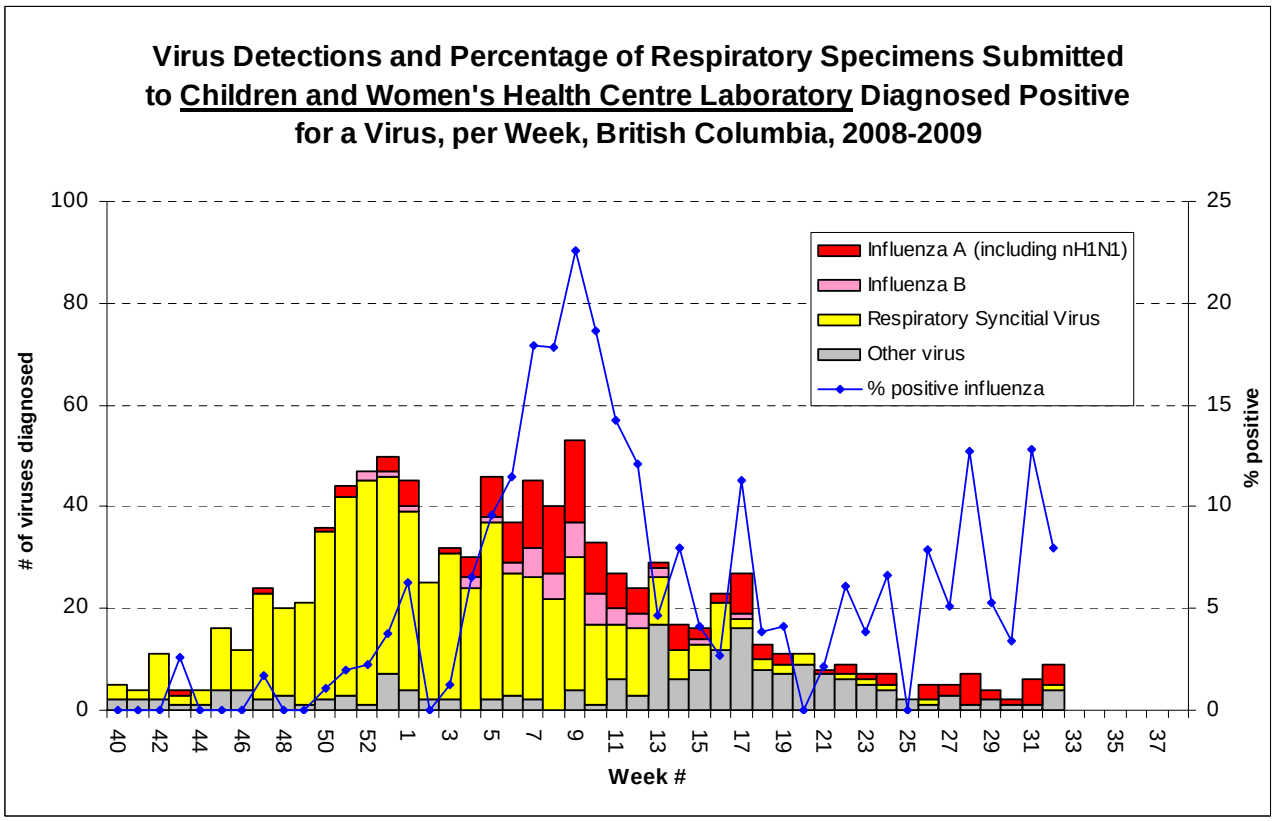


* Influ LTCF = Long-term care facility, influenza identified
* Other LTCF = Long-term care facility, other pathogen identified (including RSV, parainfluenza, adenovirus, and rhino/enterovirus)
* ILI (No Pathogen) LTCF = Long-term care facility, no pathogen identified

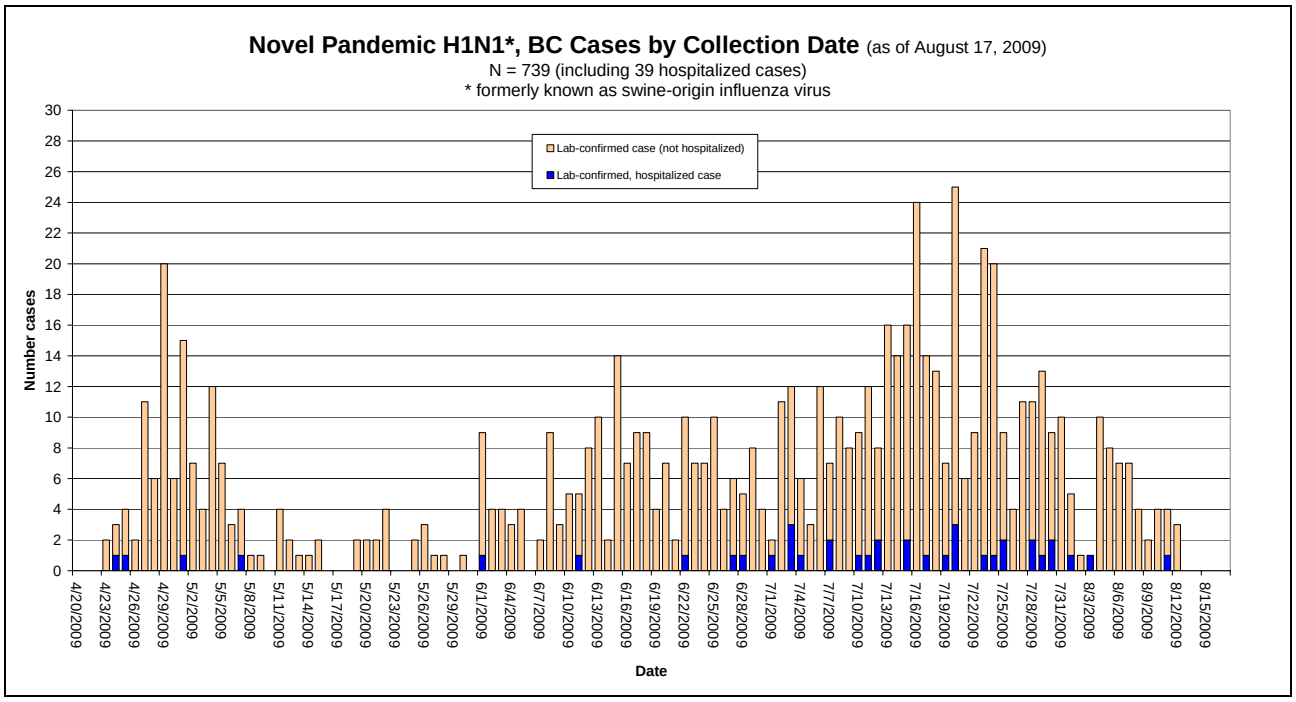
LABORATORY SUMMARY

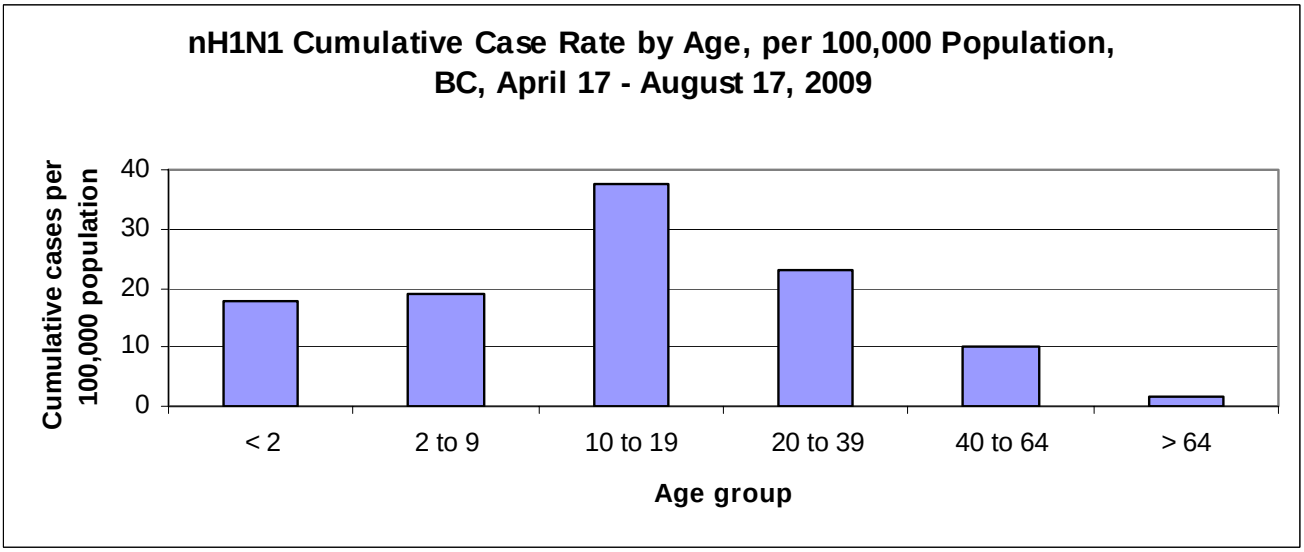


Note: The increase in bars during weeks 17-19 above reflects the large surge in specimens submitted to BCCDC for testing (2594 specimens were tested, a 5-fold increase over the number of tests performed during the 3-week period of peak activity this season).



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