British Columbia (BC) Influenza Surveillance Bulletin

2021-22 Influenza Season

Week 40: October 3 to 9, 2021

Table of Contents

A. Laboratory surveillance 2
   Laboratory findings

B. Clinical Indicators
   BC Children’s Hospital Emergency Room 7
   Medical Service Plan 8

C. Influenza outbreak reports 9

D. National
   FluWatch Activity levels 10
   NML Strain Characterization 10
   NML Antiviral Resistance

E. International
   USA (CDC) 11
   WHO 11

F. Influenza Vaccine Components
   (WHO Recommendations)
   2019-20 Northern Hemisphere 12
   2021 Southern Hemisphere 12

G. Additional Information
   Explanatory note 13
   List of Acronyms 13
   Web Sites

Still no sign of influenza, but increased detection of other non-influenza respiratory viruses (NIRVs) in BC

This is the first influenza bulletin of the 2021-22 season, which officially started in week 40 (October 3-9, 2021). Cumulative observations since our last bulletin of week 34 are also summarized here (i.e. weeks 35-40).

Between weeks 35 and 40 (spanning August 29 to October 9, 2021), no influenza virus was detected among 7,506 specimens tested across BC. By way of comparison there were also no influenza detections in week 40 of 2020 but 25 detections among 546 specimens tested (5% positivity) in week 40 of 2019. Elsewhere in Canada, seven influenza viruses (all influenza A) were reported from Ontario (3), Alberta (3) and Quebec (1) in weeks 35-38, 2021.

The detection of other non-influenza respiratory viruses (NIRVs) has increased in recent weeks in BC. Between weeks 35 and 40, most NIRV detections were entero-/rhinoviruses (590/843; 70%), followed by parainfluenza (138/843; 16%) and respiratory syncytial virus (RSV) (79/843; 9%). Most have been among young children under the age of 9 years. Between weeks 35 and 40, 79 RSV positive specimens were identified among 7,506 tested (1%) compared to none (among 6,634 tested) in 2020. With the exception of Northern Health Authority, all reporting sites have detected at least one RSV since week 35 of 2021.

Visits to BC Children’s Hospital Emergency Room for influenza-like illness (ILI) as a percentage of all visits has exceeded the 5-year historical average since week 33 (mid-August). Acknowledging the ongoing COVID-19 pandemic, changes in healthcare seeking behaviours and circulation of other respiratory viruses likely contribute.

After a prolonged absence, the recent increased detection of some NIRVs in BC warrants further monitoring.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

Report Disseminated: October 14, 2021
A. Laboratory Surveillance

Since the beginning of the 2021-22 season, commencing October 3, 2021 (Week 40), no influenza viruses have been detected among the 1,822 specimens tested across the province (Figure 1). Since our last bulletin in week 34 (found here), 5,684 specimens were tested during the inter-seasonal period of August 29 to October 2, 2021 (weeks 35-39), with none being positive for influenza virus.

By way of comparison there were also no influenza detections in week 40 of 2020 among 1,378 specimens tested, but there were 25 detections among 546 specimens tested (5% positivity) in week 40 of 2019. Influenza positivity currently remains below the 5-year historical (pre-pandemic) average (Figure 2). On average for week 40 of 2014-2019 there were 269 influenza tests and 20 (7%) influenza detections (range 6 to 38 detections) reported (source: RVDSS Report).

The BCCDC Public Health Laboratory (PHL) and some local health authority (HA) laboratories also conduct testing for other non-influenza respiratory viruses (NIRV), including RSV +/- other multiplex testing (beyond SARS-CoV-2 which is not addressed in this report). Recent weekly RSV percent positivity has increased, ranging above the 5-year historical average (2014-15 to 2018-2019) for 5 weeks. Weekly EV/RV positivity gradually increased over the summer period, but remains below the historical average for this time of year (Figure 2).

Between weeks 35 and 40, 79 RSV positive specimens were identified among 7,506 tested (1%) compared to none (among 6,634 tested) in 2020. With the exception of Northern Health Authority, all reporting sites have detected at least one RSV between weeks 35 and 40 of 2021 (Table 1). Among specimens additionally subjected to multiplex testing between weeks 35 and 40, entero/rhinoviruses (EV/RV) were found in 25% (590/2,367), their again being the most commonly detected NIRV (590/843; 70%). The second most commonly detected NIRV was parainfluenza, which was found in 6% (138/2,407) of detections. Most NIRV detections (at the BCCDC PHL) were among children under the age of 9 years. (Figures 2, 3, 4, 5; Table 1).

Figure 1. Influenza virus positivity among respiratory specimens testeda across BC, 2021-2022a,b,c
Figure 2. Laboratory influenza and other respiratory virus detections across BC with 5-season historical data

* The shaded area (red) represents the maximum and minimum percentage of influenza positivity reported by week from seasons 2014-2015 to 2018-2019.

Figure 3. Influenza and non-influenza respiratory virus (NIRV) detections among specimens submitted to BCCDC Public Health Laboratory and Island Health Laboratories, 2021-2022*

* The BCCDC Public Health Laboratory (PHL) conducts the majority of influenza subtype characterization for the province, including for primary specimens submitted directly to the BCCDC PHL for influenza diagnosis, as well as for specimens that have tested positive for influenza at other external sites and for which secondary subtyping was requested. Influenza A(H1N1)pdm09 and influenza A(subtype unknown) weekly case counts as directly typed/subtyped on primary specimens by Island Health Authority are also incorporated into the influenza counts in the graph and narrative summary above.

Figure 4. Cumulative number (since week 35) of non-influenza respiratory virus detections (NIRV) by type and age group, BCCDC Public Health Laboratory, 2021-22

Source: BCCDC Public Health Laboratory (PHDRW); Data are current to October 13, 2021; figure includes cumulative influenza detections for specimens collected from weeks 35-40.
Figure 5. Influenza and NIRV detections among respiratory specimens submitted to BC Children’s and Women’s Health Centre Laboratory, 2020-2021a,b,c

a. Positive rates were calculated using aggregate data. The denominators for each rate represent the total number of tests; multiple tests may be performed for a single specimen and/or patient.
b. Week of sample based on the sample collection date.
c. From week 35 (August 29-September 4, 2021) to week 40 (October 3-9, 2021), among the 579 specimens submitted for influenza virus testing at the BC Children’s and Women’s Health Centre laboratory, most that were found positive for non-influenza respiratory viruses were entero/rhinoviruses (195/275= 71%). 26 specimen were positive for RSV.
Table 1. Influenza and non-influenza respiratory viruses (NIRV) detected among primary patient specimens by health authority of test site

<table>
<thead>
<tr>
<th>Count (% positive from total screened)</th>
<th>Health authority&lt;sup&gt;a,b&lt;/sup&gt; where specimen tested£; BC Cases</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FHA</td>
<td>IHA</td>
</tr>
</tbody>
</table>

### Current report Week 40 [October 3 - 9, 2021]

<table>
<thead>
<tr>
<th>Influenza, Total&lt;sup&gt;d&lt;/sup&gt;</th>
<th>0/164 (0)</th>
<th>0/225 (0)</th>
<th>0/718 (0)</th>
<th>0/295 (0)</th>
<th>0/182 (0)</th>
<th>0/238 (0)</th>
<th>0/1822 (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza A total</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A(H3N2)&lt;sup&gt;e&lt;/sup&gt;</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A(H1N1)pdm09&lt;sup&gt;e&lt;/sup&gt;</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Influenza B total</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NIRV, Total&lt;sup&gt;e&lt;/sup&gt;</td>
<td>8</td>
<td>21</td>
<td>7</td>
<td>0</td>
<td>18</td>
<td>119</td>
<td>173</td>
</tr>
<tr>
<td>RSV</td>
<td>8/164 (5)</td>
<td>0/225 (0)</td>
<td>2/718 (&lt;1)</td>
<td>0/295 (0)</td>
<td>6/182 (3)</td>
<td>12/238 (5)</td>
<td>28/1822 (2)</td>
</tr>
<tr>
<td>Enterovirus/Rhinovirus</td>
<td>---£</td>
<td>20/74 (27)</td>
<td>5/40 (13)</td>
<td>---£</td>
<td>9/78 (12)£</td>
<td>78/185 (42)</td>
<td>---£</td>
</tr>
<tr>
<td>Other&lt;sup&gt;f&lt;/sup&gt;</td>
<td>---£</td>
<td>1/74 (1)</td>
<td>0/40 (0)</td>
<td>---£</td>
<td>3/87 (3)£</td>
<td>29/185 (16)</td>
<td>---£</td>
</tr>
</tbody>
</table>

### Cumulative total to date, Week 35 to 40 [August 29 - October 9, 2021]

<table>
<thead>
<tr>
<th>Influenza Total&lt;sup&gt;d&lt;/sup&gt;</th>
<th>0/502 (0)</th>
<th>0/1195 (0)</th>
<th>0/3169 (0)</th>
<th>0/483 (0)</th>
<th>0/883 (0)</th>
<th>0/1274 (0)</th>
<th>0/7506 (0)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influenza A total</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A(H3N2)&lt;sup&gt;e&lt;/sup&gt;</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>----</td>
<td>0</td>
</tr>
<tr>
<td>A(H1N1)pdm09&lt;sup&gt;e&lt;/sup&gt;</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>----</td>
<td>0</td>
</tr>
<tr>
<td>Influenza B total</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NIRV, Total&lt;sup&gt;e&lt;/sup&gt;</td>
<td>16</td>
<td>90</td>
<td>80</td>
<td>0</td>
<td>75</td>
<td>582</td>
<td>843</td>
</tr>
<tr>
<td>RSV</td>
<td>16/502 (3)</td>
<td>1/1195 (&lt;1)</td>
<td>13/3169 (&lt;1)</td>
<td>0/483 (0)</td>
<td>14/883 (2)</td>
<td>35/1274 (3)</td>
<td>79/7506 (1)</td>
</tr>
<tr>
<td>Enterovirus/Rhinovirus</td>
<td>---£</td>
<td>78/495 (16)</td>
<td>47/327 (14)</td>
<td>---£</td>
<td>54/382 (14)£</td>
<td>411/1163 (35)</td>
<td>---£</td>
</tr>
<tr>
<td>Other&lt;sup&gt;f&lt;/sup&gt;</td>
<td>---£</td>
<td>11/495 (2)</td>
<td>20/327 (6)</td>
<td>---£</td>
<td>7/422 (2)£</td>
<td>136/1163 (12)</td>
<td>---£</td>
</tr>
</tbody>
</table>

---

a. FHA=Fraser Health Authority; IHA=Interior Health Authority; VIHA=Vancouver Island Health Authority; NHA=Northern Health Authority; VCHA=Vancouver Coastal Health Authority; BCCDC=primary patient specimens screened at BCCDC Public Health Laboratory; CW=Children’s and Women’s Health Centre Laboratory

b. The HA associated with each subtyped sample is based on patient’s health authority. If patient health authority information is missing, the ordering physician’s health authority is used.

c. The number of influenza A, influenza B, RSV, Enterovirus/Rhinovirus, and other non-influenza respiratory viruses (NIRV) detected are based on specimens submitted for influenza screening/testing to various labs across FHA, VCHA (including Providence Health), VIHA, IHA and NHA. Samples sent to Children’s & Women’s Laboratory (CW) and BCCDC Public Health Laboratory for primary diagnostic purposes are displayed separately here (i.e. excluding those already screened at another site and submitted for secondary testing or characterization).

d. Influenza co-infections (influenza A and B virus positive) not accounted for in data source (PLOVER).

e. The BCCDC PHL conducts the majority of influenza subtype characterization for the province, including for primary specimens submitted directly to the BCCDC PHL for influenza diagnosis, as well as for specimens that have tested positive for influenza at other external sites and for which secondary subtyping was requested. Influenza A(H1N1)pdm09 and influenza A(H3N2) are directly typed/subtyped on primary specimens by IHA and are also incorporated into the influenza A subtype counts above.

f. Not tested by Fraser Health Microbiology Laboratories and Northern Health laboratory sites.

g. Enterovirus/Rhinovirus and Coronavirus not tested by Providence Health.

h. Other non-influenza respiratory viruses (NIRV) included on multiplex panels are parainfluenza, adenovirus, human metapneumovirus (HMPV), and seasonal coronaviruses (does not include SARS-CoV-2).
B. Clinical Indicators

BC Children’s Hospital Emergency Room
The proportion of visits to BC Children’s Hospital Emergency Room (ER) attributed to ILI slightly decreased in week 40 (14.6%) following a steep increase between week 37 (8.1%) and week 39 (16.4%). The proportion has been trending above the 5-year historical average since week 33 (August 15-21, 2021) (Figure 6). Acknowledging the ongoing COVID-19 pandemic, changes in healthcare seeking behaviours and circulation of other respiratory viruses likely contribute. (Figure 5).

Figure 6. Percent of patients presenting to BC Children’s Hospital ER

[Graph showing the percentage of patients presenting to BC Children’s Hospital ER over time]

Source: BCCH Admitting, Discharge, Transfer database (ADT). Data includes records with a triage chief complaint of “flu” or “influenza” or “fever/cough.”

*5-year historical average for 2021-22 season based on 2014-15 to 2018-19 seasons (excluded 2019-20 & 2020-21 seasons); CI=confidence interval.

Medical Service Plan
As shown in Figure 7 and Figure 8, in all weeks between week 31 (beginning August 1, 2021) and week 40 (beginning October 3, 2021), BC Medical Service Plan (MSP) general practitioner claims for influenza illness (weekly counts) remained below the 10-year historical minimum overall in the province and in 4 out of 5 health authorities. The exception of Northern Health Authority warrants cautious interpretation given instability associated with the smaller population.

Figure 7. Service claims submitted to MSP for influenza illness*, British Columbia, 2021-2022 season

*Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services. Influenza illness (II) is tracked as the weekly count of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza).


MSP data beginning August 1, 2021 corresponds to sentinel ILI week 31; data are current to October 12, 2021.
Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services. Influenza illness (ILI) is tracked as the weekly count of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza).


MSP data beginning August 1, 2021 corresponds to sentinel ILI week 31; data are current to October 12, 2021.
C. Influenza outbreak reports

The last influenza outbreak in BC was in March 2020 (week 12) with no influenza outbreaks reported to date in the 2021-22 season.
**D. National**

**FluWatch (week 35-38, August 29 to September 25, 2021)**

In week 38, influenza activity across Canada was exceptionally low with all regions reporting no influenza activity. For the past four weeks, all influenza indicators were at exceptionally low inter-seasonal levels. A total of eight influenza detections (all influenza A) have been reported for the reporting period of week 35 to 38*. This number of detections is lower than what we have seen historically in the past six pre-pandemic seasons, during which an average of 87 influenza detections were reported at this point in the season. Among the six detections with detailed age information, all were reported in individuals under the age of 65 years. Overall, the percentage of laboratory tests positive for influenza remains at exceptionally low levels, despite the elevated levels of testing seen this month. In weeks 35 to 38, 32,190 tests for influenza were performed at reporting laboratories and the average percentage of tests positive for influenza was 0.1%. In the past four weeks, 11 ILI outbreaks in schools and/or daycares were reported and no laboratory-confirmed influenza outbreaks have been reported. The percentage visits for influenza-like illness (ILI) was 0.8% in week 38 and is within expected levels. The percentage of FluWatchers reporting fever and cough was 0.6% in week 38; it remains below expected levels but is trending up.


**National Microbiology Laboratory (NML): Strain Characterization**

The National Microbiology Laboratory has not yet reported influenza strain characterization results for influenza viruses collected during the 2021-2022 season.

**National Microbiology Laboratory (NML): Antiviral Resistance**

The National Microbiology Laboratory has not yet reported antiviral resistance results for influenza viruses collected during the 2021-2022 season.

*From the RVDSS week 38 report, the eight influenza detections were from Quebec (n=1), Ontario (n=3), Alberta (n=3), and BC (n=1). BCCDC editorial note: The one earlier reported detection from BC has since been adjudicated a likely false positive and therefore should be excluded from the total influenza detection count.*
E. International

USA (week 39, September 26 to October 2, 2021)

In week 39, influenza activity remained low in the US. The proportion of outpatient visits for ILI is at 1.9% this week, which is below the national baseline (2.6%). The proportion of deaths attributed to pneumonia and influenza during week 39 (18.7%) is above the epidemic threshold of 5.7%. No influenza-associated pediatric deaths were reported to CDC during week 39. Of the 28,706 samples tested for influenza from clinical laboratories across the US in week 39, 11 (0.03%) were influenza A and 9 (0.03%) was influenza B positive.


WHO (September 27, 2021, based on data up to September 12, 2021)

In the temperate zone of the northern hemisphere, respiratory illness indicators and influenza activity remained below baseline overall. RSV detections increased in some parts of Canada and the USA. In Europe, influenza activity remained at inter-seasonal levels. Detections of influenza A (predominated A(H3N2) for those specimens that were subtyped) and B viruses in multiple European countries.

In countries in the temperate zone of the southern hemisphere, influenza activity remained at inter-seasonal levels. In Oceania, influenza is being detected at very low levels, even below the already low detection in 2020, despite ongoing testing. In South Africa, detections of predominately influenza B/Victoria lineage viruses continued to be reported; a few influenza A(H1N1)pdm09 and A(H3N2) viruses were also detected. In temperate South America no detections of influenza virus were reported. Respiratory syncytial virus (RSV) detection is increasing, but still below seasonal levels in some regions of the southern hemisphere.

In countries in the tropical zone, there were sporadic detections of influenza A(H1N1), influenza A(H3N2), and influenza B(Victoria). RSV and SARI activity increasing in some parts of the tropical region as well (eg. South America, Tropical Africa, etc).

From August 30 to September 12, 2021, the WHO GISRS laboratories tested more than 275,940 specimens. Of these, 1884 were positive for influenza viruses including 808 (42.9%) typed as influenza A and 1076 (57.1%) as influenza B. Of subtyped influenza A viruses, 54 (7.4%) were influenza A(H1N1)pdm09 and 686 (92.7%) were influenza A(H3N2). Of the characterized B viruses, 2 (0.2%) belonged to the B(Yamagata) lineage and 973 (99.8%) to the B(Victoria) lineage.

F. WHO Recommendations for Influenza Vaccines

WHO Recommendations for the 2021-22 Northern Hemisphere Influenza Vaccine

On February 26, 2021, the WHO announced recommended strain components for the 2021-22 northern hemisphere trivalent influenza vaccine (TIV):*

- an A/Victoria/2570/2019 (H1N1)pdm09-like virus [a clade 6B.1A5A virus]; †
- an A/Cambodia/e0826360/2020 (H3N2)-like virus [a clade 3C.2a1b/T131K virus];‡
- a B/Washington/02/2019-like (B/Victoria lineage) virus [a clade V1A.3, ∆3 virus].§

It is recommended that quadrivalent influenza vaccines (QIV) for the 2021-22 northern hemisphere season contain the above three viruses and a B/Phuket/3073/2013-like virus (B/Yamagata lineage) [a clade 3 virus], unchanged since 2015-2016.

* Recommended strains represent a change for two of the three components used for the 2020-2021 northern hemisphere TIV.
† Note for cell-based vaccine, the WHO recommends an A/Wisconsin/588/2019 (H1N1)pdm09-like virus [a clade 6B.1A5A virus] for the 2021-22 season. Recommended strains represent a change from the 2020-2021 season vaccine which contained an A/Guangdong-Maonan/SWL1536/2019 [a clade 6B.1A5A virus] for the egg-based vaccine and an A/Hawaii/70/2019 (H1N1)pdm09-like virus [also clade 6B.1A5A] for the cell-based vaccine.
‡ Recommended strain represents a change from the 2020-2021 season vaccine which contained an A/Hong Kong/2671/2019 (H3N2)-like virus [a clade 3C.2a1b/T135K virus].
§ Recommended strain is unchanged from the 2020-2021 season vaccine.

For further details: https://www.who.int/teams/global-influenza-programme/vaccines/who-recommendations/candidate-vaccine-viruses

WHO Recommendations for 2022 Southern Hemisphere Influenza Vaccine

On September 24, 2021, the WHO announced the recommended strain components for the 2022 southern hemisphere trivalent influenza vaccine (TIV):*

- an A/Victoria/2570/2019 (H1N1)pdm09-like virus [a clade 6B.1A5A virus]; †
- an A/Darwin/9/2021 (H3N2)-like virus [a clade 3C.2a1b/T131K-A virus];‡
- a B/Austria/1359417/2021 (B/Victoria lineage)-like virus [a clade V1A.3, ∆3 virus].§

It is recommended that quadrivalent influenza vaccines (QIV) for the 2022 southern hemisphere season contain the above three viruses and a B/Phuket/3073/2013-like virus (B/Yamagata lineage) [a clade 3 virus], unchanged from 2021.

* Recommended strains represent a change for two of the three components used for the 2021 southern hemisphere TIV.
† Note for cell-based vaccine, the WHO recommends A/Wisconsin/588/2019 (H1N1)pdm09-like virus [also a 6B.1A5A virus] for the 2022 season. Both the cell based and egg based vaccine components have not been changed from the 2021 season vaccine.
‡ Recommended strain represents a change from the 2021 season vaccine which contained an A/Darwin/6/2021 (H3N2)-like virus [also a 3C.2a1b/T131K virus] for the 2022 season. Recommended strain represents a change from the 2021 season vaccine which contained an A/Hong Kong/2671/2019 (H3N2)-like virus [a clade 3C.2a1b/T135K]
§ Note for cell-based vaccine, the WHO recommends a B/Austria/1359417/2021 (B/Victoria lineage)-like virus [a clade V1A.3, Δ3 virus] for the 2022 season. Recommended strain represents a change from the 2021 season vaccine which contained an a B/Washington/02/2019 (B/Victoria lineage)-like virus [a clade V1A.3, Δ3 virus]

For further details: https://www.who.int/publications/m/item/recommended-composition-of-influenza-virus-vaccines-for-use-in-the-2022-southern-hemisphere-influenza-season
G. Additional Information

Explanatory Note:
The surveillance period for the 2021-22 influenza season is defined starting in week 40. Weeks 35-39 of the 2020-21 season are shown on graphs for comparison purposes.

List of Acronyms:
- ACF: Acute Care Facility
- EV/RV: Entero/Rhinoviruses
- FHA: Fraser Health Authority
- HA: Health authority
- HBoV: Human bocavirus
- 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
- PHL: Public Health Laboratory
- RSV: Respiratory syncytial virus
- VCHA: Vancouver Coastal Health Authority
- VIHA: Vancouver Island Health Authority
- WHO: World Health Organization

Web Sites:
- BC CDC Emerging Respiratory Pathogen Updates:
  www.bccdc.ca/health-professionals/data-reports/emerging-respiratory-virus-updates

Influenza Web Sites
- USA Weekly Surveillance Reports: www.cdc.gov/flu/weekly/
- Joint ECDC – WHO/Europe weekly influenza update (Flu News Europe): flunewseurope.org
- WHO – Influenza Updates: https://www.who.int/influenza/surveillance_monitoring/updates/en/
- WHO – Weekly Epidemiological Record: www.who.int/wer/en/
- WHO Collaborating Centre for Reference and Research on Influenza (Australia): www.influenzacentre.org/
- Australian Influenza Report:

Avian Influenza Web Sites
- World Organization for Animal Health: www.oie.int/eng/en_index.htm

Contact Us:
- Tel: (604) 707-2510
- Fax: (604) 707-2516
- Email: InfluenzaFieldEpi@bccdc.ca

Communicable Diseases & Immunization Service (CDIS)
- BC Centre for Disease Control, 655 West 12th Ave, Vancouver BC V5Z 4R4
- Online: www.bccdc.ca/health-professionals/data-reports/influenza-surveillance-reports