Increased entero/rhinovirus (EV/RV) detection and some RSV but still no sign of influenza virus

This is the “Back-to-School” edition of the influenza bulletin providing update between week 18 (starting May 2, 2021) and week 34 (starting August 22, 2021).

Since the last bulletin on May 20, 2021 (spanning to week 17), no influenza viruses were detected among almost 15,000 specimens tested. For comparison, 237 influenza viruses were detected among just over 1,100 specimens tested for the same pre-pandemic period of 2019.

Entero-/rhinovirus (EV/RV) detection has increased (10% positivity during the summer report period), but has remained well below the 5-year historical average (24% for the same period). Additionally, five RSV detections were reported (among 14,877 tested) between weeks 18-34, all in August. Although a low percent positivity overall, this contrasts with the single pediatric RSV detection across all of the 2020-21 monitoring period (among 75,135 tested) and warrants ongoing monitoring given off-season reports elsewhere.

Since week 27 (July 4, 2021), there has been a steady increase in percent visits to BC Children’s Hospital Emergency Room for flu-like illness, exceeding the 5-year historical average in the most recent week 34. Acknowledging the ongoing COVID-19 pandemic, other respiratory viruses (e.g. EV/RV) likely contribute.

We will update you further through the new 2021-22 surveillance period.
A. Laboratory Surveillance

Since the 2020-21 season influenza bulletin issued on May 20, 2021 (data up to May 1, 2021), there have been no influenza viruses detected among the 14,915 specimens tested between week 18 (beginning May 2, 2021) and week 34 (ending August 28, 2021) across the province (Figure 1).

During the most recent week 34 (August 22-28, 2021), 806 specimens were tested for influenza by laboratories across BC with none positive. Compared to prior seasons, the influenza positivity rate (0%) is below the 5-year historical average for week 34 (1.5%) (Figure 2).

Briefly summarized, since the start of the 2020-21 influenza season (beginning September 27, 2020 – week 40) to the end of this summer (ending August 28, 2021 – week 34), over 90,000 influenza tests were conducted across BC laboratories (Table 1). A total of 18 influenza viruses (10 influenza A and 8 influenza B) were detected between weeks 44-10 (October 25, 2020-March 13, 2021), from among 11 individuals. Ten of these 11 individuals had recently received LAIV suggesting vaccine-type rather than wild-type influenza virus.

By way of contrast, during the same period of 2019-20, there were 90,065 influenza tests conducted with 6,673 (7.4%) influenza viruses detected (additionally noting that LAIV was not administered as part of the publicly-funded influenza immunization program in 2019-20). During the same week 40-34 period of the past 5 (2015-2019) seasons an average of 36,054 influenza tests and 5,764 (16%) influenza detections (range 3,195 to 7,014 detections) were reported (source: RVDSS Report).

Figure 1. Influenza virus positivity among respiratory specimens tested\(^a\) across BC, 2020-2021\(^{b,c,d}\)

![Influenza virus positivity among respiratory specimens tested across BC, 2020-2021](image)

\(\text{a. The percentage influenza positivity is presented by influenza type based on primary specimens submitted for influenza testing at the BCCDC Public Health Laboratory (PHL) and other external sites that share complete testing data with the BCCDC PHL. Reporting sites include: BC Children’s and Women’s Hospital, Children’s and Women’s Hospital Laboratory, Fraser Health Medical Microbiology Laboratory, Island Health, Providence Health Care, Powell River Hospital, St. Paul’s Hospital, Vancouver General Hospital, Victoria General Hospital, Vancouver Coastal Health, BCCDC PHL, Interior Health Authority sites, and Northern Health Authority.}\\n\(\text{b. Rates are subject to change with subsequent data reconciliation.}\\n\(\text{c. Week of sample based on the sample collection date.}\\n\(\text{d. The positive influenza A and influenza B viruses detected in weeks 44, 47, 48, 49, 3, 6, and 7 are all associated with live attenuated influenza vaccine (LAIV) receipt in 10 individuals, and likely represent vaccine-type virus rather than community circulation of seasonal influenza.}\)
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). Weekly RSV positivity rates have remained below the 5-year historical average (2015-16 to 2019-2020). Weekly EV/RV positivity rates have been gradually increasing over the summer period and are currently sitting close to the historical positivity rates for this time of the year (Figure 2).

Although still a low rate of detection, five RSV positive specimens were identified among 14,877 tested for RSV between week 18 and week 34. Conversely, there was just one RSV positive detection (out of 75,135 specimens) reported during the regular 2020-21 influenza season (week 40 to 17). The five new RSV detections were all from August 2021; four were reported by Island Health Laboratories and one by BCCDC PHL. Among specimens additionally subjected to multiplex testing between week 18 and 34, entero/rhinoviruses (EV/RV) were found in 10% (523/5,154) and were again the most commonly detected NIRV (523/618; 85%). During the same summer period, the five-year historical average positivity (excluding the 2020 pandemic period) was 24%. Through 2020-21 EV/RV represented 1,847/2,127 (87%) of NIRV detections with most EV/RV detections being among young children (median age 3 years). (Figures 2, 3, 4, 5; Table 1).

**Figure 2. Laboratory influenza and other respiratory virus detections across BC with 5-season historical data*,**


**Historical average data for week 53 is calculated by taking the average of week 52 and week 1 data from the past 5 influenza seasons.
Figure 3. Influenza and non-influenza respiratory virus (NIRV) detections among specimens submitted to BCCDC Public Health Laboratory and Island Health Laboratories, 2020-2021*

* 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.

** The positive influenza A pdm09(H1N1), influenza A(H3N2), and influenza B viruses detected in weeks 44, 47, 48, 49, 3, 7, and 7 are all associated with live attenuated influenza vaccine (LAIV) receipt in 10 individuals. These detections have already been reported by local health authority laboratories (Figure 1, Figure 5, and Table 1) and were sent to BCCDC PHL for further subtyping and analysis.

Figure 4. Cumulative number (since week 36) of non-influenza respiratory virus detections (NIRV) by type and age group, BCCDC Public Health Laboratory, 2020-21

Source: BCCDC Public Health Laboratory (PHDRW); Data are current to May 1, 2021; figure includes cumulative influenza detections for specimens collected from weeks 36-34.
Figure 5. Influenza and NIRV detections among respiratory specimens submitted to BC Children’s and Women’s Health Centre Laboratory, 2020-2021\textsuperscript{a,b,c,d}

\textbf{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.

\textbf{b.} Week of sample based on the sample collection date.

\textbf{c.} From week 36 (August 30-September 5, 2020) to week 33 (August 22-28, 2021), among the 3193 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 (529/596= 89\%). One specimen was positive for RSV.

\textbf{d.} The positive influenza A and influenza B viruses detected in week 44 and 47 are associated with live attenuated influenza vaccine (LAIV) receipt in 2 individuals, and likely represent vaccine-type virus rather than community circulation of seasonal influenza viruses.
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(^a,b) where specimen tested(^c), BC Cases</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current report Week 34 [August 22 - 28, 2021]</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influenza, Total(^d)</td>
<td>0/30 (0)</td>
<td>0/123 (0)</td>
</tr>
<tr>
<td>Influenza A total</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>A(H3N2)(^e)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>A(H1N1)pdm09(^g)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Influenza B total</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>RSV</td>
<td>0/30 (0)</td>
<td>0/123 (0)</td>
</tr>
<tr>
<td>Entero/Rhinovirus</td>
<td>(---^f)</td>
<td>5/64 (7.8)</td>
</tr>
<tr>
<td>Other(^h)</td>
<td>(---^f)</td>
<td>0/64 (0)</td>
</tr>
<tr>
<td><strong>2020-21 Season: Cumulative total to date, Week 40 to 34 [September 27, 2020 – August 28, 2021]</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influenza Total(^d)</td>
<td>1/22147 (0)</td>
<td>5/15931 (&lt;0.1)(^i)</td>
</tr>
<tr>
<td>Influenza A total</td>
<td>1 (0)</td>
<td>3 (&lt;0.1) (&lt;0.1)(^i)</td>
</tr>
<tr>
<td>A(H3N2)(^e)</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>A(H1N1)pdm09(^g)</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Influenza B total</td>
<td>0 (0)</td>
<td>2 (&lt;0.1) (&lt;0.1)(^i)</td>
</tr>
<tr>
<td>RSV</td>
<td>0/22147 (0)</td>
<td>0/15931 (0)</td>
</tr>
<tr>
<td>Entero/Rhinovirus</td>
<td>(---^f)</td>
<td>589/6358 (9.3)</td>
</tr>
<tr>
<td>Other(^h)</td>
<td>(---^f)</td>
<td>37/5892 (0.6)</td>
</tr>
</tbody>
</table>

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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, Entero/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. Entero/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).  
i. Since the start of the season (week 40), there has been 10 laboratory reported cases known to be associated with recent live attenuated influenza vaccine (LAIV) receipts. The reported LAIV cases correspond with all the influenza A and B virus detections between weeks 44-7; majority of these cases have dual influenza A and B virus detections.
B. Clinical Indicators

**BC Children’s Hospital Emergency Room**

Since week 27 (starting July 4, 2021), there has been a steady increase in the proportion of visits to BC Children’s Hospital Emergency Room attributed to ILI. In the most recent week (starting August 22, 2021), the proportion (7.8%) is above the 5-year historical average (5.1%) (Figure 6). Recognizing the ongoing COVID-19 pandemic, increase in other detected respiratory viruses such as EV/RV is likely contributory (Figure 5).

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

![Graph showing weekly percentage of patients presenting to BC Children's Hospital ER due to ILI]

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 2020-21 season based on 2014-15 to 2018-19 seasons (excluded 2019-20 season); CI=confidence interval.
**Medical Service Plan**

As shown in Figure 7a and Figure 8, in all weeks between week 1 (beginning January 3, 2021) and week 34 (beginning August 22, 2021), BC Medical Service Plan (MSP) general practitioner claims for influenza illness (weekly counts) were within (mostly below) the expected range in BC and in all 5 health authorities. For earlier or more recent weeks that may have exceeded the expected range, note that the clinical diagnosis of "influenza illness" as represented in administrative MSP billing data is non-specific. In the absence of laboratory-confirmed influenza detections in the province for many months more likely reflects other non-influenza respiratory pathogens such as SARS-CoV-2 or entero/rhinoviruses. See laboratory findings.

Early MSP data for the 2021-22 season is also provided below Figure 7b. MSP claims for influenza illness for the month of August 2021 remain below the 10-year median for this time of the year overall in the province and in all 5 health authorities (HA graphs not shown).

**Figure 7a. Service claims submitted to MSP for influenza illness†, British Columbia, 2020-2021 season**

![Graph showing service claims submitted to MSP for influenza illness from 2020-2021 season]

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

![Graph showing service claims submitted to MSP for influenza illness from 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 2, 2020 corresponds to sentinel ILI week 32 and August 1, 2021 corresponds to sentinel ILI week 31; data are current to September 1, 2021.
Figure 8.

Interior

Fraser

Vancouver Coastal

Vancouver Island

Northern

Counts of visits for influenza

Legend:
- Normal: count within expected range
- Unusual: count above 95th percentile of expected range
- Rare: count above 99th percentile of expected range
- Very rare: count above 99.9th percentile of expected range

Expected counts from PHIDO algorithm
C. Influenza outbreak reports

The last influenza outbreak in BC was in March 2020 (week 12) with no influenza outbreaks reported during the 2020-2021 season (since week 40, starting September 27, 2020). By way of comparison, during the same period spanning weeks 40 (from September 29, 2019) to 34 (to August 22, 2020) of the 2019/2020 season, there were 73 long-term care facility influenza outbreaks reported.
**D. National**

**FluWatch (week 25-29, June 20, 2021 to July 24, 2021)**

Despite continued monitoring across Canada, there continues to be no evidence of community circulation of influenza virus. Given the time of year, influenza is expected to remain at interseasonal levels for the remainder of the 2020-2021 seasonal influenza surveillance period. Since the last report, one laboratory detection of influenza virus (A(subtype unknown)) was reported in week 29. Between weeks 25 to 29, 26,093 tests for influenza virus were performed at reporting laboratories and the average percentage of tests positive was 0%. Compared to the past six seasons, the number of tests performed for this time period was higher than the average (9,622) and the percentage of tests positive for influenza remains well below average interseasonal levels (1.4%)

To date this season, 64 influenza virus detections have been reported, which is significantly lower than the past six seasons for which an average of 52,089 influenza virus detections were reported for the season to date. All provinces and territories are closely monitoring indicators of influenza activity this season. Thirty-one of the influenza virus detections reported to date this season are known to have been associated with recent live attenuated influenza vaccine (LAIV) receipt and do not represent community circulation of seasonal influenza viruses.

To date this season, 139 influenza-like-illness (ILI) outbreaks in schools and/or daycares, and no other influenza or ILI outbreaks were reported in any other settings. No outbreaks were reported during the period between weeks 25 to 29. Note outbreaks of ILI are not specific to any one respiratory pathogen and can be due to influenza or other respiratory viruses, including rhinovirus and even COVID-19. For more information on the respiratory viruses currently circulating in Canada, please refer to the Respiratory Virus Detections in Canada Report.


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

Due to the very low influenza circulation to date this season, the National Microbiology Laboratory has not reported strain characterization information on influenza viruses collected during the 2020-2021 season.

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

Due to the very low influenza circulation to date this season, the National Microbiology Laboratory has not reported antiviral resistance testing results for influenza viruses collected during the 2020-2021 season.
E. International

USA (week 33, August 15 to 21, 2021)
Nationwide during week 33, 2.2% of patient visits reported through ILINet were due to influenza-like illness. Although increasing, this percentage is still below the national baseline of 2.6%. Of the 17,487 specimens tested by public health laboratories in week 33, three (<0.02%) influenza A (one subtype unknown and two H3N2) and one (<0.01%) influenza B viruses were detected. In clinical laboratories across the United States, 27,364 samples were tested for influenza in week 33, 11 (0.04%) were influenza A and 6 (0.02%) were influenza B positive. The proportion of deaths attributed to pneumonia, influenza, and/or COVID-19 during week 33 (17.2%) was above the epidemic threshold of 5.4%. No influenza-associated pediatric death was reported to the US CDC in the current reporting week; the total for 2020-2021 season is one.


WHO (August 16, 2021, based on data up to August 01, 2021)

In the temperate zone of the northern hemisphere, influenza activity remained below baseline overall. In the countries of North America, influenza activity indicators, including the percent of tests positive for influenza and influenza like illness (ILI) activity, remained at very low levels. In Europe and Western Asia, influenza activity was at interseasonal levels with a few detections of influenza A and B viruses in some countries. No influenza detection reported in Central Asia. In East Asia, influenza illness indicators and influenza activity remained low, ILI rates were at levels seen in previous years.

In countries in the temperate zone of the southern hemisphere, influenza activity remained at inter-seasonal level. All regions reported no to sporadic detection of influenza. Other respiratory viruses (ORVs) have been detected at usual levels for this time of the year. In particular, RSV activity was reported by New Zealand, South Africa, and Paraguay.

In countries in the tropical zone, there was sporadic detection of influenza virus. Detection of influenza virus was reported in the regions of Eastern Africa, Western Africa, South America, Caribbean, and Central America. Countries in South East Asia have also reported detections of both influenza A and influenza B.

From July 19 to August 01, 2021, the WHO GISRS laboratories tested more than 186,515 specimens. Of these, 894 were positive for influenza viruses including 383 (42.8%) typed as influenza A and 511 (57.2%) as influenza B. Of subtyped influenza A viruses, 51 (14.2%) were influenza A(H1N1)pdm09 and 307 (85.8%) were influenza A(H3N2). Of the 458 characterized B viruses, 456 (99.6%) belonged to the B(Victoria) lineage and 2 (0.4%) belonged to the B(Yamagata) 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, Δ3 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 strain represents a change from the 2020-2021 season vaccine which contained an A/Guangdong-Maoan/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 2021 Southern Hemisphere Influenza Vaccine

On September 25, 2020, the WHO announced the recommended strain components for the 2021 southern hemisphere trivalent influenza vaccine (TIV)*:

- an A/Victoria/2570/2019 (H1N1)pdm09-like virus [a clade 6B.1A5A virus]; †
- an A/Hong Kong/2671/2019 (H3N2)-like virus [a clade 3C.2a1b/T135K virus];‡
- a B/Washington/02/2019 (B/Victoria lineage)-like virus [a clade V1A.3, Δ3 virus].

It is recommended that quadrivalent influenza vaccines (QIV) for the 2021 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 2020.

* Recommended strains represent a change for two of the three components used for the 2020 southern hemisphere TIV
† Note for cell-based vaccine, the WHO recommends A/Wisconsin/588/2019 (H1N1)pdm09-like virus [also a clade 6B.1A5A virus] for the 2020-21 season. Recommended strain represents a change from the 2020 season vaccine which contained an A/Brisbane/02/2018 (H1N1)pdm09-like virus [a clade 6B.1A1 virus]
‡ Note for cell-based vaccine, the WHO recommends an A/Hong Kong/45/2019 (H3N2)-like virus [also clade 3C.2a1b/T135K virus] for the 2020-21 season. Recommended strain represents a change from the 2020 season vaccine which contained an A/South Australia/34/2019 (H3N2)-like virus [a clade 3C.2a1b/T131K virus]

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

Explanatory Note:
The surveillance period for the 2020-21 influenza season is defined starting in week 40. Weeks 36-39 of the 2019-20 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:

- BCCDC 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/

Avian Influenza Web Sites

- World Organization for Animal Health: www.oie.int/eng/en_index.htm

Contact Us:

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Fax: (604) 707-2516  
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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