

# British Columbia (BC) Influenza Surveillance Bulletin

2021-22 Influenza Season

**Week 27:** July 03 to 09, 2022

## Table of Contents

### A. Laboratory surveillance

Laboratory findings [2](#)

### 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](#)

Respiratory Virus Detections [11](#)

NML Strain Characterization [12](#)

NML Antiviral Resistance [12](#)

### E. International

USA (CDC), Australia and South Africa [13](#)

WHO [14](#)

### F. HPAI H5N1

[14](#)

### G. Influenza Vaccine Components (WHO Recommendations)

2022-23 Northern Hemisphere [15](#)

2022 Southern Hemisphere [15](#)

### H. Additional Information

Explanatory note [16](#)

List of Acronyms [16](#)

Web Sites [16](#)

## Influenza activity within expected low levels in BC, early southern hemisphere activity may have peaked

After a slightly increasing trend between weeks 17-21, influenza positivity in BC steadily decreased between weeks 22-27 (May 29-July 09). Overall, 3% of respiratory specimens tested positive for influenza virus between weeks 22-27, gradually decreasing weekly from 4% to 1%.

Week 22-27 percent positivity (3%) was below the 5-year pre-COVID-19 pandemic average (5%) but higher than in 2021 (0%) or 2020 (<0.1%). Nationally, percent positivity showed a similar pattern between weeks 22-27: 5% overall, decreasing weekly from 8.5% to 1.2%, the latter within expected levels.

All but one influenza virus detected in BC during weeks 22-27 were influenza A and of 370 subtyped, all but five were H3N2. Nationally across Canada virtually all subtyped influenza A viruses were also H3N2 (914/918). Of A(H3N2) viruses genetically characterized to date in Canada, all are clade 2a.2 which is the H3N2 strain included in the upcoming northern hemisphere (NH) 2022-23 vaccine.

In week 26, an outbreak due to influenza A(H3N2) clade 2a.2 virus was reported from a long-term care facility (LTCF) in BC. Sporadic LTCF outbreaks are not unexpected at this time of year. This is just the 5th influenza outbreak reported in 2021-22 (weeks 40-27) in BC, fewer than the 5-year pre-COVID-19 pandemic average of 134 for that period.

In BC, the three most common other (non-influenza, non-SARS-CoV-2) respiratory viruses were entero/rhinoviruses (EV/RV), human metapneumovirus (HMPV) and respiratory syncytial virus (RSV) in that order. Whereas EV/RV and RSV were at low expected levels, HMPV percent positivity has exceeded expected levels for several weeks in BC and Canada overall.

In the southern hemisphere (SH), early influenza activity may have peaked or plateaued in [Australia](#) (A(H3N2) predominance) and [South Africa](#) (greater mix of influenza viruses). Of characterized viruses, nearly all are antigenically similar to the SH 2022 vaccine components, each of which are also shared with the NH 2022-23 vaccine.

Prepared by BCCDC Influenza & Emerging Respiratory Pathogens Team

Report Disseminated: July 18, 2022

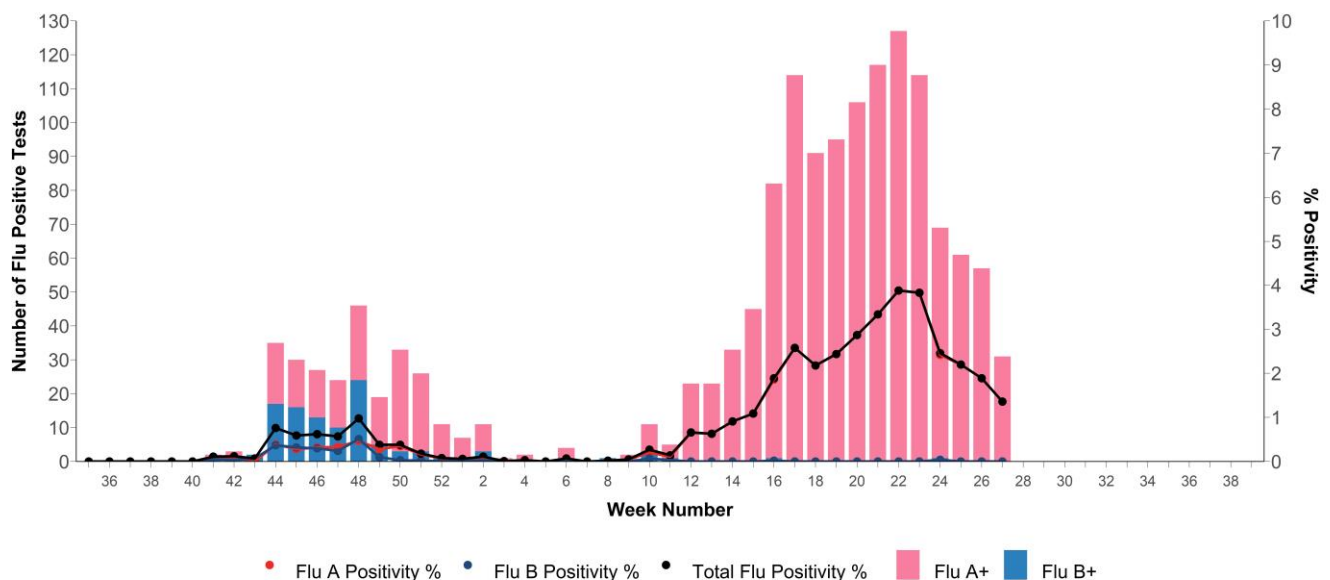
## A. Laboratory Surveillance

Since the start of the 2021-22 season on October 3, 2021 (week 40), 1,490 (1%) influenza viruses have been detected among 202,979 specimens tested to the end of week 27 in BC (Figure 1, Table 1). Of these detections, 459/1490 (31%) were during weeks 22-27.

Between weeks 22-27, percent influenza positivity gradually decreased from 4% in weeks 22 (127/3,274) and 23 (114/2,979), to 3% in week 24 (69/2,805), 2% in weeks 25 (61/2,773) and 26 (57/3,018), and 1% in the current reporting week 27 (July 3-9: 31/2,339) (Figure 1, Figure 2). All but one of these detections were influenza A (458/459) and among subtyped viruses, all but five were influenza A(H3N2) (365/370). Since week 10 (March 6 to July 3, 2022), 191 influenza A(H3N2) viruses in BC were genetically characterized and all belonged to clade 2a.2. The 2022-23 A(H3N2) vaccine component is also a clade 2a.2 virus. Influenza virus detections in weeks 22-27 of 2022 were higher than the same period of 2021 (0/4,707 specimens tested) and 2020 (4/7,099; <0.1%) but lower than the 5-year (pre-COVID-19 pandemic) average (50/1,067; 5%) (Figure 2). Among 138 (30%) of 459 detections during weeks 22-27 with known age information, 37 (27%) were 0-8 years old, 27 (20%) were 9-19 years old, 38 (27%) were 20-49 years old, 7 (5%) were 50-64 years old and 29 (21%) were 65+ years old.

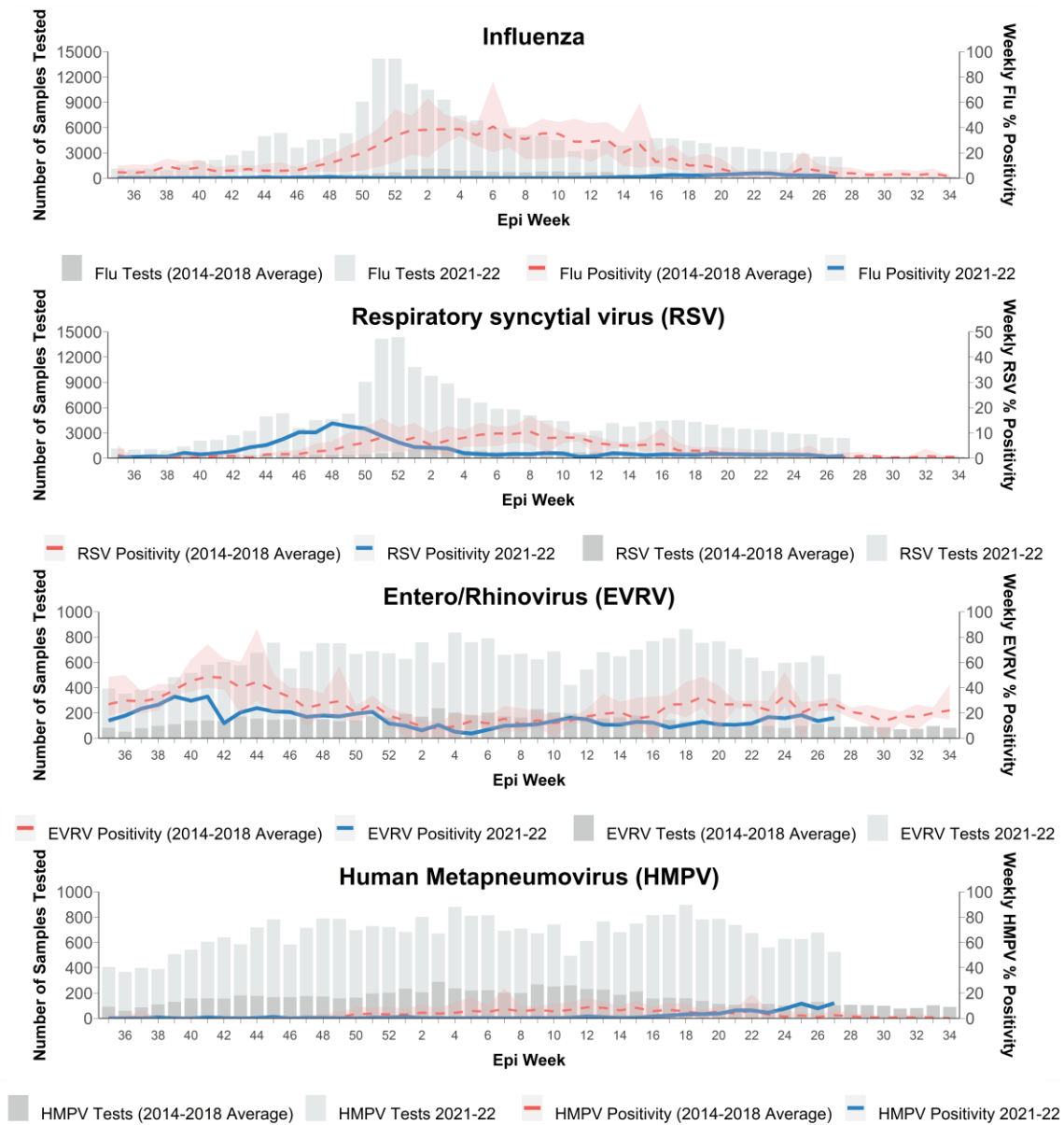
The BCCDC PHL and some local health authority (HA) laboratories also conduct testing for other non-influenza respiratory viruses (NIRV), including RSV and other pathogens beyond SARS-CoV-2 which is not addressed in this report. Among specimens additionally subjected to multiplex testing during weeks 22-27, enteroviruses (EV/RV), HMPV and RSV were the first- (586/1,407; 42%), second- (331/1,407; 24%) and third-most (211/1,407; 16%) NIRVs. EV/RV, HMPV, and RSV were identified in 17% (586/3,532), 9% (331/3,595) and 1% (211/16,558) of specimens tested, respectively, in weeks 22-27. Both RSV and EV/RV detections (percent positivity) remain low and within expected levels but human metapneumovirus (HMPV) detections have been higher than the 5-year (pre-COVID-19) pandemic maximum from week 24 (Figure 2). 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 tested<sup>a</sup> across BC, 2021-2022<sup>a,b,c</sup>



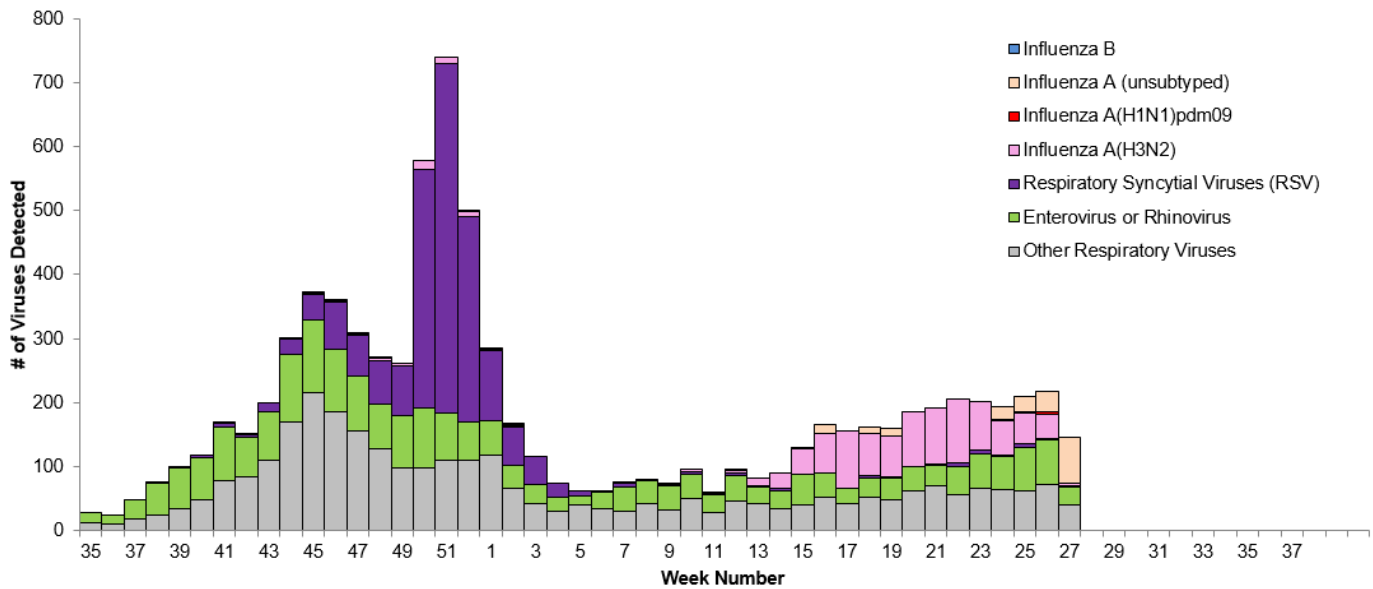
- The percentage influenza positivity is presented by influenza type based on primary specimens submitted for influenza testing at the BCCDC Public Health Laboratory (PHL) and other external sites that share complete testing data with the BCCDC PHL. Reporting sites include: BC Children's and Women's 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, BCCDC PHL, Interior Health Authority sites, and Northern Health Authority.
- Findings are subject to change with subsequent data reconciliation.
- Week of sample based on the sample collection date.

Figure 2. Influenza and other non-SARS-CoV-2 respiratory virus detections in BC, with 5-season historical data\*



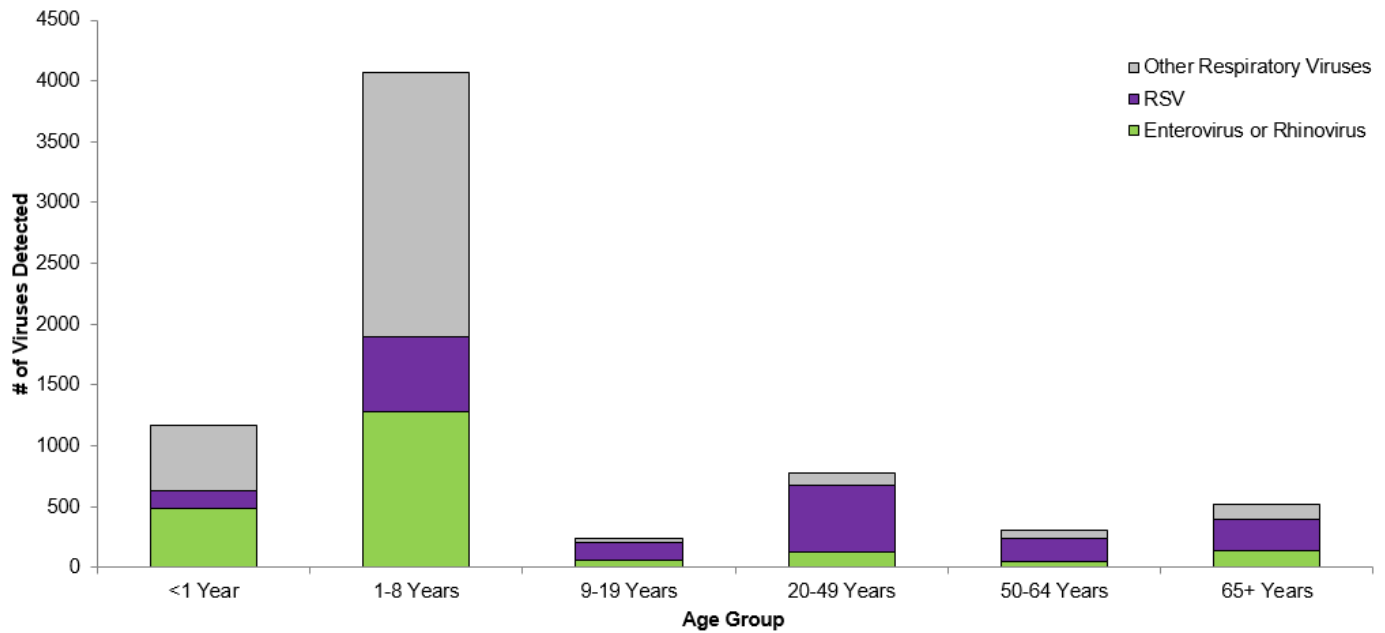
\* The shaded area (red) represents the maximum and minimum percentage of influenza positivity reported by week from seasons 2014-15 to 2018-19.  
Source: Respiratory Virus Detections Surveillance System (RVDSS) weekly report; data includes seasons 2014-15, 2015-16, 2016-17, 2017-18, 2018-19, 2021-22 (2019-20 & 2020-21 are excluded from the historical average calculations due to the COVID-19 pandemic).

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



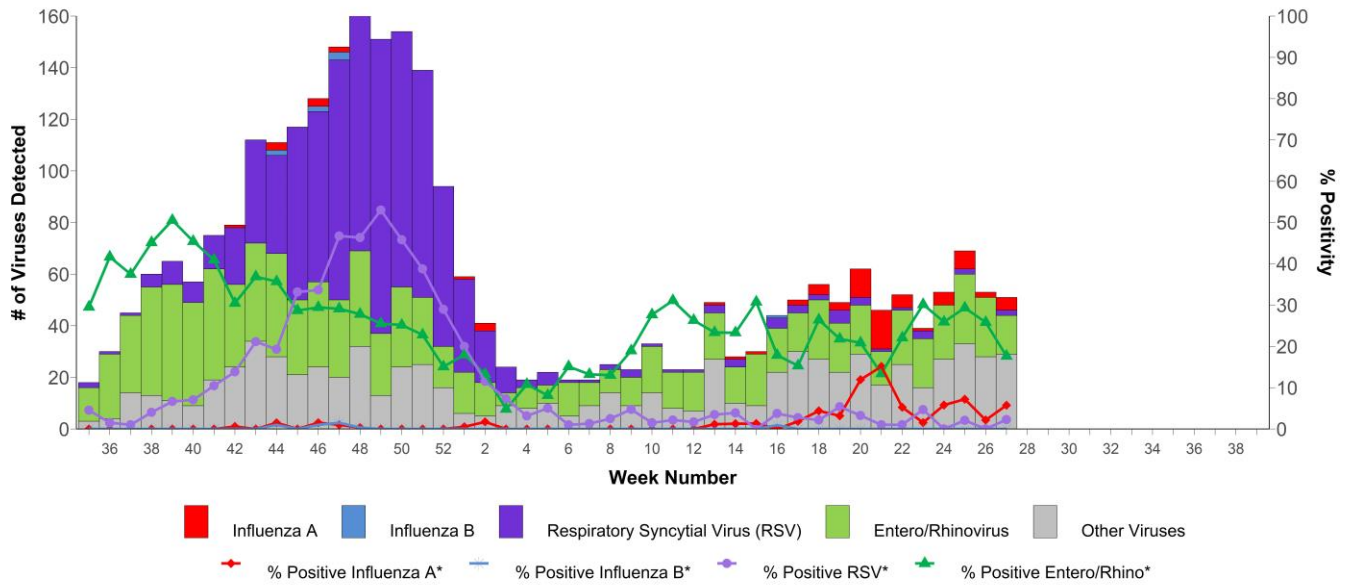
\* The BCCDC Public Health Laboratory (PHL) conducts the majority of influenza subtype characterization for the province, including for primary specimens submitted directly to the BCCDC PHL for influenza diagnosis, as well as for specimens that have tested positive for influenza at other external sites 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 July 14 2022; figure includes cumulative influenza detections for specimens collected from weeks 35-27.

**Figure 5. Influenza and NIRV detections among respiratory specimens submitted to BC Children’s and Women’s Health Centre Laboratory, 2021-2022<sup>a,b,c</sup>**



- 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 to week 27 (August 29, 2021 – July 09, 2022), 5,511 specimens were submitted for influenza virus testing at the BC Children’s and Women’s Health Centre laboratory. Amongst detected viruses, the most common viruses were RSV (972/2,843; 34%), enterovirus/rhinoviruses (996/2,843; 35%) and parainfluenza (342/2,843; 12%).

**Table 1. Influenza and non-influenza respiratory viruses (NIRV) detected among primary patient specimens by health authority of test site**

Count (% positive of total screened)	Health authority <sup>a,b</sup> where specimen tested <sup>c</sup> , BC Cases							Total
	FHA	IHA*	VIHA	NHA	VCHA	BCCDC	CW	
<b>Most recent report, Week 27 [July 03 to 09, 2022]</b>								
Influenza, Total <sup>d</sup>	8/869 (1)	NR	0/502 (0)	15/212 (7)	3/617 (<1)	0/52 (0)	5/87 (6)	31/2339 (1)
Influenza A total	8 (1)	NR	0	15 (7)	3 (<1)	0	5 (6)	31 (1)
A(H3N2) <sup>e</sup>	1	NR	0	3	1	---	---	5
A(H1N1)pdm09 <sup>e</sup>	0	NR	0	0	0	---	---	0
Influenza B total	0	NR	0	0	0	0	0	0
NIRV, Total <sup>c</sup>	7	NR	16	20	15	68	46	172
RSV	7/869 (1)	NR	9/502 (2)	0/212 (0)	2/498 (<1)	1/52 (2)	2/88 (2)	21/2221 (1)
Enterovirus/Rhinovirus	---	NR	2/26 (8)	---	10/74 (14) <sup>g</sup>	29/183 (16)	15/85 (18)	---
Other <sup>h</sup>	---	NR	5/26 (19)	---	3/80 (4) <sup>g</sup>	38/183 (21)	29/85 (34)	---
<b>Cumulative total to date, Week 40 to 27 [October 3, 2021 to July 09, 2022]</b>								
Influenza Total <sup>d</sup>	295/42991 (1)	448/38531 (1)	113/24915 (<1)	152/11572 (1)	280/39425 (1)	116/40500 (<1)	86/5045 (2)	1490/202979 (1)
Influenza A total	284 (1)	446 (1)	107 (<1)	143 (1)	216 (1)	109 (<1)	77 (2)	1382 (1)
A(H3N2) <sup>e</sup>	186	55	103	35	58	---	---	437
A(H1N1)pdm09 <sup>e</sup>	0	0	3	1	0	---	---	4
Influenza B total	11 (<1)	2 (<1)	6 (<1)	9 (<1)	64 (<1)	7 (<1)	9 (<1)	108 (<1)
NIRV, Total <sup>c</sup>	2216	2751	1180	854	1626	5933	2539	17099
RSV	2216/42991 (5)	1668/38531 (4)	983/25213 (4)	638/11573 (6)	1326/34123 (4)	1783/40487 (4)	954/5040 (19)	9568/197958 (5)
Enterovirus/Rhinovirus	---	510/5116 (10)	108/1333 (8)	---	157/2822 (6) <sup>g</sup>	2077/12361 (17)	841/3560 (24)	---
Other <sup>h</sup>	---	573/5116 (11)	89/1333 (7)	---	143/3278 (4) <sup>g</sup>	2073/12361 (17)	744/3560 (21)	---

- 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).

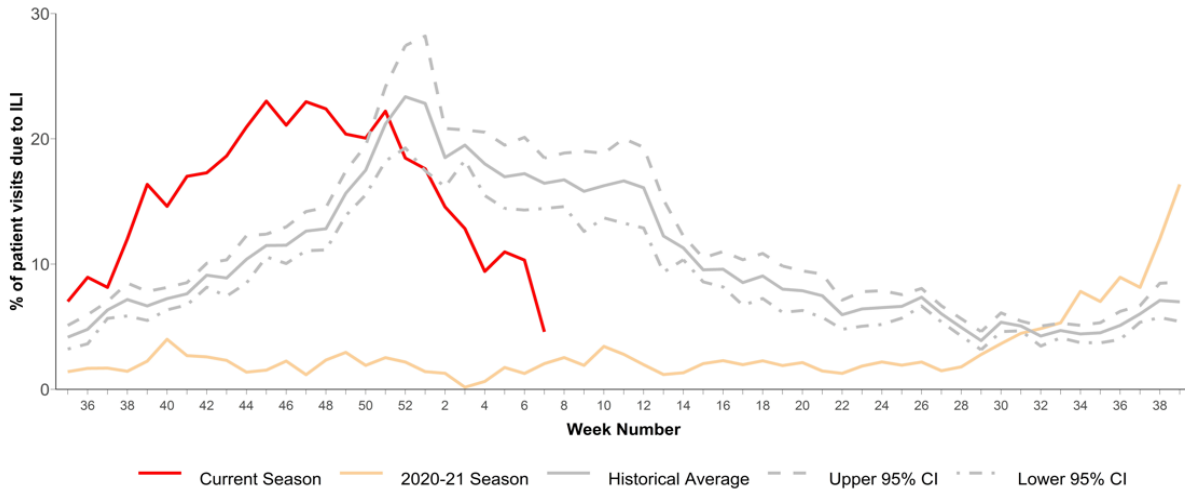
NR = Not Reported  
\*Week 27 data missing

## B. Clinical Indicators

### BC Children’s Hospital Emergency Room

Due to system updates, reporting of this indicator has paused since week 7 ([Figure 6](#)).

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

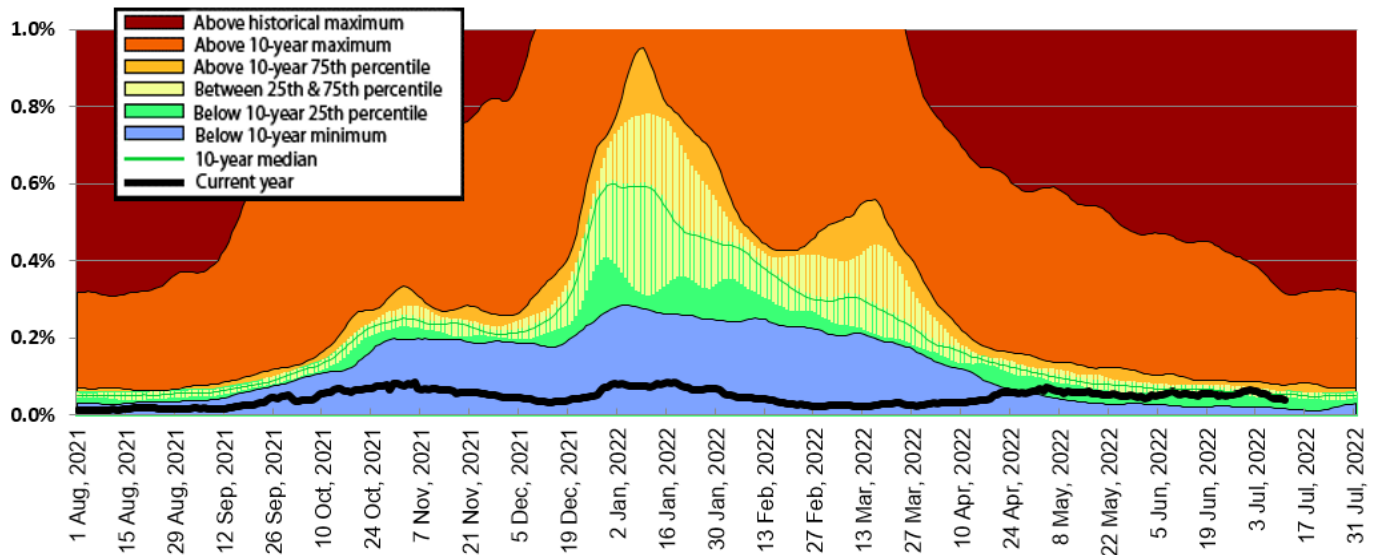


Source: BCCH Admitting, Discharge, Transfer database (ADT). Data includes records with a triage chief complaint of "flu" or "influenza" or "fever/cough."  
 \*5-year historical average for 2021-22 season based on 2014-15 to 2018-19 seasons (excluded 2019-20 & 2020-21 seasons); CI=confidence interval.

### Medical Service Plan Claims

In BC, during weeks 22 to 27 (May 29 to July 9, 2022), BC Medical Service Plan (MSP) general practitioner claims for influenza illness remained low overall in the province ([Figure 7](#)) and the five health authorities ([Figure 8](#)).

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



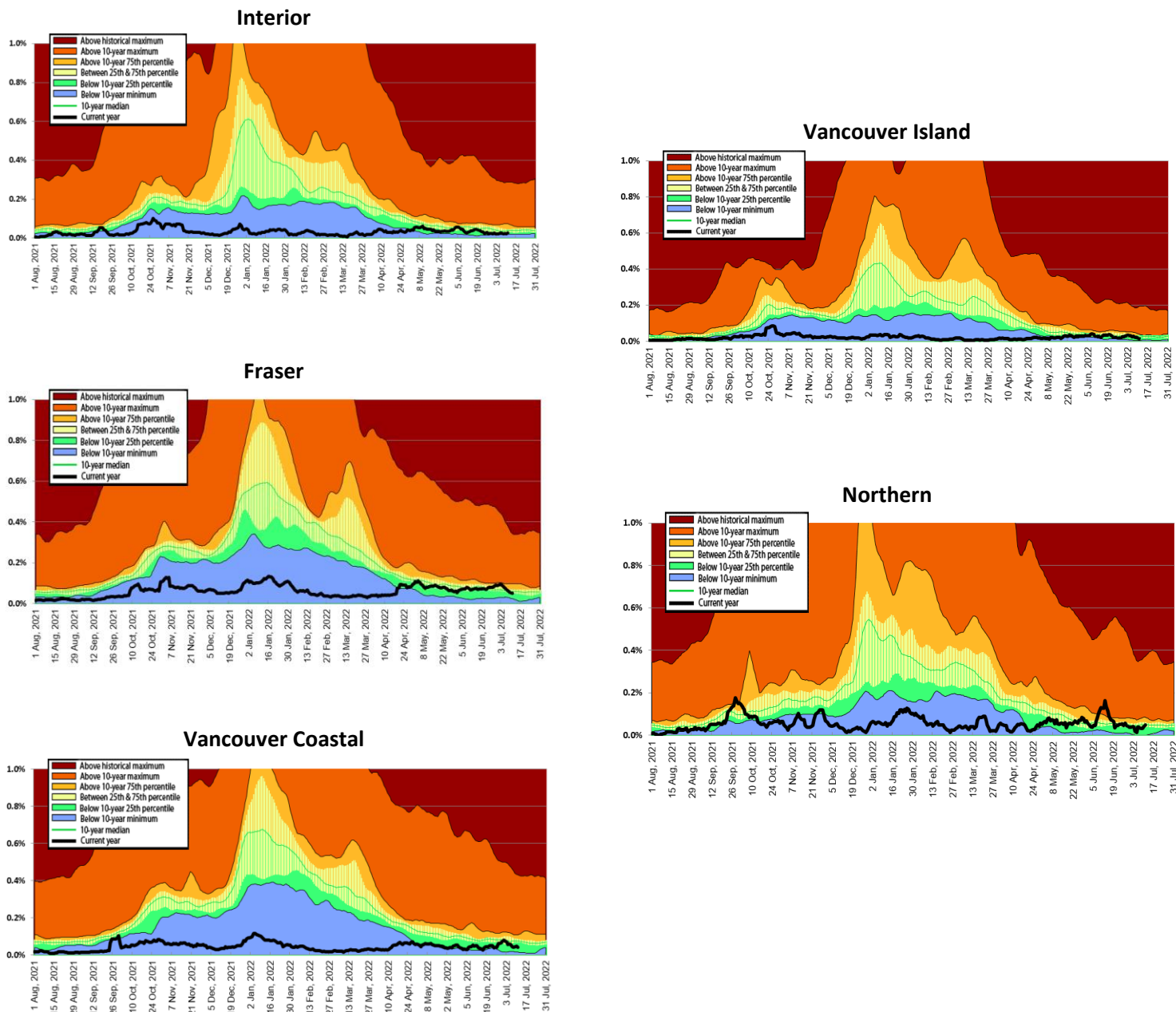
‡ Data provided by Population Health Surveillance and Epidemiology, BC Ministry of Health Services. Influenza illness (II) is tracked as the weekly count of all submitted MSP general practitioner claims with ICD-9 code 487 (influenza).

\* 10-year historical data was derived from the seasons 2008-09, 2010-11, 2011-12, 2012-13, 2013-14, 2014-15, 2015-16, 2016-17, 2017-18, and 2018-19. Seasons 2019-20 and 2020-21 were excluded due to the COVID-19 pandemic.

MSP data beginning August 1, 2021 corresponds to sentinel ILI week 31; data are current to July 11, 2022.



Figure 8.



† 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).

\* 10-year historical data was derived from the seasons 2008-09, 2010-11, 2011-12, 2012-13, 2013-14, 2014-15, 2015-16, 2016-17, 2017-18, and 2018-19. Seasons 2019-20 and 2020-21 were excluded due to the COVID-19 pandemic.

MSP data beginning August 1, 2021 corresponds to sentinel ILI week 31; data are current to July 11, 2022.



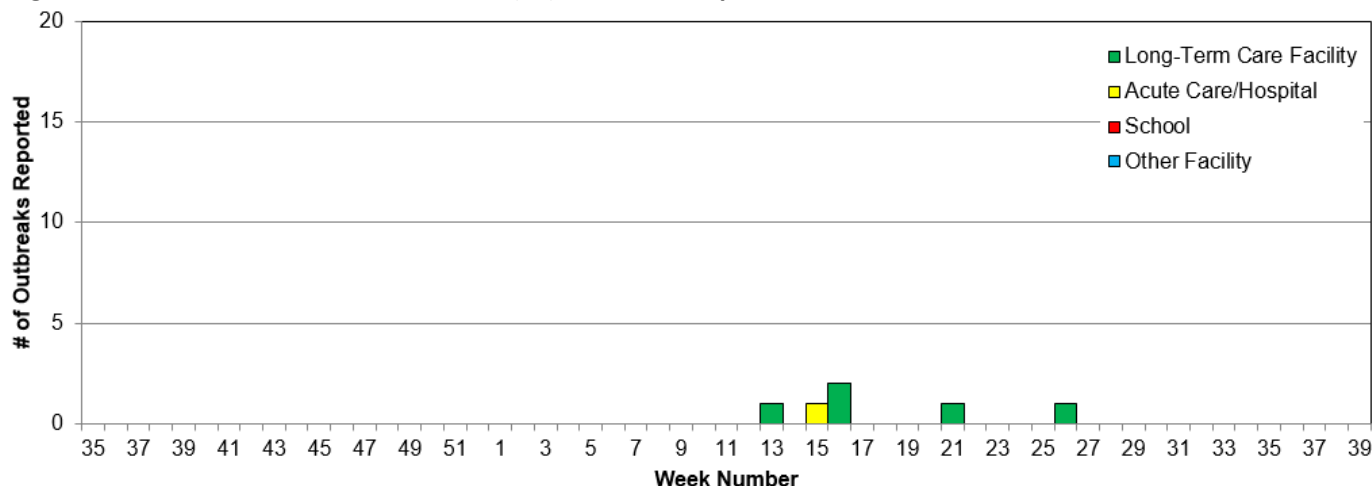
### C. Influenza outbreak reports

In week 26 of 2022, one laboratory-confirmed influenza A(H3N2) outbreak was reported from long-term care facility (LTCF) in Fraser Health Authority ([Figure 9](#), [Figure 10](#)). Sequencing analysis showed that influenza A(H3N2) viruses from this outbreak belonged to genetic group 3C.2a1b.2a.2 (“2a.2”) which is also the genetic subgroup of the upcoming 2022-23 influenza vaccine. This is just the 5<sup>th</sup> influenza outbreak since the week 40 start of the 2021-22 season in BC.

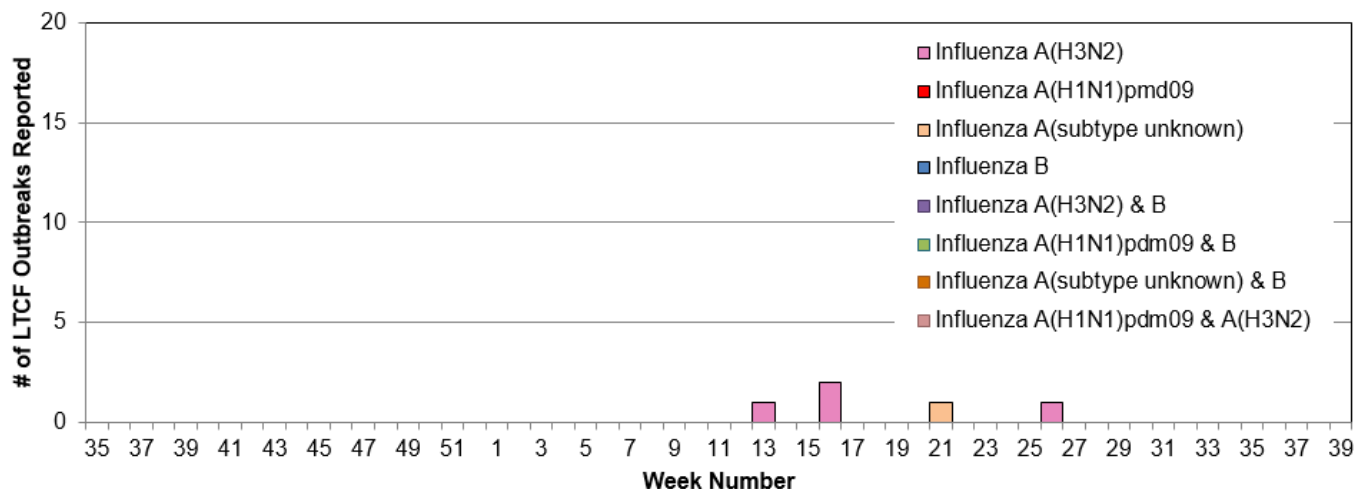
One or fewer laboratory-confirmed influenza outbreaks were reported during weeks 22-27 of the five pre-COVID-19 pandemic seasons (i.e. 2014-15 to 2018-19). Across weeks 40-27, 73 LTCF influenza outbreaks were reported in 2019-20 and 134 were reported on average during the five pre-COVID-19 pandemic seasons\*.

\*In prior bulletins for the 2021-22 season, 2019-20 historic 5-year average tallies of LTCF outbreaks may have included laboratory-confirmed detections in LTCFs that were not declared as outbreaks by the local health authority. That unrecognized error in historic comparisons has been corrected here and going forward.

**Figure 9. Number of influenza-like illness (ILI) outbreaks reported, British Columbia 2021-22**



**Figure 10. Number of influenza-like illness (ILI) outbreaks by type/subtype in long-term care facilities (LTCF), British Columbia 2021-22**



## D. National

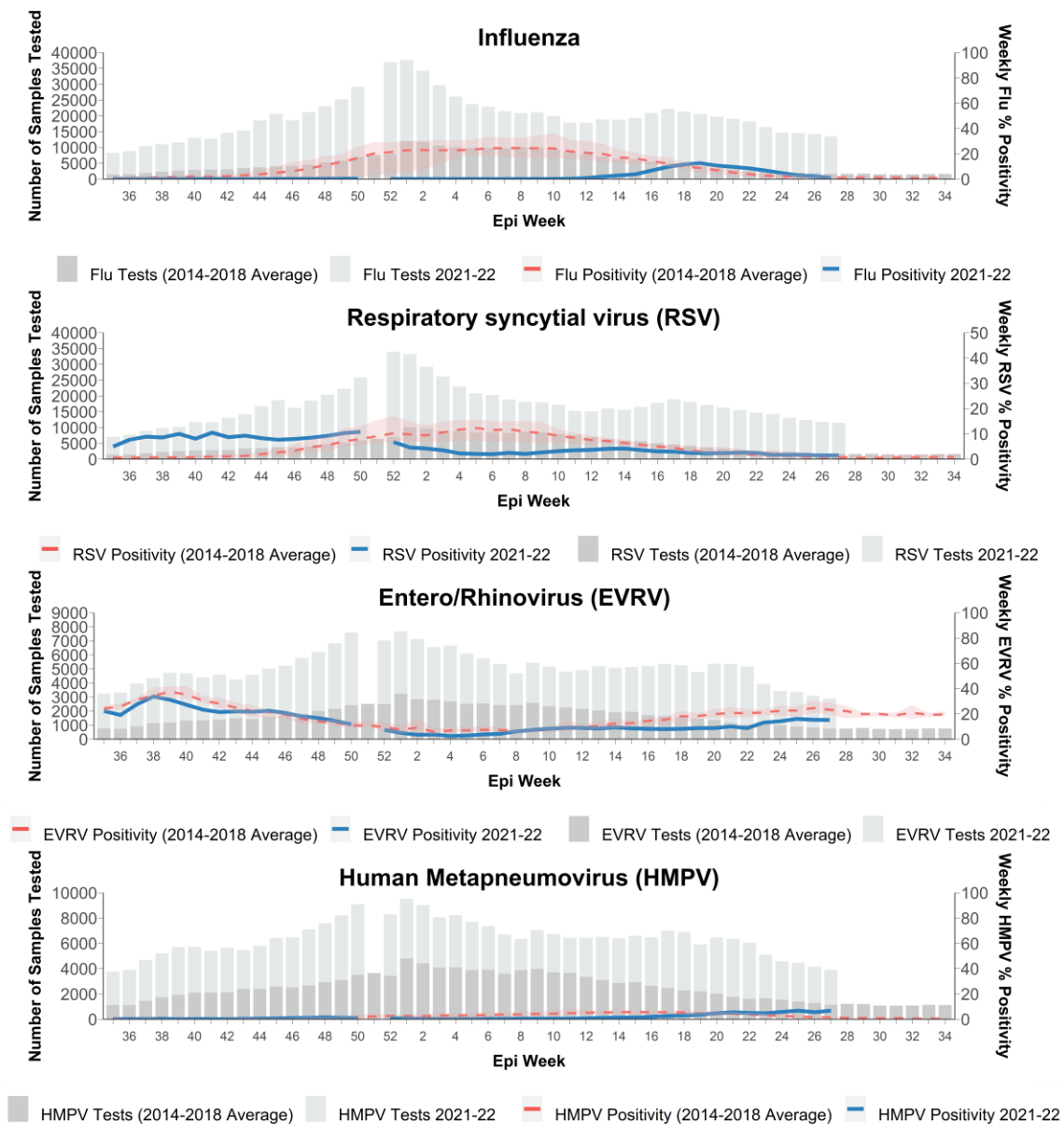
### FluWatch (Week 24, June 12 to 18, 2022)

At the national level, influenza activity continued to decline ([Figure 11](#)). Sporadic and some limited localized influenza activity continued to be reported in most regions across the country. In week 24, 12,346 tests for influenza were performed at reporting laboratories and the percentage of tests positive for influenza was 5% (588 influenza A and 8 influenza B). In the past six pre-pandemic seasons (2014-2015 to 2019-2020), an average of 2,449 tests were performed, with 1-4% of tests positive for influenza for week 24. To date between weeks 35 of 2021 and week 24 of 2022 (August 29, 2021 to June 18, 2022), 14,763 influenza detections (14,573 influenza A and 188 influenza B) were reported, which is lower than historically in the past six pre-pandemic seasons, when an average of 49,116 influenza detections were reported for the same period. Among subtyped influenza A viruses (n=4,302), H3N2 has accounted for 98% of detections. Among detections with detailed age information, nearly half (49%) were in children and teenagers (0 to 19 years). To date this season, 86 laboratory-confirmed influenza outbreaks have been reported, of which 38 were in LTCFs, 5 were in acute care facilities, 3 were in remote or isolated communities, 1 in school/daycare and the rest in facilities categorized as 'other'. All outbreaks were due to influenza A, of which 47 were A(H3N2), 2 were A(H1N1) and the remaining were influenza A unsubtyped. The percentage of visits to healthcare professionals for influenza-like illness (ILI) was 1% in week 24. The percentage of participants reporting symptoms of fever and cough to FluWatchers has remained steady in recent weeks and was 1% in week 24.

FluWatch report is available at:

<https://www.canada.ca/en/public-health/services/diseases/flu-influenza/influenza-surveillance/weekly-influenza-reports.html>

Figure 11. Laboratory influenza and other respiratory virus detections across Canada with 5-season historical data\*



\* The shaded area (red) represents the maximum and minimum percentage of influenza positivity reported by week from seasons 2014-15 to 2018-19.

\* 2021-22 week 51 data is missing.

Source: Respiratory Virus Detections Surveillance System (RVDSS) weekly report; data includes seasons 2014-15, 2015-16, 2016-17, 2017-18, 2018-19, 2021-22 (2019-20 & 2020-21 are excluded from the historical average calculations due to the COVID-19 pandemic).

## National Microbiology Laboratory (NML)

### Strain Characterization:

From September 1, 2021 to July 14, 2022, the National Microbiology Laboratory (NML) has characterized 195 influenza viruses (190 H3N2 and 5 H1N1) received from Canadian laboratories.

#### Influenza A(H3N2):

##### *Genetic characterization*

Sequence analysis of the HA gene showed that the 190 H3N2 viruses belonged to genetic group 3C.2a1b.2a.2 (“2a.2”). The 2021-22 northern hemisphere (NH) influenza vaccine was instead a 3C.2a1b.2a.1 (“2a.1”) virus [A/Cambodia/e0826360/2020 (H3N2)-like]. The upcoming 2022 NH vaccine is a 2a.2 virus [A/Darwyn/6/2021 (H3N2)-like] in common with the 2022 southern hemisphere (SH) influenza vaccine.

##### *Antigenic characterization*

185 influenza A (H3N2) viruses from the 2021-22 season were antigenically characterized as A/Cambodia/e0826360/2020 (H3N2)-like: 46 viruses were antigenically similar to A/Cambodia/e0826360/2020 and 139 showed reduced titers with antisera raised against egg-grown A/Cambodia/e0826360/2020. However, relevance of these findings for the upcoming 2022-23 season for which vaccine instead includes more closely aligned 2a.2 virus is uncertain.

#### Influenza A(H1N1)pdm09:

##### *Antigenic characterization*

Five H1N1 viruses were characterized as A/Wisconsin/588/2019-like with four antigenically similar to A/Wisconsin/588/2019, and one showing reduced titer with antisera raised against cell-propagated A/Wisconsin/588/2019. A/Wisconsin/588/2019 is a clade 6B.1A5A2 virus recommended as the vaccine component for cell-based vaccines for the 2021-22 NH influenza vaccine. A/Victoria/2570/2019 (H1N1)pdm09-like virus is also a clade 6B.1A5A2 virus recommended for egg-based vaccines for both the 2021-22 and unchanged for the 2022-23 seasons. Relevance of cell-based characterizations in relation to egg-based vaccine strains should be considered.

### Antiviral Resistance:

The NML conducted drug susceptibility testing on 181 influenza A (176 H3N2 and 5 H1N1) viruses received.

Oseltamivir: All H1N1 influenza viruses were sensitive to oseltamivir.

Zanamivir: All H1N1 influenza viruses were sensitive to zanamivir.

## E. International

### USA (Week 26, June 26 to July 2, 2022)

In recent weeks, seasonal influenza activity decreased nationally in the US. Clinical laboratory detections of influenza declined since peaking at around 10% in week 17 (April 24-30, 2022) to 1% in week 26. The proportion of outpatient visits for ILI was at 2% in week 26, below the national baseline, and the proportion of deaths attributed to pneumonia and influenza during week 26 was at the epidemic threshold of 6%. One influenza B associated pediatric death occurred during week 25 and was reported to CDC in week 26. There has been a total of 32 influenza-associated pediatric deaths so far this season. Of the 47,098 samples tested for influenza from clinical laboratories across the US in week 26, 674 (1%) samples were positive for influenza and of these, 656 (97%) were influenza A and 18 (3%) were influenza B. Data from public health laboratories nationwide indicate almost all influenza viruses detected in the season to date (since week 40 or October 3, 2021) were influenza A (99.5%; n=24,679/24,810) and among those subtyped, 99.9% were A(H3N2) (n=19,354/19,380). The US CDC has posted a summary of influenza activity in the United States and elsewhere, available at: <https://www.cdc.gov/flu/weekly>

### Australia (Weeks 25-26, June 20 to July 3, 2022)

Although ongoing monitoring is required, several surveillance indicators suggest the earlier-than-expected influenza A(H3N2) activity this season may have peaked or plateaued in Australia. Of interest, [the last pre-pandemic influenza season \(2019\)](#) also showed early peak but with influenza B co-circulation throughout, particularly later in the season.

The number of influenza virus notifications during [weeks 25-26](#) (June 20 to July 3: 36,719) decreased compared to [weeks 23-24](#) (June 6-19: 55,101) and [21-22](#) (May 23 to June 5: 47,860), but still exceeded that of [weeks 19-20](#) (May 9-22: 26,193) and [17-18](#) (April 25 to May 8: 7,173). To date in 2022, children <20 years have the highest notification rates.

The percentage of sentinel laboratory tests that were influenza positive in weeks 25-26 of 2022 (14%) also decreased compared to weeks 23-24 (16%), while still slightly exceeding weeks 21-22 (13%), and 19-20 (12%) and substantially higher than in weeks 17-18 (5%). Percent influenza positivity in weeks 25-26 of 2022 was lower than reported for [weeks 25-26 of 2019](#) (exceeding 20%) but higher than reported for [weeks 25-26 of 2018](#) (below 4%).

During weeks 25-26 of 2022 there were 80 hospitalizations which is lower than reported in prior bulletins for weeks 23-24 (141), 21-22 (209), and 19-20 (368) from Australia but comparable to weeks 17-18 (78). Recognizing reporting delays, this follows a consistent downward trend since week 20 (May 15-21). The 80 hospitalizations reported in weeks 25-26 of 2022 compares with 210 hospitalizations reported in [weeks 25-26 of 2019](#) (when hospitalizations ultimately peaked in [week 26](#)) and 12 reported in [weeks 25-26 of 2018](#) (when hospitalizations ultimately peaked much later in [week 36](#)).

To date in 2022, there have been 187,431 influenza virus detections in Australia, of which 83% were influenza A, <1% were influenza B, <1% were A/B co-infections and 17% were not typed. Of the influenza A viruses, 4% were A(H3N2), <1% were A(H1N1)pdm09 and 95% were not subtyped. Of influenza viruses antigenically characterized, nearly all have been considered antigenically similar to corresponding southern hemisphere 2022 [vaccine components](#).

For details see: <https://www1.health.gov.au/internet/main/publishing.nsf/Content/ozflu-surveil-no07-22.htm>

### South Africa (Week 26, June 27 to July 3, 2022)

In South Africa, where a mix of influenza A(H1N1)pdm09, A(H3N2) and B/Victoria viruses have been contributing, the 2022 influenza season started in week 17 when influenza positivity among hospital patients under pneumonia surveillance exceeded the epidemic threshold. Among primary health care patients under ILI surveillance, the number of influenza positive cases and the percentage positivity may have peaked in week 23, and has fallen below the epidemic threshold in week 25. Among hospital patients under pneumonia surveillance, percentage positivity remains above the epidemic threshold in week 26 but at low levels compared to historical 2012-2019 pre-pandemic levels. For details see: <https://www.nicd.ac.za/wp-content/uploads/2022/07/Weekly-Respiratory-pathogens-surveillance-report-FluRSVSARSCoV2-Week26.pdf>

## WHO (July 11, 2022, based on data up to June 26, 2022)

*The current influenza surveillance data should be interpreted with caution as the ongoing COVID-19 pandemic has influenced to varying extents health seeking behaviors, staffing/routines in sentinel sites, as well as testing priorities and capacities in WHO Member States.*

**In the temperate zone of the northern hemisphere,** influenza activity decreased compared to the previous period and influenza positivity was close to levels typically observed at this time of year. Activity was predominantly due to influenza A(H3N2) viruses. In East Asia, influenza activity was low in the northern provinces of China and continued to increase in the southern provinces, with influenza A(H3N2) viruses predominant. Similar increases in influenza activity have been observed this time of year in past years.

**In countries in the temperate zone of the southern hemisphere,** overall influenza activity appeared to plateau after increasing in recent weeks. In Australia, detections were predominantly influenza A and where subtyped A(H3N2) predominated followed by A(H1N1)pdm09, whereas in South Africa, the majority of detections were influenza A(H1N1)pdm09 with some influenza A (H3N2) and few influenza B/Victoria lineage detections. An increase in influenza activity was observed in New Zealand, with an increase in both ILI and positivity among tested samples.

**In tropical countries of the Caribbean, Central America and South America,** low influenza activity was reported with influenza A(H3N2) predominant. **In tropical Africa,** influenza activity continued to decrease with influenza A(H1N1)pdm09 predominant.

From June 13, 2022 to June 26, 2022, the WHO GISRS laboratories tested more than 163,505 specimens. Of these, 9741 were positive for influenza viruses, of which 9582 (98%) were typed as influenza A and 159 (2%) as influenza B. Of the sub-typed influenza A viruses, 211 (4%) were influenza A(H1N1)pdm09 and 5,640 (96%) were influenza A(H3N2). Of the characterized B viruses, 46 (100%) belonged to B-Victoria lineage.

Details are available at: <https://www.who.int/teams/global-influenza-programme/surveillance-and-monitoring/influenza-updates/current-influenza-update>

## F. Highly Pathogenic Avian Influenza (HPAI) H5N1

In Canada, from December 20, 2021 to July 9, 2022, highly pathogenic avian influenza (HPAI) H5N1 viruses were detected: on 108 premises across nine provinces; in wild birds (e.g. waterfowl, raptors, scavengers, shore birds) across all ten provinces and the Yukon; and in 26 wild mammals (e.g. red foxes, skunks and mink) across six provinces [NS, PEI, ON, MB, AB, BC]. In BC, from April to June 2022, 18 premises have been affected (13 small flocks, 4 commercial flocks and 1 captive wild) with a small flock the most recently affected (June 18, 2022). The most recent commercial farm otherwise affected in Canada was in Quebec (July 9, 2022). Notable recent events include [H5N1 detection in harbor seals in QC and the US](#), representing the first detections of this virus in this species in North America.

Although there has been a decrease in detection from earlier in 2022, detection of avian influenza during the summer months, especially among mammals, is unusual and increased detections in the fall may be expected with bird migration. No human infections in association with these events have been detected in Canada but two mild/asymptomatic H5N1 human cases have been detected internationally in 2022 (one in UK and the other in US). See the [BCCDC H5N1 risk assessment](#) for details related to human health implications.

Visit the [Public Health Agency of Canada](#) website for general information on avian influenza and for periodic [human emerging respiratory pathogen updates](#). Stay alert for updated Canadian and BC guidelines for monitoring and management. The [website of the US CDC](#) is a useful resource. For an updated tally of affected premises in BC and elsewhere in Canada, see [here](#). For a map of where infected birds in North America have been detected see the [US National Wildlife Health Center](#) and here for infected [Canadian domestic](#) and [Canadian wild](#) bird populations.



## G. WHO Recommendations for Influenza Vaccines

### WHO Recommendations for the 2022-23 Northern Hemisphere Influenza Vaccine

On February 25, 2022, the WHO announced recommended strain components for the 2022-23 northern hemisphere trivalent influenza vaccine (TIV)\*:

- an A/Victoria/2570/2019 (H1N1)pdm09-like virus [a clade 6B.1A.5a.2 virus]; †
- an A/Darwin/9/2021 (H3N2)-like virus [a clade 3C.2a1b.2a.2 virus]; ‡
- a B/Austria/1359417/2021 (B/Victoria lineage)-like virus [a clade V1A.3a.2 virus]. §

It is recommended that quadrivalent influenza vaccines (QIV) for the 2022-23 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 of two of the three components used in 2021-22, updated for the 2022-2023 northern hemisphere TIV. For quadrivalent influenza vaccine (QIV) two of the four components have been updated from 2021-22 to 2022-23.

† Recommended strain is unchanged from the 2021-2022 season vaccine. Note for cell-based vaccine, the WHO recommends an A/Wisconsin/588/2019 (H1N1)pdm09-like virus [a clade 6B.1A.5a.2 virus] for the 2022-23 season, unchanged since 2020-2021 season vaccine which contained an A/Guangdong-Maonan/SWL1536/2019 [a clade 6B.1A5A1 virus].

‡ Recommended strain represents a change from the 2021-2022 season vaccine which contained an A/Cambodia/e0826360/2020 (H3N2)-like virus [a clade 3C.2a1b.2a1 virus]. Note for cell-based vaccine, the WHO recommends an A/Darwin/6/2021 (H3N2)-like virus [also a 3C.2a1b.2a2] for the 2022-2023 season.

§ Recommended strain represents a change from the 2021-2022 season vaccine which contained a B/Washington/02/2019 (B/Victoria lineage)-like virus [a clade V1A.3 virus].

For further details: <https://www.who.int/publications/m/item/recommended-composition-of-influenza-virus-vaccines-for-use-in-the-2022-2023-northern-hemisphere-influenza-season>

### 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.1A.5a.2 virus]; †
- an A/Darwin/9/2021 (H3N2)-like virus [a clade 3C.2a1b.2a.2 virus]; ‡
- a B/Austria/1359417/2021 (B/Victoria lineage)-like virus [a clade V1A.3a2 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.1A.5a.2 virus] for the 2022 season. Both the cell based and egg-based vaccine components have not been changed from the 2021 season vaccine.

‡ Note for cell-based vaccine, the WHO recommends an A/Darwin/6/2021 (H3N2)-like virus [also a 3C.2a1b.2a2] 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.1b virus].

§ Note for cell-based vaccine, the WHO recommends a B/Austria/1359417/2021 (B/Victoria lineage)-like virus [a clade V1A.3a2 virus] for the 2022 season. Recommended strain represents a change from the 2021 season vaccine which contained a B/Washington/02/2019 (B/Victoria lineage)-like virus [a clade V1A.3 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>

## H. 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:**

<b>ACF:</b> Acute Care Facility	<b>LTCF:</b> Long-Term Care Facility
<b>EV/RV:</b> Enteroviruses	<b>MSP:</b> BC Medical Services Plan
<b>FHA:</b> Fraser Health Authority	<b>NHA:</b> Northern Health Authority
<b>HA:</b> Health authority	<b>NML:</b> National Microbiological Laboratory
<b>HBoV:</b> Human bocavirus	<b>PHL:</b> Public Health Laboratory
<b>HMPV:</b> Human metapneumovirus	<b>RSV:</b> Respiratory syncytial virus
<b>HSDA:</b> Health Service Delivery Area	<b>VCHA:</b> Vancouver Coastal Health Authority
<b>IHA:</b> Interior Health Authority	<b>VIHA:</b> Vancouver Island Health Authority
<b>ILI:</b> Influenza-Like Illness	<b>WHO:</b> World Health Organization

### **Web Sites:**

BCCDC Emerging Respiratory Pathogen Updates:

[www.bccdc.ca/health-professionals/data-reports/emerging-respiratory-virus-updates](http://www.bccdc.ca/health-professionals/data-reports/emerging-respiratory-virus-updates)

### **Influenza Web Sites**

Canada – Influenza surveillance (FluWatch): <https://www.canada.ca/en/public-health/services/diseases/flu-influenza/influenza-surveillance.html>

Canada – Human Emerging Respiratory Pathogens Bulletins: <https://www.canada.ca/en/public-health/services/surveillance/human-emerging-respiratory-pathogens-bulletin.html>

Washington State Flu Updates: <http://www.doh.wa.gov/portals/1/documents/5100/420-100-fluupdate.pdf>

USA Weekly Surveillance Reports: [www.cdc.gov/flu/weekly/](http://www.cdc.gov/flu/weekly/)

Joint ECDC – WHO/Europe weekly influenza update (Flu News Europe): [flunewseurope.org](http://flunewseurope.org)

WHO – Influenza Updates: [https://www.who.int/influenza/surveillance\\_monitoring/updates/en/](https://www.who.int/influenza/surveillance_monitoring/updates/en/)

WHO – Weekly Epidemiological Record: [www.who.int/wer/en/](http://www.who.int/wer/en/)

WHO Collaborating Centre for Reference and Research on Influenza (Australia): [www.influenzacentre.org/](http://www.influenzacentre.org/)

WHO – Influenza vaccine recommendations: <https://www.who.int/teams/global-influenza-programme/vaccines/who-recommendations>

Australian Influenza Report:

[www.health.gov.au/internet/main/publishing.nsf/content/cda-surveil-ozflu-flucurr.htm](http://www.health.gov.au/internet/main/publishing.nsf/content/cda-surveil-ozflu-flucurr.htm)

New Zealand Influenza Surveillance and Intelligence Reporting: <https://www.esr.cri.nz/our-services/consultancy/flu-surveillance-and-research>

South Africa Weekly Respiratory Pathogens Surveillance Report: <https://www.nicd.ac.za/diseases-a-z-index/disease-index-covid-19/surveillance-reports/weekly-respiratory-pathogens-surveillance-report-week/>

### **Avian Influenza Web Sites**

WHO – Influenza at the Human-Animal Interface: [www.who.int/csr/disease/avian\\_influenza/en/](http://www.who.int/csr/disease/avian_influenza/en/)

World Organization for Animal Health: [www.oie.int/eng/en\\_index.htm](http://www.oie.int/eng/en_index.htm)

### **Contact Us:**

Tel: (604) 707-2510; Fax: (604) 707-2516; Email: [InfluenzaFieldEpi@bccdc.ca](mailto:InfluenzaFieldEpi@bccdc.ca)

Communicable Diseases & Immunization Service (CDIS)

BC Centre for Disease Control, 655 West 12<sup>th</sup> Ave, Vancouver BC V5Z 4R4

Online: [www.bccdc.ca/health-professionals/data-reports/influenza-surveillance-reports](http://www.bccdc.ca/health-professionals/data-reports/influenza-surveillance-reports)

Link to fillable Facility Outbreak Report Form: [http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Forms/Epid/Influenza%20and%20Respiratory/OutbreakReportForm\\_2018.pdf](http://www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Forms/Epid/Influenza%20and%20Respiratory/OutbreakReportForm_2018.pdf)