



Respiratory Epidemiology Summary

January 05, 2023

Summary (Epidemiological week 52, Dec 25 to 31)

Following an earlier than usual November peak, the influenza epidemic continued its steep decline over the holiday period. Conversely, RSV activity continues to increase and for the first time since the start of the influenza epidemic, RSV positivity clearly exceeded that of influenza in epi-week 52. SARS-CoV-2 detections show slight increase while severe COVID-19 outcomes remain stable.

Recognizing potential instability in surveillance indicators with behavioral changes including healthcare seeking and testing practices over the holiday period, observations during this period warrant cautious interpretation and further follow-up over additional weeks.

Laboratory

From a peak of 27% in epi-week 47 (Nov 20-26), influenza positivity fell below 10% for the first time in epi-week 52 (7%). A/H3 viruses comprise about 90% of subtyped viruses overall this season. However, A/H1 comprised a higher proportion in epi-week 52 (Dec 25-31: 12%) compared to epi-week 50 (Dec 11-17: 5%). RSV continues to show steady increase with clearly higher positivity (15%) than influenza (7%) in epi-week 52, the first time since the start of the influenza epidemic. SARS-CoV-2 test-positivity also increased to about 15% in epi-week 52. Among children 18 years and younger, RSV positivity (42%) in epi-week 52 far exceeded that of influenza (7%) or SARS-CoV-2 (6%).

Syndromic

The proportion of community health care visits for clinically-diagnosed influenza has shown steep decline in recent weeks. Visits for acute respiratory infections have declined in most pediatric age groups but remain at stable elevated levels in children under 5 years.

Wastewater

Wastewater tests for SARS-CoV-2 are generally consistent with other surveillance indicators.

Outbreaks

In epi-week 52, there were 7 COVID-19 and 1 influenza outbreaks reported in care facilities.

Severe outcomes

BCCDC has received no additional pediatric influenza deaths in epi-week 52. BCCDC is aware of 6 reports of influenza-associated deaths among children and youth in BC (1 aged <5 years, 3 aged 5-9 years, and 2 aged 15-18 years), all in November/December 2022. Several experienced secondary bacterial infections, which can be a complication of influenza contributing to more severe illness.

Influenza Vaccine Effectiveness (VE) Estimate

Preliminary estimates by the [Canadian Sentinel Practitioner Surveillance Network \(SPSN\)](#) suggest that between early November and mid-December (epi-weeks 44-50), the current season's vaccine reduced the risk of medically-attended A/H3 illness by about half. Precise estimates will be updated as the season progresses.



1.1. Pathogen Characterization

Note: Enteroviruses (ERV) data for the pediatric population are not available for this week due to a systems issue.

All ages

Following an earlier than usual peak in November, the influenza epidemic continued its steep decline. From a peak of 27% in epi-week 47 (Nov 20-26), influenza positivity fell below 10% in epi-week 52 (Dec 25-31: 7%), the first time since epi-week 44 (Oct 30-Nov 5: 8%). A/H3 viruses continue to predominate, comprising about 90% of subtyped influenza A viruses overall this season. However, A/H1 viruses comprised a greater proportion of subtyped influenza A viruses in epi-week 52 (12%) than epi-week 50 (Dec 11-17: 5%). Influenza B viruses have only been detected sporadically.

Respiratory syncytial virus (RSV) continues to show steady increase and for the first time since the start of the influenza epidemic, in epi-week 52 RSV percent positivity (15%) clearly exceeded that of influenza virus (7%), with positivity also exceeding the historical RSV average (2014/15-2018/19) for this time of year (7%). SARS-CoV-2 test-positivity also increased to about 15% in epi-week 52 while enteroviruses (ERV) remained at low detection rate of 4% in epi-week 52. Other seasonal respiratory viruses (e.g. parainfluenza, adenovirus, human metapneumovirus, seasonal coronaviruses) contribute but with combined percent positivity of ~5% overall.

Children and youth

Among children and youth 18 years and younger tested in laboratories in Vancouver (including BC Children's Hospital), Richmond, and the North Shore, the respiratory virus profile is similar to the overall provincial pattern, but more pronounced. From a peak of 41% in epi-week 47, influenza test-positivity has decreased to 7% in epi-week 52, clearly below that of RSV since epi-week 50. RSV has replaced influenza as the most commonly detected virus, with RSV positivity of 42% in epi-week 52 that slightly exceeds pre-pandemic historical RSV averages for epi-week 52 (~35%), and also slightly exceeds average historical peak week percent positivity overall (<40%). SARS-CoV-2 positivity among children increased slightly from 4% in epi-week 50 to 6% in epi-week 52. Other seasonal respiratory viruses (e.g. parainfluenza, adenovirus, human metapneumovirus, and seasonal coronaviruses) also show recent increase with adenovirus and parainfluenza/seasonal coronaviruses exceeding historical averages.

1.2. Community Visits for Respiratory Illness

Note that community visit numbers are based on physician billing diagnostic codes, which are often assigned based on clinical suspicion and which may lag. Presenting symptoms may overlap for various respiratory conditions, and there is potential for misclassification. Please refer to the limitations section of the data notes in the Supplementary Information section for further information.

Visits for acute respiratory infections have declined in most pediatric age groups but remain at stable elevated levels in children under 5 years and show continued low-level increase in adults 20 years and older. Overall, the proportion of community health care visits for clinically-diagnosed influenza mirrors laboratory surveillance in showing steep decline in recent weeks. The percentage of



community visits for clinically-diagnosed influenza has been more stable at low level among adults 40 years and older. COVID-19 diagnoses among medical visits show a slight increase.

1.3. Wastewater

Wastewater tests for SARS-CoV-2 are generally consistent with other laboratory and clinical COVID-19 surveillance indicators.

1.4. COVID-19 Weekly Summary

In epi-week 52, the number of reported COVID-19 cases (693) among individuals eligible for PCR testing was about 25% higher than in epi-week 51 (Dec 18-24: 556). Trends in severe outcomes (new hospital admissions, new critical care admissions, and deaths) are relatively stable or declining overall based on reported information so far.

Within the last four weeks, epi-weeks 49-52 (Dec 4-31, 2022):

- The 7-day rolling average for cases has been relatively stable and increasing slowly since December 23rd. Average numbers ranged from 75 to 100.
- The number of new hospital admissions has been slowly decreasing.
- The number of new critical care admissions remained stable. Average numbers ranged from 1 to 9 counts daily.
- The number of deaths within 30 days of a first positive COVID-19 test has been stable. Average numbers ranged from 0 to 11 counts daily.

Within epi-week 52 (Dec 25-31, 2022):

- There were 693 cases reported.
- There were 123 new hospital admissions reported.
- There were 45 new critical care admissions reported.
- There were 13 deaths within 30 days of a first positive COVID-19 test reported.
- We operate in a live database environment and it is expected that the number of new hospital admissions, critical care admissions and deaths in the current report week will increase over time with further updates of data feeds to BC Centre for Disease Control.

On January 5, 2023:

- There were 356 individuals in the hospital who tested positive for COVID-19.
- There were 25 individuals in critical care who tested positive for COVID-19.

1.5. Outbreaks

The weekly number of reported COVID-19 care facility outbreaks has increased in the past 4 weeks from 3 in epi-week 49 to 7 in epi-week 52. In epi-week 52, 4 outbreaks were in acute care facilities (ACFs) and 3 were in long-term care facilities (LTCFs).



Since the peak of the 2022-23 influenza epidemic in epi-week 47 and through epi-week 49, between 5-7 influenza outbreaks in facilities were reported per week, increasing to 9 in epi-week 50. However, this tally decreased to 2 in epi-week 51 with a single LTCF influenza outbreak reported in epi-week 52. Of the 31 influenza outbreaks reported since epi-week 47, all but 5 have been in LTCF. Among reported influenza outbreaks, all this season have been due to influenza A and of those with known subtype, all in LTCFs have been due to A/H3, with a single ACF outbreak due to A/H1.