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https://youtu.be/LU0ILfGeTu0

Please scroll down this file to view a copy of the slides from the session.

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Respiratory Season 2024–25

Part 1: Surveillance and Testing

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Maan Hasso, MD FRCPC

October 3, 2024

Land Acknowledgement

Toronto is situated on Treaty Land and I acknowledge and respect the traditional and ancestral territories of the First Nations, Inuit, and Métis Peoples, whose land we are hosted on today. I acknowledge that we are on lands of the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee and the Wendat, and I am thankful for the enduring hospitality of the Peoples across Turtle Island that allow us to live and work today. I stand with all Indigenous People, past and present, in promoting the wise stewardship of the lands, sky and water of Ontario since time immemorial.

Disclosures

- Mr. Whelan does not have any conflicts of interest to disclose
- Dr. Hasso does not have any conflicts of interest to disclose

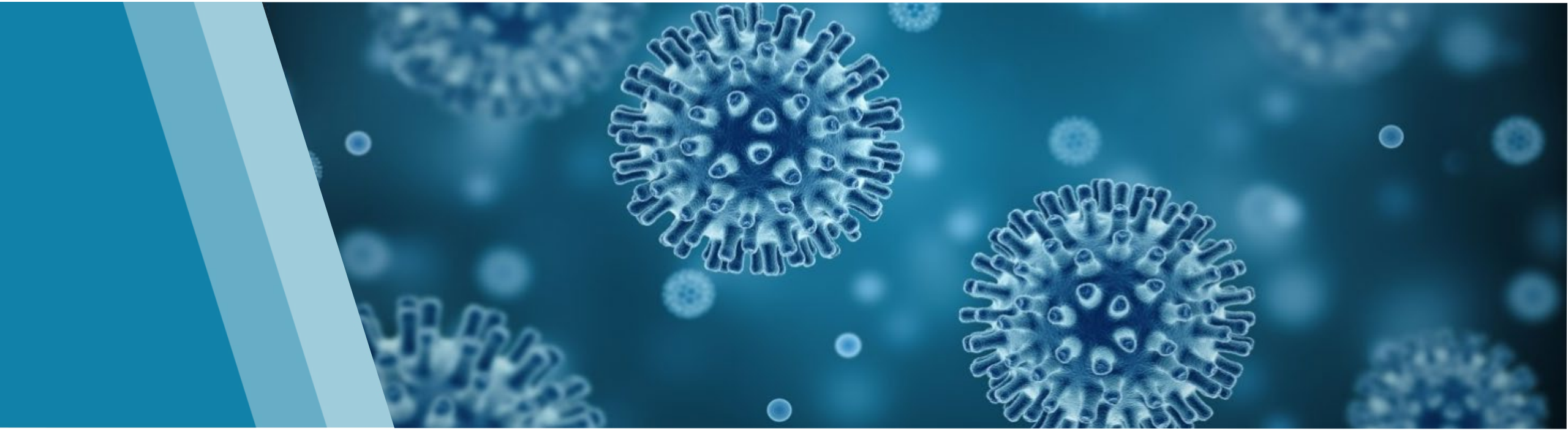
Learning Objectives

- By the end of this session, participants will be able to:
  - Summarize current epidemiological trends in influenza, COVID-19, and respiratory syncytial virus (RSV) in Ontario, Canada, and internationally
  - Identify where to find the Public Health Ontario (PHO) resources for monitoring respiratory virus activity in Ontario
  - Describe relevant provincial data reporting and entry requirements for the 2024–25 surveillance period
  - Describe the testing options available in Ontario for influenza, COVID-19 and RSV for the 2024–25 season

Outline

1. COVID-19, Influenza, and RSV activity in the 2023–24 surveillance period
    a. Ontario
    b. Canada
    c. Internationally
2. Considerations for the 2024-25 surveillance period
3. Updates on Public Health Ontario surveillance products for 2024–25
4. COVID-19 and Seasonal Respiratory Virus Testing 2024–25

Respiratory Virus Activity

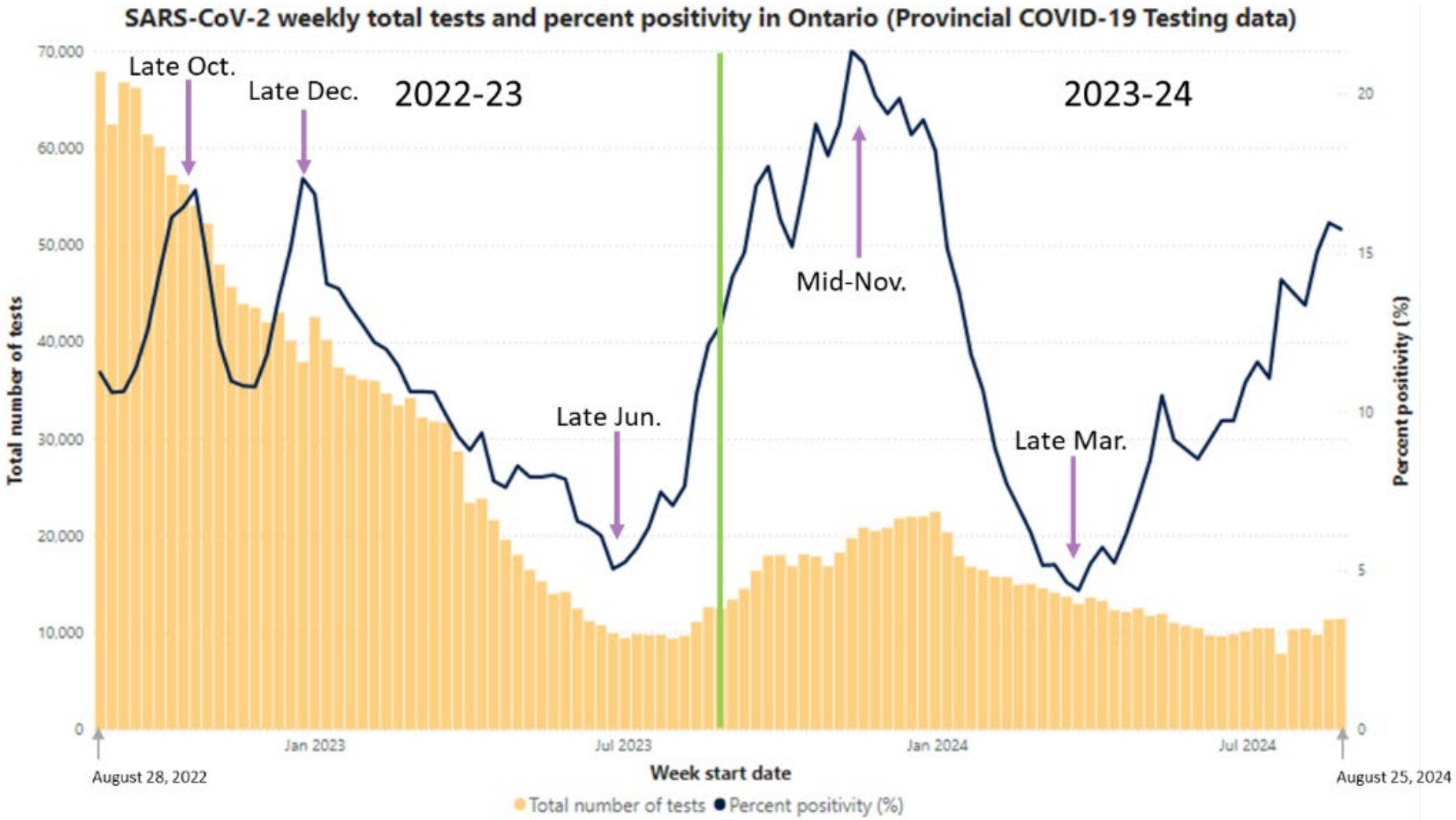


Ontario and Canada
2023–24 Surveillance Period

Comparing the 2023–24 and 2022–23 Surveillance Periods

- The following slides cover respiratory virus activity in the 2023–24 surveillance period and include comparisons to previous periods
- Focus is on percent positivity from laboratory testing data for simplicity
  - PHO monitors other indicators including outbreaks in institutions and public hospitals, hospital bed census data and COVID-19 deaths, which tend to follow similar patterns to the percent positivity data
  - Hospital bed census data and COVID-19 deaths may be considered lagging indicators
- Some general comments ahead of the graphs:
  - COVID-19 activity not yet fallen into a predictable seasonal pattern
  - Influenza activity followed a pattern similar to pre-pandemic seasons
  - RSV activity followed a pattern that was early compared to pre-pandemic seasons

COVID-19 Activity in 2023–24 Peaked in mid-November



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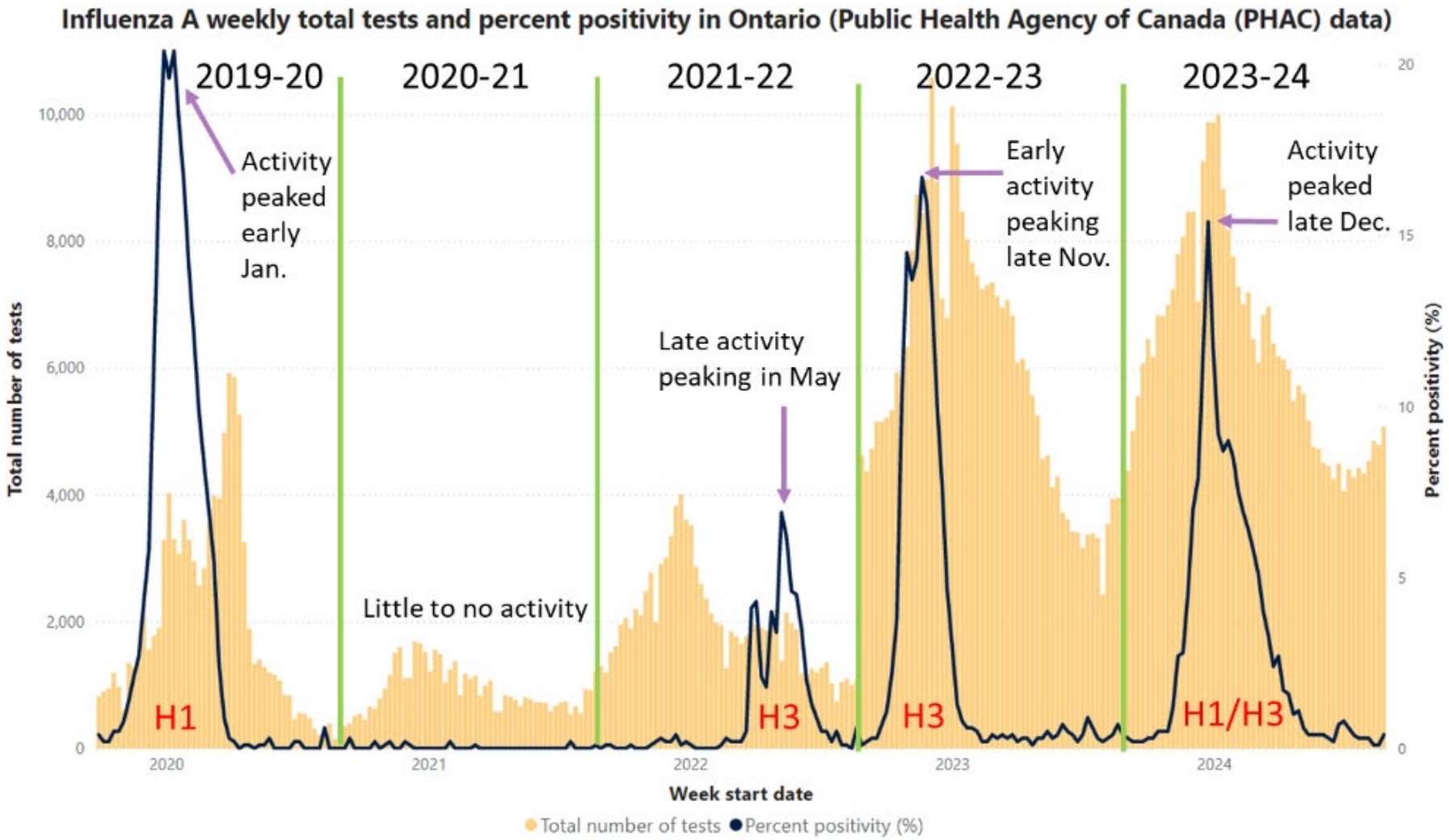
2023–24 Influenza Season Marked a Return to ‘Normal’



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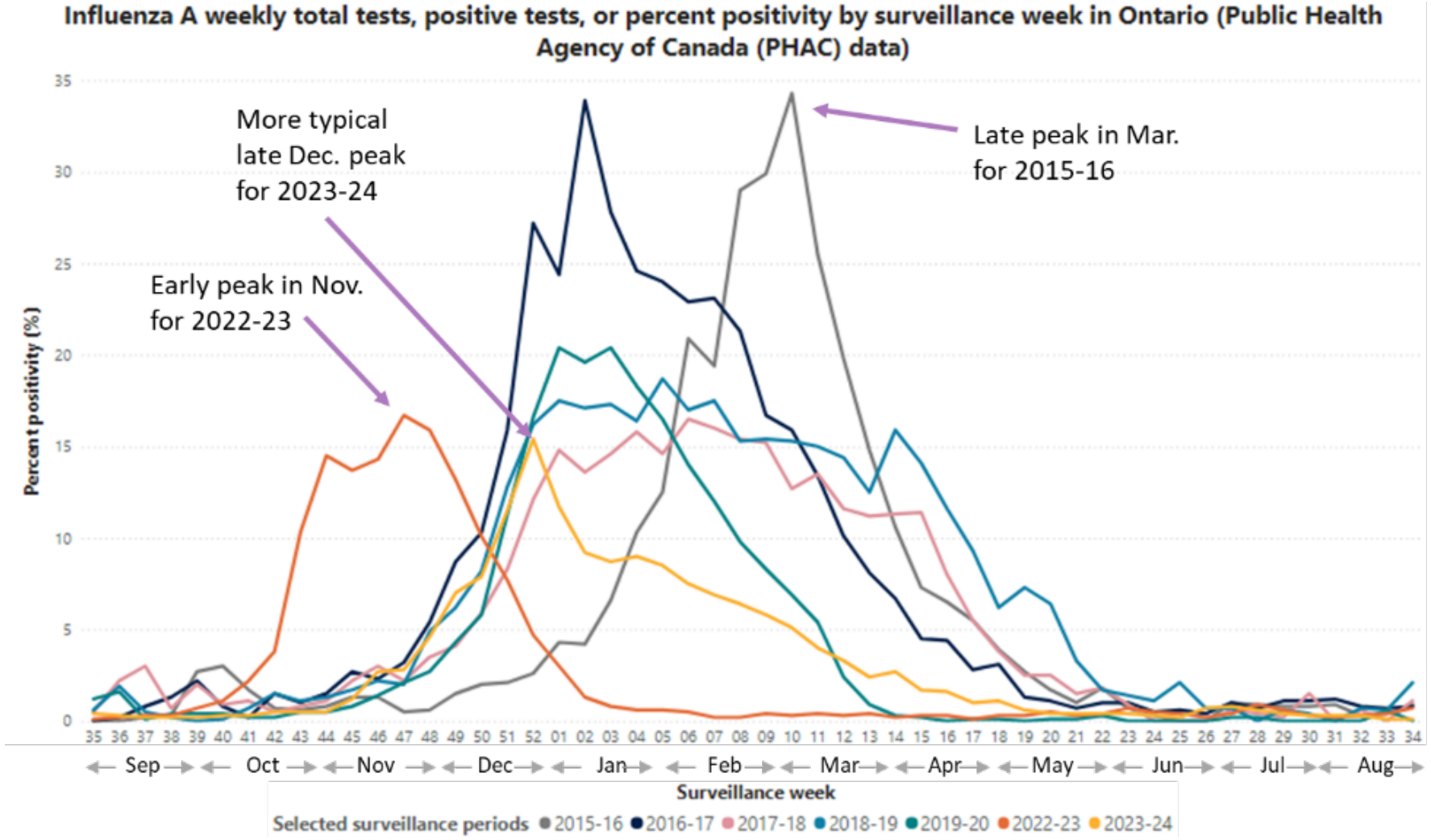
2023–24 Influenza A Activity Matched Pre-2020 Start and Peak Times



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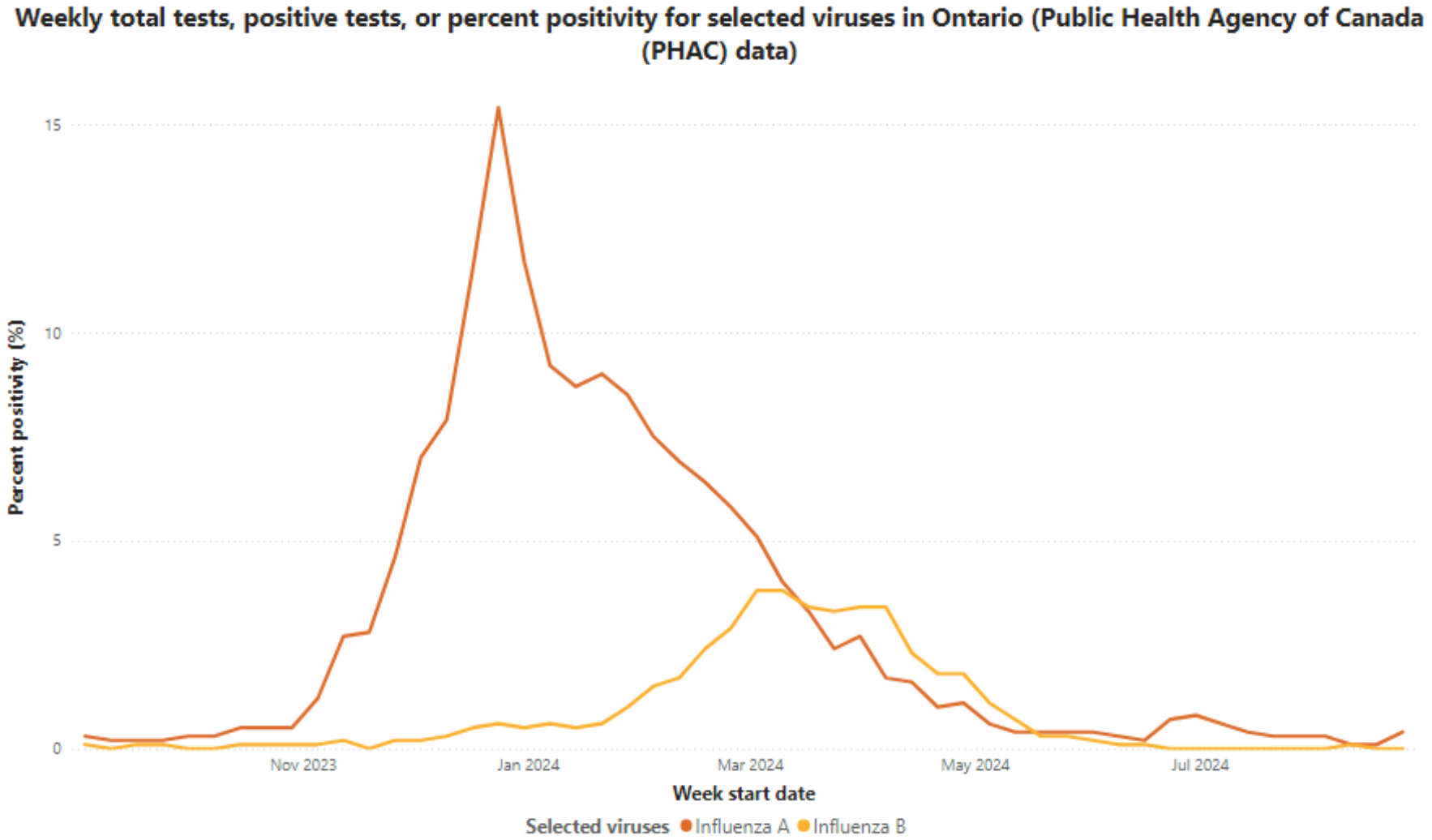
2023–24 Influenza B Activity Peaked after Influenza A



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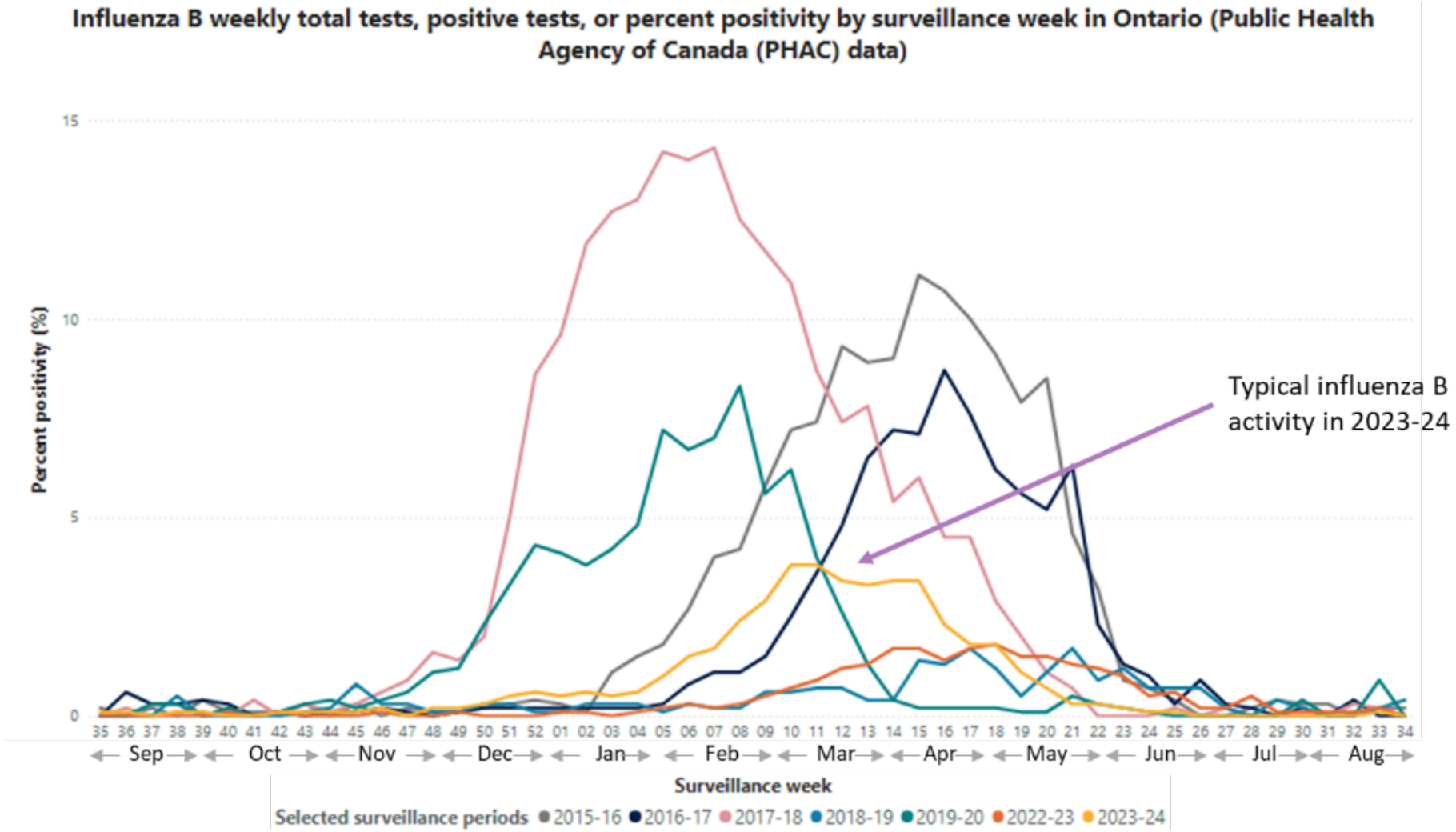
Influenza B Activity Occurred in the Spring of the 2023–24 Season



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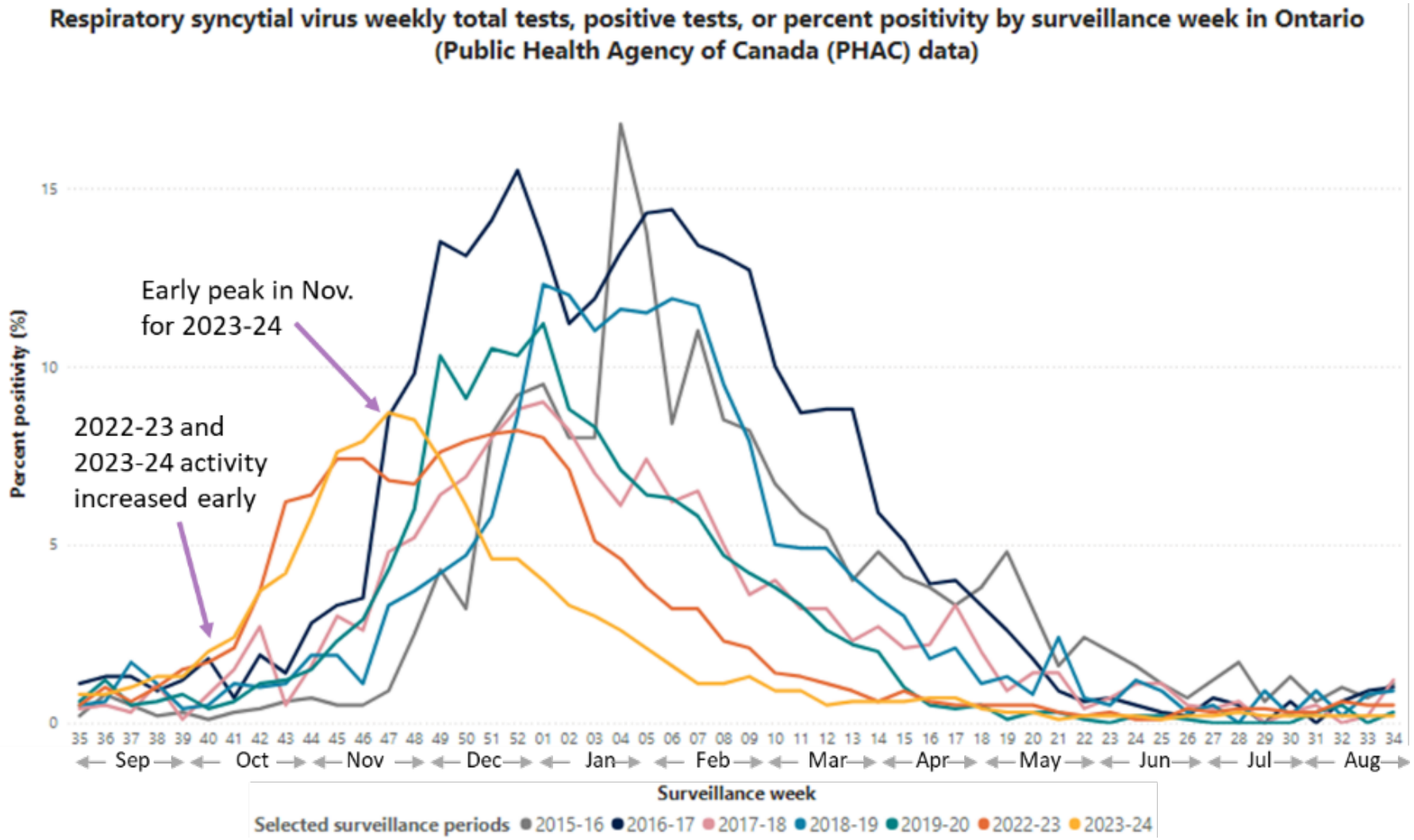
RSV Activity in the 2023–24 Season Peaked in November



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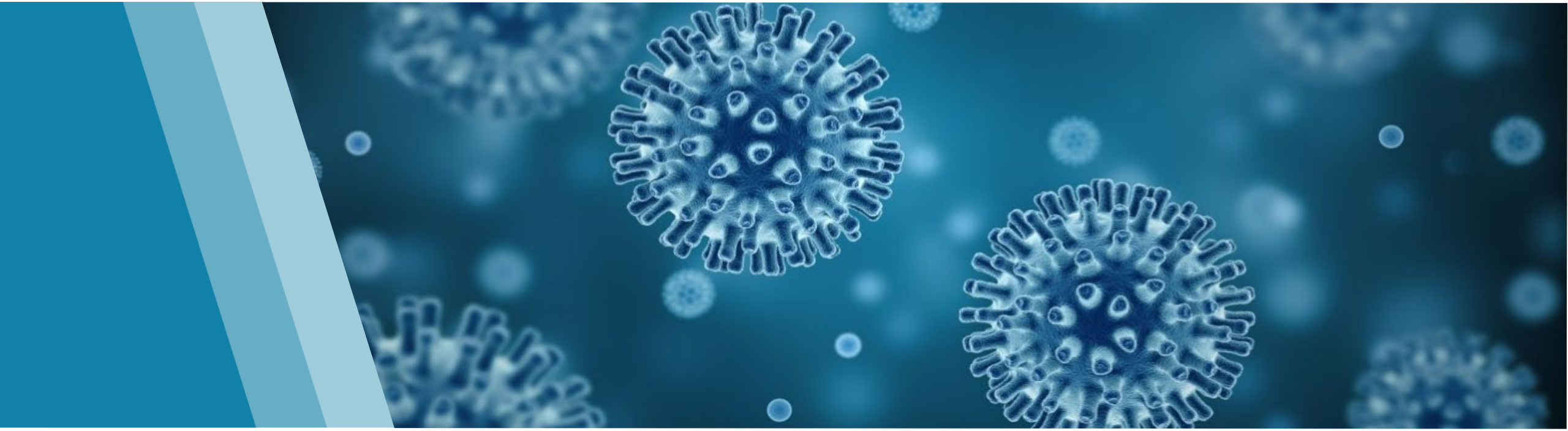
Percent Positivity Trends in 2023–24 for Canada

- COVID-19 activity had peaks in October and remained elevated before declining from December to late April 2024 based on test percent positivity
- Influenza A test percent positivity increased through November and peaked at the end of December, 2023
  - H1N1 was the dominant influenza A subtype nationally
- Influenza B increased starting in January through to a peak in April
- RSV test percent positivity increased in October with sustained activity through December, 2023 before declining

Source: Public Health Agency of Canada. Respiratory virus trends in Canada [Internet]. Ottawa, ON: Government of Canada; 2024 [cited 2024 Sep 11]. Available from: https://health-infobase.canada.ca/respiratory-virus-detections/

Respiratory Virus Activity



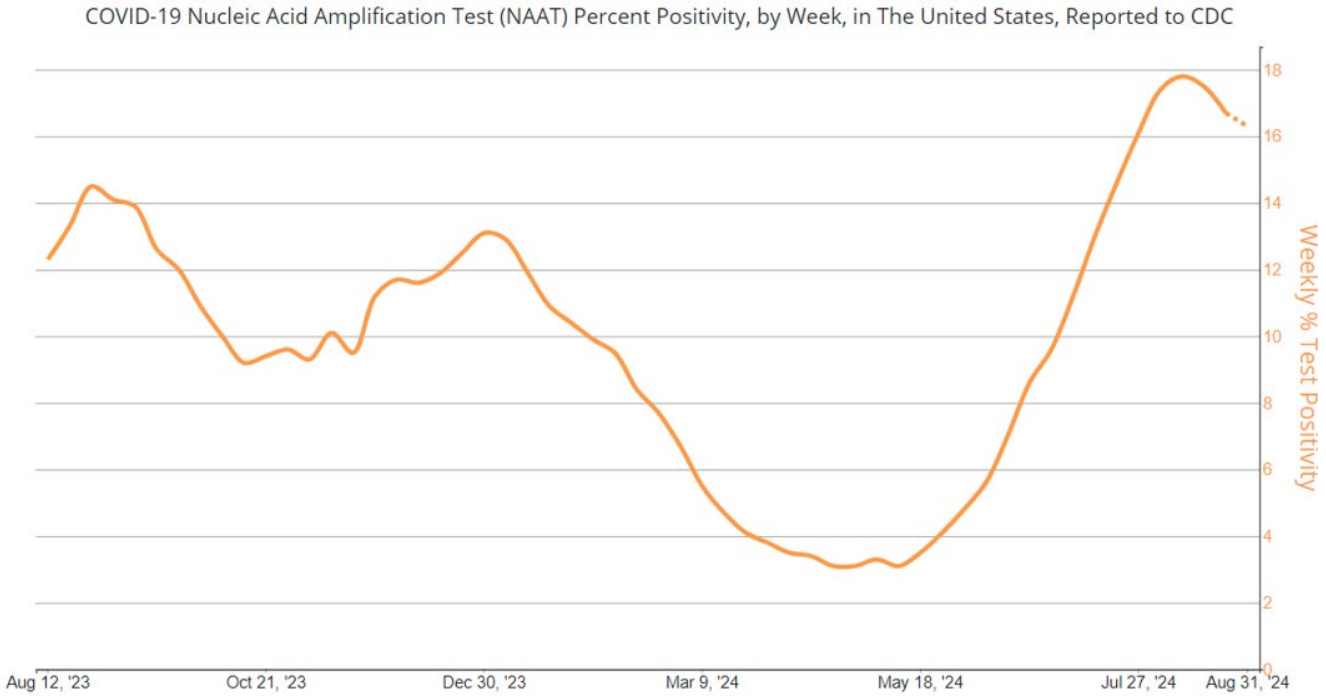
Internationally
2023–24 Surveillance Period

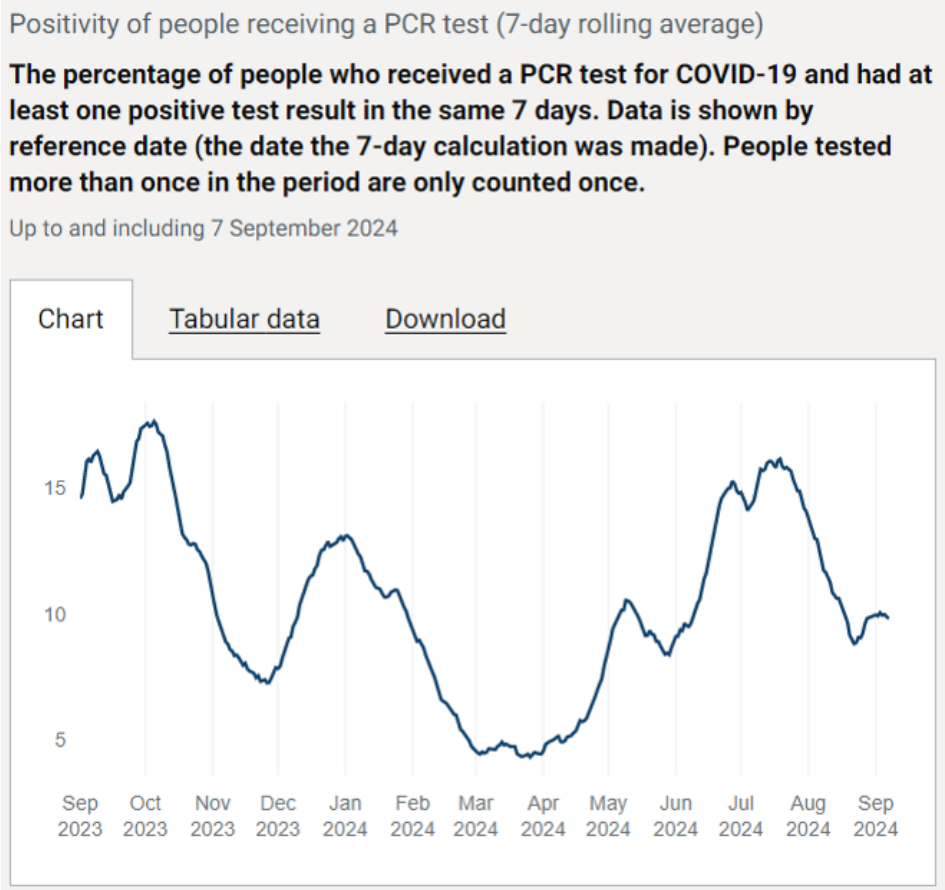
Influenza Activity in Australia

- The influenza season in 2024 seems to have started and peaked at a similar time compared to the 2019 and 2023 seasons.
- In 2024 there were more cases reported and activity remained higher for longer compared to 2023.

Source: Australian Respiratory Surveillance Report, Communicable Disease Epidemiology and Surveillance Section (CDESS). Report no. 11, 2024 [Internet]. Canberra: Government of Australia; 2024 [cited 2024 Sep 11]. Available from: https://www.health.gov.au/resources/publications/australian-respiratory-surveillance-report-11-12-august-to-25-august-2024?language=en

COVID-19 activity in United States and England Peaked Over Summer in 2024





Source US data: Centers for Disease Control and Prevention (CDC). COVID data tracker [Internet]. Atlanta, GA: CDC; 2024 [cited 2024 Sep 12]. Available from: https://covid.cdc.gov/covid-data-tracker

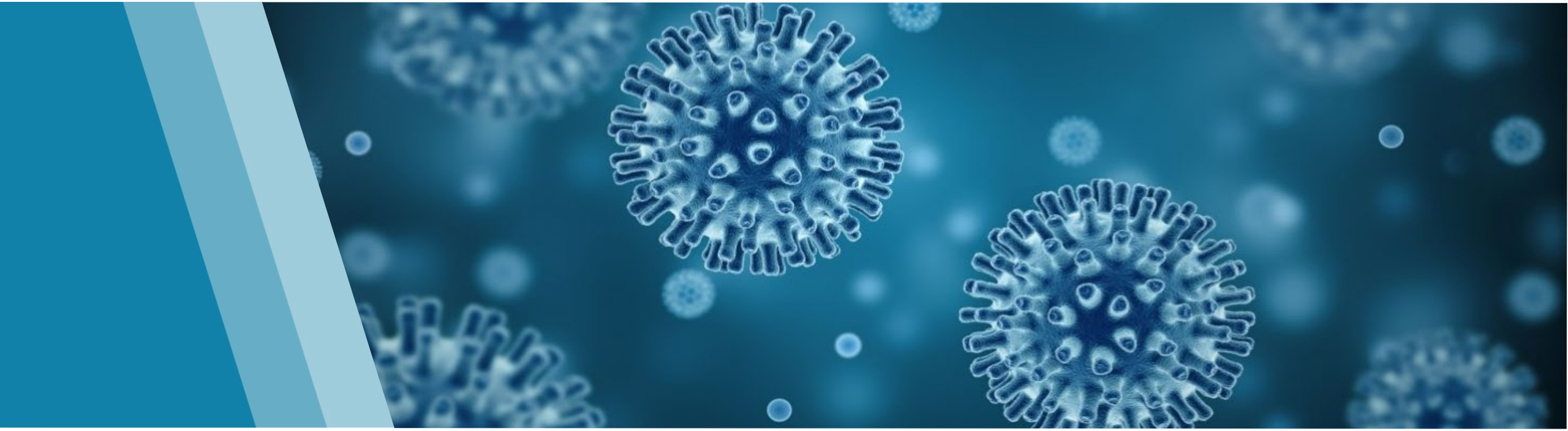
Source England data: UK Health Security Agency. Coronavirus tracker [Internet]. London: Crown Copyright; 2024 [cited 2024 Sep 12]. Available from: https://coronavirus.data.gov.uk/details/testing?areaType=nation&areaName=England

RSV Activity in Australia

- RSV is a notifiable disease in Australia
- Data on cases reported are available in 2023 and 2024
- Activity increased and peaked a few weeks earlier in 2024 than in 2023

Source: Australian Respiratory Surveillance Report, Communicable Disease Epidemiology and Surveillance Section (CDESS). Report no. 11, 2024 [Internet]. Canberra: Government of Australia; 2024 [cited 2024 Sep 11]. Available from: https://www.health.gov.au/resources/publications/australian-respiratory-surveillance-report-11-12-august-to-25-august-2024?language=en

Respiratory Virus Activity



Ontario
2024–25 Surveillance Period

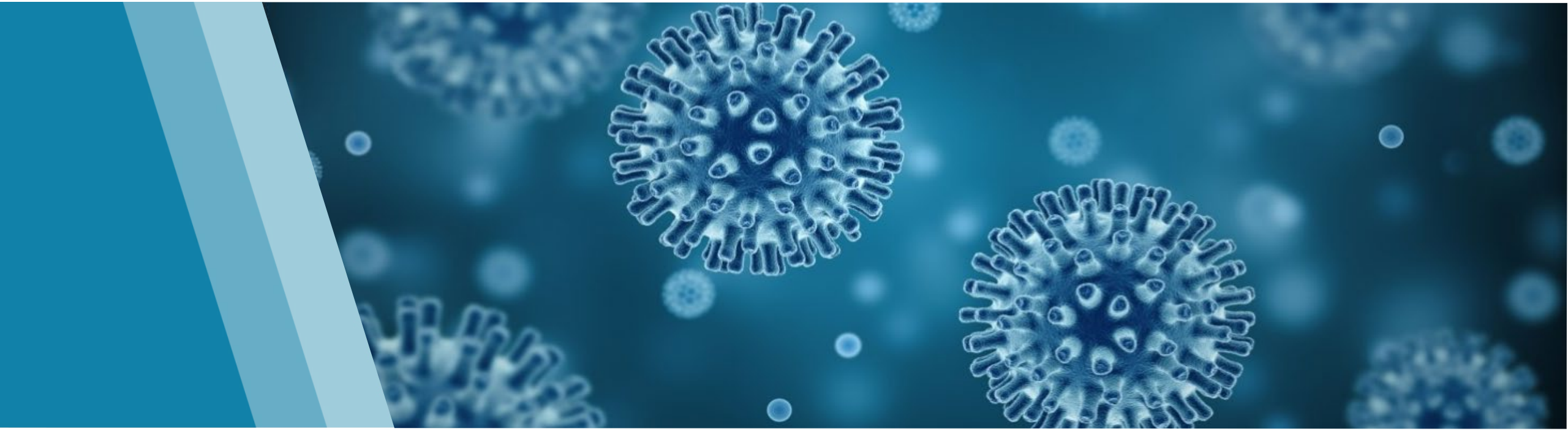
Outlook for 2024–25 Surveillance Period in Ontario

- Circulation of SARS-CoV-2, influenza and RSV in the community is expected
- Predicting precisely when peak activity for any of the three viruses will occur is difficult and more challenging the earlier predictions are made
  - When you have seen one flu season you've seen one flu season!
  - Influenza activity in Australia may not be a reliable predictor for Canadian influenza activity based on an analysis by the Public Health Agency of Canada (PHAC)
  - An evaluation of the US Center for Disease Control and Prevention (CDC)'s FluSight forecasting found that the accuracy of forecasts declined the farther into the future they extended (1 week to 4 weeks ahead)
- Currently, COVID-19 activity continues to increase based on trends that started in the 2023-24 surveillance period; both influenza and RSV activity levels are low

Sources: Chan D, Lee L, Bancej C. Does the Australian influenza season predict the Canadian influenza season? A qualitative comparison of seasons, 2014–2020. Can Commun Dis Rep 2023;49(11/12):494-500. Available from: https://doi.org/10.14745/ccdr.v49i1112a05

Mathis SM, Webber AE, León TM, Murray EL, Sun M, White LA, et al. Evaluation of FluSight influenza forecasting in the 2021–22 and 2022–23 seasons with a new target laboratory-confirmed influenza hospitalizations. Nat Commun. 2024;15:6289. Available from: https://doi.org/10.1038/s41467-024-50601-9

PHO’s Ontario Respiratory Virus Tool and Respiratory Virus Reports



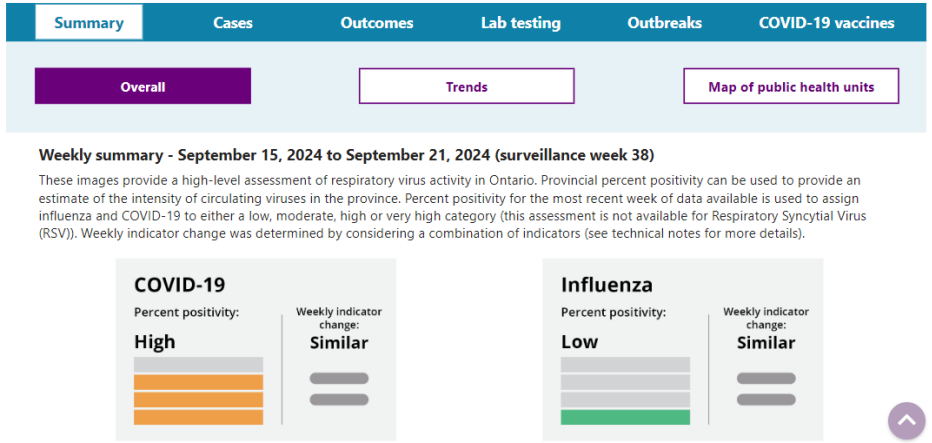
Respiratory Virus Data Tool and Reports Produced by PHO

Interactive data tool

- Ontario Respiratory Virus Tool

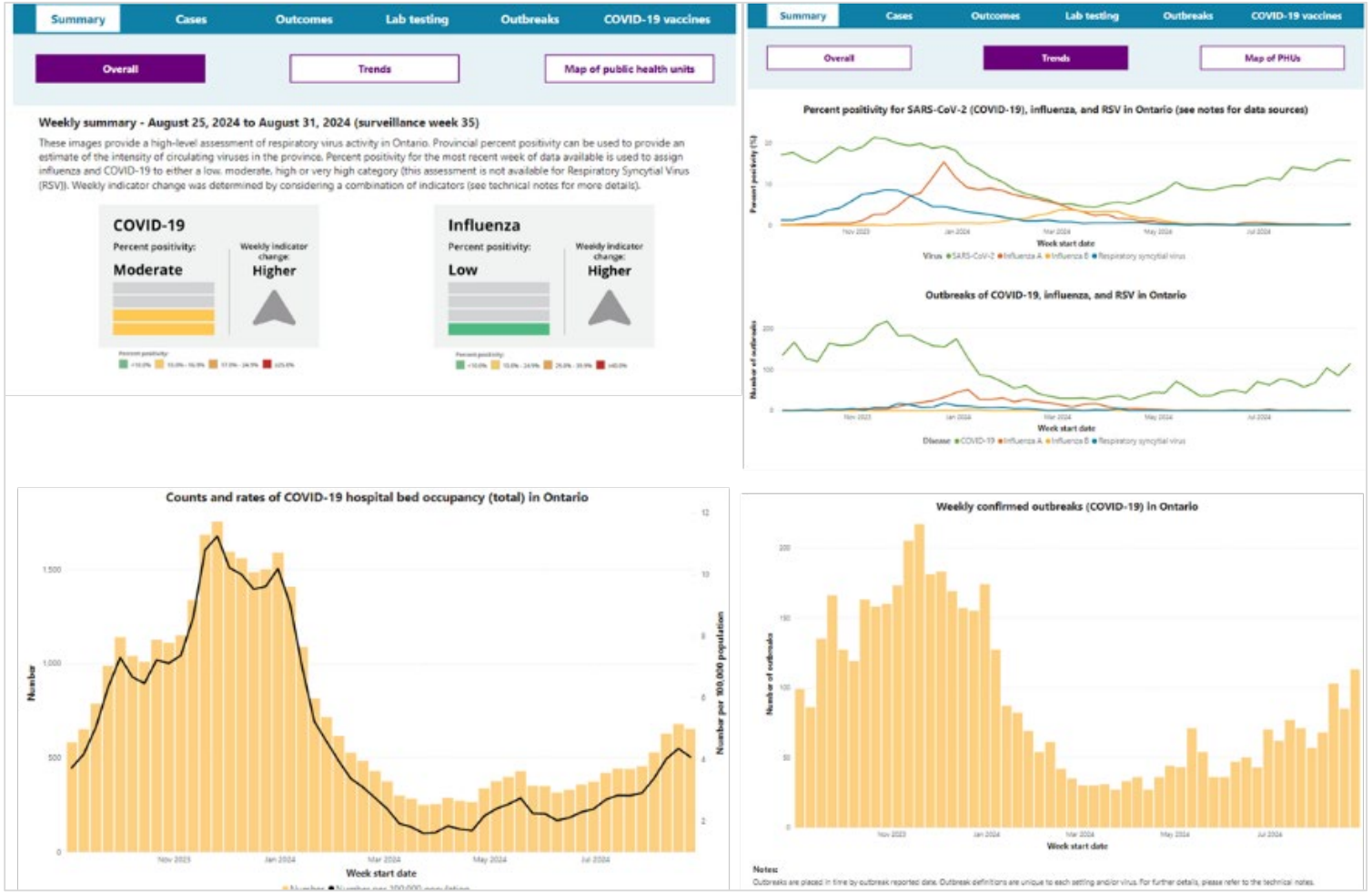
Static Reports

- Integrated Respiratory Virus Risk Indicators for Ontario
- SARS-CoV-2 Genomic Surveillance in Ontario
  - Current and projected dominant SARS-CoV-2 variant
- Influenza Genomic Surveillance in Ontario
  - Circulating strains, vaccine match, antiviral resistance
- Respiratory Syncytial Virus Genomic Surveillance in Ontario
  - Circulating lineages



Ontario Respiratory Virus Tool is Updated Every Friday at 11:30 a.m.

- The summary tab has a high level summary of activity and trends
- Lab testing tab presents percent positivity data
- Outbreaks tab for trend information on outbreaks
- Outcomes tab contains hospital bed census information and COVID-19 death data



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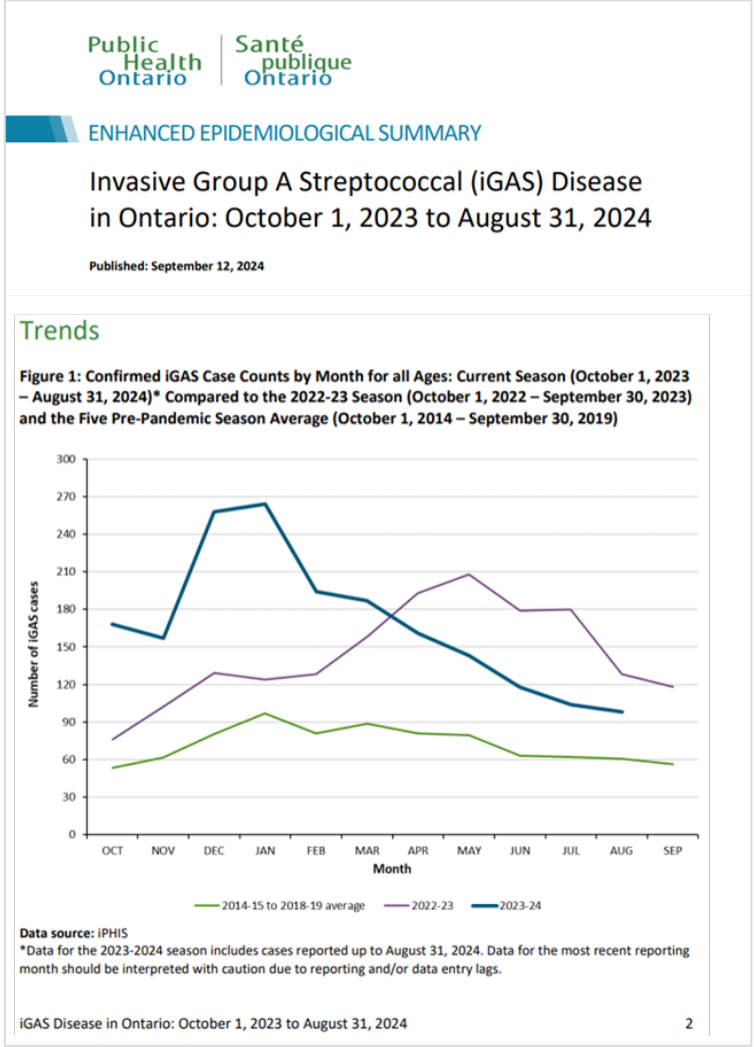
Ontario Respiratory Virus Tool Enhancements are Coming This fall

- A survey of users was conducted in the spring and based on feedback updates are coming to the tool!
- Some things to look forward to:
  - Inclusion of influenza subtype and strain information
  - A new section that takes the place of the Long-Term Care and Retirement Home outbreaks report from last season and is not restricted to COVID-19, influenza and RSV outbreaks
  - Summary information from the Integrated Respiratory Virus Risk Indicators for Ontario report showing two week COVID-19, influenza and RSV activity projections
  - COVID-19 episode counts
  - Inclusion of Ontario Laboratory Information System (OLIS) testing data for influenza and RSV (already available for COVID-19)
  - Updated Technical Notes

Invasive Group A Streptococcal Disease (iGAS)

- Similar to respiratory viruses tends to increase in the fall and winter
- For the past two seasons, 2022–23 and 2023–24, activity has been well above expected compared to pre-pandemic levels
- PHO will continue to produce and post monthly iGAS epidemiologic summaries in our iGAS page: https://www.publichealthontario.ca/en/Data-and-Analysis/Infectious-Disease/iGAS



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ENHANCED EPIDEMIOLOGICAL SUMMARY

Invasive Group A Streptococcal (iGAS) Disease in Ontario: October 1, 2023 to August 31, 2024

Published: September 12, 2024

Trends

Figure 1: Confirmed iGAS Case Counts by Month for all Ages: Current Season (October 1, 2023 – August 31, 2024)* Compared to the 2022-23 Season (October 1, 2022 – September 30, 2023) and the Five Pre-Pandemic Season Average (October 1, 2014 – September 30, 2019)

Data source: iPHIS

*Data for the 2023-2024 season includes cases reported up to August 31, 2024. Data for the most recent reporting month should be interpreted with caution due to reporting and/or data entry lags.

iGAS Disease in Ontario: October 1, 2023 to August 31, 2024 2

Outbreak Definition Updates

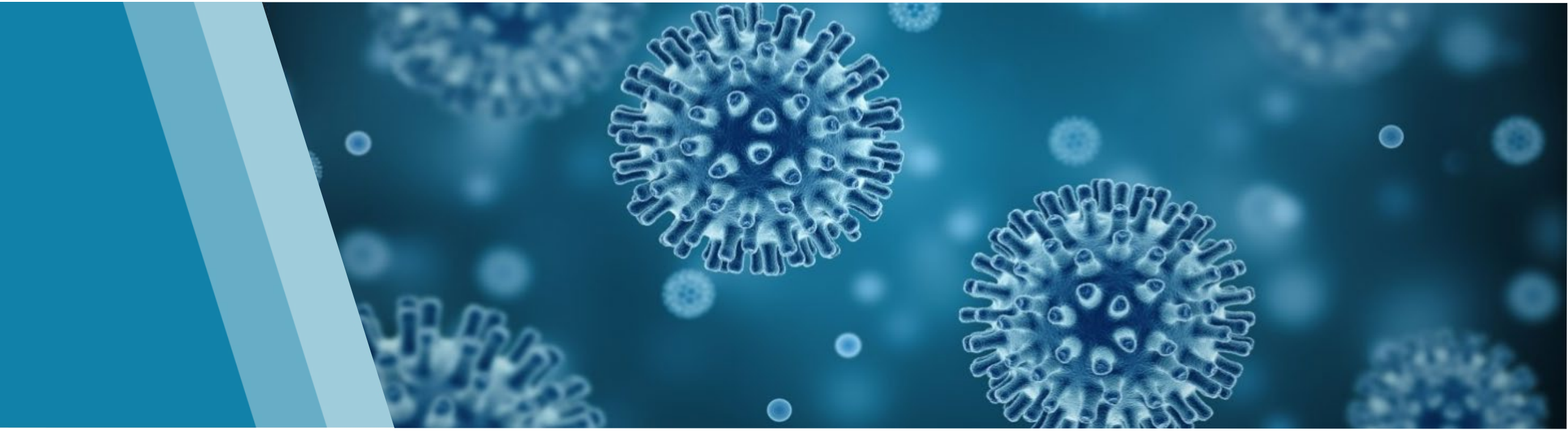
- Updates to the provincial definition of respiratory infection outbreaks in institutions or public hospitals available this fall
  - COVID-19 outbreaks are now covered in this definition
  - The updated definition is more specific
  - Possible implications for the number of outbreaks declared
- The current definitions can be found on the Ontario Public Health Standards website under Appendix 1 of the Infectious Disease protocol:

  https://www.ontario.ca/page/ontario-public-health-standards-requirements-programs-services-and-accountability#section-2

Other Available Respiratory Infection Resources

- A summary of the available vaccines for the 2024–25 influenza season
- An updated summary of considerations for the use of antivirals for the prevention and treatment of influenza.
- Surveillance guide which includes instructions on reporting and data entry into iPHIS (in previous years we referred to this as our surveillance package)

COVID and Seasonal Respiratory Virus Testing 2024–25



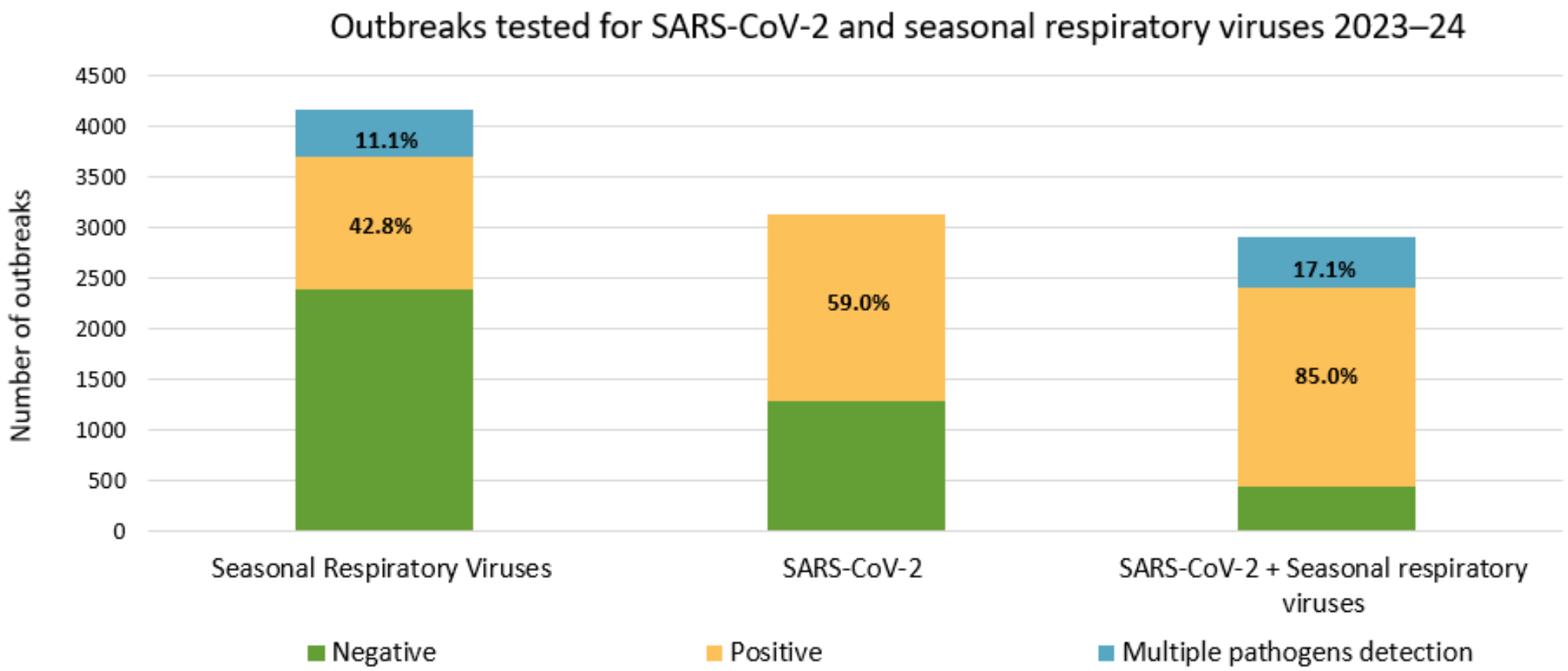
Purpose of Respiratory Virus Testing

- Facilitate the timely detection of respiratory viruses to support:
  - Early clinical intervention
  - Treatment guidance and infection prevention and control measures
- Inform public health response strategies
- Enable the characterization of respiratory illness trends for assessing burden and program impacts
  - Trends over time
  - Circulating viral strains
  - Geographic distribution by health unit

Respiratory Virus Testing at PHO

- **COVID-19**
  - SARS-CoV-2
- **FLUVID**
  - Influenza A
  - Influenza B
  - SARS-CoV-2
  - Respiratory Syncytial Virus (RSV A & B)
- **Rapid Testing**
  - Influenza antigen (A & B)
- **Multiplex Respiratory Virus PCR (MRVP)**
  - Influenza A, H3 & H1(pdm09) subtypes
  - Influenza B
  - Respiratory syncytial virus (RSV A & B)
  - parainfluenza (1 – 4)
  - Adenovirus
  - Enterovirus
  - Seasonal human coronavirus (OC43, 229E, NL63, HKU1)
  - Rhinovirus
  - Human metapneumovirus

Respiratory Outbreak Testing at PHO



Source: PHO Laboratory Information Management System

SARS-CoV-2 Test

- **Testing Indications**

1. Ontarians eligible for COVID-19 treatment (i.e., symptomatic individuals who are immunocompromised, or 65 years of age or older, or those with high-risk medical conditions).
2. People in high-risk and some congregate living settings (including long-term care homes) and other specific populations to support outbreak prevention and management.

- For test indications, please refer to the testing guidance documents from the **Ontario Ministry of Health**

Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Coronavirus Disease 2019 (COVID-19) – PCR test information index [Internet]. Toronto, ON: King's Printer for Ontario; 2024 [cited 2024 Sep 9]. Available from: https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Covid-19

Testing Panels for Respiratory Viruses

- PHO provides testing using 2 different respiratory test panels – these are
  - **MRVP**
  - **FLUVID**
- If patients meet testing criteria, submitters who request for respiratory virus testing, will be tested for FLUVID and/or MRVP.
- COVID-19 PCR may also be tested using the same sample

Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Coronavirus Disease 2019 (COVID-19) – PCR test information index [Internet]. Toronto, ON: King's Printer for Ontario; 2024 [cited 2024 Sep 9]. Available from: https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Covid-19

Respiratory Virus Panel Testing Eligibility

MRVP

- Symptomatic hospitalized patients (ward and ICU/CCU)
- Symptomatic children (<18 years) seen in the emergency department
- Symptomatic residents in institutional settings (non-outbreak)
- The first four specimens from symptomatic individuals in an outbreak that requests respiratory virus testing

FLUVID

- Symptomatic residents and healthcare workers/staff in institutional settings in an outbreak that request COVID-19 and respiratory virus testing beyond the first four specimens that have been tested for SARS-CoV-2 and MRVP
- Symptomatic adults seen in emergency department if they are at risk for severe disease/outcome, and in which care or treatment decisions may be impacted by test results

Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Coronavirus Disease 2019 (COVID-19) – PCR test information index [Internet]. Toronto, ON: King's Printer for Ontario; 2024 [cited 2024 Sep 9]. Available from: https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Covid-19

PHO Testing Algorithm for Respiratory Outbreaks

- Only the first four specimens from symptomatic individuals associated with an outbreak are eligible for testing with MRVP
- Beyond the first four specimens, symptomatic individuals in the same outbreak will be tested for Influenza A/B, SARS-CoV-2 and RSV using the FLUVID assay
- Rapid influenza testing is performed on the first four outbreak samples submitted for respiratory virus testing, if molecular testing cannot be performed within 24 hours

Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Coronavirus Disease 2019 (COVID-19) – PCR test information index [Internet]. Toronto, ON: King's Printer for Ontario; 2024 [cited 2024 Sep 9]. Available from: https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Covid-19

Testing Outside the Standard PHO Algorithm

- PHO can be consulted if considering additional testing, e.g., additional testing beyond the first four samples for symptomatic patients in an outbreak
- Use the following for test requisition:
  1. **Coronavirus Disease 2019 (COVID-19) – PCR Test Requisition** for COVID-19 and Respiratory Virus orders
  2. **General Test Requisition Form** to order other assays
- To request additional testing in an outbreak setting, contact PHO Customer Service Centre at 416-235-6556 or 1-877-604-4567 (toll-free)

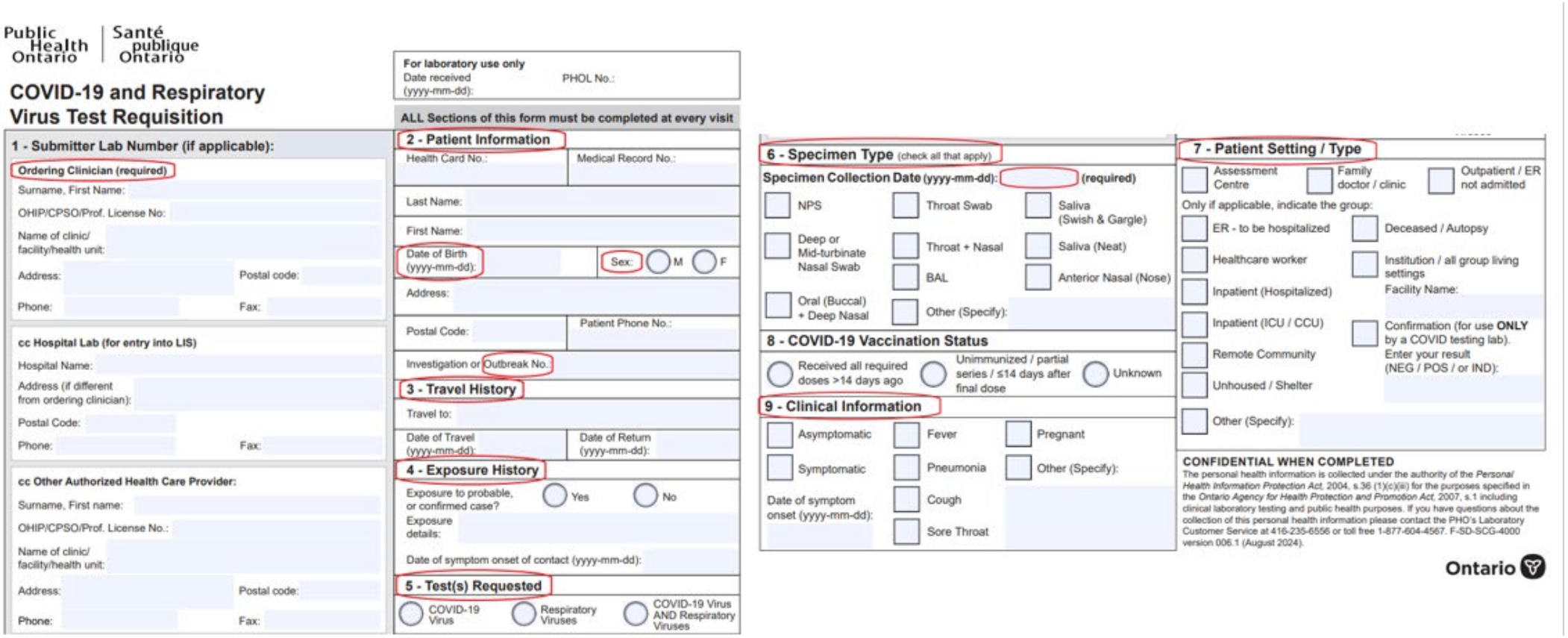
Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Coronavirus Disease 2019 (COVID-19) – PCR test information index [Internet]. Toronto, ON: King's Printer for Ontario; 2024 [cited 2024 Sep 9]. Available from: https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Covid-19

Role of Asymptomatic Testing During Outbreaks

- Testing of asymptomatic individuals is not recommended
- Asymptomatic testing, in particular for COVID-19 outbreaks, may be considered in exceptional situations
  - Ongoing unexplained transmission despite fully implemented outbreak measures
- Asymptomatic tested individuals do not need to be placed on Additional Precautions due to **low pre-test probability**
- Asymptomatic residents and staff are not tested for other non-COVID-19 respiratory viruses

Resource: https://www.ontario.ca/files/2024-04/moh-recommendations-for-outbreak-prevention-and-control-in-institutions-and-cls-en-2024-04-09.pdf Ontario. Ministry COVID-19 testing and treatment. Toronto: of Health; 2024 [cited 10 02]. Available from: https://www.ontario.ca/page/covid-19-testing-and-treatment#section-2.

Submission Guidelines – Requisition



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COVID-19 and Respiratory Virus Test Requisition

For laboratory use only
Date received (yyyy-mm-dd): PHOL No.:

ALL Sections of this form must be completed at every visit

1 - Submitter Lab Number (if applicable):

Ordering Clinician (required)
Surname, First Name:
OHIP/CPSO/Prof. License No:
Name of clinic/ facility/health unit:
Address: Postal code:
Phone: Fax:

cc Hospital Lab (for entry into LIS)
Hospital Name:
Address (if different from ordering clinician):
Postal Code:
Phone: Fax:

cc Other Authorized Health Care Provider:
Surname, First name:
OHIP/CPSO/Prof. License No.:
Name of clinic/ facility/health unit:
Address: Postal code:
Phone: Fax:

2 - Patient Information

Health Card No.: Medical Record No.:
Last Name:
First Name:
Date of Birth (yyyy-mm-dd): Sex: M F
Address:
Postal Code: Patient Phone No.:
Investigation or Outbreak No.:

3 - Travel History

Travel to:
Date of Travel (yyyy-mm-dd): Date of Return (yyyy-mm-dd):

4 - Exposure History

Exposure to probable, or confirmed case? Yes No
Exposure details:
Date of symptom onset of contact (yyyy-mm-dd):

5 - Test(s) Requested

COVID-19 Virus | Respiratory Viruses | COVID-19 Virus AND Respiratory Viruses

6 - Specimen Type (check all that apply)

Specimen Collection Date (yyyy-mm-dd): (required)

NPS | Throat Swab | Saliva (Swish & Gargle)
Deep or Mid-turbinate Nasal Swab | Throat + Nasal | Saliva (Neat)
BAL | Anterior Nasal (Nose)
Oral (Buccal) + Deep Nasal | Other (Specify):

8 - COVID-19 Vaccination Status

Received all required doses >14 days ago | Unimmunized / partial series / ≤14 days after final dose | Unknown

9 - Clinical Information

Asymptomatic | Fever | Pregnant
Symptomatic | Pneumonia | Other (Specify):
Date of symptom onset (yyyy-mm-dd): | Cough
Sore Throat

7 - Patient Setting / Type

Assessment Centre | Family doctor / clinic | Outpatient / ER not admitted

Only if applicable, indicate the group:

ER - to be hospitalized | Deceased / Autopsy
Healthcare worker | Institution / all group living settings
Facility Name:
Inpatient (Hospitalized)
Inpatient (ICU / CCU) | Confirmation (for use **ONLY** by a COVID testing lab). Enter your result (NEG / POS / or IND):
Remote Community
Unhoused / Shelter
Other (Specify):

CONFIDENTIAL WHEN COMPLETED

The personal health information is collected under the authority of the *Personal Health Information Protection Act*, 2004, s.36 (1)(c)(iii) for the purposes specified in the *Ontario Agency for Health Protection and Promotion Act*, 2007, s.1 including clinical laboratory testing and public health purposes. If you have questions about the collection of this personal health information please contact the PHO's Laboratory Customer Service at 416-235-6556 or toll free 1-877-604-4567. F-SD-SCG-4000 version 006.1 (August 2024).

Ontario

Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). COVID-19 and respiratory virus test requisition [Internet]. Toronto, ON: King's Printer for Ontario; 2024 [cited 2024 Sep 27]. Available from: https://www.publichealthontario.ca/-/media/documents/lab/2019-ncov-test-requisition.pdf?la=en

Submission Guidelines – Collection Kits

- Check the expiry dates for both collection swabs and transport media (tube), as samples collected using expired swabs or tubes will be rejected
- Make sure the sample tubes/containers are labeled properly in accordance with PHO's sample acceptance criteria to avoid rejection
- Samples that are not suitable for rapid testing will be sent directly for MRVP or FLUVID testing
  - Media containing guanidine is unsuitable for influenza rapid testing
  - Expired collection kits are unsuitable for influenza rapid testing

Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Criteria for acceptance of specimens [Internet]. Toronto, ON: King's Printer for Ontario; 2024 [cited 2024 Sep 27]. Available from: https://www.publichealthontario.ca/en/Laboratory-Services/About-Laboratory-Services/Specimen-Acceptance-Criteria

Test Frequency and Turnaround Time (TAT)

- COVID and FLUVID testing is performed seven days a week at PHO sites
  - In lab TAT is within 48 hours from receipt at a PHO testing laboratory.
- The TAT for MRVP testing is up to four days
- TAT may vary according to geographical location and proximity to a PHO testing laboratory
- The TAT for influenza rapid testing is within one day after sample receipt at any PHO's laboratory site

Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Respiratory viruses (including influenza) test information index [Internet]. Toronto, ON: King's Printer for Ontario; 2024 [cited 2024 Sep 27]. Available from: https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index/Virus-Respiratory

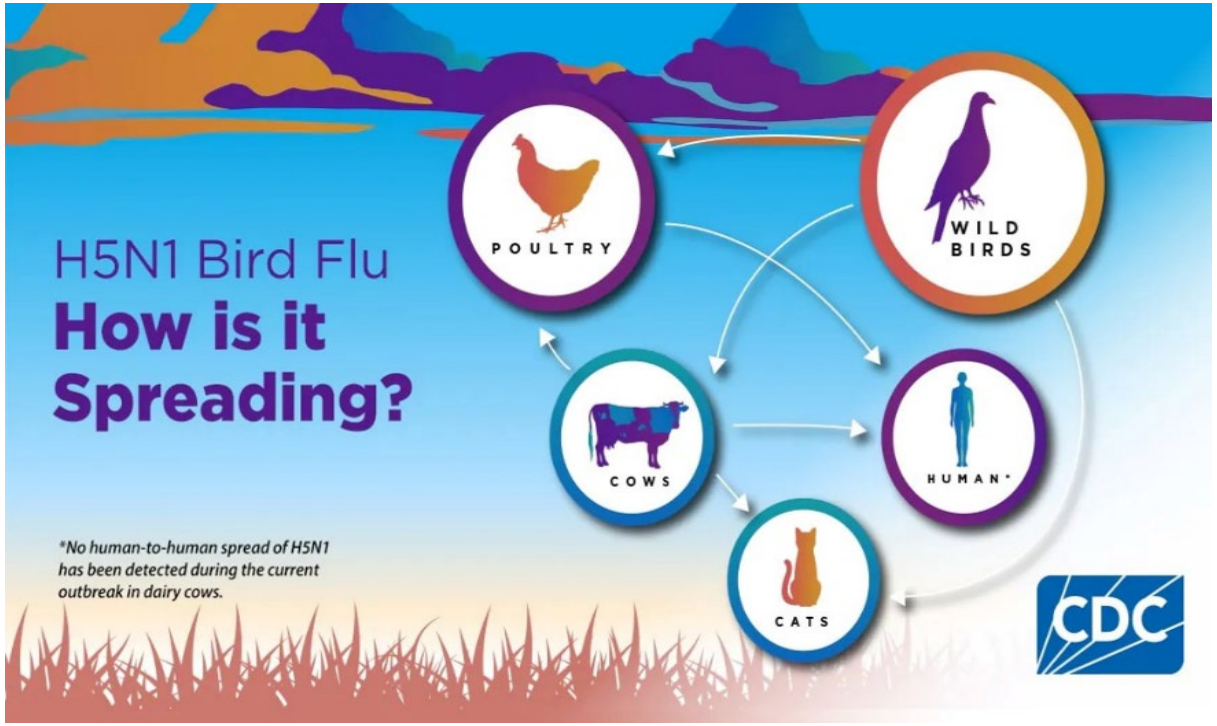
Other Respiratory Virus Testing at PHO

- Avian influenza, novel influenza, and Flu A subtyping
- Antiviral resistance in influenza
- Middle East Respiratory Syndrome Coronavirus (MERS-CoV)
- Enterovirus D68
- General Test Requisition Form to order the assays

Source: Ontario Agency for Health Protection and Promotion (Public Health Ontario). Test information index [Internet]. Toronto, ON: King's Printer for Ontario; 2024 [cited 2024 Sep 27]. Available from: https://www.publichealthontario.ca/en/Laboratory-Services/Test-Information-Index

Enhanced Influenza Surveillance

- To support preparedness and response for the 2024–2025 influenza/respiratory season in Ontario, PHO will continue to subtype Influenza A positive specimens
- The enhanced influenza surveillance program will be essential for early identification of HPAI H5N1 and/or novel influenza strains.



Source: Centers for Disease Control and Prevention (CDC). H5 bird flu: current situation [Internet]. Atlanta, GA: CDC; 2024 [cited 2024 Sep 27]. Available from: https://www.cdc.gov/bird-flu/situation-summary/index.html

Influenza-A Subtyping Criteria for 2024–25 Season

- Specimens that cannot be subtyped by the primary testing laboratory using current commercial PCR assays (non-H3/non-H1 samples)
- Specimens from cases of suspected animal-to-human transmission of influenza A virus
- Specimens from patients with suspected influenza anti-viral resistance
- Specimens from all ICU patients regardless of typing results

Enterovirus D68 (EV-D68) Surveillance at PHO

- EV-D68 has exhibited a biennial pattern, with peaks in the late summers and autumns of even-numbered years
- EV-D68 surveillance started from 1st week of July (July 5th)
- The numbers are from July 5th to September 13th, 2024
  - Total number of samples tested: 105
  - Number of EV D68 positive samples: 33
  - Positivity rate: 31.43%

Sources: Hodcroft EB, Dyrdak R, Andres C, Egli A, Reist J, García Martínez de Artola D, et al. Evolution, geographic spreading, and demographic distribution of Enterovirus D68. PLoS Pathog. 2022;18(5):e1010515. Available from: https://doi.org/10.1371/journal.ppat.1010515

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Surveillance report: enterovirus - D68 testing at Public Health Ontario [Internet]. Toronto, ON: King's Printer for Ontario; 2022 [cited 2024 Sep 27]. Available from: https://www.publichealthontario.ca/-/media/Documents/E/2022/enterovirus-d68-testing-public-health-ontario.pdf?rev=5c3f7854910041b39a8b8edf195904c3&la=en

Sentinel Practitioners Surveillance Network (SPSN)

- The SPSN relies on a network of primary care practitioners in the community to conduct surveillance and annual estimation of COVID- and flu-vaccine effectiveness
- Specimens submitted from patients who present with ARI or ILI within 7 days of onset are tested for SARS-CoV-2 and other respiratory pathogens (MRVP)
- Specimens are submitted with a short questionnaire that includes a brief immunization history against Influenza and COVID-19 which then helps in the estimation of vaccine effectiveness
- Additional testing (e.g., WGS) is performed on select specimens for a deeper analyses of vaccine effectiveness
- Results are shared via peer-reviewed publications

PHO Resource Links

- Ontario Respiratory Virus Tool
- Integrated Respiratory Virus Risk Indicators
- SARS-CoV-2 Genomic Surveillance in Ontario
- Influenza Genomic Surveillance in Ontario 2023-24 Season
- Respiratory Syncytial Virus Genomic Surveillance in Ontario 2023-24 Season
- iGAS epidemiologic summaries in our iGAS page
- Enterovirus D68 Surveillance Report
- PHO Criteria for Acceptance of Specimens
- PHO Respiratory Viruses (including influenza) test information index
- PHO COVID-19 and Respiratory Virus Test Requisition
- Coronavirus Disease 2019 (COVID-19) – PCR test information index

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- Ministry of Health
- Ontario Health

For more information about this presentation, contact:

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Public Health Ontario keeps Ontarians safe and healthy. Find out more at **PublicHealthOntario.ca**

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