



# Multiplex Respiratory Virus PCR (MRVP) Respiratory Virus Testing

## What is MRVP testing?

- MRVP is a laboratory test used for the detection of a panel of influenza and other respiratory viruses

## Which viruses are tested?

- The panel of viruses tested varies depending on the laboratory and the particular assay/test being used
- The FLUVID assay detects influenza A, influenza B, SARS-CoV-2 (COVID-19), and respiratory syncytial virus (RSV A/B)
- Public Health Ontario (PHO) Laboratory's MRVP assay, detects:
  - ◆ influenza A
  - ◆ influenza A H1 (pdm09) subtype
  - ◆ respiratory syncytial virus (RSV A/B)
  - ◆ adenovirus
  - ◆ seasonal human coronavirus\* (OC43, 229E, NL63, HKU1)
  - ◆ influenza A H3 subtype
  - ◆ influenza B
  - ◆ parainfluenza (1 – 4)
  - ◆ enterovirus
  - ◆ rhinovirus
  - ◆ human metapneumovirus

\* Note: Seasonal human coronaviruses are different than SARS-CoV-2 which causes COVID-19

## Who is eligible for MRVP testing?

- Eligibility criteria varies by each laboratory
- In some cases, there may be a cost involved with MRVP testing even when the eligibility criteria is met

At present, the following individuals are eligible for respiratory virus testing at **PHO Laboratory**<sup>1</sup>:

1. Symptomatic<sup>2</sup> children (<18 years) seen in the Emergency Department (ED)
2. All symptomatic hospitalized patients (ward and ICU/CCU)
3. **First 4 symptomatic** patients in an **outbreak**
4. **Symptomatic patients in institutional settings (non-outbreak)** will be eligible for MRVP testing when ordered on the PHO Laboratory requisition

Notes:

- 1) PHO Laboratory's eligibility criteria may change periodically according to clinical guidelines and surveillance requirements. Refer to PHO Laboratory's [Test Information Index](#) for the most current criteria.
- 2) Symptomatic refers to acute respiratory illness symptoms.

November 2, 2022

## MRVP Testing Laboratories

- Not all labs have MRVP testing capabilities. Some labs may only conduct respiratory testing seasonally during the fall and winter months. Check with your usual lab to confirm.
- Specimens initially sent to a non-MRVP testing lab may need to be transferred to a lab with MRVP testing capabilities (e.g. PHO Laboratory)
- This may present challenges due to various factors including:
  - ◆ processing methods at certain labs rendering the specimen not testable (e.g. specimen heat inactivation)
  - ◆ additional costs incurred at other labs (e.g. MRVP not covered by Ministry of Health for all labs even when eligibility criteria is met)
  - ◆ delays in testing and receiving results
  - ◆ limited results yielded based on the assay being used by the particular laboratory
- **Best Practice: where possible send specimens to PHO Laboratory for MRVP testing**, especially for outbreak associated specimens. Please speak to your Toronto Public Health (TPH) Liaison should you require further information.

## How is MRVP testing done?

- **Nasopharyngeal swab** is the most sensitive specimen type for respiratory virus testing
- However, there are other approved specimen types – for additional details, refer to the PHO Laboratory link at the end of this document
- PHOL can use the **same specimen** for COVID-19 and MRVP testing provided acceptance criteria are met. However certain transport media types may not be suitable for MRVP testing. (Refer to PHO Laboratory's [Test Information Index](#))

## When should MRVP testing be requested?

- In both outbreak and non-outbreak scenarios, refer to the setting specific provincial guidance as well as the eligibility criteria above to determine when testing should be requested

## Adding on Respiratory Virus Testing to a sample already submitted for COVID-19 testing

- In many instances, it is possible to add respiratory virus testing to a specimen already submitted for COVID-19 testing
- This however is dependent on the specimen retention policies of the original laboratory receiving the specimen
- Currently, there is approximately a 72 hour time frame to add subsequent tests on a sample. Please contact your TPH Liaison should you need any assistance with adding on additional testing to an already submitted specimen.

## Test Turnaround Time (TAT)

- Depending on the lab, the TAT for respiratory virus testing such as MRVP can be up to 4 days

## Reporting

- Specimens that are positive for **SARS-CoV-2** and/or **influenza**, and all\* results from **outbreaks**, are reported to the Medical Officer of Health as per Health Protection and Promotion Act

Note: \*For TPH to receive all results, including negative results, the TPH Associate Medical Officer of Health (AMOH)/physician consultant must be included as the CC Health Care Provider on the requisition:

CC  Other Authorized Health Care Provider

## Important Reminders

When completing the PHO Laboratory requisition form, ensure the following:

- Ordering Clinician = Facility's Clinician**

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 section = TPH AMOH**

(For outbreaks and when testing recommended by TPH for exposures)

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 \_\_\_\_\_

- Provide the **Outbreak #** or **Provincial Surveillance Testing Number** – if applicable.

For sporadic testing, this field can be left blank.

Investigation or Outbreak Number \_\_\_\_\_

- Only mark **one** of the 3 options

### 5. Tests Requested

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

- Check off **"Institution"**

### 7. Patient Setting/Type

- Assessment Center       Family doctor/ clinic       Outpatient/ER not admitted

If only applicable, indicate the group:

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

- Check **Symptomatic** and complete information on symptoms

Only symptomatic persons are eligible for MRVP testing!

9. Clinical Information		
<input type="checkbox"/> Asymptomatic	<input type="checkbox"/> Fever	<input type="checkbox"/> Pregnant
<input type="checkbox"/> Symptomatic	<input type="checkbox"/> Pneumonia	<input type="checkbox"/> Other (specify):
Date of symptom onset (yyyy/mm/dd):	<input type="checkbox"/> Cough	_____
_____	<input type="checkbox"/> Sore Throat	_____

**Ensuring the requisition form is filled in completely and correctly for each person being tested is crucial in receiving the desired test results with the best possible turn-around time!**

## Additional Resources

### Public Health Ontario

- [Laboratory Respiratory Viruses Test Information Index](#)
- [Laboratory COVID-19 and Respiratory Virus Test Requisition](#)
- [Laboratory Respiratory Outbreak Testing Prioritization](#)
- [Ontario Respiratory Pathogen Bulletin](#)

### Toronto Public Health

- Contact your Facility Liaison
- [Infection Prevention & Control Information for Long-Term Care Homes & Retirement Homes](#)