

## LABSTRACT – October 2020

# Serological Testing for: Cytomegalovirus (CMV), Epstein-Barr virus (EBV), Herpes simplex virus (HSV), Measles, Mumps, Rubella, Varicella (MMRV)

## Audience

Health Care Providers and Public Health Practitioners

## Overview

Effective October 5, 2020 Public Health Ontario's (PHO) laboratory will commence the use of the following new commercial serological assays for Cytomegalovirus (CMV), Epstein-Barr virus (EBV), Herpes simplex virus (HSV), Measles, Mumps, Rubella, and Varicella zoster virus (MMRV).

## Background information

For many years, serologic tests for Cytomegalovirus (CMV), Herpes simplex virus (HSV), Measles, Mumps, Rubella, Varicella zoster virus (MMRV) at PHO have routinely been performed using Enzyme Immunoassays (EIA). Although EIA's have been extremely reliable over the years, they have become outdated and are being replaced by newer technologies using Chemiluminescent Immunoassays and Multiplex Flow Immunoassays which are designed to improve workflow and turnaround time.

## What is changing?

- Current testing platforms at PHO Laboratory for Cytomegalovirus (CMV), Herpes simplex virus (HSV), Measles, Mumps, Rubella, and Varicella zoster virus (MMRV) serology are being replaced by new random access analyzers. These random access analyzers are designed to simplify diagnostics, improve workflow and drive further operational efficiencies. This change will not impact the reliability or quality of results.
- PHO Laboratory currently provides a quantitative unit value for the level of specific IgG antibody when reporting results for MMRV Serology for determination of immunity/immune status. Effective October 5th quantitative unit values will no longer be provided for the above serologic tests. Only qualitative results (i.e., Reactive, Non-Reactive, or Indeterminate) will be reported. MMRV serology for diagnosis will continue to be reported qualitatively.

- For Herpes simplex virus (HSV) serology, PHO Laboratory currently provides a ‘Total’ antibody result which does not distinguish between HSV type 1 and HSV type 2 antibodies. Effective October 5th, PHO will provide type specific serology for Herpes Simplex Virus. Reports will indicate the presence or absence of HSV-1 IgG antibodies and HSV-2 IgG antibodies separately (See summary below). PHO will not be implementing a HSV IgM antibody test.

HSV-1 IgG Test Result	HSV-2 IgG Test Result	Interpretations of Results
Non-Reactive	Non-Reactive	Herpes simplex Virus type 1 IgG and Herpes simplex Virus type 2 IgG antibodies not detected.
Non-Reactive	Reactive	Herpes simplex Virus type 1 IgG antibodies not detected; Herpes simplex Virus type 2 IgG antibodies detected.
Reactive	Non-Reactive	Herpes simplex Virus type 1 IgG antibodies detected; Herpes simplex Virus type 2 IgG antibodies not detected.
Reactive	Reactive	Herpes simplex Virus type 1 IgG and Herpes simplex Virus type 2 IgG antibodies detected.

## Specimen collection and test ordering

Human Serum is acceptable for testing patient specimens. Plasma is not an acceptable specimen for testing. For detailed information regarding test ordering at PHO’s laboratory, including testing indications, specimen collection, and submission guidance, please refer to the Test Information Index on our website at [publichealthontario.ca/specimencollection](http://publichealthontario.ca/specimencollection) for each of the following:

- [Cytomegalovirus - Serology](#)
- [Epstein Barr Virus \(EBV\) - Serology](#)
- [Herpes simplex virus - Immunity Serology](#)
- [Measles - Serology](#)
- [Mumps - Serology](#)
- [Rubella - Serology](#)
- [Varicella zoster virus- Serology](#)

## Interpretation of results

This change in methodology will not affect the clinical interpretation of the results. As with all lab tests, results should be interpreted in conjunction with the clinical signs, symptoms and history of the patient.

## References

- [CDC CMV Overview](#)
- [CDC EBV Overview](#)
- [WHO -HSV Fact Sheet](#) and [CDC Genital Herpes](#)
- [Measles: for health professionals](#)
- [Mumps: for health professionals](#)
- [Rubella : for health professionals](#)
- [Varicella : for health professionals](#)
- [Canadian Immunization guide](#)

## For further information

- Contact the PHO Laboratory Customer Service Centre at 416-235-6556 or 1-877-604-4567 (toll-free), or by email at [customerservicecentre@oahpp.ca](mailto:customerservicecentre@oahpp.ca)
- For PHO Laboratory specimen collection information and previous Lababstracts, refer to [publichealthontario.ca/test directory](http://publichealthontario.ca/test directory)
- The current version of the PHO Laboratory General Test Requisition and other forms are available at [publichealthontario.ca/Requisitions](http://publichealthontario.ca/Requisitions)
- To subscribe to future Lababstracts, [register on our website](#)
- To register for Autofax and receive laboratory reports by fax directly from our laboratory information system as soon as they are released, contact the PHOL Customer Service Centre.