

Lababstract - April 2013

Measles, Mumps, Rubella (MMR) and Varicella-Zoster Virus (VZV) Immune Status Serology

Changes to the Reporting of MMR and VZV IgG results when the reason for testing is the Determination of Immunity/Immune Status

To Health Care Providers:

Measles, Mumps, Rubella and Varicella – Zoster IgG antibody screening is a frequently ordered test panel for the determination of immunity. Currently only qualitative test results are reported e.g. Measles IgG non-reactive, indeterminate or reactive. Effective April 2013, in addition to the qualitative result, the Public Health Ontario Laboratories (PHOL) will also report a quantitative unit value for the level of specific IgG antibody detected along with an interpretation of the patient's immune status based on the unit value obtained.

The following table provides information on the units of measurement for each assay and the interpretation of the level of IgG reported.

Guidelines for the Interpretation of Measles, Mumps, Rubella and Varicella-Zoster Virus Quantitative IgG Antibody Results

TEST	UNIT OF MEASUREMENT	*ANTIBODY RANGES	ANTIBODY STATUS**
Measles	mIU/mL (Milli-international Units /Millilitre)	<200	Non-reactive
		≥200 - <275	Indeterminate
		≥275	Reactive
Mumps	RU/mL (Relative Units /Millilitre)	<16	Non-reactive
		≥16 - <22	Indeterminate
		≥22	Reactive
Rubella	IU/mL (International Units /Millilitre)	<5	Non-reactive
		≥5 - <10	Indeterminate
		≥10	Reactive
Varicella-Zoster Virus	mIU/mL (Milli-International Units /Millilitre)	<80	Non-Reactive
		≥80 - <110	Indeterminate
		≥110	Reactive

Measles, Mumps, Rubella and Varicella-Zoster Virus Immune Status Serology (Continued)

**The cut-off antibody values for measles, rubella and varicella-zoster virus serology are based on World Health Organization (WHO) standards. As there is no WHO standard for mumps serology, the cut-off values are based on previously published literature.*

Quantitative IgG results will **only** be provided when the reason for testing, as indicated on the PHOL requisition, is for the determination of immunity/immune status. When completing the PHOL requisition, please indicate clearly which of the Measles, Mumps, Rubella, and/or Varicella Zoster Virus IgG antibody you are requesting and ensure that either IgG testing alone is being requested or that the immune status box is checked. If the box marked "Diagnosis" on the requisition is incorrectly checked you may not receive quantitative IgG results.

****INTERPRETATION OF IgG ANTIBODY REACTIVITY**

N.B. these interpretations assume the absence of acute or recent infection.

- Non-Reactive: No evidence of immunity. (Indicates susceptibility)
- Indeterminate: Antibody levels in the indeterminate range for this assay may be insufficient to confer immunity.

The interpretation of indeterminate serologic results (which represent values at or near the cut-off between negative and positive results) is difficult. In a recently exposed individual, an indeterminate result may represent a rising antibody level due to infection. In a previously immunized individual, an indeterminate result may represent a borderline level of protection or falling antibody level due to waning immunity. A follow-up sample may be considered if indicated clinically to determine if there is a change in the individual's antibody level over time.

- Reactive: Evidence of past infection / vaccination; evidence of immunity.

A quantitative IgG antibody result alone cannot be used to diagnose or rule out acute or recent infection. The serological diagnosis of infection requires testing for both specific IgG and IgM antibodies.

For further information:

- Contact the PHOL Customer Service Centre at 416-235-6556 or 1-877-604-4567 (toll-free) or by email at CustomerServiceCentre@oahpp.ca
- For the PHOL Specimen Collection Guide and previous Lababstracts, refer to <http://www.oahpp.ca/services/public-health-laboratories.html>
- The current version of the PHO laboratory requisition form is available at <http://www.oahpp.ca/resources/requisitions.html>
- To subscribe to future Lababstracts, email lababstracts@oahpp.ca