



MLS: Laboratory Update
***Cryptosporidium* Update**
August 23, 2010

Purpose of this Message

To inform the laboratory community about a recent paper published on *Cryptosporidium* rapid assays, specifically reiterating the recommendation to confirm *Cryptosporidium* rapid assay positive specimens with traditional microscopy.

Results of Recent Study

Submission of clinical materials from positive *Cryptosporidium* specimens to the Minnesota Department of Health Public Health Laboratory (MDH-PHL) is required in accordance with state communicable disease rules. Additional testing of these submitted materials is performed at the MDH-PHL with the results being used to aid public health surveillance. In a paper published in the April 15, 2010 edition of *Clinical Infectious Diseases: Evaluation of the Positive Predictive Value of Rapid Assays Used by Clinical Laboratories in Minnesota for the Diagnosis of Cryptosporidiosis* <http://www.journals.uchicago.edu/doi/pdf/10.1086/651423>, MDH epidemiologists and laboratorians reported on an evaluation of rapid assays used by Minnesota clinical laboratories for the diagnosis of cryptosporidiosis. In 2008, there were 235 cases of cryptosporidiosis reported to MDH; clinical materials were submitted from 179 cases (76%). The MDH-PHL confirmed the presence of *Cryptosporidium* in 115 specimens, yielding an overall positive predictive value (PPV) of 64% for testing at the submitting laboratories.

The overall PPV was 56% for rapid assays versus 97% for nonrapid assays (refer to paper for definitions). The PPV for rapid assays was only 34% in January-May, historically a low prevalence season for cryptosporidiosis. The lower positive predictive values observed may be due to improper storage of test kits, use of unapproved transport media, improper dilution of unpreserved specimens, error in performing the test or reading the results, or problems with the antibody in the assays. Even though rapid assays can be used as a screening test in higher prevalence populations, it is recommended that positives be confirmed with traditional microscopy.

Submission of “clinical materials” (stool) from cryptosporidiosis cases – MDH reporting rules

This is also a reminder that submission of “clinical materials” (stool) from cryptosporidiosis cases is required according to MDH reporting rules. MDH-PHL performs molecular genotyping of all specimens positive for *Cryptosporidium*. Further subtyping of strains is also done, based on genetic polymorphisms.

This testing enhances outbreak detection, ultimately allowing prevention of ongoing illness due to common source contamination. In addition, it provides information for a better understanding of the epidemiology of the disease so that control strategies can be developed and implemented.

Please Help Us Serve You Better

When laboratories submit samples to MDH-PHL for *Cryptosporidium* testing, it is often a challenge for MDH-PHL to distinguish why the specimen is being submitted. MDH-PHL accepts stool for:

- 1) Cryptosporidiosis cases as required by MDH reporting rules
- 2) Confirmation of positive rapid screening test results
- 3) Primary detection of *Cryptosporidium*

In order to be clear about which reason a specimen is being submitted, please reference the following table for specimen submission directions *Guidelines for Cryptosporidium Specimen Submission to the Minnesota Department of Health (August 2010)* on the MLS website at:

<http://www.health.state.mn.us/divs/phl/mls/cryptosub2010aug.pdf>

Who at MDH should be contacted with questions?

Laboratory questions: Billie Anne Juni (651) 201-5035

Transport questions: Ruth Rutledge (651) 201-4953

Epidemiology or treatment: Trisha Robinson or Dr. Kirk Smith (651) 201-5414

Thank you for your continued assistance with *Cryptosporidium* surveillance in the State Of Minnesota

Paula M. (Snippes) Vagnone, MT (ASCP)
Program Advisor, Minnesota Laboratory System
Public Health Laboratory, Minnesota Department of Health
Phone: 651-201-5581
paula.snippes@state.mn.us
www.health.state.mn.us/mls

Trisha Robinson, MPH
Epidemiologist
Acute Disease Investigation and Control, Minnesota Department of Health
Phone: 651-201-5639
trisha.robinson@state.mn.us

This is an update from the Minnesota Department of Health – Public Health Laboratory (MDH-PHL) and the Minnesota Laboratory System (MLS). This message is being sent to MLS laboratory contacts serving Minnesota residents. You are not required to reply to this message.

****Please forward this to all appropriate personnel within your institution and Health System****

The content of this message is intended for public health and health care personnel and response partners who have a need to know the information to perform their duties. It is for official use only. Do not distribute beyond the intended recipient groups as described in this message.