

Health Advisory:

Cryptosporidiosis Identified in the Greater Metropolitan St. Louis Area

August 6, 2010

This document will be updated as new information becomes available. The current version can always be viewed at <http://www.dhss.mo.gov>

The Missouri Department of Health & Senior Services (DHSS) is now using 4 types of documents to provide important information to medical and public health professionals, and to other interested persons:

Health Alerts convey information of the highest level of importance which warrants immediate action or attention from Missouri health providers, emergency responders, public health agencies, and/or the public.

Health Advisories provide important information for a specific incident or situation, including that impacting neighboring states; may not require immediate action.

Health Guidances contain comprehensive information pertaining to a particular disease or condition, and include recommendations, guidelines, etc. endorsed by DHSS.

Health Updates provide new or updated information on an incident or situation; can also provide information to update a previously sent Health Alert, Health Advisory, or Health Guidance; unlikely to require immediate action.

Health Advisory
August 6, 2010

**FROM: MARGARET T. DONNELLY
DIRECTOR**

SUBJECT: Cryptosporidiosis Identified in the Greater Metropolitan St. Louis Area

The Missouri Department of Health and Senior Services (DHSS) would like to alert health care providers about a recent increase in reported cryptosporidiosis cases in the greater metropolitan St. Louis area. Local public health officials have identified cryptosporidiosis outbreaks associated with two area swimming pools. Officials in Illinois and Missouri are currently investigating illnesses in four groups of persons who were at these swimming pools. Attack rates among members of these groups have been as high as 100% in swimmers <30 years old.

The purpose of this DHSS Health Advisory is to: 1) increase awareness among medical providers that cryptosporidiosis has been associated with swimming pools in the greater St. Louis area, and 2) to review current diagnostic, treatment, and prevention recommendations.

Clinical Manifestations

Cryptosporidium is a parasite found in the intestine of infected humans and animals. Transmission is via the fecal-oral route, which includes person-to-person, animal-to-person, waterborne, and foodborne transmission. Frequent non-bloody, watery diarrhea; vomiting; and low-grade fever are the most common manifestations of cryptosporidiosis. Other symptoms/signs include stomach cramps, nausea, fatigue, loss of appetite, and weight loss. Illness usually lasts from 1 to 20 days (mean is 10 days). Infected persons may have mild symptoms or may be asymptomatic. In persons with weakened immune systems, *Cryptosporidium* infection can result in very serious illness, and even death.

Incubation period ranges from 2 to 14 days, and is usually about 7 days.

As long as *Cryptosporidium* is present in the stool, a person can transmit the parasite to others. In most persons, shedding of *Cryptosporidium* ends within 2 weeks.

Diagnostic Testing

Unfortunately, routine laboratory examination of stool for ova and parasites may not detect *Cryptosporidium* species. The formalin ethyl acetate stool concentration method is recommended before staining stool with a modified Kinyoun acid-fast stain. Direct immunofluorescent assay (DFA) for detection of oocysts in stool, and enzyme immunoassay (EIA) for detecting antigen in stool, are available commercially. The DFA is considered the "Gold Standard" of diagnostic testing, and is routinely performed by the Missouri State Public Health Laboratory (MSPHL) on all stools sent in for parasite examination. With EIA methods, false-positive and false-negative results can occur, and confirmation by microscopy should be considered. Because shedding can be intermittent, at least 3 stool specimens collected on separate days should be examined before considering test results to be negative. Oocysts are small (4–6 µm in diameter) and can be missed in a rapid scan of a slide. Organisms also can be identified in intestinal biopsy tissue or intestinal fluid. Polymerase chain reaction (PCR) assays are used to identify species and genotype.

Office of the Director
912 Wildwood
P.O. Box 570
Jefferson City, MO 65102
Telephone: (800) 392-0272
Fax: (573) 751-6041
Web site: <http://www.dhss.mo.gov>

MSPHL does *Cryptosporidium* testing on stool as part of its routine intestinal parasite exam. MSPHL can also provide stool collection kits and instructions. For more information, including contact information, go to MSPHL's Web site at <http://www.dhss.mo.gov/Lab/Microbiology/Parasitology.html>.

Treatment

Specific treatment recommendations are available in the American Academy of Pediatrics' *Red Book*. The 2009 *Red Book* provides the following: Generally, immunocompetent people need no specific therapy. A 3-day course of nitazoxanide oral suspension has been approved by the US Food and Drug Administration for treatment of immunocompetent children beginning at 12 months of age and adults with diarrhea associated with cryptosporidiosis. Patients with acquired immunodeficiency syndrome with immune reconstitution resulting from highly active antiretroviral therapy frequently will have clearance of *Cryptosporidium* organisms. Paromomycin, alone or with azithromycin, is minimally effective. In immunocompromised patients with cryptosporidiosis, oral administration of human Immune Globulin Intravenous or bovine colostrum has been beneficial. In HIV-infected patients, antiretroviral therapy-associated improvement in CD4+ T-lymphocyte count can improve the course of disease.

Nitazoxanide (Alinia) significantly shortens the duration of diarrhea. Also, lactose intolerance is common in cryptosporidiosis, and lactose-containing foods should be avoided.

Reporting

Health care providers are requested to assist in the control of cryptosporidiosis through immediate reporting of suspect cases by telephone to their local public health agency, or to DHSS at 800-392-0272.

Additional Information

For more information, contact DHSS' Bureau of Communicable Disease Control and Prevention at 573-751-6113 or 866-628-9891 (8-5 Monday through Friday), or call your local public health agency. See also the Centers for Disease Control and Prevention's (CDC's) cryptosporidiosis Web site at <http://www.cdc.gov/crypto/>.

Information for Patients

To reduce the risk of diseases such as cryptosporidiosis when swimming:

- Refrain from swimming when you have diarrhea.
- Avoid swallowing pool water or even getting it in your mouth.
- Shower before swimming and wash your hands after using the toilet or changing diapers. Your child may need help with handwashing.
- Take children on bathroom breaks or check diapers often.
- Change diapers in a bathroom and not at poolside and thoroughly clean the diaper changing area.
- Avoid putting water toys in mouth.

Facts About Crypto and Swimming Pools (CDC)

<http://www.cdc.gov/healthywater/pdf/swimming/resources/cryptosporidium-factsheet.pdf>

Additional information for the general public on cryptosporidiosis is available at:

http://www.cdc.gov/crypto/gen_info/index.html

References

Academy of Pediatrics. "Cryptosporidiosis". In: Pickering L, ed. *Red Book: 2009 Report of the Committee on Infectious Diseases*. 27th Ed. Elk Grove Village, IL: American Academy of Pediatrics; 2009: 272-3.

Turabelidze G, Lin M, Weiser T, Zhu BP. Communitywide outbreak of cryptosporidiosis in rural Missouri associated with attendance at child care centers. *Arch Pediatr Adolesc Med* 2007;161(9):878-83.

<http://archpedi.ama-assn.org/cgi/content/full/161/9/878>