Purpose of this message
To inform laboratories about the best way to handle specimens (mainly CSF) if primary amebic meningoencephalitis (PAM) is suspected in a patient.

Action Items – Please read the laboratory information below for proper handling of suspected patients’ samples.

Background
The Minnesota Department of Health (MDH) is investigating the death of an elementary school aged child due to suspected primary amebic meningoencephalitis (PAM), a very rare form of meningoencephalitis caused by an amoeba associated with warm freshwater. Confirmation will be made with the assistance of the Centers for Disease Control and Prevention.

The organism is known as Naegleria fowleri, an amoeba commonly found in warm freshwater and soil. It causes a very rare but severe brain infection and is nearly always fatal. The organism infects people by entering the body through the nose. Generally, this occurs when people use warm freshwater for activities such as swimming and diving.

IMPORTANT Laboratory Information
Motile amebae can often be visualized in a wet-mount preparation of a freshly-centrifuged specimen of fresh cerebrospinal fluid (CSF). Samples must NOT be frozen or refrigerated or the amebas will be killed. Fixation and staining with Giemsa-Wright and modified trichrome stain are recommended. If Naegleria are identified in the CSF, the diagnosis of PAM should be subsequently confirmed with culture, PCR, or immunohistochemical tests. MDH-Public Health Laboratory is available for consultation. Please direct laboratory questions to Paula Vagnone at 651-201-5581.

Other Clinical Information
In its early stages, symptoms of PAM may be similar to symptoms of bacterial or viral meningitis, including headache, fever, nausea, or vomiting. The incubation period may vary from 2 to 15 days. Later symptoms can include stiff neck, confusion, lack of attention to people and surroundings, loss of balance, seizures, and hallucinations. After the start of symptoms, the disease progresses rapidly and usually causes death within about 5 days (range 1 to 12 days).

The only previously confirmed case of this infection in Minnesota was reported in August of 2010. Health officials acknowledged that the current suspect case child had gone swimming at multiple locations in Washington County in the 2 weeks prior to illness onset, including Lily Lake in Stillwater. The previous Minnesota case’s likely source of infection was Lily Lake; Lily Lake has been closed to swimming until further notice.

No prophylactic treatment is available for asymptomatic individuals. Consultation on suspected PAM cases, including possible treatment therapies, is available from the MDH Acute Disease Investigation and Control Section at 651-201-5414 or 1-877-676-5414.


Questions on Naegleria fowleri can be directed to the MDH Acute Disease Investigation and Control Section at 651-201-5414 or 1-877-676-5414.
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**

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