

Instructions for Clinical Teams Regarding Diagnostic Testing – Outbreak of Unknown Meningitis

As of October 3, 2012

The etiology of this cluster of meningitis has not yet been determined. Potential infectious causes may include fungal pathogens as well as less commonly identified bacteria. The following algorithm has been developed to help guide clinicians in their diagnostic work-up of a patient with meningitis of unknown etiology who meets the outbreak definition.¹ These instructions are meant to supplement routine laboratory and microbiologic test deemed necessary by the clinical team and should not replace existing diagnostic protocol.

CSF:

When possible, collect large volume of CSF (10-20mL) for testing. Please save a minimum of 10 mL of CSF to send to state health departments and CDC for further testing.² This should be an unspun sample or a fresh unadulterated sample.

In addition to routine gram stain and bacterial cultures (including aerobic and anaerobic), fungal and AFB smears and cultures should be obtained.

All cultures should be held for at least 2-3 weeks prior to discarding

Specifically for the work-up of possible fungal pathogens:

- If patients have intraventricular shunts/drains, obtain large volume of CSF to culture for fungi from this source
- Send CSF sample for Aspergillus galactomannan assay if available³

Serum:

Send specimen for Aspergillus galactomannan assay

Other tests:

In addition to routine blood cultures, consider obtaining fungal and AFB blood cultures. Other potentially infected fluid collections should be sampled (e.g., aspiration of epidural abscess) and sent for microbiologic testing as described above for CSF specimens (including fungal smear).

Tissue specimens (including post mortem specimens):

Any relevant tissue specimens sent for histopathology should be stained and reviewed for infectious agents, including fungi (silver stain). Please save specimens to send to state health departments and CDC for further evaluation².

Please send available autopsy specimens to CDC for further evaluation. See attached guidance for specimen collection and processing².

¹A person with meningitis of sub-acute onset (1-4 weeks) following epidural injection after July 1, 2012. Meningitis is defined as having 1 or more of the following symptoms: HA, fever, stiff neck, or photophobia **and** a CSF profile consistent with meningitis (elevated protein/ low glucose/pleocytosis).

²Please contact the State Health Department and State Public Health Laboratory to coordinate shipment of specimens to CDC for further testing. Please refer to the attached documents for handling of specimens and shipment instructions.

³ The Aspergillus galactomannan assay (Platelia; BioRad) has been FDA approved only for serum. However there are some published case series reporting its utility in identifying cases of Aspergillus meningitis, where the test has been done on CSF samples on a research basis.

