

**Alabama Department of Public Health
Alabama Emergency Response Technology (ALERT)
Health Alert Network (HAN)**

June 2, 2023

Call for Cases: Important Updates on Outbreak of Fungal Meningitis in U.S. Patients Who Underwent Surgical Procedures under Epidural Anesthesia in Matamoros, Mexico

The Alabama Department of Public Health (ADPH) is issuing this Health Alert Network (HAN) Health Update to supplement the ADPH HAN issued on May 23, 2023. This notification provides updates on the status of the ongoing fungal meningitis outbreak and highlights interim recommendations for diagnosis and treatment.

Key Updates

- Three U.S. laboratories and the Mexican national laboratory have detected fungal signals consistent with the *Fusarium solani* species complex from the cerebrospinal fluid (CSF) of patients receiving follow-up care in Mexico or the United States.
- Regardless of symptoms, patients who underwent medical or surgical procedures under epidural anesthesia at River Side Surgical Center or Clinica K-3 in Matamoros, Mexico, since January 1, 2023, should be evaluated for fungal meningitis by a lumbar puncture (LP) and magnetic resonance imaging (MRI) of the brain as soon as possible.
- Healthcare providers should immediately report possible fungal meningitis cases possibly related to this outbreak to their state health department's Healthcare-associated Infections (HAI) Program Manager, Melanie Roderick, at Melanie.Roderick@adph.state.al.us.

As of June 1, 2023, a multistate outbreak of fungal meningitis is ongoing among patients who underwent procedures under epidural anesthesia in the city of Matamoros, Mexico, at two clinics: River Side Surgical Center and Clinica K-3. Three U.S. laboratories (CDC Mycotic Diseases Branch's Laboratory, UCSF Clinical Microbiology Laboratory, and UW Medicine Molecular Microbiology laboratory) and the Mexican national laboratory (InDRE) have detected fungal signals consistent with the *Fusarium solani* species complex from the cerebrospinal fluid (CSF) of patients receiving follow-up care in Mexico or the United States. In addition, elevated levels of beta-D-glucan, a biomarker of fungal infection, have been detected in the CSF of at least six patients. A total of 212 residents in 25 U.S. states and jurisdictions have been identified who might be at risk of fungal meningitis because they received epidural anesthesia at the clinics of interest in 2023. Twenty-seven U.S. cases have been diagnosed and three have died. Efforts by public health officials are ongoing to find and notify additional patients who might be at risk.

Healthcare providers should be aware that all patients, including those without symptoms, who underwent medical or surgical procedures under epidural anesthesia at River Side Surgical Center or Clinica K-3 in Matamoros, Mexico, since January 1, 2023, should be evaluated for fungal meningitis as soon as possible. Evaluation for fungal meningitis includes a lumbar puncture (LP, also known as spinal tap) and magnetic resonance imaging (MRI) of the brain.

Recommendations for Healthcare Providers

- Recommendations for diagnosis and management of patients with possible fungal meningitis associated with epidural anesthesia administered in Matamoros, Mexico, are available on [CDC's website](#), which will be updated as new information becomes available.
 - Current recommendations state that *regardless of symptoms*, all patients who underwent a medical or surgical procedure under epidural anesthesia in Matamoros, Mexico, after January 1, 2023, should receive magnetic resonance imaging [MRI] (to assess for meningeal enhancement, vasculitis, stenosis, hemorrhage, or ischemia) and a diagnostic LP unless contraindicated (e.g., because of skin infection over the puncture site, brain mass causing increased intracranial pressure).
 - This recommendation is based on the high case-fatality rate (>40%) of central nervous system *Fusarium* infections observed during a recent healthcare-associated outbreak of fungal meningitis in Durango, Mexico^{1,2}, and the finding that some patients during that outbreak who had few or no symptoms were still found to have fungal meningitis based on CSF test results (data not published).
 - Early detection and treatment of fungal meningitis is critical to improving patient outcomes, particularly because patients whose symptoms are initially mild or absent may quickly worsen without treatment³.
 - At least six patients have had high positive CSF beta-D-glucan values, which suggests fungal infection. Accordingly, clinicians should consider ordering this test. **Detailed information on this and other CSF laboratory tests to order are available on this website: [Interim Recommendations](#).**
 - Patients with a normal LP result should continue to monitor themselves for symptoms for at least 4 weeks and return to the emergency room if they develop new or worsening symptoms. Clinicians can consider repeating the LP at 2 weeks after the initial first LP to ensure that an infection has not developed.

Healthcare providers should immediately report possible fungal meningitis cases possibly related to this outbreak to their state health department's Healthcare-associated Infections (HAI) Program Manager, Melanie Roderick, at Melanie.Roderick@adph.state.al.us

- If fungal meningitis is suspected, treatment should be initiated as soon as possible after obtaining CSF; treatment should not be withheld because of negative fungal culture or (1,3)-beta-D-glucan results. Consultation with an infectious disease specialist is recommended. To be connected with infectious disease clinicians with experience in treating fungal meningitis, clinicians can contact CDC's Mycotic Diseases Branch (fungaloutbreaks@cdc.gov).
- Treatment should involve broad-spectrum antifungal medications that have adequate central nervous system penetration. See [Interim Recommendations](#).

For More Information:

- [Fungal meningitis outbreak CDC website](#)
- [Fungal Infections Following Surgical Procedures in Mexico – Alert – Level 2, Practice Enhanced Precautions – Travel Health Notices | Travelers' Health | CDC](#)
- [Detailed interim recommendations](#) (clinicians)

- [Mexico Traveler Health](#)
- [Medical Tourism CDC Yellow Book 2024](#) (clinicians)
- [Traveling Abroad for Medical Care](#) (travelers)
- Visit [CDC-INFO](#) or call CDC-INFO at 1-800-232-4636

References

1. Pan American Health Organization. Technical Note: Meningitis of unknown origin Mexico. <https://www.paho.org/en/documents/technical-note-meningitis-unknown-origin-mexico>.
2. Pulice, C. Death toll from mysterious meningitis outbreak in Mexico at 35. Reuters. <https://www.reuters.com/business/healthcare-pharmaceuticals/death-toll-mysterious-meningitis-outbreak-mexico-35-2023-02-06/>. February 6, 2023.
3. Schwartz S, Kontoyiannis DP, Harrison T, Ruhnke M. Advances in the diagnosis and treatment of fungal infections of the CNS. *Lancet Neurol*. 2018 Apr;17(4):362-72.