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**CDC HEALTH ADVISORY**

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Update: Multistate Outbreak of Meningitis and Stroke  
Associated with Potentially Contaminated Steroid  
Medication

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**Summary**

The Centers for Disease Control and Prevention (CDC) and the Food and Drug Administration (FDA) continue to work closely with state public health departments on a [multistate investigation of fungal meningitis](#) among patients who received an epidural steroid injection. Some of these patients also suffered strokes that may have resulted from their infection. These cases are associated with a potentially contaminated steroid medication prepared by New England Compounding Center (NECC), located in Framingham, Mass. This HAN notice provides updated information about the investigation (including a change in the case definition\*), laboratory findings, an expanded voluntary recall of products, and recommendations for clinicians

**Background**

CDC, in collaboration with FDA, state public health departments, and state boards of pharmacy, has been investigating an ongoing outbreak of meningitis associated with a potentially contaminated steroid medication, preservative-free methylprednisolone acetate (80mg/ml) prepared by New England Compounding Center, located in Framingham, Mass. CDC and state public health departments are actively coordinating outreach to patients who have been exposed to this potentially contaminated medication.

As of October 8, 2012, a total of 105 cases, including 8 deaths, have been reported in 9 states: Florida (4 cases), Indiana (11 cases), Maryland (5 cases, including 1 death), Michigan (21 cases, including 2 deaths), Minnesota (3 cases), North Carolina (2 cases), Ohio (1 case), Tennessee (35 cases, including 4 deaths), and Virginia (23 cases, including 1 death). Fungus has been identified in specimens obtained from at least nine patients, one of whom also had *Propionibacterium acnes*, of unclear clinical significance, isolated from a post-mortem central nervous system specimen. In addition to an *Aspergillus* spp. isolated from a Tennessee patient, the fungus *Exserohilum rostratum* was identified in other patients, indicating the possibility of infections caused by multiple organisms. Fungal meningitis is not transmitted from person to person.

The clinical presentation of infected patients remains consistent with the prior report: onset of symptoms is typically 1 to 4 weeks following injection with a variety of symptoms, including fever, new or worsening headache, nausea, and new neurological deficit (consistent with deep brain stroke). Some of these patients' symptoms were very mild in nature. Cerebrospinal fluid (CSF) obtained from these patients has typically shown elevated white cell count (with a predominance of neutrophils), low glucose, and elevated protein. As of October 8, no infections resulting from injection into a peripheral joint space have been reported.

### **Product Recall**

On September 25, 2012, the New England Compounding Center located in Framingham, MA voluntarily recalled the following lots of methylprednisolone acetate (PF) 80mg/ml:

- Methylprednisolone Acetate (PF) 80 mg/ml Injection, Lot #05212012@68, BUD 11/17/2012
- Methylprednisolone Acetate (PF) 80 mg/ml Injection, Lot #06292012@26, BUD 12/26/2012
- Methylprednisolone Acetate (PF) 80 mg/ml Injection, Lot #08102012@51, BUD 2/6/2013

All infections detected as of October 8 have occurred after injections with methylprednisolone acetate products from one of these lots. At this time, there is no evidence of infection related to other NECC products.

The FDA investigation into the NECC facility is ongoing. On October 5, [FDA reported](#) observing "fungal contamination by direct microscopic examination of foreign matter taken from a sealed vial of methylprednisolone acetate collected from the New England Compounding Center." Further analysis is ongoing. On October 6, NECC expanded its previous recalls to include all products currently in circulation that were compounded at and distributed from its facility in Framingham, Mass. More information about this recall is available at the [FDA website](#).

### **Recommendations**

- Physicians should contact (by phone or in person) **any patient who had an injection (e.g., spinal, joint) after May 21, 2012, using any of the following three recalled lots of preservative-free methylprednisolone acetate (80mg/ml) produced by NECC**, to determine if they are having symptoms:
  - Methylprednisolone Acetate (PF) 80mg/ml Injection, Lot# 05212012@68, BUD 11/17/2012
  - Methylprednisolone Acetate (PF) 80mg/ml Injection, Lot#06292012@26, BUD 12/26/2012
  - Methylprednisolone Acetate (PF) 80mg/ml Injection, Lot# 08102012@51, BUD 2/6/2013

Symptoms that should prompt diagnostic evaluation include: fever, new or worsening headache, neck stiffness, sensitivity to light, new weakness or numbness, increasing pain, redness or swelling at injection site. Some of the symptoms of patients who have ultimately been diagnosed

with meningitis have been mild and not classic for meningitis (e.g., new or worsening headache without fever or neck stiffness).

- Healthcare professionals should cease use of **any** product produced by NECC, all of which have been recalled.
  - **CDC is currently not asking clinicians to actively contact patients who received other products, beyond the previously listed medications, from NECC to assess for symptoms.** However, clinicians should remain vigilant, and report to the state public health department, any infection identified in a patient known to have received a product from NECC.
- CDC has **updated clinician guidance** addressing:
  - [Interim Instructions Diagnostic Testing and Specimen Submission to CDC](#)
  - [Interim Treatment Guidance for Central Nervous System and/or Parameningeal Infections Associated with Injection of Potentially Contaminated Steroid Products](#)
  - [Role of antifungal prophylaxis in asymptomatic patients](#)
  - [Role for lumbar puncture in asymptomatic patients](#)

\*[Case Definition](#) (note: the initial date for an epidural/joint steroid injection has been revised from July 1, 2012, to May 21, 2012).

1. A person with meningitis<sup>1</sup> of sub-acute onset (1-4 weeks) following epidural injection after May 21, 2012.
2. A person with basilar stroke 1-4 weeks following epidural injection after May 21, 2012<sup>2</sup>, who has not received a diagnostic lumbar puncture.
3. A person with evidence of spinal osteomyelitis or epidural abscess at the site of an epidural injection diagnosed 1-4 weeks after epidural injection after May 21, 2012.
4. A person with septic arthritis<sup>3</sup> diagnosed 1-4 weeks following steroid joint injection after May 21, 2012.

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<sup>1</sup>Clinically diagnosed meningitis meaning one or more of the following symptoms: headache, fever, stiff neck, or photophobia **and** a CSF profile consistent with meningitis (pleocytosis +/- low glucose, elevated protein).

<sup>2</sup>These people, if possible, should have a lumbar puncture.

<sup>3</sup>Clinically diagnosed septic arthritis meaning new or worsening pain with presence of effusion or new or worsening effusion.

### **Additional Information**

- [Multistate Meningitis Outbreak Investigation](#)
- [Meningitis and Stroke Associated with Potentially Contaminated Product](#)
- [CDC Website on Fungal Diseases](#)
- [FDA Statement on Fungal Meningitis Outbreak](#)