

# This is an official **CDC HEALTH UPDATE**

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## **Source Identified and Case Definition Established: Multistate Investigation of Non-travel Associated *Burkholderia pseudomallei* Infections (Melioidosis) in Four Patients: Georgia, Kansas, Minnesota, and Texas – 2021**

### **Summary**

Whole genome sequencing (WGS) at the Centers for Disease Control and Prevention (CDC) confirmed that the strain of *Burkholderia pseudomallei* in bottles of aromatherapy room spray matches the bacterial strain that sickened all four patients. The outbreak strain was identified in a bottle of “Lavender & Chamomile” scented room spray found in the home of the Georgia resident who was infected and died from *B. pseudomallei* infection (melioidosis) in July 2021. That same outbreak strain was also identified in an unopened bottle of the same scented product recalled from a Walmart store in a different state.

This Health Alert Network (HAN) Health Update is an update to [HAN Health Update 455: Source Implicated in Fatal Case in Georgia: Multistate Investigation of Non-travel Associated \*Burkholderia pseudomallei\* Infections \(Melioidosis\) in Four Patients: Georgia, Kansas, Minnesota, and Texas—2021](#) that CDC issued on October 22, 2021. The purpose of this HAN Update is to share an interim case definition, case notification guidance, and case reporting guidance for public health jurisdictions investigating additional potential cases related to this outbreak.

This investigation was previously described in [HAN Health Update 448: New Case Identified: Multistate Investigation of Non-travel Associated \*Burkholderia pseudomallei\* Infections \(Melioidosis\) in Four Patients: Georgia, Kansas, Minnesota, and Texas—2021](#) that was issued on August 09, 2021, and [HAN Health Advisory 444: Multistate Investigation of Non-travel Associated \*Burkholderia pseudomallei\* Infections \(Melioidosis\) in Three Patients: Kansas, Texas, and Minnesota—2021](#) that was issued on June 30, 2021.

### **Background**

Currently, four cases have been identified as part of this outbreak. The contaminated product linked to the four cases is the *Better Homes and Gardens-branded Essential Oil Infused Aromatherapy Room Spray with Gemstones* “Lavender & Chamomile” scent. This product was sold online nationwide through Walmart and distributed to a limited number of Walmart stores between February and October 21, 2021. Testing for the presence of *B. pseudomallei* is underway for the five other scents under the same brand with Gemstones including “Lemon & Mandarin”, “Lavender”, “Peppermint”, “Lime & Eucalyptus”, and “Sandalwood & Vanilla.”

People who have the Better Homes & Gardens Aromatherapy Room Spray “Lavender & Chamomile” with Gemstones product, or any of the other recalled scents with Gemstones (Lemon & Mandarin, Lavender, Peppermint, Lime & Eucalyptus, and Sandalwood & Vanilla) in their homes should follow the precautions listed in [HAN Health Update 455: Source Implicated in Fatal Case in Georgia: Multistate Investigation of Non-travel Associated \*Burkholderia pseudomallei\* Infections \(Melioidosis\) in Four Patients: Georgia, Kansas, Minnesota, and Texas—2021](#) that was issued on October 22, 2021.

*Burkholderia pseudomallei*, the causative agent of melioidosis, is a [Tier 1 select agent](#) that can infect animals and humans. Cases are most common in areas of the world with tropical and sub-tropical

climates. Normally, approximately one dozen cases are reported to CDC annually that predominantly occur in people returning from a country where the disease is endemic.

### **Recommendations**

For the purposes of this outbreak, an interim case definition (adapted from an existing national case definition<sup>1</sup>) and interim suggestions for case notification and reporting for public health jurisdictions investigating additional potential cases related to this outbreak are provided here:

### **Exposure Definition**

#### ***Product Description***

[Better Homes and Gardens-branded Essential Oil Infused Aromatherapy Room Spray with Gemstones](#) in the following scents:

- Lavender & Chamomile
- Lemon & Mandarin
- Lavender
- Peppermint
- Lime & Eucalyptus
- Sandalwood & Vanilla

This product list is preliminary and may change as additional information from the investigation becomes available.

#### ***Exposure is defined as:***

- being in the room while the product is being sprayed
- having directly “sniffed” or inhaled from the product bottle
- having direct contact with an item (such as pillowcases or other linens) on which the product has been sprayed

#### ***Clinical Description***

Clinical presentation of the disease varies on a case-by-case basis. The following characteristics are typical of melioidosis:

- An acute or chronic localized infection which may or may not include symptoms of fever and muscle aches. Such infection often results in ulcer, nodule, or skin abscess.
- An acute pulmonary infection with symptoms of high fever, headache, chest pain, anorexia, and general muscle soreness.
- A bloodstream infection with symptoms of fever, headache, respiratory distress, abdominal discomfort, joint pain, muscle tenderness, or disorientation.
- A disseminated infection with symptoms of fever, neurological symptoms (e.g., altered mental status, headache, seizure, extremity weakness), muscle or joint pain, weight loss, or stomach or chest pain. Abscesses in the liver, lung, spleen, and prostate are often observed in patients diagnosed with disseminated infections; brain abscesses may also be seen.

### **Laboratory Criteria for Diagnosis**

#### ***Suspect Cases (Suspect Lab Evidence):***

- Evidence of titer result by IHA  $\geq 1:160$  on acute-phase serum specimen
- Evidence of titer result by IHA  $\geq 1:160$  on convalescent-phase serum specimen that is stable/unchanged from acute-phase serum specimen titer result obtained greater than or equal to 2 weeks apart.

#### ***Probable Cases (Presumptive Lab Evidence):***

- Evidence of a fourfold or greater rise in *B. pseudomallei* antibody titer by IHA between acute- and convalescent-phase serum specimens obtained greater than or equal to 2 weeks apart.

- Evidence of *B. pseudomallei* DNA (e.g., by LRN-validated polymerase chain reaction) in a clinical specimen collected from a normally sterile site (e.g., blood).

**Confirmed Cases (Definitive Lab Evidence):**

- Isolation and confirmation of *B. pseudomallei* from a clinical specimen of a case of severe febrile illness: culture of the organism may be done by blood, sputum, urine, pus, throat swab, swabs from organ abscesses or wounds, or tissue collected post-mortem.
  - Whole genome sequencing (WGS) and strain analysis links isolate to outbreak strain.
- Immunohistochemical (IHC) evidence of *B. pseudomallei* in a tissue specimen.

**Case Classification**

**Suspect Case:**

A case that meets the clinical description, meets one or more of the suspect lab criteria (suspect lab evidence), and meets any of the following:

- has known exposure to *B. pseudomallei* (see Exposure Definition, above)
- has an epidemiological link to a confirmed case
- there is no history of travel to a *B. pseudomallei* [endemic place](#)

**Probable Case:**

A case that meets the clinical description, meets one or more of the probable lab criteria (presumptive lab evidence), and meets any of the following:

- has known exposure to *B. pseudomallei* (see Exposure Definition, above)
- has an epidemiological link to a confirmed case
- there is no history of travel to a *B. pseudomallei* [endemic place](#)

**Confirmed Case:**

A case that meets either of the following:

- A case with or without a known exposure (see Exposure Definition, above), whose isolate from a clinical specimen is laboratory-confirmed, and WGS and strain analysis link isolate to outbreak strain.
- A case with a known exposure (see Exposure Definition, above), with no travel history to an [endemic place](#), whose isolate from a clinical specimen is laboratory-confirmed with no WGS results.
- A case with a known exposure (see Exposure Definition, above), and immunohistochemical evidence of *B. pseudomallei* in a tissue specimen.

**Case Reporting & Notification**

**Case Reporting to the Jurisdiction:**

Requirements follow local, state, tribal, and territorial laws and regulations, and may differ by jurisdiction; please follow jurisdictional guidance. Find your health department contact [here](#). Reporting of suspect, probable, and confirmed cases is recommended.

**Case Notification to CDC<sup>2</sup>:**

Immediate, Urgent: notification within 24 hours.

**Notification Criteria:**

When the source of infection is recognized as an exposure to the [Better Homes and Gardens-branded Essential Oil Infused Aromatherapy Room Spray with Gemstones](#) in the following scents:

- Lavender & Chamomile
- Lemon & Mandarin
- Lavender

- Peppermint
- Lime & Eucalyptus
- Sandalwood & Vanilla

#### What to Do:

The jurisdictional epidemiologist (or delegate) should call the CDC Emergency Operations Center (EOC) at (770)-488-7100 **within 24 hours** of the notification criteria being met.

#### For More Information

- [CDC Updates on this Outbreak](#)
- CPSC Product Recall: [Walmart Recalls Better Homes and Gardens Essential Oil Infused Aromatherapy Room Spray with Gemstones Due to Rare and Dangerous Bacteria; Two Deaths Investigated | CPSC.gov](#)
- Visit [CDC-INFO](#) or call CDC-INFO at 1-800-232-4636
- CDC 24/7 Emergency Operations Center (EOC) 770-488-7100
- CDC Bacterial Special Pathogens Branch: [bspb@cdc.gov](mailto:bspb@cdc.gov) or 404-639-1711
- [Signs and Symptoms | Melioidosis | CDC](#)
- Sample Submission Information: [Zoonoses and Select Agent Laboratory \(ZSAL\) | Bacterial Special Pathogens Branch | DHCPP | NCEZID | CDC](#)
- Contact your [health department](#) if you have any questions or suspect a patient may be infected with *B. pseudomallei*
- [CDC Health Alert Network \(HAN\) Health Advisory \(HAN 444\): Multistate Investigation of Non-travel Associated \*Burkholderia pseudomallei\* Infections \(Melioidosis\) in Three Patients: Kansas, Texas, and Minnesota—2021](#)
- [CDC Health Alert Network \(HAN\) Health Update \(HAN 448\): New Case Identified: Multistate Investigation of Non-travel Associated \*Burkholderia pseudomallei\* Infections \(Melioidosis\) in Four Patients: Georgia, Kansas, Minnesota, and Texas—2021](#)
- [CDC Health Alert Network \(HAN\) Health Update \(HAN 455\): Source Implicated in Fatal Case in Georgia: Multistate Outbreak of Non-travel Associated \*Burkholderia pseudomallei\* Infections \(Melioidosis\) in Four Patients: Georgia, Kansas, Minnesota, and Texas—2021](#)

#### References

<sup>1</sup>[Melioidosis Case Definition \(2012\)](#)

<sup>2</sup>[National Notification Process Guidelines](#)

*The Centers for Disease Control and Prevention (CDC) protects people's health and safety by preventing and controlling diseases and injuries; enhances health decisions by providing credible information on critical health issues; and promotes healthy living through strong partnerships with local, national, and international organizations.*

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#### Categories of Health Alert Network messages:

**Health Alert** Requires immediate action or attention; highest level of importance  
**Health Advisory** May not require immediate action; provides important information for a specific incident or situation  
**Health Update** Unlikely to require immediate action; provides updated information regarding an incident or situation  
**HAN Info Service** Does not require immediate action; provides general public health information

##This message was distributed to state and local health officers, state and local epidemiologists, state and local laboratory directors, public information officers, epidemiologists, HAN coordinators, and clinician organizations##