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**CDC Health Advisory**

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**Multistate Investigation of Non-travel Associated *Burkholderia pseudomallei* Infections (Melioidosis) in Three Patients: Kansas, Texas, and Minnesota—2021**

**Summary**

The Kansas Department of Health and Environment, the Texas Department of State Health Services, and the Minnesota Department of Health, with assistance from the Centers for Disease Control and Prevention (CDC), are investigating three cases of *Burkholderia pseudomallei* (melioidosis) infections. None of the patients' families reported a history of traveling outside of the continental United States.

Symptoms of melioidosis are varied and nonspecific and may include pneumonia, abscess formation, and/or blood infections. Due to its nonspecific symptoms, melioidosis can initially be mistaken for other diseases such as tuberculosis, and proper diagnosis and treatment may be delayed.

**Recommendations**

- Consider melioidosis in patients with a compatible illness even if they do not have a travel history to a disease-endemic country.
- Culture of *B. pseudomallei* from any clinical specimen is considered diagnostic for melioidosis. If melioidosis is suspected, culture blood, urine, throat swab, and, when relevant, respiratory specimens, abscesses, or wound swabs.
- When ordering specimen cultures to diagnose melioidosis, advise the laboratory that cultures may grow *B. pseudomallei*, and the laboratory personnel should observe appropriate laboratory safety precautions.

- Treatment of melioidosis consists of IV antibiotics (i.e., ceftazidime or meropenem) for at least two weeks. Depending on the response to therapy, IV treatment may be extended for up to eight weeks. Intravenous treatment is followed by oral trimethoprim-sulfamethoxazole (TMP/SMX) for 3-6 months to prevent relapse. Amoxicillin/clavulanic acid can be used in persons with a contraindication to or who cannot tolerate TMP/SMX<sup>1</sup>.
- Consider re-evaluating patients with isolates identified on automated systems as *Burkholderia* spp. (specifically *B. cepacia* and *B. thailandensis*), *Chromobacterium violaceum*, *Ochrobactrum anthropi*; and, possibly, *Pseudomonas* spp., *Acinetobacter* spp., and *Aeromonas* spp. Laboratory testing involving automated identification algorithms (e.g., MALDI-TOF, 16s, VITEK-2) may misidentify *B. pseudomallei* as another bacterium. The isolate from the Texas case was initially misidentified as *B. thailandensis* by MALDI-TOF.
- If *B. pseudomallei* is identified or an organism is suspicious for *B. pseudomallei*, contact your local public health department immediately. The health department can facilitate forwarding the isolate for confirmation to the closest reference laboratory and initiate a public health investigation.

## Background

Initial presentation among the three patients ranged from cough and shortness of breath, to weakness, fatigue, nausea, vomiting, intermittent fever, and rash on the trunk, abdomen, and face, later diagnosed with infectious encephalitis. The fatal case had several risk factors for melioidosis including chronic obstructive pulmonary disease (COPD) and cirrhosis and died ten days after being hospitalized. Genomic analysis of the strains suggests a common source, such as an imported product or animal; however, that source has not been positively identified to date.

*Burkholderia pseudomallei*, the causative agent of melioidosis, is a [Tier 1 select agent](#) which can affect both animals and humans. Cases are most common in areas of the world with tropical and sub-tropical climates. Most cases in the United States occur in persons returning from a country where the disease is endemic. These three cases are unusual because no recent travel outside the United States has been identified.

Melioidosis symptoms are nonspecific and vary depending on the type of infection. Symptoms may include localized pain or swelling, fever, ulceration, abscess, cough, chest pain, high fever, headache, anorexia, respiratory distress, abdominal discomfort, joint pain, disorientation, weight loss, stomach or chest pain, and muscle pain or joint pain and seizures. Mortality varies depending on disease severity and clinical presentation, with case fatality ranging between 10-50%. People with certain conditions are at higher risk of disease when they come in contact with the bacteria. The most common factors that make a person more likely to develop disease include diabetes,

kidney disease, chronic lung disease, and alcoholism. Melioidosis is confirmed by culture and with testing conducted by trained personnel since some automated identification methods in clinical laboratories may misidentify *B. pseudomallei* as another bacterium.

Melioidosis is not considered to be transmitted person-to-person via air or respiratory droplets in nonlaboratory settings. There have only been a few documented cases of person-to-person transmission; percutaneous inoculation is probably the most frequent route for natural infection. In contrast to other healthcare personnel, laboratory personnel are at risk because some procedures may aerosolize particles and release *B. pseudomallei* into the air. Laboratory personnel can reduce their risk of exposure by following good laboratory practices<sup>2</sup>. Laboratory staff who may have been exposed to *B. pseudomallei* should refer to existing CDC guidance<sup>3</sup>.

### For More Information

- Contact your local health department if you have any questions or suspect a patient may be infected with *Burkholderia pseudomallei*.
- 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: email: [bspb@cdc.gov](mailto:bspb@cdc.gov) or call 404-639-1711
- Select Agent List: [Tier 1 Pathogens: Security Plan Guidance: Section 11\(f\) – Tier 1 Security | Compliance | Federal Select Agent Program](#)
- Symptoms of Melioidosis: [Signs and Symptoms | Melioidosis | CDC](#)
- Sample submission information: [Zoonoses and Select Agent Laboratory \(ZSAL\) | Bacterial Special Pathogens Branch | DHCPP | NCEZID | CDC](#)

### References

<sup>1</sup>Treatment of Melioidosis:

[- Sullivan RP, Marshall CS, Anstey NM, et al. 2020 Review and revision of the 2015 Darwin melioidosis treatment guideline; paradigm drift not shift. PLOS Neglected Tropical Diseases](#)

[- Workshop on Treatment of and Postexposure Prophylaxis for \*Burkholderia pseudomallei\* and \*B. mallei\* Infection, 2010 - Volume 18, Number 12—December 2012 - Emerging Infectious Diseases journal - CDC](#)

<sup>2</sup>Biosafety in Microbiological and Biomedical Laboratories:

[- Biosafety in Microbiological and Biomedical Laboratories—6th Edition \(cdc.gov\)](#)

<sup>3</sup>Management of laboratory exposures:

[- Management of Accidental Laboratory Exposure to \*Burkholderia pseudomallei\* and \*B. mallei\* - Volume 14, Number 7—July 2008 - Emerging Infectious Diseases journal - CDC](#)

## DHEC contact information for reportable diseases and reporting requirements

Reporting of *Burkholderia pseudomallei* is consistent with South Carolina Law requiring the reporting of diseases and conditions to your state or local public health department. (State Law # 44-29-10 and Regulation # 61-20) as per the DHEC 2021 List of Reportable Conditions available at: <https://www.scdhec.gov/sites/default/files/Library/CR-009025.pdf>

Federal HIPAA legislation allows disclosure of protected health information, without consent of the individual, to public health authorities to collect and receive such information for the purpose of preventing or controlling disease. (HIPAA 45 CFR §164.512).

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<b>For information on reportable conditions, see</b> <a href="https://www.scdhec.gov/ReportableConditions">https://www.scdhec.gov/ReportableConditions</a>		<b><u>DHEC Bureau of Communicable Disease Prevention &amp; Control</u></b> <b>Division of Acute Disease Epidemiology</b> 2100 Bull St • Columbia, SC 29201 Phone: (803) 898-0861 • Fax: (803) 898-0897 Nights / Weekends: 1-888-847-0902	

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<b>Health Advisory</b>	Provides important information for a specific incident or situation; may not require immediate action.
<b>Health Update</b>	Provides updated information regarding an incident or situation; unlikely to require immediate action.
<b>Info Service</b>	Provides general information that is not necessarily considered to be of an emergent nature.