



Melioidosis

3/31/2026

Burkholderia pseudomallei

REPORT SUSPECT AND CONFIRMED CASES IMMEDIATELY

Local health officers shall immediately report suspect and confirmed cases to NJDOH by electronic reporting (CDRSS) and telephone (609) 826-5964 during business hours or 609-392-2020 during off-hours.

Note: Suspect cultures are immediately reportable to the NJDOH Communicable Disease Service at (609) 826-5964.

1 THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic Agent

Melioidosis is an infectious disease that is caused by the bacterium *Burkholderia pseudomallei*. Infection with *B. pseudomallei* can occur in both humans and animals. *B. pseudomallei* is found in contaminated soil and water- it is spread to humans and animals through direct contact with the contaminated source. Melioidosis is predominantly a disease of tropical climates, especially in Southeast Asia and Northern Australia, but was also found in the environment along the Gulf Coast of Mississippi in the United States in 2022. Besides humans, many animal species are susceptible to melioidosis, including sheep, goats, swine, horses, cats, dogs, and cattle. *Burkholderia* is a likely candidate for biological warfare and bioterrorism, in part, because only a few germs of *B. pseudomallei* can trigger disease. The case-fatality rate ranges for 10-50%.

B. Clinical Description

The clinical manifestations of melioidosis vary in severity and presentation according to the route of introduction. The incubation period is not well defined, ranging from 1 day to many years; with symptoms generally appearing 2 to 4 weeks after exposure. Melioidosis has a wide range of signs and symptoms. Signs and symptoms may mimic other diseases such as tuberculosis or more common forms of pneumonia.

- **Localized Infection:** localized pain or swelling, fever, ulceration, abscess
- **Pulmonary infection:** cough, chest pain, high fever, headache, anorexia
- **Bloodstream infection:** fever, headache, respiratory distress, abdominal discomfort, joint pain, disorientation, seizures
- **Disseminated infection:** fever, weight loss, stomach or chest pain, muscle or joint pain, headache, central nervous system/brain infection, seizures.

Although healthy people may get melioidosis, underlying medical conditions may increase the risk of disease. The major risk factors are: diabetes, liver disease, renal disease, thalassemia, cancer or another condition (not related to HIV) that weakens the immune system, and chronic lung disease (such as cystic fibrosis, chronic obstructive pulmonary disease (COPD), and bronchiectasis).

C. Reservoirs

The primary reservoir of *Burkholderia pseudomallei* is contaminated soil or water. Sheep, goats, swine, horses, cats, dogs and cattle are also reservoirs of the bacteria.

D. Modes of Transmission

Bacteria are spread through direct contact with contaminated soil and water (i.e. subcutaneous inoculation, ingestion). Humans and animals are believed to acquire the infection by inhalation of contaminated dust or water droplets, ingestion of contaminated water, and ingestion of soil-contaminated food or other contact with contaminated soil, especially through skin abrasions. Airborne transmission may occur through inhalation of contaminated aerosols in laboratory settings. Person-to-person transmission is very rare. Recently, tropical freshwater fish have also been identified as a risk of possible infection.

E. Incubation Period

The incubation period is not well defined, ranging from 1 day to many years; with symptoms generally appearing 2 to 4 weeks after exposure.

F. Period of Communicability or Infectious Period

Person-to-person transmission is very rare.

G. Epidemiology

Melioidosis is often underreported or unrecognized in many tropical and subtropical areas, with more than 165,000 cases estimated to occur annually, primarily in Southeast Asia and in northern Australia. *B. pseudomallei*, the causative agent of melioidosis, is endemic to Southeast Asia, Papua New Guinea, much of the Indian subcontinent, southern China, Hong Kong, and Taiwan. It is considered highly endemic to northeast Thailand, Malaysia, Singapore, and northern Australia. *B. pseudomallei* has also been identified in the Americas, including the Caribbean and the Gulf Coast of the United States. However, the true extent of distribution the bacteria remains unknown.

The Centers for Disease Control and Prevention reports an average of 12 melioidosis case are reported in US residents annually, mostly in people with a history of recent travel to a region where *B. pseudomallei* is known to be endemic. Those at an increased risk of infection are adventure travelers, construction and resource extraction workers, ecotourists, military personnel, and other people whose contact with contaminated soil or water might expose them to the bacteria. The bacteria can also be present in untreated water and raw or undercooked food. Infections have been reported in people who spent <1 week in an endemic area. Cases, especially those presenting as pneumonia, are often associated with periods of high rainfall (e.g., during typhoons or the monsoon season).

H. Bioterrorist Potential

Burkholderia species are considered potential bioterrorist agents and could cause a serious public health challenge in terms of ability to limit the numbers of casualties and to control other repercussions from such an attack.

2 CASE DEFINITION

A. New Jersey Department of Health (NJDOH) Case Definition

Clinical Description

In the absence of a more likely diagnosis, at least one of the following signs or symptoms: fever (temperature $>38^{\circ}\text{C}$ [100.4°F], muscle aches, ulcer, nodule, skin abscess, pneumonia, headache, chest pain, anorexia, respiratory distress, abdominal discomfort, joint pain, disorientation, weight loss, seizure, organ abscess (liver, lung, spleen, prostate, or brain), encephalomyelitis/meningitis/extra-meningeal disease

Laboratory Criteria for Diagnosis

Confirmatory laboratory evidence:

- Isolation of *B. pseudomallei* from a clinical specimen

Presumptive laboratory evidence:

- Evidence of a fourfold or greater rise in *B. pseudomallei* antibody titer by indirect hemagglutination assay (IHA) between acute- and convalescent-phase serum specimens obtained at least two weeks apart, OR
- Evidence of *B. pseudomallei* deoxyribonucleic acid (DNA) (for example, by Laboratory Response Network [LRN]-validated nucleic acid amplification test) in a clinical specimen

Supportive laboratory evidence:

- Single *B. pseudomallei* total antibody titer of greater than or equal to 1:40 by serology in one or more serum specimens

Note: The categorical labels used here to stratify laboratory evidence are intended to support the standardization of case classifications for public health surveillance. The

categorical labels should not be used to interpret the utility or validity of any laboratory test methodology.

Epidemiologic Linkage

A person with at least one of the following findings:

- History of travel to or residence in a region endemic for melioidosis, **OR**
- Known exposure to *B. pseudomallei* as a result of intentional release or known product/source exposure (outside of laboratory), **OR**
- Known exposure to *B. pseudomallei* as a result of an occupational risk (i.e., laboratory exposure)

Criteria to Distinguish a New Case from an Existing Case

An infection would be counted as a new infection if a person is culture-positive within an 18-month time period with an isolate that is distinct from the previous infection by whole genome sequencing.

Note: Recurrent melioidosis can be defined as a re-presentation with *B. pseudomallei* culture-positive clinical disease occurring <18 months following initial diagnosis and after the time designated for treatment completion (both intravenous and oral phases) for the previous episode, irrespective of whether the patient was adherent to the therapy or initially lost to follow-up. Recurrent cases will not be counted as a new case for surveillance purposes. Epidemiological and exposure information can be used to determine if it is a new or recurrent infection, as can whole genome sequencing, if an isolate is available.

Case Classification:

Confirmed

Meets confirmatory laboratory evidence

Probable

- Meets clinical criteria **AND** presumptive laboratory evidence **AND** epidemiologic linkage.
- Meets vital records criteria **AND** presumptive laboratory evidence **AND** epidemiologic linkage.
- Meets other criteria **AND** presumptive laboratory evidence **AND** epidemiologic linkage.

Suspect (Possible)

- Meets clinical criteria **AND** supportive laboratory evidence **AND** epidemiologic linkage.
- Meets vital records criteria **AND** supportive laboratory evidence **AND** epidemiologic linkage.

- Meets other criteria **AND** supportive laboratory evidence **AND** epidemiologic linkage.

Other Criteria

- A person whose healthcare record contains a recent diagnosis of melioidosis

Vital Records Criteria

- A person whose death certificate lists melioidosis as a cause of death or a significant condition contributing to death

3 LABORATORY TESTING SERVICES AVAILABLE

Melioidosis is diagnosed by isolating *Burkholderia pseudomallei* from blood, urine, sputum, skin lesions, or abscesses. Nucleic acid testing or serological tests (antibody titer by IHA) are valuable, especially when paired sera show a four-fold rise in antibody titer.

The NJDOH Division of Public Health and Environmental Laboratories (PHEL) does not provide routine testing for melioidosis. However, *Burkholderia spp.* cultures are treated as suspect select agents and sent to PHEL for identification.

4 DISEASE REPORTING AND CASE INVESTIGATION

A. Purpose of Surveillance and Reporting

- To identify cases and clusters of human illness that may be associated with a bioterrorist event.
- To determine whether the source of infection may be a major public health concern and stop transmission from such a source.
- To focus preventive and control measures.

B. Laboratory Reporting Requirements

Clinical laboratories must immediately report test results to the local health department by telephone (N.J.A.C. 8:57-2.6).

Reports shall contain:

- Patient demographics (name, age, DOB, sex assigned at birth, current gender identity, sexual orientation, race, ethnicity)
- Patient home address and telephone number

- Test performed and test result
- Specimen source or type, date of specimen collection, and date tested
- Ordering provider's name, address and telephone number
- Reporting laboratory's name, address and telephone number
- Upon request, results of other tests performed pertaining to the case

NOTE: Suspect cultures must be reported immediately to NJDOH by telephone at (609) 826-5964 during business hours and (609) 392-2020 outside of business hours.

Healthcare Professional and Administrator Reporting Requirements

Healthcare professionals and administrators must immediately report suspect and confirmed cases (N.J.A.C. 8:57-2.2, 2.3) to the local health department.

Reports shall contain:

- Disease name
- Patient demographics (name, age, DOB, sex assigned at birth, current gender identity, sexual orientation, race, ethnicity)
- Patient home address, all known telephone numbers, and email address
- Clinical presentation & diagnosis
- Date of symptom onset
- Clinical laboratory data that supports the diagnosis, if available
- A description of provided treatment
- Hospitalization and mortality status
- Reporting provider or administrator name, institution name, address, telephone number, and email address
- Medical records upon request

C. Case Investigation

Upon learning of a suspect or confirmed case of melioidosis, or any suspected bioterrorist event, the LHD must call the IZDP immediately. IZDP will direct melioidosis case investigation of New Jersey residents. If a bioterrorist event is suspected, NJDOH in conjunction with CDC and other response authorities will work closely with local health officer(s) and provide instructions/information on how to proceed.

CDRSS

IZDP will enter the initial investigative data into the Communicable Disease Reporting and Surveillance System (CDRSS). The LHD is expected to conduct a thorough case

investigation using the Melioidosis Investigation Worksheet (located in the Chapter) and enter the information into CDRSS upon request from IZDP.

Key CDRSS Fields Specific for Melioidosis

CDRSS Screen	Required Information
Patient Personal Information	<ul style="list-style-type: none"> Enter all patient personal information, including country of birth and date first arrived to the US.
Laboratory and Diagnostic Test Information	<ul style="list-style-type: none"> Ensure full test result is entered (test name, specimen type, lab name, specimen ID, specimen collection date, value and result) are entered for each reported laboratory test.
Clinical Status	<ul style="list-style-type: none"> Enter illness onset date, hospitalization (as part of this investigation), pre-existing conditions, diagnosis, and mortality information.
Medical Facility and Provider Information	<ul style="list-style-type: none"> If patient is hospitalized, enter facility name, medical record number, patient status and dates of hospitalization.
Industry and Occupation	<ul style="list-style-type: none"> Enter employment information including industry and occupation
Risk Factors	<ul style="list-style-type: none"> Answer all risk factors questions (i.e., travel) including dates. Ask about history of military service, animal contact or lab exposure prior to illness onset.
Signs/Symptoms	<ul style="list-style-type: none"> Inquire if the patient had each sign/symptom and update the response to Yes, No or Unknown accordingly. Not Asked should not be left as a default response. Enter onset and resolution dates, if known.
Treatment	<ul style="list-style-type: none"> Document all medications received with dates of treatment, dosage and duration.

5 CONTROLLING FURTHER SPREAD

A. Isolation and Quarantine Requirements

None. Person-to-person transmission is very rare.

B. Managing Special Situation

1. Exposure of a Laboratory Worker

Melioidosis can be a laboratory-acquired infection, mostly because aerosolization is a mechanism of transmission in this setting. If *B. pseudomallei* is identified in culture, IZDP will oversee the laboratory exposure investigation. This consists of identifying laboratory workers potentially exposed to the organism, providing public health recommendations to their occupational health/employee health program regarding symptom monitoring, serologic testing and post-exposure prophylaxis. Detailed information on recommended follow up according to risk category, including PEP recommendations, can be found in the CDC MMWR article: [Management of Accidental Laboratory Exposure to *Burkholderia pseudomallei* and *B. mallei* - Volume 14, Number 7—July 2008 - Emerging Infectious Diseases journal - CDC](#)

C. Preventive Measures

In areas where melioidosis is widespread, contact with contaminated soil or water can put people at risk for infection. To minimize exposure, persons with open skin wound and other with diabetes or chronic renal disease are at increased risk of infection and should avoid contact with soil and standing water. Those who perform agricultural work should wear boots, which can prevent infection through the feet and lower legs. Healthcare workers can use standard precautions when treating patients with melioidosis to help prevent infection. Laboratory workers handling specimens from infected patients should use appropriate personal protective equipment such as gloves, gown, eye protection and a class II biosafety cabinet.

Checklist for travelers visiting areas where *Burkholderia pseudomallei* is endemic:

- Avoid contact with soil or muddy water, particularly after heavy rains
- Protect open wounds, cuts, or burns. Use waterproof bandages to help keep damaged skin from contacting soil or water. Thoroughly wash any open wounds, cut, or burns that contact soil.
- For people with diabetes, foot care and preventing contamination of foot or other open wounds is important.

- Wear protective footwear and gloves when doing yard work, agricultural work.
- Wear waterproof boots during and after flooding or storms to prevent infection through the feet and lower legs.
- Avoid drinking untreated water and eating undercooked or raw foods.

Additional Information

A Melioidosis Fact Sheet can be obtained at the NJDOH Web site at:

<https://www.nj.gov/health/cd/topics/melioidosis.shtml>

References

Centers for Disease Control and Prevention. *Melioidosis*. Published October 7, 2020. Accessed April 9, 2025. <https://www.cdc.gov/melioidosis/about/>

Centers for Disease Control and Prevention. *Melioidosis*. *CDC Yellow Book 2024: Health Information for International Travel*; 2024. Accessed April 9, 2025. <https://www.cdc.gov/travel/yellowbook/2024/infections-diseases/melioidosis>

NJDOH BURKHOLDERIA PSEUDOMALLEI INVESTIGATION WORKSHEET MR #: _____ CDRSS #: _____

Demographics					
Patient Last Name		First Name		DOB: _____ / _____ / _____	Phone number
Address			City	Municipality	
Ethnicity Hispanic Non-Hispanic Unknown		Race White Black Asian Pacific Islander American Indian or Alaskan Native Unknown			
If Asian, Pacific Islander or Native Hawaiian, please check one: Asian Indian Cambodian Chinese Filipino Guamanian Hawaiian Japanese Korean Laotian Samoan Vietnamese Thai Malay Singaporean Taiwanese Indonesian Other, specify: _____					
Country of Birth			Occupation		
If not US born, date of arrival in the US: _____ / _____ / _____					
Physician and Facility Information					
Treating physician			Facility (if hospitalized)		
Name: _____			Name of facility: _____		
Address: _____			Date of admission: _____ / _____ / _____		
Phone: _____ Fax: _____			Date of discharge: _____ / _____ / _____		
Email: _____					
Clinical Status					
Preexisting conditions					
Diabetes		Cancer or other immune suppressing condition not related to HIV		Chronic lung disease	
Renal disease		Thalassemia		Liver disease	
		Other, specify: _____			
Pregnancy status		Diagnosis		Illness onset date	
Pregnant, Due date: _____ / _____ / _____		Date of diagnosis: _____ / _____ / _____		_____ / _____ / _____	
Not Pregnant					
N/A					
Sign/Symptom	Response			Onset	Additional required information
Abdominal discomfort	Yes	No	Unk	_____ / _____ / _____	
Abscess	Yes	No	Unk	_____ / _____ / _____	Describe:
Anorexia	Yes	No	Unk	_____ / _____ / _____	
Chest pain	Yes	No	Unk	_____ / _____ / _____	
Cough	Yes	No	Unk	_____ / _____ / _____	

Disorientation	Yes	No	Unk	___ / ___ / ___	Describe:
Fever	Yes	No	Unk	___ / ___ / ___	Tmax: _____ F
Headache	Yes	No	Unk	___ / ___ / ___	
Joint pain	Yes	No	Unk	___ / ___ / ___	
Localized pain or swelling	Yes	No	Unk	___ / ___ / ___	
Muscle pain/tenderness	Yes	No	Unk	___ / ___ / ___	Describe:
Pneumonia	Yes	No	Unk	___ / ___ / ___	Describe:
Respiratory distress	Yes	No	Unk	___ / ___ / ___	Describe:
Seizures	Yes	No	Unk	___ / ___ / ___	Describe:
Stomach pain	Yes	No	Unk	___ / ___ / ___	
Ulceration	Yes	No	Unk	___ / ___ / ___	Describe:
Weight loss	Yes	No	Unk	___ / ___ / ___	Amount lost:

Additional signs/symptoms:

Alternate Diagnosis:

RISK FACTORS

Did the patient recently travel out of the United States in the past year? Yes No Unk	Location: _____ Date(s): _____
Has the patient ever traveled to Asia, Australia, Central or South America, Africa or the Middle East in his/her lifetime? Yes No Unk	Location: _____ Date(s): _____
Was the patient exposed to <i>Burkholderia</i> in a laboratory setting? Yes No Unk	Describe exposure: _____ Location of exposure: _____ Date(s) of exposure: _____
Did the patient perform military service? Yes No Unk	Location: _____ Date(s): _____

Did the patient have soil or water contact in an endemic country? Yes No Unk	Location: _____ Date(s): _____
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Did the patient have contact with an animal? Yes No Unk	Type of animal: _____ Date(s) of exposure: _____
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LABORATORY TESTING

Provide all pertinent laboratory information including specimen type, collection date, test name, and result:

TREATMENT INFORMATION

Name of Treatment	Dosage	Dates
Ceftazidime		___ / ___ / ___ to ___ / ___ / ___
Meropenem		___ / ___ / ___ to ___ / ___ / ___
Trimethoprim-sulfamethoxazole		___ / ___ / ___ to ___ / ___ / ___
Amoxicillin/clavulanic acid (co-amoxiclav)		___ / ___ / ___ to ___ / ___ / ___
Other:		___ / ___ / ___ to ___ / ___ / ___
Other:		___ / ___ / ___ to ___ / ___ / ___
Other:		___ / ___ / ___ to ___ / ___ / ___
Other:		___ / ___ / ___ to ___ / ___ / ___

CASE NOTES