

MEDICAL MANAGEMENT PLAN

Coccidioidomycosis (Valley Fever)

Below is a protocol for accidental exposure to *Coccidioides* species avirulent or vaccine strains approved for use at ABSL-2

POST-EXPOSURE CONTACTS

Contact UW Employee Health Center Nurse	206-685-1026 (M-F, 8am-5pm)
If After-Hours, call UW Medical Center Paging Operator	206-906-8082
Request the Campus Health Physician	
Contact UW Environmental Health & Safety Dept. for assistance	206-221-7770 (M-F, 8am-5pm)
Call 911 for a life-threatening emergency	911

Medical Protocol

First aid	<p>Mucous Membrane Exposure (eye, nose, or mouth):</p> <ol style="list-style-type: none"> 1. Flush the affected areas immediately and thoroughly with water for 15 minutes. 2. Use an eyewash if available, use cold water, and keep eyelids open. 3. Go to UWMC/HMC ED for medical treatment/evaluation and lab work. <p>Percutaneous injury (intact skin)</p> <ol style="list-style-type: none"> 1. Splash to intact skin: Wash the site immediately and thoroughly with soap and water for 15 minutes. <p>Percutaneous Injury (through the skin):</p> <ol style="list-style-type: none"> 1. Wash the site immediately and thoroughly with soap and water for 15 minutes (without scrubbing). 2. Do not use harsh detergents or abrasive scrubbing on wounds. <p>Inhalation exposure:</p> <ol style="list-style-type: none"> 1. Respiratory protection is recommended when working with this agent. Voluntary use of the N95 should be considered when completing intranasal inoculations. 2. Personnel should be evacuated (preferably holding their breath, if possible, until after exiting the affected area), and protective laboratory clothing removed just inside the affected room before exiting.
Surveillance	<ol style="list-style-type: none"> 1. Pre-work counseling: Individuals working with the agent or materials that may contain the agent, and who are immunosuppressed, have a chronic medical condition, or women who are pregnant, should contact the UW EHC (206-685-1026) for a confidential health review. They should also talk with their healthcare provider.



	<ol style="list-style-type: none"> 2. Immune compromised individuals may have an increased risk for lab-acquired illness should an exposure occur. 3. Wear appropriate ABSL-2 PPE when completing intranasal inoculations with the agent. Voluntary use of respiratory protection (N95s) is recommended. 4. Post-Exposure: Monitor for symptoms and confirm infection by serological methods.
<p>Post exposure or Symptoms</p>	<p style="text-align: center;">Post Exposure Protocol for Coccidioides</p> <ol style="list-style-type: none"> 1. Within 20 minutes of the incident, or as soon as possible, call the EHC at 206-685-1026 between 8:00 a.m. to 5:00 p.m., Monday to Friday. Tell them you were exposed to Coccidioides. 2. Outside of business hours, holidays or weekends, personnel will report immediately to the UWMC Emergency Department for medical evaluation. 3. The injured employee should take a copy of this medical management plan to the ED, including specific strain information associated with the exposure. 4. For a life-threatening emergency, call 9-1-1. 5. Monitor for symptoms. Diagnosis of coccidioidomycosis can be established using serologic, histopathologic, PCR and culture methods. 6. Post exposure testing: Baseline serology: Coccidioides Antibody Initial Screen. Code: RCOXIS. Repeat testing on a new sample in 2 – 3 weeks. Follow up testing for known positive: Coccidioides Antibody, for follow-up. Code: RSCOCC 7. Coccidioidomycosis is generally self-limiting and will resolve without treatment. Disseminated infections, or patients who experience excessive morbidity, should be treated with antifungal medication. The type of drug and length of treatment depends on the site of infection and clinical response
<p>Treatment</p>	<p>Recommended Treatment:</p> <ol style="list-style-type: none"> 1. Symptomatic and generally supportive, most people will recover without treatment. 2. Antifungal medication is typically given to people who are at higher risk for developing severe Valley fever such as those with weakened immune systems, pregnant women or people with diabetes. The treatment is usually 3 to 6 months of fluconazole or another type of antifungal medication. There are no over-the-counter medications to treat Valley fever.

	3. Intravenous liposomal Amphotericin B (L-AmB) is recommended in cases of severe disease or azole failure.
Reporting	Report all accidents, injuries and near miss events as soon as possible on the UW Online Accident Reporting System.

BACKGROUND INFORMATION

Mode of transmission

Transmission occurs via aerosolization and rarely via direct contact with infected materials. Inhalation of arthroconidia, although secondary transmission via fomites and organ transplants may occur.

Infectious dose

Estimated to be 1-10 arthroconidia

Incubation period

1 to 3 weeks, although some infections are asymptomatic

Communicability

Not contagious but has occasionally been transmitted from person-to-person via fomites or organ transplants.

Vaccines

None

Characteristics

Coccidioides spp. are dimorphic fungi. In the environment they exist in a hyphal phase and release infectious arthroconidia (2 to 5 µm). Inside hosts, the arthroconidia transform into a unique structure called a spherule. The spherule is a large (120 µm), thick-walled structure containing 200-300 endospores, each of which can differentiate into a new endospore continuing the infection

Signs and Symptoms

Symptoms of Valley fever include:

- Fatigue/ tiredness
- Cough
- Fever
- Shortness of breath
- Headache
- Night sweats
- Muscle aches or joint pain

- Rash on upper body or legs

In extremely rare cases, the fungal spores can enter the skin through a cut or wound and cause a skin infection.

The majority (around 60%) of individuals infected is asymptomatic or develops a very mild illness, with symptoms including cough, fever, arthralgias, myalgias, and fatigue that can last 2-6 weeks.

Symptomatic individuals develop acute pneumonia or valley fever. In a small percentage of cases acute pneumonia can become chronic progressive pneumonia or pulmonary nodules and cavities can develop in the lungs, characterized by pneumonia, pleural effusion, and hilar lymphadenopathy. Dissemination occurs in 1% of infections and can affect the skin, lymph nodes, bones, and joints, causing systemic symptoms such as fever, cough, and night sweats.

Meningitis is the most serious complication of coccidioidomycosis, with symptoms including headache, nausea, vomiting, and affected mental status. This may occur in 30-50% of disseminated infections and is fatal without treatment.

Coccidioidomyces infection may also lead to erythema nodosum, acute exanthema ("Toxic erythema"), erythema multiforme, Sweet's syndrome, and interstitial granulomatous dermatitis.

Survival Outside the Host

Coccidioidal arthroconidia are hardy and can survive for long periods of time on inanimate surfaces. They can grow in the soil in semiarid climates.

Prior Laboratory Acquired Illness

93 cases of laboratory-acquired coccidioidomycosis infections and two deaths were reported prior to 1978. An additional 15 cases were asymptomatic but identified with skin tests during that period. One symptomatic case has been reported from 1979-2004.

REFERENCES:

BMBL6: *Coccidioides immitis* and *posadasii* [Biosafety in Microbiological and Biomedical Laboratories—6th Edition \(cdc.gov\)](#) Pages 213-214, Accessed 3/12/2023

Centers for Disease Control and Prevention:

[Valley Fever \(Coccidioidomycosis\) | Types of Fungal Diseases | Fungal | CDC](#) Accessed 03/12/2023.

Government of Canada -[Pathogen Safety Data Sheets: Infectious Substances – Coccidioides spp.-Canada.ca](#) Accessed 03/10/2023

2016 Infectious Diseases Society of America (IDSA) Clinical Practice Guideline for the Treatment of Coccidioidomycosis. *Clinical Infectious Diseases*, Volume 63, Issue 6, 15 September 2016, Pages e112–e146, <https://doi.org/10.1093/cid/ciw360>, Accessed 03/13/2023.