

Deadly fungal outbreak in Wisconsin linked to neighborhood construction

Enlarge / This micrograph shows the presence of the fungal agent *Blastomyces dermatitidis*, 1978.

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Toxic fungal spores wafting around a Wisconsin neighborhood—possibly spread by recent construction in the area—sparked an outbreak of rare infections that left one person dead, state health officials reported Friday in the Morbidity and Mortality Weekly Report.

In all, the outbreak cluster included five pet dogs and four people, with the onset of symptoms spanning from October 2021 to February 2022. While two of the cases in people were mild, the other two required hospitalization, including the fatal case. The five dogs were reported to have mild to moderate cases.

The outbreak was caused by the poorly understood fungus *Blastomyces* (*B. dermatitidis* and *B. gilchristii*), which lurks in moist soil and decomposing organic matter, such as wood and leaves, often near water. The Centers for Disease Control and Prevention estimates the fungus could exist throughout the eastern US, but its distribution is uneven. It's often found around the Ohio and Mississippi River valleys and the Great

Lakes. Parts of Wisconsin and Minnesota are considered hotspots.

Blastomyces often makes its presence known when it's disturbed or unearthed—often by literal digging—causing spores to get stirred up into the air. If the spores are inhaled by people or animals, they can cause an infection called blastomycosis, which is a non-contagious infection that can develop three weeks to three months after an exposure. About half of people infected will have no symptoms or ill effects, but the other half may develop signs of a respiratory infection, such as cough, fever, and shortness of breath. For many, the symptoms will clear up on their own, but for some—particularly the immunocompromised, people who smoke, and those with lung disease—the infection can continue spreading throughout the body and become life-threatening if not aggressively treated with antifungal medications. Treatment courses can range from six months to a year, depending on the severity.

In general, blastomycosis is rare in the US. In states where the infection is reportable, there are around one or two cases per 100,000 people per year. But, in some hotspots in Wisconsin, the incidence can be as high as 40 to 50 cases per 100,000 per year. Oddly, though, the area where the newly reported outbreak occurred is not considered one of those hot spots.

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The outbreak occurred in the northwestern county of St. Croix, in the unincorporated community of Boardman, in a small area next to Willow River, which flows into the St. Croix River. The whole area is near the Minnesota border, across from Minneapolis.

Fungal find

Usually, St. Croix reports one to five cases of blastomycosis a year. But, this particular area of the county hadn't seen a

human blastomycosis case in at least 10 years, though there was an unofficial report of a dog dying of the infection in 2021.

In February 2022, an “astute” veterinarian alerted health officials after noticing four dogs were diagnosed with blastomycosis in recent weeks, all living within a one-mile radius area near Willow River in Boardman, according to the report in the MWWR. Once alerted, local health officials looked at surveillance data and identified two human cases in the same small area. The officials responded by sending letters to residents of a potential cluster of cases. Two other people were diagnosed with the infection after the notification.

It’s unclear what exactly caused the flare-up of *Blastomyces* in this one residential area, but an environmental assessment pointed to unpaved walking paths along the river—as well as recent development in the area. “Construction in this neighborhood during the past decade might have dispersed *Blastomyces* spores,” the authors noted.

For those living in the affected area, there’s little they can do but be mindful of the ever-present fungal risk around their properties. There are no commercially available tests to detect *Blastomyces* in the environment. And if even there were, environmental testing is basically useless. As the CDC notes: “When a soil sample tests positive for *Blastomyces*, it isn’t necessarily a source of infection, and when a sample tests negative, that doesn’t necessarily mean that the fungus isn’t in the soil.”

In St. Croix, officials advise residents to, essentially, tread lightly: “You can reduce your risk of exposure by limiting activities that may disrupt the soil and vegetative matter” in the outbreak area, the country notes. “Higher risk” activities include “gardening, camping, hunting, hiking, riding all-terrain vehicles, clearing brush, or excavation and

construction projects.” For pets, the county advised “avoiding activities such as sniffing or digging in the soil at the water’s edge, landscaped area, or wooded terrain.”

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