Northwestern Health Unit
www.nwhu.on.ca

September 10, 2024

# Public Health Alert – Blastomycosis

## Situation

Northwestern Health Unit's (NWHU) catchment area continues to have the highest annual rate of blastomycosis in Ontario. Between 2019 and 2023, the annual rate for NWHU ranged from 17.2-50.4 cases per 100,000 while the rest of Ontario ranged from 0.2-0.6 cases per 100,000. Blastomycosis continues to be seen throughout the region but is especially higher in the Kenora and Sioux Lookout areas.

## Issue

Illness ranges from self-limiting, subclinical infection to acute or chronic pneumonia or disseminated infection, and untreated infection can cause death. Incubation ranges from 21-106 days after exposure to the fungus, with a median of 43 days. Blastomycosis can mimic other respiratory and disseminated infections and diseases and will not be identified through viral or bacterial testing; specific fungal testing is required for diagnosis.

Blastomycosis symptoms can seem to improve and then worsen. That means other treatments may seem to work temporarily, which can delay treatment and increase the risk of negative outcomes.

**Early diagnosis and appropriate antifungal treatment are the most important mechanism for preventing morbidity and mortality related to Blastomycosis.**

## Requested actions:

- Please continue to consider Blastomycosis infection when assessing patients in the region, especially going into the fall season, where it can present like other respiratory illnesses with its flu-like symptoms.
- Health care providers who are newer to Northwestern Health Unit's catchment area may be unfamiliar with Blastomycosis because it is so uncommon elsewhere. Please refer to NWHU website for more information.
- Recommended tests include:
  - Sputum sample and/or lesional material for direct visual exam by microscopy and fungal culture. Where possible, submit multiple specimens for microscopy/culture over time to increase sensitivity. A sputum specimen which is mainly saliva is not an adequate specimen for diagnosis and may lead to false negative results
  - Serology testing is available, but the sensitivity is poor and are generally not recommended; It is not suitable for acute diagnosis or for some immunocompromised patients
  - Antigen testing: requires to be sent to the USA for processing. It is sensitive however there is considerable cross-reactivity with other fungi. It may be suitable when collection of respiratory specimens is challenging

- See Public Health Ontario for further information

What is Blastomycosis?

Blastomycosis is an infection caused by the dimorphic fungus Blastomyces dermatitidis or Blastomyces gilchristii. The fungus is most common in northwestern Ontario, Manitoba, along the Great Lakes and St. Lawrence Seaway, and in parts of the U.S.A., and is rare in other areas. It lives in the environment and is most commonly found in moist soil and in decomposing matter such as wood and leaves.

How is it acquired?

Blastomycosis is typically acquired through inhalation of airborne spores from the disrupted environment. It primarily affects the lungs but can become a systemic infection with extrapulmonary manifestations. The most common extrapulmonary site for infection is the skin (cutaneous lesions are often located on the face and distal extremities). Other common sites include bone, the genitourinary system, and the central nervous system, but any system can be affected. Primary cutaneous blastomycosis is uncommon but can result from a traumatic puncture of the skin.

Blastomycosis is NOT contagious i.e. it is not transmissible person-to-person or from animal-to-person. Environmental sampling is primarily done for research purposes and has been mostly unsuccessful in isolating the fungus. Testing the environment is not routinely recommended. Eradicating the fungus from soil or the environment is also not an effective means of preventing blastomycosis. Not all who are exposed to *B. dermatitidis* or *B. gilchristii* even in the same location or at the same event will become infected. Those that are immunocompromised are at increased risk of severe disease and higher mortality. In areas where Blastomyces spp. are known to be present, the risk of infection may be reduced by avoiding activities that cause disruption of the soil; this is particularly important for individuals with compromised immune systems.

**Resources**

- Northwestern Health Unit - Blastomycosis Information for Health Care Providers
- PHO Webinar: Blastomycosis in Ontario: Public health and clinical considerations
- Public Health Agency of Canada – Blastomycosis for health professionals
- Public Health Ontario – Blastomycosis
- Public Health Ontario Laboratory Testing Index

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