

FAQ: *Wickerhamomyces anomalus*

1. What is *Wickerhamomyces anomalus*?

Wickerhamomyces anomalus (previously known as *Candida pelliculosa*) is a yeast-like fungus that is found widely in the natural environment, for example in soil, plants, industrial pollutants (because the fungus is used as a biocontroller due to its antimicrobial ability) and fermented fruit. The fungus may sometimes form part of the human body's normal flora. However, *W. anomalus* is recognised as an emerging pathogen causing serious infections such as bloodstream infections and meningitis among immunocompromised or critically ill patients. Babies admitted to neonatal units are also at risk of such infections. Moreover, invasive infections caused by this fungal species have been associated with a relatively high crude mortality.

2. How does *Wickerhamomyces anomalus* spread in a healthcare environment?

W. anomalus is a rare cause of human infection/ disease (a disease-causing germ is referred to as a pathogen). It can sometimes just form part of the human body flora (this is known as colonisation). In some cases, several people can all become infected with this fungus by direct or indirect spread from a common environmental source, e.g. a contaminated health product, contaminated equipment. It may also be possible for this fungus to be transmitted from one infected person to another by healthcare workers if infection prevention and control practices are not adhered to.

3. Can *Wickerhamomyces anomalus* cause outbreaks in a healthcare environment?

Yes. An outbreak is an increase in events, such as infections or number of germs/ microorganisms above the baseline, for a geographic area/ healthcare facility during a specified period of time. Several studies have found *W. anomalus* as a cause of healthcare-associated outbreaks. The source of the fungus in an outbreak situation is sometimes a common environmental source and sometimes propagation from one infected patient to another.

It is possible for this fungus to cause a pseudo-outbreak. A pseudo-outbreak refers to the situation in which an increase in identified organisms is observed but without any evidence of true infections. These can be difficult to distinguish from "true" clusters or outbreaks. Pseudo-outbreaks generally represent contamination of patient specimens, e.g. blood or urine cultures, by a germ/ microorganism in the absence of an infection.

4. Who is at risk of a true infection with *Wickerhamomyces anomalus*?

Outbreak investigations have documented that premature and very low birthweight infants are at especially high risk of fungal infections. Additionally, outbreaks and occurrence of infection have been reported amongst patients with weakened immune systems from conditions such as blood cancers or diabetes, those who receive lots of antibiotics, or have devices like tubes going into their body (for example, breathing tubes, feeding tubes, catheters in a vein, or bladder catheters).

5. Can family members get sick?

Transmission has not been documented in a non-healthcare setting. Unless family members have any of the risk factors above, healthy family members have a very low probability of getting a *W. anomalus*

infection. Family members caring for patients with the infection should thoroughly wash their hands before and after touching the infected patient. Testing for family members who are close contacts of a patient infected with *W. anomalus* is not recommended.

6. What are the symptoms of a true infection with *Wickerhamomyces anomalus*?

As patients may already be receiving treatment for other conditions, specific symptoms may be difficult to pinpoint. However, in adult patients, the most common symptoms of invasive infection are fever and chills that do not improve after antibiotic treatment for suspected bacterial infections. Other symptoms can develop if the infection spreads to other parts of the body, such as the heart, brain, eyes, bones, or joints. In neonates with invasive disease, typical symptoms associated with sepsis such as fever, blue lips and skin, lethargy and fast or poor breathing may be observed.

7. How is *W. anomalus* infection diagnosed?

Diagnosis is made by collecting a blood sample or other body fluids/ tissues and sent to a pathology laboratory for culture. *W. anomalus* can be identified by most pathology laboratories and confirmed at the NICD's Centre for Healthcare-Associated Infections, Antimicrobial Resistance and Mycoses (CHARM).

A pseudo-infection (a positive culture in the laboratory without a true infection in the patient) may occur if there was fungal contamination of the blood culture or specimen vial, contamination of antiseptics used to clean the skin before specimen collection or contamination of laboratory culture media or analyser.

8. How can a true infection be treated?

W. anomalus isolates require a very high concentration of an antifungal called fluconazole to inhibit their growth in the laboratory; therefore, this is not considered a suitable treatment. Most infections are treatable with a class of antifungal medications called echinocandins.

9. How can infections be prevented?

To reduce spread to patients, healthcare personnel should follow infection prevention and control (IPC) precautions when caring for patients with a *W. anomalus* infection. These IPC measures include:

- Placing the patient in a separate/single room if possible
- Patients and family members should clean their hands thoroughly before and after touching each other or the area around the patient, particularly when leaving a patient's room.
- If family members are caring for patients with *W. anomalus*, they should consider wearing disposable gloves when providing certain types of care such as changing the dressing on wounds and helping the patient bathe.

10. Where can I get more information?

Where possible, consultation with healthcare professionals, including infectious disease specialists or microbiologists, can provide specialized guidance and information tailored to your specific situation.

Alternatively:

For clinical or medical enquiries, call the National Institute for Communicable Diseases (NICD hotline for healthcare professionals only) 080 021 2552

For laboratory-related enquiries, contact CHARM, NICD +27 11 386 6278

For more information on *Candida* infections and management, navigate to the NICD website <https://www.nicd.ac.za/diseases-a-z-index/candida-auris/>