

MLS Laboratory Update: MDH Investigating Multi-state Cluster of *Paraburkholderia fungorum*

JANUARY 10, 2025

Purpose of this Message:

Notify healthcare providers and laboratorians of a multi-state cluster of *Paraburkholderia fungorum* detected in blood culture bottles.

Action Items:

See details below in 'Action Item Details' section for reporting and isolate submission.

- Laboratories: Please submit *Paraburkholderia fungorum* or *Paraburkholderia* species isolates to the MDH-PHL. If detected in a blood culture bottle, collect and provide information on manufacturer, lot number and expiration date.
- Clinicians: Notify MDH if *Paraburkholderia* species or *Paraburkholderia fungorum* is detected in a patient at your facility.

Background:

The Minnesota Department of Health (MDH) is investigating a cluster of *Paraburkholderia fungorum* and *Paraburkholderia* species, which are primarily environmental and plant microorganisms and have rarely been identified as a human pathogen. In August 2024, the MDH Public Health Laboratory (MDH-PHL) noted an increase in blood culture isolates submitted from clinical laboratories to rule out *Burkholderia mallei* and *Burkholderia pseudomallei*, that were subsequently identified as either *Paraburkholderia fungorum* or *Paraburkholderia* species using 16S ribosomal DNA sequencing by MDH-PHL. Prior to 2023, *P. fungorum* had last been identified at MDH-PHL in 2011. In October 2024, MDH PHL sent an MLS message asking clinical labs to look for cases during the previous 12 months: [Minnesota Lab System Update: Minnesota Department of Health Investigating *Paraburkholderia fungorum* \(www.health.state.mn.us/diseases/idlab/mls/labalerts/241001pfungorum.pdf\)](http://www.health.state.mn.us/diseases/idlab/mls/labalerts/241001pfungorum.pdf).

Investigation Findings

MDH has identified blood cultures positive for *P. fungorum* or *Paraburkholderia* species from 20 MN and 24 non-MN residents from 14 states. Collection dates are September 2023 – November

2024. Whole genome sequencing (WGS) was performed on 13 isolates – 11 MN and 2 non-MN residents. All isolates were 0-11 single nucleotide polymorphisms (SNPs) apart with a core genome percentage of 99.92%. Inclusion of an outlier isolate from NCBI (*P. fungorum* ATCC BAA-463; SRR2148608) was compared against 7 isolates sequenced at MDH and was >80,000 SNPs apart (core genome size comparison 84.11%).

Medical record review was conducted on 20 MN and 2 non-MN hospitalized patients. Clinical review identified other causes of illness: no cases were determined to have bacteremia due to *Paraburkholderia*.

All MN specimens were collected using the BD BACTEC™ blood culture system; however, multiple lot numbers were identified. Information on blood culture systems utilized in other states is still being investigated and no clear source of contamination has been identified. The MDH is in communication with the Centers for Disease Control and Prevention (CDC) and the U.S. Food and Drug Administration (FDA) regarding these findings.

Action Item Details:

Isolate Submission:

- Please submit isolates to the MDH-PHL as part of this investigation.
 - Contact Paula Snippes Vagnone at Paula.Snippes@state.mn.us.
- Please include: Patient Name, DOB, Specimen Collection Date, Specimen Source, Facility Name, Contact Name, Contact Phone/Email
- For positive blood cultures -
 - Please provide the blood culture bottle manufacturer, lot number, and expiration date of the bottle if possible.
 - If any unused bottles from the same lot are available and can be set aside to send to MDH without impacting patient care, please do so.

Case Reporting:

Please report if *Paraburkholderia fungorum* or *Paraburkholderia* species is identified in a culture from any body site, using any blood culture system. Reporting of these cases is per MN Rules 4605.7000 to 4605.7900 including “Unusual or increased case incidence of any suspect infectious illness”.

- Notify MDH of culture result: Christine Lees, Christine.Lees@state.mn.us
- Please include: Patient Name, DOB, Specimen Collection Date, Specimen Source, Facility Name, Contact Name, Contact Phone/Email
- Conduct additional review to determine whether finding is consistent with the clinical presentation or could represent contamination (consult an infectious disease specialist if needed).

Thank You:

Thanks to those laboratories who have submitted isolates and case information thus far. We appreciate your partnership as we continue to investigate this concerning cluster.

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