



December 24, 2018

TO: Healthcare Providers, Hospitals, Clinical Laboratories and Local Health Departments (LHDs)

FROM: New York State Department of Health (NYSDOH) Bureau of Communicable Disease Control (BCDC)

**HEALTH ADVISORY: RIFAMPIN/PENICILLIN-RESISTANT STRAIN OF RB51 *BRUCELLA*
CONTRACTED FROM CONSUMPTION OF RAW MILK**

For healthcare facilities, please distribute to the Epidemiology/Infection Control Department, Emergency Department, Infectious Disease Department, Director of Nursing, Medical Director, Director of Pharmacy, Laboratory Service, and all patient care areas.

SUMMARY

- NYSDOH, with assistance from the Centers for Disease Control and Prevention (CDC), is investigating *Brucella abortus* RB51 (RB51) exposures and illness that are connected to the purchase and consumption of raw (unpasteurized) milk and other dairy products from Miller's Biodiversity Farm in Lancaster County, Pennsylvania.
- Individuals who consumed raw milk or other raw dairy products from Miller's Biodiversity Farm are at an increased risk for brucellosis and should receive post-exposure prophylaxis (PEP) or treatment, as appropriate.
- RB51 is a strain of *Brucella abortus* that is resistant to rifampin and penicillin. Routine serologic tests for brucellosis are not effective for diagnosing or monitoring RB51 infections.

BACKGROUND

A person who drank raw milk and consumed other raw dairy products from Miller's Biodiversity Farm in Lancaster County, Pennsylvania, has been diagnosed with brucellosis. The Department's Wadsworth Center Laboratory, in conjunction with CDC, confirmed the infection and identified the RB51 strain. The individual is being treated and is doing well.

After New York State officials notified the Pennsylvania Department of Agriculture (PDA) of the source, PDA issued an order of quarantine to stop the sale of dairy products made from raw cows' milk from the farm while the investigation continues.

This is the third resident of the United States infected with RB51 due to raw milk consumption. The other two individuals, who were both diagnosed in 2017, resided in Texas and New Jersey.

EPIDEMIOLOGY

Brucella can infect cattle, swine, goats, sheep and dogs. Humans most commonly are infected following ingestion of undercooked meat, raw milk and raw dairy products (e.g. unpasteurized cheese and yogurt). Transmission can also occur by contact, through breaks in the skin, with infected animal tissues such as blood, urine, vaginal discharges, aborted fetuses and especially placentas. Airborne exposure can occur in humans in laboratories or in an abattoir (slaughterhouse). Although person to person transmission is rare, congenital brucellosis has been reported and infected mothers may transmit *Brucella* species to their infants through breast feeding.

Brucellosis is a systemic disease of acute or insidious onset, with continued intermittent or irregular fever of variable duration. In symptomatic cases, initial presentation commonly manifests as an acute febrile illness with nonspecific flu-like symptoms such as headache, weakness, profuse sweating, arthralgias, myalgias, fatigue, anorexia and weight loss. Localized suppurative infections of organs including the liver and spleen, may occur, as well as chronic localized infections. Subclinical infections have been reported. The disease may last days, months, or occasionally a year or more if not adequately treated. Complications may include sacroiliitis (or other osteoarticular manifestations), orchitis and epididymitis and less commonly, neurobrucellosis and endocarditis.

The incubation period for brucellosis can range from five days to six months.

RECOMMENDATIONS

Brucella abortus RB51 is resistant to rifampin and penicillin. A combination of doxycycline and trimethoprim/sulfamethoxazole for 21 days is the recommended first-line PEP regimen for RB51 exposure in adults.¹ PEP for children should be discussed with NYSDOH. Individuals receiving prophylaxis also be monitored for the development of symptoms of brucellosis as follows:

- For 4 weeks from last exposure, check temperature for fever.
- For 6 months from last exposure, watch for broader signs/symptoms of brucellosis.

Routine serologic tests for brucellosis are not effective for diagnosing or monitoring RB51 infections. As such, providers caring for exposed individuals who become ill with signs or symptoms consistent with brucellosis can access specialized testing through the Department's Wadsworth Center Laboratories. Testing must be pre-approved by the LHD or BCDC. If brucellosis occurs despite prophylaxis, treatment regimens should be selected based on antimicrobial susceptibility results.^{2,3,4}

REPORTING OF SUSPECTED CASES

Providers should promptly report individuals with suspected brucellosis infection to the LHD where the patient resides. Contact information is available at: https://www.health.ny.gov/contact/contact_information. If you are unable to reach the LHD where the patient resides, please contact the NYSDOH Bureau of Communicable Disease Control at 518-473-4439 during business hours or 866-881-2809 evenings, weekends, and holidays.

QUESTIONS

Questions should be directed to your LHD or the NYSDOH Bureau of Communicable Disease Control at (518) 473-4439 and bcdc@health.ny.gov.

¹ CDC Brucellosis Reference Guide <https://www.cdc.gov/brucellosis/pdf/brucellosi-reference-guide.pdf>

² Ariza J et al. 2007. Perspectives for the Treatment of Brucellosis in the 21st Century: The Ioannina Recommendations. PLoS Med. 4(12): e317. <http://www.plosmedicine.org/article/info:doi/10.1371/journal.pmed.0040317External>

³ Al-Tawfiq JA. 2008. Therapeutic options for human brucellosis. Expert Rev Anti Infect Ther. 6(1): 109-120. <http://www.ncbi.nlm.nih.gov/pubmed/18251668External>

⁴ Solera J. 2010. Update on brucellosis: therapeutic challenges. Intl J Antimicrob Agent. 36S, S18–S20. <http://www.ncbi.nlm.nih.gov/pubmed/20692127>