

BRUCELLOSIS, CANINE - USA: (MICHIGAN)

A ProMED-mail post

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<<http://www.freep.com/article/20131127/NEWS06/311270054/Canine-brucellosis-disease>>

State agriculture officials said this week that they've recently investigated 3 cases [involving 8 dogs] of a bacterial disease that affects dogs and can be transmitted to humans.

Canine brucellosis has been found in dogs in Montcalm, Calhoun, and Mackinac counties, according to the Michigan Department of Agriculture and Rural Development. 3 investigations were launched in the past 4 months, officials said.

Canine brucellosis is often sexually transmitted and can cause dogs to experience miscarriage, stillbirths, inflammation in the male reproductive system, semen abnormalities, eye problems, and back pain.

People can become infected if they're exposed to a dog's birthing fluid, saliva, feces, urine, or eye or nasal fluids.

State officials are encouraging anyone who suspects their dog is infected, or who has a dog that may have come from a breeder with infected dogs, to get the animal tested. Antibiotics will not cure the disease in dogs. "Pets do not have to be euthanized, but it's important to follow the guidelines to prevent spreading the infection, including spaying or neutering, and isolation from other dogs," State Veterinarian James Averill said in message posted this week [26 Nov 2013] on the agriculture department's website [<http://www.michigan.gov/mdard/0,4610,7-125-1572_3628-317198--,00.html>].

In a 2009 report, the department said canine brucellosis was "an emerging concern in Michigan's dog breeding facilities and 'puppy mills.'" That year, officials investigated 14 suspected cases; 5 were confirmed positive.

People infected with brucellosis may experience fever, body aches, headaches, sweating and fatigue, according to the Centers for Disease Control and Prevention. In humans, brucellosis is also known as undulant fever or Mediterranean fever, state officials said. [or Malta fever - Mod.TG]

Other animals that are most commonly infected with brucellosis include sheep, cattle, goats and pigs, according to the CDC. Consuming undercooked meat or raw dairy products can lead to human infection.

Kristi Valentini, marketing manager for Michigan Veterinary Specialists, said it's rare to see brucellosis in dogs. "It's so rare that the 3 internists I talked to in our Southfield and Ann Arbor hospitals have never seen a case of it in their careers," she said.

"It's more likely to occur in large animals, like livestock, or dogs that are breeding animals."

Montcalm County case

Officials said the Montcalm County case involved an occasional dog breeder with 6 dogs, including Boston terriers, pugs, and French bulldogs. 5 of the 6 dogs tested positive for brucellosis and were euthanized. No humans were known to have fallen ill.

Mackinac County case

The Mackinac County case involved 2 golden retriever/Labrador mixes who were brought to Michigan from Kentucky in 2011. The dogs were littermates and had a history of back pain, state officials said. Both dogs tested positive and were euthanized.

Calhoun County case

In Calhoun County, a breeder with 14 breeding dogs took 4 of them to a veterinarian for testing. One of the males tested positive and was euthanized. The other dogs were put under quarantine. No humans were known to have fallen ill.

State officials offered these tips:

- Dog owners should make sure that any dogs they are planning to use in a breeding program do not have brucellosis.
- Breeding kennels should be on a brucellosis surveillance program.
- People purchasing a puppy from a breeder should ask to see negative test results from the dogs that produced the litter. Anyone getting a dog from a pet shop or animal shelter should talk to their veterinarian about screening tests.
- Newly acquired breeding dogs and dogs with a history of reproductive problems or certain eye or spine disorders should be tested.

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[The state of Michigan can be located on the HealthMap/ProMED-mail interactive map at <http://healthmap.org/r/2_1t>. The counties affected can be seen on the map at <<http://geology.com/county-map/michigan.shtml>>.

Canine brucellosis, caused by *Brucella canis*, is an important cause of reproductive failure, particularly in kennels. This organism causes abortions, stillbirths, epididymitis [inflammation of

ducts next to the testicle], orchitis [inflammation of the testicle] and sperm abnormalities in dogs. Although dogs that have been spayed or neutered do not have reproductive signs, they occasionally develop other conditions such as ocular disease and discospondylitis (inflammation of the spinal vertebrae and intervertebral discs). *B. canis* can persist in an animal even after antibiotic treatment. In kennels, infected dogs are often euthanized to prevent them from infecting other dogs or people. Canine brucellosis is sometimes difficult to diagnose with the currently available tests.

Although *B. canis* is zoonotic, its importance as a cause of human illness is still unclear. Few cases have been reported in people, and most of these infections have been mild. However, human infections with *B. canis* may be underdiagnosed. The symptoms of this disease are nonspecific, diagnostic suspicion is low among physicians, and bacterial culture is the only commonly available test for diagnosis in people.

B. canis occurs in the fetus, placenta, fetal fluids, and vaginal discharge after an abortion or stillbirth. It can persist in vaginal discharges for several weeks after an abortion. It is also shed in normal vaginal secretions, particularly during estrus, as well as in milk. High concentrations of *B. canis* may be found in semen for weeks or months after infection, and intermittent shedding of smaller quantities can occur for years. *B. canis* is also shed in urine, and low concentrations of bacteria may be excreted in saliva, nasal and ocular secretions and feces.

In dogs, *B. canis* primarily enters the body by ingestion and through the genital, oronasal and conjunctival mucosa, but transmission through broken skin may also be possible. Most cases are thought to be acquired by venereal transmission or by contact with the fetus and fetal membranes after abortions and stillbirths. Puppies can be infected in utero, and may remain persistently infected even if they appear normal. Nursing puppies can be infected from milk, but the importance of this route is controversial. Other potential sources of infection include blood transfusions and contaminated syringes.

B. canis can be spread on fomites. In conditions of high humidity, low temperatures and no sunlight, *Brucella* spp can remain viable for several months in water, aborted fetuses, feces, equipment, and clothing. *Brucella* spp can withstand drying, particularly when organic material is present, and can survive in dust and soil. Survival is longer when the temperature is low, particularly when it is below freezing.

Humans usually become infected with members of the genus *Brucella* by ingesting organisms or via the contamination of mucous membranes and abraded skin. In case reports, *B. canis* infections have been described after close contact with dogs, especially animals that recently aborted or gave birth, and after exposure to large amounts of the organism in laboratories (such as, contact with bacterial cultures). However, the source of the organism could not be determined in some cases.

While documented human cases of *B. canis* are rare, and may be underreported, immunocompromised people should be especially careful around animals known to be positive for *B. canis*.