

Animal Surveillance Case Definition

Brucellosis

Clinical description

A communicable disease of animals and people caused by Gram-negative coccobacillus *Brucella* bacteria. There are six species in the genus *Brucella*: *B. melitensis*, *B. abortus*, *B. suis*, *B. neotomae*, *B. ovis*, and *B. canis*. Domestic livestock, including cattle, swine, sheep and goats, as well as wildlife, including bison, elk, caribou, and some species of deer, can become infected with *Brucella*. Most species of *Brucella* are associated with a limited number of hosts, but infections can occur in other species.

Canine brucellosis is caused by *B. canis* and is a significant cause of reproductive failure in dogs, particularly in breeding kennels and stray dogs. *B. abortus* and *B. melitensis* are occasionally found in dogs, particularly when in close contact with livestock. Cats are resistant to *Brucella* and no cases of natural disease occurrence are known. Clinical infections in dogs are characterized by bacteremia, abortions, prostatitis, epididymitis, lymphanditis and splenitis. The usual interval between exposure and onset of illness ranges from one to three weeks. Human brucellosis is usually caused by direct contact of mucous membranes or abraded skin with tissue or secretions from infected animals (e.g., vaginal secretions, fetuses, and fetal membranes), ingestion of contaminated food, water, or unpasteurized milk/milk products, or inhalation of airborne *Brucella* bacteria. In New Jersey, one to three confirmed or probable human *Brucella* cases are diagnosed annually, associated with ingestion of imported unpasteurized soft cheeses or livestock exposure outside of the U.S. Humans are susceptible to *B. canis*, though less so than to other *Brucellae*. *B. canis* is transmitted to humans through direct contact with bitches that recently aborted and fetal membranes.

Brucellosis is a CDC bioterrorist Class B agent. Pathogens utilized as a bioterrorism agent may have atypical routes of transmission and clinical manifestations. Veterinary practitioners suspecting brucellosis in domestic companion animals should immediately notify their local health department or the NJDHSS at 609-826-4872 during working hours and 609-392-2020 on nights, weekends and holidays.

Case classification

Confirmed

+/- compatible clinical signs **and**

- o isolation of *Brucellae* from a clinical specimen by culture.

Probable

A clinically compatible case **and**

- o elevated antibody serology to *B. canis*; **or**
- o detection of *B. canis* nucleic acids in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR) assay.

Suspect

A clinically compatible case that is epidemiologically linked to a confirmed case.