

A collaborative effort- an investigation of suspect canine brucellosis

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Brucellosis

- Brucellosis is a zoonotic disease caused by infection with *Brucella* bacteria. The species of *Brucella* that infect humans are *B. abortus*, *B. melitensis*, *B. suis*, and, rarely, *B. canis*
- Reservoirs can include cattle, swine, goats and sheep and less commonly in dogs
- Brucellosis is spread through direct contact (of mucosal surfaces and cuts and abrasions of the skin) with secretions of living or dead infected animals, including their tissues, blood, urine, vaginal discharges, aborted fetuses, and placentas. Most commonly, it can be spread through ingestion of raw milk and dairy products (e.g., unpasteurized cheese) from infected animals.
- The incubation period for brucellosis is highly variable, ranging from five days to 5 months; illness most commonly occurs two to four weeks after exposure



An Overview of *Brucella canis*

- Etiologic agent & serovar
- Clinical symptoms
- Modes of transmission
- Incubation period
- Clinical manifestation



Canine Brucellosis

- Transmitted through dogs by mucosal contact with infected material
- Dogs can remain bacteremia for at least 5 years
- Clinical manifestations:**
 - Lethargy
 - Swollen lymph nodes
 - Stillborn puppies
 - Spontaneous abortion
 - Swollen or shrunken testicles
 - Vaginal discharge
 - Difficulty walking



Reporting Requirements

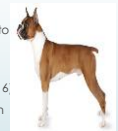
- Immediately reportable (suspect or confirmed) zoonotic disease in humans and/or canines**



Case No.	Date of Report	Reporting Agency	Reporting Person	Species	Age	Sex	Color	Location	Onset Date	Signs and Symptoms	Diagnosis	Disposition	Comments

Warren County Case Review

- Phone call from veterinarian 1/11/17
- Received zoonotic disease incident report via fax (also sent to NJDOH)
- Local family bred their two pet boxers
 - 2 y/o female and 7 y/o male – pregnant (November 2016)
 - Female presented with vaginal discharge and neck pain (1/11/17)
 - Spontaneous abortion of litter
 - Rapid test + for *B. canis*
 - Confirmatory testing to be performed at Cornell University Diagnostic Laboratory
- Vet recommended euthanasia for the female dog – female clinical presentation was “textbook” definition for *B. canis*



NJDOH Recommendations for LHD

Human Surveillance

- Identify exposed individuals in household
 - Exposed individuals should be advised to follow-up with HCP if symptomatic and for further medical recommendations
- Contact HCP to discuss identified exposures and explain clinical recommendations and testing recommendations for Brucellosis.
 - Provider to report test results to LHD
- Advise household contacts of dog to use contact precautions (i.e. gloves) to prevent transmission

Canine Surveillance

- NJDOH supported veterinarian's recommendation for euthanasia of female dog based on clinical assessment and preliminary test result- owner declined
- Female and male dog were neutered to prevent transmission and were treated with antibiotics
- LHD recommended testing male dog and repeat testing on female if confirmatory test result was positive
- Dogs to be quarantined on premises indefinitely if positive.

WCHD Response

- Options for pet owner
 - Euthanasia for both dogs
 - Further testing
 - Treatment (including spay/neuter) and isolation
- Visited home
 - Evaluated exposure during time when dog was aborting
 - Confirmed that both dogs were being treated with antibiotics
 - Made control precaution: cleaning and disinfection recommendations
 - Reinforced education regarding future exposure and handling of dogs
- Spoke with PCP
 - Add Brucellosis to differential diagnosis possibilities moving forward



Canine Lab results- Female

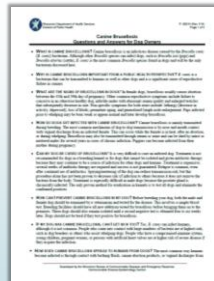
Organism/ Agent	Lab Result	Type of Test Performed	Specimen Type	Date Obtained	Result Date	Test Location
Brucella canis	Positive	RSAT	Serum	1/11/17	1/11/17	Veterinary Service location
B. canis	Positive	2ME-TAT	Serum	1/11/17	1/11/17	Veterinary Service location
B. canis	Negative	RSAT; AGID	Serum	1/11/17	1/26/17	Cornell University Diagnostic Laboratory
B. canis	Negative	Culture	Uterus	1/11/17	1/26/17	Cornell University Diagnostic Laboratory

Conclusion

- Bacterial culture came back negative – no further surveillance or precautions needed
- Due to no identified human cases- no input into CDRSS required
- Owner had elected treatment and isolation of dogs
 - Given OK to resume "normal" life with dogs
 - Called family PCP to inform of negative test result for dogs

Resources

- NJDOH Communicable Disease Chapter
- Zoonotic Disease Incident Report Form
- Canine Brucellosis: Brucella Canis (College of Veterinary Medicine, Iowa State University, 2012): <http://www.c.v.mh.iastate.edu/Facisheets/pdfs/brucella%20canis.pdf>
- Canine Brucellosis: Questions and Answers for Dog Owners (Wisconsin Department of Health Services, Division of Public Health, 2014): <http://www.dhs.wisconsin.gov/publications/p014/0814.pdf>
- Public Health Implications of Brucella canis Infections in Humans (National Association of State Public Health Veterinarians, 2012): <http://napshv.org/Documents/BrucellaCanisInHuMans.pdf>



Acknowledgments

NJDOH- Zoonotic Disease Team

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- Epidemiologist: Kristin Garafalo, MPH, CHES

Warren County Health Department

- Mary Guglielmo, BSN, RN- Public Health Nurse Supervisor
- Marilyn Gubics, RN- Public Health Nurse

