

# Zoonotic Disease in Montana: Q fever, Brucellosis, and Tularemia

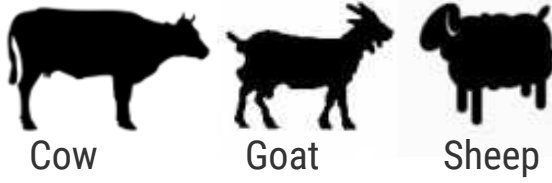
## Q Fever

*Coxiella burnetii*

3

Cases per Year  
on Average

### Reservoirs



Cow

Goat

Sheep

Although cattle, goats, and sheep are the most common reservoirs, infection has been confirmed in multiple vertebrate species including cats, dogs, wild mammals, birds, and ticks.

### Transmission

- Airborne (dust or aerosols)
- Direct contact with contaminated materials
- Ingesting raw milk

Average incubation period of  
2-3 weeks

### Symptoms

- Fever
- Chills/Sweats
- Feeling tired
- Headache
- Muscle aches
- Gastrointestinal Symptoms
- Chest Pain
- Weight loss
- Non-productive cough



## Brucellosis

*Brucella sp.*

< 1

Case per Year  
on Average

### Reservoirs



Cow

Goat

Sheep

Pig

Other reservoirs include: camels, bison, elk, equids, caribou, and some species of deer

### Transmission

- Eating or drinking raw milk/dairy products
- Breathing in the bacteria
- Bacteria enters through skin wounds or mucous membranes

Average incubation period of  
1-2 months

### Symptoms

- Night sweats
- Arthralgia
- Headache
- Fatigue
- Anorexia
- Myalgia
- Weight loss
- Arthritis/spondylitis
- Meningitis
- Focal organ involvement



## Tularemia

*Francisella tularensis*

4

Cases per Year  
on Average

### Reservoirs



Tick

Deer fly

Rabbit

Other wild animals, such as hares, voles, muskrats, water rats, beavers and some domestic animals can serve as reservoirs.

### Transmission\*

- Arthropod bite (tick/deer fly)
- Ingestion of contaminated food/water
- Inhalation of contaminated aerosols

Average incubation period of  
1-14 days

### Symptoms\*

- Skin ulcer (where arthropod bite occurred)
- Irritation and inflammation of the eye(s)
- Sore throat
- Mouth ulcers
- Tonsillitis
- Swollen lymph glands in neck
- Cough
- Chest pain
- Difficulty breathing



\*There are 6 forms of tularemia. The form in which a person is infected with is dependent upon the reservoir/agent they come into contact with. Symptoms are specific to the form of Tularemia as well.