

Health Risks to Animal Welfare Workers

Dr. Tess Peavy
Founder of Public Vet

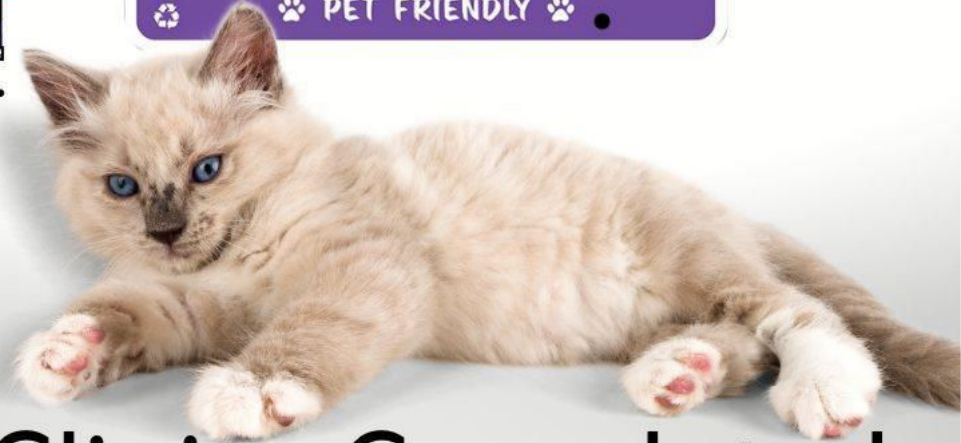


2023 *FIX is IN!* Clinics

(As of 12.05.2023)

Public Vet

- Prioritizes One Health
- Non-profit public health group
- Provides high-quality, high-volume spay/neuter services
- Serves rural areas of Indiana and Ohio



- 130 Clinics Completed
- **12,030 Cats Fixed**
- (4,117 Needed Financial Assistance)

Evaluation of *Leptospira* Exposure in Feral Cat Populations in Northern California and Southern Texas

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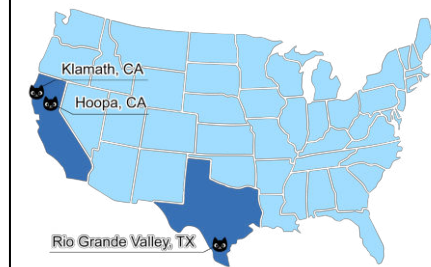


MAT

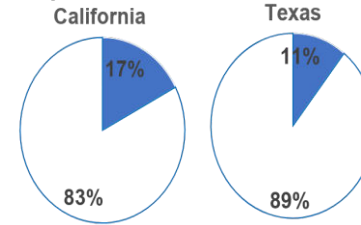
Leptospirosis is a zoonotic bacterial infection that can cause renal and hepatic injury. Sub-clinical reservoir hosts maintain a carrier state in endemic regions. Feral cats in some areas have high prevalence of *Leptospira* antibodies and leptospire can be detected in renal tissue. This finding indicates feral cats may play a role in *Leptospira* epidemiology or act as sentinels for detection of *Leptospira* in the environment. The objective of this study was to assess the exposure, and possible infection, of feral cats in two regions in the United States, to further investigate their role in the epidemiology of the disease. The second objective was to determine the performance of SNAP Lepto assay (IDEXX Laboratories) for detection of *Leptospira* antibodies in feral cat sera when compared with the microagglutination test (MAT).

- Whole blood, sera and urine specimens were collected from 52 feral cats in California in October 2020.
- Sera were collected from 75 feral cats in Texas throughout 2017.
- A MAT was performed on all 127 serum samples. The SNAP Lepto assay (IDEXX Laboratories) was performed on 106 serum samples. MAT serogroups tested were Icterohaemorrhagiae, Canicola, Hardjo, Bratislava, Grippityphosa, and Pomona (California Animal Health and Food Safety Laboratory, Davis, CA).
- *Leptospira* PCR was performed on whole blood and urine specimens from California cats (UC Davis, CA).

Study Collection Sites



Seropositive Cats



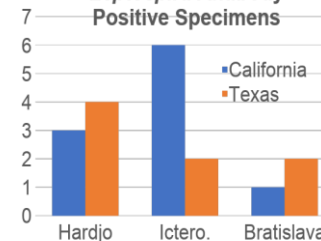
In the California population (n= 52), 9 (17%) were MAT positive. In the Texas population (n= 75), 8 (11%) of the sera samples were MAT positive.

Serogroup Seroreactivity of Positive Specimens

Serogroup	California	Texas
Hardjo	200	800
Icterohaemorrhagiae	200	200
Bratislava	100	200
Canicola	0	0
Grippityphosa	0	0
Pomona	0	0

The table displays all serogroups tested and the highest reciprocal titer obtained for each serogroup.

Leptospira Antibody Positive Specimens



In the California population, 1 cat concurrently had antibodies to both *Leptospira* serogroups Icterohaemorrhagiae and Bratislava.

Example SNAP Test

Control indicator



Sample tray

Positive indicator

PCR Results

Leptospira PCR was performed on whole blood and urine specimens from all California cats (n= 52). All results were negative.

All samples from cats in California and 54 samples from cats in Texas (including all MAT positive sera) had a SNAP test performed. All 106 tests were negative.

- Feral cats mount antibodies to *Leptospira* and may act as sentinel hosts. No cats had evidence of an active infection, but inability to test renal tissue did not rule out the possibility of infection.
- Antibodies to *Leptospira* serogroups Icterohaemorrhagiae and Hardjo were most commonly identified. The significance of this is unclear as seroreactivity does not predict the infecting serovar due to serologic cross-reactivity. However, most dogs in northern California tested at this laboratory seroreact with higher titers to Pomona or Bratislava, so dogs may be exposed to different serovars than cats.
- The SNAP Lepto assay (IDEXX Laboratories) did not detect antibodies detected by MAT in cats from these regions.

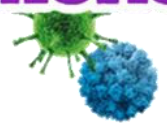


**FINANCIAL
& LEGAL
RISKS**



**ANIMAL
WELFARE
WORKERS**

**EXTERNAL
RISKS**



**INTERNAL
RISKS**



Preface for Zoonosis



Parasites and **pathogens are integral** part of healthy ecosystems.

Humans exist as part of the ecosystem, and are able to have a profound effect on it.

Health of living organism that **coexist with us** influence our health.

It's a risk based issue. 60-75% of diseases are of Zoonotic origins, and growing.

Zoonosis has been a pertinent issue in mainstream media, resulting from a multitude of zoonotic epidemics over the last two decades.

The massive loss in biodiversity, explosion of human population, and other phenomena notably globalization have created a climate that put pressure on pathogens to use humans and domestic animals as hosts.

BIOFILMS IN OUR BODIES

- **Virtually all chronic bacterial diseases include a biofilm component**
- **Two-thirds of all bacterial infectious diseases involve biofilms (CDC)**

Sites of Primary and Secondary Infection

COMMON SITES OF PRIMARY INFECTION:

Subvenous catheter

Mouth

Artificial hip implant

COMMON SITES OF SECONDARY INFECTION:

Brain

Kidneys

Intervertebral spaces

Hip

DEVICE-RELATED INFECTIONS

Ventricular derivations

Contact lenses

Endotracheal tubes

Vascular central catheters

Prosthetic cardiac valves, pacemakers and vascular grafts

Peripheral vascular catheters

Tissue fillers, breast implants

Urinary catheters

Orthopedic implants and prosthetic joints

TISSUE INFECTIONS

Chronic otitis media, chronic sinusitis

Chronic tonsillitis, dental plaque, chronic laryngitis

Endocarditis

Lung infection in cystic fibrosis

Kidney stones

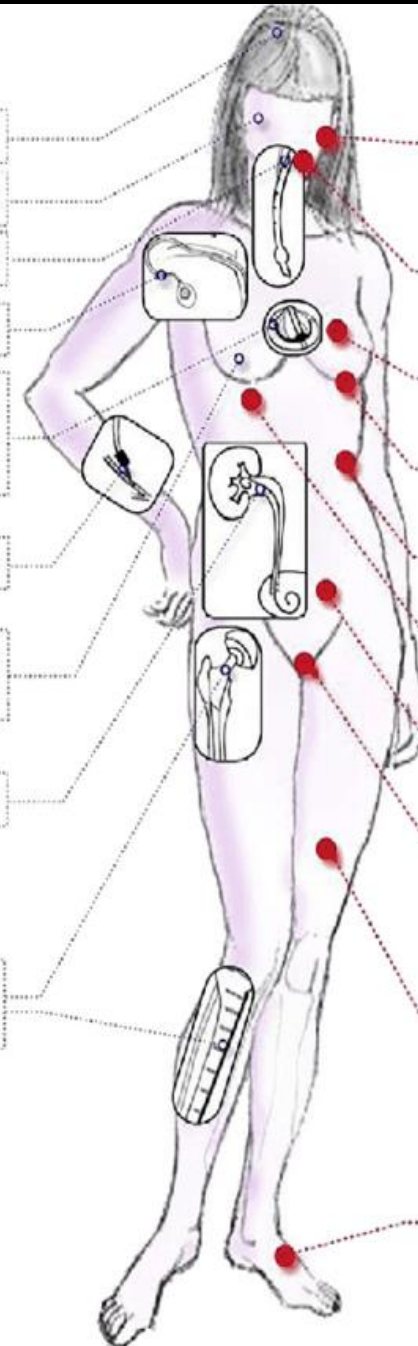
Biliary tract infections

Urinary tract infections

Vaginosis

Osteomyelitis

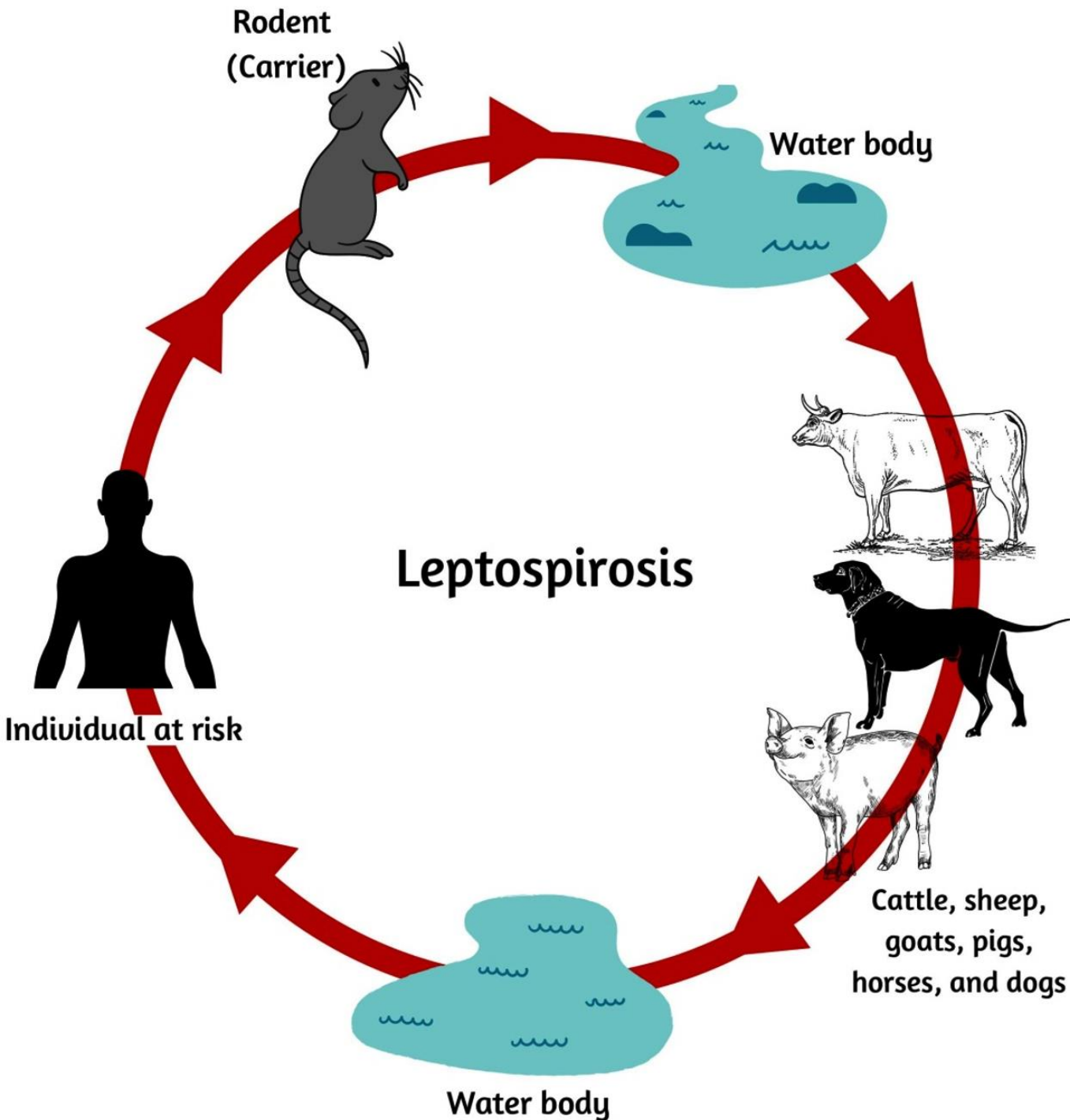
Chronic wounds





Zoonotic Illnesses

- Caused by infectious agents (bacteria, fungi, virus, parasites) that can spread from animals to people.
- Who is at risk?
 - Immunocompromised
 - Elderly
 - Children
 - Animal welfare workers



Leptospirosis

- Humans can get infected through urine, bodies of water and potentially even saliva
- Carried by both dogs and CATS!
- Has been the direct cause of death of Animal-Welfare workers



Ringworm

- Fungal infection
- Non-fatal, but extremely contagious
- Presents as red, round, itchy rash with raised borders

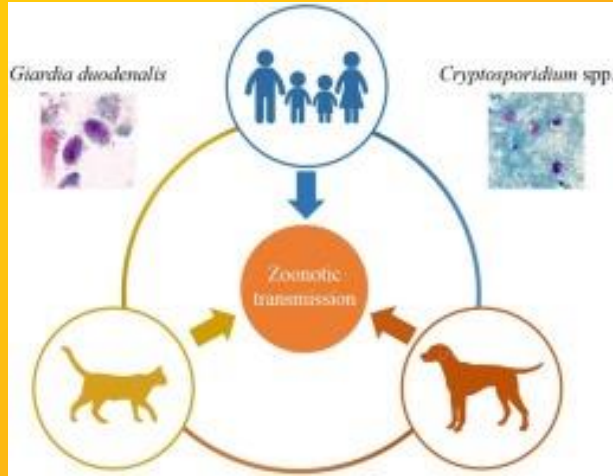




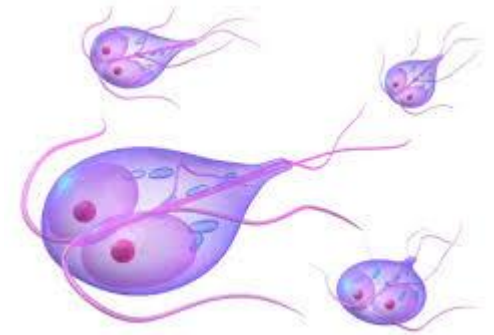
Baylisascaris

- “Raccoon Roundworm”
- Spread via infected fecal material or soil containing baylisascaris worm eggs
- Can be deadly if infection travels to the brain

Giardia and Coccidia



- Single celled protozoan parasites
- Diarrheal diseases
- Fecal -oral transmission
- Invades the lining of the GI
- NO FUN!





Toxoplasmosis

- Spread via fecal material and undercooked meat
- Increased risk for pregnant women, immunocompromised, and children
- According to available data $\frac{1}{3}$ of the human population is affected



Bartonella

- Gram-negative bacteria
- Spread via fleas





Mental Health

Open Access

Review

Human Bartonellosis: An Underappreciated Public Health Problem?

by Mercedes A. Cheslock and Monica E. Embers *  

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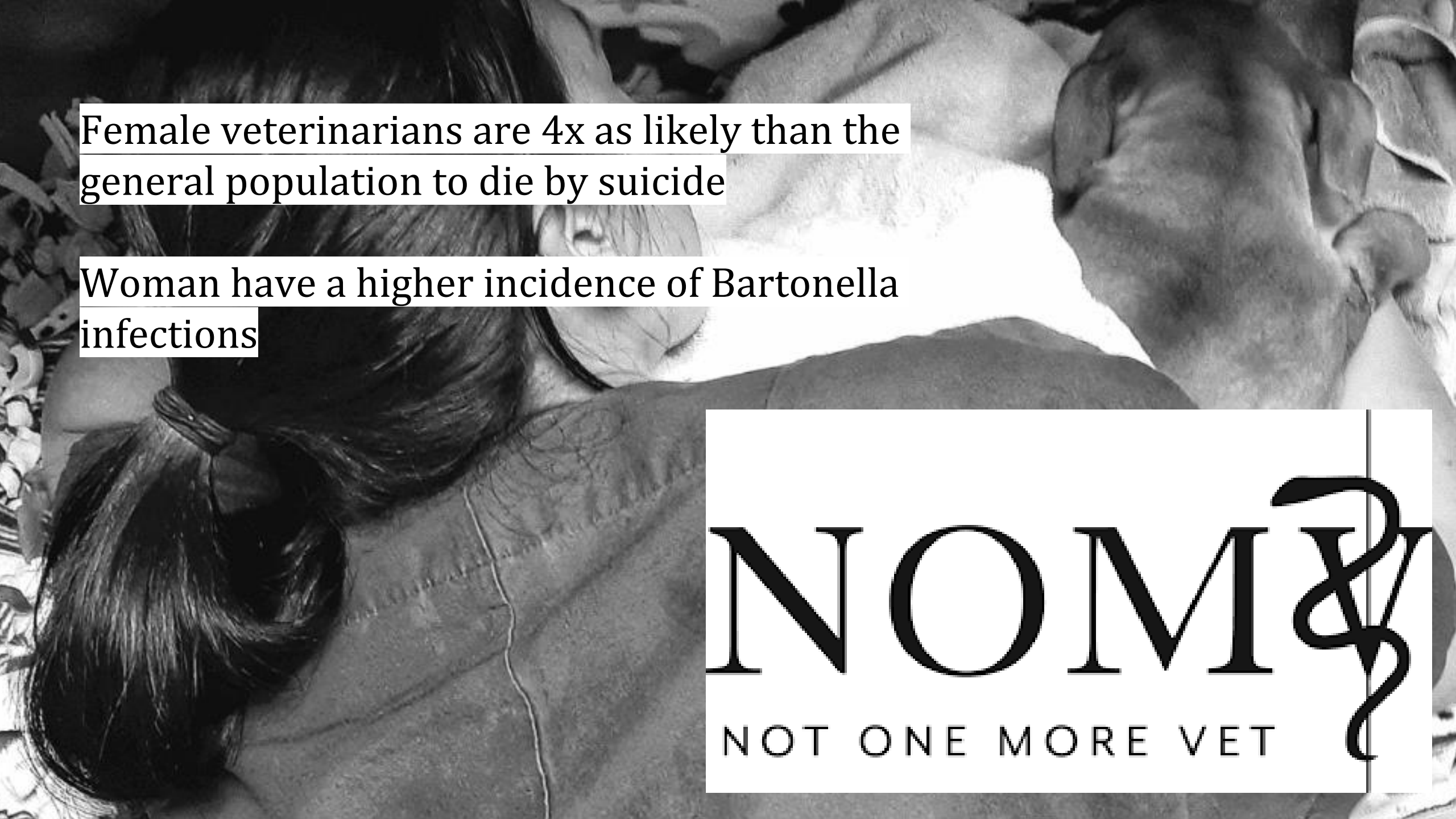
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Versions Notes

Abstract

Bartonella spp. bacteria can be found around the globe and are the causative agents of multiple human diseases. The most well-known infection is called cat-scratch disease, which causes mild lymphadenopathy and fever. As our knowledge of these bacteria grows, new presentations of the disease have been recognized, with serious manifestations. Not only has more severe disease been associated with these bacteria but also *Bartonella* species have been discovered in a wide range of mammals, and the pathogens' DNA can be found in multiple vectors. This review will focus on some common mammalian reservoirs as well as the suspected vectors in relation to the disease transmission and prevalence. Understanding the complex interactions between these bacteria, their vectors, and their reservoirs, as well as the breadth of infection by *Bartonella* around the world will help to assess the impact of Bartonellosis on public health.

Keywords: *Bartonella*; vector; bartonellosis; ticks; fleas; domestic animals; human



Female veterinarians are 4x as likely than the general population to die by suicide

Woman have a higher incidence of Bartonella infections

NOMV
NOT ONE MORE VET

Partnerships

Communication



Solutions

NONVIOLENT COMMUNICATION

Structure



Steps You Can Take



GET TESTED!



**INFORM CLIENTS
AND COWORKERS**



**SEEK OUT
SUPPORT & CONNECTION**



Thank you!



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