



Public Health Services One Health Epidemiology Program Newsletter

Epidemiology & Immunization Services Branch

Friday, November 3, 2023

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Announcements





Meet Some of our Team, from left to right:

Jeff Johnson, MPH, EISB Branch Chief; Annie Kao, PhD, MPH, MS, Senior Epidemiologist; Emily Trumbull, DVM, Veterinarian; Meghan Villalobos, MPH, Epidemiologist; Sarah Stous, MPH, Senior Epidemiologist; Olivia Springfield, MAS, Epidemiologist II; Seema Shah, MD, MPH, EISB Medical Director. Not pictured Mark Beatty, MD, MPH, Assistant Medical Director and Linnie Cua, PhD, MPH, Epidemiologist II. In the next issue we will highlight the San Diego County, Public Health Laboratory team.

Join our FREE Virtual Event: County of San Diego Continuing Education Credits (CE) for Veterinarians



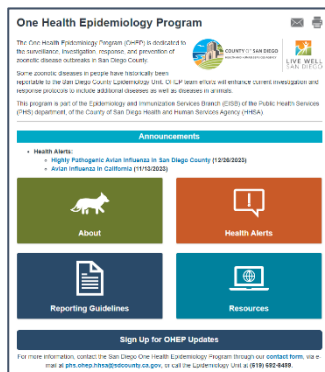
- **When:** December 7, 2023 from 12-1 PM PST
- **Where:** Training will take place on Zoom

Scan the QR code on the left or click [here](#) to register!

We will introduce the One Health Epidemiology Program, provide information about local disease vectors, and review rabies resources and testing.

1 Hour of CEs will be provided to attending veterinary professionals, approved by the California Veterinary Medical Board.

County Resources



Check Out these Resources:

- [One Health Epidemiology Program](#)
- [Communicable Disease Reports](#)
- [Dog Importation Guidelines](#)
- [Submission Form for Rabies Testing](#)

Vector-Borne & Zoonotic Disease Information

Current Diseases of Concern or Outbreaks Links:

- [Equine West Nile Virus](#)
 - [Salmonella Outbreak Linked to Small Turtles](#)
 - [Salmonella Contaminated Darwin's Natural Pet Products for Dog & Cats](#)
 - [Salmonella Contaminated Mid America Pet Food](#)
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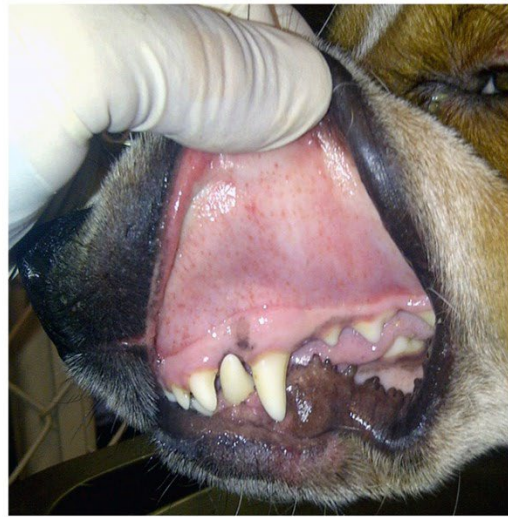
Have You Heard About Rocky Mountain Spotted Fever?

Background: Rocky Mountain Spotted Fever (RMSF) is a tick-borne disease caused by the bacteria *Rickettsia rickettsii*, which affects people and dogs. Serology data in dogs from San Diego shelters shows evidence of exposure to the pathogen *R. rickettsii* (Backus et al. 2023). Although, the San Diego County Vector Control Program (VCP) currently detects *R. rickettsii* in ticks at a low frequency, it is worth noting in nearby regions, such as Arizona and Baja California, Mexico, ticks are known to carry this disease. Currently, there is an ongoing [human RMSF epidemic](#) in Northern Mexico (Zazueta et al. 2021). In this area, dogs can become heavily infested with brown dog ticks (*Rhipicephalus sanguineus Sensu Lato*) which serves as the vector for this disease. Therefore, it is crucial to consider your canine patients' travel history when a tick-borne disease is on your differential list.

Clinical Signs: Clinical signs of RMSF in dogs can appear similar to other tick-borne diseases or may be more non-specific. Dogs may present with fever, lethargy, anorexia, maculopapular rash, polyarthritis, lymphadenopathy, and edema of the face or extremities. Petechial hemorrhages on mucosal surfaces or retinal hemorrhages may be seen. In some cases, neurological signs may manifest and can range from ataxia to seizures. Clinical pathology can include anemia, thrombocytopenia, and leukopenia followed by a leukocytosis. Cases in dogs can be severe enough to be fatal. Although cats have been found to have antibodies to *R. rickettsii* in endemic areas, associated clinical signs have not been documented (Kidd 2022).



A



B

These photos demonstrate the maculopapular rash in the ear (A) and the petechiae on the oral mucosa (B) from two different dogs in the Levin et al study from 2014.

Diagnostics: In dogs, PCR can detect rickettsial DNA during the acute phase (days 5 to 13 days post infection), while serology can detect IgG antibodies later in the course of disease, peaking 17-28 days post infection (Levin et al. 2014). A fourfold increase or decrease of antibodies detected by indirect fluorescent antibody (IFA) tests over a four-week period indicates a recent acute infection rather than historical exposure (Allison & Little 2013).

Treatment: Due to the severity of the disease, when clinical signs are consistent with RMSF, initiation of empiric antibiotic therapy should not be delayed while awaiting laboratory confirmation (Kidd 2022). The antibiotic of choice for treatment of RMSF is doxycycline.

If you have a suspected or laboratory confirmed case of Rocky Mountain Spotted Fever, please call the County of San Diego, Epidemiology Unit (619) 692-8499.

References:

Allison RW, Little SE. Diagnosis of rickettsial diseases in dogs and cats. *Veterinary clinical pathology*. 2013 Jun;42(2):127-44.

Backus L, Foley J, Chung C, Virata S, Zazueta OE, López-Pérez A. Tick-borne pathogens detected in sheltered dogs during an epidemic of Rocky Mountain spotted fever, a One Health challenge. *Journal of the American Veterinary Medical Association*. 2023 Mar 1;261(3):375-83.

Kidd L. Emerging Spotted Fever Rickettsioses in the United States. *Veterinary Clinics: Small Animal Practice*. 2022 Nov 1;52(6):1305-17.

Levin ML, Killmaster LF, Zemtsova GE, Ritter JM, Langham G. Clinical presentation, convalescence, and relapse of Rocky Mountain spotted fever in dogs experimentally infected via tick bite. *PLoS One*. 2014 Dec 26;9(12):e115105.

Zazueta OE, Armstrong PA, Márquez-Elguea A, Milán NS, Peterson AE, Ovalle-Marroquín DF, Fierro M, Arroyo-Machado R, Rodríguez-Lomeli M, Trejo-Dozal G, Paddock CD. Rocky Mountain spotted fever in a large metropolitan center, Mexico–United States border, 2009–2019. *Emerging Infectious Diseases*. 2021 Jun;27(6):1567.

Additional Resources:

- [San Diego County Vector Control Program website](#)
- [Merck Veterinary Manual Rocky Mountain Spotted Fever in Dogs - Generalized Conditions](#)
- [California Department of Public Health \(CDPH\) Tickborne Diseases website](#)

West Nile Virus – From our Partners at Department of Environmental Health and Quality



West Nile virus (WNV) is a mosquito-borne virus that can infect a wide spectrum of animals and people. Certain species of passerine birds are the reservoir and mosquitoes transmit the virus to other animals and people after feeding on infected birds.

Eighty percent of people who are bitten by an infected mosquito have no symptoms, but 20 percent may develop flu-like symptoms. Less than 1% of people may develop more serious complications like encephalitis or meningitis which can have lifelong deleterious effects. WNV is the most common mosquito-borne disease in the United States as well as in California. It has been present in San Diego since 2003. The San Diego County Vector Control Program (VCP) is a countywide program that works to protect the public from vectors and the diseases they can transmit to people, including WNV.



The program monitors WNV by trapping and testing mosquitoes throughout the county and by collecting and testing dead crows, ravens, jays, and raptors, like owls, hawks, and falcons, that have been reported by the public. People can report dead corvids and raptors to the VCP for testing if the birds have been dead for less than 24 hours and are in good condition (no physical injuries, foul odors, or covered in ants or flies).

The best protection against WNV is to prevent mosquito bites by wearing EPA-approved mosquito repellent, long sleeves, and pants, and to prevent mosquito breeding by dumping out standing water around your home.

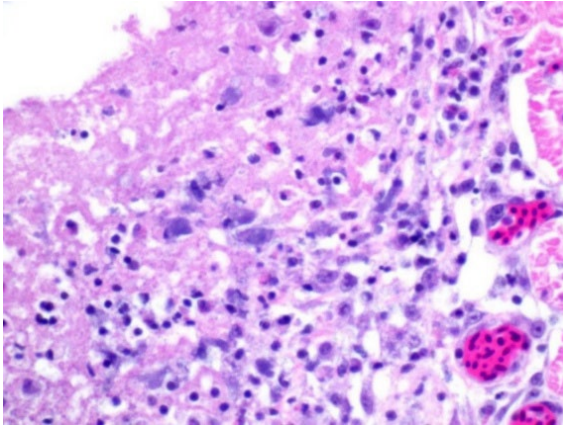
You can learn more about how to prevent WNV and how to report dead birds by visiting the VCP website sdvector.com, emailing vector@sdcounty.ca.gov, or calling (858) 694-2888.

***Chlamydia psittaci* in a Wild Collard Dove – From our Partners at the San Diego Zoo, Disease Investigations Laboratory**

Chlamydia psittaci is an obligate intracellular bacterium that causes the zoonotic disease psittacosis. This bacterium is found worldwide and affects a range of domestic and wild avian species, especially psittacines, budgerigars, pigeons and doves. Clinical signs in birds can range from being asymptomatic to include anorexia, ocular discharge, decreased egg production, gastrointestinal or respiratory signs and can result in high morbidity and mortality. People affected can have mild flu symptoms such as fever, headache, muscle aches, dry cough and chills or can be more severe leading to pneumonia.

Transmission from birds to humans has occurred from handling affected animals, inhalation of respiratory secretions or through aerosolization of dried fecal material. This has been documented in professions working in close contact with affected birds. Maintaining good air quality and as well as the use of personal protective equipment minimizes the risks of exposure to those working with birds.

A wild collared dove with a *Chlamydia psittaci* infection was found deceased on zoo property; this infection was examined by the zoo's veterinary pathology team.



The gross necropsy revealed the pronounced exudative pericarditis, coelomitis and air sacculitis. The histology image, on the left, shows the fibrinous epicarditis with intracellular basophilic (blue) aggregates of small bacteria consistent with chlamydia.

For more information, please visit:

- [BioOne Compendium of Measures to Control Chlamydia psittaci Infection Among Humans and Pet Birds](#)
- [The Center for Food Security & Public Health Psittacosis/Avian Chlamydiosis](#)
- [Centers for Disease Control and Prevention Psittacosis website](#)

How to Contact Us

For more information, contact the San Diego One Health Epidemiology Program through our [contact form](#), via e-mail at [pht.ohep.hhsa@sdcounty.ca.gov](mailto:phs.ohep.hhsa@sdcounty.ca.gov), or call the Epidemiology Unit at (619) 692-8499.

We want to know if you are seeing any unusual, new, or emerging animal disease or outbreak. We can provide consultation, help investigate these diseases, and provide resources. Keeping us informed helps us protect our human and animal community.

Sign up for our One Health Epidemiology Network Updates

Thank You!

If you have any questions on the content of this newsletter or have a question about the One Health Epidemiology Program, please email phs.ohep.hhsa@sdcounty.ca.gov



The Public Health Services department, County of San Diego Health and Human Services Agency, has maintained national public health accreditation, since May 17, 2016, and was re-accredited by the Public Health Accreditation Board on August 21, 2023.