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Maine Health Alert Network (HAN) System

PUBLIC HEALTH ADVISORY

To: Health Care Providers
From: Dr. Isaac Benowitz, State Epidemiologist
Subject: U.S. CDC: Severe and Fatal Rocky Mountain Spotted Fever Following Travel to Tecate, Mexico
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Please take a moment to review this information from U.S. CDC about severe Rocky Mountain Spotted Fever.

Spotted Fever Rickettsioses, which includes Rocky Mountain Spotted Fever, are not endemic in Maine. Since 2007, Maine has reported 44 probable cases of Spotted Fever Rickettsioses (2-3 cases per year on average). Maine has never reported a confirmed case of Spotted Fever Rickettsioses. While dog ticks are the second most abundant tick vector in the state, dog ticks in Maine are not known to carry *Rickettsia* spp. bacteria. Mainers are more likely to pick up Spotted Fever Rickettsioses while traveling to another state where Spotted Fever Rickettsioses bacteria are known to be endemic.

The University of Maine Cooperative Extension Tick Laboratory tests dog ticks for *Rickettsia rickettsii* as part of their public tick surveillance program. To date, the Tick Lab has not identified *R. rickettsii* in any ticks submitted to their lab. However, one Gulf Coast tick submitted to the lab in 2022 tested positive for *Rickettsia parkeri*.

All confirmed and suspected cases with Spotted Fever Rickettsioses (includes *R. rickettsii* [Rocky Mountain Spotted Fever], *R. parkeri* [*Rickettsia parkeri* rickettsiosis], *Rickettsia philipii* [Pacific Coast tick fever], and *R. akari* [Rickettsialpox]) must be reported to Maine CDC by electronic laboratory reporting, fax at 800-293-7534, or phone at 800-821-5821.

Severe and Fatal Confirmed Rocky Mountain Spotted Fever among People with Recent Travel to Tecate, Mexico

Summary

The Centers for Disease Control and Prevention (U.S. CDC) is issuing this Health Alert Network (HAN) Health Advisory to notify healthcare providers and the public about an outbreak of Rocky Mountain spotted fever (RMSF) among people in the United States with recent travel to or residence in the city of Tecate, state of Baja California, Mexico. RMSF is a severe, rapidly progressive, and often deadly disease transmitted by the bite of infected ticks, although many patients do not recall being bitten by a tick. Doxycycline is the treatment of choice for patients of all ages. As of December 8, 2023, five patients have been diagnosed with confirmed RMSF since late July 2023; all had travel to or residence in Tecate within 2 weeks of illness onset. RMSF is endemic in multiple border states in northern Mexico, including but not exclusive to Baja California, Sonora, Chihuahua, Coahuila, and Nuevo León. Healthcare providers should consider RMSF in their differential diagnosis of patients who have reported recent travel to Tecate, Mexico, or other areas of northern Mexico and subsequently develop signs or symptoms of an unexplained severe febrile illness. **Consider initiating doxycycline based on presumptive clinical and epidemiologic findings, and do not delay treatment pending the result of a confirmatory laboratory test. Early treatment with doxycycline saves lives.**

Background

RMSF is endemic across northern Mexico and areas of the southwestern United States. In these regions, the pathogen (*Rickettsia rickettsii*) can be transmitted by brown dog ticks (*Rhipicephalus sanguineus*) which are closely associated with domestic dogs in urban and peri-urban environments. From July to December 2023, U.S. CDC and the California Department of Public Health identified five patients with RMSF who developed the disease within 2 weeks following travel to the city of Tecate in the state of Baja California, Mexico. All patients presented to hospitals in southern California. Four patients were under the age of 18 years. Three patients were U.S. residents, and two were residents of Mexico. All five patients were hospitalized, and three died.

RMSF is a rapidly progressive disease and without early administration of doxycycline can be fatal within days. [RMSF signs and symptoms](#) can be relatively mild and non-specific during the first 1–4 days of illness and include a low-moderate fever, headache, gastrointestinal symptoms, abdominal pain, myalgia, rash, and edema around the eyes and on the back of hands. Patients with more advanced disease, generally on or after day 5 of illness, may develop altered mental status, coma, cerebral edema, respiratory compromise, necrosis, and multiorgan system damage. The disease is rapidly progressive, and **half of all people who die from this disease succumb within 8 days of illness onset.** Untreated disease is often fatal, and the case fatality rate of RMSF in Mexico can exceed 40%.

Recommendations for Healthcare Providers

Diagnosis

- Know that RMSF signs and symptoms can include fever, headache, and rash.
 - A faint macular rash usually appears on the arms and lower extremities on or about 2–4 days after onset of symptoms and becomes petechial on or about day 5 or 6 of illness. Some patients never develop a rash.
 - The disease progresses rapidly if left untreated and is frequently deadly if not treated with doxycycline within the first 5 days of illness.
 - Children younger than 10 years old are five times more likely than adults to die from RMSF. Doxycycline is the treatment of choice for patients of all ages, including young children.
 - RMSF is a multisystem disease and can also involve the lungs, heart, kidneys, and central nervous system.
- Consider RMSF when evaluating patients presenting with [RMSF signs and symptoms](#), including fever, headache, and rash, especially those with a travel history to Tecate or other areas in northern Mexico endemic for RMSF in the past 2 weeks.
- The absence of a classical “spotted” rash does not exclude the diagnosis, particularly during the first few days of illness.

- Inquire about recent travel history and exposure to ticks or tick-infested dogs when evaluating patients with signs and symptoms suggestive of RMSF.

Diagnostic Testing

If RMSF is suspected, whole blood and serum samples obtained from acutely ill people should be evaluated for Rickettsia by molecular and serologic testing methods available at commercial laboratories, or U.S. CDC.

- **Do not delay or withhold treatment pending receipt of laboratory test results or based on an initial negative test result.**
- Polymerase chain reaction (PCR) amplification can be performed on whole blood, rash biopsy, or postmortem tissue but has low sensitivity early in the disease.
- Serologic testing can also be performed on paired acute and convalescent serum samples collected 2–4 weeks apart. Serologic testing for detection of antibodies is frequently negative in the first week of illness.
- Diagnostic testing at U.S. CDC may allow retrospective laboratory confirmation in patients who die from the infection.
- If Rickettsia-specific testing is not available, [specimen submission](#) to U.S. CDC can be coordinated through Maine CDC.

Treatment

- [Doxycycline](#) is the recommended antibiotic treatment for RMSF in adults and children of all ages, including pregnant people. Intravenous formulations are required for patients with severe nausea and vomiting and for patients who are obtunded.
- If RMSF is suspected, initiate treatment with doxycycline immediately. Do not delay treatment pending laboratory confirmation. Early treatment saves lives.
- In cases of severe doxycycline allergy, rapid desensitization procedures in an inpatient setting may be considered. Physicians should carefully weigh the benefits of doxycycline use and the risks of adverse effects on a case-by-case basis with an infectious disease or other specialist.

Reporting

- RMSF is a nationally notifiable disease. Healthcare professionals and clinical laboratories should report all cases to Maine CDC.

Recommendations for the Public

- Seek medical attention if you or a family member has [traveled](#) to Tecate or another city in northern Mexico where RMSF has been known to occur, and develops fever, headache, or rash within 2 weeks of return to the United States.
- Protect against tick bites by [treating your dog for ticks](#), using [EPA-registered insect repellent](#), and wearing protective clothing.
- Perform thorough [tick checks](#) on yourself and children after outdoor activities or when around dogs with ticks. Promptly [remove any ticks](#).
- Learn about [RMSF symptoms](#) and seek medical help if you suspect that you or a family member may have this disease.

For More Information

RMSF

- [Rocky Mountain Spotted Fever \(RMSF\) | U.S. CDC](#)
- [Diagnosis and Management of Tickborne Rickettsial Diseases: Rocky Mountain Spotted Fever and Other Spotted Fever Group Rickettsioses, Ehrlichioses, and Anaplasmosis — United States | MMWR | U.S. CDC](#)
- [RMSF Training Module: Clinical Diagnosis and Treatment for Healthcare Providers \(Continuing Education\) | Rocky Mountain Spotted Fever \(RMSF\) | U.S. CDC](#)
- [Health Department Directories - Public Health Professionals Gateway | U.S. CDC](#)
- [For Public Health Officials: Rocky Mountain Spotted Fever \(RMSF\) | U.S. CDC](#)

Travelers' Health

- [Mexico - Traveler view | Travelers' Health | U.S. CDC](#)
- [Rickettsial Diseases | U.S. CDC Yellow Book 2024](#)
- [Avoid bug bites | Travelers' Health | U.S. CDC](#)
- [Rocky Mountain Spotted Fever in Mexico - Level 1 - Level 1 - Practice Usual Precautions - Travel Health Notices | Travelers' Health | U.S. CDC](#)
- [Health Advisory: Endemic Rocky Mountain Spotted Fever \(RMSF\) in Baja California Region || County of San Diego Health & Human Services Agency](#)

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7. López-Castillo, D. C., Vaquera-Aparicio, D., González-Soto, M. A., Martínez-Ramírez, R., Rodríguez-Muñoz, L., & Solórzano-Santos, F. Rocky mountain spotted fever: five years of active surveillance experience in a second level pediatric hospital in northeastern Mexico, 2018, [Fiebre manchada de montañas rocosas: experiencia en 5 años de vigilancia activa en un hospital pediátrico de segundo nivel en el noreste de México]. *Boletín medico del Hospital Infantil de Mexico*, 2018, 75(5), 303–308. <https://doi.org/10.24875/BMHIM.M18000034>