

December 27, 2023

## **Health Notice for District of Columbia Health Care Providers Severe and Fatal Confirmed Rocky Mountain Spotted Fever among People with Recent Travel to Tecate, Mexico**

### **SUMMARY**

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The Centers for Disease Control and Prevention (CDC) issued a Health Alert Network (HAN) Health Advisory on Friday, December 8, 2023 to inform 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. As of December 8, 2023, five patients have been diagnosed with confirmed RMSF since July 2023. All patients had been present in Tecate within 2 weeks of illness onset and presented to hospitals in southern California for treatment. RMSF is a serious, rapidly progressive disease transmitted by the bite of infected ticks. It is endemic in multiple states in Northern Mexico and areas of the southwestern United States. Doxycycline is the primary treatment for all patients and should be administered as early as possible. Providers who suspect RMSF should consider initiating doxycycline based on presumptive clinical and epidemiologic findings and not delay treatment pending the result of a confirmatory laboratory test. Cases left untreated or where treatment is delayed are often fatal. To date in 2023, the DC Department of Health has reported one probable, non-fatal case of RMSF.

### **BACKGROUND**

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RMSF is endemic across northern Mexico and parts of the southwestern United States<sup>1</sup>. Over 2,000 people a year are affected by RMSF in the US, and, while it has been identified throughout the contiguous United States, over 50% of cases are reported by Arkansas, Missouri, North Carolina, Tennessee, and Virginia<sup>2,3</sup>. Between July and December 2023, CDC and the California Department of Public Health identified five patients with RMSF who developed illness within 2 weeks following travel to Tecate in the state of Baja California, Mexico. All patients, four of whom were under the age of 18 years, presented to hospitals in southern California. Three patients were U.S. residents, and two were residents of Mexico. All five patients were hospitalized, and three died<sup>1</sup>.

Rocky Mountain spotted fever is a serious, rapidly progressive illness, which can be fatal within days without early administration of doxycycline<sup>1,4</sup>. It is spread by several species of ticks in the United States, including the American dog tick and Rocky Mountain wood tick<sup>4</sup>. In Mexico and parts of the southwestern United States, it may be spread by brown dog ticks, which are closely associated with domestic dogs in urban and peri-urban environments<sup>1,4</sup>. Patients may not recall any recent exposure to ticks. During the first 1-4 days of illness, signs and symptoms of RMSF can

be relatively mild and non-specific<sup>1</sup>. Patients may experience a low-moderate fever, headache, rash, nausea, vomiting, abdominal pain, muscle pain, lack of appetite, gastrointestinal symptoms, and edema around the eyes and on the back of hands<sup>1,5</sup>. On or after day 5 of illness, patients with more advanced disease may experience altered mental status, coma, cerebral edema, respiratory compromise, necrosis, and multiorgan system damage<sup>1</sup>. Untreated cases are often fatal, and half of all deaths from RMSF occur within 8 days of illness onset. Patients who recover from severe RMSF may experience permanent damage, including hearing loss, paralysis, mental disability, or amputation of arms, legs, fingers or toes<sup>5</sup>.

## RECOMMENDATIONS FOR HEALTHCARE PROVIDERS

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CDC emphasizes the need for prompt diagnosis and treatment of people with RMSF to prevent progression to severe disease or death. Please see the following diagnostic, treatment, and reporting 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, state public health laboratories, or 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 CDC may allow retrospective laboratory confirmation in patients who die from the infection.
- If Rickettsia-specific testing is not available, specimen submission to CDC can be coordinated through the DC Department of Health.

### 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 the DC Department of Health within 48 hours after provisional diagnosis or the appearance of suspicious symptoms.
- Report RMSF by submitting a [Notifiable Disease and Condition Case Report Form](#).
- Contact DC Health at [vectorborne.epi@dc.gov](mailto:vectorborne.epi@dc.gov) or (202) 442-9143 during business hours or (844) 493-2652 after hours if questions about diagnosing and treating RMSF remain.

### ADDITIONAL RESOURCES

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- [Rocky Mountain Spotted Fever: Information for Healthcare Providers | CDC](#)
- [Rocky Mountain Spotted Fever Toolkit](#)
- [Timeline of Rocky Mountain Spotted Fever Signs and Symptoms](#)

## REFERENCES

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1. Centers for Disease Control and Prevention. (2023). CDC HAN Health Alert: Severe and Fatal Confirmed Rocky Mountain Spotted Fever among People with Recent Travel to Tecate, Mexico. Retrieved from <https://emergency.cdc.gov/han/2023/han00502.asp>.
2. Johns Hopkins Medicine. (2019). Rocky Mountain Spotted Fever. Retrieved from <https://www.hopkinsmedicine.org/health/conditions-and-diseases/rocky-mountain-spotted-fever>.
3. Centers for Disease Control and Prevention. (CDC 2022). Rocky Mountain Spotted Fever (RMSF) Epidemiology and Statistics. Retrieved from <https://www.cdc.gov/rmsf/stats/index.html>.
4. Centers for Disease Control and Prevention. (CDC 2018). Rocky Mountain Spotted Fever (RMSF) Transmission. Retrieved from <https://www.cdc.gov/rmsf/transmission/index.html>.
5. Centers for Disease Control and Prevention. (CDC 2019). Rocky Mountain Spotted Fever (RMSF) Signs and Symptoms. Retrieved from <https://www.cdc.gov/rmsf/symptoms/index.html>.

Please regularly visit the DC Health - Health Notices website at [dchealth.dc.gov/page/health-notices](https://dchealth.dc.gov/page/health-notices) for the latest updates and information.

**Please contact the DC Health Division of Epidemiology-Disease Surveillance and Investigation at:**  
Phone: (202) 442-9371/442-8141 (8:15 am-4:45 pm) | 844-493-2652 (after-hours calls) | Fax:  
(202) 442-8060 | Email: [vectorborne.epi@dc.gov](mailto:vectorborne.epi@dc.gov) or [doh.epi@dc.gov](mailto:doh.epi@dc.gov)