



**North Carolina Department of Health and Human Services
Division of Public Health • Epidemiology Section**
1902 Mail Service Center • Raleigh, North Carolina 27699-1902
Tel 919-733-3421 • Fax 919-733-0195

Beverly Eaves Perdue, Governor
Albert A. Delia, Acting Secretary

Laura Gerald, MD, MPH
State Health Director

Date: 10 April 2012
To: NC Medical Providers
From: Dr. Megan Davies, State Epidemiologist
Subject: 2012 Update; Surveillance for Tick Borne Rickettsial Diseases

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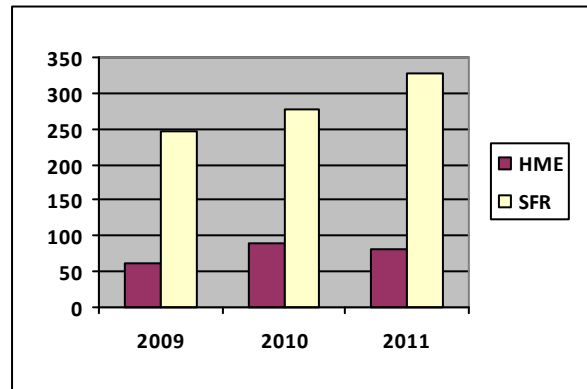
Spotted Fever Group Rickettsiosis Ehrlichiosis and Anaplasmosis Disease Introduction:

Tick Borne Rickettsial Diseases (TBRD), including Rocky Mountain spotted fever (RMSF) and infection with other *Rickettsia*, *Ehrlichia* and *Anaplasma* species, continues to be the most common tick borne disease reported in North Carolina. The bargraph shows the number of reported cases during 2009-2011, although the actual number of cases is likely much larger.

Treatment:

Regardless of the ultimate cause of infection, if TBRD is suspected the patient should be treated promptly and appropriately with doxycycline. Laboratory confirmation of infection with a TBRD organism may take weeks and therapy should not be delayed pending diagnosis. TBRD are potentially fatal and treatment guidelines can be found at:

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5504a1.htm>.



Confirmation of Diagnosis and Surveillance:

Submission of serological specimens for Immunofluorescent Assay (IFA) of IgG antibody is the most accepted means to confirm a diagnosis of TBRD for surveillance purposes. Although testing is available for RMSF specifically, the test is not species specific and will cross react with other species in the genus *Rickettsia*. Testing for spotted fever rickettsia is available at no charge from the State Laboratory of Public Health. See: <http://slph.state.nc.us/virology-serology/special-serology.asp>.

The CDC notes that ELISA (EIA) tests alone are not quantitative and IgM tests lack specificity. For these reasons we strongly encourage the use of paired acute and convalescent sera submitted for IgG IFA testing for surveillance purposes. Commercial labs offer this testing under the following test numbers:

	RMSF	HME
Quest Diagnostics (Chantilly VA)	# 6419; CPT Code(s): 86757 (x2)	# 74662; CPT Code: 86666
LabCorp	# 016592 CPT Code: 86757	# 164722; CPT Code: 86666(x4)
Mayo Medical Laboratories	Test ID: FRSFG Secondary ID 57262; CPT 86757	Test ID: FECHA Secondary ID 91710; CPT 86666/x2

Education of patients, prevention of disease:

We encourage all providers to educate their patients about personal protective measures they can take to minimize their risk of acquiring these conditions. Information for patients can be found here: <http://www.cdc.gov/ticks/prevention.html>.

Additional information and Emerging Tick Borne Rickettsial Diseases.

Over the past several years it has become increasingly evident that SFGR share many clinical manifestations and extensive antigenic cross reactivity hampers specific confirmation of the actual causative agent. [1-4] Therefore, to accurately describe



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the disease burden in NC and around the United States, any surveillance case with a causative agent from the *Rickettsia* species will be reported as Spotted Fever Rickettsiosis.

If you would like additional assistance in dealing with surveillance for these organisms or have questions please contact Carl Williams or Jodi Reber at 919-733-3419.

References:

1. Cragun, et. al. The Expanding Spectrum of Eschar-Associated Rickettsioses in the United States. Arch. Dermatol. 2010;146 (No. 6). pp E1-E8.
2. Paddock, et. al. *Rickettsia parkeri* Rickettsioses and Its Clinical Distinction from Rocky Mountain Spotted Fever. CID. 2008;47 (1 November). pp 1188-1196
3. Apperson, et. al. Tick-Borne disease in North Carolina: Is “*Rickettsia amblyommi*” a Possible Cause of Rickettsiosis Reported as Rocky Mountain Spotted Fever? Vector-Borne and Zoonotic Diseases. 2008;8(5). pp 597-606.
4. Varela Stokes, et. al. *Rickettsia parkeri* in *Amblyomma maculatum* ticks, North Carolina, USA, 2009-2010. Emerg Infect Dis. 2011 Dec;17(12):2350-3