



Tickborne Diseases -- Georgia, 1989

The Office of Epidemiology, Georgia Department of Human Resources (GDHR), maintains surveillance for three tickborne diseases--Lyme disease (LD), Rocky Mountain spotted fever (RMSF), and human ehrlichiosis. This report summarizes data on the occurrence of these three diseases in Georgia during 1989. Lyme Disease

During 1989, 715 LD cases* were reported to the GDHR--a greater than 12-fold increase from the 59 cases reported in 1988. Cases peaked during the summer, when ticks are most active (Figure 1). Onset for at least 84 (12%) patients occurred during previous years. Each of the 19 health districts in Georgia reported one or more cases of LD.

Of the 715 patients, 365 (51%) were female; 596 (84%) were white, 36 (5%) were black, and 82 (11%) were of unrecorded race. Median age of patients was 40 years (range: 1-85 years). Cases were reported from 114 (72%) of the 159 counties in Georgia. A band of counties across the midsection of Georgia accounted for most of the cases and for the highest rates (Figure 2). This area of the state also has the highest density of white-tailed deer, which appear to play a major role in maintaining the life cycle of *Ixodes scapularis*, the vector of LD in Georgia. Rocky Mountain Spotted Fever

During 1989, 23 RMSF cases (0.4 cases per 100,000 population) were reported to the GDHR. Six (26%) patients were less than 10 years of age, and 10 (43%) were less than 20 years of age (range: 4-71 years; median: 33 years). Seventeen patients (74%) were male; all were white. Ten (43%) were hospitalized, and RMSF was laboratory confirmed for 20 (87%). For 15 (65%) patients, a history of tick attachment or exposure to a tick-infested area was reported. Fever and/or headache were present in 20 (87%) of patients, and rash, in 13 (57%). Three counties reported multiple cases: Clarke (four cases), Cobb (three), and DeKalb (two). Onsets of illness ranged from March 31 to November 17. Ehrlichiosis

During 1989, one case of human ehrlichiosis was reported in Georgia. A 25-year-old man from Richmond County had onset November 7 and was hospitalized for a fever of unclear etiology. Serologic tests confirmed the diagnosis of ehrlichiosis. Reported by: T

McKinley, MPH, D Smith, Office of Epidemiology, RK Sikes, DVM, State Epidemiologist, Georgia Dept of Human Resources. Div of Vector-Borne Infectious Diseases, Center for Infectious Diseases, CDC.

Editorial Note

Editorial Note: LD is the most commonly reported vectorborne disease in the United States (1). The approximately 7400 cases provisionally reported for 1989 represent a 62% increase over those reported for 1988 (2) and a 15-fold increase from 1982, when national surveillance was established. As a result of surveillance efforts, the epidemiology of LD, RMSF, and ehrlichiosis is now more clearly defined, and preventive measures have been identified (1-3). These measures include avoidance of sites suspected to be infested with ticks; use of repellents and acaricides, wearing of protective clothing, and frequent inspection for and prompt removal of attached ticks.

The 12-fold increase in the number of LD cases reported by the GDHR from 1988 to 1989 is one of the largest reported by any state for a similar period; the Georgia rate in 1989 is among the 10 highest in the United States and is 10- to 20-fold greater than the rates reported in surrounding states. Laboratory-confirmed LD has consistently been concentrated geographically in the northeastern, mid-Atlantic, north central, and northern Pacific coastal areas (1,2). The high rate in Georgia in 1989 may reflect a fundamental change in the local epidemiology of the disease, an alteration in reporting resulting from a major change in physician and public awareness, and/or a change in availability or sensitivity of diagnostic tests.

During 1988 and 1989, the GDHR conducted extensive education programs for both physicians and the public about LD and made laboratory testing available. During this period, the GDHR public health laboratory was the only laboratory in the state doing serologic testing for LD. These factors also may have contributed to increased reporting.

The diagnosis of LD may be difficult to make in some cases and requires a careful assessment of clinical, epidemiologic, and laboratory features. Signs and symptoms are often nonspecific, and a history of tick exposure may be absent. Laboratory diagnosis is problematic and cannot be relied on as the sole determinant in evaluation of an individual case (4). *Borrelia burgdorferi* is difficult to isolate by culture, even when present in a clinical specimen. Serologic tests, especially in the early phase of illness, are inadequately sensitive. In addition, these tests are nonspecific, and crossreactions with other closely related spirochetes can occur; some positive antibody reactions in both humans and nonhuman hosts may be due to that crossreactivity. Monoclonal antibodies are now being used to identify *B. burgdorferi* in ticks (5); however, these tests are difficult to perform and must be carefully interpreted.

References

1. CDC. Lyme disease--United States, 1987 and 1988. MMWR 1989;38:68-72.
2. Miller GL, Craven RB, Bailey RE, Tsai TF. The epidemiology of Lyme disease

- in the United States, 1987-1988. *Laboratory Med* 1990;21:285-9.
3. Steere AC. Lyme disease. *N Engl J Med* 1989;321:586-96.
 4. Barbour AG. The diagnosis of Lyme disease; rewards and perils. *Ann Intern Med* 1989;110:502-2.
 5. Magnarelli LA, Anderson JF. Ticks and biting insects infected with the etiologic agent of Lyme disease, *Borrelia burgdorferi*. *J Clin Microbiol* 1988;26:1482-6.
 - o The case definition used by GDHR is 1) presence of an erythema

migrans (EM) lesion and a history of tick exposure within 30 days of onset or, in the absence of known tick exposure, an EM lesion and a positive serologic test (immunofluorescence antibody (IFA) titer greater than or equal to 128) or involvement of at least one body system (musculoskeletal, cardiovascular, or nervous); or

6. in the absence of EM, a positive serologic test (IFA greater than or equal to 128) and involvement of one or more body systems (musculoskeletal, cardiovascular, or nervous).

Disclaimer All MMWR HTML documents published before January 1993 are electronic conversions from ASCII text into HTML. This conversion may have resulted in character translation or format errors in the HTML version. Users should not rely on this HTML document, but are referred to the original *MMWR* paper copy for the official text, figures, and tables. An original paper copy of this issue can be obtained from the Superintendent of Documents, U.S. Government Printing Office (GPO), Washington, DC 20402-9371; telephone: (202) 512-1800. Contact GPO for current prices.

**Questions or messages regarding errors in formatting should be addressed to mmwrq@cdc.gov.

Page converted: 08/05/98

This page last reviewed 5/2/01
<http://www.cdc.gov/mmwr/preview/mmwrhtml/00001640.htm>

Accessed online 2/09/2011