

**North Carolina Department of Health and Human Services
Division of Public Health • Epidemiology Section
Communicable Disease Branch**



ATTENTION HEALTH CARE PROVIDERS:

Please report relevant clinical findings about this disease event to the local health department.

Durham County Health Department
Communicable Disease Control
414 East Main Street
Durham, NC 27701

Telephone: (919) 560-7600
Fax: (919) 560-7716

**EHRlichiosis, HME
Confidential Communicable Disease Report—Part 2
NC DISEASE CODE: 572**

REMINDER to Local Health Department staff: If sending this form to the Health Care Provider, remember to attach a cover letter from your agency indicating the part(s) of the form the provider should complete.

| | | | | | | |
|---------------------|-------|--------|--------|--------------|-------|-------------------------------|
| Patient's Last Name | First | Middle | Suffix | Maiden/Other | Alias | Birthdate (mm/dd/yyyy) / / |
| | | | | | | SSN |

NC EDSS LAB RESULTS Verify if lab results for this event are in NC EDSS. If not present, enter results.

Name of laboratory _____ City _____ State _____ ZIP _____

| SEROLOGIC TESTS Indicate Y(es) or N(o) ONLY if the test was performed. | SEROLOGY 1 | | SEROLOGY 2 | | Other Diagnostic Tests? | Positive? |
|---|------------------------------|---|------------------------------|---|-------------------------|---|
| | Collection Date (mm/dd/yyyy) | Specimen # | Collection Date (mm/dd/yyyy) | Specimen # | | |
| | Titer/Result | Positive? | Titer/Result | Positive? | | |
| IFA-IgG | () | <input type="checkbox"/> Y <input type="checkbox"/> N | () | <input type="checkbox"/> Y <input type="checkbox"/> N | PCR | <input type="checkbox"/> Y <input type="checkbox"/> N |
| IFA-IgM | () | <input type="checkbox"/> Y <input type="checkbox"/> N | () | <input type="checkbox"/> Y <input type="checkbox"/> N | Morulae visualization | <input type="checkbox"/> Y <input type="checkbox"/> N |
| Other test: _____ | () | <input type="checkbox"/> Y <input type="checkbox"/> N | () | <input type="checkbox"/> Y <input type="checkbox"/> N | Immunostain | <input type="checkbox"/> Y <input type="checkbox"/> N |
| | | | | | Culture | <input type="checkbox"/> Y <input type="checkbox"/> N |

Comments/details:

Was there a fourfold change in antibody titer between the two serum specimens? Y N

NC EDSS PART 2 WIZARD COMMUNICABLE DISEASE

Is/was patient symptomatic for this disease? Y N U

If yes, symptom onset date (mm/dd/yyyy): ___/___/___

CHECK ALL THAT APPLY:

Fever Y N U

Headache Y N U

Meningitis Y N U

Encephalitis Y N U

Muscle aches/pains (myalgias) Y N U

Thrombocytopenia Y N U

Leukopenia Y N U

Anemia Y N U

Elevated liver enzymes Y N U

PREDISPOSING CONDITIONS

Any immunosuppressive conditions Y N U

Please specify:

HOSPITALIZATION INFORMATION

Was patient hospitalized for this illness >24 hours? Y N U

Hospital name: _____

City, State: _____

Hospital contact name: _____

Telephone: () -

Admit date (mm/dd/yyyy): ___/___/___

Discharge date (mm/dd/yyyy): ___/___/___

CLINICAL FINDINGS

Acute respiratory distress syndrome (ARDS) Y N U

Acute renal failure Y N U

Disseminated intravascular coagulation Y N U

Other symptoms, signs, clinical findings, or complications consistent with this illness Y N U

If yes, specify:

TREATMENT

Did patient take an antibiotic as treatment for this illness? Y N U

If yes:

Check all antibiotics that apply:

Doxycycline Chloramphenicol

Unknown

Other (specify) _____

Date antibiotic began (mm/dd/yyyy): ___/___/___

If no:

Did patient refuse treatment? Y N U

CLINICAL OUTCOMES

Discharge/Final diagnosis: _____

Survived? Y N U

Status at time of report:

Fully recovered

Survived but experiencing sequelae (residual deficit from illness) at time of report

Died? Y N U

Died from this illness? Y N U

Date of death (mm/dd/yyyy): ___/___/___

| | | | | | | |
|---------------------|-------|--------|--------|--------------|-------|-------------------------------|
| Patient's Last Name | First | Middle | Suffix | Maiden/Other | Alias | Birthdate (mm/dd/yyyy) / / |
| | | | | | | SSN |

TRAVEL/IMMIGRATION

The patient is:
 Resident NC
 Resident of another state or US territory
 None of the above

Did patient have a travel history during the 14 days prior to onset of symptoms? Y N U

List travel dates and destinations _____

Additional travel/residency information:

VECTOR EXPOSURES

During the 14 days prior to onset of symptoms, did the patient have an opportunity for exposure to ticks? Y N U

Exposed on (mm/dd/yyyy): ____/____/____
 Until (mm/dd/yyyy): ____/____/____

Frequency
 Once
 Multiple times within this time period
 Daily

Exposure setting _____
 City/county of exposure _____
 State of exposure _____
 Country of exposure _____

Was the tick embedded? Y N U

How long? _____
 Hours
 Days
 Unknown

Notes:

CASE INTERVIEWS/INVESTIGATIONS

Was the patient interviewed? Y N U
 Date of interview (mm/dd/yyyy): ____/____/____

Medical records reviewed (including telephone review with provider/office staff)? Y N U
 Specify reason if medical records were not reviewed:

Notes on medical record verification:

GEOGRAPHICAL SITE OF EXPOSURE

In what geographic location was the patient MOST LIKELY exposed?

Specify location:
 In NC
 City _____
 County _____
 Outside NC, but within US
 City _____
 State _____
 County _____
 Outside US
 City _____
 Country _____
 Unknown

Is the patient part of an outbreak of this disease? Y N

Notes:

Ehrlichiosis/Anaplasmosis

2008 Case Definition

Clinical presentation

A tick-borne illness characterized by acute onset of fever and one or more of the following symptoms or signs: headache, myalgia, malaise, anemia, leukopenia, thrombocytopenia, or elevated hepatic transaminases. Nausea, vomiting, or rash may be present in some cases. Intracytoplasmic bacterial aggregates (morulae) may be visible in the leukocytes of some patients.

Clinical evidence

Any reported fever and one or more of the following: headache, myalgia, anemia, leukopenia, thrombocytopenia, or any hepatic transaminase elevation.

Laboratory evidence

For the purposes of surveillance,

1. ***Ehrlichia chaffeensis* infection** (formerly included in the category Human Monocytic Ehrlichiosis [HME]):

Laboratory confirmed:

- Serological evidence of a fourfold change in immunoglobulin G (IgG)-specific antibody titer to *E. chaffeensis* antigen by indirect immunofluorescence assay (IFA) between paired serum samples (one taken in first week of illness and a second 2-4 weeks later), **or**
- Detection of *E. chaffeensis* DNA in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR) assay, **or**
- Demonstration of ehrlichial antigen in a biopsy or autopsy sample by immunohistochemical methods, **or**
- Isolation of *E. chaffeensis* from a clinical specimen in cell culture.

Laboratory supportive:

- Serological evidence of elevated IgG or IgM antibody reactive with *E. chaffeensis* antigen by IFA, enzyme-linked immunosorbent assay (ELISA), dot-ELISA, or assays in other formats (CDC uses an IFA IgG cutoff of >1:64 and does not use IgM test results independently as diagnostic support criteria.), **or**
- Identification of morulae in the cytoplasm of monocytes or macrophages by microscopic examination.

2. ***Ehrlichia ewingii* infection** (formerly included in the category Ehrlichiosis [unspecified, or other agent]):

Laboratory confirmed:

- Because the organism has never been cultured, antigens are not available. Thus, *Ehrlichia ewingii* infections may only be diagnosed by molecular detection methods: *E. ewingii* DNA detected in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR) assay.

3. ***Anaplasma phagocytophilum* infection** (formerly included in the category Human Granulocytic Ehrlichiosis [HGE]):

Laboratory confirmed:

- Serological evidence of a fourfold change in IgG-specific antibody titer to *A. phagocytophilum* antigen by indirect immunofluorescence assay (IFA) in paired serum samples (one taken in first week of illness and a second 2-4 weeks later), **or**
- Detection of *A. phagocytophilum* DNA in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR) assay, **or**
- Demonstration of anaplasma antigen in a biopsy/autopsy sample by immunohistochemical methods, **or**
- Isolation of *A. phagocytophilum* from a clinical specimen in cell culture.

Laboratory supportive:

- Serological evidence of elevated IgG or IgM antibody reactive with *A. phagocytophilum* antigen by IFA, enzyme-linked immunosorbent Assay (ELISA), dot-ELISA, or assays in other formats (CDC uses an IFA IgG cutoff of \geq 1:64 and does not use IgM test results independently as diagnostic support criteria.), **or**
- Identification of morulae in the cytoplasm of neutrophils or eosinophils by microscopic examination.

4. **Human ehrlichiosis/anaplasmosis – undetermined:**

- See case classification

Exposure

Exposure is defined as having been in potential tick habitats within the past 14 days before onset of symptoms. A history of a tick bite is not required.

Case Classification

Confirmed: A clinically compatible case (meets clinical evidence criteria) that is laboratory confirmed.

Probable: A clinically compatible case (meets clinical evidence criteria) that has supportive laboratory results. For ehrlichiosis/anaplasmosis – an undetermined case can only be classified as probable. This occurs when a case has compatible clinical criteria with laboratory evidence to support ehrlichia/anaplasma infection, but not with sufficient clarity to definitively place it in one of the categories previously described. This may include the identification of morulae in white cells by microscopic examination in the absence of other supportive laboratory results.

Suspect: A case with laboratory evidence of past or present infection but no clinical information available (e.g. a laboratory report).