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.

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

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
- Surved but experiencing sequelae (residual deficit from illness)

Died? ________________________ Y N U

Died from this illness? ________________________ Y N U

Date of death (mm/dd/yyyy): ____/____/____
Case Interviews/Investigations

In what geographic location was the patient MOST LIKELY exposed?

<table>
<thead>
<tr>
<th>Location</th>
<th>City</th>
<th>County</th>
<th>State</th>
<th>Country</th>
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<tbody>
<tr>
<td>Nc city</td>
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<tr>
<td>Outside NC, but within US</td>
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<tr>
<td>Outside US</td>
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Notes:

GEOGRAPHICAL SITE OF EXPOSURE

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:

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:

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:

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:

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

Notes:

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:

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:
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 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
   - Demonstration of anaplasmal 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 \(1:64\) 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
Confined: 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).