Ehrlichiosis

3/10/2025

DISEASE REPORTABLE WITHIN 24 HOURS OF DIAGNOSIS

Cases should be reported to the local health department where the patient resides. If patient residence is unknown, report to your own local health department. Contact information is available at: http://localhealth.nj.gov.

If the individual does not live in New Jersey, report the case to the New Jersey Department of Health at: (609) 826-5964.

1 THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic Agent

Ehrlichiosis is the general name given to the diseases caused by obligate intracellular bacteria in the genus *Ehrlichia* within the family *Anaplasmataceae*. Obligate intracellular parasites can only survive and replicate inside the cells of another organism. Ehrlichia infections are commonly reported in the United States and pathogenic species are also found in many other regions of the world.

The majority of reported human infections in the United States are caused by either *Ehrlichia chaffeensis* or *Ehrlichia ewingii*. *E. muris eauclairensis* has been reported from travelers to, or residents of, Minnesota and Wisconsin.

B. Clinical Description

Ehrlichiosis is characterized by an acute onset of illness typically presenting 5-14 days after a tick bite with a combination of nonspecific symptoms, most often fever, headache, and malaise. Other symptoms may include chills/sweats, myalgia, gastrointestinal symptoms (nausea, vomiting, diarrhea, anorexia), confusion, and rash. Rash develops in up to 60% of children, but less than 30% of adults, and typically begins 5 days after symptom onset. The rash usually spares the face, but in some cases may spread to the palms of hands and soles of feet. The rash associated with E. chaffeensis infection may range from maculopapular to petechial in nature and is usually not pruritic (itchy).. Illness is often accompanied by laboratory abnormalities including leukopenia, thrombocytopenia, and moderately elevated liver enzymes. Anemia is reported in about half of patients but generally occurs later in illness.

If treatment is delayed, the disease may become severe. Severe illness may involve:

- Meningitis, meningoencephalitis, and other central nervous system involvement (20% of patients)
- Acute respiratory distress syndrome
- Toxic shock-like or septic shock-like syndromes
- Renal failure
- Hepatic failure
- Coagulopathy
- Pancytopenia

Risk factors for severe ehrlichiosis include delayed antibiotic treatment, age younger than 5 or older than 65 years, and immune-compromising conditions, e.g., advanced HIV, persons receiving chemotherapy or other immune-suppressing medications

Patients who are treated early may recover quickly with outpatient antibiotic treatment, while those who experience a more severe course might require hospitalization or intensive care. Symptoms of *E. ewingii* and *E. muris eauclairensis* infections are similar to those of *E. chaffeensis*, although typically less severe. Gastrointestinal symptoms are less common in patients with *E. ewingii* ehrlichiosis and rash is infrequent in cases of *E. muris eauclairensis*.

Treatment

Early recognition and prompt treatment can prevent progression to severe illness and improve patient outcomes. Ehrlichiosis can be difficult to diagnose, particularly in the early stages of illness. Treatment should be started as soon as ehrlichiosis is suspected. CDC recommends doxycycline as the drug of choice for treatment of ehrlichiosis and all tickborne rickettsial diseases in patients of all ages, including children aged <8 years. Doxycycline is most effective at preventing severe complications if it is started within the first week of illness.

Clinical Care of Ehrlichiosis: https://www.cdc.gov/ehrlichiosis/hcp/clinical-care/index.html

C. Vectors and Reservoirs

The primary vector of *E. chaffeensis and E. ewingii* is the lone star tick (*Amblyomma americanum)*. The lone star tick is a very aggressive human biter. The adult female is easily distinguished by a white dot or "lone star" on her back. Lone star tick saliva can be irritating; redness and discomfort near a tick bite does not necessarily indicate an infection. White-tailed deer is a major host of the lone star tick and is thought to be an important reservoir for *E. chaffeensis.* Dogs and small rodents may also be reservoirs. Lone star ticks are commonly found in southern New Jersey, parts of central New Jersey, and have been tracking northward. *E. muris eauclairensis* is transmitted by the blacklegged or deer tick (*Ixodes scapularis*). While the blacklegged tick is widely distributed throughout New Jersey, *E. muris eauclairensis* has only been identified in the Upper Midwest region of the United States, specifically in Minnesota and Wisconsin.

D. Modes of Transmission

Ehrlichia spp. is primarily spread to people by the bite of an infected tick. The duration of time the tick must remain attached before the transmission of infectious organisms occurs is unclear. Because tick bites may be painless and may occur on parts of the body that are difficult to observe, unrecognized tick bites are common in patients who are later confirmed to have a tickborne rickettsial disease.

Transmission of ehrlichiosis via blood transfusion and organ transplantation has been reported infrequently. Blood products are not routinely screened for the presence of *Ehrlichia* species.

E. Incubation Period

Symptoms generally appear 5-14 days after the bite of an infected tick. While data after blood transfusion or organ transplant is lacking, persons who develop ehrlichiosis within 30 days should be reported to public health for investigation.

F. Period of Communicability or Infectious Period

Because these bacteria infect the white blood cells and circulate in the bloodstream, there is a risk of transmission via blood transfusion and organ transplantation. Infected donors who are asymptomatic or in the pre-symptomatic period pose the greatest risk to the blood supply.

G. Epidemiology

The epidemiology of ehrlichiosis reflects the geographic distribution of the lone star tick (*Amblyomma americanum*) and the blacklegged tick for *E. muris euclarensis*, and vertebrate hosts involved in the transmission of these pathogens, as well as the human behaviors that place persons at risk for tick exposure, tick attachment, and subsequent infection. Although cases of ehrlichiosis can occur during any month of the year, the majority of cases reported to CDC have an illness onset during the summer months with a peak typically occurring in June and July. This period coincides with the season for increased numbers of adult and nymphal lone star ticks. All stages of this tick feed on humans, however, only adult and nymphal ticks spread *E. chaffeensis* to humans. In the United States, the number of ehrlichiosis cases due to *E. chaffeensis* reported to CDC has increased steadily. In 2000, only 200 cases of ehrlichiosis were reported. In 2019, the number of reported cases rose to 2,093. Notably, while cases and incidence rose over this timeframe, the case fatality rate has declined since 2000. The case facility rate cited in recent publications is roughly 1% of cases.

Between 2019-2023, there were 529 cases of ehrlichiosis reported in New Jersey, or an average of 106 cases per year (ranging from 77 to 146), with the highest incidence rates in the southern counties, which is consistent with the distribution of the lone star tick (refer to the NJDOH Vector-borne Disease Dashboard). Over half of all reported cases (2019-2023) were male and 70% were between 50-79 years of age. Less than 3% of reported cases were in children.

2 CASE DEFINITION

NJDOH follows the current case definition as published on the CDC National Notifiable Disease Surveillance System (NNDSS) website.

Ehrlichiosis Case Definition: https://ndc.services.cdc.gov/conditions/ehrlichiosis/

Case definitions enable public health to classify and count cases consistently across reporting jurisdictions and should not be used by healthcare providers to determine how to meet an individual patient's health needs.

A. NEW! 2024 Case Definition

The 2024 ehrlichiosis case definition is now distinct from anaplasmosis. As with the prior case definition, cases should not be classified as cases for both anaplasmosis and ehrlichiosis based on serologic evidence alone. A combination of titer levels, information about the location of possible exposures, clinical manifestations, and the incidence of a particular disease in the geographic areas of exposure should be used to help determine the appropriate disease for individual cases. The CDS Vector-borne Disease Team will assist LHDs with case classification if these scenarios arise.

Updates to the case definition include:

- IgM and ELISA test results are no longer sufficient laboratory evidence.
- IgG antibody titer results <1:128 do not require investigation.
- Flexibility in the timing of a convalescent sample has been increased from 2-4 weeks to 2-10 weeks from illness onset.
- For the purpose of case classification, samples for serologic and smear testing (presumptive laboratory evidence) must be collected within 60 days of illness onset.
- Four subgroups will be used for reporting: *Ehrlichia chaffeensis, Ehrlichia ewingii, Ehrlichia muris eauclairensis,* and Other or Unspecified *Ehrlichia.*
    - The subgroups *E. chaffeensis, E. ewingii,* and *E. muris eauclairensis* will only be used if molecular testing is performed, as antibodies to closely-related species of *Ehrlichia* can cross-react with multiple antigens.
    - Serologic assays cannot definitively distinguish between species, even if a species is listed on the laboratory test result. Therefore, *E. chaffeensis, E. ewingii,* and *E. muris eauclairensis* ehrlichiosis reported cases should only be classified as "Confirmed."
    - Cases reported within the "*Other or Unspecified Ehrlichia*" can be classified as either "Probable" or "Confirmed".

- Clinical evidence is stratified into objective and subjective categories. Reports with only presumptive laboratory evidence require stronger clinical evidence to be classified as a case, while reports with confirmatory laboratory evidence have less strict requirements.
- Fever is no longer required for confirmed cases.
- Fatigue/malaise and nausea/vomiting have been added as subjective clinical evidence.
- A person previously reported as a probable or confirmed case-patient may be counted as a new case when there is an episode of new clinically compatible illness with confirmatory laboratory evidence.

B. Clinical Description (for purposes of surveillance)

- Objective clinical evidence: fever as reported by patient or healthcare provider, anemia, leukopenia, thrombocytopenia, or any hepatic transaminase elevation
- Subjective clinical evidence: chills/sweats, headache, myalgia, nausea/vomiting, or fatigue/malaise

C. Laboratory Criteria

Confirmatory Laboratory Evidence:

- Detection of *E. chaffeensis, E. ewingii, E. muris eauclairensis,* unspeciated *Ehrlichia spp*., or other *Ehrlichia spp*. DNA in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR) assay, nucleic acid amplification tests (NAAT), or other molecular method, **OR**
- Serological evidence of a fourfold change[1] in immunoglobulin G (IgG)-specific antibody titer to *Ehrlichia* spp. antigen by indirect immunofluorescence assay (IFA) in paired serum samples (one taken in first two weeks after illness onset and a second taken two to ten weeks after acute specimen collection)[2], **OR**
- Demonstration of ehrlichial antigen in a biopsy or autopsy sample by immunohistochemical methods **OR**
- Isolation of *E. chaffeensis, E. ewingii, E. muris eauclairensis,* unspeciated *Ehrlichia spp*., or other *Ehrlichia spp*. from a clinical specimen in cell culture with molecular confirmation (e.g., PCR or sequence)

Presumptive Laboratory Evidence:

- Serological evidence of elevated IgG antibody reactive with *Ehrlichia spp*. antigen by IFA at a titer ≥1:128 in a sample taken within 60 days of illness onset, **OR**
- Microscopic identification of intracytoplasmic morulae in leukocytes in a sample taken within 60 days of illness onset.

[1] A four-fold change in titer is equivalent to a change of two dilutions (e.g., 1:64 to 1:256).

[2] A four-fold rise in titer should not be excluded as confirmatory laboratory criteria if the acute and convalescent specimens are collected within two weeks of one another.

D. Case Classification

Cases should be classified in CDRSS as Ehrlichiosis with one of the following subgroups:

- *Ehrlichia chaffeensis (molecular testing only)*
- *Ehrlichia ewingii (molecular testing only)*
- *Ehrlichia muris eauclairensis (molecular testing only)*
- Other or Unspecified *Ehrlichia*

Note: The subgroups *E. chaffeensis, E. ewingii, and E. muris eauclairensis* can only be classified as CONFIRMED as molecular testing is required. Cases reported within the "Other or Unspecified Ehrlichia" can be classified as either "Probable" or "Confirmed".

CONFIRMED

Meets confirmatory laboratory evidence AND at least one of the objective or subjective clinical evidence criteria.

PROBABLE

- Meets presumptive laboratory evidence with fever as reported by patient or healthcare provider **AND** at least one other objective or subjective clinical evidence criterion (excluding chills/sweats), **OR**

- Meets presumptive laboratory evidence without reported fever but with chills/sweats **AND**

    - at least one objective clinical evidence criterion, **OR**

    - two other subjective clinical evidence criteria.

POSSIBLE

Meets confirmatory or presumptive laboratory evidence with no or insufficient clinical information to classify as a confirmed or probable case (e.g., a laboratory report only and unable to obtain clinical information).

NOT A CASE

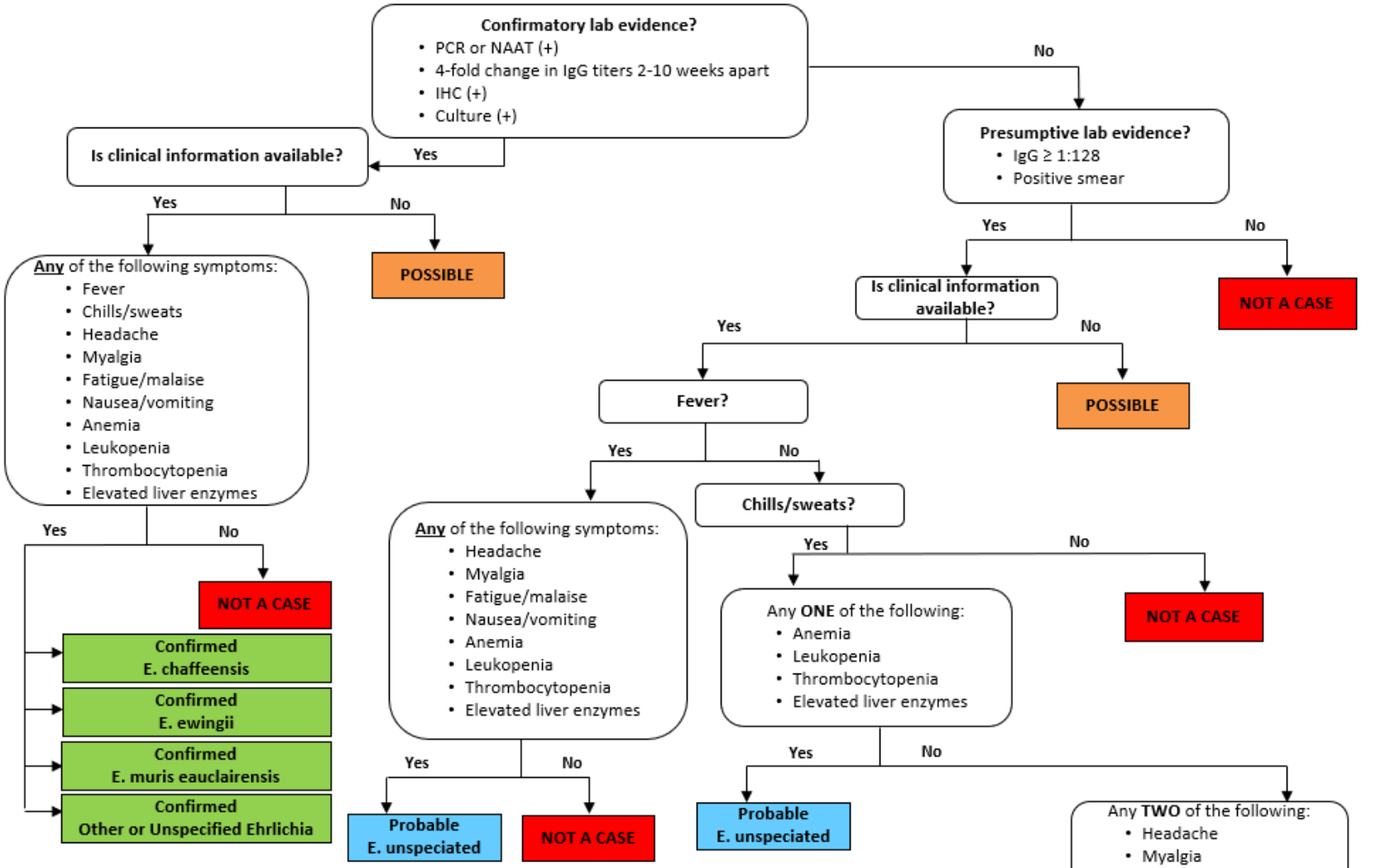
Meets confirmatory or presumptive laboratory evidence but does not meet clinical criteria to classify as a confirmed or probable case (e.g., clinical information was obtained but does not meet criteria).

Criteria to Distinguish a New Case of Ehrlichiosis from a Prior Case

A person previously reported as a probable or confirmed case-patient may be counted as a new case when there is an episode of new clinically compatible illness with confirmatory laboratory evidence.

Ehrlichiosis

Ehrlichiosis National Surveillance Case Definition - 2024



NOTES:

1) Subgroup depends on lab result. For results without species-specific information, including fourfold change in IFA IgG, use Other or Unspecified Ehrlichia.
2) Collection date for presumptive laboratory evidence **MUST** be within 60 days of onset – if not, then not a case.
3) For patients with results for both anaplasmosis and ehrlichiosis, please refer to the disease chapter.

3 LABORATORY TESTING

Ehrlichiosis can be identified by tests including serology, polymerase chain reaction, immunohistochemistry, culture, and blood-smear microscopy. The optimal diagnostic test depends on the timing relative to symptom onset and the type of specimen(s) available for testing. Speciation requires molecular or culture-based methods.

Nucleic acid testing: PCR is performed on whole blood specimens and species-specific tests can identify if the infection is caused by *E. chaffeensis*, *E. ewingii*, or other *Ehrlichia* spp. is PCR is most sensitive in the first week of illness, and quickly decreases in sensitivity within 48 hours of administration of appropriate antibiotics. Although a positive PCR result should be treated as clear evidence of active infection, a negative result does not rule out the diagnosis. PCR can also be used to identify ehrlichiosis from DNA in solid tissue and bone marrow specimens.

Microscopic identification: During the first week of illness, a microscopic examination of a peripheral blood smear might reveal morulae (microcolonies of *Ehrlichiae*) in the cytoplasm of white blood cells. If these morulae are identified, ehrlichiosis should be strongly suspected. E. chaffeensis most commonly infects monocytes; E. ewingii more commonly infects granulocytes; and no target cell has been identified for E. muris eauclairensis. Blood smear examination for morulae is insufficiently sensitive and should not be relied upon solely to diagnose ehrlichiosis. Observing morulae in a particular cell type cannot conclusively differentiate among *Ehrlichia* species or between *Ehrlichia* and *Anaplasma*.

Serology: The reference standard serologic test for diagnosis of ehrlichiosis is the indirect fluorescent antibody (IFA) test for immunoglobulin G (IgG) antibodies directed against Ehrlichia spp. IgG IFA tests should be performed on paired acute and convalescent serum samples, with the acute specimen collected during the first two weeks of illness and the convalescent collected 2-10 weeks later. Seroconversion is defined as a four-fold increase in titer from the convalescent compared to acute.

Antibody titers determined using IgG IFA tests are frequently negative (titer of less than 1:64) in the first week of illness, so a negative test during this time does not rule out infection. In most cases, the first IgG IFA titer is typically low, or “negative,” and the second typically shows a significant (four-fold) increase in IgG antibody levels. Ehrlichiosis cannot be confirmed using single acute antibody results. A single titer of 1:128 or greater is classified as presumptive laboratory evidence.

Immunoglobulin M (IgM) is not a reliable method for the diagnosis of ehrlichiosis and should not be used as an indicator of recent infection.

Antibodies against *Ehrlichia* species might remain elevated for many months after disease has resolved. Seroconversion provides the best evidence of recent infection

Note: Serologic tests based on enzyme immunoassay (EIA) technology are available, but are qualitative rather than quantitative, meaning they only provide a positive/negative result, and are less useful to measure changes in antibody titers between paired specimens. Furthermore, some EIA assays rely on the evaluation of IgM antibody alone, which may have a higher frequency of false positive results. EIA test results do not meet public health case definition.

IHC and Culture: Culture isolation and immunohistochemical (IHC) assays of Ehrlichia species are only available at specialized laboratories. Routine hospital blood cultures cannot detect the organism. PCR, culture, and IHC assays can also be applied to post-mortem specimens. If a bone marrow biopsy is performed as part of the investigation of cytopenias, immunostaining of the bone marrow biopsy specimen can diagnose ehrlichiosis. Healthcare providers interested in culture and/or IHC should contact the CDS Vector-borne Disease team.

The NJDOH Division of Public Health and Environmental Laboratories (PHEL) does not provide testing for ehrlichiosis but PCR and serological testing is available at many commercial laboratories.

4 PURPOSE OF SURVEILLANCE AND REPORTING

- To better understand the local epidemiology of infection with *E. chaffeensis, E. ewingii, and* identify imported cases of *E. muris eauclairensis.*
- To recognize areas in New Jersey where incidence of disease has changed (increased or decreased)
- To focus preventive education

5 CASE INVESTIGATION

A. Investigation

Local health departments are asked to investigate ehrlichiosis reports and close cases in CDRSS within 2 weeks of case creation. The NJDOH Ehrlichiosis Investigation Worksheet may be used to help guide the patient or physician interview and all information should be documented in CDRSS. If there is only a single serological test result, ask healthcare provider if an acute (or convalescent) test or a PCR test was ordered; request the negative test results and enter into CDRSS. If there is only a serologic test result and specimen was collected in the first week of illness, recommend the HCP order Ehrlichia PCR testing to identify *Ehrlichia* species. Worksheets should not be sent to NJDOH.

A minimum of 3 attempts should be made to obtain information. Attempts to both the healthcare provider/infection preventionist and patient should be made before closing the case. After 3 attempts, enter what is known into CDRSS, including attempts to obtain information (dates and results of the attempts), and classify/close the case according to the case definition.

Beginning in 2024, a person previously reported as a probable or confirmed case-patient may be counted as a new case when there is an episode of new clinically compatible illness with confirmatory laboratory evidence. Local health departments should check for prior cases for all investigations without confirmatory test results. Also, to count as laboratory evidence for case classification, samples for serologic and smear testing (presumptive laboratory evidence) must be collected within 60 days of illness onset.

B. Key CDRSS Fields Specific for Ehrlichiosis

CDRSS Screen	Required Information
Disease Information	• After reviewing laboratory tests, select subgroup: ○ *Ehrlichia chaffeensis (molecular only)* ○ *Ehrlichia ewingii (molecular only)* ○ *Ehrlichia muris eauclairensis (molecular only)* ○ Other or Unspecified *Ehrlichia*
Patient Personal Information	• Ensure name, sex, date of birth, race and ethnicity are entered.
Laboratory and Diagnostic Test Information	• Review test result to determine if it meets laboratory criteria for case definition. To count as laboratory evidence for case classification, samples for serologic and smear testing (presumptive laboratory evidence) must be collected within 60 days of illness onset.
Additional Requirements	• Enter information on severe clinical complications, immunocompromising conditions and blood donation. • If the patient donated blood in the 30 days prior to illness onset/diagnosis, document the date and location of donation. Notify the CDS Vector Team (CDSVectorTeam@doh.nj.gov) by email. • NJDOH CDS Vector-borne Disease staff will complete questions related to transfusion-associated infections.
Clinical Status	• Enter illness onset date, hospitalization (as part of this investigation), pre-existing conditions and mortality information.
Contact Tracing	• In transfusion-transmitted infection investigations, the donor and recipient information will be linked by CDS Vector-borne Disease staff.
Industry and Occupation Information	• Indicate the patient's occupation and industry/work setting

CDRSS Screen	Required Information
Medical Facility and Provider Information	• For admitted/hospitalized patients, ensure patient status is marked as INPATIENT and admission and discharge dates are entered.
Risk Factors	• Answer all risk factors questions (i.e., known tick exposures). Focus on two weeks prior to illness onset and note tick bite and travel history (exposure history). • Ask about receipt of blood transfusion or solid organ transplant in the year prior to symptom onset. Include dates and hospital where blood/organ products were received. Notify the REP and CDS Vector Team (CDSVectorTeam@doh.nj.gov) by email. • Ask about organ donation in the 30 days prior to illness onset. Include dates and hospital where organ was donated. Notify the REP and CDS Vector Team (CDSVectorTeam@doh.nj.gov) by email.
Signs/Symptoms	• Inquire if the patient had each sign/symptom and update the response to Yes, No or Unknown accordingly. Not Asked should not be left as a default response. Enter onset and resolution dates, if known. • In addition to asking about clinical symptoms, ask healthcare provider about other lab work, specifically anemia, leukopenia, thrombocytopenia, and elevated liver enzymes and enter values in attribute fields when possible.
Treatment	• Document all medications received with dates of treatment/duration. This should include treatment that will be continued in an outpatient setting.
Comments	• If requested information was not provided by the patient's healthcare provider, list the dates attempts were made to obtain information and the outcomes. For example, 1/12/23 faxed form to provider; 1/31/23, spoke with office manager and re-sent form; 2/15/23, refaxed form to provider. • Missing information should be obtained by interviewing the patient. If the patient is non-responsive, document attempts and call outcomes in Comments section as well. • If a confirmed or probable case of ehrlichiosis was reported in CDRSS on or after January 1, 2024 and a subsequent case is created that only meets presumptive lab evidence, document this, referencing the prior case ID# in comments when closing current case as Not a Case.

6 CONTROLLING FURTHER SPREAD

A. Isolation and Quarantine Requirements/Protection of Contacts of a Case

There are no isolation or quarantine restrictions.

B. Managing Special Situations

Transfusion-Associated Cases

If the patient received one or more blood transfusions in the 12 months prior to illness onset, contact the infection preventionist at the facility(s) where the transfusion(s) took place and request a list of the transfusions, including:

1. Date transfused
2. Healthcare facility where transfused
3. Type of blood product (red blood cells, platelets, plasma, other)
4. Source of blood product (blood center name)

Enter this information into the Comments and Risk Factors section of CDRSS. Notify the CDS Vector Team (CDSVectorTeam@doh.nj.gov) by email with the information above. CDS will reach out to the blood center for further investigation if necessary.

Transplant Transmitted Cases

If the patient received one or more organ transplants in the year prior to illness onset, contact the infection preventionist at the facility(s) where the transplant took place and request a list of the transplanted organs, including:

1. Date of transplant
2. Healthcare facility where transplant occurred
3. Organ(s) received
4. Source of organ (donation center/foundation)

Enter this information into the Comments and Risk Factors section of CDRSS. Notify the CDS Vector Team (CDSVectorTeam@doh.nj.gov) by email with the information above. CDS will reach out to the healthcare facility for further investigation.

C. Preventive Measures

Removing a Tick

1. Remove the tick as soon as possible.
2. Use fine-tipped tweezers to grasp the tick as close to the skin as you can.
3. Pull upward with steady, even pressure. Don't twist or jerk the tick.
4. After removing the tick, clean the bite area and your hands with rubbing alcohol or soap and water.
5. Dispose of the tick by putting it in alcohol, placing it in a sealed container (e.g. plastic bag), wrapping it tightly in tape, or flushing it down the toilet. Never crush a tick with fingers. Petroleum jelly, a hot match, nail polish, or other products should not be used to remove a tick.

For more information and CDC Tick Bite Bot: cdc.gov/ticks/after-a-tick-bite/

Tick Prevention

- **Know where ticks are:** ticks live in or near wooded or grassy areas. Always walk in the center of trails to avoid contact with ticks.
- **Keep your yard clean:** mow lawns, clear brush and remove leaf litter.
- **Apply insecticides:** use EPA-registered repellent with DEET on skin and permethrin on clothing, boots and camping gear. Always follow product instructions.
- **Cover up:** wear long sleeves and light-colored pants tucked into socks to prevent ticks from getting under clothes.
- **Shower:** showering (preferably within 2 hours) can help find and wash off unattached ticks.
- **Check your body for ticks:** use a hand-held or full-length mirror to view all parts of your body upon return from tick-infested areas. Parents should check their children for ticks under the arms, in and around the ears, inside the belly button, behind the knees, between the legs, around the waist and especially in their hair.
- **Examine gear and pets:** ticks can ride into the home on clothing and pets, then attach to a person later, so carefully examine pets, coats, and day packs.
- **Dry clothing:** tumble dry clothes in a dryer on high heat for 10 minutes to kill ticks on dry clothing after you come indoors.
- **Protect pets:** talk to your veterinarian about the best tick prevention products for your dog and tickborne diseases in your area.

For more information: https://www.cdc.gov/ticks/prevention/

Tick Testing and Identification

Tick testing of individual ticks is not useful because:

- If the test shows that the tick contained disease-causing organisms, that does not necessarily mean that the person has been infected.

- If someone has been infected, they will probably develop symptoms before results of the tick testing are available. Treatment should not be delayed while waiting for tick testing results.

- Negative results can lead to false assurance. For example, the person concerned may have been unknowingly bitten by a different tick that was infected.

Tick identification may be of value when discussing tick bite exposures with a healthcare provider. County mosquito control agencies or agricultural extension offices may offer tick identification services. Online identification resources include: the TickEncounter Resource Center at the University of Rhode Island.

Tick Bite Prophylaxis

Post-tick bite antibiotic prophylaxis is not recommended to prevent ehrlichiosis. People who have been bitten by a tick should watch for signs and symptoms of infection. They should see their healthcare provider if fever or other symptoms develop within two weeks of the tick bite.

Additional Information

An Ehrlichiosis Fact Sheet, Investigation Worksheet and additional information can be obtained from the NJDOH website: https://www.nj.gov/health/cd/topics/ehrli.shtml

References

Centers for Disease Control and Prevention. Case definitions for infectious conditions under public health surveillance, 2024. https://ndc.services.cdc.gov/conditions/ehrlichia-chaffeensis/

Diagnosis and Management of Tickborne Rickettsial Diseases: Rocky Mountain Spotted Fever and Other Spotted Fever Group Rickettsioses, Ehrlichioses, and Anaplasmosis — United States; A Practical Guide for Health Care and Public Health Professionals. Recommendations and Reports / May 13, 2016 / 65(2);1–44

Centers for Disease Control and Prevention. Ehrlichiosis: cdc.gov/ehrlichiosis

NJDOH Vector-borne Disease Data Dashboard: https://bit.ly/VectorBorne