Utah Department of Health & Human Services

Anaplasmosis

Disease plan

Quick links

Last updated: November 20, 2025, by Karen Valcarce

Questions about this disease plan?

Contact the Utah Department of Health and Human Services, Office of Communicable Diseases: 801-538-6191.

Critical clinician information

Clinical evidence
Signs/symptoms • Fever • Chills/sweats • Headache • Body aches • Fatigue or malaise • Anemia • Leukopenia • Thrombocytopenia • Hepatic transaminase elevation • Elevated C-reactive protein
Period of communicability • Anaplasmosis is not transmitted from person to person.
Incubation period • The mean incubation period ranges from 5–14 days.
Mode of transmission • Anaplasma is transmitted through the bite of an infected blacklegged tick (*Ixodes scapularis* and *Ixodes pacificus*).
Laboratory testing
Type of lab test/timing of specimen collection • Preferred way to diagnose is through acute and convalescent serologic testing collected 2–10 weeks apart demonstrating fourfold increase in immunoglobulin G (IgG).. • PCR testing is most sensitive during the first week of illness. A negative PCR test does not rule out anaplasmosis.
Type of specimens • Serology: Serum is most effective for serologic testing. Minimum sample volume 1 mL and shipped refrigerated or on ice packs and labeled either acute or convalescent. • PCR: Whole blood is preferred for PCR testing. Minimum sample volume of 1 mL and shipped refrigerated if under a week and frozen on dry ice if over a week.
Treatment recommendations
Type of treatment • Doxycycline is the preferred treatment for anaplasmosis for all ages.
Contact management
Isolation of case • None
Quarantine of contacts • None
Infection control procedures
• None

Why is anaplasmosis important to public health?

Anaplasmosis (also known as human granulocytic anaplasmosis [HGA] and formerly known as human granulocytic ehrlichiosis [HGE]) is caused by the bite of an infected tick. It is a serious illness that can be fatal if not treated correctly, even in previously healthy people, making it an important public health concern. Ongoing surveillance is needed to establish the burden of disease and better define the epidemiology of the various infections caused by Anaplasma species. This information will be used to better inform medical professionals about the disease and tailor prevention messages for the public.

Clinical description

The agent that causes anaplasmosis infects white blood cells. It causes sudden illness, with a combination of nonspecific signs. Early on in the illness patients may have fever, headache, malaise, chills, rigors, and muscle and joint aches. Gastrointestinal symptoms may also occur (nausea, vomiting, diarrhea, and loss of appetite), although this is seen in only about 20% of patients.[1] Rash is rarely reported (<10% of cases) and may actually indicate a coinfection or completely different tickborne etiology.[1,2,3]

Common laboratory findings include mild anemia, thrombocytopenia, leukopenia, and elevated hepatic transaminases. If treatment is delayed, the illness may become severe and progress to renal failure, respiratory failure, peripheral neuropathies, disseminated intravascular coagulation (DIC)-like coagulopathies, rhabdomyolysis, or hemorrhage. Many people with anaplasmosis may be asymptomatic or may have a very mild, self-limited illness.

Antibiotics are used to treat the infection. Response to treatment is usually apparent within 24−48 hours.[1,3] Severe complications are associated with delayed treatment, older or younger age, or with immunocompromising conditions or immune-suppressing medications. Fatal infections have been reported. Coinfections with other tickborne agents, such as the agents of Lyme disease and babesiosis, are possible and may complicate the clinical picture.

Causative agent

Anaplasmosis is a bacterial infection caused by *Anaplasma phagocytophilum* (formerly *Ehrlichia phagocytophila*). The etiologic agent is an obligate intracellular pathogen.

Differential diagnosis

The following should be considered along with anaplasmosis:

- Rocky Mountain spotted fever (RMSF)
- ehrlichiosis

- Heartland virus
- Bourbon virus
- babesiosis
- sepsis
- toxic shock syndrome
- meningoencephalitis
- bacteremia
- hemolytic-uremic syndrome (HUS)
- cytomegalovirus
- Epstein-barr virus
- hepatitis
- blood malignancies

Laboratory identification

Anaplasmosis is typically identified serologically and requires evidence of an increase in titer between acute and convalescent sera as antibodies are slow to appear. Testing for anaplasmosis is complicated by the close genetic relationship between *Ehrlichia* and *Anaplasma* species and antibodies can cross-react.[3,4,5] Polymerase chain reaction (PCR), immunohistochemical (IHC) assays and culture, and blood smear microscopy are other testing options. Enzyme-linked immunosorbent assay (ELISA) tests are no longer widely available and have been removed as laboratory evidence.[4] The optimal test will depend on symptom onset and the specimen types available.

Serology

Serologic testing using the indirect immunofluorescence antibody (IFA) assay for immunoglobulin G (IgG) antibodies is the reference standard, although other methods are available. This test is available through most commercial laboratories. A definitive diagnosis requires at least a fourfold change in IgG titers between acute and convalescent sera collected 2−10 weeks apart.[4,5] A single acute antibody result does not confirm anaplasmosis and may only be classified as presumptive laboratory evidence. Antibody titers may remain elevated for months or even years.[5] Immunoglobulin M (IgM) IFA assays are not reliable and should not be used as an indicator of an active infection.

Polymerase chain reaction (PCR)

PCR-based testing on whole blood samples can detect anaplasmosis early on in the infection. This method is most sensitive in the first week of illness and may decrease following the administration of antibiotics. A negative PCR result does not rule out the diagnosis and treatment should not be

withheld due to negative results.[3,5] It is recommended to use both PCR in association with serologic tests for the diagnosis of anaplasmosis, especially if PCR is negative.[2]

Blood–smear microscopy

Intracytoplasmic inclusions, called morulae, can sometimes be seen on a blood smear in patients with anaplasmosis. Morulae are observed within granulocytes.[3] Blood-smear microscopy cannot be used to conclusively differentiate *Ehrlichia* and *Anaplasma* species. On its own, blood-smear testing is not sufficiently sensitive and should not be the only test relied upon for diagnosis.[5]

IHC (immunohistochemistry) and culture

Culture isolation and IHC assays are only available at specialized laboratories, as routine blood cultures cannot detect *A. phagocytophilum*.[5]

Treatment

Doxycycline is the drug of choice for anaplasmosis in both adults and children. Treatment should not be delayed while awaiting confirmatory test results. Doxycycline is most effective at preventing severe complications if it is given within the first week after symptom onset. After beginning treatment, fever generally subsides within 24–48 hours.[6] For persons with life-threatening allergies or severe intolerance, alternative antibiotics should be considered. Alternative treatment should also be considered for pregnant patients with a mild course of illness. Rifampin has been used successfully for treatment of anaplasmosis in several pregnant individuals and in children under 8 years of age.[6] When exploring treatments other than doxycycline, keep in mind that alternatives may not be effective against RMSF, which has similar clinical manifestations as anaplasmosis, or Lyme disease, which can be a common coinfection.[3,7] Doxycycline or other antibiotics are not recommended as a post-tick bite prophylaxis to prevent anaplasmosis. Visit the CDC website for additional information: https://www.cdc.gov/anaplasmosis/hcp/clinical-care/index.html .

Dosage

Doxycycline is the first-line treatment for adults and children of all ages. Patients with suspected anaplasmosis should be treated with doxycycline for 10−14 days to provide adequate length of treatment for possible coinfection with *Borrelia* species.[6]

- Adults: 100 mg every 12 hours[6]
- Children under 45 kg (100 lbs): 2.2 mg/kg body weight given twice daily[6]

All tetracyclines can cause dental staining in children; however, the risk of such staining after use of doxycycline is minimal if a short course of therapy is administered (≤21 days).[2]

Case fatality

Severe complications are associated with delayed treatment, older or younger age, or with immunocompromising conditions. These complications may affect the lungs, bone marrow, brain, meninges (linings of the brain and spinal cord), kidneys, and blood. Fatal infections have been reported, with a case fatality rate of around 0.3%.[2]

Reservoir

Deer and wild rodents, especially the white-footed mouse, are the likely animal reservoirs for *A. phagocytophilum*.[2,8]

Transmission

A. phagocytophilum is transmitted through the bite of an infected tick. Two types of ticks are responsible for transmission: the blacklegged tick (*Ixodes scapularis*), and the western blacklegged tick (*Ixodes pacificus*). The blacklegged tick, or deer tick, is the same tick associated with Lyme disease and babesiosis. The western blacklegged tick can also transmit Lyme disease and hard tick relapsing fever. These ticks may be coinfected and capable of transmitting more than one disease through a single bite. The longer a tick stays attached, the higher the likelihood of successful transmission of infection.[8] Since tick bites are often painless and may occur on parts of the body that are difficult to observe, cases of anaplasmosis may have no known history of tick bite.

Although anaplasmosis is primarily a tickborne disease, *A. phagocytophilum* can also be transmitted through blood transfusion. Transmission by other means has been suggested as well, including maternal-child transmission and through direct contact with slaughtered deer. People who have an active infection should be excluded from donating blood or bone marrow until their illness has resolved and they have completed the full course of antibiotics.[9]

Susceptibility

Susceptibility is believed to be general, although men and people over 40 years of age are more commonly infected and older or immunocompromised individuals are likely to suffer a more serious illness.[10] Reinfection is rare, but has been reported.[2]

Incubation period

The period between exposure to infection and the first symptoms of anaplasmosis ranges from 5–14 days.[1]

Period of communicability

Anaplasmosis is not communicable from person to person.

Epidemiology

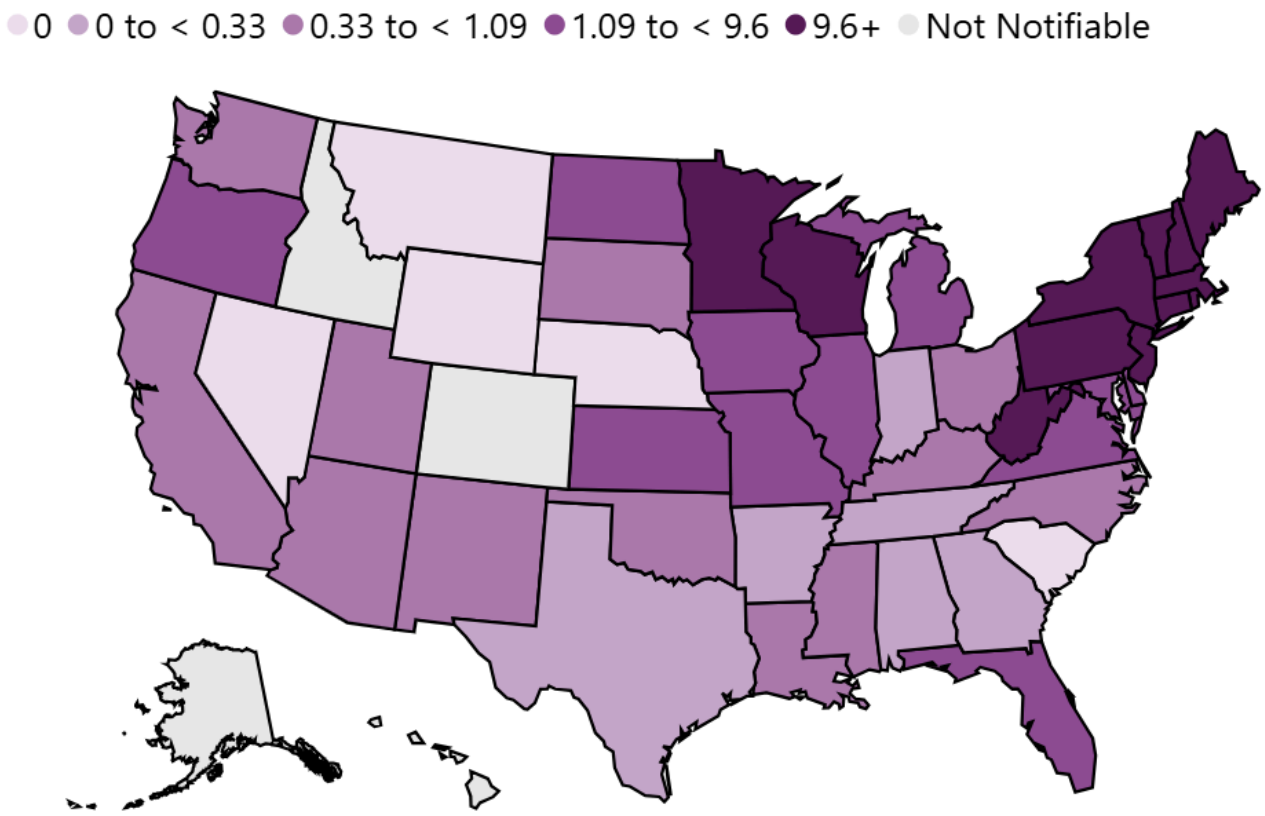
In 2000, only 348 cases of anaplasmosis were reported. However, cases have increased steadily since then.[10] Anaplasmosis is more frequently reported than ehrlichiosis in the U.S. In 2023, there were 7,280 cases reported.[10]

Anaplasmosis cases correspond with the geographic distribution of the blacklegged tick. Cases are most frequently reported from the northeastern and upper midwestern U.S. as shown in Figure 1 below.[3,10] Cases have also been reported along the west coast, corresponding with the known range of the western blacklegged tick.[3] In 2023, 8 states were responsible for 90% of reported cases: Maine, Massachusetts, Minnesota, New Jersey, New York, Pennsylvania, Vermont, and Wisconsin.[10]

Most cases occur in the spring and summer months, when nymph ticks are most active, peaking around June or July. A second peak is seen in October and November when adult ticks are most active. Tick bites, exposure to wildlife, and golfing have been associated with an increased risk of infection.[4]

In Utah, anaplasmosis was added to the list of reportable diseases in 2000. Since 2009, internal DHHS data show there have been 9 cases of *A. phagocytophilum* infection and 2 cases that could not be distinguished from ehrlichiosis (these were counted as "Ehrlichiosis/anaplasmosis, undetermined," which has since been removed as a nationally notifiable condition). Case investigation data indicates these infections were likely not acquired in Utah.

Figure 1. Annual reported incidence for anaplasmosis , United States, 2023[10]



Public health control measures

Public health responsibility

- Investigate all suspect cases of disease and fill out and submit appropriate disease investigation forms.
- Determine the probable source (location) of where the infection was acquired.
    - Due to the small size of ticks, patients may not recall getting a tick bite.
- Classify cases according to Centers for Disease Control and Prevention (CDC) and Council for State and Territorial Epidemiologists (CSTE) criteria so accurate records on anaplasmosis can be maintained at the national level.
- If anaplasmosis transmission is found to occur in Utah, provide education to the public about the mode of tick transmission and ways to avoid infection.
- Provide education to clinicians on diagnosis, testing, and reporting.

Prevention

Managing special situations: Response to a tick bite

The longer a tick remains attached to someone, the higher the likelihood of disease transmission. Promptly remove any attached tick using fine-point tweezers. Do not squeeze or twist the tick. Instead, grasp it close to the skin and pull straight out using steady pressure.

Whenever an attached tick is removed from a person's body, that person should monitor their health for the appearance of rash, fever, or flu-like symptoms. They should immediately seek the advice of a healthcare provider if they notice any symptoms. This is especially important if the tick was attached for more than 24 hours.

It may be helpful to save the tick after removal for 2 reasons:

1) If the person who was bitten goes on to develop signs or symptoms such as fever, flu-like symptoms, or a rash, it may be helpful for the physician to know the type of tick

2) Depending on the circumstances of the bite (when a person was bitten, the type of tick, how long it was attached), a physician may choose to treat the person who was bitten.

The tick may be kept either securely sealed in a small plastic bag or attached to a piece of paper using clear tape. For those who do not wish to keep the tick, they can either drown it in alcohol or flush it down the toilet.

Preventive measures

Environmental measures

Prevention of diseases spread by ticks, involves making the yard less attractive to ticks.

- Keep grass cut short.
- Remove leaf litter and brush from around the yard.
- Prune low lying bushes to let in more sunlight.
- Keep woodpiles and bird feeders off the ground and away from the home.
- Keep the plants around stone walls cut short.
- Use a 3-foot wide woodchip, mulch, or gravel barrier where the lawn meets the woods, and remind children not to cross that barrier.
- Ask a landscaper or local nursery about plants to use in the yard that do not attract deer.
- Use deer fencing (for yards 15 acres or more).

If someone chooses to use a pesticide to reduce the number of ticks on their property, they should be advised to hire a licensed applicator who is experienced with tick control. A local landscaper or arborist may be a licensed applicator. In general, good tick control can be achieved with no more than 2 pesticide applications in any year. Advise people to ask, when selecting an applicator, if the applicator will provide:

- A written pest control plan that includes information on the pesticide to be used.
- Information about non-chemical pest control alternatives.
- Signs to be posted around the property after the application.

Personal preventive measures/education

There is no human vaccine for anaplasmosis. If someone lives, works, or spends leisure time in an area likely to have ticks, they should be advised of the following:

- The single most important thing one can do to prevent a tick-borne disease is to check oneself for ticks once a day. Favorite places ticks like to go on the body include areas between the toes, back of the knees, groin, armpits, neck, along the hairline, and behind the ears. Remember to check children and pets too.
- Promptly remove any attached tick using fine-point tweezers. The tick should not be squeezed or twisted but grasped close to the skin and pulled straight out using steady pressure.
- Stick to main pathways and the centers of trails when hiking.
- Wear long-sleeved, light-colored shirts, and long pants tucked into socks.
- Talk to a veterinarian about the best ways to protect pets and livestock from ticks.

Use repellents containing DEET (N,N-diethyl-m-toluamide), and choose a product that will provide sufficient protection for the amount of time spent outdoors. Product labels often indicate the length of time that someone can expect protection from a product. DEET is considered safe when used according to the manufacturer's directions. The efficacy of DEET levels off at a concentration of 30%, which is the highest concentration recommended for children and adults. DEET products should not be used on children <2 months of age. The following precautions should be observed when using DEET products:

- Avoid using DEET products that combine the repellent with a sunscreen. Sunscreens may need to be reapplied too often, resulting in an over application of DEET.
- Apply DEET on exposed skin, using only as much as needed.
- Do not use DEET on the hands of young children, and avoid applying repellent to areas around the eyes and mouth.
- Do not use DEET over cuts, wounds, or irritated skin.
- Wash treated skin with soap and water after returning indoors, and wash treated clothing.
- Avoid spraying DEET products in enclosed areas.

Permethrin-containing products will kill mosquitoes and ticks on contact. Permethrin products are not designed to be applied to the skin. Treat your clothing and allow it to dry in a well-ventilated area before you wear it. Because permethrin binds very tightly to fabrics, once the fabric is dry, very little of the permethrin gets onto your skin.

Chemoprophylaxis

Use of antibiotic prophylaxis for anaplasmosis is not recommended.

Vaccine

There is currently no vaccination for anaplasmosis.

Isolation and quarantine requirements

Isolation: None.

Hospital: None.

Quarantine: None, except exclusion from blood and bone marrow donation.

Case investigation

Reporting (CSTE position statement, 2024)

Report all suspect and confirmed cases of anaplasmosis. Reporting should be ongoing and routine. In Utah, cases are required by law to be reported within 3 working days of identification.

Note: The following section is copied directly from CSTE position statement 23-ID-04.[4]

Report any illness to public health authorities that meets any of the following criteria:

A1. Clinical criteria for reporting

- N/A

A2. Laboratory criteria for reporting

- Detection of *A. phagocytophilum* 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 testing, **OR**
- Serological evidence of elevated IgG antibody reactive with *A. phagocytophilum* antigen by indirect immunofluorescence assay (IFA) at a titer ≥1:128, **OR**
- Microscopic identification of intracytoplasmic morulae in leukocytes, **OR**
- Demonstration of anaplasmal antigen in a biopsy or autopsy sample by immunohistochemical methods, **OR**

- Isolation of *A. phagocytophilum* from a clinical specimen in cell culture with molecular confirmation (e.g., PCR or sequencing)

A3. Epidemiologic linkage criteria for reporting

- N/A

A4. Vital records criteria for reporting

- A person whose death certificate lists anaplasmosis as an underlying cause of death or a significant condition contributing to death.

A5. Healthcare record criteria for reporting

- A person whose healthcare record contains a diagnosis of anaplasmosis.

Table 1. Table of criteria to determine whether a case should be reported to public health authorities

Criterion	Reporting
Clinical criteria for reporting	
N/A	
Laboratory criteria for reporting	
Detection of *A. phagocytophilum* 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 testing	S
Serological evidence of elevated IgG antibody reactive with *A. phagocytophilum* antigen by indirect immunofluorescence assay (IFA) at a titer ≥1:128	S
Microscopic identification of intracytoplasmic morulae in leukocytes	S
Demonstration of anaplasmal antigen in a biopsy or autopsy sample by immunohistochemical methods	S
Isolation of *A. phagocytophilum* from a clinical specimen in cell culture with molecular confirmation (e.g., PCR or sequencing)	S
Epidemiologic linkage criteria for reporting	
N/A	
Vital record criteria for reporting	
A person whose death certificate lists anaplasmosis as an underlying cause of death or a significant condition contributing to death	S
Healthcare record criteria for reporting	
A person whose healthcare record contains a diagnosis of anaplasmosis	S

Notes: S = This criterion alone is sufficient to report a case

Case definition (CSTE position statement, 2024)

Note: The following section is copied directly from CSTE position statement 23-ID-04.[4]

A. Narrative: A description of criteria to determine how public health should classify a case of anaplasmosis.

A. phagocytophilum is closely related to *Ehrlichia* spp. bacteria, and many patients are tested using serologic panels that include targets for both species. As a result, it is not uncommon for jurisdictions to receive positive antibody results for both *Anaplasma* and *Ehrlichia* spp. with the same collection date for a single patient. Public health agencies should use 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 to help determine the appropriate disease type for individual patients. Patients should not be classified as cases for both anaplasmosis and ehrlichiosis based on serologic evidence alone.

A1. Clinical criteria

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

A2. Laboratory criteria*

Confirmatory laboratory evidence

- Detection of *A. phagocytophilum* 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 testing, **OR**
- Serological evidence of a fourfold change[1] in IgG-specific antibody titer to *A. phagocytophilum* antigen by indirect immunofluorescence assay (IFA) in paired serum samples (one taken in the first 2 weeks after illness onset and a second taken 2 to 10 weeks after acute specimen collection)[2], **OR**
- Demonstration of anaplasmal antigen in a biopsy or autopsy sample by immunohistochemical methods, **OR**
- Isolation of *A. phagocytophilum* from a clinical specimen in cell culture with molecular confirmation (e.g., PCR or sequencing)

Presumptive laboratory evidence

- Serological evidence of elevated IgG antibody reactive with *A. phagocytophilum* 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.

** Note: The categorical labels used here to stratify laboratory evidence are intended to support the standardization of case classifications for public health surveillance. The categorical labels should not be used to interpret the utility or validity of any laboratory test methodology.*

[1]A fourfold change in titer is equivalent to a change of 2 dilutions (e.g., 1:64 to 1:256).

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

A3. Epidemiologic linkage criteria

- N/A

A4. Case classifications

Confirmed**:

- Meets confirmatory laboratory evidence **AND** at least 1 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 1 other objective or subjective clinical evidence criterion (excluding chills/sweats), **OR**
- Meets presumptive laboratory evidence without a reported fever but with chills/sweats **AND**
    - at least 1 objective clinical evidence criterion, **OR**
    - 2 other subjective clinical evidence criteria.

Suspect**:

- 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).

*** Patients should not be classified as cases for both anaplasmosis and ehrlichiosis based on serologic evidence alone (see Part A Narrative).*

B. Criteria to distinguish a new case of anaplasmosis from reports or notifications which should not be enumerated as a new case for surveillance

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

Table 2. Table of criteria for defining a case of anaplasmosis

Criterion	Confirmed	Probable			Suspect
Clinical evidence					
Objective clinical evidence					
Fever as reported by patient or healthcare provider	O	N			
Anemia	O	O	O		
Leukopenia	O	O	O		
Thrombocytopenia	O	O	O		
Hepatic transaminase elevation	O	O	O		
Elevated C-reactive protein	O	O	O		
Subjective clinical evidence					
Chills/sweats	O		N	N	
Headache	O	O			
Myalgia	O	O			
Fatigue or malaise	O	O			
At least 2 of the following *subjective clinical evidence* criteria: • Headache • Myalgia • Fatigue or malaise				N	
No or insufficient clinical information to classify as a confirmed or probable case					N
Laboratory evidence					
Detection of *A. phagocytophilum* DNA in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR) assay, nucleic acid amplification test (NAAT), or other molecular testing	O				O
Serological evidence of a fourfold change[1] in IgG-specific antibody titer to *A. phagocytophilum* antigen by indirect immunofluorescence assay (IFA) in paired serum samples (one taken in first 2 weeks after illness onset and a second taken 2 to 10 weeks after acute specimen collection)[2]	O				O
Demonstration of anaplasmal antigen in a biopsy or autopsy sample by immunohistochemical method	O				O
Isolation of *A. phagocytophilum* from a clinical specimen in cell culture with molecular confirmation (e.g., PCR or sequence)	O				O

Serological evidence of elevated IgG-specific antibody reactive with *A. phagocytophilum* antigen by IFA ≥1:128 in sample taken within 60 days of onset		O	O	O	O
Microscopic identification of intracytoplasmic morulae in leukocytes in a sample taken within 60 days of illness onset		O	O	O	O

Notes:
N = All "N" criteria in the same column are NECESSARY to classify a case.
O = At least one of these "O" (ONE OR MORE) criteria in each category (categories=clinical evidence, laboratory evidence, and epidemiologic evidence) in the same column—in conjunction with all "N" criteria in the same column—is required to classify a case.
[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.

Case investigation process

- Complete CMR in EpiTrax.
- Verify case status.
- Fill out disease investigation form.
- Determine whether patient had travel/exposure history consistent with acquisition of disease in Utah or elsewhere.
- If patient acquired disease in Utah, identify the source of transmission and implement measures to eliminate it.

Outbreaks

One or more locally-acquired cases of anaplasmosis, or one case of unusual etiology or transmission.

Identifying case contacts

None.

Case contact management

None.

References

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Version control

Updated Oct 2025: Created this disease plan specifically for anaplasmosis. Previously it was combined with the ehrlichiosis disease plan.

EpiTrax minimum/required fields by tab

Demographic

- County
- State
- Street
- City
- ZIP code
- Date of birth
- Birth gender
- Race
- Ethnicity
- First name
- Last name
- Phone number

Clinical

- Date diagnosed
- Date of death
- Hospitalized
- Died
- Disease
- Onset date
- Pregnant
- Clinician
- Diagnostic facility
- Specific disease being reported
- Did the patient have an underlying immunosuppressive condition?
- Did the patient experience any of the following life-threatening complications in clinical course of illness?
- Was the patient treated with antibiotics?

Laboratory

- Organism
- Specimen source
- Test result
- Test type

Epidemiological

- Imported from

Investigation

- List date 14 days prior to disease onset
- Was patient bitten by a tick during the above time period?
- Was patient in a wooded, brushy or grassy area (potential tick habitat) <30 days prior to onset of symptoms?
- Was the patient camping during exposure period?
- Was the patient hunting during exposure period?
- Did the patient visit any parks during exposure period?
- Did the patient travel outside of Utah during exposure period?

Contacts

- Last name
- First name
- Date of birth

Reporting

- Date first reported to public health

Administrative

- Outbreak name
- Outbreak associated
- State case status

Electronic laboratory reporting processing rules

Note that the below rules are specific to informatics as a way to standardize what labs are entered into EpiTrax and should not be used for investigational purposes.

The following rules describe how laboratory results reported to public health should be added to new or existing events in EpiTrax. These rules have been developed for the automated processing of electronic laboratory reports, although they apply to manual data entry, as well.

Whitelist rules

Whitelist rules describe how long an existing event can have new laboratory data appended to it. If a laboratory result falls outside the whitelist rules for an existing event, it should not be added to that event, and should be evaluated to determine if a new event (CMR) should be created.

Anaplasmosis morbidity whitelist rule: If the specimen collection date of the laboratory result is 2 years or less after the event date, the laboratory result should be added to the morbidity event.

Anaplasmosis contact whitelist rule: Never added to a contact.

Graylist rule

We often receive laboratory results through ELR that cannot create cases, but can be useful if a case is created in the future. These laboratory results go to the graylist. The graylist rule describes how long an existing event can have an old laboratory result appended to it.

Anaplasmosis graylist rule: If the specimen collection date of the laboratory result is 30 days before to seven days after the event date of the morbidity event, the laboratory result should be added to the morbidity event.

Other electronic laboratory processing rules

- If an existing event has a state case status of “not a case,” ELR will never add additional test results to that case. New labs will be evaluated to determine if a new CMR should be created.