



ARIZONA DEPARTMENT OF HEALTH SERVICES

Case Definitions for Communicable Morbidities

2019

(revised October 2019)

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Introduction

In the United States, requirements for reporting diseases are mandated by state or local laws or regulations, and the list of reportable diseases in each state differs. The reporting requirements for Arizona are part of the Arizona Administrative Code (A.A.C.), available at http://apps.azsos.gov/public_services/Title_09/9-06.pdf. The A.A.C. stipulates what communicable diseases healthcare providers, laboratories, and other entities need to report to public health officials, who will then review reports, conduct a public health investigation if appropriate, and classify cases according to the current case definitions.

Since 1990, in collaboration with the [Council of State and Territorial Epidemiologists](#) (CSTE), the [Centers for Disease Control and Prevention](#) (CDC) has published case definitions for public health surveillance to provide uniform criteria for case classification to increase the specificity of reporting and improve the comparability of diseases reported from different geographic areas.

The CDC/CSTE surveillance case definitions included in this report differ in their use of clinical, laboratory, and epidemiologic criteria to define cases. Some clinical syndromes do not have confirmatory laboratory tests; however, laboratory evidence may be one component of a clinical definition (e.g., toxic-shock syndrome). Most case definitions include a brief clinical description; however, unless this description is explicitly cited in the case classification section, it is included only as background information. Some diseases require laboratory confirmation for diagnosis regardless of clinical symptoms, whereas others are diagnosed based on epidemiologic data. Many case definitions for the childhood vaccine-preventable diseases and foodborne diseases include epidemiologic criteria (e.g., exposure to probable or confirmed cases of disease or to a point source of infection [i.e., a single source of infection, such as an event resulting in a foodborne-disease outbreak, to which all confirmed case-patients were exposed]). In some instances, the anatomic site of infection may be important; for example, whether the organism was isolated from a normally sterile site (e.g., blood).

Since each state has the authority to make additional morbidities reportable, there are some morbidities reportable in Arizona that are not nationally notifiable. Case definitions for those morbidities are also included in this report to standardize surveillance within Arizona. Case definitions in this document for nationally notifiable conditions match the CDC case definitions for most morbidities, unless noted.

For more information see:

- ADHS's Summary and Overview for Case Definitions for Public Health Surveillance at <http://www.azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-case-definition>;
- CDC's National Notifiable Diseases Surveillance System at <http://wwwn.cdc.gov/nndss/>; or
- the ADHS Infectious Disease Surveillance Overview posted at <http://www.azdhs.gov/preparedness/epidemiology-disease-control/index.php#data-home>

Definition of Terms Used in Case Classification

Confirmed case: A case that is classified as confirmed for reporting purposes.

Probable case: A case that is classified as probable for reporting purposes.

Suspected case: A case that is classified as suspected for reporting purposes.

Laboratory-confirmed case: A case that is confirmed by one or more of the laboratory methods listed in the case definition under Laboratory Criteria for Diagnosis. Although other laboratory methods may be used in clinical diagnosis, if specific test methods are listed in a case definition, only those listed are accepted as laboratory confirmation for case-defining purposes.

Epidemiologically-linked case: A case in which a) the patient has had contact with one or more persons who either have/had the disease or have been exposed to a point source of infection (e.g., a single source of infection, such as an event leading to a foodborne-disease outbreak, to which all confirmed case-patients were exposed) and b) transmission of the agent by the usual modes of transmission for that agent is plausible. A case may be considered epidemiologically linked to a laboratory-confirmed case if at least one case in the chain of transmission is laboratory-confirmed.

Supportive or presumptive laboratory results: Specified laboratory results that are consistent with the diagnosis, yet do not meet the criteria for laboratory confirmation.

Clinically compatible case: A clinical syndrome generally compatible with the disease, as described in the clinical description.

Normally sterile site: An anatomic location, or tissue or body fluid from an anatomic location, in which microorganisms are not found in the absence of disease. See [Appendix 1: Specimen types and Guidelines for determining “sterile” and “non-sterile” sites](#) for additional guidelines.

Definition of an Epidemiologic Investigation

Arizona Administrative Code R9-6-101.33 (http://apps.azsos.gov/public_services/Title_09/9-06.pdf)

Epidemiologic investigation: The application of scientific methods to ascertain a diagnosis; identify risk factors for a disease; determine the potential for spreading a disease; institute control measures; and complete forms and reports such as communicable disease, case investigation, and outbreak reports.

Definition of Binational Case

A binational case refers to an individual with a confirmed, probable or suspect case of a reportable communicable disease, AND meeting one or more of the following criteria:

- Potentially exposed while in Mexico or Canada (travel to Mexico or Canada during the appropriate period when patient may have been infected)
- Potentially exposed by resident of Mexico or Canada
- Resident of Canada or Mexico
- Has case contacts in or from Mexico or Canada (e.g., potentially exposed by person who recently traveled to Mexico or Canada, epi-linked contact of a binational case).
- Exposure to suspected product from Canada or Mexico
- Other situations that may require binational notification or coordination of response (e.g., a measles outbreak without known cross-border contacts in a border community or state; exposure to an exported product from the U.S. to Canada or Mexico; sought medical attention and/or treatment in Canada or Mexico)

Arizona and Sonora will utilize Arizona's Medical Electronic Disease Intelligence System (MEDSIS) and/or secure email accounts to share all confidential information.

Cross-border investigations of binational cases will be determined on a case-by-case basis. During cross-border disease investigations of binational interest:

- Arizona health authorities will use Arizona's Communicable Disease Case Definition guide for epidemiologic investigations.
- Sonora health authorities will use Communicable Disease Case Definitions based on the Guidelines established by the [Mexican Official Norms for Epidemiologic Surveillance](http://www.cdc.gov/USMexicoHealth/pdf/us-mexico-guidelines.pdf) (<http://www.cdc.gov/USMexicoHealth/pdf/us-mexico-guidelines.pdf>).

Modified 2015

Case Definitions for Communicable Morbidities Reportable in Arizona

ACUTE FLACCID MYELITIS (AFM)

PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS

Cases should be reported under the [emerging or exotic disease](#) requirement. Enter in MEDSIS as Acute Flaccid Myelitis.

CASE DEFINITION**Clinical Description**

An illness with onset of acute flaccid limb weakness.

Laboratory Criteria for Diagnosis***Confirmatory evidence***

A magnetic resonance image (MRI) showing spinal cord lesion largely restricted to gray matter*† and spanning one or more vertebral segments.

Presumptive evidence

Cerebrospinal fluid (CSF) with pleocytosis (white blood cell count >5 cells/mm³).

Case Classification***Confirmed***

- Clinically compatible case AND
- Confirmatory laboratory evidence

Probable

- Clinically compatible case AND
- Presumptive laboratory evidence

* Spinal cord lesions may not be present on initial MRI; a negative or normal MRI performed within the first 72 hours after onset of limb weakness does not rule out AFM.

† Terms in the spinal cord MRI report such as “affecting mostly gray matter,” “affecting the anterior horn or anterior horn cells,” “affecting the central cord,” “anterior myelitis,” or “poliomyelitis” would all be consistent with this terminology.

Comment

To provide consistency in case classification, review of case information and assignment of final case classification for all suspected AFM cases will be done by experts in national AFM surveillance. This is similar to the review required for final classification of paralytic polio cases.

CONTROL MEASURES

[Arizona Administrative Code R9-6-333](#) Emerging or Exotic Disease

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of an emerging or exotic disease case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. In consultation with the Department, isolate an emerging or exotic disease case or suspect case as necessary to prevent transmission;
3. Conduct an epidemiologic investigation of each reported emerging or exotic disease case or suspect case; and
4. For each emerging or exotic disease case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Contact Control Measures

A local health agency, in consultation with the Department,

1. Shall quarantine or exclude an emerging or exotic disease contact as necessary, according to R9-6-303, to prevent transmission.

INVESTIGATION FORMS

See the Acute Flaccid Myelitis: Patient Summary Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2018: Updated clinical description. National experts in AFM surveillance will determine the final case classification.</p> <p>2016: CSTE approved a case definition for AFM in 2015 in order to standardize surveillance, although AFM is not nationally notifiable and is not explicitly reportable in Arizona at this time.</p>
Most Recent CDC/CSTE Revision Year	2018

AMEBIASIS

PROVIDERS REPORT WITHIN 24 HRS IF AN OUTBREAK IS DETECTED OR PERSON HAS A HIGH-RISK OCCUPATION

PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 DAYS FOR ALL OTHER CASES

CASE DEFINITION

Clinical Description

Infection of the large intestine by *Entamoeba histolytica* may result in an illness of variable severity ranging from mild, chronic diarrhea to fulminant dysentery. Infection may also be asymptomatic. Extraintestinal infection may also occur. The most common is hepatic abscess.

Laboratory Criteria for Diagnosis

Confirmatory Laboratory Evidence

- Intestinal amebiasis:
 - Demonstration of cysts or trophozoites of *E. histolytica* in stool, OR
 - Demonstration of trophozoites in tissue biopsy or ulcer scrapings by culture of histopathology.
- Extraintestinal amebiasis:
 - Demonstration of *E. histolytica* trophozoites in extraintestinal tissue.

Supportive Laboratory Evidence

- Detection of *E. histolytica* using a culture-independent diagnostic test (CIDT) (e.g., polymerase chain reaction [PCR]).

Epidemiologic Linkage

A person who has had contact with a case that meets the confirmatory laboratory criteria.

Case Classification

Confirmed, intestinal amebiasis

A clinically compatible illness that is laboratory confirmed.

Confirmed, extraintestinal amebiasis

A parasitologically confirmed infection of extraintestinal tissue or among symptomatic persons (with clinical or radiographic findings consistent with extraintestinal infection) demonstration of specific antibody against *E. histolytica* as measured by IHA (indirect hemagglutination), or other reliable immunodiagnostic test such as ELISA (enzyme-linked immunosorbent assay).

Probable

A clinically compatible case that is epidemiologically linked to a confirmed case.

Suspect

A clinically compatible case that meets the supportive laboratory criteria.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

Asymptomatic intestinal carriage of *E. histolytica* should not be reported. Among asymptomatic persons, a positive serologic test does not necessarily indicate extraintestinal amebiasis.

CONTROL MEASURES

[Arizona Administrative Code R9-6-306](#) Amebiasis

Case control measures

A local health agency shall:

1. Exclude an amebiasis case or suspect case with diarrhea from:
 - a. Working as a food handler, caring for children in or attending a child care establishment, or caring for patients or residents in a health care institution until:
 - i. Either:
 - (1) Treatment with an amebicide is initiated, and
 - (2) A stool specimen negative for amoebae is obtained from the amebiasis case or suspect case; or
 - ii. The local health agency has determined that the amebiasis case or suspect case is unlikely to infect other individuals; and
 - b. Using an aquatic venue for two weeks after diarrhea has resolved;
2. Conduct an epidemiologic investigation of each reported amebiasis case or suspect case; and
3. For each amebiasis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Amebiasis Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	2019: Added supportive laboratory criteria and suspect classification to allow for CIDT. Added probable classification for epi-linkage.
Most Recent CDC/CSTE Revision Year	N/A

CASE DEFINITION

Clinical Description

A tick-borne illness characterized by acute onset of fever and one or more of the following signs or symptoms: headache, myalgia, malaise, anemia, leukopenia, thrombocytopenia, or elevated liver enzymes. Nausea, vomiting, or rash may be present in some cases.

Intracytoplasmic bacterial aggregates (morulae) may be visible in the leukocytes of some patients. There are at least three species of bacteria responsible for ehrlichiosis/anaplasmosis in the U.S.: *Ehrlichia chaffeensis*, found primarily in monocytes, and *Anaplasma phagocytophilum* and *Ehrlichia ewingii*, found primarily in granulocytes*. For cases with evidence of *Ehrlichia* spp. infection, see the [Ehrlichiosis case definition](#).

Human anaplasmosis caused by *Anaplasma phagocytophilum* (formerly Human Granulocytic Ehrlichiosis or HGE) should be reported and entered as anaplasmosis. Human ehrlichiosis caused by *E. chaffeensis* (formerly Human Monocytic Ehrlichiosis or HME) or *E. ewingii* (formerly unspecified or other agent), or undetermined ehrlichiosis/anaplasmosis should be reported and entered as ehrlichiosis.

*Note: The clinical signs of disease from infection with these agents are similar, and the range distributions overlap, so testing for one or more species may be indicated. Serologic cross-reactions may occur among tests for these agents.

Clinical evidence

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

Exposure

History of having been in potential tick habitat in the 14 days prior to the onset of illness or history of tick bite.

Laboratory Criteria for Surveillance

Anaplasma phagocytophilum infection (formerly HGE):

Confirmatory Testing

- Serological evidence of a four-fold change in IgG-specific antibody titer to *A. phagocytophilum* antigen by IFA in paired serum samples, OR
- Detection of *A. phagocytophilum* DNA in a clinical specimen via PCR assay, OR
- Demonstration of anaplasma antigen in a biopsy or autopsy sample by IHC, OR
- Isolation of *A. phagocytophilum* from a clinical specimen in cell culture.

Presumptive Testing

- Serological evidence of elevated IgG or IgM antibody reactive with *A. phagocytophilum* antigen by IFA, ELISA, dot-ELISA, or assays in other acceptable formats, OR
- Identification of morulae in the cytoplasm of neutrophils or eosinophils by microscopic examination.

Human ehrlichiosis/anaplasmosis - undetermined:

See the [Ehrlichiosis case definition](#).

Case Classification**Confirmed**

A clinically compatible case that meets the criteria for clinical evidence criteria and for confirmatory laboratory testing.

Probable

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

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

Problem cases for which sera demonstrate elevated antibody IFA responses to more than a single infectious agent are usually resolvable by comparing the levels of the antibody responses, the greater antibody response generally being that directed at the actual agent involved. Tests of additional sera and further evaluation using PCR, IHC, and isolation via cell culture may be needed for further clarification. Cases involving persons infected with more than a single agent, while possible, are extremely rare and every effort should be made to resolve cases that appear as such by other explanations.

Current commercially available ELISA tests are not quantitative, cannot be used to evaluate changes in antibody titer, and are not useful for serological confirmation. IgM tests are not always specific and the IgM response may be persistent. IgM tests are not strongly supported for use in serodiagnosis of acute disease.

CONTROL MEASURES

[Arizona Administrative Code R9-6-307](#) Anaplasmosis

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported anaplasmosis case or suspect case; and
2. For each anaplasmosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Tick-Borne Rickettsial Disease Case Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes (other than separately listing anaplasmosis and ehrlichiosis)
Justification	2018: Anaplasmosis split from ehrlichiosis, compatible with the listing in the reportable disease rules. ADHS 2013 case definitions revised in 2012 to match CDC/CSTE.
Most Recent CDC/CSTE Revision Year	2008

CASE DEFINITION

Clinical Description

- **Cutaneous anthrax:** It usually begins as a small, painless, pruritic papule on an exposed surface, which progresses through a vesicular stage into a depressed black eschar; the eschar is often surrounded by edema or erythema and may be accompanied by lymphadenopathy. Fever is also common.
- **Ingestion anthrax:** presents as two sub-types:
 - Oropharyngeal: When anthrax spores germinate in the oropharynx, a mucosal lesion may be observed in the oral cavity or oropharynx. Symptoms include sore throat, difficulty swallowing, and swelling of the neck. Less specific symptoms include fever, fatigue, shortness of breath, abdominal pain, and nausea/vomiting; the symptoms may resemble a viral respiratory illness. Cervical lymphadenopathy, ascites, and altered mental status may be observed.
 - Gastrointestinal: When anthrax spores germinate in the lower gastrointestinal tract, symptoms include abdominal pain, nausea, vomiting or diarrhea (either of which may contain blood), and abdominal swelling. Less specific symptoms such as fever, fatigue, and headache are also common. Altered mental status and ascites may be observed.
- **Inhalation anthrax:** Often described as a biphasic illness. Early nonspecific symptoms of inhalation anthrax include fever and fatigue. Localized thoracic symptoms such as cough, chest pain, and shortness of breath follow, as may non-thoracic symptoms such as nausea, vomiting, abdominal pain, headache, diaphoresis, and altered mental status. Lung sounds are often abnormal and imaging often shows pleural effusion or mediastinal widening.
- **Injection anthrax:** Usually presents as a severe soft tissue infection manifested as significant edema or bruising after an injection. No eschar is apparent, and pain is often not described. Nonspecific symptoms such as fever, shortness of breath, or nausea are sometimes the first indication of illness. Occasionally patients present with meningeal or abdominal involvement. A coagulopathy is not unusual.

Additional considerations:

- 1) Signs of systemic involvement from the dissemination of either the bacteria and/or its toxins can occur with all types of anthrax and include fever or hypothermia, tachycardia, tachypnea, hypotension, and leukocytosis. One or more of these signs are usually present in patients with ingestion anthrax, inhalation anthrax, and injection anthrax and may be present in up to a third of patients with cutaneous anthrax.
- 2) Anthrax meningitis: may complicate any form of anthrax, and may also be a primary manifestation. Primary symptoms include fever, headache (which is often described as severe), nausea, vomiting, and fatigue. Meningeal signs (e.g., meningismus), altered mental status, and other neurological signs such as seizures or focal signs are usually present. Most patients with anthrax meningitis have CSF abnormalities consistent with bacterial meningitis, and the CSF is often described as hemorrhagic.

Clinical Criteria for Diagnosis

- For surveillance purposes, an illness with at least one specific OR two non-specific symptoms and signs that are compatible with cutaneous, ingestion, inhalation, or injection anthrax; systemic involvement; or anthrax meningitis; OR
- A death of unknown cause AND organ involvement consistent with anthrax.

Laboratory Criteria for Diagnosis

Confirmatory laboratory criteria for Bacillus anthracis or Bacillus cereus expressing anthrax toxins:

- Culture and identification from clinical specimens by Laboratory Response Network (LRN);
- Demonstration of *B. anthracis* antigens in tissues by immunohistochemical staining using both *B. anthracis* cell wall and capsule monoclonal antibodies;
- Evidence of a four-fold rise in antibodies to protective antigen between acute and convalescent sera or a fourfold change in antibodies to protective antigen in paired convalescent sera using Centers for Disease Control and Prevention (CDC) quantitative anti-PA IgG ELISA testing in an unvaccinated person;
- Detection of *B. anthracis* or anthrax toxin genes by the LRN-validated polymerase chain reaction and/ or sequencing in clinical specimens collected from a normally sterile site (such as blood or CSF) or lesion of other affected tissue (skin, pulmonary, reticuloendothelial, or gastrointestinal);
- Detection of lethal factor (LF) in clinical serum specimens by LF mass spectrometry.

Presumptive laboratory criteria for Bacillus anthracis or Bacillus cereus expressing anthrax toxins:

- Gram stain demonstrating Gram-positive rods, square-ended, in pairs or short chains;
- Positive result on a test with established performance in a CLIA-accredited laboratory.

Epidemiologic Linkage

- Exposure to environment, food, animal, materials, or objects that is suspect or confirmed to be contaminated with *B. anthracis*;
- Exposure to the same environment, food, animal, materials, or objects as another person who has laboratory-confirmed anthrax;
- Consumption of the same food as another person who has laboratory-confirmed anthrax.

Case Classification

Confirmed

A case that meets the clinical criteria AND has confirmatory laboratory results.

Probable

A case that meets the clinical criteria AND has presumptive laboratory results, OR
A case that meets the clinical criteria AND has epidemiologic evidence relating it to anthrax.

Suspect

A case that meets the clinical criteria AND for whom an anthrax test was ordered, but with no epidemiologic evidence relating it to anthrax.

Criteria to Distinguish a New Case from an Existing Case

A case should never be counted as a new case if there was a previously reported infection in the same individual.

CONTROL MEASURES

[Arizona Administrative Code R9-6-308](#) Anthrax

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of an anthrax case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported anthrax case or suspect case;
3. For each anthrax case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
4. Ensure that an isolate or a specimen, as available, from each anthrax case or suspect case is submitted to the Arizona State Laboratory.

Environmental Control Measures:

A local health agency shall:

1. Provide or arrange for disinfection of areas or objects contaminated by *Bacillus anthracis* through sterilization by dry heating, incineration of objects, or other appropriate means.

INVESTIGATION FORMS

See Anthrax Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2018: Updated clinical description, removed meningeal anthrax, added injection anthrax. Added clinical criteria for diagnosis and criteria for epidemiologic linkage. Updated lab testing.
Most Recent CDC/CSTE Revision Year	2018

ARBOVIRAL INFECTION

PROVIDERS SUBMIT A REPORT WITHIN 5 WORKING DAYS

LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

CASE DEFINITION

Includes:

- California Serogroup Viruses (including California encephalitis, Jamestown Canyon, Keystone, La Crosse, Snowshoe hare, and Trivittatus viruses)
- [Chikungunya](#) (see Chikungunya page for Control Measures)
- Eastern Equine Encephalitis Virus
- Powassan Virus
- [St. Louis Encephalitis Virus](#)
- [West Nile Virus](#) (see West Nile Virus page for Control Measures)
- Western Equine Encephalitis Virus

For [Dengue](#), [Yellow Fever](#), or [Zika Virus](#), please see the separately listed case definitions.

Background

Arthropod-borne viruses (arboviruses) are transmitted to humans primarily through the bites of infected mosquitoes, ticks, sand flies, or midges. Other modes of transmission for some arboviruses include blood transfusion, organ transplantation, perinatal transmission, consumption of unpasteurized dairy products, breast feeding, and laboratory exposures.

More than 130 arboviruses are known to cause human disease. Most arboviruses of public health importance belong to one of three virus genera: Flavivirus, Alphavirus, and Bunyavirus.

Clinical Description

Most arboviral infections are asymptomatic. Clinical disease ranges from mild febrile illness to severe encephalitis. For the purposes of surveillance and reporting, based on their clinical presentation, arboviral disease cases are often categorized into two primary groups: neuroinvasive disease and non-neuroinvasive disease.

Neuroinvasive disease: Many arboviruses cause neuroinvasive disease such as aseptic meningitis, encephalitis, or acute flaccid paralysis (AFP). These illnesses are usually characterized by the acute onset of fever with stiff neck, altered mental status, seizures, limb weakness, cerebrospinal fluid (CSF) pleocytosis, or abnormal neuroimaging. AFP may result from anterior ("polio") myelitis, peripheral neuritis, or post-infectious peripheral demyelinating neuropathy (i.e., Guillain-Barré syndrome). Less common neurological manifestations, such as cranial nerve palsies, also occur.

Non-neuroinvasive disease: Most arboviruses are capable of causing an acute systemic febrile illness (e.g., West Nile fever) that may include headache, myalgias, arthralgias, rash, or gastrointestinal symptoms. Some viruses also can cause more characteristic clinical manifestations, such as severe polyarthralgia or arthritis due to Chikungunya virus or other alphaviruses (e.g., Mayaro, Ross River, O'nyong-nyong).

Clinical Criteria for Diagnosis

A clinically compatible case of arboviral disease is defined as follows:

Neuroinvasive disease

- Meningitis, encephalitis, acute flaccid paralysis, or other acute signs of central or peripheral neurologic dysfunction, as documented by a physician, AND
- Absence of a more likely clinical explanation. Other clinically compatible symptoms of arbovirus disease include: headache, myalgia, rash, arthralgia, vertigo, vomiting, paresis and/ or nuchal rigidity.

Non-neuroinvasive disease

- Fever or chills as reported by the patient or a health-care provider, AND
- Absence of neuroinvasive disease, AND
- Absence of a more likely clinical explanation. Other clinically compatible symptoms of arbovirus disease include: headache, myalgia, rash, arthralgia, vertigo, vomiting, paresis and/ or nuchal rigidity.

Laboratory Criteria for Diagnosis

- Isolation of virus from, or demonstration of specific viral antigen or nucleic acid in, tissue, blood, CSF, or other body fluid, OR
- Four-fold or greater change in virus-specific quantitative antibody titers in paired sera, OR
- Virus-specific IgM antibodies in serum with confirmatory virus-specific neutralizing antibodies in the same or a later specimen, OR
- Virus-specific IgM antibodies in CSF or serum.

Case Classification

Confirmed

Neuroinvasive Disease

A case that meets the above clinical criteria for neuroinvasive disease and one or more the following laboratory criteria for a confirmed case:

- Isolation of virus from, or demonstration of specific viral antigen or nucleic acid in, tissue, blood, CSF, or other body fluid, OR
- Four-fold or greater change in virus-specific quantitative antibody titers in paired sera, OR
- Virus-specific IgM antibodies in serum with confirmatory virus-specific neutralizing antibodies in the same or a later specimen, OR
- Virus-specific IgM antibodies in CSF, with or without a reported pleocytosis, and a negative result for other IgM antibodies in CSF for arboviruses endemic to the region where exposure occurred.

Non-neuroinvasive Disease

A case that meets the above clinical criteria for non-neuroinvasive disease and one or more of the following laboratory criteria for a confirmed case:

- Isolation of virus from, or demonstration of specific viral antigen or nucleic acid in, tissue, blood,

- CSF, or other body fluid, OR
- Four-fold or greater change in virus-specific quantitative antibody titers in paired sera, OR
- Virus-specific IgM antibodies in serum with confirmatory virus-specific neutralizing antibodies in the same or a later specimen.

Probable**Neuroinvasive Disease**

A case that meets the above clinical criteria for neuroinvasive disease and the following laboratory criteria:

- Virus-specific IgM antibodies in CSF or serum but with no other testing.

Non-neuroinvasive Disease

A case that meets the above clinical criteria for non-neuroinvasive disease and the laboratory criteria for a probable case:

- Virus-specific IgM antibodies in serum but with no other testing.

Suspect

A case that meets the above clinical criteria for either neuroinvasive or non-neuroinvasive disease and the following laboratory criteria:

- Serologic (IgM) evidence of a flavivirus infection, but indistinguishable results by available testing.

Additional Guidance

Due to serologic cross-reactivity, differentiating between similar flaviviruses with positive results for virus-specific IgM antibodies can be challenging. In some instances, the ratio of serologic results can be used to assign a probable case classification. When testing cannot distinguish between specific viruses, the case should be classified as a probable case of unspecified flavivirus. Refer to the Arizona Case Classification Algorithm for West Nile Virus & St. Louis Encephalitis Virus, or contact the vector-borne disease staff at 602-364-3676 for guidance on a case-specific basis.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 12 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment**Interpreting Arboviral Laboratory Results**

- **Serologic cross-reactivity.** In some instances, arboviruses from the same genus produce cross-reactive antibodies. In geographic areas where two or more closely-related arboviruses occur, serologic testing for more than one virus may be needed and results compared to determine the specific causative virus. For example, such testing might be needed to distinguish antibodies resulting from infections within genera, e.g., flaviviruses such as West Nile, St. Louis encephalitis, Powassan, Dengue, or Japanese encephalitis viruses.
- **Rise and fall of IgM antibodies.** For most arboviral infections, IgM antibodies are generally first

detectable at 3 to 8 days after onset of illness and persist for 30 to 90 days, but longer persistence has been documented (e.g., up to 500 days for West Nile virus). Serum collected within 8 days of illness onset may not have detectable IgM and testing should be repeated on a convalescent-phase sample to rule out arboviral infection in those with a compatible clinical syndrome.

- **Persistence of IgM antibodies.** Arboviral IgM antibodies may be detected in some patients months or years after their acute infection. Therefore, the presence of these virus-specific IgM antibodies may signify a past infection and be unrelated to the current acute illness. Finding virus-specific IgM antibodies in CSF or a fourfold or greater change in virus-specific antibody titers between acute- and convalescent-phase serum specimens provides additional laboratory evidence that the arbovirus was the likely cause of the patient's recent illness. Clinical and epidemiologic history also should be carefully considered.
- **Persistence of IgG and neutralizing antibodies.** Arboviral IgG and neutralizing antibodies can persist for many years following a symptomatic or asymptomatic infection. Therefore, the presence of these antibodies alone is only evidence of previous infection and clinically compatible cases with the presence of IgG, but not IgM, should be evaluated for other etiologic agents.
- **Arboviral serologic assays.** Assays for the detection of IgM and IgG antibodies commonly include enzyme-linked immunosorbent assay (ELISA), microsphere immunoassay (MIA), or immunofluorescence assay (IFA). These assays provide a presumptive diagnosis and should have confirmatory testing performed. Confirmatory testing involves the detection of arboviral-specific neutralizing antibodies utilizing assays such as plaque reduction neutralization test (PRNT).
- **Other information to consider.** Vaccination history, detailed travel history, date of onset of symptoms, and knowledge of potentially cross-reactive arboviruses known to circulate in the geographic area should be considered when interpreting results.

Imported Arboviral Diseases

Human disease cases due to Dengue, Yellow fever, or Zika viruses are nationally notifiable to CDC using specific case definitions; many other nationally notifiable arboviruses are covered by this case definition. Many other exotic arboviruses (e.g., Chikungunya, Japanese encephalitis, Tick-borne encephalitis, Venezuelan equine encephalitis, and Rift Valley fever viruses) are important public health risks for the United States as competent vectors exist that could allow for sustained transmission upon establishment of imported arboviral pathogens. Health-care providers and public health officials should maintain a high index of clinical suspicion for cases of potentially exotic or unusual arboviral etiology, particularly in international travelers. If a suspected case occurs, it should be reported to the appropriate local/state health agencies and CDC.

CONTROL MEASURES

[Arizona Administrative Code R9-6-309](#) Arboviral Infection

Case Control Measures:

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported arboviral infection case or suspect case;
2. For each arboviral infection case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and

3. Ensure that each arboviral infection case is provided with health education that includes measures to:
 - a. Avoid mosquito bites, and
 - b. Reduce mosquito breeding sites.

Environmental Control Measures:

A local health agency shall:

1. Conduct an assessment of the environment surrounding each arboviral infection case or suspect case and implement vector control measures as necessary.

INVESTIGATION FORMS

For Dengue, Chikungunya, and Zika see the Dengue Case Investigation Form, Chikungunya Case Investigation Form, and Zika Case Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

For other Arboviral diseases see the Arboviral Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2017: Zika virus was removed from the list of arboviruses for this case definition, because a separate Zika virus case definition was created. A comment regarding unspecified flavivirus was added to the Additional Guidance.</p> <p>2016: After the 2015 WNV/SLE outbreak in Arizona a suspect case definition and a note on additional guidance were added. These changes are not present in the CDC/CSTE case definitions. Zika virus was also added to the list of arboviruses.</p> <p>2015: Chikungunya virus was added to the list of arboviruses included in the case definition. The list of clinically compatible symptoms was expanded. Both changes match CDC/CSTE changes.</p> <p>2014: Clinical criteria revised to accept subjective fever or chills in place of measured temperature; modification of laboratory criteria to exclude</p>

	<p>“Virus-specific IgM antibodies in CSF and a negative result for other IgM antibodies in CSF for arboviruses endemic to the region where exposure occurred” from the confirmed non-neuroinvasive definition and elimination of “IgM antibodies in CSF” from the probable non-neuroinvasive definition; changes were made to match the 2014 CDC/CSTE case definitions.</p> <p>2013: Section moved from West Nile Virus to Arboviral Diseases. Material within the section is identical.</p>
<p>Most Recent CDC/CSTE Revision Year</p>	<p>2015</p>

CASE DEFINITION**Clinical Description**

Babesiosis is a parasitic disease caused by intraerythrocytic protozoa of the *Babesia* genus (*Babesia microti* and other species). *Babesia* are transmitted in nature through the bites of infected ticks but can also be acquired through contaminated blood components from asymptomatic parasitemic donors or, more rarely, transplacentally. *Babesia* infection can range from subclinical to life-threatening. Clinical manifestations, if any, can include hemolytic anemia and nonspecific influenza-like signs and symptoms (e.g., fever, chills, sweats, headache, myalgia, arthralgia, malaise, fatigue, generalized weakness). Splenomegaly, hepatomegaly, or jaundice may be evident. In addition to signs of hemolytic anemia, laboratory findings may include thrombocytopenia, proteinuria, hemoglobinuria, and elevated levels of liver enzymes, blood urea nitrogen, and creatinine. Risk factors for severe babesiosis include asplenia, advanced age, and other causes of impaired immune function (e.g., HIV, malignancy, corticosteroid therapy). Some immunosuppressive therapies or conditions may mask or modulate the clinical manifestations (e.g., the patient may be afebrile). Severe cases can be associated with marked thrombocytopenia, disseminated intravascular coagulation, hemodynamic instability, acute respiratory distress, myocardial infarction, renal failure, hepatic compromise, altered mental status, and death.

Clinical Evidence

For the purposes of surveillance:

- Objective: one or more of the following: fever, anemia, or thrombocytopenia.
- Subjective: one or more of the following: chills, sweats, headache, myalgia, or arthralgia.

Laboratory Criteria for Diagnosis

For the purposes of surveillance:

Laboratory confirmatory

- Identification of intraerythrocytic *Babesia* organisms by light microscopy in a Giemsa, Wright, or Wright-Giemsa–stained blood smear; or
- Detection of *Babesia microti* DNA in a whole blood specimen by polymerase chain reaction (PCR); or
- Detection of *Babesia* spp. genomic sequences in a whole blood specimen by nucleic acid amplification; or
- Isolation of *Babesia* organisms from a whole blood specimen by animal inoculation.

Laboratory supportive

- Demonstration of a *Babesia microti* Indirect Fluorescent Antibody (IFA) total immunoglobulin (Ig) or IgG antibody titer of greater than or equal to (\geq) 1:256 (or \geq 1:64 in epidemiologically linked blood donors or recipients); or
- Demonstration of a *Babesia microti* Immunoblot IgG positive result; or
- Demonstration of a *Babesia divergens* IFA total Ig or IgG antibody titer of greater than or equal to (\geq) 1:256; or

- Demonstration of a *Babesia duncani* IFA total Ig or IgG antibody titer of greater than or equal to (\geq) 1:512.

Epidemiologic Evidence for Transfusion Transmission

For the purposes of surveillance, epidemiologic linkage between a transfusion recipient and a blood donor is demonstrated if all of the following criteria are met:

- In the transfusion recipient:
 - Received one or more red blood cell (RBC) or platelet transfusions within one year before the collection date of a specimen with laboratory evidence of *Babesia* infection; and
 - At least one of these transfused blood components was donated by the donor described below; and
 - Transfusion-associated infection is considered at least as plausible as tick-borne transmission; and
- In the blood donor:
 - Donated at least one of the RBC or platelet components that was transfused into the above recipient; and
 - The plausibility that this blood component was the source of infection in the recipient is considered equal to or greater than that of blood from other involved donors. (More than one plausible donor may be linked to the same recipient.)

Case Classification

Confirmed

A case that has confirmatory laboratory results and meets at least one of the objective or subjective clinical evidence criteria, regardless of the mode of transmission (can include clinically manifest cases in transfusion recipients or blood donors).

Probable

- A case that has supportive laboratory results and meets at least one of the objective clinical evidence criteria (subjective criteria alone are not sufficient); OR
- A case that is in a blood donor or recipient epidemiologically linked to a confirmed or probable babesiosis case (as defined above) and:
 - has confirmatory laboratory evidence but does not meet any objective or subjective clinical evidence criteria; or
 - has supportive laboratory evidence and may or may not meet any subjective clinical evidence criteria but does not meet any objective clinical evidence criteria.

Suspect

A case that has confirmatory or supportive laboratory results, but insufficient clinical or epidemiologic information is available for case classification (e.g., only a laboratory report was provided).

Comment

The validity of the diagnosis of babesiosis is highly dependent on the laboratory that performs the testing. For example, differentiation between Plasmodium and *Babesia* organisms on peripheral blood

smears can be difficult. Confirmation of the diagnosis of babesiosis by a reference laboratory is strongly encouraged, especially for patients without residence in or travel to areas known to be endemic for babesiosis.

A positive *Babesia* IFA result for immunoglobulin M (IgM) is insufficient for diagnosis and case classification of babesiosis in the absence of a positive IFA result for IgG (or total Ig). If the IgM result is positive but the IgG result is negative, a follow-up blood specimen drawn at least one week after the first should be tested. If the IgG result remains negative in the second specimen, the IgM result likely was a false positive.

When interpreting IFA IgG or total Ig results, it is helpful to consider factors that may influence the relative magnitude of *Babesia* titers (e.g., timing of specimen collection relative to exposure or illness onset, the patient's immune status, the presence of clinically manifest versus asymptomatic infection). In immunocompetent persons, active or recent *Babesia* infections that are symptomatic are generally associated with relatively high titers (although antibody levels may be below the detection threshold early in the course of infection); titers can then persist at lower levels for more than a year. In persons who are immunosuppressed or who have asymptomatic *Babesia* infections, active infections can be associated with lower titers.

Babesia microti is the most frequently identified agent of human babesiosis in the United States; most reported tick-borne cases have been acquired in parts of northeastern and north-central regions. Sporadic U.S. cases caused by other *Babesia* agents include *B. duncani* (formerly the WA1 parasite) and related organisms (CA1-type parasites) in several western states as well as parasites characterized as "*B. divergens* like" (MO1 and others) in various states. Serologic and molecular tests available for *B. microti* infection do not typically detect these other *Babesia* agents.

Blood-borne transmission of *Babesia* is not restricted by geographic region or season. The epidemiologic linkage criteria for transfusion transmission that are described here provide a low threshold for asymptomatic donor or recipient cases to be considered probable cases for surveillance purposes and are not intended to be regulatory criteria. Transfusion investigations entail laboratory testing for evidence of *Babesia* infection in recipients and donors as well as epidemiologic assessments of the plausibility of blood- and tick-borne transmission.

CONTROL MEASURES

[Arizona Administrative Code R9-6-310](#) Babesiosis

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported babesiosis case or suspect case; and
2. For each babesiosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Babesiosis Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2011

CASE DEFINITION**Clinical Description**

A disease consistent with clinical presentation and/or:

- Subcutaneous nodules that are firm and painful;
- Nodules that involve the muscle;
- Nodules or inflammatory mass that involves the gastrointestinal tract or other organs

Laboratory Criteria for Diagnosis

- Biopsy with microscopic appearance consistent with *Basidiobolus ranarum* (septate hyphae with eosinophilic infiltration), OR
- Isolation of *B. ranarum* from culture of a mass, OR
- A positive serologic result for *Basidiobolus*

Case Classification**Confirmed**

A clinically compatible illness that is laboratory confirmed.

CONTROL MEASURES

[Arizona Administrative Code R9-6-311](#) Basidiobolomycosis

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported basidiobolomycosis case or suspect case; and
2. For each basidiobolomycosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Basidiobolomycosis Questionnaire at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

CASE DEFINITION

Subtypes

- Botulism, foodborne
- Botulism, wound
- Botulism, other

Botulism, Foodborne

Clinical Description

Ingestion of botulinum toxin results in an illness of variable severity. Common symptoms are diplopia, blurred vision, and bulbar weakness. Symmetric paralysis may progress rapidly.

Laboratory Criteria for Diagnosis

- Detection of botulinum toxin in serum, stool, or patient's food, OR
- Isolation of *Clostridium botulinum* from stool

Case Classification

Confirmed

A clinically compatible case that is laboratory confirmed or that occurs among persons who ate the same food as persons with laboratory confirmed botulism.

Probable

A clinically compatible case with an epidemiologic link to a suspect food item (e.g. home-canned foods within the previous 48 hours)

Botulism, Wound

Clinical Description

An illness resulting from toxin produced by *Clostridium botulinum* that has infected a wound. Common symptoms are diplopia, blurred vision, and bulbar weakness. Symmetric paralysis may progress rapidly.

Laboratory Criteria for Diagnosis

- Detection of botulinum toxin in serum, OR
- Isolation of *Clostridium botulinum* from wound

Case Classification

Confirmed

A clinically compatible illness that is laboratory confirmed in a patient who has no suspected exposure to contaminated food and who has either a history of a fresh, contaminated wound during the 2 weeks before onset of symptoms, or a history of injection drug use within the 2 weeks before onset of symptoms.

Probable

A clinically compatible case in a patient who has no suspected exposure to contaminated food and who has either a history of a fresh, contaminated wound during the 2 weeks before onset of symptoms, or a history of injection drug use within the 2 weeks before onset of symptoms.

Botulism, Other

Clinical Description

Common symptoms are diplopia, blurred vision, and bulbar weakness. Symmetric paralysis may progress rapidly.

Laboratory Criteria for Diagnosis:

- Detection of botulinum toxin in clinical specimen, or
- Isolation of *Clostridium botulinum* from clinical specimen

Case Classification

Confirmed

An illness clinically compatible with botulism that is laboratory confirmed among patients ≥ 1 year of age without histories of ingestion of suspect food and without wounds.

Comment

Botulism may be diagnosed without laboratory confirmation if the clinical and epidemiologic evidence is overwhelming.

CONTROL MEASURES

[Arizona Administrative Code R9-6-312](#) Botulism, Foodborne, Wound, Other

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a botulism case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported botulism case or suspect case; and
3. For each botulism case or suspect case:
 - a. Submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
 - b. Ensure that one or more specimens from each botulism case or suspect case are submitted to the Arizona State Laboratory.

Environmental Control Measures:

An individual in possession of:

1. Food known to be contaminated by Clostridium botulinum or Clostridium botulinum toxin shall boil the contaminated food for 10 minutes and then discard it, and
2. Utensils known to be contaminated by Clostridium botulinum or Clostridium botulinum toxin shall boil the contaminated utensils for 10 minutes before reuse or disposal.

INVESTIGATION FORMS

See the Botulism Adult Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification:	ADHS case definition was edited in 2012 to match CDC/CSTE
Most Recent CDC/CSTE Revision Year	2011

CASE DEFINITION**Clinical Description**

An illness of infants, characterized by constipation, poor feeding, and "failure to thrive" that may be followed by progressive weakness, impaired respiration, and death.

Laboratory Criteria for Diagnosis

- Detection of botulinum toxin in stool or serum, OR
- Isolation of *Clostridium botulinum* from stool

Case Classification**Confirmed**

A clinically compatible case that is laboratory-confirmed, occurring among children aged less than 1 year.

CONTROL MEASURES

[Arizona Administrative Code R9-6-312](#) Botulism

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a botulism case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported botulism case or suspect case; and
3. For each botulism case or suspect case:
 - a. Submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
 - b. Ensure that one or more specimens from each botulism case or suspect case are submitted to the Arizona State Laboratory.

Environmental Control Measures:

An individual in possession of:

1. Food known to be contaminated by *Clostridium botulinum* or *Clostridium botulinum* toxin shall boil the contaminated food for 10 minutes and then discard it, and
2. Utensils known to be contaminated by *Clostridium botulinum* or *Clostridium botulinum* toxin shall boil the contaminated utensils for 10 minutes before reuse or disposal.

INVESTIGATION FORMS

See the Botulism Infant Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2011

CASE DEFINITION

Clinical Description

An illness characterized by acute or insidious onset of fever and one or more of the following: night sweats, arthralgia, headache, fatigue, anorexia, myalgia, weight loss, arthritis/spondylitis, meningitis, or focal organ involvement (endocarditis, orchitis/epididymitis, hepatomegaly, splenomegaly).

Laboratory Criteria for Diagnosis

Confirmatory Testing

- Culture and identification of *Brucella* spp. from clinical specimens
- Evidence of a fourfold or greater rise in *Brucella* antibody titer between acute- and convalescent-phase serum specimens obtained greater than or equal to 2 weeks apart.

Presumptive Testing

- *Brucella* total antibody titer of greater than or equal to 160 by standard tube agglutination test (SAT) or *Brucella* microagglutination test (BMAT) in one or more serum specimens obtained after onset of symptoms.
- Detection of *Brucella* DNA in a clinical specimen by PCR assay.

Case Classification

Confirmed

A clinically compatible illness with confirmatory laboratory evidence of *Brucella* infection

Probable

A clinically compatible illness with at least one of the following:

- Epidemiologically linked to a confirmed human or animal brucellosis case
- Presumptive laboratory evidence, but without definitive laboratory evidence, of *Brucella* infection

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-313](#) Brucellosis

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported brucellosis case or suspect case;

2. For each brucellosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
3. Ensure that an isolate or a specimen, as available, from each brucellosis case is submitted to the Arizona State Laboratory.

INVESTIGATION FORMS

See the Brucellosis Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2010

CAMPYLOBACTERIOSIS

PROVIDERS REPORT WITHIN 24 HOURS IF AN OUTBREAK IS DETECTED OR PERSON HAS A HIGH-RISK OCCUPATION

PROVIDERES AND LABORATORIES SUBMIT A REPORT WITHIN 5 DAYS FOR ALL OTHER CASES

CASE DEFINITION

Clinical Description

An illness of variable severity commonly manifested by diarrhea, abdominal pain, nausea and sometimes vomiting. The organism may also rarely cause extra-intestinal infections such as bacteremia, meningitis or other focal infections.

Laboratory Criteria for Diagnosis

Confirmatory Testing

Isolation of *Campylobacter* spp. from a clinical specimen.

Presumptive Testing

Detection of *Campylobacter* spp. in a clinical specimen using culture-independent diagnostic tests (CIDTs).

Case Classification

Confirmed

A case that meets the confirmatory laboratory criteria.

Probable

A case that meets the presumptive laboratory criteria; or

A clinically compatible case that is epidemiologically linked to a case that meets the confirmatory or presumptive laboratory criteria for diagnosis.

Criteria to Distinguish a New Case from an Existing Case

A case should not be counted as a new case if laboratory results were reported within 30 days of a previously reported infection in the same individual.

Comment

The use of CIDTs as stand-alone tests for the direct detection of *Campylobacter* in stool is increasing. Data regarding their performance indicate variability in the sensitivity, specificity, and positive predictive value of these assays depending on the manufacturer (CDC unpublished data). Culture confirmation of CIDT-positive specimens is ideal, but not practical to achieve in most jurisdictions.

CONTROL MEASURES

[Arizona Administrative Code R9-6-314](#) Campylobacteriosis

Case Control Measures

A local health agency shall:

1. Exclude a campylobacteriosis case or suspect case with diarrhea from:
 - a. Working as a food handler, caring for children in or attending a child care establishment, or caring for patients or residents in a health care institution until:
 - i. Diarrhea has resolved,
 - ii. A stool specimen negative for *Campylobacter* spp. is obtained from the campylobacteriosis case or suspect case, or
 - iii. The local health agency has determined that the case or suspect case is unlikely to infect other individuals; and
 - b. Using an aquatic venue until diarrhea has resolved;
2. Conduct an epidemiologic investigation of each reported campylobacteriosis case or suspect case; and
3. For each campylobacteriosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Campylobacteriosis Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2017: Added criteria to distinguish a new case from an existing case to match 2014 CSTE/CDC case definition.</p> <p>In 2015, CDC/CSTE modified the case definition for probable cases to include illnesses with positive culture-independent diagnostic tests (CIDTs). The previously suspect cases now count as probable and the suspect case classification has been eliminated.</p> <p>2012: CDC/CSTE added suspect laboratory criteria for diagnosis and case classification, based on non-culture testing; ADHS edited the 2012 case definition to match CDC/CSTE.</p>
Most Recent CDC/CSTE Revision Year	2015

Cases should be reported under the [emerging or exotic disease](#) requirement. Enter in MEDSIS under Emerging or Exotic Disease.

CASE DEFINITION

Clinical Description

Clinical manifestation of *Candida auris* infection depends upon the site of infection. Patients with *C. auris* bloodstream infection typically have sepsis and severe illness. Other invasive infections, such as intraabdominal candidiasis and meningitis can also occur. *C. auris* has also been found to cause wound infections and otitis, and has been cultured from urine and respiratory specimens. *C. auris* has been found to colonize the skin of asymptomatic people.

Clinical Criteria

None

Laboratory Criteria

Confirmatory Laboratory Evidence

Detection of *C. auris* from any body site using either culture or culture-independent diagnostic test (CIDT) (e.g., polymerase chain reaction).

Presumptive Laboratory Evidence

Detection of *C. haemulonii* from any body site using a yeast identification method that is not able to detect *C. auris* AND either the isolate/specimen is not available for further testing, or the isolate/specimen has not yet undergone further testing.

Note: When additional test results are available, case re-classification may occur, including making this a non-case.

Epidemiologic Linkage

- Person resided within the same household with another person with confirmatory or presumptive laboratory evidence of *C. auris* infection or colonization; OR
- Person received care within the same healthcare facility as another person with confirmatory or presumptive laboratory evidence of *C. auris* infection or colonization*; OR
- Person received care in a healthcare facility that commonly shares patients with another facility that had a patient with confirmatory or presumptive laboratory evidence of *C. auris* infection or colonization*; OR
- Person had an overnight stay in a healthcare facility in the previous one year in a foreign country with documented *C. auris* transmission (<https://www.cdc.gov/fungal/candida-auris/tracking-cauris.html>).

*Note: the person with confirmatory or presumptive laboratory evidence of *C. auris* and potentially exposed individuals do not need to be present in a health care facility for any overlapping time period. Any case occurring in a facility with a confirmed or probable case identified in the prior 12 months would be considered epidemiologically linked.

Case Classification

C. auris, clinical

Confirmed

Person with confirmatory laboratory evidence from a clinical specimen collected for the purpose of diagnosing or treating disease in the normal course of care. This includes specimens from sites reflecting invasive infection (e.g., blood, cerebrospinal fluid) and specimens from non-invasive sites such as wounds, urine, and the respiratory tract, where presence of *C. auris* may simply represent colonization and not true infection.

Probable

Person with presumptive laboratory evidence from a clinical specimen collected for the purpose of diagnosing or treating disease in the normal course of care and evidence of epidemiologic linkage.

Suspect

Person with presumptive laboratory evidence from a clinical specimen collected for the purpose of diagnosing or treating disease in the normal course of care and no evidence of epidemiologic linkage.

C. auris, screening/surveillance

Confirmed

Person with confirmatory laboratory evidence from a swab collected for the purpose of screening or surveillance for *C. auris* colonization, regardless of site swabbed. Typical colonization/screening sites are skin (e.g., axilla, groin), nares, rectum, or other external body site. Swabs from wound or draining ear are considered clinical.

Probable

Person with presumptive laboratory evidence from a swab collected for the purpose of screening for *C. auris* colonization regardless of site swabbed. Typical colonization/screening specimen sites are skin (e.g., axilla, groin), nares, rectum, or other external body sites. Swabs from wound or draining ear are considered clinical.

Criteria to Distinguish a New Case from an Existing Case

- A person with a clinical case should not be counted as a colonization/screening case thereafter (e.g., patient with known infection who later has colonization of skin is not counted as more than one case).
- A person with a colonization/screening case can be later categorized as a clinical case (e.g., patient with positive screening swab who later develops bloodstream infection would be counted in both categories).

Comment

Some yeast identification methods are unable to differentiate *C. auris* from other yeast species. *C. auris* can be misidentified as a number of different organisms when using traditional biochemical methods for yeast identification such as VITEK 2 YST, API 20C, BD Phoenix yeast identification system, and MicroScan.

The most common misidentification of *C. auris* is *C. haemulonii*. *C. haemulonii* have been less commonly observed to cause invasive infections. Therefore, *C. auris* should be suspected when *C. haemulonii* is identified on culture of blood or other normally sterile site unless the method used can

reliably detect *C. auris*. *Candida* isolates from the urine and respiratory tract ultimately confirmed as *C. auris* have been initially identified as *C. haemulonii*; less data are available about the ability of *C. haemulonii* to grow in urine or the respiratory tract, although true *C. haemulonii* infections in general appear to be rare in the United States.

The table below summarizes common misidentifications based on the yeast identification method used. If any of the species listed below are identified using the specified identification method, or if species identity cannot be determined by any method, further characterization using appropriate methodology should be sought.

Common misidentifications for *C. auris* by yeast identification method

Identification Method	Organism <i>C. auris</i> can be misidentified as
Bruker MALDI Biotyper (FDA database)	No misidentifications of <i>C. auris</i> . Bruker MALDI-TOF is able to accurately identify <i>C. auris</i>
bioMérieux VITEK MS (IVD/RUO database)	<i>C. haemulonii</i>
VITEK 2 YST (Ver. 8.01 or older)	<i>C. haemulonii</i> <i>C. duobushaemulonii</i>
API 20C	<i>Rhodotorula glutinis</i> (characteristic red color not present) <i>C. sake</i>
BD Phoenix yeast identification system	<i>C. haemulonii</i> <i>C. catenulata</i>
MicroScan	<i>C. famata</i> <i>C. guilliermondii</i> * <i>C. lusitaniae</i> * <i>C. parapsilosis</i> *
RapID YEAST PLUS	<i>C. parapsilosis</i> *

**C. guilliermondii*, *C. lusitaniae*, and *C. parapsilosis* generally make hyphae or pseudohyphae on cornmeal agar. If hyphae or pseudohyphae are not present on cornmeal agar, this should raise suspicion for *C. auris* as *C. auris* typically does not make hyphae or pseudohyphae. However, some *C. auris* isolates have formed hyphae or pseudohyphae. Therefore, it would be prudent to consider any *C. guilliermondii*, *C. lusitaniae*, and *C. parapsilosis* isolates identified on MicroScan and any *C. parapsilosis* isolates identified on RapID YEAST PLUS as possible *C. auris* isolates and further identification should be sought.

CONTROL MEASURES

[Arizona Administrative Code R9-6-333](#) Emerging or Exotic Disease

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of an emerging or exotic disease case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;

2. In consultation with the Department, isolate an emerging or exotic disease case or suspect case as necessary to prevent transmission;
3. Conduct an epidemiologic investigation of each reported emerging or exotic disease case or suspect case; and
4. For each emerging or exotic disease case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Contact Control Measures

A local health agency, in consultation with the Department,

1. Shall quarantine or exclude an emerging or exotic disease contact as necessary, according to R9-6-303, to prevent transmission.

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	2019: Case definition revised to match CDC/CSTE case definition. 2018: New CDC/CSTE case definition; added to Arizona case definition manual.
Most Recent CDC/CSTE Revision Year	2019

CASE DEFINITION**Clinical Description**

Classification of CRE is based entirely on laboratory criteria; no clinical criteria are provided.

Laboratory Criteria for Diagnosis

Enterobacter spp., *E.coli*, *Klebsiella* spp., or any other Enterobacteriaceae (see [Appendix 2](#)) isolated from any clinical specimen:

- **Laboratory criterion A:** Resistant to any carbapenem (minimum inhibitory concentrations (MIC) of ≥ 4 mcg/ml for meropenem, imipenem*, and doripenem or ≥ 2 mcg/ml for ertapenem),
* Note: Do not use imipenem for *Proteus* spp., *Providencia* spp. or *Morganella* spp., as these bacteria may be intrinsically nonsusceptible to imipenem.

OR

- **Laboratory criterion B:** Demonstrating laboratory evidence of carbapenemase production (for laboratories performing any of this testing):
 - Positive for known carbapenemase resistance mechanism (e.g., *Klebsiella pneumoniae* carbapenemase (KPC), New Delhi metallo- β -lactamase (NDM), Verona integron-encoded metallo- β -lactamase (VIM), imipenemase (IMP), oxacillinase-48-like carbapenemase (OXA-48)) demonstrated by a recognized test (e.g., polymerase chain reaction (PCR), Xpert Carba-R), OR
 - Positive on a phenotypic test for carbapenemase production (e.g., metallo- β -lactamase test, modified Hodge test, Carba NP, Carbapenem Inactivation Method (CIM), or modified CIM (mCIM)).

Enterobacteriaceae meeting either set of criteria (A or B) should be reported. Cultures collected for any reason (diagnosis as well as screening/surveillance) should be reported if they meet the above criteria. This document is not intended as guidance on whether or when surveillance cultures should be collected.

For Enterobacteriaceae resistant to any carbapenem (criterion A), include all drug susceptibility testing results when reporting the case.

Isolate submission

Enterobacteriaceae isolates meeting the above laboratory criteria (A and/or B) should be submitted to ASPHL for additional testing.

- Along with the isolate, include the results of the testing performed indicating that the isolate meets the above criteria (e.g., MIC = 8 for ertapenem, or positive CIM). Write this information on the laboratory submission form or attach printed results.
- See <http://www.azdhs.gov/preparedness/state-laboratory/public-health-microbiology/index.php> for additional information on submitting isolates.

Note: Changes have been made to the Clinical and Laboratory Standards Institute (CLSI) MIC breakpoints for carbapenems in the past decade (Clinical and Laboratory Standards Institute,

“M100. Performance standards for antimicrobial susceptibility testing”). It is important to note that clinical laboratory adoption of the most current breakpoints for these antibiotic classes may vary. Laboratories should report any results that meet the definition of resistance defined above that is, MIC of ≥ 4 mcg/ml for meropenem, imipenem, and doripenem or ≥ 2 mcg/ml for ertapenem, even if automated systems indicate these are susceptible or intermediate.

Note: Negative PCR for all known resistance mechanism (e.g., KPC, NDM, VIM, IMP, OXA-48) if accompanied by positive phenotypic test for carbapenemase production (e.g., mCIM, CIM, CarbaNP) should be reported urgently to public health (and isolate submitted to ASPHL) as it could signify a novel carbapenemase.

Case Classification

Confirmed

A case that meets:

- Laboratory criterion A, as confirmed by a public health laboratory; OR
- Laboratory criterion B (public health laboratory confirmation is not required).

Probable*

A case that:

- Meets laboratory criterion A, but not confirmed by a public health laboratory, AND
- Does not meet laboratory criterion B.

* The probable definition will generally apply only when testing at a public health laboratory cannot be performed. If a public health laboratory identifies that the specimen/isolate is not an Enterobacteriaceae or is not carbapenem-resistant, the case should be classified as “Not a case”, even if the original testing met criterion A.

Note: This definition is broader than the national case definition, which defines only carbapenemase-producing (CP)-CRE in *Enterobacter* spp., *E.coli* or *Klebsiella* spp. The Arizona definition includes other mechanisms of resistance as well as other Enterobacteriaceae.

Sub-classifications of CRE

CRE cases should be further stratified according to:

- a) the organism identified (*E.coli*, *Enterobacter* spp., *Klebsiella* spp., or other Enterobacteriaceae), and
- b) the mechanism of resistance (carbapenemase-producing (CP)-CRE, CRE that is likely non-CP-CRE, or insufficient information to classify as CP-CRE or likely non-CP-CRE).

Additional notes on laboratory interpretation are included in the Comments.

1. CP-CRE:

- Positive for known carbapenemase resistance mechanism (e.g., KPC, NDM, VIM, IMP, OXA-48) demonstrated by a recognized test (e.g., polymerase chain reaction (PCR), Xpert Carba-R), OR

- Positive on a phenotypic test for carbapenemase production (e.g., metallo- β -lactamase test, modified Hodge test, Carba NP, Carbapenem Inactivation Method (CIM), or modified CIM (mCIM)).

Notes:

- Cases involving isolates that are phenotypically positive for carbapenemase production (e.g., mCIM), but negative for KPC, NDM, OXA-48, VIM, and IMP should be counted as confirmed CP-CRE.
 - A positive Modified Hodge Test (MHT) can be used to confirm CP-CRE for *Klebsiella* spp., *E. coli*, and other Enterobacteriaceae, but not *Enterobacter* spp. An isolate that tests positive on MHT but negative PCR for KPC, NDM, OXA-48, VIM and IMP should have additional characterization performed with another phenotypic test for carbapenemase such as mCIM.
 - If isolate is indeterminate on mCIM and negative by PCR for KPC, NDM, OXA-48, VIM and IMP, isolate should be tested using CarbaNP.
2. Likely non-CP-CRE (one or more of the following):
 - Negative mCIM;
 - Negative Carba NP and negative PCR for OXA-48;
 - Negative CIM and negative PCR for OXA-48;
 - Negative PCR for KPC, NDM, OXA-48, VIM, and IMP; OR
 - Negative Xpert Carba-R.
 3. Insufficient information to classify as CP-CRE or likely non-CP-CRE:
 - No other recognized test performed and/or isolate no longer available
 - *Enterobacter* spp. and positive MHT and no other tests performed/isolate no longer available.
 - Combination of tests performed/results do not allow for classification as likely non-CP-CRE.

Criteria to Distinguish a New Case from an Existing Case

- Different organisms/species/carbapenemases are counted as separate events from other organisms/species/carbapenemases.
- There is at least a 365 day interval from previous notification event for clinical cases.
- A person with a clinical case should not be counted as a screening/surveillance case thereafter (e.g., patient with known infection who later has colonization of GI tract is not counted as more than one case).
- A person with a screening case can be later categorized as a clinical case (e.g., patient with positive peri-rectal screening swab who later develops blood stream infection would be counted in both categories).

Infection Control Implications

1. For all sub-classifications:

Standard Precautions + Contact Precautions (+ additional transmission-based precautions per patient status (e.g. Droplet)). Interfacility communication.

2. Additionally:
 - a. For confirmed CP-CRE: Perform more aggressive interventions (e.g. screening, cohorting of staff/patients).
 - b. Insufficient information to classify: Strongly consider more aggressive interventions (e.g. screening, cohorting of staff/patients), based on the clinical circumstance, patient history of travel, and local CRE epidemiology.

For more infection control information, see the Facility Guidance for Control of CRE (CDC) and CRE Control and Prevention Toolkit (Agency for Healthcare Research and Quality) at <https://www.cdc.gov/hai/organisms/cre/cre-toolkit/index.html>.

Comment

Due to intrinsic production of AmpC beta-lactamase, non-CP *Enterobacter* spp. or *Citrobacter* spp. may produce a false positive Modified Hodge Test. False positive results may also be observed with organisms carrying extended-spectrum beta-lactamases of the CTX-M type. There is also a problem with false negative MHT results when testing New Delhi metallo- β -lactamase (NDM)-producing isolates. Therefore, caution is advised when interpreting results for these organisms. Other phenotypic tests for carbapenemase production, such as the mCIM should be used, if available.

Metallo-beta-lactamase carbapenemases require the presence of metal ions such as zinc to hydrolyze carbapenems. Lack of appropriate zinc ion supplementation in Mueller Hinton Agar media used in the Modified Hodge Test may lead to false negative results for NDM and other metallo-beta-lactamase enzymes. In addition, it has been observed that Modified Hodge Test results for NDM carbapenemases may vary depending on the carbapenem used for the test (i.e., ertapenem, meropenem, imipenem).

Due to the inherently weak carbapenem hydrolysis activity of OXA-48 and OXA-48-like enzymes, delayed, weak, indeterminate, or negative reactions may be observed with the Carba NP and the CIM test. Therefore, a Carba NP indeterminate or negative result or a negative CIM test should not be considered sufficient to rule out the presence of OXA-48 or OXA-48-like enzymes, particularly in patients with a history of previous medical care in endemic regions.

Gene Xpert Carba-R assay is FDA-approved for detection of carbapenemase genes from pure bacterial isolates and rectal surveillance swab specimens. Carbapenemase genes detected include those encoding KPC, NDM, VIM, OXA-48, and IMP (limited to the IMP-1 group) enzymes. The limitation of only detecting the IMP-1 group illustrates how variants of a gene could be missed; phenotypic tests (e.g. mCIM) for carbapenemase production are likely to detect these.

Serratia marcescens isolates carry the *sme* Class A carbapenemase gene. Also, some *Enterobacter cloacae* carry similar genes which are *imi* and *nmc-A* which share 97% amino acid identity. All of these genes are chromosomally located but acquired. These carbapenemases also result in positive Carba NP and mCIM tests.

CONTROL MEASURES

[Arizona Administrative Code R9-6-315](#) Carbapenem-resistant Enterobacteriaceae

Case Control Measures

1. A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall:
 - a. Institute isolation precautions as necessary for a carbapenem-resistant enterobacteriaceae case or carrier to prevent transmission; and
 - b. If a carbapenem-resistant enterobacteriaceae case or carrier is being transferred to another health care provider or health care institution or to a correctional facility, comply with R9-6-305.
2. An administrator of a correctional facility, either personally or through a representative, shall:
 - a. Institute isolation precautions as necessary for a carbapenem-resistant enterobacteriaceae case or carrier to prevent transmission; and
 - b. If a carbapenem-resistant enterobacteriaceae case or carrier is being transferred to another correctional facility or to a health care institution, comply with R9-6-305.
3. A local health agency, in consultation with the Department, shall:
 - a. Ensure that a case or carrier of carbapenem-resistant enterobacteriaceae is isolated as necessary to prevent transmission; and
 - b. Upon request, ensure that an isolate or a specimen, as available, from each case or carrier of carbapenem-resistant enterobacteriaceae is submitted to the Arizona State Laboratory.

Outbreak Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation for each outbreak or suspected outbreak of carbapenem-resistant enterobacteriaceae; and
2. For each outbreak or suspected outbreak of carbapenem-resistant enterobacteriaceae, submit to the Department the information required under R9-6-206(E).

INVESTIGATION FORMS

None at this time

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	No
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	<p>2019: Updated the criteria to distinguish a new case from an existing case to reflect what is in the 2018 CDC/CSTE case definition.</p> <p>2018: CRE became reportable in Arizona and CP-CRE became nationally notifiable. Case definition updated to reflect decisions on reporting, isolate submission, classification, and stratification, as well as updating information from the national case definition.</p>

	<p>Arizona definition is broader than the national definition, which is for only three genera of Enterobacteriaceae (<i>E. coli</i>, <i>Enterobacter</i> spp., and <i>Klebsiella</i> spp.) and only one mechanism (carbapenemase producers).</p> <p>2017: adopted 2015 CSTE case definition using modified expanded definition of CRE</p> <p>2016: CSTE approved a case definition for CRE in 2015 in order to standardize surveillance, although CRE is not nationally notifiable and is not explicitly reportable in Arizona at this time.</p>
Most Recent CDC/CSTE Revision Year	2018

CASE DEFINITION

Background

Chagas disease is a parasitic infection caused by *Trypanosoma cruzi*, which is spread to animals and people by means of vector-borne transmission. The disease is found only in the Americas, commonly South America, Central America, and Mexico. In Chagas endemic countries, the principal method of transmission is through contact with fecal matter from an infected triatomine bug. The triatomine bug, also known as the kissing bug, bites a person or animal host, ingests a blood meal, and then defecates on the host. The host may accidentally scratch or rub the feces into the bite wound, eyes, or mouth, thereby allowing the *T. cruzi* parasite to enter the body through mucous membranes or bloodstream.

Infection with Chagas disease can also occur through congenital transmission, transfusion of blood or blood products, organ transplantation, consumption of uncooked food contaminated with feces from infected bugs, and accidental laboratory exposure. Chagas disease is not transmitted from person-to-person.

Clinical Description

There are two phases of Chagas disease: the acute and chronic phase. Both phases can be asymptomatic to life threatening. The majority of Chagas disease cases are asymptomatic.

The **acute phase** is characterized by the first 8 weeks of infection, detectable parasitemia, and asymptomatic or symptomatic manifestations of the disease. Symptoms can include:

- Fever
- Malaise
- Rash
- Body aches
- Headache
- Loss of appetite
- Vomiting
- Diarrhea
- Hepatomegaly
- Splenomegaly
- Lymphadenopathy
- Chagoma (nodular swelling at site where the parasite entered the body)
- Romaña's sign (swelling of the eyelid on the side of the face near the bite wound or where the bug feces were deposited or accidentally rubbed into the eye)
- Acute myocarditis (rare) and/or
- Meningoencephalitis (rare)

Even if symptoms develop during the acute phase, they usually fade away on their own, within a few weeks or months. However, the acute phase may be severe in people with weakened immune systems.

The **chronic intermediate phase** occurs after the acute phase when infected individuals enter into a prolonged asymptomatic form of the disease. The infection remains silent during this phase and few or no parasites are found in the bloodstream. During this time, most people are unaware of their infection. Many people remain asymptomatic for their entire life and never develop chronic Chagas-related symptoms.

It is estimated that 20-30% of infected people will develop the **chronic symptomatic phase** of Chagas disease. This phase is characterized by undetectable parasitemia and severe life-threatening cardiac or intestinal medical complications. These include:

- Cardiomyopathy, heart failure, altered heart rate or rhythm, and cardiac arrest; and/or
- Intestinal complications, such as megaesophagus or megacolon, which can lead to difficulties with eating or with passing stool.

Laboratory Criteria for Diagnosis

Confirmatory Testing

- Isolation of *T. cruzi* by microscopy (microscopic examination, wet mount, thick and thin smears-Giemsa stain), OR
- Isolation of *T. cruzi* by culture, OR
- Detection of *T. cruzi* DNA by polymerase chain reaction (PCR), OR
- Detection of antibody specific to *T. cruzi* by two distinct diagnostic assays (can only be performed at CDC)

Presumptive Testing

- Evidence of *T. cruzi* antibodies on a single serologic diagnostic assay (not blood screening); OR
- Reactive blood donor screen AND a secondary positive diagnostic assay. (Note that 'additional' or 'confirmatory' antibody tests performed by a blood screening agency do not count as diagnostic tests. See Comments.)

Case Classification

Confirmed

A case that meets the confirmatory laboratory criteria.

Probable

A case that meets the presumptive laboratory criteria.

Type Classification

Acute phase

- Asymptomatic or symptomatic within 8 weeks of documented exposure* or symptom onset/diagnosis

Chronic, intermediate phase

- Asymptomatic case >9 months of age and >8 weeks since documented exposure*

Chronic, symptomatic phase

- Symptomatic case >9 months of age and >8 weeks since documented exposure*

Comments

*Documented exposure may include contact with triatomine bug, recipient of contaminated blood products, congenital exposure, or travel to an endemic country.

Note that the testing performed by a blood screening/blood donation agency (even those tests listed as “additional” or “confirmatory”) should not be considered diagnostic. Blood donor testing is very sensitive by design, for the purposes for protecting the safety of the blood supply. Evidence of antibodies against *T. cruzi* on blood screening may prompt a patient to have further diagnostic testing performed, but only the results of the diagnostic testing should be considered in either the confirmatory or presumptive laboratory criteria.

CONTROL MEASURES

[Arizona Administrative Code R9-6-316](#) Chagas Infection and Related Disease (American Trypanosomiasis)

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported Chagas infection or disease case or suspect case; and
2. For each Chagas infection or disease case:
 - a. Submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
 - b. Provide to the Chagas infection or disease case or ensure that another person provides to the Chagas infection or disease case health education that includes:
 - i. The treatment options for Chagas infection or disease,
 - ii. Where the Chagas infection or disease case may receive treatment for Chagas infection or disease, and
 - iii. For women of childbearing age, the risks of transmission of Chagas infection or disease to a fetus.

INVESTIGATION FORMS

See Chagas Case Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	2019: Clarified that testing performed for blood donation screening should not be considered diagnostic and should not be used in the laboratory criteria. 2017: Case definition added to the surveillance manual.
Most Recent CDC/CSTE Revision Year	N/A

CHANCROID (*Haemophilus ducreyi*)

PROVIDERS SUBMIT A REPORT WITHIN 5 WORKING DAYS

CASE DEFINITION

Clinical Description

A sexually transmitted disease characterized by painful genital ulceration and inflammatory inguinal adenopathy. The disease is caused by infection with *Haemophilus ducreyi*.

Laboratory Criteria for Diagnosis

Isolation of *H. ducreyi* from a clinical specimen

Case Classification

Confirmed

A case that is laboratory confirmed.

Probable

A clinically compatible case with one or more painful genital ulcers in which:

- There is no evidence of *Treponema pallidum* infection by dark field examination of ulcer exudate or by a serologic test for syphilis performed at least 7 days after onset of ulcers, and
- The clinical presentation of the ulcer(s) is not typical of disease caused by HSV (herpes simplex virus) or HSV culture is negative.

CONTROL MEASURES

[Arizona Administrative Code R9-6-317](#) Chancroid (*Haemophilus ducreyi*)

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported chancroid case or suspect case;
2. For each chancroid case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
3. Comply with the requirements specified in R9-6-1103 concerning treatment and health education for a chancroid case.

Contact control measures:

1. When a chancroid case has named a contact, a local health agency shall comply with the requirements specified in R9-6-1103 concerning notification, testing, treatment, and health education for the contact.

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2010

CHIKUNGUNYA

PROVIDERS AND LABORATORIES SUBMIT A REPORT
WITHIN 1 WORKING DAY

For the case definition, see [Arboviral infection](#) in this document.

CONTROL MEASURES

[Arizona Administrative Code R9-6-318](#) Chikungunya

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a chikungunya case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported chikungunya case or suspect case;
3. For each chikungunya case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
4. Ensure that each chikungunya case is provided with health education that includes measures to:
 - a. Avoid mosquito bites, and
 - b. Reduce mosquito breeding sites.

Environmental control measures:

In cooperation with the Department, a local health agency or another local agency responsible for vector control within a jurisdiction

1. Shall conduct an assessment of the environment surrounding each chikungunya case or suspect case and implement vector control measures as necessary.

INVESTIGATION FORMS

See the Chikungunya Case Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION**Clinical Description**

Infection with *Chlamydia trachomatis* may result in urethritis, epididymitis, cervicitis, acute salpingitis, or other syndromes when sexually transmitted. Perinatal infections may result in conjunctivitis and pneumonia among newborns. Other syndromes caused by *C. trachomatis* include lymphogranuloma venereum (see separate case definition) and trachoma.

Laboratory Criteria for Diagnosis

- Isolation of *C. trachomatis* by culture, OR
- Demonstration of *C. trachomatis* in a clinical specimen
 - by antigen detection methods, OR
 - by detection of nucleic acid.

Case Classification**Confirmed**

A case that is laboratory confirmed.

Criteria to Distinguish a New Case from an Existing Case

A case should not be counted as a new case if laboratory results were reported within 30 days of a previously reported infection in the same individual, unless there is evidence of reinfection. The 30 days should be counted from the date of initial screening unless treated. For cases with treatment, the 30 days should be counted from the initial treatment date. Additional details can be found at <https://www.cdc.gov/std/laboratory/de-duplication-guidance-june2016.pdf>.

CONTROL MEASURES

[Arizona Administrative Code R9-6-319](#) *Chlamydia trachomatis* Infection

Case Control Measures:

A local health agency shall:

1. Comply with the requirements specified in R9-6-1103 concerning treatment and health education for a *Chlamydia trachomatis* infection case that seeks treatment from the local health agency.

Contact Control Measures:

If an individual who may have been exposed to chlamydia through sexual contact with a *Chlamydia trachomatis* infection case seeks treatment for symptoms of chlamydia infection from a local health agency, the local health agency shall comply with the requirements specified in R9-6-1103 concerning treatment and health education for the individual.

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2016: Nucleic acid detection added to the laboratory criteria for diagnosis.
Most Recent CDC/CSTE Revision Year	2010

CHOLERA

PROVIDERS REPORT WITHIN 24 HOURS IF CASE HAS A HIGH-RISK OCCUPATION

PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY FOR ALL OTHER CASES

CASE DEFINITION

Clinical Description

An illness characterized by diarrhea and/or vomiting. Severity is variable.

Laboratory Criteria for Diagnosis

- Isolation of toxigenic (cholera toxin-producing) *Vibrio cholerae* O1 or O139 from stool or vomitus, OR
- Serologic evidence of recent infection

Case Classification

Confirmed

A clinically compatible illness that is laboratory confirmed.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

When two or more different serotypes are identified in one or more specimens from the same individual (as long as at least one week apart), each should be reported as a separate case.

*Based on ADHS guidelines

Comment

Only confirmed cases should be reported nationally. Illnesses due to strains of *V. cholerae* other than toxigenic *V. cholerae* O1 or O139 should be reported as Vibrio infection rather than cholera. The etiologic agent of a case of cholera should be reported as either *V. cholerae* O1 or *V. cholerae* O139.

CONTROL MEASURES

[Arizona Administrative Code R9-6-320](#) Cholera

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a cholera case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Exclude a cholera case or suspect case from:
 - a. Working as a food handler, caring for patients or residents in a health care institution, or caring for children in or attending a child care establishment until a stool specimen

- negative for toxigenic *Vibrio cholerae* is obtained from the cholera case or suspect case;
and
- b. Using an aquatic venue until diarrhea has resolved;
 3. Conduct an epidemiologic investigation of each reported cholera case or suspect case; and
 4. For each cholera case, submit to the Department, as specified in Article 2, Table 4 2.4, the information required under R9-6-206(D).

Contact Control Measures:

1. A local health agency shall provide follow-up for each cholera contact for five calendar days after exposure.

INVESTIGATION FORMS

See Cholera and other Vibrio Illness Surveillance Report at

<http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2013 change to ADHS laboratory criteria to match CDC/CSTE case definition.
Most Recent CDC/CSTE Revision Year	2010

CASE DEFINITION

Clinical Description

Infection may be asymptomatic or may produce an acute or chronic disease. Although the disease initially resembles an influenza-like illness or pneumonia-like febrile illness primarily involving the bronchopulmonary system, dissemination can occur to multiple organ systems. An illness is typically characterized by one or more of the following:

- Influenza-like signs and symptoms, including fever, chest pain, cough, myalgia, arthralgia, headache
- Pneumonia or other pulmonary lesion, diagnosed by chest X-ray
- Rashes, including erythema nodosum or erythema multiforme
- Involvement of bones, joints, or skin by dissemination
- Meningitis
- Involvement of viscera and lymph nodes

Laboratory Criteria for Diagnosis

Laboratory-confirmed coccidioidomycosis requires at least one of the following:

- Cultural, histopathologic, or molecular evidence of presence of *Coccidioides* species, OR
- Immunologic evidence of infection
 1. Serologic (testing of serum, cerebrospinal fluid (CSF), or other body fluid) by:
 - a. Detection of coccidioidal IgM by immunodiffusion, enzyme immunoassay (EIA), latex agglutination, or tube precipitin, OR
 - b. Detection of coccidioidal IgG by immunodiffusion, enzyme immunoassay (EIA), or complement fixation (for complement fixation, titers from blood must be $\geq 1:4$; for immunodiffusion or when the specimen is CSF, any titer is considered positive).
 2. Coccidioidal skin test conversion from negative to positive after the onset of clinical signs and symptoms.

Case Classification

Confirmed

A case that is laboratory confirmed.

Criteria to Distinguish a New Case from an Existing Case*

A case should never be counted as a new case if there was a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-322](#) Coccidioidomycosis (Valley Fever)

Outbreak Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported outbreak of coccidioidomycosis; and
2. For each outbreak of coccidioidomycosis, submit to the Department the information required under R9-6-206(E).

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	No
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	Coccidioidomycosis is endemic in Arizona, and previous study has shown that most reported cases that meet the laboratory criteria also meet the clinical case definition. Because of the high number of reported cases, lack of resources to investigate all reported cases, and very high rate of clinical symptoms among laboratory-reported cases, Arizona uses a laboratory-only case definition.
Most Recent CDC/CSTE Revision Year	2011

COLORADO TICK FEVER

PROVIDERS SUBMIT A REPORT WITHIN 5 WORKING DAYS

CASE DEFINITION**Clinical Description**

An acute viral disease characterized by fever, chills, lethargy, headache and myalgias with infrequent macular or maculopapular rash. After initial onset, a remission is usual, followed by a second bout of fever lasting 2-3 days.

Laboratory Criteria for Diagnosis

- Isolation of Colorado tick fever virus from blood or CSF, OR
- Fourfold or greater change in serum antibody

Case Classification***Confirmed***

A case that is laboratory confirmed with symptoms and history as above.

Probable

A compatible history of tick or outdoor exposure, plus clinical symptoms with supportive laboratory results (demonstration of single serological test result suggestive of recent infection with no history of previous infection, by use of hemagglutination, IFA or ELISA).

CONTROL MEASURES

[Arizona Administrative Code R9-6-323](#) Colorado Tick Fever

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported Colorado tick fever case or suspect case; and
2. For each Colorado tick fever case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See http://www.cdc.gov/ticks/forms/2010_tbrd_crf.pdf.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

CASE DEFINITION

Clinical Description

An acute inflammation of the conjunctiva involving redness and burning or itching of the eyes. Drainage from the eyes may be present as clear and watery fluid or white or yellowish pus.

Laboratory Criteria for Diagnosis

Cultures of purulent drainage or conjunctival swabs may be used to identify the specific infectious agent in cases of bacterial conjunctivitis.

Case Classification

Confirmed

A case that meets the clinical case description

Comment

Only outbreaks of acute conjunctivitis should be reported. An outbreak consists of:

- three or more cases,
- diagnosed or detected within a one-week period,
- all of whom have a common exposure AND
- not from the same household or family

CONTROL MEASURES

[Arizona Administrative Code R9-6-324](#) Conjunctivitis

Case Control Measures

An administrator of a school or child care establishment, either personally or through a representative, shall exclude an acute conjunctivitis case from attending the school or child care establishment until the symptoms of acute conjunctivitis subside or treatment for acute conjunctivitis is initiated and maintained for 24 hours.

Outbreak control measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported conjunctivitis outbreak; and
2. For each conjunctivitis outbreak, submit to the Department the information required under R9-6-206(E).

INVESTIGATION FORMS

Outbreak summary form only: <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

CASE DEFINITION

Clinical Description

Creutzfeldt-Jakob Disease (CJD) is a fatal disease characterized by progressive dementia and a variety of other neurological symptoms including:

- Myoclonus
- Visual or cerebellar signs
- Pyramidal/extrapyramidal signs
- Akinetic mutism

CJD is typified by development of spongy spaces in brain tissue where cells have died. Incubation periods range from 15 months to 30 years.

Laboratory Criteria for Diagnosis

Confirmatory Testing

- Detection of characteristic lesions by examination of frozen brain tissue. This diagnosis can be made in the U.S. only by the National Prion Disease Pathology Surveillance Center (NPDPS) in Cleveland, Ohio.
- Detection of abnormal prion protein by Western blot testing performed on frozen brain tissue, or by immunohistochemistry (IHC)/histology performed on fixed tissue.

Presumptive Testing

- Detection of 14-3-3 protein in CSF.
- Genetic analysis suggestive of the presence of the mutation associated with CJD.
- Detection of characteristic patterns by EEG or MRI

Case Classification

When possible, each case of CJD should be classified into one of the types according to the mode of transmission.

Confirmed

A case that meets at least one of the confirmatory laboratory criteria and only when performed by the NPDPS.

- Iatrogenic CJD meets the above criteria PLUS
 - Progressive cerebellar syndrome in a recipient of human cadaveric-derived hormone or
 - A CJD recognized exposure risk (i.e. antecedent neurosurgery with dura mater implantation, corneal transplants, brain surgery).
- Familial CJD meets the above criteria PLUS
 - Confirmed or Probable CJD in a first degree relative
- Sporadic CJD meets the above criteria PLUS
 - No evidence of iatrogenic and familial CJD

Probable

A case that meets one of the presumptive laboratory criteria and in which three of the five clinical findings described above are present. Findings must include progressive dementia with clinical duration lasting < 2 years. Routine investigations should not suggest an alternative diagnosis.

- Iatrogenic CJD meets the above criteria PLUS
 - Progressive cerebellar syndrome in a recipient of human cadaveric-derived hormone or
 - A recognized CJD exposure risk (i.e. antecedent neurosurgery with dura mater implantation, corneal transplants, brain surgery).
- Familial CJD meets the above criteria PLUS
 - Confirmed or Probable CJD in a first degree relative
- Sporadic CJD meets the above criteria PLUS
 - No evidence of iatrogenic and familial CJD

Suspect

A case that meets one of the presumptive laboratory criteria and in which no clinical information is known and routine investigations should not suggest an alternative diagnosis.

Criteria to Distinguish a New Case from an Existing Case*

A case should never be counted as a new case if there was a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

Additional information and forms may be obtained by visiting the website for the National Prion Disease Pathology Surveillance Center at Case Western Reserve University in Cleveland, Ohio at www.cjdsurveillance.com or <http://case.edu/med/pathology/centers/npdpssc/> CJD is reportable in Arizona but is not a nationally notifiable condition. ADHS should be notified of all pending case investigations involving possible CJD and may coordinate shipment of specimens to the NPDPSC.

Additional information regarding the different CJD classifications based on mode of transmission is included below:

- Classical (Sporadic or Spontaneous) CJD: CJD of unexplained origin and presumably autochthonous. The prevalence of classical CJD is about one case per 1,000,000 population/year. This type of CJD typically strikes older individuals with the vast majority of cases occurring in those over 65 years of age (median = 68 years). Median duration of illness is 4-5 months.
- Iatrogenic CJD: Occurs as a result of exposure to infectious prions during a medical procedure. Corneal transplants, dura mater grafts, brain surgery, and growth or gonadotropic hormones made from human pituitary glands have all been implicated in iatrogenic CJD cases.
- Familial (Genetic) CJD: Same general characteristics as classical CJD, but a case may be given this classification when the patient has a known family history of rapid-onset dementia.
- (New) Variant CJD: Associated with consumption of Bovine Spongiform Encephalopathy- (BSE, aka "Mad Cow Disease") infected beef. Only three cases with this form of CJD have been found in the U.S. and all cases had acquisition of the disease almost certainly in countries with BSE-contaminated cattle products (United Kingdom and Saudi Arabia). The typical age of onset of

Variante CJD is much younger than Classical CJD (median = 28 years). Median duration of illness is 13-14 months.

- Human cases of CJD associated with consumption of venison contaminated with Chronic Wasting Disease (CWD) prions have not been documented. If such a situation were to occur, it would most likely be classified as a new type of CJD.

CONTROL MEASURES

[Arizona Administrative Code R9-6-325](#) Creutzfeldt-Jakob Disease

Case Control Measures:

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported Creutzfeldt-Jakob disease case or suspect case; and
2. For each Creutzfeldt-Jakob disease case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Creutzfeldt-Jakob Disease Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

CRYPTOSPORIDIOSIS
(*Cryptosporidium parvum*)

PROVIDERS REPORT WITHIN 24 HOURS IF AN OUTBREAK IS DETECTED OR PERSON HAS A HIGH-RISK OCCUPATION

PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 DAY FOR ALL OTHER CASES

CASE DEFINITION

Clinical Description

A gastrointestinal illness characterized by diarrhea with a duration of 72 hours or more, abdominal cramping, fever, nausea, vomiting or anorexia.

Laboratory Criteria for Diagnosis

Confirmatory Testing

The detection of *Cryptosporidium* organisms or DNA in stool, intestinal fluid, tissue samples, biopsy specimens, or other biological sample by certain laboratory methods with a high positive predictive value (PPV), e.g.,

- Direct fluorescent antibody [DFA] test,
- Polymerase chain reaction [PCR],
- Enzyme immunoassay [EIA], or
- Light microscopy of stained specimen.

Presumptive Testing

The detection of *Cryptosporidium* antigen by a screening method, such as immunochromatographic card/rapid card test; or laboratory test of unknown method.

Case Classification

Confirmed

A case that meets the clinical description and the respective criteria for laboratory-confirmation as described above.

Probable

A case that meets the clinical description and either meets the presumptive criteria for laboratory diagnosis or is epidemiologically linked to a confirmed case.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

Test results known to be obtained with commercially-available immunochromatographic card tests are limited to meeting “probable” case criteria due to recent report of unacceptably high rates of false-positive results (Clin Infect Dis. 2010 Apr 15;50(8):e53-55)

CONTROL MEASURES

[Arizona Administrative Code R9-6-326](#) Cryptosporidiosis

Case Control Measures

A local health agency shall:

1. Exclude a cryptosporidiosis case or suspect case with diarrhea from:
 - a. Working as a food handler, caring for patients or residents in a health care institution, or caring for children in or attending a child care establishment until diarrhea has resolved; and
 - b. Using an aquatic venue for two weeks after diarrhea has resolved;
2. Conduct an epidemiologic investigation of each reported cryptosporidiosis case or suspect case; and
3. For each cryptosporidiosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Environmental control measures

A local health agency shall:

1. Conduct a sanitary inspection or ensure that a sanitary inspection is conducted of each facility or location regulated under 9 A.A.C. 8 that is associated with an outbreak of cryptosporidiosis.

INVESTIGATION FORMS

See Cryptosporidiosis Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes (with additional comments)
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	ADHS edited the case definition in 2012 to match CDC/CSTE but kept additional comments about laboratory tests.
Most Recent CDC/CSTE Revision Year	2012

CYCLOSPORIASIS
(*Cyclospora cayetanensis*)

PROVIDERS AND LABORATORIES SUBMIT A REPORT
WITHIN 1 WORKING DAY

CASE DEFINITION

Clinical Description

An illness of variable severity caused by the protozoan parasite *Cyclospora cayetanensis* and commonly characterized by watery diarrhea. Other common symptoms include loss of appetite, weight loss, abdominal bloating and cramping, increased flatulence, nausea, fatigue, and low-grade fever. Vomiting also may be noted. Relapses and asymptomatic infections can occur.

Laboratory Criteria for Diagnosis

Detection of *Cyclospora* organisms or DNA in stool, intestinal fluid/aspirate, or intestinal biopsy specimens.

Case Classification

Confirmed

A case that meets the clinical description and at least one of the criteria for laboratory confirmation as described above.

Probable

A case that meets the clinical description and that is epidemiologically linked to a confirmed case.

CONTROL MEASURES

[Arizona Administrative Code R9-6-327](#) *Cyclospora* Infection

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported *Cyclospora* infection case or suspect case; and
2. For each *Cyclospora* infection case submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Cyclosporiasis Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2010

CASE DEFINITION

Clinical Description

Cysticercosis is a tissue infection with the larval stage of the pork tapeworm, *Taenia solium*. When tapeworm eggs or proglottids are swallowed, the hatching eggs release larvae which can migrate from the intestine into tissues (including muscle, organs or central nervous system (CNS)) where they form cysts or cysticerci. The occurrence of cysticerci in the CNS (neurocysticercosis) can present with headache, epileptiform seizures, signs of intracranial hypertension, or psychiatric disturbances.

Laboratory Criteria for Diagnosis

Diagnosis can be made from:

- Microscopic examination of excised cysticerci from tissues, OR
- Recognition of cysticerci by CAT scan, MRI, or, when calcified, X-ray, OR
- Specific serologic tests.

Case Classification

Confirmed

A case with cysticerci in tissues or CNS identified by microscopy

Probable

A clinically compatible case with suspected cysticerci visualized in CAT scan, MRI, or X-ray, OR positive serologic tests.

Criteria to Distinguish a New Case from an Existing Case*

A case should never be counted as a new case if there was a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-328](#) Cysticercosis

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported cysticercosis case or suspect case; and
2. For each cysticercosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

Contact ADHS.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

CASE DEFINITION

Clinical Description

Dengue-like illness is defined by fever as reported by the patient or healthcare provider.

Dengue is defined by fever as reported by the patient or healthcare provider and the presence of one or more of the following signs and symptoms:

- Nausea/vomiting,
- Rash,
- Aches and pains (e.g., headache, retro-orbital pain, joint pain, myalgia, arthralgia),
- Tourniquet test positive,
- Leukopenia (a total white blood cell count of $<5,000/\text{mm}^3$), **or**
- Any warning sign for severe dengue:
 - Abdominal pain or tenderness
 - Persistent vomiting
 - Extravascular fluid accumulation (e.g., pleural or pericardial effusion, ascites)
 - Mucosal bleeding at any site
 - Liver enlargement >2 centimeters
 - Increasing hematocrit concurrent with rapid decrease in platelet count

Severe dengue is defined as dengue with any one or more of the following scenarios:

- Severe bleeding from the gastrointestinal tract (e.g., hematemesis, melena) or vagina (menorrhagia) as defined by requirement for medical intervention including intravenous fluid resuscitation or blood transfusion.
- Severe plasma leakage evidenced by hypovolemic shock and/or extravascular fluid accumulation (e.g., pleural or pericardial effusion, ascites) with respiratory distress. A high hematocrit value for patient age and sex offers further evidence of plasma leakage.
- Severe organ involvement, including any of the following:
 - Elevated liver transaminases: aspartate aminotransferase (AST) or alanine aminotransferase (ALT) $>1,000$ units per liter (U/L)
 - Impaired level of consciousness and/or diagnosis of encephalitis, encephalopathy, or meningitis
 - Heart or other organ involvement including myocarditis, cholecystitis, and pancreatitis

Laboratory Criteria for Diagnosis

Diagnostic testing should be requested for patients in whom there is a high index of suspicion for dengue, based either on signs and symptoms, or epidemiological linkage to a confirmed or probable dengue case.

Confirmatory Testing

- Detection of DENV nucleic acid in serum, plasma, blood, cerebrospinal fluid (CSF), other body fluid or tissue by validated reverse transcriptase-polymerase chain reaction (PCR), or
- Detection of DENV antigens in tissue by a validated immunofluorescence or immunohistochemistry assay, or
- Detection in serum or plasma of DENV NS1 antigen by a validated immunoassay; or
- Cell culture isolation of DENV from a serum, plasma, or CSF specimen; or
- Detection of IgM anti-DENV by validated immunoassay in a serum specimen or CSF in a person living in a dengue endemic or non-endemic area of the United States without evidence of other flavivirus transmission (e.g., WNV, SLEV, or recent vaccination against a flavivirus (e.g., YFV, JEV)); or
- Detection of IgM anti-DENV in a serum specimen or CSF by validated immunoassay in a traveler returning from a dengue endemic area without ongoing transmission of another flavivirus (e.g., WNV, JEV, YFV), clinical evidence of co-infection with one of these flaviviruses, or recent vaccination against a flavivirus (e.g., YFV, JEV); or
- IgM anti-DENV seroconversion by validated immunoassay in acute (i.e., collected <5 days of illness onset) and convalescent (i.e., collected >5 days after illness onset) serum specimens; or
- IgG anti-DENV seroconversion or ≥4-fold rise in titer by a validated immunoassay in serum specimens collected >2 weeks apart, and confirmed by a neutralization test (e.g., plaque reduction neutralization test) with a >4-fold higher end point titer as compared to other flaviviruses tested.

Probable Testing

- Detection of IgM anti-DENV by validated immunoassay in a serum specimen or CSF in a person living in a dengue endemic or non-endemic area of the United States with evidence of other flavivirus transmission (e.g., WNV, SLEV), or recent vaccination against a flavivirus (e.g., YFV, JEV).
- Detection of IgM anti-DENV in a serum specimen or CSF by validated immunoassay in a traveler returning from a dengue endemic area with ongoing transmission of another flavivirus (e.g., WNV, JEV, YFV), clinical evidence of co-infection with one of these flaviviruses, or recent vaccination against a flavivirus (e.g., YFV, JEV).

Suspected Testing

- The absence of IgM anti-DENV by validated immunoassay in a serum or CSF specimen collected <5 days after illness onset and in which molecular diagnostic testing was not performed in a patient with an epidemiologic linkage.

Epidemiologic Linkage

- Travel to a dengue endemic country or presence at location with ongoing outbreak within previous two weeks of dengue-like illness, OR
- Association in time and place (e.g., household member, family member, classmate, or neighbor) with a confirmed or probable dengue case.

Case Classification

Confirmed

A clinically compatible case of dengue-like illness, dengue, or severe dengue with confirmatory laboratory results, as listed above.

Probable

A clinically compatible case of dengue-like illness, dengue, or severe dengue with laboratory results indicative of probable infection, as listed above.

Suspect

A clinically compatible case of dengue-like illness, dengue, or severe dengue with an epidemiologic linkage, as listed above.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

Asymptomatic Blood or Tissue Donor: Dengue virus-specific viral antigen or genomic sequences demonstrated in donated blood or organs during screening and confirmatory testing in the absence of symptoms in the donor.

Dengue viruses are members of the Flaviviridae family and have sufficient antigenic similarity to Zika virus, yellow fever virus, Japanese encephalitis virus, and West Nile virus that previous infection or vaccination may raise cross-reactive serum antibodies. After a primary infection with a heterologous flavivirus, subsequent antibody testing by ELISA may produce false positive results for a different flavivirus. PRNT can often resolve cross-reactive serum antibodies in this situation and identify the infecting virus. However, high-titered cross-reactive antibody levels produced from multiple previous flavivirus infections cannot be resolved by PRNT. This demonstrates the complexity inherent in serological diagnosis and differentiation in populations living in regions where more than one flavivirus co-circulates. However, only a small proportion of the U.S. population has evidence of previous flavivirus infection (or vaccination) so that cross-reactive flavivirus antibodies should not be a significant limitation to dengue diagnosis among most US travelers. Among U.S. residents, most testing for dengue is done through private clinical laboratories using IgM or IgG detection techniques.

A person with two clinical episodes of dengue occurring at least two weeks apart and shown to be due to different infecting DENV-types confirmed by molecular diagnostic testing should be classified as two different cases. However, for two clinical episodes of dengue in the same person diagnosed only by IgM anti-DENV on the second episode; to be considered separate cases, the episodes would have to occur >90 days apart due to the persistence of detectable IgM anti-DENV for ~90 days.

Reference testing is available from CDC's Dengue Branch, Division of Vector-Borne Infectious Diseases, National Center for Infectious Diseases, 1324 Calle Cañada, San Juan, PR 00920-3860, telephone 787-706-2399, fax 787-706-2496

CONTROL MEASURES

[Arizona Administrative Code R9-6-329](#) Dengue

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a dengue case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported dengue case or suspect case;
3. For each dengue case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
4. Ensure that each dengue case is provided with health education that includes measures to:
 - a. Avoid mosquito bites, and
 - b. Reduce mosquito breeding sites.

Environmental Control Measures

1. In cooperation with the Department, a local health agency or another local agency responsible for vector control within a jurisdiction shall conduct an assessment of the environment surrounding each dengue case or suspect case and implement vector control measures as necessary.

INVESTIGATION FORMS

See Dengue Case Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justifications	2015: Overall name changed from Dengue Fever to Dengue Virus Infections. Classifications changed from dengue fever, dengue hemorrhagic fever and dengue shock syndrome to dengue-like illness, dengue, or severe dengue, to match the new classifications adopted by the WHO in 2008. Modification of the laboratory criteria for confirmatory, probable and suspect testing. Changes match those in the CDC/CSTE definition.
Most Recent CDC/CSTE Revision Year	2015

CASE DEFINITION**Clinical Description**

Possible outbreaks of disease come to the attention of public health officials in various ways. Often, an astute clinician, infection control nurse, or clinical laboratory worker first notices an unusual disease or an unusual number of cases of a disease and alerts public health officials. Frequently, it is the patient (or someone close to the patient) who first suspects a problem, as is often the case in foodborne outbreaks after a shared meal.

Outbreak Definition for Diarrhea, Nausea, or Vomiting

An outbreak of D, N, V is defined as two or more people not from the same household or family diagnosed or detected within a one-week period with similar illness consisting of a new onset of diarrhea, nausea and/or vomiting all of whom have a common exposure (ingestion of common food, residence in common location, or other exposure or event common to those ill).

Case Definition of Gastroenteritis (D, N, V)

A case of gastroenteritis is defined as a person with new onset of nausea, diarrhea and/or vomiting. Diarrhea is defined as two or more loose stools per 24 hour period or an unexplained increase in the number of bowel movements.

CONTROL MEASURES

[Arizona Administrative Code R9-6-330](#) Diarrhea, Nausea, or Vomiting

Outbreak Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported outbreak of diarrhea, nausea, or vomiting;
2. Submit to the Department the information required under R9-6-206(E); and
3. Exclude each case that is part of an outbreak of diarrhea, nausea, or vomiting from:
 - a. Working as a food handler, caring for patients or residents in a health care institution, or caring for children in or attending a child care establishment until:
 - i. Diarrhea and vomiting have resolved, or
 - ii. The local health agency has determined that the case is unlikely to infect other individuals; and
 - b. Using an aquatic venue for two weeks after diarrhea has resolved.

Environmental Control Measures

A local health agency shall:

1. Conduct a sanitary inspection or ensure that a sanitary inspection is conducted of each facility or location regulated under 9 A.A.C. 8 that is associated with an outbreak of diarrhea, nausea, or vomiting.

INVESTIGATION FORMS

See Outbreak Summary Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

CASE DEFINITION

Clinical Description

Diphtheria is caused by toxin-producing *Corynebacterium diphtheriae* (*C. diphtheriae*). This disease primarily manifests as respiratory infections that may result in death, but it may also present as mild infections in non-respiratory sites, such as the skin. While respiratory diphtheria is now extremely rare, non-respiratory infections caused by toxin-producing bacteria have recently been detected. Non-respiratory disease caused by toxin-producing *C. diphtheriae* may act as a source of transmission and can lead to new respiratory and non-respiratory diphtheria disease; both respiratory and non-respiratory disease caused by toxin-producing bacteria require public health follow-up. This diphtheria surveillance case definition better reflects the epidemiology of diphtheria in the U.S, in order to focus efforts on identifying disease caused by toxin-producing bacteria and appropriately guide public health interventions.

Clinical Criteria for Diagnosis

- Upper respiratory tract illness with an adherent membrane of the nose, pharynx, tonsils, or larynx OR
- Infection of a non-respiratory anatomical site (e.g., skin, wound, conjunctiva, ear, genital mucosa)

Laboratory Criteria for Diagnosis

Confirmatory Laboratory Evidence

- Isolation of *C. diphtheriae* from any site AND
- Confirmation of toxin-production by Elek test or by another validated test capable of confirming toxin-production

Supportive Laboratory Evidence

- Histopathologic diagnosis

Epidemiologic Linkage

Epidemiologic linkage requires direct contact with a laboratory-confirmed case of diphtheria.

Case Classification

Confirmed

- An upper respiratory tract illness with an adherent membrane of the nose, pharynx, tonsils, or larynx and any of the following:
 - isolation of toxin-producing *Corynebacterium diphtheriae* from the nose or throat OR
 - epidemiologic linkage to a laboratory-confirmed case of diphtheria.

OR

- An infection at a non-respiratory anatomical site (e.g., skin, wound, conjunctiva, ear, genital mucosa) and isolation of toxin-producing *Corynebacterium diphtheriae* from that site.

Suspect

- In the absence of a more likely diagnosis, an upper respiratory tract illness with each of the following:
 - an adherent membrane of the nose, pharynx, tonsils, or larynx AND
 - absence of laboratory confirmation AND
 - lack of epidemiologic linkage to a laboratory-confirmed case of diphtheria

OR

- Histopathologic diagnosis

Criteria to Distinguish a New Case from an Existing Case

Individuals without evidence of clinical criteria as described by the diphtheria surveillance case definition but for whom toxin-producing *Corynebacterium diphtheriae* is confirmed via laboratory testing (isolation and toxigenicity testing by modified Elek test or other validated test capable of confirming toxin-production) should not be classified as cases. These individuals are considered carriers of the bacteria and are not reportable.

Comment

- Cases of laboratory-confirmed, non-toxin-producing *C. diphtheriae* (respiratory or non-respiratory) should not be reported by state or local health departments to CDC as diphtheria cases.
- Negative laboratory results may be sufficient to rule-out a diagnosis of diphtheria; however, clinicians should carefully consider all lab results in the context of the patient's vaccination status, antimicrobial treatment, and other risk factors.
- PCR and MALDI-TOF diagnostics for *C. diphtheriae*, when used alone, do not confirm toxin production. These tests, when used, should always be combined with a test that confirms toxin production, such as the Elek test.

CONTROL MEASURES

[Arizona Administrative Code R9-6-331](#) Diphtheria

Case control measures:

1. A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall:
 - a. Isolate and institute droplet precautions for a pharyngeal diphtheria case or suspect case until two successive sets of cultures negative for *Corynebacterium diphtheriae* are obtained from nose and throat specimens collected from the case or suspect case at least 24 hours apart and at least 24 hours after cessation of treatment; and
 - b. Isolate and institute contact precautions for a cutaneous diphtheria case or suspect case until two successive sets of cultures negative for *Corynebacterium diphtheriae* are obtained from skin specimens collected from the case or suspect case at least 24 hours apart and at least 24 hours after cessation of treatment.
2. A local health agency shall:

- a. Upon receiving a report under R9-6-202 of a diphtheria case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
- b. Conduct an epidemiologic investigation of each reported diphtheria case or suspect case; and
- c. For each diphtheria case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Contact Control Measures:

A local health agency shall:

1. Exclude each diphtheria contact from working as a food handler, caring for patients or residents in a health care institution, or caring for children in or attending a school or child care establishment until a set of cultures negative for *Corynebacterium diphtheriae* is obtained from the contact's nose and throat specimens;
2. In consultation with the Department, quarantine a contact of a diphtheria case, if indicated, until two successive sets of cultures negative for *Corynebacterium diphtheriae* are obtained from nose and throat specimens collected from the contact at least 24 hours apart;
3. Offer each previously immunized diphtheria contact prophylaxis and a vaccine containing diphtheria toxoid; and
4. Offer each unimmunized diphtheria contact prophylaxis and the primary vaccine series.

INVESTIGATION FORMS

See Diphtheria Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	2019: Updated to include non-respiratory disease and to require confirmation that the bacteria is toxin-producing. Probable classification removed and suspect added. Changes based on modifications to CDC/CSTE definition.
Most Recent CDC/CSTE Revision Year	2019

CASE DEFINITION

Clinical Description

A tick-borne illness characterized by acute onset of fever and one or more of the following signs or symptoms: headache, myalgia, malaise, anemia, leukopenia, thrombocytopenia, or elevated liver enzymes. Nausea, vomiting, or rash may be present in some cases.

Intracytoplasmic bacterial aggregates (morulae) may be visible in the leukocytes of some patients. There are at least three species of bacteria responsible for ehrlichia/anaplasmosis in the U.S.: *Ehrlichia chaffeensis*, found primarily in monocytes, and *Anaplasma phagocytophilum* and *Ehrlichia ewingii*, found primarily in granulocytes*. For cases with evidence of *Anaplasma* spp. infection, see the [Anaplasmosis case definition](#).

Three categories of confirmed or probable ehrlichiosis should be reported:

1. Human ehrlichiosis caused by *E. chaffeensis* (formerly Human Monocytic Ehrlichiosis or HME),
2. Human ehrlichiosis caused by *E. ewingii* (formerly unspecified or other agent), and
3. Human ehrlichiosis/anaplasmosis- undetermined. Cases in this category can only be reported as “probable” because the cases are only weakly supported by ambiguous lab test results.

Human anaplasmosis caused by *Anaplasma phagocytophilum* (formerly Human Granulocytic Ehrlichiosis or HGE) should instead be reported and entered as [anaplasmosis](#).

*Note: The clinical signs of disease from infection with these agents are similar, and the range distributions overlap, so testing for one or more species may be indicated. Serologic cross-reactions may occur among tests for these agents.

Clinical evidence

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

Exposure

History of having been in potential tick habitat in the 14 days prior to the onset of illness or history of tick bite.

Laboratory Criteria for Surveillance

Ehrlichia chaffeensis infection (formerly HME):

Confirmatory Testing

- Serological evidence of a four-fold change in immunoglobulin G (IgG)-specific antibody titer to *E. chaffeensis* 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 *E. chaffeensis* DNA in a clinical specimen via PCR assay, OR
- Demonstration of ehrlichial antigen in a biopsy or autopsy sample by IHC, OR
- Isolation of *E. chaffeensis* from a clinical specimen in cell culture.

Presumptive Testing

- Serological evidence of elevated IgG or IgM antibody reactive with *E. chaffeensis* antigen by IFA, ELISA, dot-ELISA, or assays in other acceptable formats, OR
- Identification of morulae in the cytoplasm of monocytes or macrophages by microscopic examination.

Ehrlichia ewingii infection (formerly unspecified or other agent):

Confirmatory Testing

Detection of *E. ewingii* DNA in a clinical specimen via PCR assay. *E. ewingii* has never been cultured; therefore, antigens are not available and this infection may only be diagnosed by molecular detection methods.

Human ehrlichiosis/anaplasmosis - undetermined:

See case classification

Case Classification**Confirmed**

A clinically compatible case that meets the criteria for clinical evidence criteria and for confirmatory laboratory testing.

Probable

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

Suspect

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

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

Problem cases for which sera demonstrate elevated antibody IFA responses to more than a single infectious agent are usually resolvable by comparing the levels of the antibody responses, the greater antibody response generally being that directed at the actual agent involved. Tests of additional sera and further evaluation using PCR, IHC, and isolation via cell culture may be needed for further clarification. Cases involving persons infected with more than a single agent, while possible, are

extremely rare and every effort should be made to resolve cases that appear as such by other explanations.

Current commercially available ELISA tests are not quantitative, cannot be used to evaluate changes in antibody titer, and are not useful for serological confirmation. IgM tests are not always specific and the IgM response may be persistent. IgM tests are not strongly supported for use in serodiagnosis of acute disease.

CONTROL MEASURES

[Arizona Administrative Code R9-6-332](#) Ehrlichiosis

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported ehrlichiosis case or suspect case; and
2. For each ehrlichiosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Tick-Borne Rickettsial Disease Case Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes (other than separately listing anaplasmosis and ehrlichiosis)
Justification	2018: Anaplasmosis split from ehrlichiosis, compatible with the listing in the reportable disease rules. ADHS 2013 case definitions revised in 2012 to match CDC/CSTE.
Most Recent CDC/CSTE Revision Year	2008

EMERGING OR EXOTIC DISEASE

PROVIDERS AND LABORATORIES SUBMIT A REPORT
WITHIN 24 HOURS

The following conditions may be reported under Emerging and Exotic Disease; please see the separate sections in this manual for their case definitions. This is not an exhaustive list of possible emerging or exotic diseases, only ones for which a separate case definition exists.

- [Acute Flaccid Myelitis \(AFM\)](#)
- [Candida auris](#)
- [Influenza A Novel Virus](#)
- [Vancomycin-resistant Staphylococcus epidermidis \(VRSE\)](#)

CASE DEFINITION

Definition

Emerging or Exotic Diseases are defined as those meeting one of the following definitions:

- A disease which is newly appeared in the population, or
- A disease whose incidence in humans has increased in the past two decades or threatens to increase in the near future, or
- A disease with increasing incidence in a defined time period and location

Examples may include:

- New infections resulting from changes or evolution of existing organisms
- Known infections spreading to new geographic areas or populations
- Previously unrecognized infections appearing in areas undergoing ecologic transformation
- Old infections reemerging as a result of antimicrobial resistance in known agents or breakdown in public health measures

Case reports of emerging or exotic disease should specify the morbidity and etiological agent, if known, and may be subject to additional clinical or laboratory criteria for classification.

CONTROL MEASURES

[Arizona Administrative Code R9-6-333](#) Emerging or Exotic Disease

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of an emerging or exotic disease case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. In consultation with the Department, isolate an emerging or exotic disease case or suspect case as necessary to prevent transmission;
3. Conduct an epidemiologic investigation of each reported emerging or exotic disease case or suspect case; and
4. For each emerging or exotic disease case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Contact Control Measures

A local health agency, in consultation with the Department,

1. Shall quarantine or exclude an emerging or exotic disease contact as necessary, according to R9-6-303, to prevent transmission.

INVESTIGATION FORMS

None. Some pathogens reported under Emerging or Exotic Disease may have a specific investigation form; check with ADHS if uncertain.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

CASE DEFINITION

Parasitic encephalitis may be caused by free-living amoebae, including:

- [Granulomatous Amebic Encephalitis \(GAE\), *Acanthamoeba* Disease, excluding keratitis](#)
- [Granulomatous Amebic Encephalitis \(GAE\), *Balamuthia mandrillaris* Disease](#)
- [Primary Amebic Meningoencephalitis \(PAM\), *Naegleria fowleri* Disease](#)

Please see those individual case definitions for complete descriptions. Cases of parasitic encephalitis caused by other organisms not represented here may also occur and be counted as cases

[Acanthamoeba keratitis](#) is a form of *Acanthamoeba* disease that does not cause encephalitis. The case definition can be found in the non-reportable disease section.

CONTROL MEASURES

[Arizona Administrative Code R9-6-334](#) Encephalitis, Viral or Parasitic

Case Control Measures

A local health agency shall:

1. Upon receiving a report of encephalitis under R9-6-202, notify the Department:
 - a. For a case or suspect case of parasitic encephalitis, within 24 hours after receiving the report and provide to the Department the information contained in the report; and
 - b. For a case or suspect case of viral encephalitis, within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported viral or parasitic encephalitis case or suspect case; and
3. For each encephalitis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

Contact ADHS. Depending on the etiology of the encephalitis, an investigation form may or may not be available.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2017: Split into four separate case definitions: Granulomatous Amebic Encephalitis (GAE) <i>Acanthamoeba</i> Disease excluding keratitis, Granulomatous Amebic Encephalitis

	<p>(GAE) <i>Balamuthia mandrillaris</i> Disease, Primary Amebic Meningoencephalitis (PAM) <i>Naegleria fowleri</i> Disease, and Acanthamoeba keratitis (moved to non-reportable diseases).</p> <p>Definitions for free-living amebic infections moved into Encephalitis, parasitic in 2013.</p>
<p>Most Recent CDC/CSTE Revision Year</p>	<p>N/A</p>

Viral encephalitis is a general category meant to be used to report encephalitis of suspected viral origins until a specific etiology is identified, or to detect clusters of encephalitis cases of possible public health concern. Examples of viruses causing viral encephalitis are adenoviruses, enteroviruses, herpes simplex virus (HSV), varicella zoster virus (VZV) and some arboviruses (West Nile virus, St. Louis Encephalitis virus, etc.).

Since the viral encephalitis morbidity represents a collection of cases of different etiologies, and possibly with varying risk factors and public health implications, ADHS will no longer publish case counts for viral encephalitis, as those counts are difficult to interpret meaningfully. The viral encephalitis morbidity will instead be used solely for reporting and investigation purposes, to identify any need for further public health control measures or follow-up.

For cases reported or entered into MEDSIS under the “Encephalitis, viral” morbidity:

- Once a specific viral etiology has been identified, **please enter the case under that specific morbidity** in MEDSIS, if available, and classify using the corresponding case definitions:
 - For West Nile virus, St. Louis Encephalitis virus, California Serogroup viruses, Eastern Equine Encephalitis virus, Western Equine Encephalitis virus and other arboviruses, please refer to the [Arboviral Infection](#) case definition.
 - For varicella zoster virus (VZV) please refer to the [Varicella](#) case definition.
 - Please indicate in the MEDSIS viral encephalitis case that the case has been moved to the other morbidity. No further action is needed in the viral encephalitis case.
- For non-reportable etiologies (e.g., HSV, adenovirus, enterovirus) for which there is no case classification nor MEDSIS morbidity, the case should remain in the viral encephalitis morbidity.

Since ADHS will no longer report case counts for this morbidity, and since it represents a variety of etiologies, case classification (e.g., confirmed, probable) is not needed for these cases. Local case classifications can be used at the discretion of the local health agency.

Please note that reporting and investigation of viral encephalitis continues to be required by Arizona Administrative Code (see below). The investigation should identify whether any further public health action or follow-up is needed for the case.

CONTROL MEASURES

[Arizona Administrative Code R9-6-334](#) Encephalitis, Viral or Parasitic

Case Control Measures

A local health agency shall:

1. Upon receiving a report of encephalitis under R9-6-202, notify the Department:
 - a. For a case or suspect case of parasitic encephalitis, within 24 hours after receiving the report and provide to the Department the information contained in the report; and
 - b. For a case or suspect case of viral encephalitis, within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported viral or parasitic encephalitis case or suspect case; and

- For each encephalitis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	2019: Case definition modified to clarify its use. Case classifications have been removed.
Most Recent CDC/CSTE Revision Year	N/A

CASE DEFINITION**Clinical Description**

An infection of variable severity characterized by diarrhea (often bloody) and abdominal cramps. Illness may be complicated by hemolytic uremic syndrome (HUS). (Note that some clinicians still use the term thrombotic thrombocytopenic purpura [TTP] for adults with post-diarrheal HUS.)

Laboratory Criteria for Diagnosis**Confirmatory results**

- Isolation of *E. coli* O157:H7 from a specimen, OR
- For all other *E. coli* isolates, identification of Shiga toxin or Shiga toxin genes

Supportive results

- Isolation of *E. coli* O157 from a clinical specimen, without confirmation of H antigen, detection of Shiga toxin, or detection of Shiga toxin genes, OR
- Identification of an elevated antibody titer against a known Shiga toxin-producing serogroup of *E. coli*, OR
- Detection of Shiga toxin or Shiga toxin genes in a clinical specimen using a culture-independent diagnostic test (CIDT) and no known isolation of *Shigella* from a clinical specimen, OR
- Detection of *E. coli* O157 or STEC/EHEC in a clinical specimen using a CIDT.

Epidemiologic Linkage

- A clinically compatible illness in a person that is epidemiologically linked to a confirmed or probable case with laboratory evidence, OR
- A clinically compatible illness in a person that is a member of a risk group as defined by public health authorities during an outbreak.

Case Classification**Confirmed**

- A case that meets the confirmatory laboratory criteria for diagnosis

Probable

- A person with isolation of *E. coli* O157 from a clinical specimen, without confirmation of H antigen, detection of Shiga toxin, or detection of Shiga toxin genes, OR
- A clinically compatible illness in a person with identification of an elevated antibody titer against a known Shiga toxin-producing serogroup of *E. coli*, OR

- A clinically compatible illness in a person with detection of Shiga toxin or Shiga toxin genes in a clinical specimen using CIDT and no known isolation of *Shigella* from a clinical specimen, OR
- A clinically compatible illness in a person with detection of *E. coli* O157 or STEC/EHEC from a clinical specimen using a CIDT, OR
- A clinically compatible illness in a person with an epidemiological linkage, as defined above.

Suspect

- A person with no known clinical compatibility that meets one of the last three supportive laboratory criteria for diagnosis:
 - Identification of an elevated antibody titer against a known Shiga toxin-producing serogroup of *E. coli*, OR
 - Detection of Shiga toxin or Shiga toxin genes in a clinical specimen using a CIDT and no known isolation of *Shigella* from a clinical specimen, OR
 - Detection of *E. coli* O157 or STEC/EHEC in a clinical specimen using a CIDT; OR
- A person with a diagnosis of case of post-diarrheal HUS (see HUS case definition).

Criteria to Distinguish a New Case from an Existing Case

- A new case should be created when a positive laboratory result is received more than 180 days after the most recent positive laboratory result associated with a previously reported case in the same individual, OR
- When two or more different serogroups/serotypes are identified in one or more specimens from the same individual, each serogroup/serotype should be reported as a separate case.

Comment

Asymptomatic infections and infections at sites other than the gastrointestinal tract in people (1) meeting the confirmatory laboratory criteria for diagnosis or (2) with isolation of *E. coli* O157 from a clinical specimen without confirmation of H antigen, detection of Shiga toxin, or detection of Shiga toxin genes, are considered STEC cases and should be reported.

Although infections with Shiga toxin-producing organisms in the United States are primarily caused by STEC, in recent years an increasing number are due to infections by Shiga toxin-producing *Shigella*. Persons with (1) detection of Shiga toxin or Shiga toxin genes using a CIDT and (2) isolation of *Shigella* spp. from a clinical specimen should not be reported as an STEC case.

Due to the variable sensitivities and specificities of CIDT methods and the potential for degradation of Shiga toxin in a specimen during transit, discordant results may occur between clinical and public health laboratories. Persons with (1) detection of Shiga toxin or Shiga toxin genes using a CIDT and (2) the absence of isolation of *Shigella* from a clinical specimen, should be reported as a probable case, regardless of whether detection of Shiga toxin or Shiga toxin genes is confirmed by a public health laboratory.

CONTROL MEASURES

[Arizona Administrative Code R9-6-335](#) *Escherichia coli*, Shiga Toxin-producing

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 or R9-6-203 of a Shiga toxin-producing *Escherichia coli* case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Exclude a Shiga toxin-producing *Escherichia coli* case or suspect case with diarrhea from:
 - a. Working as a food handler, caring for patients or residents in a health care institution, or caring for children in or attending a child care establishment until:
 - i. Two successive stool specimens, collected from the Shiga toxin-producing *Escherichia coli* case or suspect case at least 24 hours apart, are negative for Shiga toxin-producing *Escherichia coli*;
 - ii. Diarrhea has resolved; or
 - iii. The local health agency has determined that the case or suspect case is unlikely to infect other individuals; and
 - b. Using an aquatic venue for two weeks after diarrhea has resolved;
3. Conduct an epidemiologic investigation of each reported Shiga toxin-producing *Escherichia coli* case or suspect case; and
4. For each Shiga toxin-producing *Escherichia coli* case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Environmental Control Measures

A local health agency shall

1. If an animal located in a private residence is suspected to be the source of infection for an a Shiga toxin-producing *Escherichia coli* case or outbreak, provide health education for the animal’s owner about Shiga toxin-producing *Escherichia coli* and the risks of becoming infected with Shiga toxin-producing *Escherichia coli*; and
2. If an animal located in a setting other than a private residence is suspected to be the source of infection for a Shiga toxin-producing *Escherichia coli* case or outbreak:
 - a. Provide health education for the animal’s owner about Shiga toxin-producing *Escherichia coli* and the risks of becoming infected with Shiga toxin-producing *Escherichia coli*, and
 - b. Require the animal’s owner to provide information to individuals with whom the animal may come into contact about Shiga toxin-producing *Escherichia coli* and methods to reduce the risk of transmission.

INVESTIGATION FORMS

See Enterohemorrhagic *E. coli* (Shiga-toxin producing) Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2018: Included CIDT testing in supportive results, allowing for cases with this testing to be classified as probable. Added epidemiologic linkage and criteria to distinguish a new case from an existing case.

	<p>2016: Identification of Shiga toxin genes added to the supportive results. Addition of "Identification of Shiga toxin genes in a specimen from a clinically compatible case if no specimen is available to culture" to the suspect case definition.</p> <p>2014: Modifications were made to the supportive laboratory results to match the 2014 CDC/CSTE case definitions.</p> <p>2013: ADHS case definition was edited to match CDC/CSTE except for a difference in the suspect and probable case classifications for classifying cases when no specimen is available to culture.</p>
Most Recent CDC/CSTE Revision Year	2018

Outbreaks should be reported under the [Diarrhea, Nausea, or Vomiting](#) requirement.

CASE DEFINITION

Clinical Description

Symptoms of illness depend upon etiologic agent. Please see the "Guidelines for Confirmation of Foodborne-Disease Outbreaks" tables at http://www.cdc.gov/foodsafety/outbreaks/investigating-outbreaks/confirming_diagnosis.html.

Laboratory Criteria for Diagnosis

Dependent upon the etiologic agent.

Please see the "Guidelines for Confirmation of Foodborne-Disease Outbreaks" tables at http://www.cdc.gov/foodsafety/outbreaks/investigating-outbreaks/confirming_diagnosis.html.

Definition

An incident in which two or more persons experience a similar illness after ingestion of a common food, and epidemiologic analysis implicates the food as the source of the illness.

Comment

There are two exceptions: one case of botulism or chemical poisoning linked to a food item constitutes an outbreak.

CONTROL MEASURES

[Arizona Administrative Code R9-6-330](#) Diarrhea, Nausea, or Vomiting

Outbreak Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported outbreak of diarrhea, nausea, or vomiting;
2. Submit to the Department the information required under R9-6-206(E); and
3. Exclude each case that is part of an outbreak of diarrhea, nausea, or vomiting from:
 - a. Working as a food handler, caring for patients or residents in a health care institution, or caring for children in or attending a child care establishment until:
 - i. Diarrhea and vomiting have resolved, or
 - ii. The local health agency has determined that the case is unlikely to infect other individuals; and
 - b. Using an aquatic venue for two weeks after diarrhea has resolved.

Environmental Control Measures

A local health agency shall:

1. Conduct a sanitary inspection or ensure that a sanitary inspection is conducted of each facility or location regulated under 9 A.A.C. 8 that is associated with an outbreak of diarrhea, nausea, or vomiting.

INVESTIGATION FORMS

See Outbreak Summary Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2011

GIARDIASIS

PROVIDERS REPORT WITHIN 24 HOURS IF AN OUTBREAK IS DETECTED OR PERSON HAS A HIGH-RISK OCCUPATION

PROVIDERS SUBMIT A REPORT WITHIN 5 DAYS FOR ALL OTHER CASES

CASE DEFINITION

Clinical Description

An illness caused by the protozoan *Giardia lamblia* (aka *G. intestinalis* or *G. duodenalis*) and characterized by gastrointestinal symptoms such as diarrhea, abdominal cramps, bloating, weight loss, or malabsorption.

Laboratory Criteria for Diagnosis

Laboratory-confirmed giardiasis is defined as the detection of *Giardia* organisms, antigen, or DNA in stool, intestinal fluid, tissue samples, biopsy specimens or other biological samples.

Case Classification

Confirmed

A case that meets the clinical description and the criteria for laboratory confirmation as described above. When available, molecular characterization (e.g., assemblage designation) should be reported.

Probable

A case that meets the clinical description and that is epidemiologically linked to a confirmed case.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-336](#) Giardiasis

Case Control Measures

A local health agency shall

1. Exclude a giardiasis case or suspect case with diarrhea from:
 - a. Working as a food handler, caring for patients or residents in a health care institution, or caring for children in or attending a child care establishment until:
 - i. Treatment for giardiasis is initiated and diarrhea has resolved, or
 - ii. The local health agency has determined that the case or suspect case is unlikely to infect other individuals; and
 - b. Using an aquatic venue for two weeks after diarrhea has resolved;
2. Conduct an epidemiologic investigation of each reported giardiasis case or suspect case; and
3. For each giardiasis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Giardiasis Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CSTE Revision Year	2011

GLANDERS (*Burkholderia mallei*)

PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS

LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

CASE DEFINITION

Please contact the Office of Infectious Disease Services at (602) 364-3676 to discuss the case definition if a suspected case of *Burkholderia mallei* is detected.

CONTROL MEASURES

[Arizona Administrative Code R9-6-337](#) Glanders

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a glanders case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported glanders case or suspect case;
3. For each glanders case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
4. Ensure that an isolate or a specimen, as available, from each glanders case or suspect case is submitted to the Arizona State Laboratory.

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	Separated from <i>Burkholderia pseudomallei</i> in 2013 to reflect distinct clinical presentation.
Most Recent CDC/CSTE Revision Year	N/A

CASE DEFINITION

Clinical Description

A sexually transmitted infection commonly manifested by urethritis, cervicitis, or salpingitis. Infection may be asymptomatic.

Laboratory Criteria for Diagnosis

- Isolation of typical gram-negative, oxidase-positive diplococci by culture (presumptive *Neisseria gonorrhoeae*) from a clinical specimen, OR
- Demonstration of *N. gonorrhoeae* in a clinical specimen by detection of antigen or nucleic acid, OR
- Observation of gram-negative intracellular diplococci in a urethral smear obtained from a male or an endocervical smear obtained from a female

Case Classification

Confirmed

A person with laboratory isolation of typical gram-negative, oxidase-positive diplococci by culture (presumptive *Neisseria gonorrhoeae*) from a clinical specimen, or demonstration of *N. gonorrhoeae* in a clinical specimen by detection of antigen or detection of nucleic acid via nucleic acid amplification (e.g., Polymerase Chain Reaction [PCR]) or hybridization with a nucleic acid probe.

Probable

Demonstration of gram-negative intracellular diplococci in a urethral smear obtained from a male or an endocervical smear obtained from a female.

Criteria to Distinguish a New Case from an Existing Case

A case should not be counted as a new case if laboratory results were reported within 30 days of a previously reported infection in the same individual, unless there is evidence of reinfection. The 30 days should be counted from the date of initial screening unless treated. For cases with treatment, the 30 days should be counted from the initial treatment date. Additional details can be found at <https://www.cdc.gov/std/laboratory/de-duplication-guidance-june2016.pdf>.

CONTROL MEASURES

[Arizona Administrative Code R9-6-338, R9-6-1101 thru R9-6-1104](#) Gonorrhea

Case Control Measures:

1. For the prevention of gonorrheal ophthalmia, a physician, physician assistant, registered nurse practitioner, or midwife attending the birth of an infant in this state shall treat the eyes of the infant immediately after the birth with one of the following, unless treatment is refused by the parent or guardian:
 - a. Erythromycin ophthalmic ointment 0.5%, or
 - b. Tetracycline ophthalmic ointment 1%.

2. A local health agency shall comply with the requirements specified in R9-6-1103 concerning treatment and health education for a gonorrhea case that seeks treatment from the local health agency.

Contact Control Measures:

If an individual who may have been exposed to gonorrhea through sexual contact with a gonorrhea case seeks treatment for symptoms of gonorrhea from a local health agency, the local health agency shall comply with the requirements specified in R9-6-1103 concerning treatment and health education for the individual.

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2014: Laboratory criteria revised to include an endocervical smear obtained from a female; probable case definition modified to remove the criterion of a written morbidity report of gonorrhea submitted by a physician and urethral smear obtained from a male was added; modifications made to match the 2014 CDC/CSTE case definition.
Most Recent CDC/CSTE Revision Year	2014

**GRANULOMATOUS AMEBIC
ENCEPHALITIS (GAE),
Acanthamoeba Disease excluding
keratitis**

PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS

Cases should be reported under the [Encephalitis, parasitic](#) requirement. Enter in MEDSIS as Encephalitis, parasitic.

CASE DEFINITION

Clinical Description

The genus *Acanthamoeba* includes several species of opportunistic free-living amoebae that might invade the brain through the blood, probably from a primary infection in the skin (from ulcers or dermatitis) or sinuses. Once in the brain, the amoebae cause granulomatous amebic encephalitis (GAE). *Acanthamoeba* GAE has a slow and insidious onset and develops into a subacute or chronic disease lasting several weeks to months. *Acanthamoeba* GAE affects both immunocompetent persons and persons who are immunosuppressed from a variety of causes (e.g., HIV/AIDS, organ transplantation). Initial symptoms of *Acanthamoeba* GAE might include headache, photophobia, and stiff neck accompanied by positive Kernig's and Brudzinski's signs. Other symptoms might include nausea, vomiting, low-grade fever, muscle aches, weight loss, mental-state abnormalities, lethargy, dizziness, loss of balance, cranial nerve palsies, other visual disturbances, hemiparesis, seizures, and coma. Once the disease progresses to neurologic infection, it is generally fatal within weeks or months. However, a few patients have survived this infection.

Laboratory Criteria for Diagnosis

Confirmatory Testing

Detection of *Acanthamoeba* antigen or nucleic acid (e.g., immunohistochemistry or PCR) from a clinical specimen (e.g., tissue) or culture.

Case Classification

Confirmed

A case that meets the clinical criteria and confirmatory laboratory criteria for diagnosis

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

Acanthamoeba and *B. mandrillaris* can cause clinically similar illnesses and might be difficult to differentiate using commonly available laboratory procedures. Definitive diagnosis by a reference laboratory might be required. Several species of *Acanthamoeba* are associated with infection (i.e., *A. castellanii*, *A. culbertsoni*, *A. hatchetti*, *A. healyi*, *A. polyphaga*, *A. rhyodes*, *A. astonyxis*, *A. lenticulata* and *A. divionensis*). A negative test on CSF does not rule out *Acanthamoeba* infection because the organism is not commonly present in the CSF. Although it is unknown if *Acanthamoeba* spp. can be

transmitted via organ transplantation, patients presenting with the above clinical criteria who have received a solid organ transplant should be further investigated to determine if the infection was transmitted through the transplanted organ. An investigation of the donor should be initiated through notification of the organ procurement organization (OPO) and transplant center.

CONTROL MEASURES

[Arizona Administrative Code R9-6-334](#) Encephalitis, Viral or Parasitic

Case Control Measures

A local health agency shall:

1. Upon receiving a report of encephalitis under R9-6-202, notify the Department:
 - a. For a case or suspect case of parasitic encephalitis, within 24 hours after receiving the report and provide to the Department the information contained in the report; and
 - b. For a case or suspect case of viral encephalitis, within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported viral or parasitic encephalitis case or suspect case; and
3. For each encephalitis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

Contact ADHS. Depending on the etiology of the encephalitis, an investigation form may or may not be available.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2017: Separated from encephalitis, parasitic and a separate case definition created. Laboratory criteria and confirmatory case classification updated. Comments expanded. All to match 2016 CSTE position statement.
Most Recent CDC/CSTE Revision Year	2017

GRANULOMATOUS AMEBIC ENCEPHALITIS (GAE), *Balamuthia mandrillaris* Disease PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS

Cases should be reported under the [Encephalitis, parasitic](#) requirement. Enter in MEDSIS as Encephalitis, parasitic.

CASE DEFINITION

Clinical Description

B. mandrillaris is an opportunistic free-living amoeba that can invade the brain through the blood, probably from a primary infection in the skin (from ulcers or dermatitis), sinuses, or via organ transplantation. The incubation period is not well-characterized but has been observed to range from 2 weeks to months or possibly years. Once in the brain, the amoebae can cause meningoencephalitis and/or granulomatous amebic encephalitis (GAE). *B. mandrillaris* GAE often has a slow, insidious onset and develops into a subacute or chronic disease lasting several weeks to months; however, *B. mandrillaris* infections associated with organ transplantation have an especially rapid clinical course. *B. mandrillaris* GAE affects both immunocompetent persons and persons who are immunosuppressed from a variety of causes (e.g., HIV/AIDS, organ transplantation). Initial symptoms of *B. mandrillaris* GAE might include headache, photophobia, and stiff neck accompanied by positive Kernig's and Brudzinski's signs. Other symptoms might include nausea, vomiting, low-grade fever, muscle aches, weight loss, mental-state abnormalities, lethargy, dizziness, loss of balance, cranial nerve palsies, other visual disturbances, hemiparesis, seizures, and coma. Painless skin lesions appearing as plaques a few millimeters thick and one to several centimeters wide have been observed in some patients, especially patients outside the U.S., preceding the onset of neurologic symptoms by 1 month to approximately 2 years. Once the disease progresses to neurologic infection, it is generally fatal within weeks or months; however, a few patients have survived this infection.

Laboratory Criteria for Diagnosis

Detection of *B. mandrillaris* antigen or nucleic acid (e.g., immunohistochemistry or PCR) from a clinical specimen (e.g., tissue) or culture.

Case Classification

Confirmed

A case that meets the clinical criteria and confirmatory laboratory criteria for diagnosis

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

B. mandrillaris and *Acanthamoeba* spp. can cause clinically similar illnesses and might be difficult to differentiate using commonly available laboratory procedures. Definitive diagnosis by a reference laboratory might be required. A negative test on CSF does not rule out *B. mandrillaris* infection because

the organism is not commonly present in the CSF. Once the disease progresses to neurologic infection, it is generally fatal within weeks or months; however, a few patients have survived this infection. Patients presenting with the above clinical criteria who have received a solid organ transplant should be further investigated to determine if the infection was transmitted through the transplanted organ. An investigation of the donor should be initiated through notification of the organ procurement organization (OPO) and transplant center.

CONTROL MEASURES

[Arizona Administrative Code R9-6-334](#) Encephalitis, Viral or Parasitic

Case Control Measures

A local health agency shall:

1. Upon receiving a report of encephalitis under R9-6-202, notify the Department:
 - a. For a case or suspect case of parasitic encephalitis, within 24 hours after receiving the report and provide to the Department the information contained in the report; and
 - b. For a case or suspect case of viral encephalitis, within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported viral or parasitic encephalitis case or suspect case; and
3. For each encephalitis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

Contact ADHS. Depending on the etiology of the encephalitis, an investigation form may or may not be available.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2017: Separated from encephalitis, parasitic and a separate case definition created. Laboratory criteria and confirmatory case classification updated. Comments expanded. All to match 2016 CSTE position statement.
Most Recent CDC/CSTE Revision Year	2017

CASE DEFINITION

Clinical Description

Invasive disease due to *Haemophilus influenzae* may produce any of several clinical syndromes, including pneumonia, bacteremia, meningitis, epiglottitis, septic arthritis, cellulitis, or purulent pericarditis; less common infections include endocarditis and osteomyelitis.

Laboratory Criteria for Diagnosis

Confirmatory results

- Isolation of *H. influenzae* from a normally sterile body site (e.g., cerebrospinal fluid (CSF), blood, joint fluid, pleural fluid, pericardial fluid), or
- Detection of *Haemophilus influenzae*-specific nucleic acid in a specimen obtained from a normally sterile body site, using a validated polymerase chain reaction (PCR) assay

Presumptive results

- Detection of *Haemophilus influenzae* type b antigen in CSF

Case Classification

Confirmed

A case that meets either of the confirmatory laboratory criteria for diagnosis.

Probable

Meningitis with detection of *Haemophilus influenzae* type b antigen in CSF.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

When two or more different serotypes are identified in one or more specimens from the same individual, each should be reported as a separate case.

*Based on ADHS guidelines

Comment

Positive antigen test results in urine or serum are unreliable for diagnosis of *H. influenzae* disease and should not be used as a basis for case classification.

Isolates of *Haemophilus influenzae* are important for antimicrobial susceptibility testing.

See [Appendix 1](#) for guidance on interpreting whether a specimen is from a “normally sterile body site”.

CONTROL MEASURES

[Arizona Administrative Code R9-6-339](#) *Haemophilus influenzae*: Invasive Disease

Case Control Measures

1. A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall isolate and institute droplet precautions for a *Haemophilus influenzae* meningitis or epiglottitis case or suspect case for 24 hours after the initiation of treatment.
2. A local health agency shall:
 - a. Upon receiving a report under R9-6-202 or R9-6-203 of a *Haemophilus influenzae* invasive disease case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
 - b. Conduct an epidemiologic investigation of each reported *Haemophilus influenzae* invasive disease case or suspect case; and
 - c. For each *Haemophilus influenzae* invasive disease case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Contact Control Measures

A local health agency shall

1. Evaluate the level of risk of transmission from each contact's exposure to a *Haemophilus influenzae* invasive disease case and, if indicated, shall provide or arrange for each contact to receive immunization or treatment.

INVESTIGATION FORMS

See *Haemophilus influenzae* Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2015: Added detection by PCR to confirmed case definition, and probable case definition modified to specify meningitis instead of clinically compatible. Both changes match CDC/CSTE revisions.</p> <p>2013: Minor revisions to ADHS case definition to better match CDC/CSTE.</p>
Most Recent CDC/CSTE Revision Year	2015

CASE DEFINITION

Clinical Description

A chronic bacterial disease characterized by the involvement primarily of skin as well as peripheral nerves and the mucosa of the upper airway. Clinical forms of Hansen's disease represent a spectrum reflecting the cellular immune response to *Mycobacterium leprae*. The following characteristics are typical of the major forms of the disease, though these classifications are assigned after a case has been laboratory confirmed.

- *Tuberculoid*: One or a few well-demarcated, hypopigmented, and hypoesthetic or anesthetic skin lesions, frequently with active, spreading edges and a clearing center: peripheral nerve swelling or thickening may also occur.
- *Lepromatous*: A number of erythematous papules and nodules or an infiltration of the face, hands, and feet with lesions in a bilateral and symmetrical distribution that progress to thickening of the skin.
- *Borderline (dimorphous)*: Skin lesions characteristic of both the tuberculoid and lepromatous forms.
- *Indeterminate*: Early lesions, usually hypopigmented macules without developed tuberculoid or lepromatous features but with definite identification of acid-fast bacilli in Fite stained sections

Laboratory Criteria for Diagnosis

- Demonstration of acid-fast bacilli in skin or dermal nerve from a biopsy of skin lesion using Fite stain, without growth of mycobacteria on conventional media (if done), OR
- Identification of noncaseating granulomas with peripheral nerve involvement, without growth of mycobacteria on conventional media (if done).

Case Classification

Confirmed

A clinically compatible illness with confirmatory laboratory results.

Criteria to Distinguish a New Case from an Existing Case*

A case should never be counted as a new case if there was a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-340](#) Hansen's Disease (Leprosy)

Case Control Measures:

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported Hansen's disease case or suspect case; and

2. For each Hansen’s disease case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Contact Control Measures:

In consultation with the Department, a local health agency shall

1. Examine contacts of a Hansen’s disease case, if indicated, for signs and symptoms of leprosy at six-to-twelve month intervals for five years after the last exposure to an infectious case.

INVESTIGATION FORMS

See Hansen’s Disease (Leprosy) Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2013: ADHS case definition was updated to match the new 2013 CDC/CSTE case definition.
Most Recent CDC/CSTE Revision Year	2013

CASE DEFINITION**Clinical Description**

Hantavirus pulmonary syndrome (HPS), commonly referred to as hantavirus disease, is a febrile illness characterized by bilateral interstitial pulmonary infiltrates and respiratory compromise usually requiring supplemental oxygen and clinically resembling acute respiratory disease syndrome (ARDS). The typical prodrome consists of fever, chills, myalgia, headache, and gastrointestinal symptoms. Typical clinical laboratory findings include hemoconcentration, left shift in the white blood cell count, neutrophilic leukocytosis, thrombocytopenia, and circulating immunoblasts. While progression to cardiopulmonary symptoms consistent with HPS occurs in most patients, some patients with confirmed infection may show signs of only the prodrome (Hantavirus infection, non-Hantavirus pulmonary syndrome).

Clinical Case Definition**Hantavirus Pulmonary Syndrome (HPS)**

Hantavirus Pulmonary Syndrome (HPS) is an acute febrile illness (i.e., temperature greater than 101.0 F [greater than 38.3 C]) with a prodrome consisting of fever, chills, myalgia, headache, and gastrointestinal symptoms, and one or more of the following clinical features:

- Bilateral diffuse interstitial edema, or
- Clinical diagnosis of acute respiratory distress syndrome (ARDS), or
- Radiographic evidence of noncardiogenic pulmonary edema, or
- An unexplained respiratory illness resulting in death, and includes an autopsy examination demonstrating noncardiogenic pulmonary edema without an identifiable cause, or
- Healthcare record with a diagnosis of hantavirus pulmonary syndrome, or
- Death certificate lists hantavirus pulmonary syndrome as a cause of death or a significant condition contributing to death

Hantavirus infection, non-Hantavirus pulmonary syndrome (non-HPS)

Non-HPS Hantavirus infection is a febrile illness with non-specific viral symptoms including fever, chills, myalgia, headache, and gastrointestinal symptoms, but no cardio-pulmonary symptoms. Typical clinical laboratory findings include hemoconcentration, left shift in the white blood cell count, neutrophilic leukocytosis, thrombocytopenia, and circulating immunoblasts.

Laboratory Criteria for Diagnosis

- Detection of hantavirus-specific immunoglobulin M or rising titers of hantavirus-specific immunoglobulin G, OR
- Detection of hantavirus-specific ribonucleic acid sequence by polymerase chain reaction in clinical specimens, OR
- Detection of hantavirus antigen by immunohistochemistry in lung biopsy or autopsy tissues

Case Classification

Confirmed

Hantavirus Pulmonary Syndrome: A clinically compatible case of HPS that is laboratory confirmed

Hantavirus infection, non-HPS: A clinically compatible case of Non-HPS Hantavirus infection that is laboratory confirmed.

Comment

Laboratory testing should be performed or confirmed at a reference laboratory such as the Arizona State Public Health Laboratory or Centers for Disease Control and Prevention. Because the clinical illness is nonspecific and ARDS is common, a screening case definition can be used to determine which patients to test. In general, a predisposing medical condition (e.g., chronic pulmonary disease, malignancy, trauma, burn, and surgery) is a more likely cause of ARDS than HPS, and patients who have these underlying conditions and ARDS need not be tested for hantavirus.

CONTROL MEASURES

[Arizona Administrative Code R9-6-341](#) Hantavirus Infection

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a hantavirus infection case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Ensure that a hantavirus infection case or, if the case is a child or incapacitated adult, the parent or guardian of the case receives health education about reducing the risks of becoming reinfected with or of having others become infected with hantavirus;
3. Conduct an epidemiologic investigation of each reported hantavirus infection case or suspect case; and
4. For each hantavirus infection case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Environmental Control Measures

A local health agency shall:

1. Conduct an environmental assessment for each hantavirus infection case or suspect case.

INVESTIGATION FORMS

See Hantavirus Case Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2015: Non-HPS hantaviral infections have been added as a subcategory of

	<p>hantavirus infections. The clinical case definition has been adjusted so that all febrile, laboratory-confirmed hantaviral infections are counted as cases, regardless of the presence or absence of pulmonary symptoms.</p>
<p>Most Recent CDC/CSTE Revision Year</p>	<p>2015</p>

CASE DEFINITION

Clinical Description

Hemolytic uremic syndrome (HUS) is characterized by the acute onset of microangiopathic hemolytic anemia, renal injury, and low platelet count. Thrombotic thrombocytopenic purpura (TTP) also is characterized by these features but can include central nervous system (CNS) involvement and fever and may have a more gradual onset. Most cases of HUS (but few cases of TTP) occur after an acute gastrointestinal illness (usually diarrheal).

Laboratory Criteria for Diagnosis

The following are both present at some time during the illness:

- Anemia (acute onset) with microangiopathic changes (i.e., schistocytes, burr cells, or helmet cells) on peripheral blood smear, and
- Renal injury (acute onset) evidenced by either hematuria, proteinuria, or elevated creatinine level (i.e., greater than or equal to 1.0 mg/dL in a child aged less than 13 years or greater than or equal to 1.5 mg/dL in a person aged greater than or equal to 13 years, or greater than or equal to 50% increase over baseline)

Note: A low platelet count can usually, but not always, be detected early in the illness, but it may then become normal or even high. If a platelet count obtained within 7 days after onset of the acute gastrointestinal illness is not less than 150,000/mm³, other diagnoses should be considered.

Case Classification

Confirmed

An acute illness diagnosed as HUS or TTP that both meets the laboratory criteria and began within 3 weeks after onset of an episode of acute or bloody diarrhea

Probable

- An acute illness diagnosed as HUS or TTP that meets the laboratory criteria in a patient who does not have a clear history of acute or bloody diarrhea in preceding 3 weeks, OR
- An acute illness diagnosed as HUS or TTP, that has onset within 3 weeks after onset of an acute or bloody diarrhea AND meets the laboratory criteria except that microangiopathic changes are not confirmed

Comment

Some investigators consider HUS and TTP to be part of a continuum of disease. Therefore, criteria for diagnosing TTP on the basis of CNS involvement and fever are not provided because cases diagnosed clinically as post-diarrheal TTP also should meet the criteria for HUS. These cases are reported as post-diarrheal HUS. If a patient meets the case definition for both Shiga toxin-producing *E. coli* (STEC) and HUS, the case should be reported for each of the conditions.

CONTROL MEASURES

[Arizona Administrative Code R9-6-342](#) Hemolytic Uremic Syndrome

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a hemolytic uremic syndrome case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported hemolytic uremic syndrome case or suspect case; and
3. For each hemolytic uremic syndrome case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Contact Control Measures

A local health agency shall

1. Exclude a hemolytic uremic syndrome contact with diarrhea of unknown cause from working as a food handler until diarrhea has resolved.

INVESTIGATION FORMS

See Enterohemorrhagic E.coli (Shiga-toxin producing) and/or HUS Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2013: Statement added about reporting a case as both STEC and HUS, when appropriate, in accordance with CDC/CSTE case definition.
Most Recent CDC/CSTE Revision Year	2010

HEPATITIS A

PROVIDERS REPORT WITHIN 24 HOURS IF AN OUTBREAK IS DETECTED OR PERSON HAS A HIGH-RISK OCCUPATION

PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY FOR ALL OTHER CASES

CASE DEFINITION

Clinical Description

An acute illness with a discrete onset of any sign or symptom consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, abdominal pain, or dark urine),

AND

- a) jaundice or elevated bilirubin levels (total bilirubin levels >3.0 mg/dL), OR
- b) elevated serum alanine aminotransferase (ALT) levels (>200 IU/L)

AND

- c) the absence of a more likely diagnosis

Laboratory Criteria for Diagnosis

Confirmatory Laboratory Evidence

- Immunoglobulin M (IgM) antibody to hepatitis A virus (anti-HAV) positive, OR
- Nucleic acid amplification test (NAAT; such as PCR or genotyping) for hepatitis A virus RNA positive

Epidemiologic Linkage

Contact (e.g., household or sexual) with a laboratory-confirmed hepatitis A case 15-50 days prior to onset of symptoms.

Case Classification

Confirmed

- A case that meets the clinical description and is IgM anti-HAV positive*, OR
- A case that has hepatitis A virus RNA detected by NAAT (such as PCR or genotyping), OR
- A case that meets the clinical description and occurs in a person with an epidemiologic linkage, as defined above.

Probable

A case that is IgM anti-HAV positive* but for which clinical illness information is unavailable. If an investigation indicates the absence of clinical illness, the case should be ruled out rather than classified as probable.

*And not otherwise ruled out by IgM anti-HAV or NAAT for hepatitis A virus testing performed in a public health laboratory.

Criteria to Distinguish a New Case from an Existing Case

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual. Although hepatitis A is usually self-limiting and does not result in chronic infection, up to 10% of persons with hepatitis A may experience a relapse during the 6 months after acute illnesses.

CONTROL MEASURES

[Arizona Administrative Code R9-6-343](#) Hepatitis A

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 or R9-6-203 of a hepatitis A case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Exclude a hepatitis A case or suspect case from working as a food handler, caring for patients or residents in a health care institution, or caring for children in or attending a child care establishment during the first 14 calendar days of illness or for seven calendar days after onset of jaundice;
3. Conduct an epidemiologic investigation of each reported hepatitis A case or suspect case; and
4. For each hepatitis A case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Contact Control Measures

A local health agency shall:

1. Exclude a hepatitis A contact with symptoms of hepatitis A from working as a food handler during the first 14 calendar days of illness or for seven calendar days after onset of jaundice;
2. For 45 calendar days after exposure, monitor a food handler who was a contact of a hepatitis A case during the infectious period for symptoms of hepatitis A; and
3. Evaluate the level of risk of transmission from each contact's exposure to a hepatitis A case and, if indicated, provide or arrange for each contact to receive prophylaxis and immunization.

INVESTIGATION FORMS

See Hepatitis A Case Report at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	No
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	2019: Nucleic acid amplification testing added to confirmatory laboratory criteria and classification. Clinical criteria modified to include bilirubin and remove AST liver function testing, and specify levels for "elevated". Changes based on modifications to CDC/CSTE definition.

	<p>Confirmed case definition matches CDC/CSTE case definition. Probable case definition is not part of the CDC/CSTE case definition (see 2013 explanation below).</p> <p>2013: A probable case classification was added to the ADHS case definition to be able to distinguish cases with confirmatory laboratory results but for which clinical information could not be obtained from those meeting both the clinical and laboratory criteria. The CSTE/CDC case definition also does not specify criteria for what constitutes "elevated" liver aminotransferase levels.</p>
<p>Most Recent CDC/CSTE Revision Year</p>	<p>2019</p>

CASE DEFINITION**Clinical Description**

An acute illness with a discrete onset of any sign or symptom* consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, and abdominal pain), and either

- a) jaundice, or
- b) elevated serum alanine aminotransferase (ALT) levels >100 IU/L.

*A documented negative hepatitis B surface antigen (HBsAg) laboratory test result within 6 months prior to a positive test (either HBsAg, hepatitis B “e” antigen (HBeAg), or hepatitis B virus nucleic acid testing (HBV NAT) including genotype) result does not require an acute clinical presentation to meet the surveillance case definition.

Laboratory Criteria for Diagnosis

- Hepatitis B surface antigen (HBsAg) positive, AND
- Immunoglobulin M (IgM) antibody to hepatitis B core antigen (HBcIgM) positive (if done)

Case Classification***Confirmed***

A case that meets the clinical case definition, is laboratory confirmed (HBsAg positive and, if done, HBcIgM positive), and is not known to have chronic hepatitis B.

Probable

A case that meets the clinical case definition, is HBcIgM positive and either HBsAg negative or unknown

Suspect

A case that is IgM positive (HBsAg can be positive, negative, or unknown) but for which clinical illness information is unavailable. If an investigation indicates the absence of clinical illness, the case should be ruled out rather than classified as suspect.

Criteria to Distinguish a New Case from an Existing Case*

A case should never be counted as a new case if there was a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

For positive hepatitis B surface antigen results that are accompanied by a negative hepatitis B surface antigen confirmation (both tests should have the same collection date), the negative confirmation result negates the original positive surface antigen result from the same date. The case should be classified using any other available test results.

CONTROL MEASURES

[Arizona Administrative Code R9-6-344](#) Hepatitis B and Hepatitis D

Case Control Measures

A local health agency shall:

1. Evaluate a health care provider identified as the source of hepatitis B virus transmission in the work place and, if indicated, ensure reassignment of the health care provider to a position where the occupational risk of transmission is eliminated;
2. Conduct an epidemiologic investigation of each reported case or suspect case of hepatitis B or hepatitis B co-infected with hepatitis D; and
3. For each acute case of hepatitis B or hepatitis B co-infected with hepatitis D or case of perinatal hepatitis B, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

The operator of a blood bank, blood center, or plasma center shall notify a donor of a test result with significant evidence suggestive of hepatitis B, as required under A.R.S. § 32-1483 and 21 CFR 630.6.

Contact Control Measures

A local health agency shall:

1. Refer each non-immune hepatitis B contact to a health care provider for prophylaxis and initiation of the hepatitis B vaccine series, and
2. Provide health education related to the progression of hepatitis B disease and the prevention of transmission of hepatitis B infection to each non-immune hepatitis B contact.

INVESTIGATION FORMS

See Hepatitis B and D Investigation Form <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	No
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2016: Clarification added about confirmatory HBsAg test results from the same specimen.</p> <p>The CDC/CSTE case definition was changed in 2012, and the ADHS confirmed case definition was changed to match. CDC/CSTE does not have probable or suspect case definitions for acute hepatitis B, but we feel it is important to monitor symptomatic persons with HBcIgM positive results or for whom symptoms cannot be identified. The current suspect definition was considered</p>

	probable before 2013.
Most Recent CDC/CSTE Revision Year	2012

CASE DEFINITION

Clinical Description

Persons with chronic HBV infection may have no evidence of liver disease or may have a spectrum of disease ranging from chronic hepatitis to cirrhosis or liver cancer. Persons with chronic infection may be asymptomatic.

Laboratory Criteria for Diagnosis

- IgM anti-HBc negative AND a positive result on one of the following tests: hepatitis B surface antigen (HBsAg), hepatitis B e antigen (HBeAg), or nucleic acid test for hepatitis B virus DNA (HBV DNA, including qualitative, quantitative and genotype testing), OR
- HBsAg positive or HBV DNA positive or HBeAg positive two times at least 6 months apart (any combination of these tests performed 6 months apart is acceptable.)

Case Classification

Confirmed

A case that meets either of the above laboratory criteria for diagnosis

Probable

A case with a single HBsAg positive or HBV DNA positive or HBeAg positive lab result that does not meet the case definition for acute hepatitis B (either does not have symptoms or symptoms are unknown)

Criteria to Distinguish a New Case from an Existing Case*

A case should never be counted as a new case if there was a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

Multiple laboratory tests indicative of chronic HBV infection may be performed simultaneously on the same patient specimen as part of a “hepatitis panel”. Testing performed in this manner may lead to seemingly discordant results, e.g. HBsAg-negative AND HBV DNA-positive. For the purposes of this case definition, any positive result among the three laboratory tests mentioned above is acceptable, regardless of other testing results. Negative HBeAg results and HBV DNA levels below positive cutoff level cannot rule out HBV infection.

For positive hepatitis B surface antigen results that are accompanied by a negative hepatitis B surface antigen confirmation (both tests should have the same collection date), the negative confirmation result negates the original positive surface antigen result from the same date. The case should be classified using any other available test results.

In the United States, an estimated 1.25 million persons have chronic hepatitis B virus (HBV) infection. Fifteen to 25% of these persons will develop the complications of cirrhosis or hepatocellular carcinoma. In addition, chronically infected persons are a major reservoir of transmission to others. Persons who

test positive for the presence of hepatitis B surface antigen (HBsAg), HBeAg or HBV DNA are potentially infectious to contacts.

CONTROL MEASURES

[Arizona Administrative Code R9-6-344](#) Hepatitis B and Hepatitis D

Case Control Measures

A local health agency shall:

1. Evaluate a health care provider identified as the source of hepatitis B virus transmission in the work place and, if indicated, ensure reassignment of the health care provider to a position where the occupational risk of transmission is eliminated;
2. Conduct an epidemiologic investigation of each reported case or suspect case of hepatitis B or hepatitis B co-infected with hepatitis D; and
3. For each acute case of hepatitis B or hepatitis B co-infected with hepatitis D or case of perinatal hepatitis B, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

The operator of a blood bank, blood center, or plasma center shall notify a donor of a test result with significant evidence suggestive of hepatitis B, as required under A.R.S. § 32-1483 and 21 CFR 630.6.

Contact Control Measures

A local health agency shall:

1. Refer each non-immune hepatitis B contact to a health care provider for prophylaxis and initiation of the hepatitis B vaccine series, and
2. Provide health education related to the progression of hepatitis B disease and the prevention of transmission of hepatitis B infection to each non-immune hepatitis B contact.

INVESTIGATION FORMS

See Hepatitis B and D Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes (except ADHS-added clarification about confirmatory HBsAg testing)
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2016: Clarification added about confirmatory HBsAg test results from the same specimen.
Most Recent CDC/CSTE Revision Year	2012

HEPATITIS B, PERINATAL

Acquired in the United States or U.S. Territories

PROVIDERS AND LABORATORIES SUBMIT A REPORT
WITHIN 5 WORKING DAYS

CASE DEFINITION

Clinical Description

Perinatal hepatitis B in a child ≤ 24 months of age may range from asymptomatic to fulminant hepatitis.

Laboratory Criteria for Diagnosis

Laboratory evidence of HBV infection in a child consists of one or more of the following:

- positive HBsAg test (only if at least 4 weeks after last dose of hepatitis B vaccine)
- positive HBeAg test, OR
- detectable HBV DNA.

Case Classification

Confirmed

Child born in the U.S. to a HBV-infected mother and:

- positive for HBsAg at ≥ 1 month of age and ≤ 24 months of age, OR
- positive for HBeAg or HBV DNA ≥ 9 months of age and ≤ 24 months of age.

Probable

Child born in the U.S. whose mother's hepatitis B status is unknown, and with the following test results for the child:

- positive for HBsAg at ≥ 1 month of age and ≤ 24 months of age, OR
- positive for HBeAg or HBV DNA ≥ 9 months of age and ≤ 24 months of age.

Criteria to Distinguish a New Case from an Existing Case*

A case should never be counted as a new case if there was a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

Infants born to HBsAg-positive mothers should receive hepatitis B immune globulin (HBIG) and the first dose of hepatitis B vaccine within 12 hours of birth, followed by the second and third doses of hepatitis B vaccine at 1 and 6 months of age, respectively. Post-vaccination testing for HBsAg and antibody to HBsAg is recommended 1 to 2 months following completion of the vaccine series, but not earlier than 9 months of age.

If mother known to *not* be infected with HBV, refer to the case definition for acute Hepatitis B.

CONTROL MEASURES

[Arizona Administrative Code R9-6-344](#) Hepatitis B and Hepatitis D

Case Control Measures

A local health agency shall:

1. Evaluate a health care provider identified as the source of hepatitis B virus transmission in the work place and, if indicated, ensure reassignment of the health care provider to a position where the occupational risk of transmission is eliminated;
2. Conduct an epidemiologic investigation of each reported case or suspect case of hepatitis B or hepatitis B co-infected with hepatitis D; and
3. For each acute case of hepatitis B or hepatitis B co-infected with hepatitis D or case of perinatal hepatitis B, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

The operator of a blood bank, blood center, or plasma center shall notify a donor of a test result with significant evidence suggestive of hepatitis B, as required under A.R.S. § 32-1483 and 21 CFR 630.6.

Contact Control Measures

A local health agency shall:

1. Refer each non-immune hepatitis B contact to a health care provider for prophylaxis and initiation of the hepatitis B vaccine series, and
2. Provide health education related to the progression of hepatitis B disease and the prevention of transmission of hepatitis B infection to each non-immune hepatitis B contact.

INVESTIGATION FORMS

None. Contact the perinatal hepatitis B coordinator for information to be collected.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2017: Laboratory criteria updated to include HBeAg and HBV DNA. Probable definition added for classification of children for whom the mother’s hepatitis B status is unknown. Changes were match to match changes to the CDC/CSTE case definition.
Most Recent CDC/CSTE Revision Year	2017

CASE DEFINITION**Clinical Description**

An acute illness with a discrete onset of any sign or symptom* consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, abdominal pain, nausea, vomiting, or diarrhea), and either a) jaundice, or b) serum alanine aminotransferase (ALT) levels >200 IU/L.

*A documented negative HCV antibody laboratory test result followed within 12 months by a positive test (as described in the laboratory criteria for diagnosis) result does not require an acute clinical presentation to meet the surveillance case definition.

Laboratory Criteria for Diagnosis

- A positive test for antibodies to hepatitis C virus (anti-HCV) OR
- Hepatitis C virus detection test:
 - A positive test indicating presence of hepatitis C viral antigen(s) (HCV antigen) #
OR
 - Nucleic Acid Test (NAT) for HCV RNA positive (including qualitative, quantitative or genotype testing)

When and if a test for HCV antigen(s) is approved by FDA and available.

Case Classification***Confirmed***

- A case that meets clinical criteria and has a positive hepatitis C virus detection test (HCV NAT or HCV antigen),
- OR
- A documented negative HCV antibody, HCV antigen or NAT laboratory test result followed within 12 months by a positive result of any of these tests (test conversion).

Probable

- A case that meets clinical criteria and has a positive anti-HCV antibody test, but has no reports of a positive HCV NAT or positive HCV antigen tests,
- AND
- Does not have test conversion within 12 months or has no report of test conversion.

Criteria to Distinguish a New Case from an Existing Case

A new acute case is an incident acute hepatitis C case that meets the case criteria for acute hepatitis C and has not previously been reported. A new probable acute case may be re-classified as confirmed acute case if a positive NAT for HCV RNA or a positive HCV antigen(s) test is reported within the same year. A confirmed acute case may be classified as a confirmed chronic case if a positive NAT for HCV RNA or a positive HCV antigen is reported one year or longer after acute case onset. A confirmed

acute case may not be reported as a probable chronic case (i.e., HCV antibody positive, but with an unknown HCV RNA NAT or antigen status).

Comment

Available serologic tests for anti-HCV do not distinguish between acute and chronic or past infection. Thus, other causes of acute hepatitis should be excluded for anti-HCV positive patients who have an acute illness compatible with viral hepatitis.

CONTROL MEASURES

[Arizona Administrative Code R9-6-345](#) Hepatitis C

Case Control Measures:

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported hepatitis C outbreak;
2. For each hepatitis C outbreak, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(E);
3. Evaluate a health care provider identified as the source of hepatitis C virus transmission in the work place and, if indicated, ensure reassignment of the health care provider to a position where the occupational risk of transmission is eliminated; and
4. Ensure that health education related to the progression of hepatitis C disease and the prevention of transmission of hepatitis C infection is provided to each individual who may have been exposed to hepatitis C during the outbreak.

INVESTIGATION FORMS

See Acute Hepatitis C Case Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2016: ADHS case definition updated to match CDC/CSTE definition. Changes include: decreased ALT levels; updates to the laboratory criteria; confirmation based on known, recent seroconversion; and the addition of a probable case classification.</p> <p>2013: ADHS case definition updated to match CDC/CSTE definition.</p>
Most Recent CDC/CSTE Revision Year	2016

CASE DEFINITION

Clinical Description

No available evidence of clinical and relevant laboratory information indicative of acute infection. Most HCV-infected persons are asymptomatic. However, many have chronic liver disease, which can range from mild to severe.

Laboratory Criteria for Diagnosis

- A positive test indicating presence of hepatitis C viral antigen(s) (HCV antigen)* OR
- Nucleic acid test (NAT) for HCV RNA positive (including qualitative, quantitative, or genotype testing); OR
- A positive test for antibodies to hepatitis C virus (anti-HCV)

* When and if a test for HCV antigen(s) is approved by FDA and available.

Case Classification

Confirmed

- A case that does not meet clinical criteria for acute infection or has no report of clinical criteria,
AND
- Does not have test conversion within 12 months or has no report of test conversion,
AND
- Has a positive HCV NAT or HCV antigen test

Probable

- A case that does not meet clinical criteria for acute infection or has no report of clinical criteria,
AND
- Does not have test conversion within 12 months or has no report of test conversion,
AND
- Has a positive anti-HCV antibody test, but no report of a positive HCV NAT or positive HCV antigen test.

Criteria to Distinguish a New Case from an Existing Case

A new chronic case is an incident chronic hepatitis C case that meets the case criteria for chronic hepatitis C and has not previously been reported. A confirmed acute case may not be reported as a probable chronic case (i.e., HCV antibody positive, but with an unknown HCV RNA NAT or antigen status).

Comment¹

Only 20-30% of acutely infected persons are symptomatic. Regardless of whether symptoms are present, the majority of persons who are infected with HCV become chronically infected (75-85%). Chronic liver disease develops in most (60-70%) of those infected, including cirrhosis and

hepatocellular carcinoma. Persons with chronic HCV infection are a major reservoir for transmission of HCV infections. Most people do not know that they are infected. It is essential that infected persons are counseled regarding ways to prevent transmission of HCV to others, to get vaccinated against hepatitis A and B, and to avoid hepatotoxic substances, especially alcohol, which may worsen the course of liver disease. Infected persons need to be evaluated for the presence of liver disease and referred for treatment if indicated. The 15-25% of acutely infected persons who clear the virus and persons who clear the virus due to treatment may show evidence of past infection by testing positive for antibodies to HCV (EIA or rapid test) even if they are not chronically infected.

¹Statistics are from <http://www.cdc.gov/hepatitis/hcv/hcvfaq.htm> (accessed January 2016).

CONTROL MEASURES

[Arizona Administrative Code R9-6-345](#) Hepatitis C

Case Control Measures:

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported hepatitis C outbreak;
2. For each hepatitis C outbreak, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(E);
3. Evaluate a health care provider identified as the source of hepatitis C virus transmission in the work place and, if indicated, ensure reassignment of the health care provider to a position where the occupational risk of transmission is eliminated; and
4. Ensure that health education related to the progression of hepatitis C disease and the prevention of transmission of hepatitis C infection is provided to each individual who may have been exposed to hepatitis C during the outbreak.

INVESTIGATION FORMS

See Chronic Hepatitis C Case Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2016: ADHS case definition updated to match CDC/CSTE definition. Renamed from "Hepatitis C, past or present". Changes include: updates to the laboratory criteria, and changes to both confirmed and probable classifications.</p> <p>2013: ADHS definition was edited to match CDC/CSTE by removing an outdated laboratory criterion for diagnosis</p>
Most Recent CDC/CSTE Revision Year	2016

CASE DEFINITION

Clinical Description

Test results prior to 2 months of age should not be used for classification. Cases in the specified age range (2 to 36 months of age) that are known to have been exposed to HCV via healthcare or another mechanism other than perinatally should be classified according to the acute or chronic hepatitis C infection case definitions. Test results after 36 months of age should also be classified as acute or chronic hepatitis C infection case definitions and not as perinatal hepatitis C infection.

Clinical Criteria

Perinatal hepatitis C in pediatric patients may range from asymptomatic to fulminant hepatitis.

Laboratory Criteria

- HCV RNA positive test results for infants between 2 to 36 months of age; OR
- HCV genotype test results for infants between 2 to 36 months of age or greater; OR
- HCV antigen test results for infants between 2 to 36 months of age or greater

Epidemiologic Linkage

Maternal infection with HCV of any duration, if known. Not known to have been exposed to HCV via a mechanism other than perinatal (e.g. not acquired via healthcare).

Case Classification

Confirmed

Infant who has a positive test for HCV RNA (NAAT), HCV antigen, or detectable HCV genotype at ≥ 2 months and ≤ 36 months of age and is not known to have been exposed to HCV via a mechanism other than perinatal.

Criteria to Distinguish a New Case from an Existing Case*

A case should never be counted as a new case if there was a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-345](#) Hepatitis C

Case Control Measures:

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported hepatitis C outbreak;
2. For each hepatitis C outbreak, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(E);

3. Evaluate a health care provider identified as the source of hepatitis C virus transmission in the work place and, if indicated, ensure reassignment of the health care provider to a position where the occupational risk of transmission is eliminated; and
4. Ensure that health education related to the progression of hepatitis C disease and the prevention of transmission of hepatitis C infection is provided to each individual who may have been exposed to hepatitis C during the outbreak.

INVESTIGATION FORMS

See Chronic Hepatitis C Case Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	N/A
Justification	2018: New CDC/CSTE case definition.
Most Recent CDC/CSTE Revision Year	2018

CASE DEFINITION

Clinical Description

An acute illness with a discrete onset of symptoms and jaundice or elevated serum aminotransferase levels (alanine aminotransferase or aspartate aminotransferase) levels (greater than 2.5 times the upper limit of normal).

Laboratory Criteria for Diagnosis

- HBsAg-positive or IgM anti-HBc positive, and
- Positive for antibody to hepatitis delta virus

Case Classification

Confirmed

A case that meets the clinical case definition and is laboratory confirmed

Criteria to Distinguish a New Case from an Existing Case*

A case should never be counted as a new case if there was a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-344](#) Hepatitis B and Hepatitis D

Case Control Measures

A local health agency shall:

1. Evaluate a health care provider identified as the source of hepatitis B virus transmission in the work place and, if indicated, ensure reassignment of the health care provider to a position where the occupational risk of transmission is eliminated;
2. Conduct an epidemiologic investigation of each reported case or suspect case of hepatitis B or hepatitis B co-infected with hepatitis D; and
3. For each acute case of hepatitis B or hepatitis B co-infected with hepatitis D or case of perinatal hepatitis B, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

The operator of a blood bank, blood center, or plasma center shall notify a donor of a test result with significant evidence suggestive of hepatitis B, as required under A.R.S. § 32-1483 and 21 CFR 630.6.

Contact Control Measures

A local health agency shall:

1. Refer each non-immune hepatitis B contact to a health care provider for prophylaxis and initiation of the hepatitis B vaccine series, and
2. Provide health education related to the progression of hepatitis B disease and the prevention of transmission of hepatitis B infection to each non-immune hepatitis B contact.

INVESTIGATION FORMS

See Hepatitis B and D Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

HEPATITIS E

PROVIDERS REPORT WITHIN 24 HOURS IF AN OUTBREAK IS DETECTED OR PERSON HAS A HIGH-RISK OCCUPATION

PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 DAYS FOR ALL OTHER CASES

CASE DEFINITION

Clinical Description

An acute illness with a discrete onset of symptoms and jaundice or elevated serum aminotransferase levels (alanine aminotransferase or aspartate aminotransferase) levels (greater than 2.5 times the upper limit of normal).

Laboratory Criteria for Diagnosis

Confirmatory Testing

Presence of either of the following criteria in CDC-conducted testing:

- IgM or IgG to hepatitis E virus, OR
- Detection of hepatitis E virus by nucleic acid testing in a clinical specimen

Presumptive Testing

Presence of IgM to hepatitis E virus in non-CDC-conducted testing.

Case Classification

Confirmed

A case that meets the clinical case definition and is laboratory confirmed or, a case that meets the clinical case definition and occurs in a person who has an epidemiologic link with a person who has laboratory-confirmed hepatitis E (i.e., household or sexual contact with an infected person during the 15-50 days before the onset of symptoms).

Probable

A case that meets the clinical case definition and meets the presumptive laboratory criteria, with:

- History of international travel or residence during the incubation period prior to illness onset (15-50 days) OR another highly suspect risk factor for hepatitis E
- The absence of confirmatory diagnosis of any other acute viral hepatitis.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-346](#) Hepatitis E

Case Control Measures

A local health agency shall:

1. Exclude a hepatitis E case or suspect case from working as a food handler, caring for patients or residents in a health care institution, or caring for children in or attending a child care establishment during the first 14 calendar days of illness or for seven calendar days after onset of jaundice;
2. Conduct an epidemiologic investigation of each reported hepatitis E case or suspect case; and
3. For each hepatitis E case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Hepatitis E Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justifications	2014: Confirmatory and supportive laboratory criteria were modified; Probable case definition was added; modifications were made to capture cases for which no clinical specimen is available for testing at CDC, but risk factors and clinical symptoms are compatible with acute HEV infection.
Most Recent CDC/CSTE Revision Year	N/A

CASE DEFINITION

2008 Surveillance Case Definition for HIV Infection Among Adults and Adolescents

The 2008 HIV infection case definition for adults and adolescents (aged >13 years) replaces the HIV infection and AIDS case definitions and the HIV infection classification system (1--3, 5). The case definition is intended for public health surveillance only and not as a guide for clinical diagnosis. The definition applies to all HIV variants (e.g., HIV-1 or HIV-2) and excludes confirmation of HIV infection through diagnosis of AIDS-defining conditions alone. For surveillance purposes, a reportable case of HIV infection among adults and adolescents aged >13 years is categorized by increasing severity as stage 0, stage 1, stage 2, or stage 3 (AIDS) or as stage unknown (Table).

Laboratory Criteria

- Positive result from an HIV antibody screening test (e.g., reactive enzyme immunoassay [EIA]*) confirmed by a positive result from a supplemental HIV antibody test (e.g., Western blot or indirect immunofluorescence assay test); OR
- Positive result or report of a detectable quantity (i.e., within the established limits of the laboratory test) from any of the following HIV virologic (i.e., non-antibody) tests†:
 - HIV nucleic acid (DNA or RNA) detection test (e.g., polymerase chain reaction [PCR])
 - HIV p24 antigen test, including neutralization assay
 - HIV isolation (viral culture)

Other Criterion (for Cases that Do Not Meet Laboratory Criteria)

HIV infection diagnosed by a physician or qualified medical-care provider§ based on the laboratory criteria and documented in a medical record. Oral reports of prior laboratory test results are not acceptable.

Case Classification

Confirmed

A confirmed case meets the laboratory criteria for diagnosis of HIV infection and one of the four HIV infection stages (stage 0, stage 1, stage 2, stage 3, or stage unknown) (Table). Although cases with no information on CD4+ T-lymphocyte count or percentage and no information on AIDS-defining conditions can be classified as stage unknown, every effort should be made to report CD4+ T-lymphocyte counts or percentages and the presence of AIDS-defining conditions at the time of diagnosis. Additional CD4+ T-lymphocyte counts or percentages and any identified AIDS-defining conditions can be reported as recommended (6).

HIV Infection, Stage 0

The criteria for stage 0 consist of a sequence of discordant test results indicative of early HIV infection in which a negative or indeterminate result was within 180 days of a positive result. The criteria for stage 0 supersede and are independent of the criteria used for other stages.

Stage 0 can be established either:

- Based on testing history (previous negative/indeterminate test results): a negative or indeterminate HIV test (antibody, combination antigen/antibody, or nucleic acid test) result within 180 days before the first confirmed positive HIV test result of any type. The first positive test result could be any time before the positive supplemental test result that confirms it; OR
- Based on a testing algorithm: a sequence of tests performed as part of a laboratory testing algorithm that demonstrate the presence of HIV-specific viral markers such as p24 antigen or nucleic acid (RNA or DNA) 0–180 days before or after an antibody test that had a negative or indeterminate result. Examples of algorithms that would fulfill this requirement include:
 - A positive initial HIV immunoassay result (e.g., antigen/antibody or antibody only) followed by a negative or indeterminate supplemental antibody test result (e.g., HIV-1/HIV-2 antibody differentiation assay or Western blot) and a positive NAT result. All three tests are usually performed as part of the same testing algorithm but time might elapse between tests if additional specimens must be obtained for definitive supplemental testing; AND
 - A negative initial HIV immunoassay result followed by a positive NAT result that might have been done to evaluate the presence of acute HIV infection (19, 20).

Exception

A confirmed case of HIV infection is not in stage 0 if the negative or indeterminate HIV test used as the criterion for it being a recent infection was preceded >60 days by evidence of HIV infection, such as a confirmed positive HIV test result, a clinical (physician-documented) diagnosis of HIV infection for which the surveillance staff have not found sufficient laboratory evidence, a CD4+ T-lymphocyte test result indicative of stage 3 (Table), or an opportunistic illness indicative of stage 3 (Appendix).

Classifying a case as stage 0 depends on documenting negative HIV antibody test results in the specific situations described above. Negative test results from testing algorithms that have concluded that the person is not infected need not be reported to HIV surveillance programs.

Progression of Stage After Initial Diagnosis in Stage 0

Although the stage at diagnosis does not change, if >180 days have elapsed after the stage was 0 at diagnosis, the stage at the later date is classified as 1, 2, 3, or unknown, depending on CD4+ T-lymphocyte test results (Table) or whether an opportunistic illness had been diagnosed >180 days after HIV infection diagnosis.

HIV Infection, Stage 1

No AIDS-defining condition and either CD4+ T-lymphocyte count of >500 cells/ μ L or CD4+ T-lymphocyte percentage of total lymphocytes of >29.

HIV Infection, Stage 2

No AIDS-defining condition and either CD4+ T-lymphocyte count of 200--499 cells/ μ L or CD4+ T-lymphocyte percentage of total lymphocytes of 14--28.

HIV Infection, Stage 3 (AIDS)

CD4+ T-lymphocyte count of <200 cells/ μ L or CD4+ T-lymphocyte percentage of total lymphocytes of <14 or documentation of an AIDS-defining condition (Appendix A). Documentation of an AIDS-defining condition supersedes a CD4+ T-lymphocyte count of >200 cells/ μ L and a CD4+ T-lymphocyte percentage of total lymphocytes of >14. Definitive diagnostic methods for these conditions are available in Appendix C of the 1993 revised HIV classification system and the expanded AIDS case definition (2) and from the National Notifiable Diseases Surveillance System (available at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6303a1.htm?s_cid=rr6303a1_e).

HIV Infection, Stage Unknown

No information available on CD4+ T-lymphocyte count or percentage and no information available on AIDS-defining conditions. (Every effort should be made to report CD4+ T-lymphocyte counts or percentages and the presence of AIDS-defining conditions at the time of diagnosis.)

2008 Surveillance Case Definitions for HIV Infection and AIDS Among Children Aged 18 Months to <13 Years

These 2008 surveillance case definitions of HIV infection and AIDS supersede those published in 1987 (1) and 1999 (3) and apply to all variants of HIV (e.g., HIV-1 or HIV-2). They are intended for public health surveillance only and are not a guide for clinical diagnosis. The 2008 laboratory criteria for reportable HIV infection among persons aged 18 months to <13 years exclude confirmation of HIV infection through the diagnosis of AIDS-defining conditions alone. Laboratory-confirmed evidence of HIV infection is now required for all reported cases of HIV infection among children aged 18 months to <13 years (20).

Criteria for HIV Infection

Children aged 18 months to <13 years are categorized as HIV infected for surveillance purposes if at least one of laboratory criteria or the other criterion is met.

Laboratory Criteria for Diagnosis

- Positive result from a screening test for HIV antibody (e.g., reactive EIA), confirmed by a positive result from a supplemental test for HIV antibody (e.g., Western blot or indirect immunofluorescence assay); OR
- Positive result or a detectable quantity by any of the following HIV virologic (non-antibody) tests***:
 - HIV nucleic acid (DNA or RNA) detection (e.g., PCR)
 - HIV p24 antigen test, including neutralization assay
 - HIV isolation (viral culture)

Other Criterion (for Cases that Do Not Meet Laboratory Criteria)

HIV infection diagnosed by a physician or qualified medical-care provider based on the laboratory criteria and documented in a medical record. Oral reports of prior laboratory test results are not acceptable.

Criteria for AIDS

Children aged 18 months to <13 years are categorized for surveillance purposes as having AIDS if the criteria for HIV infection are met and at least one of the AIDS-defining conditions has been documented ([Appendix A](#)).

The 2008 surveillance case definition for AIDS retains the 24 clinical conditions in the AIDS surveillance case definition published in 1987 (1) and revised in 1994 (4) for children aged <13 years ([Appendix A](#)). Because the 2008 definition requires that all AIDS diagnoses have laboratory-confirmed evidence of HIV infection, the presence of any AIDS-defining condition listed in Appendix A indicates a surveillance diagnosis of AIDS. Guidance on the diagnosis of these diseases in the context of all nationally notifiable diseases is available at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6303a1.htm?s_cid=rr6303a1_e.

2008 Surveillance Case Definition for HIV Infection Among Children Aged <18 Months

The 2008 case definition of HIV infection among children aged <18 months replaces the definition published in 1999 (3) and applies to all variants of HIV (e.g., HIV-1 or HIV-2). The 2008 definition is

intended for public health surveillance only and not as a guide for clinical diagnosis. The 2008 definition takes into account new available testing technologies. Laboratory criteria for children aged <18 months at the time of diagnosis include revisions to one category: presumptively uninfected with HIV. No substantial changes have been made to the remaining three categories (definitively HIV infected, presumptively HIV infected, and definitively uninfected with HIV), and no changes have been made to the conditions listed under the AIDS criteria in the 1987 pediatric surveillance case definition for AIDS for children aged <18 months (1,3,13). Because diagnostic laboratory testing for HIV infection among children aged <18 months might be unreliable, children in this age group with perinatal HIV exposure whose illness meets the AIDS case definition on the basis of clinical criteria are considered presumptively HIV infected when the mother has laboratory-confirmed HIV infection. The definitive or presumptive exclusion of HIV infection for surveillance purposes does not mean that clinical HIV infection can be ruled out. For the purposes of calculating the exact timing of tests (e.g., when a specimen was obtained for laboratory testing) based on the surveillance case definition, 1 month corresponds to 30 days.

Criteria for Definitive or Presumptive HIV Infection

A child aged <18 months is categorized for surveillance purposes as definitively or presumptively HIV infected if born to an HIV-infected mother and if the laboratory criterion or at least one of the other criteria is met.

Laboratory Criterion for Definitive HIV Infection

A child aged <18 months is categorized for surveillance purposes as definitively HIV infected if born to an HIV-infected mother and the following laboratory criterion is met.

- Positive results on two separate specimens (not including cord blood) from one or more of the following HIV virologic (non-antibody) tests:
 - HIV nucleic acid (DNA or RNA) detection**
 - HIV p24 antigen test, including neutralization assay, for a child aged >1 month
 - HIV isolation (viral culture)

Laboratory Criterion for Presumptive HIV Infection

A child aged <18 months is categorized for surveillance purposes as presumptively HIV infected if:

1. Born to an HIV-infected mother; AND
2. The criterion for definitively HIV infected is not met; AND
3. The following laboratory criterion is met:
 - Positive results on one specimen (not including cord blood) from the listed HIV virologic tests (HIV nucleic acid detection test; HIV p24 antigen test, including neutralization assay, for a child aged >1 month; or HIV isolation [viral culture] for definitively HIV infected) and no subsequent negative results from HIV virologic or HIV antibody tests.

Other Criteria (for Cases that Do Not Meet Laboratory Criteria for Definitive or Presumptive HIV Infection)

- HIV infection diagnosed by a physician or qualified medical-care provider based on the laboratory criteria and documented in a medical record. Oral reports of prior laboratory test results are not acceptable; OR
- When test results regarding HIV infection status are not available, documentation of a condition that meets the criteria in the 1987 pediatric surveillance case definition for AIDS (1) ([Appendix A](#)).

Criteria for Uninfected with HIV, Definitive or Presumptive

A child aged <18 months born to an HIV-infected mother is categorized for surveillance purposes as either definitively or presumptively uninfected with HIV if:

1. The criteria for definitive or presumptive HIV infection are not met; AND
2. At least one of the laboratory criteria or other criteria are met^{††}:
 - a. At least two negative HIV DNA or RNA virologic tests from separate specimens, both of which were obtained at age ≥ 1 month and one of which was obtained at age ≥ 4 months; OR
 - b. At least two negative HIV antibody tests from separate specimens obtained at age ≥ 6 months; **AND**
 - c. No other laboratory or clinical evidence of HIV infection (i.e., no positive results from virologic tests [if tests were performed] and no current or previous AIDS-defining condition) ([Appendix A](#)).

Laboratory Criteria for Uninfected with HIV, Presumptive

A child aged <18 months born to an HIV-infected mother is categorized for surveillance purposes as presumptively uninfected with HIV if:

1. The criteria for definitively uninfected with HIV are not met; AND
2. At least one of the laboratory criteria are met:
 - a. Two negative RNA or DNA virologic tests, from separate specimens, both of which were obtained at age ≥ 2 weeks and one of which was obtained at age ≥ 4 weeks ^{§§}; OR
 - b. One negative RNA or a DNA virologic test from a specimen obtained at age ≥ 8 weeks; OR
 - c. One negative HIV antibody test from a specimen obtained at age ≥ 6 months; OR
 - d. One positive HIV virologic test followed by at least two negative tests from separate specimens, one of which is a virologic test from a specimen obtained at age ≥ 8 weeks or an HIV antibody test from a specimen obtained at age ≥ 6 months; **AND**
 - e. No other laboratory or clinical evidence of HIV infection (i.e., no subsequent positive results from virologic tests if tests were performed, and no AIDS-defining condition for which no other underlying condition indicative of immunosuppression exists) ([Appendix A](#)).

Other Criteria (for Cases that Do Not Meet Laboratory Criteria for Uninfected with HIV, Definitive or Presumptive)

- Determination of uninfected with HIV by a physician or qualified medical-care provider based on the laboratory criteria and who has noted the HIV diagnostic test results in the medical record. Oral reports of prior laboratory test results are not acceptable; AND

- No other laboratory or clinical evidence of HIV infection (i.e., no positive results from virologic tests [if tests were performed] and no AIDS-defining condition for which no other underlying condition indicative of immunosuppression exists) ([Appendix A](#)).

Criteria for Indeterminate HIV Infection

A child aged <18 months born to an HIV-infected mother is categorized as having perinatal exposure with an indeterminate HIV infection status if the criteria for infected with HIV and uninfected with HIV are not met.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5710a1.htm>

CONTROL MEASURES

[Arizona Administrative Code R9-6-347](#) Human Immunodeficiency Virus (HIV) Infection and Related Disease

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation, including a review of medical records, of each reported HIV-infected individual or suspect case; and
2. For each HIV-infected individual, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

The operator of a blood bank, blood center, or plasma center shall notify a donor of a test result with significant evidence suggestive of HIV infection, as required under A.R.S. § 32-1483 and 21 CFR 630.6.

The Department and a local health agency shall offer anonymous HIV-testing to an individual as specified in R9-6-1005.

Contact Control Measures

The Department or the Department's designee shall confidentially notify an individual reported to be at risk for HIV infection under A.R.S. § 36-664(l) as specified in R9-6-1006(A).

Environmental Control Measures

An employer, as defined under A.R.S. § 23-401, or health care provider shall comply with the requirements specified in A.R.S. § 23-403 and A.A.C. R20-5-602.

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes

Justification	2014: Stage 0 added to the Case Definition for HIV Infection Among Adults and Adolescents as per CSTE/CDC revision (http://www.cdc.gov/mmwr/preview/mmwrhtml/rr6303a1.htm)
Most Recent CDC/CSTE Revision Year	2014

CASE DEFINITION

Clinical Description

Influenza-like illness with a reported fever >100°F AND cough and/or sore throat, in the absence of a known cause other than influenza.

Laboratory Criteria for Diagnosis

- Isolation of influenza virus in tissue cell culture from respiratory specimens; OR
- Positive reverse-transcriptase polymerase chain reaction (RT-PCR) from respiratory specimens; OR
- Positive immunofluorescent antibody staining (direct or indirect) of respiratory specimens; OR
- Positive rapid influenza diagnostic test of respiratory specimens; OR
- Demonstration of immunohistochemical (IHC) staining for influenza viral antigens in respiratory tract tissue from autopsy specimens; OR
- Four-fold rise in influenza hemagglutination inhibition (HI) antibody titer in paired acute and convalescent sera*.

Case Classification

Confirmed

A case that meets the laboratory criteria for diagnosis.

Comment

Negative RT-PCR or culture results may be used to rule out cases identified by other testing methods (e.g., rapid diagnostic tests) at any time of year.

*Serologic testing for influenza is available in a limited number of laboratories, and should only be considered as evidence of recent infection if a four-fold rise in influenza (HI) antibody titer is demonstrated in paired sera. Single serum samples are not interpretable.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 4 months of a previously reported infection in the same individual.

When two or more different types (A, B) or subtypes (H3, H1) are identified in different specimens from the same individual, refer to the current season's [Influenza Case Classification Guide](#) (see Appendix 3).

If different flu seasons, count as separate cases.

*Based on ADHS guidelines

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	2019: Removed comment about usage of rapid diagnostic tests to align with the changes starting in Summer 2018 regarding how rapid tests are counted.
Most Recent CDC/CSTE Revision Year	N/A

INFLUENZA-ASSOCIATED MORTALITY IN A CHILD

PROVIDERS SUBMIT A REPORT WITHIN 1 WORKING DAY
LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

CASE DEFINITION**Clinical Description**

An influenza-associated death is defined for surveillance purposes as a death resulting from a clinically compatible illness that was confirmed to be influenza by an appropriate laboratory or rapid diagnostic test. There should be no period of complete recovery between the illness and death. Influenza-associated deaths in all persons aged <18 years should be reported.

A death should not be reported if:

- There is no laboratory confirmation of influenza virus infection.
- The influenza illness is followed by full recovery to baseline health status prior to death.
- The death occurs in a person 18 years or older.
- After review and consultation there is an alternative agreed upon cause of death.

Laboratory Criteria for Diagnosis

See laboratory criteria for influenza. Laboratory testing for influenza virus infection may be done on pre- or post-mortem clinical specimens.

Case Classification***Confirmed***

A death meeting the clinical case definition that is laboratory confirmed. Laboratory or rapid diagnostic test confirmation is required as part of the case definition; therefore, all reported deaths will be classified as confirmed.

Criteria to Distinguish a New Case from an Existing Case*

A case should never be counted as a new case if there was a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-348](#) Influenza-Associated Mortality in a Child

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a case or suspect case of an influenza-associated death of a child, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported case or suspect case of influenza-associated mortality in a child; and
3. For each case of influenza-associated mortality in a child, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Influenza-Associated Pediatric Deaths Case Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2004

Cases should be reported under the [emerging or exotic disease](#) requirement.

CASE DEFINITION

Clinical Description

An illness compatible with influenza virus infection (fever >100 degrees Fahrenheit, with cough and/or sore throat).

Laboratory Criteria for Diagnosis

A human case of infection with an influenza A virus subtype that is different from currently circulating human influenza H1 and H3 viruses. Novel subtypes include, but are not limited to, H2, H5, H7, and H9 subtypes. Influenza H1 and H3 subtypes originating from a non-human species or from genetic reassortment between animal and human viruses are also novel subtypes. Novel subtypes will be detected with methods available for detection of currently circulating human influenza viruses at state public health laboratories (e.g., real-time reverse transcriptase polymerase chain reaction [RT-PCR]). Confirmation that an influenza A virus represents a novel virus will be performed by CDC's influenza laboratory. Once a novel virus has been identified by CDC, confirmation may be made by public health laboratories following CDC-approved protocols for that specific virus, or by laboratories using an FDA-authorized test specific for detection of that novel influenza virus.

Epidemiologic Linkage

- The patient has had contact with one or more persons who either have or had the disease; AND
- Transmission of the agent by the usual modes of transmission is plausible.

A case may be considered epidemiologically linked to a laboratory-confirmed case if at least one case in the chain of transmission is laboratory confirmed. Laboratory testing for the purposes of case classification should use methods mutually agreed upon by CDC and the Council of State and Territorial Epidemiologists (CSTE). Currently, only viral isolation, RT-PCR, gene sequencing, or a 4-fold rise in strain-specific serum antibody titers are considered confirmatory.

Case Classification

Confirmed

A case of human infection with a novel influenza A virus confirmed by CDC's influenza laboratory or using methods agreed upon by CDC and CSTE as noted in Laboratory Criteria, above.

Probable

A case meeting the clinical criteria and epidemiologically linked to a confirmed case, but for which no confirmatory laboratory testing for influenza virus infection has been performed or test results are inconclusive for a novel influenza A virus infection.

Suspect

A case meeting the clinical criteria, pending laboratory confirmation. Any case of human infection with an influenza A virus that is different from currently circulating human influenza H1 and H3 viruses is classified as a suspected case until the confirmation process is complete.

Comment

Once a novel virus is identified by CDC, it will be nationally notifiable until CSTE in consultation with CDC determines that it is no longer necessary to report each case.

On December 13, 2006, the United States formally accepted the revision of the International Health Regulations, referred to as IHR (2005) (http://whqlibdoc.who.int/publications/2008/9789241580410_eng.pdf). The IHR (2005) are an international legal instrument that governs the roles of the World Health Organization (WHO) and its member countries in identifying and responding to and sharing information about public health emergencies of international concern (http://whqlibdoc.who.int/publications/2008/9789241580410_eng.pdf). The updated rules are designed to prevent and protect against the international spread of diseases, while minimizing interference with world travel and trade. The revised regulations add human infections with new influenza strains to the list of conditions that Member States must immediately report to WHO. An outbreak of infections with a new influenza A virus that demonstrates human-to-human transmission could signal the beginning of the next pandemic. Robust epidemiologic and laboratory surveillance systems are required for a coordinated public health response to infections with a novel influenza virus subtype. Early detection of an influenza virus with pandemic potential will permit identification of viral characteristics (e.g., genetic sequence, antiviral susceptibility, and virulence) that will affect clinical management and public health response measures. It should also facilitate development of a virus-specific vaccine and testing strategies.

All state public health laboratories have the capacity to test respiratory specimens for influenza viruses with sensitive and specific assays that can detect human and non-human influenza A viruses. They also have the capacity to subtype currently circulating human influenza A H1, H3, and avian H5 (Asian lineage) viruses. The detection or confirmation by a state public health laboratory of an influenza A virus that is unsubtypeable with standard methods (e.g., real-time RT-PCR assays for human influenza A(H3) or (H1) viruses), or a non-human influenza virus (e.g., H5) from a human specimen, could be the initial identification of a virus with pandemic potential. Prompt notification of CDC by a state epidemiologist in conjunction with the public health laboratory will permit rapid confirmation of results and reporting to WHO. In addition, it will aid prompt viral characterization, and the development of virus-specific diagnostic tests.

CONTROL MEASURES

[Arizona Administrative Code R9-6-333](#) Emerging or Exotic Disease

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of an emerging or exotic disease case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. In consultation with the Department, isolate an emerging or exotic disease case or suspect case as necessary to prevent transmission;
3. Conduct an epidemiologic investigation of each reported emerging or exotic disease case or suspect case; and
4. For each emerging or exotic disease case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Contact Control Measures

A local health agency, in consultation with the Department,

1. Shall quarantine or exclude an emerging or exotic disease contact as necessary, according to R9-6-303, to prevent transmission.

INVESTIGATION FORMS

See Novel Influenza A Case Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2013: New CDC/CSTE case definition.
Most Recent CDC/CSTE Revision Year	2013

CASE DEFINITION

Clinical Description

Legionellosis is associated with two clinically and epidemiologically distinct illnesses: Legionnaires' disease, which is characterized by fever, myalgia, cough, and clinical or radiographic pneumonia; and Pontiac fever, a milder illness without pneumonia.

Clinical compatibility for surveillance purposes for each of these illnesses is defined below:

Clinical Compatibility	Legionnaires' disease	Pontiac fever
Pneumonia (clinical or radiographic)	Yes	No
Other clinical features	<p>Fever, myalgia, and cough.</p> <p>These symptoms are typical but not required; additional symptoms (e.g., shortness of breath, headache, confusion, nausea, diarrhea) may be present.</p>	<p>A milder illness without pneumonia.</p> <p>A flu-like illness, often with fever, chills, headache, myalgia, fatigue, malaise; less often with symptoms such as cough or nausea.</p>

Laboratory Criteria for Diagnosis

Confirmatory Laboratory Evidence

- By culture: isolation of any *Legionella* organism from respiratory secretions, lung tissue, pleural fluid, or other normally sterile fluid.
- By detection of *Legionella pneumophila* serogroup 1 antigen in urine using validated reagents.
- By seroconversion: fourfold or greater rise in specific serum antibody titer to *Legionella pneumophila* serogroup 1 using validated reagents.

Supportive Laboratory Evidence

- By seroconversion: fourfold or greater rise in antibody titer to specific species or serogroups of *Legionella* other than *L. pneumophila* serogroup 1 (e.g., *L. micdadei*, *L. pneumophila* serogroup 6).
- By seroconversion: fourfold or greater rise in antibody titer to multiple species of *Legionella* using pooled antigen and validated reagents.
- By the detection of specific *Legionella* antigen or staining of the organism in respiratory secretions, lung tissue, or pleural fluid by direct fluorescent antibody (DFA) staining, immunohistochemistry (IHC), or other similar method, using validated reagents.
- By detection of *Legionella* species by a validated nucleic acid assay.

Case Classification

Confirmed

A clinically compatible case that meets at least one of the confirmatory laboratory criteria.

Suspect

A clinically compatible case that meets at least one of the supportive laboratory criteria.

Epidemiologic Classification of Travel- and Healthcare-Associated Legionellosis

Legionellosis cases of either confirmed or suspect classifications may be further assessed for associations to travel or to healthcare facility exposures. Cases meeting the criteria below are considered to be definitely or possibly associated with travel and/or healthcare exposures.

Legionellosis cases will be counted and reported based on the clinical and laboratory criteria above, regardless of the presence or absence of travel or healthcare exposures. (ADHS-added clarifications)

Travel-associated legionellosis:

- Definite: A case that has a history of spending the **entire** incubation period away from home, either in the same country of residence or abroad, in the incubation period prior to onset of illness.
 - for Legionnaires' disease of 2 to 10 days
 - for Pontiac fever of 0 to 3 days before the onset of symptoms
- Possible: A case that has a history of spending at least one night away from home, either in the same country of residence or abroad, in the incubation period prior to onset of illness.

Healthcare-associated legionellosis:

- Definite: A case with overnight (inpatient) stay at one or more healthcare facilities throughout the **entire** incubation period.
 - for Legionnaires' disease of 2 to 10 days
 - for Pontiac fever of 0 to 3 days before the onset of symptoms
- Possible: A case with overnight (inpatient) stay at one or more healthcare facilities during the incubation period but not during the entire incubation period, or that is epidemiologically linked to a healthcare facility during an outbreak investigation.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-349](#) Legionellosis (Legionnaires' Disease)

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a legionellosis case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported legionellosis case or suspect case; and
3. For each legionellosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Environmental control measures

The owner of a water, cooling, or ventilation system or equipment that is determined by the Department or a local health agency to be associated with a case of *Legionella* infection shall comply with the environmental control measures recommended by the Department or local health agency to prevent the exposure of other individuals.

INVESTIGATION FORMS

See Legionellosis Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	No
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	<p>2019: Clinical compatibility language was clarified (pneumonia is sufficient for clinical compatibility for Legionnaire's disease) and the classification table removed.</p> <p>2016: ADHS added the Epidemiological Classification section to better clarify and define healthcare- and travel-associated cases. These changes are based on a proposed 2015 CSTE position statement, which is also the source of the classification table. Although these sub-classifications differ from the CDC/CSTE definition, the overall confirmed and suspect case definitions match and are unchanged.</p>
Most Recent CDC/CSTE Revision Year	2005

CASE DEFINITION

Clinical Description

An illness characterized by fever, headache, chills, myalgia, conjunctival suffusion, and less frequently by meningitis, rash, jaundice, or renal insufficiency. Symptoms may be biphasic.

Clinical presentation includes history of fever within the past two weeks and at least two of the following clinical findings: myalgia, headache, jaundice, conjunctival suffusion without purulent discharge, or rash (i.e. maculopapular or petechial); OR at least one of the following clinical findings:

- Aseptic meningitis
- GI symptoms (e.g., abdominal pain, nausea, vomiting, diarrhea)
- Pulmonary complications (e.g., cough, breathlessness, hemoptysis)
- Cardiac arrhythmias, ECG abnormalities
- Renal insufficiency (e.g., anuria, oliguria)
- Hemorrhage (e.g., intestinal, pulmonary, hematuria, hematemesis)
- Jaundice with acute renal failure

Laboratory Criteria for Diagnosis

Diagnostic testing should be requested for patients in whom there is a high index of suspicion for leptospirosis, based either on signs and symptoms, or on occupational, recreational or vocational exposure to animals or environments contaminated with animal urine.

Confirmatory Testing

- Isolation of *Leptospira* from a clinical specimen; OR
- Fourfold or greater increase in *Leptospira* agglutination titer between acute and convalescent-phase serum specimens obtained >2 weeks apart and studied at the same laboratory; OR
- Demonstration of *Leptospira* in a clinical specimen by immunofluorescence; OR
- *Leptospira* agglutination titer of ≥ 800 by Microscopic Agglutination Test (MAT) in one or more serum specimens; OR
- Detection of pathogenic *Leptospira* DNA (e.g., by PCR) from a clinical specimen.

Presumptive Testing

- *Leptospira* agglutination titer of ≥ 200 but < 800 by Microscopic Agglutination Test (MAT) in one or more serum specimens; OR
- Demonstration of anti-*Leptospira* antibodies in a clinical specimen by indirect immunofluorescence; OR
- Demonstration of *Leptospira* in a clinical specimen by dark field microscopy; OR
- Detection of IgM antibodies against *Leptospira* in an acute phase serum specimen

Case Classification

Confirmed

A clinically compatible case that meets the confirmatory laboratory criteria.

Probable

A clinically compatible case with at least one of the following:

- Involvement in an exposure event (e.g., adventure race, triathlon, flooding) with known associated cases, OR
- Presumptive laboratory findings, but without confirmatory laboratory evidence of *Leptospira* infection.

CONTROL MEASURES

[Arizona Administrative Code R9-6-350](#) Leptospirosis

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a leptospirosis case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported leptospirosis case or suspect case; and
3. For each leptospirosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Leptospirosis Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2013: ADHS case definition was updated to match the new CDC/CSTE case definition.
Most Recent CDC/CSTE Revision Year	2013

CASE DEFINITION

Clinical Description

Invasive Listeriosis

- Systemic illness caused by *L. monocytogenes* manifests most commonly as bacteremia or central nervous system infection. Other manifestations can include pneumonia, peritonitis, endocarditis, and focal infections of joints and bones.
- Pregnancy-associated listeriosis has generally been classified as illness occurring in a pregnant woman or in an infant aged < 28 days. Listeriosis may result in pregnancy loss (fetal loss before 20 weeks gestation), intrauterine fetal demise (>20 weeks gestation), pre-term labor, or neonatal infection, while causing minimal or no systemic symptoms in the mother. Pregnancy loss and intrauterine fetal demise are considered to be maternal outcomes.
- Neonatal listeriosis commonly manifests as bacteremia, central nervous system infection, and pneumonia, and is associated with high fatality rates. Transmission of *Listeria* from mother to baby transplacentally or during delivery is almost always the source of early-onset neonatal infections (diagnosed between birth and 6 days), and the most likely source of late-onset neonatal listeriosis (diagnosed between 7–28 days).

Non-invasive Listeria Infections

Listeria infection manifesting as an isolate from a non-sterile site suggestive of a noninvasive infection; includes febrile gastroenteritis, urinary tract infection, and wound infection.

Laboratory Criteria for Diagnosis

Confirmatory Laboratory Evidence

- Isolation of *L. monocytogenes* from a specimen collected from a normally sterile site reflective of an invasive infection (e.g., blood or cerebrospinal fluid [CSF] or, less commonly, pleural, peritoneal, pericardial, hepatobiliary, or vitreous fluid; orthopedic site such as bone, bone marrow, or joint; or other sterile sites including organs such as spleen, liver, and heart, but not sources such as urine, stool, or external wounds); OR
- For maternal isolates: In the setting of pregnancy, pregnancy loss, intrauterine fetal demise, or birth, isolation of *L. monocytogenes* from products of conception (e.g., chorionic villi, placenta, fetal tissue, umbilical cord blood, amniotic fluid) collected at the time of delivery; OR
- For neonatal isolates: In the setting of live birth, isolation of *L. monocytogenes* from a non-sterile neonatal specimen (e.g., meconium, tracheal aspirate, but not products of conception) collected within 48 hours of delivery.

Presumptive Laboratory Evidence

- Detection of *L. monocytogenes* by culture-independent diagnostic test (CIDT)* in a specimen collected from a normally sterile site (e.g., blood or cerebrospinal fluid or, less commonly: pleural, peritoneal, pericardial, hepatobiliary, or vitreous fluid; orthopedic site such as bone, bone marrow, or joint; or other sterile sites including organs such as spleen, liver, and heart, but not sources such as urine, stool, or external wounds); OR

- **For maternal isolates:** In the setting of pregnancy, pregnancy loss, intrauterine fetal demise, or birth, detection of *L. monocytogenes* by CIDT* from products of conception (e.g. chorionic villi, placenta, fetal tissue, umbilical cord blood, amniotic fluid) collected at the time of delivery; OR
- **For neonatal isolates:** In the setting of live birth, detection of *L. monocytogenes* by CIDT* from a non-sterile neonatal specimen (e.g., meconium, tracheal aspirate, but not products of conception) collected within 48 hours of delivery.

Supportive Laboratory Evidence

Isolation of *L. monocytogenes* from a clinical specimen collected from a non-invasive specimen source, e.g., stool, urine, wound, other than those specified under maternal and neonatal specimens in *Confirmatory laboratory evidence*, above.

*For listeriosis, a CIDT should only include PCR or other nucleic acid amplification test (NAAT) assays. Serological tests should not be considered evidence of infection.

Epidemiologic Linkage

For probable maternal cases:

- A mother who does not meet the confirmed case criteria, BUT
- Who gave birth to a neonate who meets confirmatory or presumptive laboratory evidence for diagnosis; AND
- Neonatal specimen was collected up to 28 days of birth.

For probable neonatal cases:

- Neonate(s) who do not meet the confirmed case criteria; AND
- Whose mother meets confirmatory or presumptive laboratory evidence for diagnosis from products of conception; OR
- A clinically compatible neonate whose mother meets confirmatory or presumptive laboratory evidence for diagnosis from a normally sterile site.

Case Classification

Confirmed

A person who meets confirmatory laboratory evidence.

Probable

- A person who meets the presumptive laboratory criteria for diagnosis; OR
- A mother or neonate who meets the epidemiologic linkage but who does not have confirmatory laboratory evidence.

Suspect

A person with supportive laboratory evidence.

Criteria to Distinguish a New Case from an Existing Case*

As a rule of thumb, a case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual. However, as noted in the 2018 CSTE position statement, there is currently insufficient data available to support a routine recommendation for criteria to distinguish a new case of listeriosis from prior reports or notifications.

Duplicate or recurring reports of listeriosis in an individual should be evaluated on a case-by-case basis.

*Based on ADHS guidelines

Comment

Pregnancy loss and intrauterine fetal demise are considered maternal outcomes and would be counted as a single case in the mother. Cases in neonates and mothers should be reported separately when each meets the case definition. A case in a neonate is counted if live-born.

See [Appendix 1](#) for additional guidance on interpreting whether a specimen is from a “normally sterile body site”.

CONTROL MEASURES

[Arizona Administrative Code R9-6-351](#) Listeriosis

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a listeriosis case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported listeriosis case or suspect case;
3. For each listeriosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
4. Ensure that an isolate or a specimen, as available, from each listeriosis case is submitted to the Arizona State Laboratory.

INVESTIGATION FORMS

See the Listeriosis Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	<p>2019: Clarified classification of maternal and neonatal cases by adding epi linkages and accounting for isolation of <i>L. monocytogenes</i> from neonatal specimens or products of conception; included CIDT in the laboratory criteria (classified as probable); and accounted for <i>L. monocytogenes</i> isolated from non-sterile sites (classified as suspect). Changes based on modifications to CDC/CSTE definition.</p> <p>Mid-2019 revision: Clarified that serological testing should not be</p>

	considered CIDT, per CDC.
Most Recent CDC/CSTE Revision Year	2019

CASE DEFINITION**Clinical Presentation**

A systemic, tick-borne disease with protean manifestations, including dermatologic, rheumatologic, neurologic, and cardiac abnormalities. The best clinical marker for the disease is erythema migrans (EM), the initial skin lesion that occurs in 60%-80% of patients.

Erythema migrans (EM)

For purposes of surveillance, EM is defined as a skin lesion that typically begins as a red macule or papule and expands over a period of days to weeks to form a large round lesion, often with partial central clearing. A single primary lesion must reach greater than or equal to 5 cm in size across its largest diameter. Secondary lesions also may occur. Annular erythematous lesions occurring within several hours of a tick bite represent hypersensitivity reactions and do not qualify as EM. For most patients, the expanding EM lesion is accompanied by other acute symptoms, particularly fatigue, fever, headache, mildly stiff neck, arthralgia, or myalgia. These symptoms are typically intermittent. The diagnosis of EM must be made by a physician. Laboratory confirmation is recommended for persons with no known exposure. Local reactions to insect bites and stings are often misidentified as EM. As a result, it is important to get additional information about the lesion, including (1) general description (shape and color), (2) was it itchy, painful, or warm to-the-touch, (3) when did the lesion first appear, (4) how many days did it persist, and (5) how much it expanded.

Late Manifestations

Late manifestations occur after the acute period of illness, usually after months or years of infection. For the purposes of surveillance, late manifestations include any of the following when an alternate explanation is not found:

- Musculoskeletal system
 - Recurrent, brief attacks (weeks or months) of objective joint swelling in one or a few joints, sometimes followed by chronic arthritis in one or a few joints.
 - Manifestation not considered as criteria for diagnosis include chronic progressive arthritis not preceded by brief attacks and chronic symmetrical polyarthritis.
 - Arthralgia, myalgia, or fibromyalgia syndromes alone are not criteria for musculoskeletal involvement.
- Nervous system
 - Any of the following signs that cannot be explained by any other etiology, alone or in combination: lymphocytic meningitis; cranial neuritis, particularly facial palsy (may be bilateral); radiculoneuropathy; or, rarely, encephalomyelitis.
 - Headaches, fatigue, paresthesia, or mild stiff necks alone are not criteria for neurologic involvement.
- Cardiovascular system
 - Acute onset of high-grade (2nd degree or 3rd degree) atrioventricular conduction defects that resolve in days to weeks and are sometimes associated with myocarditis.

- Palpitations, bradycardia, bundle branch block, or myocarditis alone are not criteria for cardiovascular involvement.

Laboratory Criteria for Diagnosis

For the purposes of surveillance, the laboratory evidence includes:

- A positive culture for *Borrelia burgdorferi*; OR
- A positive two-tier test, defined as a positive or equivocal enzyme immunoassay (EIA) or immunofluorescence assay (IFA) followed by a positive IgM or IgG western immunoblot (WB) for Lyme disease
 - IgM WB is considered positive when at least two of the following three bands are present: 24kDa (OspC)*, 39 kDa (BmpA), and 41 kDa (Fla).
 - Disregard IgM results for specimens collected >30 days after symptom onset.
- A positive single-tier IgG WB test for Lyme disease
 - IgG WB is considered positive when at least five of the following 10 bands are present: 18 kDa, 24 kDa (OspC)*, 28 kDa, 30 kDa, 39 kDa (BmpA), 41 kDa (Fla), 45 kDa, 58 kDa (not GroEL), 66 kDa, and 93 kDa.

*Depending upon the assay, OspC could be indicated by a band of 21, 22, 23, 24, or 25 kDa.

Exposure

Exposure is defined as having been (\leq 30 days before onset of EM) in wooded, brushy, or grassy areas (i.e., potential tick habitats) of Lyme disease vectors. Since infected ticks are not uniformly distributed, a detailed travel history to verify whether exposure occurred in a high or low incidence state is needed. An exposure in a high-incidence state is defined as exposure in a state with an average Lyme disease incidence of at least 10 confirmed cases / 100,000 for the previous three reporting years. A low-incidence state is defined as a state with a disease incidence of <10 confirmed cases / 100,000. A history of tick bite is not required.

Based on the data available at <http://www.cdc.gov/lyme/stats/tables.html>, the following states will be considered high-incidence states for 2019 (based on 2015—2017 data): Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia and Wisconsin. [NOTE: DC new for 2019.]

Case Classification

Confirmed

- A case of EM with exposure in a high-incidence state (as defined above); OR
- A case of EM with laboratory evidence of infection and a known exposure in a low-incidence state; OR
- A case with at least one late manifestation that has laboratory evidence of infection.

Probable

- Any other case of physician-diagnosed Lyme disease that has laboratory evidence of infection (as defined above).

Suspect

- A case of EM where there is no known exposure (as defined above) and no laboratory evidence of infection (as defined above); OR
- A case with laboratory evidence of infection but no clinical information available (e.g., a laboratory report).

Criteria to Distinguish a New Case from an Existing Case

If a case has been previously reported and counted, it should not be considered a new case.

Comment

This surveillance case definition was developed for national reporting of Lyme disease; it is NOT appropriate for clinical diagnosis.

Lyme disease reports will not be considered cases if the medical provider specifically states this is not a case of Lyme disease, or if the only symptom listed is “tick bite” or “insect bite”.

CONTROL MEASURES

[Arizona Administrative Code R9-6-352](#) Lyme Disease

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported Lyme disease case or suspect case; and
2. For each Lyme disease case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See the Lyme Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2017: Exposure (epidemiological) criteria were revised to include a definition of a high-incidence state. Laboratory evidence now includes more information to help interpret results. Classification modified to use new epidemiological criteria. Changes were based on CDC/CSTE definition.</p> <p>2013: ADHS definition changed to match</p>

	CDC/CSTE.
Most Recent CDC/CSTE Revision Year	2017

CASE DEFINITION**Clinical Description**

Lymphocytic choriomeningitis virus (LCMV) is a rodent-borne arenavirus which is endemic in house mice throughout the world. Infection has also been documented in pet rodents such as mice, guinea pigs, and hamsters. Transmission to humans can occur through direct contact with infected rodents or rodent-contaminated environments. LCMV infection in humans can range from asymptomatic to mild self-limited illness characterized by any or all of the following symptoms: fever, malaise, lack of appetite, muscle aches, headache, nausea, and vomiting. Aseptic meningitis can also occur in some patients. Orchitis, parotitis, arthritis, myocarditis, and rash occasionally occur. Lab findings can include leucopenia and thrombocytopenia.

Laboratory Diagnosis***Confirmatory Testing***

- Isolation of the lymphocytic choriomeningitis virus
- Polymerase chain reaction (PCR) for LCMV

Presumptive Testing

- Serology indicating a positive IgM or a four-fold increase in IgG
- Complete blood count showing leukopenia and thrombocytopenia
- Cerebral spinal fluid analysis indicating increased protein or an increase in white blood cells with an increase in lymphocytes

Case Classification***Confirmed***

A clinically-compatible illness that is laboratory confirmed by culture or PCR

Probable

A clinically-compatible illness that has at least one of the presumptive tests listed

CONTROL MEASURES

[Arizona Administrative Code R9-6-353](#) Lymphocytic Choriomeningitis

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a lymphocytic choriomeningitis case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported lymphocytic choriomeningitis case or suspect case; and
3. For each lymphocytic choriomeningitis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

Contact ADHS.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

Report under [Chlamydia trachomatis infection](#)

CASE DEFINITION

Clinical Description

Infection with L₁, L₂, or L₃ serovars of *Chlamydia trachomatis* may result in a disease characterized by genital lesions, suppurative regional lymphadenopathy, or hemorrhagic proctitis. The infection is usually sexually transmitted.

Laboratory Criteria for Diagnosis

- Isolation of *C. trachomatis*, serotype L1, L2, or L3, from clinical specimen; OR
- Demonstration of inclusion bodies by immunofluorescence in leukocytes of an inguinal lymph node (bubo) aspirate; OR
- Positive microimmunofluorescent serologic test for a lymphogranuloma venereum strain of *C. trachomatis* in a clinically compatible case.

Case Classification

Confirmed

A case that is laboratory confirmed.

Probable

A clinically compatible case with one or more tender fluctuant inguinal lymph nodes or characteristic proctogenital lesions with supportive laboratory findings of a single *C. trachomatis* complement fixation (CF) titer of greater than 64.

CONTROL MEASURES

[Arizona Administrative Code R9-6-319](#) *Chlamydia trachomatis* Infection

Case Control Measures:

A local health agency shall:

1. Comply with the requirements specified in R9-6-1103 concerning treatment and health education for a *Chlamydia trachomatis* infection case that seeks treatment from the local health agency.

Contact Control Measures:

If an individual who may have been exposed to chlamydia through sexual contact with a *Chlamydia trachomatis* infection case seeks treatment for symptoms of chlamydia infection from a local health agency, the local health agency shall comply with the requirements specified in R9-6-1103 concerning treatment and health education for the individual.

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2013: Separated from ADHS Chlamydia case definition.
Most Recent CDC/CSTE Revision Year	1997

CASE DEFINITION

Clinical Description

The first symptoms of malaria (most often fever, chills, sweats, headaches, muscle pains, nausea and vomiting) are often not specific and are also found in other diseases (such as influenza and other common viral infections). Likewise, the physical findings are often not specific (elevated temperature, perspiration, tiredness). In severe malaria (caused by *P. falciparum*), clinical findings (confusion, coma, neurologic focal signs, severe anemia, respiratory difficulties) are more striking and may increase the suspicion index for malaria.

Laboratory Criteria for Diagnosis

- Detection of circulating malaria-specific antigens using rapid diagnostic test (RDT); OR
- Detection of species specific parasite DNA in a sample of peripheral blood using a Polymerase Chain Reaction (PCR) test*; OR
- Detection of malaria parasites in thick or thin peripheral blood films, determining the species by morphologic criteria, and calculating the percentage of red blood cells infected by asexual malaria parasites (parasitemia).

Case Classification

Confirmed

- Detection and specific identification of malaria parasites by microscopy on blood films in a laboratory with appropriate expertise in any person (symptomatic or asymptomatic) diagnosed in the United States, regardless of whether the person experienced previous episodes of malaria while outside the country; OR
- Detection of *Plasmodium* species by nucleic acid test * in any person (symptomatic or asymptomatic) diagnosed in the United States, regardless of whether the person experienced previous episodes of malaria while outside the country; OR
- Detection of unspiciated malaria parasite by microscopy on blood films in a laboratory with appropriate expertise in any person (symptomatic or asymptomatic) diagnosed in the United States, regardless of whether the person experienced previous episodes of malaria while outside the country.

Suspect

Detection of *Plasmodium* species by rapid diagnostic antigen testing without confirmation by microscopy or nucleic acid testing in any person (symptomatic or asymptomatic) diagnosed in the United States, regardless of whether the person experienced previous episodes of malaria while outside the country.

Criteria to Distinguish a New Case from an Existing Case

A subsequent attack experienced by the same person but caused by a different *Plasmodium* species is counted as an additional case. A subsequent attack experienced by the same person and caused by the same species in the United States may indicate a relapsing infection or treatment failure caused by drug resistance or a separate attack.

Comment

* Laboratory-developed malaria PCR tests must fulfill CLIA requirements, including validation studies.

A subsequent attack experienced by the same person but caused by a different *Plasmodium* species is counted as an additional case. A subsequent attack experienced by the same person and caused by the same species in the United States may indicate a relapsing infection or treatment failure caused by drug resistance or a separate attack.

Blood smears from questionable cases should be referred to the CDC Division of Parasitic Diseases Diagnostic Laboratory for confirmation of the diagnosis.

Cases also are classified according to the following World Health Organization categories:

- Autochthonous:
 - Indigenous: malaria acquired by mosquito transmission in an area where malaria is a regular occurrence
 - Introduced: malaria acquired by mosquito transmission from an imported case in an area where malaria is not a regular occurrence
- Imported: malaria acquired outside a specific area (e.g., the United States and its territories)
- Induced: malaria acquired through artificial means (e.g., blood transfusion, common syringes, or malariotherapy)
- Relapsing: recurrence of disease after it has been apparently cured. In malaria, true relapses are caused by reactivation of dormant liver-stage parasites (hypnozoites) of *P. vivax* and *P. ovale*
- Cryptic: an isolated case of malaria that cannot be epidemiologically linked to additional cases

CONTROL MEASURES

[Arizona Administrative Code R9-6-354](#) Malaria

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported malaria case or suspect case; and
2. For each malaria case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Environmental Control Measures

In cooperation with the Department, a local health agency or another local agency responsible for vector control within a jurisdiction

1. Shall conduct an assessment of the environment surrounding each malaria case or suspect case and implement vector control measures as necessary.

INVESTIGATION FORMS

See the Malaria Case Surveillance Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2017: Added criteria to distinguish a new case from an existing case to match 2013 CSTE/CDC case definition.</p> <p>2014: Modifications were made to the laboratory criteria to include the determination of the parasite species and the quantification of the parasitemia; confirmed case definition was changed to include detection of unspciated parasite; modifications were made to match the 2014 CDC/CSTE case definition.</p>
Most Recent CDC/CSTE Revision Year	2014

CASE DEFINITION

Clinical Description

An acute illness characterized by:

- A generalized, maculopapular rash lasting ≥ 3 days; AND
- A temperature $\geq 101.0^{\circ}\text{F}$ ($\geq 38.3^{\circ}\text{C}$); AND
- Cough, coryza, or conjunctivitis.

Laboratory Criteria for Diagnosis

- Isolation of measles virus[†] from a clinical specimen; OR
- Detection of measles-virus specific nucleic acid[†] from a clinical specimen using polymerase chain reaction; OR
- IgG seroconversion[†] or a significant rise in measles immunoglobulin G antibody[†] using any evaluated and validated method; OR
- A positive serologic test for measles immunoglobulin M^{†§} antibody.

[†]Not explained by MMR vaccination during the previous 6-45 days

[§]Not otherwise ruled out by other confirmatory testing or more specific measles testing in a public health laboratory.

Case Classification

Confirmed

An acute febrile rash illness[‡] with:

- Any of the laboratory criteria for diagnosis listed above; OR
- Direct epidemiologic linkage to a case confirmed by one of the laboratory criteria for diagnosis listed above.

Probable

In the absence of a more likely diagnosis, an illness that meets the clinical description with:

- No epidemiologic linkage to a laboratory-confirmed measles case; AND
- Noncontributory or no measles laboratory testing.

[‡]Temperature does not need to reach $\geq 101^{\circ}\text{F}/38.3^{\circ}\text{C}$ and rash does not need to last ≥ 3 days.

Epidemiologic Classification of Internationally-Imported and U.S-Acquired

Internationally imported case

An internationally imported case is defined as a case in which measles results from exposure to measles virus outside the United States as evidenced by at least some of the exposure period (7–21 days before rash onset) occurring outside the United States and rash onset occurring within 21 days of

entering the United States and there is no known exposure to measles in the U.S. during that time. All other cases are considered U.S.-acquired.

U.S.-acquired case

An U.S.-acquired case is defined as a case in which the patient had not been outside the United States during the 21 days before rash onset or was known to have been exposed to measles within the United States. U.S.-acquired cases are subclassified into four mutually exclusive groups:

- **Import-linked case:** Any case in a chain of transmission that is epidemiologically linked to an internationally imported case.
- **Imported-virus case:** a case for which an epidemiologic link to an internationally imported case was not identified, but for which viral genetic evidence indicates an imported measles genotype, i.e., a genotype that is not occurring within the United States in a pattern indicative of endemic transmission. An endemic genotype is the genotype of any measles virus that occurs in an endemic chain of transmission (i.e., lasting ≥ 12 months). Any genotype that is found repeatedly in U.S.-acquired cases should be thoroughly investigated as a potential endemic genotype, especially if the cases are closely related in time or location.
- **Endemic case:** a case for which epidemiological or virological evidence indicates an endemic chain of transmission. Endemic transmission is defined as a chain of measles virus transmission that is continuous for ≥ 12 months within the United States.
- **Unknown source case:** a case for which an epidemiological or virological link to importation or to endemic transmission within the U.S. cannot be established after a thorough investigation.

These cases must be carefully assessed epidemiologically to assure that they do not represent a sustained U.S.-acquired chain of transmission or an endemic chain of transmission within the U.S.

Note: Internationally imported, import-linked, and imported-virus cases are considered collectively to be import-associated cases. States may also choose to classify cases as “out-of-state-imported” when imported from another state in the United States. For national reporting, however, cases will be classified as either internationally imported or U.S.-acquired.

CONTROL MEASURES

[Arizona Administrative Code R9-6-355](#) Measles (Rubeola)

Case Control Measures:

1. An administrator of a school or child care establishment, either personally or through a representative, shall:
 - a. Exclude a measles case from the school or child care establishment and from school- or child-care-establishment-sponsored events from the onset of illness through the fourth calendar day after the rash appears; and
 - b. Exclude a measles suspect case from the school or child care establishment and from school- or child-care-establishment-sponsored events until the local health agency has determined that the suspect case is unlikely to infect other individuals.
2. A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall isolate and institute airborne precautions for a measles case from onset of illness through the fourth calendar day after the rash appears.
3. An administrator of a health care institution, either personally or through a representative, shall exclude a measles:
 - a. Case from working at the health care institution from the onset of illness through the fourth calendar day after the rash appears; and

- b. Suspect case from working at the health care institution until the local health agency has determined that the suspect case may return to work.
4. A local health agency shall:
 - a. Upon receiving a report under R9-6-202 or R9-6-203 of a measles case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
 - b. Conduct an epidemiologic investigation of each reported measles case or suspect case;
 - c. For each measles case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
 - d. Ensure that one or more specimens from each measles case or suspect case, as required by the Department, are submitted to the Arizona State Laboratory.
5. An administrator of a correctional facility or shelter, either personally or through a representative, shall comply with the measles control measures recommended by a local health agency or the Department.

Contact Control Measures:

1. When a measles case has been at a school or child care establishment, the administrator of the school or child care establishment, either personally or through a representative, shall:
 - a. Consult with the local health agency to determine who shall be excluded and how long each individual shall be excluded from the school or child care establishment, and
 - b. Comply with the local health agency's recommendations for exclusion.
2. A local health agency shall:
 - a. Determine which measles contacts will be quarantined or excluded, according to R9-6-303, to prevent transmission; and
 - b. Provide or arrange for immunization of each non-immune measles contact within 72 hours after last exposure, if possible.
3. An administrator of a health care institution shall ensure that a paid or volunteer full-time or part-time worker at a health care institution does not participate in the direct care of a measles case or suspect case unless the worker is able to provide evidence of immunity to measles through one of the following:
 - a. A record of immunization against measles with two doses of live virus vaccine given on or after the first birthday and at least one month apart;
 - b. A statement signed by a physician, physician assistant, registered nurse practitioner, state health officer, or local health officer affirming serologic evidence of immunity to measles; or
 - c. Documentary evidence of birth before January 1, 1957.

INVESTIGATION FORMS

See Measles Case Surveillance Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2013: ADHS definition was edited to match the new 2013 CDC/CSTE definition. Changes including adding

	PCR to the laboratory criteria and removing the Suspect case classification.
Most Recent CDC/CSTE Revision Year	2013

CASE DEFINITION

Clinical Description

Clinical presentation of the disease varies on a case by case basis. The following characteristics are typical of melioidosis.

- An acute or chronic localized infection which may or may not include symptoms of fever and muscle aches. Such infection often results in ulcer, nodule, or skin abscess.
- An acute pulmonary infection with symptoms of fever, headache, chest pain, anorexia, and general muscle soreness.
- A bloodstream infection with symptoms of fever, headache, respiratory distress, abdominal discomfort, joint pain, muscle tenderness, and/or disorientation.
- A disseminated infection with symptoms of fever, weight loss, stomach or chest pain, muscle or joint pain, and/or headache or seizure. Abscesses in the liver, lung, spleen, and prostate are often observed in patients diagnosed with disseminated infections; less frequently, brain abscesses may be seen.

Laboratory Criteria for Diagnosis

Confirmatory Testing

- Isolation of *B. pseudomallei* from a clinical specimen of a case of severe febrile illness: Culture of the organism may be done by blood, sputum, urine, pus, throat swab, or swabs from organ abscesses or wounds.

Presumptive Testing

- Evidence of a fourfold or greater rise in *B. pseudomallei* antibody titer by IHA between acute- and convalescent-phase serum specimens obtained greater than or equal to 2 weeks apart.
- Evidence of *B. pseudomallei* DNA (for example, by LRN-validated polymerase chain reaction) in a clinical specimen collected from a normally sterile site (blood) or lesion of other affected tissue (abscesses, wound).

Case Classification

Confirmed

A case that meets the confirmatory laboratory criteria, with or without clinical evidence.

Probable

A case that meets the clinical case definition, one or more of the presumptive laboratory criteria, and one of the following epidemiologic findings:

- History of travel to melioidosis-endemic region; OR
- Known exposure to *B. pseudomallei* as a result of intentional release or occupational risk (lab exposure)

CONTROL MEASURES[Arizona Administrative Code R9-6-356](#) Melioidosis**Case Control Measures**

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a melioidosis case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported melioidosis case or suspect case;
3. For each melioidosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
4. Ensure that an isolate or a specimen, as available, from each melioidosis case or suspect case is submitted to the Arizona State Laboratory.

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	ADHS 2013 edited content to match CDC/CSTE. Moved <i>B. mallei</i> to a separate case definition.
Most Recent CDC/CSTE Revision Year	2012

CASE DEFINITION**Clinical Description**

Meningococcal disease presents most commonly as meningitis and/or meningococemia that may progress rapidly to purpura fulminans, shock, and death. However, other manifestations may be observed.

Laboratory Criteria for Diagnosis**Confirmatory Testing**

- Isolation of *Neisseria meningitidis* from a normally sterile site (e.g., blood or CSF or, less commonly, synovial, pleural, or pericardial fluid) or from purpuric lesions, OR
- Detection of *N. meningitidis*-specific nucleic acid in a specimen obtained from a normally sterile body site, using a validated polymerase chain reaction (PCR) assay.

Presumptive Testing

- Detection of *N. meningitidis* antigen in a formalin-fixed tissue by immunochemistry (IHC), or in CSF by latex agglutination.

Case Classification**Confirmed**

A case that meets the confirmatory laboratory criteria for diagnosis.

Probable

A case that meets the presumptive laboratory criteria for diagnosis.

Suspect

- Clinical purpura fulminans in the absence of a positive blood culture, OR
- Gram-negative diplococci, not yet identified, isolated from a normally sterile site (e.g., blood or CSF)

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

When two or more different serogroups are identified in one or more specimens from the same individual, each should be reported as a separate case.

*Based on ADHS guidelines

Comment

See [Appendix 1](#) for guidance on interpreting whether a specimen is from a “normally sterile body site”.

CONTROL MEASURES

[Arizona Administrative Code R9-6-357](#) Meningococcal Invasive Disease

Case Control Measures:

1. A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall isolate and institute droplet precautions for a meningococcal invasive disease case for 24 hours after the initiation of treatment.
2. A local health agency shall:
 - a. Upon receiving a report under R9-6-202 or R9-6-203 of a meningococcal invasive disease case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
 - b. Conduct an epidemiologic investigation of each reported meningococcal invasive disease case or suspect case;
 - c. For each meningococcal invasive disease case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
 - d. Ensure that an isolate or a specimen, as available, from each meningococcal invasive disease case is submitted to the Arizona State Laboratory.

Contact Control Measures:

A local health agency shall:

1. Evaluate the level of risk of transmission from each contact's exposure to a meningococcal invasive disease case and, if indicated, provide or arrange for each contact to receive prophylaxis.

INVESTIGATION FORMS

See Meningococcal Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2015: PCR of normally sterile sites specimen moved from a presumptive to confirmatory test, matching the CDC/CSTE change.
Most Recent CDC/CSTE Revision Year	2015

**METHICILLIN-RESISTANT
STAPHYLOCOCCUS AUREUS
(INVASIVE)**

LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING
DAYS

CASE DEFINITION

Clinical Description

Staphylococcus aureus can produce a variety of presentations, ranging from skin or soft tissue infection to bacteremia or the involvement of various organs (e.g., endocarditis, pneumonia, osteomyelitis). Methicillin-resistant *Staphylococcus aureus* (MRSA) is resistant to beta-lactam antibiotics. Only MRSA from normally sterile sites (invasive disease) is reportable.

Laboratory Criteria for Diagnosis

- Isolation of *Staphylococcus aureus* by culture from a normally sterile site. Examples of sterile sites include but are not limited to: CSF, blood, peritoneal fluid, pericardial fluid, or pleural fluid; AND
- Resistance of *Staphylococcus aureus* isolate to oxacillin* or ceftioxin**, detected and defined according to the standards and guidelines approved by the National Committee for Clinical Laboratory Standards (NCCLS).

Interpretive Criteria (in µg/ml) for <i>S. aureus</i> MIC (Minimum Inhibitory Concentration) Tests			
	Susceptible	Intermediate	Resistant
Oxacillin	≤ 2 µg/ml	N/A	≥ 4 µg/ml
Ceftioxin	≤ 4 µg/ml	N/A	≥ 8 µg/ml

* Methicillin is no longer commercially available in the United States and oxacillin maintains its activity during storage better than methicillin and is more likely to detect heteroresistant strains. Oxacillin, which is in the same class of drugs as methicillin, was chosen as the agent of choice for testing staphylococci in the early 1990s. The acronym MRSA is still used by many to describe these isolates because of its historic role.

** Ceftioxin is used as a surrogate for oxacillin; report oxacillin susceptible or resistant based on the ceftioxin result. If both ceftioxin and oxacillin are tested against *S. aureus* and either result is resistant, the organism should be reported as oxacillin resistant.

Case Classification

Confirmed

A case that meets the laboratory criteria for diagnosis.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

See [Appendix 1](#) for guidance on interpreting whether a specimen is from a “normally sterile body site”.

CONTROL MEASURES

[Arizona Administrative Code R9-6-358](#) Methicillin-resistant *Staphylococcus aureus* (MRSA)

Case Control Measures:

1. A diagnosing health care provider or an administrator of a health care institution transferring a known methicillin-resistant *Staphylococcus aureus* case with active infection to another health care provider or health care institution or to a correctional facility shall, either personally or through a representative, ensure that the receiving health care provider, health care institution, or correctional facility is informed that the patient is a known methicillin-resistant *Staphylococcus aureus* case.
2. If a known methicillin-resistant *Staphylococcus aureus* case with active infection is being transferred from a correctional facility to another correctional facility or to a health care institution, an administrator of the correctional facility, either personally or through a representative, shall ensure that the receiving correctional facility or health care institution is informed that the individual is a known methicillin-resistant *Staphylococcus aureus* case.

Outbreak control measures:

A local health agency, in consultation with the Department, shall:

1. Conduct an epidemiologic investigation of each reported outbreak of methicillin-resistant *Staphylococcus aureus* in a health care institution or correctional facility; and
2. For each outbreak of methicillin-resistant *Staphylococcus aureus* in a health care institution or correctional facility, submit to the Department the information required under R9-6-206(E).

When an outbreak of methicillin-resistant *Staphylococcus aureus* occurs in a health care institution or correctional facility, the administrator of the health care institution or correctional facility, either personally or through a representative, shall comply with the control measures recommended by a local health agency or the Department.

INVESTIGATION FORMS

See Methicillin-resistant *Staphylococcus aureus* (MRSA) Surveillance Supplemental Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2017: MIC values updated and table added.
Most Recent CDC/CSTE Revision Year	N/A

MIDDLE EAST RESPIRATORY SYNDROME CORONAVIRUS (MERS)

PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

Cases should be reported under the [Novel Coronavirus \(e.g., SARS or MERS\)](#) requirement. Enter in MEDSIS as MERS.

CASE DEFINITION

Clinical and Epidemiological Criteria

These criteria serve as guidance for testing; however, patients should be evaluated and discussed with public health departments on a case-by-case basis if their clinical presentation or exposure history is equivocal (e.g., uncertain history of health care exposure).

Clinical Features		Epidemiologic Risk
<p>Severe illness Fever¹ <i>and</i> pneumonia or acute respiratory distress syndrome (based on clinical or radiological evidence)</p>	and	<p>A history of travel from countries in or near the Arabian Peninsula² within 14 days before symptom onset, <i>or</i> close contact³ with a symptomatic traveler who developed fever¹ and acute respiratory illness (not necessarily pneumonia) within 14 days after traveling from countries in or near the Arabian Peninsula².</p> <p>– <i>or</i> –</p> <p>A member of a cluster of patients with severe acute respiratory illness (e.g., fever¹ and pneumonia requiring hospitalization) of unknown etiology in which MERS is being evaluated, in consultation with state and local health departments in the US.</p>
<p>Milder illness Fever¹ <i>and</i> symptoms of respiratory illness (not necessarily pneumonia; e.g., cough, shortness of breath)</p>	and	<p>A history of being in a healthcare facility (as a patient, worker, or visitor) within 14 days before symptom onset in a country or territory in or near the Arabian Peninsula² in which recent healthcare-associated cases of MERS have been identified.</p>
<p>Fever¹ <i>or</i> symptoms of respiratory illness (not necessarily pneumonia; e.g., cough, shortness of breath)</p>	and	<p>Close contact³ with a confirmed MERS case while the case was ill.</p>

Laboratory Criteria for Diagnosis

Confirmatory Testing

Confirmatory laboratory testing requires a positive PCR on at least two specific genomic targets or a single positive target with sequencing on a second.

Case Classification

Confirmed

A person with laboratory confirmation of MERS infection.

Probable

A person meeting the clinical and epidemiological criteria listed above, with absent or inconclusive laboratory results for MERS infection, who is a close contact³ of a laboratory-confirmed MERS case. Examples of laboratory results that may be considered inconclusive include a positive test on a single

PCR target, a positive test with an assay that has limited performance data available, or a negative test on an inadequate specimen.

Comment

The MERS case definition may be subject to change as the situation evolves. Please refer to CDC website for the most up-to-date information.

Footnotes

1. Fever may not be present in some patients, such as those who are very young, elderly, immunosuppressed, or taking certain medications. Clinical judgment should be used to guide testing of patients in such situations.
2. Countries considered in the Arabian Peninsula and neighboring include: Bahrain; Iraq; Iran; Israel, the West Bank, and Gaza; Jordan; Kuwait; Lebanon; Oman; Qatar; Saudi Arabia; Syria; the United Arab Emirates (UAE); and Yemen, as of January 2016. Check <http://www.cdc.gov/coronavirus/mers/case-def.html> for the most up-to-date list of countries.
3. Close contact is defined as: a) being within approximately 6 feet (2 meters) or within the room or care area for a prolonged period of time (e.g., healthcare personnel, household members) while not wearing recommended personal protective equipment (i.e., gowns, gloves, respirator, eye protection— see <https://www.cdc.gov/coronavirus/mers/infection-prevention-control.html>); or b) having direct contact with infectious secretions (e.g., being coughed on) while not wearing recommended personal protective equipment (i.e., gowns, gloves, respirator, eye protection –see <https://www.cdc.gov/coronavirus/mers/infection-prevention-control.html>). Data to inform the definition of close contact are limited. At this time, brief interactions, such as walking by a person, are considered low risk and do not constitute close contact.

CONTROL MEASURES

[Arizona Administrative Code R9-6-361](#) Novel Coronavirus (e.g., SARS or MERS)

Case Control Measures

A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall isolate and institute both airborne precautions and contact precautions for a novel coronavirus case or suspect case, including a case or suspect case of severe acute respiratory syndrome or Middle East respiratory syndrome, until evaluated and determined to be noninfectious by a physician, physician assistant, or registered nurse practitioner.

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a novel coronavirus case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. In consultation with the Department, ensure that isolation and both airborne precautions and contact precautions have been instituted for a novel coronavirus case or suspect case to prevent transmission;
3. Conduct an epidemiologic investigation of each reported novel coronavirus case or suspect case; and
4. For each novel coronavirus case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Contact Control Measures

A local health agency, in consultation with the Department, shall:

Determine which novel coronavirus contacts will be quarantined or excluded, according to R9-6-303, to prevent transmission.

INVESTIGATION FORMS

See MERS Patient Under Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2016: Case definition was added to this manual.
Most Recent CDC/CSTE Revision Year	2015

CASE DEFINITION**Clinical Description**

The clinical case definition requirements vary for each of the case classification categories. See the case classifications, below.

Laboratory Criteria for Diagnosis***Confirmatory Testing***

- Isolation of mumps virus from clinical specimen; OR
- Detection of mumps nucleic acid via reverse transcriptase polymerase chain reaction (RT-PCR).

Presumptive Testing

Detection of serum mumps IgM antibody.

Case Classification***Confirmed***

A case with confirmatory laboratory results and an acute illness characterized by any of the following:

- Acute parotitis or other salivary gland swelling, lasting at least 2 days
- Aseptic meningitis
- Encephalitis
- Hearing loss
- Orchitis
- Oophoritis
- Mastitis
- Pancreatitis

Probable

Acute parotitis or other salivary gland swelling lasting at least 2 days, or orchitis or oophoritis unexplained by another more likely diagnosis, in:

- A person with positive presumptive laboratory results; OR
- A person with epidemiologic linkage to another probable or confirmed case or linkage to a group/community defined by public health during an outbreak of mumps.

Suspect

- Parotitis, acute salivary gland swelling, orchitis, or oophoritis unexplained by another more likely diagnosis; OR
- A positive lab result with no mumps clinical symptoms (with or without epidemiological-linkage to a confirmed or probable case).

Classification of Import Status

Internationally imported case

An internationally imported case is defined as a case in which mumps results from exposure to mumps virus outside the United States as evidenced by at least some of the exposure period (12–25 days before onset of parotitis or other mumps-associated complications) occurring outside the United States and the onset of parotitis or other mumps-associated complications within 25 days of entering the United States and no known exposure to mumps in the U.S. during that time. All other cases are considered U.S.-acquired cases.

U.S.-acquired case

A U.S.-acquired case is defined as a case in which the patient had not been outside the United States during the 25 days before onset of parotitis or other mumps-associated complications or was known to have been exposed to mumps within the United States. U.S.-acquired cases are sub-classified into four mutually exclusive groups:

- **Import-linked case:** Any case in a chain of transmission that is epidemiologically linked to an internationally imported case.
- **Imported-virus case:** A case for which an epidemiologic link to an internationally imported case was not identified but for which viral genetic evidence indicates an imported mumps genotype, i.e., a genotype that is not occurring within the United States in a pattern indicative of endemic transmission. An endemic genotype is the genotype of any mumps virus that occurs in an endemic chain of transmission (i.e., lasting ≥ 12 months). Any genotype that is found repeatedly in U.S.-acquired cases should be thoroughly investigated as a potential endemic genotype, especially if the cases are closely related in time or location.
- **Endemic case:** A case for which epidemiological or virological evidence indicates an endemic chain of transmission. Endemic transmission is defined as a chain of mumps virus transmission continuous for ≥ 12 months within the United States.
- **Unknown source case:** A case for which an epidemiological or virological link to importation or to endemic transmission within the U.S. cannot be established after a thorough investigation. These cases must be carefully assessed epidemiologically to assure that they do not represent a sustained U.S.-acquired chain of transmission or an endemic chain of transmission within the U.S.

Note: Internationally imported, import-linked, and imported-virus cases are considered collectively to be import-associated cases.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

With previous contact with mumps virus either through vaccination (particularly with 2 doses) or natural infection, serum mumps IgM test results may be negative; IgG test results may be positive at initial blood draw and viral detection in RT-PCR or culture may have low yield if the buccal swab is collected too long after parotitis onset. Therefore, mumps cases should not be ruled out by negative laboratory results. Serologic tests should be interpreted with caution, as false positive and false negative results are possible with IgM tests.

States may also choose to classify cases as “out-of-state-imported” when imported from another state in the United States. For national reporting, however, cases will be classified as either internationally imported or U.S.-acquired.

CONTROL MEASURES

Arizona Administrative Code R9-6-359 Mumps

Case Control Measures

1. An administrator of a school or child care establishment, either personally or through a representative, shall:
 - a. Exclude a mumps case from the school or child care establishment for five calendar days after the onset of glandular swelling; and
 - b. Exclude a mumps suspect case from the school or child care establishment and from school- or child-care-establishment-sponsored events until evaluated and determined to be noninfectious by a physician, physician assistant, registered nurse practitioner, or local health agency.
2. A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall isolate and institute droplet precautions with a mumps case for five calendar days after the onset of glandular swelling.
3. An administrator of a health care institution, either personally or through a representative, shall exclude a mumps:
 - a. Case from working at the health care institution for five calendar days after the onset of glandular swelling; and
 - b. Suspect case from working at the health care institution until evaluated and determined to be noninfectious by a physician, physician assistant, registered nurse practitioner, or local health agency.
4. A local health agency shall:
 - a. Upon receiving a report under R9-6-202 or R9-6-203 of a mumps case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
 - b. Conduct an epidemiologic investigation of each reported mumps case or suspect case;
 - c. For each mumps case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
 - d. Ensure that one or more specimens from each mumps case or suspect case, as required by the Department, are submitted to the Arizona State Laboratory.
5. An administrator of a correctional facility or shelter, either personally or through a representative, shall comply with the mumps control measures recommended by a local health agency or the Department.

Contact Control Measures

1. When a mumps case has been at a school or child care establishment, the administrator of the school or child care establishment, either personally or through a representative, shall:
 - a. Consult with the local health agency to determine who shall be excluded and how long each individual shall be excluded from the school or child care establishment, and
 - b. Comply with the local health agency’s recommendations for exclusion.
2. An administrator of a health care institution shall ensure that a paid or volunteer full-time or part-time worker at a health care institution does not participate in the direct care of a mumps case or suspect case unless the worker is able to provide evidence of immunity to mumps through one of the following:
 - a. A record of immunization against mumps with two doses of live virus vaccine given on or after the first birthday and at least one month apart; or

- b. A statement signed by a physician, physician assistant, registered nurse practitioner, state health officer, or local health officer affirming serologic evidence of immunity to mumps.
 3. A local health agency shall determine which mumps contacts will be:
 - a. Quarantined or excluded, according to R9-6-303, to prevent transmission; and
 - b. Advised to obtain an immunization against mumps.

INVESTIGATION FORMS

See Mumps Surveillance Worksheet Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2013: ADHS definition was updated to match the 2012 CDC/CSTE definition.
Most Recent CDC/CSTE Revision Year	2012

Outbreaks should be reported under the [Diarrhea, Nausea, or Vomiting](#) requirement.

CASE DEFINITION

Clinical Description

Norovirus usually causes a self-limited, mild-to-moderate disease that often occurs in outbreaks. Clinical symptoms include nausea, vomiting, diarrhea, abdominal pain, or other symptoms typical of gastrointestinal illnesses.

Laboratory Criteria for Diagnosis

Identification of norovirus through nucleic acid testing at the Arizona State Public Health Laboratory, CDC, or other approved laboratory.

Case Classification

Confirmed

A case that meets the laboratory criteria for diagnosis.

Suspect

A case with clinically compatible symptoms of norovirus and epi-linked to a confirmed norovirus case OR a confirmed norovirus outbreak.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-360](#) Norovirus

Outbreak Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported norovirus outbreak;
2. Submit to the Department the information required under R9-6-206(E); and
3. Exclude each case that is part of a norovirus outbreak from working as a food handler, caring for patients or residents in a health care institution, or caring for children in or attending a child care establishment until:
 - a. Diarrhea has resolved, or
 - b. The local health agency has determined that the case or suspect case is unlikely to infect other individuals.

Environmental Control Measures

A local health agency shall

1. Conduct a sanitary inspection or ensure that a sanitary inspection is conducted of each facility or location regulated under 9 A.A.C. 8 that is associated with a norovirus outbreak.

INVESTIGATION FORMS

See Outbreak Summary Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2015: deleted “reference” from “approved reference laboratory” in the laboratory criteria.</p> <p>2014: addition of suspect case definition to capture epi-linked/outbreak cases without laboratory testing available, that were not captured in the previous case definition.</p> <p>2013: testing from other approved labs accepted</p>
Most Recent CDC/CSTE Revision Year	N/A

NOVEL CORONAVIRUS (e.g., SARS OR MERS)

PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

See [Severe Acute Respiratory Syndrome \(SARS\)](#) or [Middle Eastern Respiratory Syndrome \(MERS\)](#) for separate case definitions.

CONTROL MEASURES

[Arizona Administrative Code R9-6-361](#) Novel Coronavirus (e.g., SARS or MERS)

Case Control Measures

A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall isolate and institute both airborne precautions and contact precautions for a novel coronavirus case or suspect case, including a case or suspect case of severe acute respiratory syndrome or Middle East respiratory syndrome, until evaluated and determined to be noninfectious by a physician, physician assistant, or registered nurse practitioner.

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a novel coronavirus case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. In consultation with the Department, ensure that isolation and both airborne precautions and contact precautions have been instituted for a novel coronavirus case or suspect case to prevent transmission;
3. Conduct an epidemiologic investigation of each reported novel coronavirus case or suspect case; and
4. For each novel coronavirus case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Contact Control Measures

A local health agency, in consultation with the Department, shall:

1. Determine which novel coronavirus contacts will be quarantined or excluded, according to R9-6-303, to prevent transmission.

PARATYPHOID FEVER

PROVIDERS REPORT WITHIN 24 HOURS IF AN OUTBREAK IS DETECTED OR PERSON HAS A HIGH-RISK OCCUPATION

PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 DAY FOR ALL OTHER CASES

Cases should be reported under the [Salmonellosis](#) requirement. Enter in MEDSIS as Paratyphoid Fever.

CASE DEFINITION

Background

S. Paratyphi A, B (tartrate negative), and C are bacteria that often cause a potentially severe and occasionally life-threatening bacteremic illness. While fever and gastrointestinal symptoms are common, the clinical presentation varies, including mild and atypical infections. In the United States, approximately 80 cases of paratyphoid fever caused by *S. Paratyphi* A are reported each year, 90% of which are acquired during international travel. Cases of paratyphoid fever caused by serotypes *S. Paratyphi* B (tartrate negative) and C are reported much less frequently. Ongoing surveillance of *S. Paratyphi* infections is essential to detect and control outbreaks, determine public health priorities, monitor trends in illness, and assess effectiveness of public health interventions.

Of note, *S. Paratyphi* B (tartrate positive), previously known as *S. Java*, typically causes an uncomplicated gastroenteritis, with lower rates of hospitalization and recent international travel compared with *S. Paratyphi* A, B (tartrate negative), and C. For these reasons, *Paratyphi* B (tartrate positive) is categorized as salmonellosis instead of an *S. Paratyphi* Infection.

Clinical Description

An illness caused by *Salmonella enterica* serotypes *Paratyphi* A, *Paratyphi* B (tartrate negative), and *Paratyphi* C that is often characterized by insidious onset of sustained fever, headache, malaise, anorexia, relative bradycardia, constipation or diarrhea, and nonproductive cough. However, mild and atypical infections may occur. Carriage of paratyphoidal *Salmonella* may be prolonged.

Clinical Criteria

One or more of the following:

- Fever
- Diarrhea
- Abdominal cramps
- Constipation
- Anorexia
- Relative bradycardia

Laboratory Criteria for Diagnosis

Confirmatory Laboratory Evidence

Isolation of *Salmonella* *Paratyphi* A, *Paratyphi* B (tartrate negative) or *Paratyphi* C from a clinical specimen.

Presumptive Laboratory Evidence

Detection of *Salmonella* Paratyphi A, Paratyphi B (tartrate negative) or Paratyphi C in a clinical specimen using a culture-independent diagnostic test (CIDT).

*Serologic testing (i.e., detection of antibodies to *S. Paratyphi* A, B, or C) should not be utilized for case classification.

Epidemiologic Linkage

- Epidemiological linkage to a confirmed case of paratyphoid fever; OR
- Epidemiological linkage to a probable case of paratyphoid fever with laboratory evidence; OR
- Member of a risk group as defined by public health authorities during an outbreak.

Case Classification**Confirmed**

A case that meets the confirmatory laboratory criteria.

Probable

- A clinically compatible illness in a person that meets the presumptive laboratory criteria.
- A clinically compatible illness in a person with an epidemiological linkage.

Criteria to Distinguish a New Case from an Existing Case

A case should not be counted as a new case if laboratory results were reported within 365 days of a previously reported infection in the same individual.

When two or more different serotypes are identified from one or more specimens from the same individual, each should be reported as a separate case.

Comment

Several serological tests have been developed to detect antibodies to *S. Paratyphi* A, B, and C. However, no current serological test is sufficiently sensitive or specific to replace culture-based tests for the identification of *S. Paratyphi* infections. Whether public health follow-up for positive serologic testing is conducted and how is at the discretion of the jurisdiction. The percentage of persons with *S. Paratyphi* A, B (tartrate negative), or C infections that become chronic carriers is not known.

Differentiating whether a person is a chronic carrier or is experiencing a new infection often relies on a variety of factors, including advanced laboratory testing (e.g., pulsed-field gel electrophoresis [PFGE], whole genome sequencing [WGS]) to compare the isolate from the previous infection to the new isolate. While these methodologies can provide detailed information about the genetic make-up of the organisms, there is still significant variability in how two organisms can be defined as different.

CONTROL MEASURES

[Arizona Administrative Code R9-6-373](#) Salmonellosis

Case Control Measures:

A local health agency shall:

1. Upon receiving a report under R9-6-202 or R9-6-203 of a salmonellosis case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Exclude a salmonellosis case or suspect case with diarrhea from:
 - a. Working as a food handler, caring for children in or attending a child care establishment, or caring for patients or residents in a health care institution until:
 - i. Diarrhea has resolved,
 - ii. A stool specimen negative for *Salmonella* spp. is obtained from the salmonellosis case or suspect case, or
 - iii. The local health agency has determined that the case or suspect case is unlikely to infect other individuals; and
 - b. Using an aquatic venue until diarrhea has resolved;
3. Conduct an epidemiologic investigation of each reported salmonellosis case or suspect case; and
4. For each salmonellosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Typhoid and Paratyphoid Fever Surveillance Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	<p>2019: Clinical criteria added, presumptive lab testing (CIDT) added (counting as probable classification), and epidemiological linkage defined. Changes based on new CDC/CSTE definition for <i>S. Paratyphi</i> infections.</p> <p>2018: Paratyphoid fever should be reported separately from salmonellosis, per CDC request, but no national case definition is available for paratyphoid fever with relevant clinical and laboratory criteria. An Arizona-specific case definition is created here, based on both salmonellosis and typhoid fever CDC/CSTE definitions.</p>
Most Recent CDC/CSTE Revision Year	2019

CASE DEFINITION

Background

Bordetella pertussis is the most poorly controlled bacterial vaccine-preventable disease in the U.S., with peaks in disease occurring every 3-5 years. Although routine childhood vaccination has resulted in substantial reductions in disease, the number of reported pertussis cases has been steadily increasing since the 1980s. Notable peaks in disease occurred in 2004 (25,827 cases, 27 deaths), 2010 (27,550 cases, 27 deaths), and most recently in 2012 when more than 41,000 cases and 18 deaths were reported, the largest number of cases in the U.S. since 1959. Furthermore, the epidemiologic features of pertussis have changed in recent years with an increasing burden of disease among fully-vaccinated children and adolescents.

Clinical Description

A cough illness lasting at least 2 weeks with at least one of the following: paroxysms of coughing, inspiratory "whoop," post-tussive vomiting, or (FOR INFANTS AGED <1 YEAR ONLY) apnea (with or without cyanosis), in the absence of a more likely diagnosis.

Laboratory Criteria for Diagnosis

- Isolation of *Bordetella pertussis* from clinical specimen; OR
- Positive polymerase chain reaction (PCR) for *B. pertussis*.

Case Classification

Confirmed

- A case that is culture-positive for *B. pertussis* and in which an acute cough illness of any duration is present;

OR

- A case with positive PCR results for *B. pertussis* with an acute cough illness of any duration, with at least one of the following signs or symptoms:
 - Paroxysms of coughing; or
 - Inspiratory "whoop"; or
 - Post-tussive vomiting; or
 - Apnea (with or without cyanosis) (FOR INFANTS AGED <1 YEAR ONLY);

OR

- A case that meets the clinical case definition and is epidemiologically linked directly to a case confirmed by either culture or PCR.

Probable

- In the absence of a more likely diagnosis, a case that meets the clinical case definition that is not laboratory confirmed by culture or PCR, and is not epidemiologically linked to a laboratory-confirmed case;

OR, FOR INFANTS AGED <1 YEAR ONLY:

- Acute cough illness of any duration, with at least one of the following signs or symptoms:
 - Paroxysms of coughing; or
 - Inspiratory "whoop"; or
 - Post-tussive vomiting; or
 - Apnea (with or without cyanosis); AND
- Contact with a laboratory-confirmed case of pertussis.

OR

- A case with positive PCR results and unknown information on clinical symptoms.

Suspect

In the absence of a more likely diagnosis, a case that has positive serological tests against *B. pertussis* with unknown clinical symptoms. Cases with positive serology, in the absence of other positive test pertussis test results, that are known to not meet the clinical case definition should be ruled out.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 2 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

The clinical case definition above is appropriate for endemic or sporadic cases. In outbreak settings, a case may be defined as a cough illness lasting at least 2 weeks (as reported by a health professional). Because direct fluorescent antibody testing of nasopharyngeal secretions has been demonstrated in some studies to have low sensitivity and variable specificity, such testing should not be relied on as a criterion for laboratory confirmation. Serologic testing for pertussis is available in some areas but is not standardized and, therefore, should not be relied on as a criterion for laboratory confirmation.

CONTROL MEASURES

[Arizona Administrative Code R9-6-363](#) Pertussis (Whooping Cough)

Case Control Measures:

1. An administrator of a school or child care establishment, either personally or through a representative, shall:
 - a. Exclude a pertussis case from the school or child care establishment for 21 calendar days after the date of onset of cough or for five calendar days after the date of initiation of antibiotic treatment for pertussis; and
 - b. Exclude a pertussis suspect case from the school or child care establishment until evaluated and determined to be noninfectious by a physician, physician assistant, registered nurse practitioner, or local health agency.
2. An administrator of a health care institution, either personally or through a representative, shall:
 - a. Exclude a pertussis case from working at the health care institution for 21 calendar days after the date of onset of cough or for five calendar days after the date of initiation of antibiotic treatment for pertussis; and
 - b. Exclude a pertussis suspect case from working at the health care institution until evaluated and determined to be noninfectious by a physician, physician assistant, registered nurse practitioner, or local health agency.

3. A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall isolate and initiate droplet precautions for a pertussis case for five calendar days after the date of initiation of antibiotic treatment for pertussis.
4. A local health agency shall:
 - a. Upon receiving a report under R9-6-202 or R9-6-203 of a pertussis case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
 - b. Conduct an epidemiologic investigation of each reported pertussis case or suspect case; and
 - c. For each pertussis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).
5. An administrator of a correctional facility or shelter, either personally or through a representative, shall comply with the pertussis control measures recommended by a local health agency or the Department.

Contact Control Measures:

1. When a pertussis case has been at a school or child care establishment, the administrator of the school or child care establishment, either personally or through a representative, shall:
 - a. Consult with the local health agency to determine who shall be excluded and how long each individual shall be excluded from the school or child care establishment, and
 - b. Comply with the local health agency’s recommendations for exclusion.
2. A local health agency shall identify contacts of a pertussis case and shall:
 - a. Determine which pertussis contacts will be quarantined or excluded, according to R9-6-303, to prevent transmission; and
 - b. If indicated, provide or arrange for a pertussis contact to receive antibiotic prophylaxis.

INVESTIGATION FORMS

See Pertussis Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	No
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2018: Changes were made mid-year, to apply to all 2018 cases, removing the cough duration criterion for PCR-confirmed cases. Ensuring two weeks of cough is a burden on investigators and analysis of past years’ data showed that criterion rarely changed the final classification. PCR-positive infants were moved from probable to confirmed classifications for consistency with this change. Both changes differ from the national case definition.</p> <p>2014: changes were made to include apnea</p>

	<p>to the list of case-defining clinical signs and symptoms for infants; the probable classification was modified to PCR positive or epi-linked cases occurring among infants with cough of any duration and at least one other clinical symptom. Both changes follow the CDC/CSTE changes.</p> <p>2013: ADHS case definition includes a Suspect classification for use in tracking serological results, including serologic cases that cannot be investigated. The probable case definition includes a classification for PCR positive individuals who are lost to follow up or are missing clinical information. The confirmed case classification matches the CDC/CSTE definitions.</p>
<p>Most Recent CDC/CSTE Revision Year</p>	<p>2014</p>

CASE DEFINITION

Clinical Description

A disease characterized by fever and leukocytosis that presents in one or more of the following principal clinical forms:

- Regional lymphadenitis (bubonic plague)
- Septicemia without an evident bubo (septicemic plague)
- Plague pneumonia resulting from hematogenous spread in bubonic or septicemic cases (secondary plague pneumonia) or inhalation of infectious droplets (primary plague pneumonia)
- Pharyngitis and cervical lymphadenitis resulting from exposure to larger infectious droplets or ingestion of infected tissues (pharyngeal plague)
- Plague is transmitted to humans by fleas or by direct exposure to infected tissues or respiratory droplets

Laboratory Criteria for Diagnosis

Confirmatory Testing

- Isolation of *Yersinia pestis* from a clinical specimen; OR
- Fourfold or greater change in serum antibody titers to *Y. pestis* F1 antigen.

Presumptive Testing

- Elevated serum antibody titer(s) to *Yersinia pestis* fraction 1 (F1) antigen (without documented fourfold or greater change) in a patient with no history of plague vaccination; OR
- Detection of F1 antigen in a clinical specimen by fluorescent assay.

Case Classification

Confirmed

A clinically compatible case with confirmatory laboratory results.

Probable

A clinically compatible illness with presumptive laboratory results.

Suspect

A clinically compatible case without presumptive or confirmatory laboratory results.

CONTROL MEASURES

[Arizona Administrative Code R9-6-364](#) Plague

Case Control Measures

1. A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall isolate and institute droplet precautions for a

pneumonic plague case or suspect case until 72 hours of antibiotic therapy have been completed with favorable clinical response.

2. An individual handling the body of a deceased plague case shall use droplet precautions.
3. A local health agency shall:
 - a. Upon receiving a report under R9-6-202 of a plague case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
 - b. Conduct an epidemiologic investigation of each reported plague case or suspect case;
 - c. For each plague case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
 - d. Ensure that an isolate or a specimen, as available, from each plague case or suspect case is submitted to the Arizona State Laboratory.

Contact Control Measures

A local health agency shall:

1. Provide follow-up to pneumonic plague contacts for seven calendar days after last exposure to a pneumonic plague case.

INVESTIGATION FORMS

See Plague Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2013: Suspect category added to ADHS definition to match CDC/CSTE definition. Slight rewording of laboratory criteria.
Most Recent CDC/CSTE Revision Year	2010

CASE DEFINITION**Clinical Description**

Acute onset of a flaccid paralysis of one or more limbs with decreased or absent tendon reflexes in the affected limbs, without other apparent cause, and without sensory or cognitive loss.

Laboratory Criteria for Diagnosis

None

Case Classification**Confirmed**

A case that meets the clinical case definition and in which the patient has a neurologic deficit 60 days after onset of initial symptoms, has died, or has unknown follow-up status.

Probable

A case that meets the clinical case definition.

Comment

All suspected cases of paralytic poliomyelitis are reviewed by a panel of expert consultants before final classification occurs. Confirmed cases are then further classified based on epidemiologic and laboratory criteria (classification described in Sutter RW, et al. 1989. *AJPH*: 79(4):495-498).

- I. SPORADIC: A case of paralytic poliomyelitis not linked epidemiologically to another case of paralytic poliomyelitis
 - a. Wild virus poliomyelitis: Virus characterized as wild virus
 - b. Vaccine-associated poliomyelitis
 - i. Recipient—OPV was received 4 to 30 days before onset of illness
 - ii. Contact—illness onset was 4 to 75 days after OPV was fed to a recipient in contact with patient and contact occurred within 30 days before onset of illness
 - iii. Community—No history of receiving OPV or of contact with an OPV recipient, as defined in 1 and 2, and virus isolated and characterized as vaccine-related
 - c. Poliomyelitis with no history of receiving OPV or of contact with an OPV recipient, as defined in B1 and B2, and virus not isolated or not characterized
- II. EPIDEMIC: A case of paralytic poliomyelitis linked epidemiologically to another case of paralytic poliomyelitis.
 - a. Not a recipient of OPV
 - i. Virus characterized as wild virus
 - ii. Virus characterized as vaccine-related
 - iii. Virus not isolated or not characterized
 - b. OPV recipient—OPV received 4 to 30 days before onset of illness
 - i. Virus characterized as wild virus
 - ii. Virus characterized as vaccine-related
 - iii. Virus not isolated or not characterized
- III. IMMUNOLOGICALLY ABNORMAL: Proven or presumed
 - a. Wild virus poliomyelitis—Virus characterized as wild virus
 - b. Vaccine-associated poliomyelitis
 - i. Recipient—OPV was received 4 to 30 days before onset of illness

- ii. Contact—Illness onset was 4 to 75 days after OPV was fed to a recipient in contact with patient and contact occurred within 30 days before onset of illness
 - iii. Community—No history of receiving OPV or of contact with an OPV recipient, as defined in 1 and 2, and virus isolated and characterized as vaccine-related
 - c. Poliomyelitis with no history- of receiving OPV or of contact with an OPV recipient, as defined in B1 and B2, and virus not isolated or not characterized.
- IV. IMPORTED: Poliomyelitis in a person (US resident or other) who has entered the United States
- a. Virus characterized as wild virus
 - b. Virus characterized as vaccine-related
 - c. Indeterminate—Virus not isolated or characterized

CONTROL MEASURES

[Arizona Administrative Code R9-6-365](#) Poliomyelitis (Paralytic or Non-paralytic)

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a poliomyelitis case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported poliomyelitis case or suspect case;
3. For each poliomyelitis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
4. Ensure that one or more specimens from each poliomyelitis case or suspect case, as required by the Department, are submitted to the Arizona State Laboratory.

INVESTIGATION FORMS

See Suspected Polio Case Worksheet Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes (with additional comments)
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2010

CASE DEFINITION**Clinical Description**

Most poliovirus infections are asymptomatic or cause mild febrile disease. Poliovirus infections occasionally cause aseptic meningitis and one out of 200 infections from poliovirus type 1 results in paralytic poliomyelitis, characterized by acute onset of flaccid paralysis that is typically asymmetric and associated with a prodromal fever. Poliovirus is spread through fecal material, oral secretions, some aerosols, and fomites.

*Note that this case definition applies only to poliovirus infections found in asymptomatic persons or those with mild, nonparalytic disease (e.g., those with a nonspecific febrile illness, diarrhea, or aseptic meningitis). Isolation of polioviruses from persons with acute paralytic poliomyelitis should continue to be reported as “paralytic poliomyelitis.”

Laboratory Criteria for Diagnosis

Poliovirus isolate identified in an appropriate clinical specimen (e.g., stool, cerebrospinal fluid, oropharyngeal secretions), with confirmatory typing and sequencing performed by the CDC Poliovirus Laboratory, as needed.

Case Classification***Confirmed***

Any person without symptoms of paralytic poliomyelitis who meets the laboratory criteria for diagnosis.

Comment

In 2005, a vaccine-derived poliovirus (VDPV) type 1 was identified in a stool specimen obtained from an immunodeficient Amish infant and, subsequently, from 4 other children in 2 other families in the infant’s central Minnesota community¹. Epidemiological and laboratory investigations determined that the VDPV had been introduced into the community about 3 months before the infant was identified and that there had been virus circulation in the community. Investigations in other communities in Minnesota and nearby states and Canada did not identify any additional infections or any cases of paralytic poliomyelitis.

Although oral poliovirus vaccine (OPV) is still widely used in most countries, inactivated poliovirus vaccine (IPV) replaced OPV in the United States in 2002. Therefore, the Minnesota poliovirus infections were the result of importation of a vaccine-derived poliovirus into the United States and the first time a VDPV has been shown to circulate in a community in a developed country³. Circulating VDPVs commonly revert to a wild poliovirus phenotype and have increased transmissibility & high risk for paralytic disease; they have recently caused polio infections and outbreaks of paralytic poliomyelitis in several countries³. Contacts between persons in communities with low polio vaccination coverage pose the potential for transmission of polioviruses and outbreaks of paralytic poliomyelitis.

Because of the success of the routine childhood immunization program in the U.S. and the Global Polio Eradication Initiative, polio has been eliminated in the Americas since 1991. Because the U.S. has used IPV exclusively since 2000, the occurrence of any poliovirus infections in the U.S. is a cause for concern. Reflecting the global concern for poliovirus importations into previously polio-free countries,

the World Health Assembly, W.H.O., has added circulating poliovirus to the notifiable events in the International Health Regulations (IHR)⁴.

References

¹ CDC. Poliovirus infections in four unvaccinated children – Minnesota, August-October 2005. MMWR; 54(41); 1053–1055.
² CDC. Poliomyelitis prevention in the United States. Updated recommendations from the Advisory Committee on Immunization Practices (ACIP). MMWR 2000;49 (No. RR-5).
³ Kew OM, Sutter RW, de Gourville EM, Dowdle WR, Pallansch MA. Vaccine-derived polioviruses and the endgame strategy for global polio eradication. Ann Rev Microbiol 2005;59;587-635.
⁴ CDC. Brief report. Conclusions and recommendations of the Advisory Committee on Poliomyelitis Eradication — Geneva, Switzerland, October 2005. MMWR 2005;54;1186-8.

CONTROL MEASURES

[Arizona Administrative Code R9-6-365](#) Poliomyelitis (Paralytic or Non-paralytic)

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a poliomyelitis case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported poliomyelitis case or suspect case;
3. For each poliomyelitis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
4. Ensure that one or more specimens from each poliomyelitis case or suspect case, as required by the Department, are submitted to the Arizona State Laboratory.

INVESTIGATION FORMS

See Suspected Polio Case Worksheet Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes (with additional comments)
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2010

PRIMARY AMEBIC MENINGOENCEPHALITIS (PAM), <i>Naegleria fowleri</i> DISEASE	PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS
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Cases should be reported under the [Encephalitis, parasitic](#) requirement. Enter in MEDSIS as Encephalitis, parasitic.

CASE DEFINITION

N. fowleri is a free-living ameboflagellate that invades the brain and meninges via the nasal mucosa and olfactory nerve to cause acute, fulminant hemorrhagic meningoencephalitis (primary amebic meningoencephalitis – PAM), primarily in healthy children and young adults with a recent history of exposure to warm fresh water. Initial signs and symptoms of PAM begin 1 to 14 days after infection and include sudden onset of headache, fever, nausea, vomiting, and stiff neck accompanied by positive Kernig's and Brudzinski's signs. In some cases, abnormalities in taste or smell, nasal obstruction and nasal discharge might be seen. Other symptoms might include photophobia, mental-state abnormalities, lethargy, dizziness, loss of balance, other visual disturbances, hallucinations, delirium, seizures, and coma. After the onset of symptoms, the disease progresses rapidly and usually results in death within 3 to 7 days. Although a variety of treatments have been shown to be active against amebae in vitro and have been used to treat infected persons, most infections have still been fatal.

Laboratory Criteria for Diagnosis

Confirmatory Testing

Detection of *N. fowleri* antigen or nucleic acid from a clinical specimen (e.g., immunohistochemistry or PCR).

Presumptive Testing

- Visualization of motile amebae in a wet mount of CSF; OR
- Isolation of *N. fowleri* in culture from a clinical specimen.

Case Classification

Confirmed

A case that meets the clinical criteria and confirmatory laboratory criteria for diagnosis.

Probable

A case that meets the clinical criteria and the presumptive laboratory criteria for diagnosis.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

N. fowleri might cause clinically similar illness to bacterial meningitis, particularly in its early stages. Definitive diagnosis by a reference laboratory might be required. Unlike *Balamuthia mandrillaris* and *Acanthamoeba* spp., *Naegleria fowleri* is commonly found in CSF of patients with PAM. After the onset

of symptoms, the disease progresses rapidly and usually results in death within 3 to 7 days. Patients presenting with the above clinical criteria and found to have a history of recreational freshwater exposure in the two weeks prior to presentation or are known to have performed nasal irrigation (e.g., use of a neti pot for treatment of sinus conditions or practice ritual ablution including nasal rinsing) in the absence of another explanation for their condition, should be investigated further. Urgent confirmatory testing and treatment should be initiated. Notify ADHS as soon as possible.

CONTROL MEASURES

[Arizona Administrative Code R9-6-334](#) Encephalitis, Viral or Parasitic

Case Control Measures

A local health agency shall:

1. Upon receiving a report of encephalitis under R9-6-202, notify the Department:
 - a. For a case or suspect case of parasitic encephalitis, within 24 hours after receiving the report and provide to the Department the information contained in the report; and
 - b. For a case or suspect case of viral encephalitis, within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported viral or parasitic encephalitis case or suspect case; and
3. For each encephalitis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

Contact ADHS. Depending on the etiology of the encephalitis, an investigation form may or may not be available.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2017: Separated from encephalitis, parasitic and a separate case definition created. Laboratory criteria and confirmatory case classification updated to include confirmatory and probable classifications. Comments expanded. All to match 2016 CSTE position statement.
Most Recent CDC/CSTE Revision Year	2017

**PSITTACOSIS (*Chlamydia psittaci*
/Chlamydophila psittaci)
(Ornithosis)**

PROVIDERS AND LABORATORIES SUBMIT A REPORT
WITHIN 5 WORKING DAYS

CASE DEFINITION

Clinical description

Psittacosis is an illness characterized by fever, chills, headache, myalgia, and a dry cough with pneumonia often evident on chest x-ray. Severe pneumonia requiring intensive-care support, endocarditis, hepatitis, and neurologic complications occasionally occur.

Laboratory Criteria for Diagnosis

- Isolation of *Chlamydophila psittaci* from respiratory specimens (e.g., sputum, pleural fluid, or tissue), or blood; OR
- Fourfold or greater increase in antibody (Immunoglobulin G [IgG]) against *C. psittaci* by complement fixation (CF) or microimmunofluorescence (MIF) between paired acute- and convalescent-phase serum specimens obtained at least 2-4 weeks apart; OR
- Supportive serology (e.g. *C. psittaci* antibody titer [Immunoglobulin M (IgM)] of greater than or equal to 32 in at least one serum specimen obtained after onset of symptoms); OR
- Detection of *C. psittaci* DNA in a respiratory specimen (e.g. sputum, pleural fluid or tissue) via amplification of a specific target by polymerase chain reaction (PCR) assay.

Case Classification

Confirmed

An illness characterized by fever, chills, headache, cough and myalgia, and laboratory confirmed by either:

- Isolation of *Chlamydophila psittaci* from respiratory specimens (e.g., sputum, pleural fluid, or tissue), or blood; OR
- Fourfold or greater increase in antibody (Immunoglobulin G [IgG]) against *C. psittaci* by complement fixation (CF) or microimmunofluorescence (MIF) between paired acute- and convalescent-phase serum specimens obtained at least 2-4 weeks apart.

Probable

An illness characterized by fever, chills, headache, cough and myalgia that has either:

- Supportive serology (e.g., *C. psittaci* antibody titer [Immunoglobulin M, IgM] of greater than or equal to 32 in at least one serum specimen obtained after onset of symptoms); OR
- Detection of *C. psittaci* DNA in a respiratory specimen (e.g. sputum, pleural fluid or tissue) via amplification of a specific target by polymerase chain reaction (PCR) assay.

Comment

Although MIF has shown greater specificity to *C. psittaci* than CF, positive serologic findings by both techniques may occur as a result of infection with other *Chlamydophila* species and should be interpreted with caution. To increase the reliability of test results, acute- and convalescent-phase serum specimens should be analyzed at the same time in the same laboratory. A real time polymerase chain reaction (rtPCR) has been developed and validated in avian specimens but has not yet been validated for use in humans (1).

References

1. Mitchell SL, BJ Wolff, WL Thacker, PG Ciembor, CR Gregory, KDE Everett, BW Ritchie, JM Winchell 2008 Genotyping of *Chlamydophila psittaci* by real-time PCR and high resolution melt analysis. J. Clin. Microbiol. 47:175-181

CONTROL MEASURES

[Arizona Administrative Code R9-6-366](#) Psittacosis (Ornithosis)

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported psittacosis case or suspect case; and
2. For each psittacosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Environmental Control Measures

A local health agency shall:

1. If a bird infected with *Chlamydia psittaci* or *Chlamydophila psittaci* is located in a private residence:
 - a. Provide health education for the bird's owner about psittacosis and the risks of becoming infected with psittacosis, and
 - b. Advise the bird's owner to obtain treatment for the bird; and
2. If a bird infected with *Chlamydia psittaci* or *Chlamydophila psittaci* is located in a setting other than a private residence:
 - a. Provide health education for the bird's owner about psittacosis and the risks of becoming infected with psittacosis,
 - b. Ensure that the bird is treated or destroyed and any contaminated structures are disinfected, and
 - c. Require the bird's owner to isolate the bird from contact with members of the public and from other birds until treatment of the bird is completed or the bird is destroyed.

INVESTIGATION FORMS

See Psittacosis Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2010

CASE DEFINITION**Exposure**

Exposure is usually via aerosol, is broadly interpreted, and may be unknown (especially for chronic infection), but often includes the presence of goats, sheep, or other livestock, especially during periods of parturition. Direct contact with animals is not required, and variable incubation periods may be dose dependent.

Q Fever, Acute**Clinical Description**

Acute fever usually accompanied by rigors, myalgia, malaise, and a severe retrobulbar headache. Fatigue, night-sweats, dyspnea, confusion, nausea, diarrhea, abdominal pain, vomiting, non-productive cough, and chest pain have also been reported. Severe disease can include acute hepatitis, atypical pneumonia with abnormal radiograph, and meningoencephalitis. Pregnant women are at risk for fetal death and abortion. Clinical laboratory findings may include elevated liver enzyme levels, leukocytosis, and thrombocytopenia. Asymptomatic infections may also occur.

Note: Serologic profiles of pregnant women infected with acute Q fever during gestation may progress frequently and rapidly to those characteristic of chronic infection.

Clinical Evidence

Acute fever and one or more of the following: rigors, severe retrobulbar headache, acute hepatitis, pneumonia, or elevated liver enzyme levels.

Laboratory Criteria for Diagnosis***Confirmatory Testing***

- Serological evidence of a fourfold change in immunoglobulin G (IgG)-specific antibody titer to *C. burnetii* phase II antigen by indirect immunofluorescence assay (IFA) between paired serum samples, (CDC suggests one taken during the first week of illness and a second 3-6 weeks later, antibody titers to phase I antigen may be elevated or rise as well), OR
- Detection of *C. burnetii* DNA in a clinical specimen via amplification of a specific target by polymerase chain reaction (PCR) assay, OR
- Demonstration of *C. burnetii* in a clinical specimen by immunohistochemical methods (IHC), OR
- Isolation of *C. burnetii* from a clinical specimen by culture.

Presumptive Testing

- Has a single supportive IFA IgG titer of $\geq 1:128$ to phase II antigen (phase I titers may be elevated as well).
- Has serologic evidence of elevated phase II IgG or IgM antibody reactive with *C. burnetii* antigen by enzyme-linked immunosorbent assay (ELISA), dot-ELISA, or latex agglutination.

Note: For acute testing, CDC uses in-house IFA IgG testing (cutoff of $\geq 1:128$), preferring simultaneous testing of paired specimens, and does not use IgM results for routine diagnostic testing.

Case Classification

Confirmed acute Q fever

A laboratory confirmed case that either meets clinical case criteria or is epidemiologically linked to a lab confirmed case.

Probable acute Q fever

A clinically compatible case of acute illness (meets clinical evidence criteria for acute Q fever illness) that has laboratory presumptive results for past or present acute disease (antibody to Phase II antigen) but is not laboratory confirmed.

Q Fever, Chronic

Clinical Description

Infection that persists for more than 6 months. Potentially fatal endocarditis may evolve months to years after acute infection, particularly in persons with underlying valvular disease. Infections of aneurysms and vascular prostheses have been reported. Immunocompromised individuals are particularly susceptible. Rare cases of chronic hepatitis without endocarditis, osteomyelitis, osteoarthritis, and pneumonitis have been described.

Clinical Evidence

Newly recognized, culture-negative endocarditis, particularly in a patient with previous valvulopathy or compromised immune system, suspected infection of a vascular aneurysm or vascular prosthesis, or chronic hepatitis, osteomyelitis, osteoarthritis, or pneumonitis in the absence of other known etiology.

Laboratory Criteria for Diagnosis

Confirmatory Testing

- Serological evidence of IgG antibody to *C. burnetii* phase I antigen $\geq 1:800$ by IFA (while phase II IgG titer will be elevated as well; phase I titer is higher than the phase II titer); OR
- Detection of *C. burnetii* DNA in a clinical specimen via amplification of a specific target by PCR assay; OR
- Demonstration of *C. burnetii* antigen in a clinical specimen by IHC; OR
- Isolation of *C. burnetii* from a clinical specimen by culture.

Presumptive Testing

Has an antibody titer to *C. burnetii* phase I IgG antigen $\geq 1:128$ and $< 1:800$ by IFA.

Note: Samples from suspected chronic patients should be evaluated for IgG titers to both phase I and phase II antigens. Current commercially available ELISA tests (which test only for phase 2) are not quantitative, cannot be used to evaluate changes in antibody titer, and hence are not useful for serological confirmation. IgM tests are not strongly supported for use in serodiagnosis of acute disease, as the response may not be specific for the agent (resulting in false positives) and the IgM response may be persistent. Complement fixation (CF) tests and other older test methods are neither readily available nor commonly used.

Serologic test results must be interpreted with caution, because baseline antibodies acquired as a result of historical exposure to Q fever may exist, especially in rural and farming areas.

Case Classification

Confirmed chronic Q fever

A clinically compatible case of chronic illness (meets clinical evidence criteria for chronic Q fever) that meets the confirmatory laboratory criteria for chronic infection.

Probable chronic Q fever

A clinically compatible case of chronic illness (meets clinical evidence criteria for chronic Q fever) that has laboratory presumptive results for past or present chronic infection (antibody to Phase I antigen).

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 12 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-367](#) Q-Fever

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a Q fever case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported Q fever case or suspect case; and
3. For each Q fever case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Q Fever Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2009

CASE DEFINITION**Laboratory Criteria for Diagnosis**

- A positive direct fluorescent antibody test (preferably performed on central nervous system tissue)
- Isolation of rabies virus (in cell culture or in a laboratory animal)

Case Classification***Confirmed***

A case that is laboratory confirmed

CONTROL MEASURES

[Arizona Administrative Code R9-6 Articles 5 and 6](#) Rabies Control and Reporting Post-Exposure Rabies Prophylaxis

INVESTIGATION (REPORTING) FORMS

- Manual: <http://www.azdhs.gov/preparedness/epidemiology-disease-control/rabies/index.php#manual>
- Animal Bite or Exposure Form: <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2010

RABIES, HUMAN

PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS

LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

CASE DEFINITION

Clinical Description

Rabies is an acute encephalomyelitis that almost always progresses to coma or death within 10 days of the first symptom.

Laboratory Criteria for Diagnosis

- Detection by direct fluorescent antibody of Lyssavirus antigens in a clinical specimen (preferably the brain or the nerves surrounding hair follicles in the nape of the neck); OR
- Isolation (in cell culture or in a laboratory animal) of rabies virus from saliva, CSF (cerebrospinal fluid) or central nervous system tissue; OR
- Identification of Lyssavirus specific antibody (i.e. by indirect fluorescent antibody (IFA) test or complete rabies virus neutralization at 1:5 dilution) in the cerebrospinal fluid (CSF); OR
- Identification of Lyssavirus specific antibody (i.e. by indirect fluorescent antibody (IFA) test or complete rabies virus neutralization at 1:5 dilution) in the serum of an unvaccinated person; OR
- Detection of Lyssavirus viral RNA (using reverse transcriptase-polymerase chain reaction [RT-PCR]) in saliva, CSF, or tissue.

Case Classification

Confirmed

A clinically compatible illness that is laboratory confirmed.

Comment

- Laboratory confirmation by all of the above methods is strongly recommended.
- All confirmatory testing must be performed by the Centers for Disease Control and Prevention. Contact the Arizona Department of Health Services (602) 364-4562 to consult on suspected rabies cases.
- Serology performed by a commercial laboratory is not recognized for diagnosis of rabies.

CONTROL MEASURES

[Arizona Administrative Code R9-6-368](#) Rabies in a Human

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a human rabies case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported human rabies case or suspect case;
3. For each human rabies case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and

4. Ensure that a specimen from each human rabies case or suspect case, as required by the Department, is submitted to the Arizona State Laboratory.

Contact Control Measures:

A local health agency shall:

1. Evaluate the level of risk of transmission from each contact's exposure to a human rabies case and, if indicated, provide or arrange for each contact to receive prophylaxis.

INVESTIGATION FORMS

See Possible Human Rabies Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2011

CASE DEFINITION

Clinical Description

An acute febrile disease with headache, fever, shaking chills, and myalgia. Symptoms may relapse after a febrile periods of 2-4 days.

Laboratory Criteria for Diagnosis

- Demonstration of visible spirochetes in a peripheral blood smear’ OR
- Demonstration of spirochetemia in inoculated Swiss mice; OR
- Serological evidence of non-treponemal spirochetes in persons not visiting endemic Lyme disease area.

Case Classification

Confirmed

A case that is laboratory confirmed with a consistent history of exposure or epidemiologically linked to confirmed case.

Probable

A compatible history of exposure to soft ticks in rustic cabins, caves, or firewood, and at least three of the major symptoms.

CONTROL MEASURES

[Arizona Administrative Code R9-6-369](#) Relapsing Fever (Borreliosis)

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a borreliosis case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported borreliosis case or suspect case; and
3. For each borreliosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

RESPIRATORY DISEASE IN A HEALTH CARE INSTITUTION OR CORRECTIONAL FACILITY

PROVIDERS REPORT WITHIN 24 HOURS IF AN OUTBREAK IS DETECTED

CASE DEFINITION

Coming soon

CONTROL MEASURES

[Arizona Administrative Code R9-6-370](#) Respiratory Disease in a Health Care Institution or Correctional Facility

Outbreak Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported outbreak of respiratory disease in a health care institution or correctional facility; and
2. For each outbreak of respiratory disease in a health care institution or correctional facility, submit to the Department the information required under R9-6-206(E).

When an outbreak of respiratory disease occurs in a health care institution or correctional facility, the administrator of the health care institution or correctional facility, either personally or through a representative, shall comply with the control measures recommended by a local health agency.

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2018: Newly reportable in Arizona. New case definition (coming soon).
Most Recent CDC/CSTE Revision Year	N/A

CASE DEFINITION

Laboratory Criteria for Diagnosis

- RSV isolation in tissue cell culture from nasopharyngeal secretions;
- Reverse-transcriptase polymerase chain reaction (RT-PCR) testing of respiratory specimens;
- Immunofluorescent antibody staining (direct or indirect) of respiratory specimens;
- Rapid RSV diagnostic testing of respiratory specimens; OR
- Four-fold rise in antibody titer in paired acute and convalescent sera.

Case Classification

Confirmed

A case that meets the laboratory criteria for diagnosis.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 4 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

RSV is laboratory reportable, but RSV mortality is not routinely monitored. In situations where RSV-associated mortality needs to be defined, see the [RSV-associated mortality](#) section in this document under “Case Definitions for Communicable Morbidities of Public Health Significance which are not Reportable in Arizona”.

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

RUBELLA (German measles)

PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS IF SUSPECT CASE HAS A HIGH-RISK OCCUPATION.

PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY FOR ALL OTHER CASES

CASE DEFINITION

Clinical Description

An illness with all of the following characteristics:

- Acute onset of generalized maculopapular rash
- Temperature greater than 99.0°F or 37.2°C, if measured
- Arthralgia, arthritis, lymphadenopathy, or conjunctivitis

Laboratory Criteria for Diagnosis

- Isolation of rubella virus; OR
- Detection of rubella-virus specific nucleic acid by polymerase chain reaction; OR
- IgG seroconversion[†] or significant rise between acute- and convalescent-phase titers in serum rubella immunoglobulin G antibody level by any standard serologic assay; OR
- Positive serologic test for rubella immunoglobulin M (IgM) antibody^{†*}.

[†]Not explained by MMR vaccination during the previous 6-45 days.

*Not otherwise ruled out by more specific testing in a public health laboratory.

Case Classification

Confirmed

- A case that is laboratory confirmed (with or without symptoms); OR
- A case that meets the clinical case definition, including a measured fever greater than 99.0°F or 37.2°C, and is epidemiologically linked to a laboratory-confirmed case.

Probable

A case that meets the clinical case definition, has no or noncontributory serologic or virologic testing, and is not epidemiologically linked to a laboratory-confirmed case, in the absence of a more likely diagnosis.

Suspect

Any generalized rash illness of acute onset that does not meet the criteria for probable or confirmed rubella or any other illness.

Epidemiologic Classification of Internationally-Imported and U.S.-Acquired

Internationally imported case: An internationally imported case is defined as a case in which rubella results from exposure to rubella virus outside the United States as evidenced by at least some of the exposure period (12–23 days before rash onset) occurring outside the United States and the onset of rash within 23 days of entering the United States and no known exposure to rubella in the U.S. during that time. All other cases are considered U.S.-acquired cases.

U.S.-acquired case: A U.S.-acquired case is defined as a case in which the patient had not been outside the United States during the 23 days before rash onset or was known to have been exposed to rubella within the United States. U.S.-acquired cases are subclassified into four mutually exclusive groups:

- **Import-linked case:** Any case in a chain of transmission that is epidemiologically linked to an internationally imported case.
- **Imported-virus case:** A case for which an epidemiologic link to an internationally imported case was not identified but for which viral genetic evidence indicates an imported rubella genotype, i.e., a genotype that is not occurring within the United States in a pattern indicative of endemic transmission. An endemic genotype is the genotype of any rubella virus that occurs in an endemic chain of transmission (i.e., lasting ≥ 12 months). Any genotype that is found repeatedly in U.S.-acquired cases should be thoroughly investigated as a potential endemic genotype, especially if the cases are closely related in time or location.
- **Endemic case:** A case for which epidemiological or virological evidence indicates an endemic chain of transmission. Endemic transmission is defined as a chain of rubella virus transmission continuous for ≥ 12 months within the United States.
- **Unknown source case:** A case for which an epidemiological or virological link to importation or to endemic transmission within the U.S. cannot be established after a thorough investigation. These cases must be carefully assessed epidemiologically to assure that they do not represent a sustained U.S.-acquired chain of transmission or an endemic chain of transmission within the U.S.

Note: Internationally imported, import-linked, and imported-virus cases are considered collectively to be import-associated cases.

Comment

Serum rubella IgM test results that are false positives have been reported in persons with other viral infections (e.g., acute infection with Epstein-Barr virus [infectious mononucleosis], recent cytomegalovirus infection, and parvovirus infection) or in the presence of rheumatoid factor. Patients who have laboratory evidence of recent measles infection are excluded.

CONTROL MEASURES

[Arizona Administrative Code R9-6-371](#) Rubella (German Measles)

Case Control Measures

An administrator of a school or child care establishment, either personally or through a representative, shall:

1. Exclude a rubella case from the school or child care establishment and from school- or child-care-establishment-sponsored events from the onset of illness through the seventh calendar day after the rash appears; and
2. Exclude a rubella suspect case from the school or child care establishment and from school- or child-care-establishment-sponsored events until evaluated and determined to be noninfectious by a physician, physician assistant, registered nurse practitioner, or local health agency.

A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, and in consultation with the local health agency, shall isolate and institute droplet precautions for a rubella case through the seventh calendar day after the rash appears.

An administrator of a health care institution, either personally or through a representative, shall exclude a rubella:

1. Case from working at the health care institution from the onset of illness through the seventh calendar day after the rash appears; and
2. Suspect case from working at the health care institution until evaluated and determined to be noninfectious by a physician, physician assistant, registered nurse practitioner, or local health agency.

A local health agency shall:

1. Upon receiving a report under R9-6-202 or R9-6-203 of a rubella case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported rubella case or suspect case;
3. For each rubella case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
4. Ensure that one or more specimens from each rubella case or suspect case, as required by the Department, are submitted to the Arizona State Laboratory.

An administrator of a correctional facility or shelter, either personally or through a representative, shall comply with the rubella control measures recommended by a local health agency or the Department.

Contact Control Measures:

An administrator of a health care institution shall ensure that a paid or volunteer full-time or part-time worker at a health care institution does not participate in the direct care of a rubella case or suspect case or of a patient who is or may be pregnant unless the worker first provides evidence of immunity to rubella consisting of:

1. A record of immunization against rubella given on or after the first birthday; or
2. A statement signed by a physician, physician assistant, registered nurse practitioner, state health officer, or local health officer affirming serologic evidence of immunity to rubella.

When a rubella case has been at a school or child care establishment, the administrator of the school or child care establishment, either personally or through a representative, shall:

1. Consult with the local health agency to determine who shall be excluded and how long each individual shall be excluded from the school or child care establishment, and
2. Comply with the local health agency's recommendations for exclusion.

A local health agency shall:

1. Determine which rubella contacts will be quarantined or excluded, according to R9-6-303, to prevent transmission; and
2. Provide or arrange for immunization of each non-immune rubella contact within 72 hours after last exposure, if possible.

INVESTIGATION FORMS

See Rubella Surveillance Worksheet Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2013: ADHS definition was edited to match CDC/CSTE, including addition of PCR testing.
Most Recent CSTE Revision Year	2013

CASE DEFINITION

Clinical Description

Presence of any defect(s) or laboratory data consistent with congenital rubella infection. Infants with congenital rubella syndrome usually present with more than one sign or symptom consistent with congenital rubella infection. However, infants may present with a single defect. Hearing impairment is most common single defect.

Clinical Case Definition

An illness, usually manifesting in infancy, resulting from rubella infection in utero and characterized by signs or symptoms from the following categories:

- a. Cataracts/congenital glaucoma, congenital heart disease (most commonly patent ductus arteriosus or peripheral pulmonary artery stenosis), hearing impairment, pigmentary retinopathy.
- b. Purpura, hepatosplenomegaly, jaundice, microcephaly, developmental delay, meningoenzephalitis, radiolucent bone disease.

Laboratory Criteria for Diagnosis

- Isolation of rubella virus; OR
- Demonstration of rubella-specific immunoglobulin M (IgM) antibody; OR
- Infant rubella antibody level that persists at a higher level and for a longer period than expected from passive transfer of maternal antibody (i.e., rubella titer that does not drop at the expected rate of a twofold dilution per month); OR
- A specimen that is PCR positive for rubella virus.

Case Classification

Confirmed

An infant with at least one of the symptoms listed in the clinical case definition and meets the laboratory criteria for diagnosis.

Probable*

A case that is not laboratory confirmed and that has any two complications listed in paragraph "a" of the clinical case definition or one complication from paragraph "a" and one from paragraph "b", and lacks evidence of any other etiology.

Suspect

A case with one or more compatible clinical findings but not meeting the criteria for a probable case.

Infection only*

A case that demonstrates laboratory evidence of infection, but without any clinical symptoms or signs.

Criteria to Distinguish a New Case from an Existing Case*

A case should never be counted as a new case if there was a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

*In probable cases, either or both of the eye-related findings (cataracts and congenital glaucoma) count as a single complication. In cases classified as infection only, if any compatible signs or symptoms (e.g., hearing loss) are identified later, the case is reclassified as confirmed.

Epidemiologic Classification of Internationally-Imported and U.S.-Acquired

Congenital rubella syndrome cases will be classified epidemiologically as internationally imported or U.S.-acquired, according to the source of infection in the mother, using the definitions below, which parallel the classifications for rubella cases.

Internationally imported case: To be classified as an internationally imported CRS case, the mother must have acquired rubella infection outside the U.S. or in the absence of documented rubella infection, the mother was outside the United States during the period when she may have had exposure to rubella that affected her pregnancy (from 21 days before conception and through the first 24 weeks of pregnancy).

U.S.-acquired case: A US-acquired case is one in which the mother acquired rubella from an exposure in the United States. U.S.-acquired cases are subclassified into four mutually exclusive groups:

- **Import-linked case:** Any case in a chain of transmission that is epidemiologically linked to an internationally imported case.
- **Imported-virus case:** A case for which an epidemiologic link to an internationally imported case was not identified but for which viral genetic evidence indicates an imported rubella genotype, i.e., a genotype that is not occurring within the United States in a pattern indicative of endemic transmission. An endemic genotype is the genotype of any rubella virus that occurs in an endemic chain of transmission (i.e., lasting ≥ 12 months). Any genotype that is found repeatedly in U.S.-acquired cases should be thoroughly investigated as a potential endemic genotype, especially if the cases are closely related in time or location.
- **Endemic case:** A case for which epidemiological or virological evidence indicates an endemic chain of transmission. Endemic transmission is defined as a chain of rubella virus transmission continuous for ≥ 12 months within the United States.
- **Unknown source case:** A case for which an epidemiological or virological link to importation or to endemic transmission within the U.S. cannot be established after a thorough investigation. These cases must be carefully assessed epidemiologically to assure that they do not represent a sustained U.S.-acquired chain of transmission or an endemic chain of transmission within the U.S.

Note: Internationally imported, import-linked, and imported-virus cases are considered collectively to be import-associated cases.

CONTROL MEASURES

[Arizona Administrative Code R9-6-372](#) Rubella Syndrome, Congenital

Case Control Measures:

A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall isolate and implement contact precautions for an infant congenital rubella syndrome case until:

1. The infant congenital rubella syndrome case reaches one year of age; or
2. Two successive negative virus cultures, from specimens collected at least one month apart, are obtained from the infant congenital rubella syndrome case after the infant congenital rubella syndrome case reaches three months of age.

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a congenital rubella syndrome case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported congenital rubella syndrome case or suspect case;
3. For each congenital rubella syndrome case, as specified in Table 2.4, the information required under R9-6-206(D); and
4. Ensure that one or more specimens from each congenital rubella syndrome case or suspect case, as required by the Department, are submitted to the Arizona State Laboratory.

Contact Control Measures

An administrator of a health care institution shall

1. Ensure that a paid or volunteer full-time or part-time worker at a health care institution who is known to be pregnant does not participate in the direct care of a congenital rubella syndrome case or suspect case unless the worker first provides evidence of immunity to rubella that complies with R9-6-371(B)(1).

INVESTIGATION FORMS

See Congenital Rubella Syndrome Case Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2010

SALMONELLOSIS

PROVIDERS REPORT WITHIN 24 HOURS IF AN OUTBREAK IS DETECTED OR PERSON HAS A HIGH-RISK OCCUPATION

PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 DAY FOR ALL OTHER CASES

CASE DEFINITION

Note: For cases of infection with Salmonella serotypes Paratyphi A, Paratyphi B [tartrate negative] and Paratyphi C, please see the [Paratyphoid Fever](#) case definition. Salmonella enterica serotype Typhi infections should be classified under [Typhoid Fever](#).

Clinical Description

An illness of variable severity commonly manifested by diarrhea, abdominal pain, nausea, and sometimes vomiting. Asymptomatic infections may occur and the organism may cause extraintestinal infections.

Laboratory Criteria for Diagnosis

Confirmatory Testing

Isolation of *Salmonella* from a clinical specimen.

Presumptive Testing

Detection of *Salmonella* from a clinical specimen using a culture-independent diagnostic test (CIDT).

Case Classification

Confirmed

A case that meets the confirmatory laboratory criteria

Probable

- A case that meets the presumptive laboratory criteria; OR
- A clinically compatible illness that is epidemiologically linked to a case that meets the presumptive or confirmatory laboratory criteria.

Criteria to Distinguish a New Case from an Existing Case

A case should not be counted as a new case if laboratory results were reported within 365 days of a previously reported infection in the same individual.

When two or more different serotypes are identified from one or more specimens from the same individual, each should be reported as a separate case.

Comment

Both asymptomatic infections and infections at sites other than the gastrointestinal tract, if laboratory confirmed, are considered confirmed cases that should be reported.

The use of CIDTs as stand-alone tests for the direct detection of *Salmonella* in stool is increasing. Specific performance characteristics such as sensitivity, specificity, and positive predictive value of these assays likely depend on the manufacturer and are currently unknown. It is therefore useful to collect information on the type(s) of testing performed for reported salmonellosis cases. When a

specimen is positive using a CIDT it is also helpful to collect information on all culture results for the specimen, even if those results are negative.

Culture confirmation of CIDT-positive specimens is ideal, although it might not be practical in all instances. State and local public health agencies should make efforts to encourage reflexive culturing by clinical laboratories that adopt culture-independent methods, should facilitate submission of isolates/clinical material to state public health laboratories, and should be prepared to perform reflexive culture when not performed at the clinical laboratory as isolates are currently necessary for molecular typing (PFGE and whole genome sequencing) that are essential for outbreak detection.

CONTROL MEASURES

[Arizona Administrative Code R9-6-373](#) Salmonellosis

Case Control Measures:

A local health agency shall:

5. Upon receiving a report under R9-6-202 or R9-6-203 of a salmonellosis case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
6. Exclude a salmonellosis case or suspect case with diarrhea from:
 - a. Working as a food handler, caring for children in or attending a child care establishment, or caring for patients or residents in a health care institution until:
 - i. Diarrhea has resolved,
 - ii. A stool specimen negative for *Salmonella* spp. is obtained from the salmonellosis case or suspect case, or
 - iii. The local health agency has determined that the case or suspect case is unlikely to infect other individuals; and
 - b. Using an aquatic venue until diarrhea has resolved;
7. Conduct an epidemiologic investigation of each reported salmonellosis case or suspect case; and
8. For each salmonellosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Environmental Control Measures

A local health agency shall:

1. If an animal infected with *Salmonella* spp. is located in a private residence, provide health education for the animal's owner about salmonellosis and the risks of becoming infected with *Salmonella* spp.; and
2. If an animal infected with *Salmonella* spp. is located in a setting other than a private residence:
 - a. Provide health education for the animal's owner about salmonellosis and the risks of becoming infected with *Salmonella* spp., and
 - b. Require the animal's owner to provide information to individuals with whom the animal may come into contact about salmonellosis and methods to reduce the risk of transmission.

INVESTIGATION FORMS

See Salmonellosis Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2018: Paratyphoid fever (specific serotypes of <i>Salmonella enterica</i>) was separated into its own morbidity for reporting nationally. All other salmonellosis remains unchanged.</p> <p>2017: Supportive laboratory evidence modified to allow for tests other than culture. Supportive laboratory evidence used for a new probable definition. Added criteria to distinguish a new case from an existing case. Suspect definition removed. Changes based on CDC/CSTE definition.</p> <p>2013: ADHS definition was changed to match CDC/CSTE, including the addition of non-culture based testing and a suspect case classification.</p>
Most Recent CDC/CSTE Revision Year	2017

CASE DEFINITION

Clinical Description

A parasitic disease of the skin caused by a mite whose penetration is visible as papules, vesicles, or tiny linear burrows containing the mites and their eggs. Lesions are prominent around finger webs, anterior surfaces of wrists and elbows, anterior axillary folds, belt line, thighs, and external genitalia in men, nipples, buttocks, and abdomen in women.

Laboratory Criteria for Diagnosis

Recovery of *Sarcoptes scabiei* mite, parts of the mite, or eggs by scraping.

Case Classification

Confirmed

A laboratory confirmed case.

Probable

An infested individual with rash occurring as described above.

Comment

Only outbreaks of scabies are reportable.

CONTROL MEASURES

[Arizona Administrative Code R9-6-374](#) Scabies

Case Control Measures

An administrator of a school or child care establishment, either personally or through a representative, shall exclude a scabies case from the school or child care establishment until treatment for scabies is completed.

An administrator of a health care institution or shelter, either personally or through a representative, shall exclude a scabies case from participating in the direct care of a patient or resident until treatment for scabies is completed.

An administrator of a shelter, either personally or through a representative, shall ensure that a scabies case receives treatment for scabies and that the case's clothing and personal articles are disinfested.

An administrator of a correctional facility, either personally or through a representative, shall ensure that a scabies case receives treatment for scabies and that the case's clothing and personal articles are disinfested.

Contact Control Measures

An administrator of a school, child care establishment, health care institution, or shelter, either personally or through a representative

1. Shall advise a scabies contact with symptoms of scabies to obtain examination and, if necessary, treatment.

Outbreak Control Measures

A local health agency shall:

1. Provide health education regarding prevention, control, and treatment of scabies to individuals affected by a scabies outbreak;
2. When a scabies outbreak occurs in a health care institution, notify the licensing agency of the outbreak; and
3. For each scabies outbreak, submit to the Department the information required under R9-6-202(D).

INVESTIGATION FORMS

See Outbreak Summary Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

SEVERE ACUTE RESPIRATORY SYNDROME (SARS)

PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 24 HOURS

Cases should be reported under the [Novel Coronavirus \(e.g., SARS or MERS\)](#) requirement. Enter in MEDSIS as SARS.

CASE DEFINITION**Clinical Description****Early illness**

Presence of two or more of the following features: fever (might be subjective), chills, rigors, myalgia, headache, diarrhea, sore throat, or rhinorrhea.

Mild-to-moderate respiratory illness

- Temperature of >100.4° F (>38° C); AND
- One or more clinical findings of lower respiratory illness (e.g., cough, shortness of breath, or difficulty breathing).

Severe respiratory illness

- Meets clinical criteria of mild-to-moderate respiratory illness; AND
- One or more of the following findings:
 - Radiographic evidence of pneumonia; OR
 - Acute respiratory distress syndrome; OR
 - Autopsy findings consistent with pneumonia or acute respiratory distress syndrome without an identifiable cause.

Laboratory Criteria for Diagnosis*

Tests to detect SARS-CoV are being refined and their performance characteristics assessed; therefore, criteria for laboratory diagnosis of SARS-CoV are changing. The following are general criteria for laboratory confirmation of SARS-CoV:

- Detection of serum antibody to SARS-CoV by a test validated by CDC (e.g., enzyme immunoassay); OR
- Isolation in cell culture of SARS-CoV from a clinical specimen; OR
- Detection of SARS-CoV RNA by a reverse transcription polymerase chain reaction test validated by CDC and with subsequent confirmation in a reference laboratory (e.g., CDC).

*Information about the current criteria for laboratory diagnosis of SARS-CoV is available at <https://www.cdc.gov/sars/lab/testing.html>.

Exposure

One or more of the following exposures in the 10 days before onset of symptoms:

- Close contact with a person with confirmed SARS-CoV disease; OR

- Close contact with a person with mild-to-moderate or severe respiratory illness for whom a chain of transmission can be linked to a confirmed case of SARS-CoV disease in the 10 days before onset of symptoms.

Case Classification

SARS-CoV disease

Confirmed case of SARS-CoV disease

Clinically compatible illness (i.e., early, mild-to-moderate, or severe) that is laboratory confirmed.

Probable case of SARS-CoV disease

Meets the clinical criteria for severe respiratory illness and the epidemiologic criteria for likely exposure to SARS-CoV.

Other Criteria

SARS Report Under Investigation (RUI)

Reports in persons from areas where SARS is not known to be active

- SARS RUI-1: Cases compatible with SARS in groups likely to be first affected by SARS-CoV if SARS-CoV is introduced from a person without clear epidemiologic links to known cases of SARS-CoV disease or places with known ongoing transmission of SARS-CoV

Reports in persons from areas where SARS activity is occurring

- SARS RUI-2: Cases meeting the clinical criteria for mild-to-moderate illness and the epidemiologic criteria for possible exposure (spring 2003 CDC definition for suspect cases)
- SARS RUI-3: Cases meeting the clinical criteria for severe illness and the epidemiologic criteria for possible exposure (spring 2003 CDC definition for probable cases)
- SARS RUI-4: Cases meeting the clinical criteria for early or mild-to-moderate illness and the epidemiologic criteria for likely exposure to SARS-CoV

Exclusion Criteria

A case may be excluded as a SARS report under investigation (SARS RUI), including as a CDC-defined probable SARS-CoV case, if any of the following apply:

- An alternative diagnosis can explain the illness fully; OR
- Antibody to SARS-CoV is undetectable in a serum specimen obtained >28 days after onset of illness; OR
- The case was reported on the basis of contact with a person who was excluded subsequently as a case of SARS-CoV disease; then the reported case also is excluded, provided other epidemiologic or laboratory criteria are not present.

Comment

See the [MMWR report from December 12, 2003](#) /52(49); 1202-1206 for more information and the full list of comments.

CONTROL MEASURES

[Arizona Administrative Code R9-6-361](#) Novel Coronavirus (e.g., SARS or MERS)

Case Control Measures

A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall isolate and institute both airborne precautions and contact precautions for a novel coronavirus case or suspect case, including a case or suspect case of severe acute respiratory syndrome or Middle East respiratory syndrome, until evaluated and determined to be noninfectious by a physician, physician assistant, or registered nurse practitioner.

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a novel coronavirus case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. In consultation with the Department, ensure that isolation and both airborne precautions and contact precautions have been instituted for a novel coronavirus case or suspect case to prevent transmission;
3. Conduct an epidemiologic investigation of each reported novel coronavirus case or suspect case; and
4. For each novel coronavirus case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Contact Control Measures

A local health agency, in consultation with the Department, shall:

1. Determine which novel coronavirus contacts will be quarantined or excluded, according to R9-6-303, to prevent transmission.

INVESTIGATION FORMS

Contact ADHS.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2013: ADHS definition was changed to match CDC/CSTE, including modifying the exposure criteria for the situation in which SARS is not currently known to be circulating in the world.
Most Recent CSTE Revision Year	2003

SHIGELLOSIS

REPORT WITHIN 24 HOURS IF AN OUTBREAK IS DETECTED OR PERSON HAS A HIGH-RISK OCCUPATION
PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 DAY FOR ALL OTHER CASES

CASE DEFINITION

Clinical Description

An illness of variable severity characterized by diarrhea, fever, nausea, cramps, and tenesmus. Asymptomatic infections occur.

Laboratory Criteria for Diagnosis

Confirmatory Testing

Isolation of *Shigella* species from a clinical specimen.

Presumptive Testing

Detection of *Shigella* or *Shigella*/Enteroinvasive *Escherichia coli* (EIEC) from a clinical specimen using a culture-independent diagnostic test (CIDT).

Case Classification

Confirmed

A case that meets the confirmatory laboratory criteria.

Probable

- A case that meets the presumptive laboratory criteria for diagnosis; OR
- A clinically compatible illness that is epidemiologically linked to a case that meets the presumptive or confirmatory laboratory criteria.

Criteria to Distinguish a New Case from an Existing Case

A case should not be counted as a new case if laboratory results were reported within 90 days of a previously reported infection in the same individual.

When two or more different serotypes are identified in one or more specimens from the same individual, each should be reported as a separate case.

Comment

Both asymptomatic infections and infection at sites other than the gastrointestinal tract, if laboratory confirmed, are considered confirmed cases that should be reported.

The use of CIDTs as stand-alone tests for the direct detection of *Shigella*/EIEC in stool is increasing. EIEC is genetically very similar to *Shigella* and will be detected in CIDTs that detect *Shigella*. Specific performance characteristics such as sensitivity, specificity, and positive predictive value of these assays likely depend on the manufacturer and are currently unknown. It is therefore useful to collect information on the type(s) of testing performed for reported shigellosis cases. When a specimen is positive using a CIDT, it is also helpful to collect information on all culture results for the specimen, even if those results are negative.

CONTROL MEASURES

[Arizona Administrative Code R9-6-375](#) Shigellosis

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 or R9-6-203 of a shigellosis case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Exclude a shigellosis case or suspect case with diarrhea from:
 - a. Working as a food handler, caring for children in or attending a child care establishment, or caring for patients or residents in a health care institution until:
 - i. Diarrhea has resolved,
 - ii. A stool specimen negative for *Shigella* spp. is obtained from the shigellosis case or suspect case, or
 - iii. The local health agency has determined that the case or suspect case is unlikely to infect other individuals; and
 - b. Using an aquatic venue for one week after diarrhea has resolved;
3. Conduct an epidemiologic investigation of each reported shigellosis case or suspect case; and
4. For each shigellosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Shigellosis Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2017: Supportive laboratory evidence modified to allow for tests other than culture. Supportive laboratory evidence used for a new probable definition. Suspect definition removed. Added criteria to distinguish a new case from an existing case. Changes based on CDC/CSTE definition.</p> <p>2013: ADHS definition was edited to better match CDC/CSTE, including addition of non-culture based testing and the suspect case classification.</p>
Most Recent CDC/CSTE Revision Year	2017

CASE DEFINITION

Clinical Description

An illness with acute onset of fever $\geq 101^{\circ}\text{F}$ or 38.3°C followed by a rash characterized by firm, deep seated vesicles or pustules in the same stage of development without other apparent cause. Clinically consistent cases are those presentations of smallpox that do not meet this classical clinical case definition: a) hemorrhagic type, b) flat type, and c) *variola sine eruptione*. (Detailed clinical description is available on the CDC web site, see URL: <https://www.cdc.gov/smallpox/index.html>)

Laboratory Criteria for Diagnosis

- Polymerase chain reaction (PCR) identification of variola DNA in a clinical specimen; OR
- Isolation of smallpox (variola) virus from a clinical specimen (Level D laboratory only; confirmed by variola PCR).

Note: Laboratory testing of specimens from suspect smallpox vaccine adverse events or smallpox cases takes place in reference level Laboratory Response Network member laboratories and at CDC. Consultation with the state epidemiologist, state health laboratory, and CDC is necessary before sending specimens to CDC.

Generic orthopox PCR and negative strain electron microscopy (EM) identification of a pox virus in a clinical specimen are suggestive of an orthopox virus infection but not diagnostic for smallpox.

Case Classification*

Confirmed

Case of smallpox that is laboratory confirmed, or a case that meets the clinical case definition that is epidemiologically linked to a laboratory confirmed case.

Probable

A case that meets the clinical case definition, or a clinically consistent case that does not meet the clinical case definition and has an epidemiological link to a confirmed case of smallpox.

Suspect

A case with a generalized, acute vesicular or pustular rash illness with fever preceding development of rash by 1-4 days, without another apparent cause.

*Exclusion Criteria: A case may be excluded as a suspect or probable smallpox case if an alternative diagnosis fully explains the illness or appropriate clinical specimens are negative for laboratory criteria for smallpox.

Comment

The smallpox case definition is to be used only during post-event surveillance or once an outbreak has been confirmed. Different criteria may be used for evaluating a suspect case. See CDC guidance for Public Health Response Activities at <https://www.cdc.gov/smallpox/bioterrorism-response-planning/public-health/index.html>.

CONTROL MEASURES

[Arizona Administrative Code R9-6-376](#) Smallpox

Case Control Measures

A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall isolate and institute both airborne precautions and contact precautions for a smallpox case or suspect case, until evaluated and determined to be noninfectious by a physician, physician assistant, or registered nurse practitioner.

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a smallpox case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. In consultation with the Department:
 - a. Ensure that isolation and both airborne precautions and contact precautions have been instituted for a smallpox case or suspect case to prevent transmission, and
 - b. Conduct an epidemiologic investigation of each reported smallpox case or suspect case;
3. For each smallpox case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
4. Ensure that a specimen from each smallpox case or suspect case, as required by the Department, is submitted to the Arizona State Laboratory.

Contact Control Measures

A local health agency, in consultation with the Department, shall:

1. Quarantine or exclude a smallpox contact as necessary, according to R9-6-303, to prevent transmission; and
2. Monitor the contact for smallpox symptoms, including fever, each day for 21 calendar days after last exposure.

INVESTIGATION FORMS

Contact ADHS in the event of a suspect case of smallpox.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes (with revised Note and Comment)
Justification	2017: Comment and Lab Note revised to remove references to the CDC Smallpox Response Plan, which is no longer available.
Most Recent CDC/CSTE Revision Year	2010

SPOTTED FEVER RICKETTSIOSIS
(e.g., Rocky Mountain spotted fever)

PROVIDERS AND LABORATORIES SUBMIT A REPORT
WITHIN 1 WORKING DAY

Enter Rocky Mountain Spotted Fever in MEDSIS under Rocky Mountain Spotted Fever.

CASE DEFINITION

Epidemiology

Spotted fever rickettsioses are a group of tick-borne infections caused by some members of the genus *Rickettsia*. Rocky Mountain spotted fever (RMSF) is an illness caused by *Rickettsia rickettsii*, a bacterial pathogen transmitted to humans through contact with ticks. *Dermacentor* species of ticks are most commonly associated with infection, including *Dermacentor variabilis* (the American dog tick), *Dermacentor andersoni* (the Rocky Mountain wood tick), and more recently *Rhipicephalus sanguineus* (the brown dog tick). Disease onset averages one week following a tick bite. Age-specific illness is highest for children and older adults. In addition to RMSF, human illness associated with other spotted fever group *Rickettsia* species, including infection with *Rickettsia parkeri* (associated with *Amblyomma maculatum* ticks), has also been reported. In these patients, clinical presentation appears similar to, but may be milder than, RMSF; the presence of an eschar at the site of tick attachment has been reported for some other spotted fever rickettsioses.

Clinical Description

Illness is characterized by acute onset of fever, and may be accompanied by headache, malaise, myalgia, nausea/vomiting, or neurologic signs; a macular or maculopapular rash appears 4-7 days following onset in many (~80%) patients, often present on the palms and soles. RMSF may be fatal in as many as 20% of untreated cases, and severe, fulminant disease can occur.

Note: The characteristic rash may appear late or not at all. Also, some RMSF cases present with acute respiratory distress syndrome (ARDS) and thrombocytopenia.

Clinical Evidence

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

Laboratory Criteria for Diagnosis

The organism in the acute phase of illness is best detected by polymerase chain reaction (PCR) and immunohistochemical methods (IHC) in skin biopsy specimens, and occasionally by PCR in appropriate whole blood specimens taken during the first week of illness, prior to antibiotic treatment. Serology can also be employed for detection, however an antibody response may not be detectable in initial samples, and paired acute and convalescent samples are essential for confirmation.

For the purposes of surveillance:

Confirmatory Testing

- Serological evidence of a fourfold change in immunoglobulin G (IgG)-specific antibody titer reactive with *Rickettsia rickettsii* or other spotted fever group antigen by indirect immunofluorescence assay (IFA) between paired serum specimens (one taken in the first week of illness and a second 2-4 weeks later); OR

- Detection of *R. rickettsii* or other spotted fever group DNA in a clinical specimen via amplification of a specific target by PCR assay; OR
- Demonstration of spotted fever group antigen in a biopsy or autopsy specimen by IHC; OR
- Isolation of *R. rickettsii* or other spotted fever group rickettsia from a clinical specimen in cell culture.

Presumptive Testing

Has serologic evidence of elevated IgG or IgM antibody reactive with *R. rickettsii* or other spotted fever group antigen by IFA, enzyme-linked immunosorbent assay (ELISA), dot-ELISA, or latex agglutination.

Note: Current commercially available ELISA tests are not quantitative, cannot be used to evaluate changes in antibody titer, and hence are not useful for serological confirmation. IgM tests are not strongly supported for use in serodiagnosis of acute disease, as the response may not be specific for the agent (resulting in false positives) and the IgM response may be persistent. Complement fixation (CF) tests and other older test methods are neither readily available nor commonly used. CDC uses in-house IFA IgG testing (cutoff of $\geq 1:64$), preferring simultaneous testing of paired specimens, and does not use IgM results for routine diagnostic testing.

Exposure

Exposure is defined as having been in potential tick habitats within the past 14 days before onset of symptoms. Occupation should be recorded if relevant to exposure. A history of a tick bite is not required.

Case Classification

Confirmed

A clinically compatible case (meets clinical evidence criteria) that meets the confirmatory laboratory criteria.

Probable

A clinically compatible case (meets clinical evidence criteria) that meets the presumptive laboratory criteria.

Suspect

- A case with laboratory evidence of past or present infection but no clinical information available (e.g. a laboratory report).
- A case that meets the clinical criteria with a negative acute specimen results and missing convalescent testing.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-377](#) Spotted Fever Rickettsiosis (e.g., Rocky Mountain Spotted Fever)

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a spotted fever rickettsiosis case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Ensure that a spotted fever rickettsiosis case or, if the case is a child or incapacitated adult, the parent or guardian of the case receives health education about reducing the risks of becoming reinfected with or of having others become infected with spotted fever rickettsiosis;
3. Conduct an epidemiologic investigation of each reported spotted fever rickettsiosis case or suspect case; and
4. For each spotted fever rickettsiosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Environmental Control Measures

In cooperation with the Department, a local health agency or another local agency responsible for vector control within a jurisdiction shall

1. Conduct an assessment of the environment surrounding each spotted fever rickettsiosis case or suspect case and implement vector control measures as necessary.

INVESTIGATION FORMS

See Tick-Borne Rickettsial Disease Case Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	No
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2013: ADHS has added additional criteria to the suspect case definition. Many cases do not go in for convalescent testing and most acute specimens are negative. For cases meeting clinical criteria with missing convalescent testing, ADHS is classifying these as suspect cases.
Most Recent CDC/CSTE Revision Year	2010

**ST. LOUIS ENCEPHALITIS VIRUS
DISEASE**

PROVIDERS SUBMIT A REPORT WITHIN 5 WORKING
DAYS

LABORATORIES SUBMIT A REPORT WITHIN 1
WORKING DAY

See [Arboviral infection](#) in this document.

CASE DEFINITION

Clinical Description

Invasive group A streptococcal infections may present with any of several clinical syndromes including pneumonia, bacteremia in association with cutaneous infection (cellulitis, erysipelas, or infection of a surgical or nonsurgical wound), deep soft tissue infection (myositis or necrotizing fasciitis), meningitis, peritonitis, osteomyelitis, septic arthritis, postpartum sepsis (puerperal fever), neonatal sepsis, and non-focal bacteremia.

Streptococcal Toxic Shock Syndrome (STSS)

The streptococcal toxic shock syndrome is a severe illness associated with invasive or noninvasive group A streptococcal (*Streptococcus pyogenes*) infection. STSS may occur with infection at any site, but most often occurs in association with infection of a cutaneous lesion. Signs of toxicity and a rapidly progressive clinical course are characteristic, and the case fatality rate may exceed 50 percent. STSS cases should be reported and classified under [Toxic Shock Syndrome - Streptococcal](#).

Laboratory Criteria for Diagnosis

Confirmatory Laboratory Evidence

Isolation of group A *Streptococcus* (*Streptococcus pyogenes*) by culture from a normally sterile site.

Presumptive Laboratory Evidence

Identification of group A *Streptococcus* (*Streptococcus pyogenes*) from a normally sterile body site by a culture-independent diagnostic test (CIDT) without isolation of the bacteria.

Case Classification

Confirmed

A case that meets the confirmatory laboratory evidence.

Probable

A case that meets the presumptive laboratory evidence.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

See [Appendix 1](#) for guidance on interpreting whether a specimen is from a “normally sterile body site”.

CONTROL MEASURES

[Arizona Administrative Code R9-6-378](#) Streptococcal Group A Infection

Non-invasive streptococcal group A infection:Case Control Measures

An administrator of a school, child care establishment, or health care institution or a person in charge of a food establishment, either personally or through a representative

1. Shall exclude a streptococcal group A infection case with streptococcal lesions or streptococcal sore throat from working as a food handler, attending or working in a school, caring for children in or attending a child care establishment, or caring for patients or residents in a health care institution for 24 hours after the initiation of treatment for streptococcal group A infection.

Invasive streptococcal group A infection:Outbreak Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported outbreak of streptococcal group A invasive infection;
2. For each streptococcal group A invasive infection case involved in an outbreak, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
3. For each outbreak of streptococcal group A invasive infection, submit to the Department the information required under R9-6-206(E).

INVESTIGATION FORMS

See Invasive Group A Streptococcus Surveillance Supplemental Form at

<http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	No
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	<p>2019: Presumptive laboratory evidence added to allow for tests other than culture. Presumptive laboratory evidence used for a new probable definition, which was not part of the CDC/CSTE definition.</p> <p>2014: Removed “clinically compatible” from confirmed definition. Matches the latest CDC/CSTE definition.</p>
Most Recent CDC/CSTE Revision Year	1995 (no longer nationally notifiable after 2009)

STREPTOCOCCAL GROUP B INFECTION IN AN INFANT YOUNGER THAN 90 DAYS OF AGE, INVASIVE DISEASE

PROVIDERS SUBMIT A REPORT WITHIN 5 WORKING DAYS

LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

CASE DEFINITION

Clinical Description

Group B Streptococcus can produce a variety of syndromes in neonates. Clinical manifestations include pneumonia, bloodstream infection, and meningitis.

Laboratory Criteria for Diagnosis

Isolation of Group B Streptococcus (*Streptococcus agalactiae*) by culture from a normally sterile site

Case Classification

Confirmed

A clinically compatible case of invasive Group B Streptococcus that is laboratory-confirmed in a sterile site in children < 90 days of age.

Criteria to Distinguish a New Case from an Existing Case*

A case should never be counted as a new case if there was a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

See [Appendix 1](#) for guidance on interpreting whether a specimen is from a “normally sterile body site”.

CONTROL MEASURES

[Arizona Administrative Code R9-6-379](#) Streptococcal Group B Infection in an Infant Younger Than 90 Days of Age

Case Control Measures

A local health agency shall:

1. Confirm the diagnosis of streptococcal group B invasive infection for each reported case or suspect case of streptococcal group B invasive infection in an infant younger than 90 days of age; and
2. For each case of streptococcal group B infection in an infant younger than 90 days of age, submit to the Department the information required under R9-6-202(C).

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

**STREPTOCOCCUS PNEUMONIAE
INFECTION (Pneumococcal
invasive disease)**

PROVIDERS AND LABORATORIES SUBMIT A REPORT
WITHIN 5 WORKING DAYS

CASE DEFINITION

Clinical Description

Streptococcus pneumoniae causes many clinical syndromes, depending on the site of infection (e.g., acute otitis media, pneumonia, bacteremia, or meningitis). Starting in 2000, a conjugate pneumococcal vaccine is recommended for prevention of pneumococcal disease in the pediatric population.

Laboratory Criteria for Diagnosis

Confirmatory Laboratory Evidence

Isolation of *S. pneumoniae* by culture from a normally sterile body site (e.g., blood, cerebrospinal fluid, or, less commonly, joint, pleural, or pericardial fluid).

Presumptive Laboratory Evidence

Identification of *S. pneumoniae* from a normally sterile body site by a culture-independent diagnostic test (CIDT) without isolation of the bacteria.

Case Classification

Confirmed

A case that meets the confirmatory laboratory evidence.

Probable

A case that meets the presumptive laboratory evidence.

Criteria to Distinguish a New Case from an Existing Case

A single case should be defined as a health event with a specimen collection date that occurs more than 30 days from the last known specimen with a positive lab finding.

Comment

See [Appendix 1](#) for guidance on interpreting whether a specimen is from a “normally sterile body site”. In 2010 a new 13-valent pneumococcal conjugate vaccine (PCV 13) was licensed. Surveillance should be enhanced to provide baseline and ongoing data for the assessment of disease burden and immunization program effects.

In January 2008, the Clinical and Laboratory Standards Institute published new Minimum Inhibitory Concentration (MIC) breakpoints for defining susceptibility of *S. pneumoniae* isolates to penicillin (1). The new breakpoints are estimated to decrease the number of isolates classified as antibiotic-resistant by approximately 5% (2). The changes in breakpoints will likely result in a surveillance artifact in drug resistant *S. pneumoniae* reporting and further complicate interpretation of the reported data.

The use of CIDTs as stand-alone tests for the direct detection of *S. pneumoniae* from clinical specimens is increasing. Data regarding their performance indicate variability in the sensitivity, specificity, and positive predictive value of these assays depending on the manufacturer and validation methods used. It is therefore useful to collect information on the laboratory conducting the testing, and the type and manufacturer of the CIDT used to diagnose each invasive pneumococcal disease (IPD)

case. Culture confirmation of CIDI-positive specimens is still the ideal method of confirming a case of IPD.

References

1. Clinical and Laboratory Standards Institute. Performance Standards for Antimicrobial Susceptibility Testing; Eighteenth Informational Supplement. CLSI document M100-S18 (ISBN 1-56238-653-0). Clinical and Laboratory Standards Institute, 940 West Valley Road, Suite 1400, Wayne, Pennsylvania. 19087-1898 USA, 2008.
2. Centers for Disease Control and Prevention. Effect of New Penicillin Susceptibility Breakpoints for *Streptococcus pneumoniae*—United States, 2006-2007. MMWR 2008;57:1353-5.

CONTROL MEASURES

[Arizona Administrative Code R9-6-380](#) *Streptococcus pneumoniae* Infection

Outbreak Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported outbreak of *Streptococcus pneumoniae* invasive infection; and
2. For each outbreak of *Streptococcus pneumoniae* invasive infection, submit to the Department the information required under R9-6-206(E).

INVESTIGATION FORMS

None.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2017: Presumptive laboratory evidence added to allow for tests other than culture. Presumptive laboratory evidence used for a new probable definition. Suspect definition removed. Changes were based on CDC/CSTE definition.</p> <p>2014: Suspect case definition added, and slight rewording of confirmed case definition, to match CDC/CSTE.</p>
Most Recent CDC/CSTE Revision Year	2017

SYPHILIS

Primary, Secondary, Early Non-Primary Non-Secondary, Unknown Duration or Late, Congenital, and Stillbirth

PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 5 WORKING DAYS

CASE DEFINITION

Case Definition

Syphilis is a complex, sexually transmitted disease with a highly variable clinical course. Adherence to the following surveillance case definitions will facilitate understanding the epidemiology of this disease across the U.S. The following guidance is intended to be used for the purposes of syphilis surveillance, and is not intended to be used as a guide to the clinical management or public health management of syphilis cases.

In addition to describing the case definitions, the following also provides guidance for reporting neurologic, ocular, otic, and late clinical manifestations of syphilis. Cases should be reported according to [stage of infection](#), as defined below (e.g., primary syphilis; secondary syphilis; early non-primary, non-secondary syphilis; unknown duration or late syphilis, as well as congenital syphilis and syphilitic stillbirth) and the [clinical manifestations](#) should be reported in the case report data, as defined below.

Criteria to Distinguish a New Case from an Existing Case

A case reported within the same calendar year as a previously reported syphilis case (in any stage of infection) in the same individual should not be counted as a new case unless there is a four-fold increase in titer or evidence of a new infection. If the test is from a new year but there is no evidence of reinfection, the new report will not be counted as a new case of syphilis. Consult with the ADHS STD Program for any questions about distinguishing new from existing cases, or how to appropriately mark cases in PRISM. Additional details can also be found at <https://www.cdc.gov/std/tg2015/syphilis.htm>.

STAGE OF INFECTION

PRIMARY SYPHILIS

Clinical Description

A stage of infection with *Treponema pallidum* characterized by one or more ulcerative lesions (e.g. chancre), which might differ considerably in clinical appearance.

Laboratory Criteria for Diagnosis

Confirmatory evidence

- Demonstration of *Treponema pallidum* by dark field microscopy in a clinical specimen that was not obtained from the oropharynx and is not potentially contaminated by stool; OR
- Demonstration of *T. pallidum* by polymerase chain reaction (PCR) or equivalent direct molecular methods in any clinical specimen.

Presumptive evidence

- A reactive nontreponemal serologic test (Venereal Disease Research Laboratory [VDRL], rapid plasma reagin [RPR], or equivalent serologic methods); OR
- A reactive treponemal serologic test (T. pallidum particle agglutination [TP-PA], enzyme immunoassay [EIA], chemiluminescence immunoassay [CIA], or equivalent serologic methods).*

* These treponemal tests supersede older testing technologies, including microhemagglutination assay for antibody to *T. pallidum* [MHA-TP].

Case Classification**Confirmed**

A case that meets the clinical description of primary syphilis and the confirmatory laboratory criteria.

Probable

A case that meets the clinical description of primary syphilis and the presumptive laboratory criteria.

SECONDARY SYPHILIS**Clinical Description**

A stage of infection due to *T. pallidum*, characterized by localized or diffuse mucocutaneous lesions (e.g., rash — such as non-pruritic macular, maculopapular, papular, or pustular lesions), often with generalized lymphadenopathy. Other signs can include mucous patches, condyloma lata, and alopecia. The primary ulcerative lesion may still be present*.

* Because of the wide array of symptoms and signs possibly indicating secondary syphilis, serologic tests for syphilis and a physical examination are crucial to determining if a case should be classified as secondary syphilis.

Laboratory Criteria for Diagnosis**Confirmatory evidence**

- Demonstration of *T. pallidum* by dark field microscopy in a clinical specimen that was not obtained from the oropharynx and is not potentially contaminated by stool; OR
- Demonstration of *T. pallidum* by PCR or equivalent direct molecular methods in any clinical specimen.

Presumptive evidence

- A reactive nontreponemal serologic test (VDRL, RPR, or equivalent serologic methods); AND
- A reactive treponemal serologic test (TP-PA, EIA, CIA, or equivalent serologic methods).

Case Classification**Confirmed**

A case that meets the clinical description of secondary syphilis and the confirmatory laboratory criteria.

Probable

A case that meets the clinical description of secondary syphilis and the presumptive laboratory criteria.

SYPHILIS, EARLY NON-PRIMARY NON-SECONDARY**Clinical Description**

A stage of infection caused by *T. pallidum* in which initial infection has occurred within the previous 12 months, but there are no signs or symptoms of primary or secondary syphilis.

Laboratory Criteria for Diagnosis**Confirmatory Criteria**

N/A

Presumptive Criteria

A current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer, unless there is evidence that this increase was not sustained for >2 weeks.

Epidemiologic Linkage

- A history of sexual exposure to a partner within the previous 12 months who had primary, secondary, or early non-primary non-secondary syphilis (documented independently as duration <12 months).
- Only sexual contact (sexual debut) was within the previous 12 months.

Case Classification**Confirmed**

N/A

Probable

A person with no clinical signs or symptoms of primary or secondary syphilis who has one of the following:

- No prior history of syphilis, AND a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods), AND a reactive treponemal test (e.g., TP-PA, EIA, CIA, or equivalent serologic methods); OR
- A prior history of syphilis and meets the presumptive laboratory criteria.

AND

Evidence of having acquired the infection within the previous 12 months based on one or more of the following criteria:

- Documented seroconversion or fourfold or greater increase in titer of a nontreponemal test during the previous 12 months, unless there is evidence that this increase was not sustained for >2 weeks
- Documented seroconversion of a treponemal test during the previous 12 months
- A history of symptoms consistent with primary or secondary syphilis during the previous 12 months
- Meets epidemiologic criteria

SYPHILIS, UNKNOWN DURATION OR LATE

Clinical Description

A stage of infection caused by *T. pallidum* in which initial infection has occurred >12 months previously or in which there is insufficient evidence to conclude that infection was acquired during the previous 12 months.

Case Classification

Confirmed

N/A

Probable

A person with no clinical signs or symptoms of primary or secondary syphilis who meets one of the following sets of criteria:

- No prior history of syphilis, AND a current reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods), AND a current reactive treponemal test (e.g., TP-PA, EIA, CIA, or equivalent serologic methods); OR
- A prior history of syphilis therapy and a current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer, unless there is evidence that this increase was not sustained for >2 weeks; OR
- Clinical signs or symptoms and laboratory results that meet the likely or verified criteria for neurologic, ocular, otic, or late clinical manifestations syphilis.

AND

Who has no evidence of having acquired the disease within the preceding 12 months (see [Syphilis, early non-primary non-secondary](#)).

Comment

Although cases of syphilis of unknown duration are grouped together with late syphilis for the purposes of surveillance, the conservative clinical and public health responses to these cases will differ when there is uncertainty about the duration of infection. When faced with uncertainty, clinicians should act conservatively and treat unknown duration syphilis as if it were late infection, with three doses of benzathine penicillin. In contrast, the most conservative approach for STD control programs would be to manage cases of syphilis of unknown duration as early non-primary non-secondary infections and search for partners who may have been recently infected. Because this would not be feasible for most STD control programs, programs should consider prioritizing cases of syphilis of unknown duration with higher nontreponemal titers (e.g., 1:32 or higher) for investigation and partner services. Although nontreponemal titers cannot reliably distinguish between early infection (<12 months duration) and late infection (>12 months duration), nontreponemal titers usually are higher early in the course of syphilis infection.

SYPHILIS, CONGENITAL

Clinical Description

A condition caused by infection in utero with *Treponema pallidum*. A wide spectrum of severity exists from inapparent infection to severe cases that are clinically apparent at birth. An infant or child (aged less than 2 years) may have signs such as hepatosplenomegaly, rash, condyloma lata, snuffles,

jaundice (nonviral hepatitis), pseudoparalysis, anemia, or edema (nephrotic syndrome and/or malnutrition). An older child may have stigmata (e.g. interstitial keratitis, nerve deafness, anterior bowing of shins, frontal bossing, mulberry molars, Hutchinson teeth, saddle nose, rhagades, or Clutton joints).

Laboratory Criteria for Diagnosis

Demonstration of *Treponema pallidum* by:

- Dark field microscopy of lesions, body fluids, or neonatal nasal discharge; OR
- PCR or other equivalent direct molecular methods of lesions, neonatal nasal discharge, placenta, umbilical cord, or autopsy material; OR
- IHC or special stains (e.g., silver staining) of specimens from lesions, placenta, umbilical cord, or autopsy material.

Case Classification

Confirmed

A case that is laboratory confirmed.

Probable

- A condition affecting an infant whose mother had untreated or inadequately treated* syphilis at delivery, regardless of signs in the infant; OR
- an infant or child who has a reactive treponemal test for syphilis (VDRL RPR, or equivalent serologic methods)

AND

Any **one** of the following:

- Any evidence of congenital syphilis on physical examination (see Clinical Description)
- Any evidence of congenital syphilis on radiographs of long bones
- A reactive CSF VDRL test
- In a nontraumatic lumbar puncture, an elevated CSF leukocyte (white blood cell, WBC) count or protein (without other cause):

Suggested parameters for abnormal CSF WBC and protein values:

1. During the first 30 days of life, a CSF WBC count of >15 WBC/mm³ or a CSF protein >120 mg/dL.
2. After the first 30 days of life, a CSF WBC count of >5 WBC/mm³ or a CSF protein >40 mg/dL, regardless of CSF serology.

The treating clinician should be consulted to interpret the CSF values for the specific patient.

*Adequate treatment is defined as completion of a penicillin-based regimen, in accordance with CDC treatment guidelines, appropriate for stage of infection, initiated 30 or more days before delivery.

Comment

Congenital and acquired syphilis may be difficult to distinguish when a child is seropositive after infancy. Signs of congenital syphilis may not be obvious, and stigmata may not yet have developed. Abnormal values for CSF VDRL, WBC count, and protein may be found in either congenital or acquired syphilis. Findings on radiographs of long bones may help because radiographic changes in the

metaphysis and epiphysis are considered classic signs of congenitally acquired syphilis. While maternal antibodies can complicate interpretation of serologic tests in an infant, reactive tests past 18 months of age are considered to reflect the status of the child. The decision may ultimately be based on maternal history and clinical judgment. In a young child, the possibility of sexual abuse should be considered as a cause of acquired rather than congenital syphilis, depending on the clinical picture. For reporting purposes, congenital syphilis includes cases of congenitally acquired syphilis among infants and children as well as syphilitic stillbirths.

SYPHILIS, STILLBIRTH

Clinical Description

A fetal death that occurs after a 20-week gestation or in which the fetus weighs greater than 500 g and the mother had untreated or inadequately treated* syphilis at delivery.

*Adequate treatment is defined as completion of a penicillin-based regimen, in accordance with CDC treatment guidelines, appropriate for stage of infection, initiated 30 or more days before delivery.

Comment

For reporting purposes, syphilitic stillbirths should be reported as cases of congenital syphilis.

CLINICAL MANIFESTATIONS OF SYPHILIS

Syphilis is a systemic infection that, if untreated, can cause a variety of clinical manifestations, including:

- Signs and symptoms of primary and secondary syphilis (see above case definitions)
- Latent infections (i.e., those lacking any signs or symptoms)
- Neurologic, ocular, or otic manifestations (neurosyphilis, ocular syphilis, or otosyphilis), which can occur at any stage of syphilis
- Late clinical manifestations (tertiary syphilis), which generally occur after 15–30 years of untreated infection

The following provides guidance for reporting neurologic, ocular, otic, and late clinical manifestations of syphilis. Cases should be reported according to stage of infection, as defined above (e.g., primary syphilis; secondary syphilis; early non-primary, non-secondary syphilis; or unknown duration or late syphilis) and the clinical manifestations should be reported in the case report data, as defined below.

NEUROLOGIC MANIFESTATIONS

Neurologic manifestations (neurosyphilis) can occur at any stage of syphilis. If the patient has neurologic manifestations of syphilis, the case should be reported with the appropriate stage of infection (as if neurologic manifestations were not present) and neurologic manifestations should be noted in the case report data.

Clinical description

Infection of the central nervous system with *T. pallidum*, as evidenced by manifestations including syphilitic meningitis, meningovascular syphilis, general paresis, including dementia, and tabes dorsalis.

Classification of neurologic manifestations

Verified

A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) with both of the following:

- Clinical symptoms or signs that are consistent with neurosyphilis without other known causes for these clinical abnormalities; AND
- A reactive VDRL in CSF in the absence of grossly bloody contamination of the CSF.

Likely

A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) with both of the following:

- Clinical symptoms or signs that are consistent with neurosyphilis without other known causes for these clinical abnormalities; AND
- Elevated CSF protein (>50 mg/dL²) or leukocyte count (>5 white blood cells/cubic millimeter CSF) in the absence of other known causes of these abnormalities.

Possible

A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and clinical symptoms or signs that are consistent with neurosyphilis without other known causes for these clinical abnormalities.

OCULAR MANIFESTATIONS

Ocular manifestations (ocular syphilis) can occur at any stage of syphilis. If the patient has ocular manifestations of syphilis, the case should be reported with the appropriate stage of infection (as if ocular manifestations were not present) and ocular manifestations should be noted in the case report data.

Clinical description

Infection of any eye structure with *T. pallidum*, as evidenced by manifestations including posterior uveitis, panuveitis, anterior uveitis, optic neuropathy, and retinal vasculitis. Ocular syphilis may lead to decreased visual acuity including permanent blindness.

Classification of ocular manifestations

Verified

A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and both of the following:

- Clinical symptoms or signs consistent with ocular syphilis without other known causes for these clinical abnormalities; AND
- Demonstration of *T. pallidum* in aqueous or vitreous fluid by dark field microscopy, or by PCR or equivalent direct molecular methods.

Likely

A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and both of the following:

- Clinical symptoms or signs consistent with ocular syphilis without other known causes for these clinical abnormalities; AND
- Findings on exam by an ophthalmologist that are consistent with ocular syphilis in the absence of other known causes for these abnormalities.

Possible

A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and clinical symptoms or signs consistent with ocular syphilis without other known causes for these clinical abnormalities.

OTIC MANIFESTATIONS

Otic manifestations can occur at any stage of syphilis. If the patient has otic manifestations of syphilis, the case should be reported with the appropriate stage of infection (as if otic manifestations were not present) and otic manifestations should be noted in the case report data.

Clinical description

Infection of the cochleovestibular system with *T. pallidum*, as evidenced by manifestations including sensorineural hearing loss, tinnitus, and vertigo.

Classification of otic manifestations**Verified**

A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and both of the following:

- Clinical symptoms or signs consistent with otosyphilis without other known causes for these clinical abnormalities; AND
- Demonstration of *T. pallidum* in inner ear fluid by dark field microscopy, or by PCR or equivalent direct molecular detection methods.

Likely

A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and both of the following:

- Clinical symptoms or signs consistent with otosyphilis without other known causes for these clinical abnormalities; AND
- Findings on exam by an otolaryngologist that are consistent with otosyphilis in the absence of other known causes for these abnormalities.

Possible

A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and clinical symptoms or signs consistent with otosyphilis without other known causes for these clinical abnormalities.

LATE CLINICAL MANIFESTATIONS

Late clinical manifestations of syphilis usually develop only after a period of 15–30 years of untreated infection. Therefore, if the patient has late clinical manifestations of syphilis, the case should be reported with the appropriate stage of infection (for the vast majority of cases, unknown duration or late syphilis) and late clinical manifestations should be noted in the case report data.

Clinical description

Late clinical manifestations of syphilis (tertiary syphilis) may include inflammatory lesions of the cardiovascular system (e.g., aortitis, coronary vessel disease), skin (e.g., gummatous lesions), bone (e.g., osteitis), or other tissue. Rarely, other structures (e.g., the upper and lower respiratory tracts, mouth, eye, abdominal organs, reproductive organs, lymph nodes, and skeletal muscle) may be involved. In addition, certain neurologic manifestations (e.g., general paresis and tabes dorsalis) are also late clinical manifestations of syphilis.

Classification of late clinical manifestations

Verified

A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) and either of the following:

- Characteristic abnormalities or lesions of the cardiovascular system (e.g., aortitis, coronary vessel disease), skin (e.g., gummatous lesions), bone (e.g., osteitis), or other tissue in the absence of other known causes of these abnormalities, in combination with either demonstration of *T. pallidum* in late lesions by special stains or equivalent methods, or by PCR or equivalent direct molecular methods, or demonstration of pathologic changes that are consistent with *T. pallidum* infection on histologic examination of late lesions; OR
- Clinical signs and symptoms consistent with late neurologic manifestations of syphilis (e.g., general paresis, including dementia, or tabes dorsalis) in a case that meets the criteria for verified neurologic manifestations of syphilis (see above).

Likely

A person with a reactive nontreponemal test (e.g., VDRL, RPR, or equivalent serologic methods) and a reactive treponemal test (e.g., TP-PA, EIA, CIA or equivalent serologic methods) with either of the following:

- Characteristic abnormalities or lesions of the cardiovascular system (e.g., aortitis, coronary vessel disease), skin (e.g., gummatous lesions), bone (e.g., osteitis), or other tissue, in the absence of other known causes of these abnormalities; OR
- Clinical signs and symptoms consistent with late neurologic manifestations of syphilis (e.g., general paresis, including dementia, or tabes dorsalis) in a case that meets the criteria for likely neurologic manifestations of syphilis (see above).

CONTROL MEASURES

[Arizona Administrative Code R9-6-381](#) Syphilis

Case Control Measures

1. A syphilis case shall obtain serologic testing for syphilis three months, six months, and one year after initiating treatment, unless more frequent or longer testing is recommended by a local health agency.

2. A health care provider for a pregnant syphilis case shall order serologic testing for syphilis at 28 to 32 weeks gestation and at delivery.
3. A local health agency shall:
 - a. Conduct an epidemiologic investigation, including a review of medical records, of each reported syphilis case or suspect case, confirming the stage of the disease;
 - b. For each syphilis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D);
 - c. If the syphilis case is pregnant, ensure that the syphilis case obtains the serologic testing for syphilis required in subsection (A)(1) and (A)(2); and
 - d. Comply with the requirements specified in R9-6-1103 concerning treatment and health education for a syphilis case.
4. The operator of a blood bank, blood center, or plasma center shall notify a donor of a test result with significant evidence suggestive of syphilis, as required under A.R.S. § 32-1483 and 21 CFR 630.6.

Contact Control Measures

When a syphilis case has named a contact, a local health agency shall:

1. Comply with the requirements specified in R9-6-1103 concerning notification, testing, treatment, and health education for the contact.

Outbreak Control Measures:

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported syphilis outbreak; and
2. For each syphilis outbreak, submit to the Department the information required under R9-6-206(E).

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2018: Re-characterization of syphilis stages and clinical manifestations. Included congenital syphilis and syphilitic stillbirths in same definition.</p> <p>2017: Added criteria to distinguish a new case from an existing case to match 2013 CSTE/CDC case definition.</p> <p>2016: Late latent syphilis probable case definition updated to include no sexual exposure to a partner within the previous 12 months who had primary, secondary, or early latent syphilis.</p>

	2014: Laboratory criteria updated to reflect the addition of new diagnostic tests (PCR, TP-PA, EIA, CIA) and the removal of old ones (MHA-TP), according to the 2014 CDC/CSTE case definition; elimination of neurosyphilis as a separate category, syphilis, latent and syphilis latent of unknown; modification of clinical descriptions; addition of syphilis late, with clinical manifestations other than neurosyphilis; all modifications were made to match the 2014 CDC/CSTE case definition
Most Recent CDC/CSTE Revision Year	2018

TAENIASIS

PROVIDERS REPORT WITHIN 24 HOURS IF AN OUTBREAK IS DETECTED OR PERSON HAS A HIGH-RISK OCCUPATION

PROVIDERS SUBMIT A REPORT WITHIN 5 DAYS FOR ALL OTHER CASES

CASE DEFINITION

Clinical Description

A parasitic disease characterized by an intestinal infection with the adult stage of large tapeworms. Clinical manifestations are variable and may include nervousness, insomnia, anorexia, weight loss abdominal pain and digestive disturbances. Many cases are asymptomatic.

Laboratory Criteria for Diagnosis

Recovery of *Taenia scolex*, proglottids or eggs from the stool.

Case Classification

Confirmed

A case that is laboratory confirmed.

CONTROL MEASURES

[Arizona Administrative Code R9-6-382](#) Taeniasis

Case Control Measures

A local health agency shall:

1. Exclude a taeniasis case with *Taenia* spp. from working as a food handler, caring for children in or attending a child care establishment, or caring for patients or residents in a health care institution until free of infestation;
2. Conduct an epidemiologic investigation of each reported taeniasis case; and
3. For each taeniasis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

Contact ADHS.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

CASE DEFINITION**Clinical Description**

Acute onset of hypertonia and/or painful muscular contractions (usually of the muscles of the jaw and neck) and generalized muscle spasms without other apparent medical cause (as reported by a health professional)

Laboratory Criteria for Diagnosis

None

Case Classification**Probable**

- In the absence of a more likely diagnosis, an acute illness with muscle spasms or hypertonia, AND diagnosis of tetanus by a health care provider; OR
- Death, with tetanus listed on the death certificate as the cause of death or a significant condition contributing to death.

Comment

There is no definition for “confirmed” tetanus.

CONTROL MEASURES

[Arizona Administrative Code R9-6-383](#) Tetanus

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported tetanus case or suspect case; and
2. For each tetanus case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Tetanus Surveillance Worksheet Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes (with additional comments)
Case Definition Matches 2016 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2010

CASE DEFINITION

Note: For cases of Toxic Shock Syndrome with a confirmed etiology of group A streptococcus, please follow the [Toxic Shock Syndrome – Streptococcal](#) case definition.

Clinical Description

For Toxic Shock Syndrome (not Streptococcal)

An illness with the following clinical manifestations:

- Fever: Temperature >38.9°C (102°F)
- Rash: diffuse macular erythroderma
- Desquamation: 1-2 weeks after onset of illness
- Hypotension: systolic blood pressure ≤90 mm Hg for adults or <5th percentile by age for children <16 years of age;
- Multisystem involvement - three or more of the following organ systems:
 - Gastrointestinal (vomiting or diarrhea at onset of illness)
 - Muscular (severe myalgia or creatine phosphokinase level at least twice the upper limit of normal for laboratory):
 - Mucous membrane (vaginal, oropharyngeal, or conjunctival hyperemia);
 - Renal (blood urea nitrogen or creatinine at least twice the upper limit of normal for laboratory or urinary sediment with pyuria [greater than or equal to 5 leukocytes per high-power field] in the absence of urinary tract infection):
 - Hepatic (total bilirubin, AST/SGOT [aspartate aminotransferase enzyme/serum glutamic-oxaloacetic transaminase], or ALT/SGPT [alanine aminotransferase enzyme/serum glutamic - pyruvic transaminase] at least twice the upper limit of normal for laboratory):
 - Hematologic (platelets <100,000/mm³)
 - Central nervous system (disorientation or alterations in consciousness without focal neurologic signs when fever and hypotension are absent)

Laboratory Criteria for Diagnosis

For Toxic Shock Syndrome (not Streptococcal)

Negative results on the following tests, if obtained:

- Blood or cerebrospinal fluid cultures (blood culture may be positive for *Staphylococcus aureus*);
- Negative serologies for Rocky Mountain spotted fever, leptospirosis, or measles

Case Classification

For Toxic Shock Syndrome (not Streptococcal)

Confirmed

A case which meets the laboratory criteria and in which all five of the clinical findings described above are present, including desquamation, unless the patient dies before desquamation occurs.

Probable

A case which meets the laboratory criteria and in which four of the five clinical findings described above are present.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-384](#) Toxic Shock Syndrome

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported toxic shock syndrome case or suspect case; and
2. For each toxic shock syndrome case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Toxic Shock Syndrome Case Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2015: Streptococcal and non-Streptococcal TSS split into separate definitions.</p> <p>2013: ADHS case definition includes STSS under TSS. However, both STSS and TSS match the CDC/CSTE case definitions for those morbidities. Previous mistake in ADHS 2011 definition corrected.</p>
Most Recent CDC/CSTE Revision Year	2011

CASE DEFINITION

Note: This case definition is for cases of Toxic Shock Syndrome with a confirmed etiology of group A streptococcus. For other cases of Toxic Shock Syndrome, please follow the [Toxic Shock Syndrome – Non-Streptococcal](#) case definition.

Clinical Description**For Streptococcal Toxic Shock Syndrome**

An illness with the following clinical manifestations:

- Hypotension defined by a systolic blood pressure ≤ 90 mm Hg for adults or < 5 th percentile by age for children < 16 years of age.
- Multi-organ involvement characterized by two or more of the following:
 - Renal impairment: Creatinine greater than or equal to 2 mg/dL (greater than or equal to 177 $\mu\text{mol/L}$) for adults or greater than or equal to twice the upper limit of normal for age. In patients with preexisting renal disease, a greater than twofold elevation over the baseline level.
 - Coagulopathy: Platelets less than or equal to 100,000/ mm^3 (less than or equal to 100 x 10⁶/L) or disseminated intravascular coagulation, defined by prolonged clotting times, low fibrinogen level, and the presence of fibrin degradation products.
 - Liver involvement: Alanine aminotransferase, aspartate aminotransferase, or total bilirubin levels greater than or equal to twice the upper limit of normal for the patient's age. In patients with preexisting liver disease, a greater than twofold increase over the baseline level.
 - Acute respiratory distress syndrome: defined by acute onset of diffuse pulmonary infiltrates and hypoxemia in the absence of cardiac failure or by evidence of diffuse capillary leak manifested by acute onset of generalized edema, or pleural or peritoneal effusions with hypoalbuminemia.
 - A generalized erythematous macular rash that may desquamate.
 - Soft-tissue necrosis, including necrotizing fasciitis or myositis, or gangrene.

Laboratory Criteria for Diagnosis

Isolation of group A *Streptococcus* (*Streptococcus pyogenes*)

Case Classification***Confirmed***

A case that meets the clinical case definition and with isolation of group A *Streptococcus* from a normally sterile site (e.g., blood or cerebrospinal fluid or, less commonly, joint, pleural, or pericardial fluid).

Probable

A case that meets the clinical case definition in the absence of another identified etiology for the illness and with isolation of group A *Streptococcus* from a non-sterile site.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

Streptococcal toxic-shock syndrome (STSS) is a severe illness associated with invasive or noninvasive group A streptococcal (*Streptococcus pyogenes*) infection. STSS may occur with infection at any site but most often occurs in association with infection of a cutaneous lesion. Signs of toxicity and a rapidly progressive clinical course are characteristic, and the case fatality rate may exceed 50%.

CONTROL MEASURES

[Arizona Administrative Code R9-6-384](#) Toxic Shock Syndrome

Case Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported toxic shock syndrome case or suspect case; and
2. For each toxic shock syndrome case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Toxic Shock Syndrome Case Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2015: Streptococcal and non-Streptococcal TSS split into separate definitions. 2013: ADHS case definition includes STSS under TSS. However, both STSS and TSS match the CDC/CSTE case definitions for those morbidities. Previous mistake in ADHS 2011 definition corrected.
Most Recent CDC/CSTE Revision Year	2010 (Streptococcal TSS)

CASE DEFINITION

Clinical Description

A disease caused by ingestion of *Trichinella* larvae, usually through consumption of *Trichinella*-containing meat—or food contaminated with such meat—that has been inadequately cooked prior to consumption. The disease has variable clinical manifestations. Common signs and symptoms among symptomatic persons include eosinophilia, fever, myalgia, and periorbital edema.

Laboratory Criteria for Diagnosis

Human Specimens

- Demonstration of larvae of cysts of *T. spiralis* on biopsy; OR
- Positive serology for *T. spiralis*

Food Specimens

- Demonstration of *Trichinella* larvae in the food item (probable)

Case Classification

Confirmed

A clinically compatible illness that is laboratory confirmed in the patient.

Probable

- A clinically compatible illness in a person who shared an epidemiologically implicated meal or ate an epidemiologically implicated meat product; OR
- A clinically compatible illness in a person who consumed a meat product in which the parasite was demonstrated.

Suspected

Instances where there is no clinically compatible illness should be reported as suspect if the person shared an epidemiologically implicated meal, or ate an epidemiologically implicated meat product, and has a positive serologic test for trichinellosis (and no known prior history of *Trichinella* infection).

Criteria to Distinguish a New Case from an Existing Case

Serial or subsequent cases of trichinosis experienced by one individual should only be counted if there is an additional epidemiologically compatible exposure. Because the duration of antibodies to *Trichinella* spp. is not known, mere presence of antibodies without a clinically-compatible illness AND an epidemiologically compatible exposure may not indicate a new infection especially among persons with frequent consumption of wild game that is known to harbor the parasite.

Comment

Epidemiologically implicated meals or meat products are defined as a meal or meat product that was consumed by a person who subsequently developed a clinically compatible illness that was laboratory confirmed.

Negative serologic results may not accurately reflect disease status if blood was drawn less than 3-4 weeks from symptom onset.

CONTROL MEASURES

[Arizona Administrative Code R9-6-385](#) Trichinosis

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a trichinosis case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported trichinosis case or suspect case; and
3. For each trichinosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Trichinosis Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2017: Added criteria to distinguish a new case from an existing case to match 2013 CSTE/CDC case definition</p> <p>2014: Laboratory criteria were modified to include the identification of the parasite in food as a laboratory criterion for diagnosis; suspected and probable case definitions were added; comments were modified to include definition of epidemiologically implicated meals and meat products and criteria to distinguish between new and existing cases; modifications were made to match the 2014 CDC/CSTE case definitions.</p>
Most Recent CDC/CSTE Revision Year	2014

For more information on control measures, see [Arizona Administrative Code R9-6-381 and R9-6-601](#).

Complete the appropriate forms, located on the Tuberculosis Control Program Resources page (<http://www.azdhs.gov/preparedness/epidemiology-disease-control/disease-integration-services/index.php#tb-control-programs>):

- **Report of Verified Case of Tuberculosis Form** for confirmed *Mycobacterium tuberculosis* cases
- **ADHS TB Prevention Registry Form** for all contacts to confirmed *Mycobacterium tuberculosis* cases
- If Interjurisdictional: Complete **Interjurisdictional Tuberculosis Notification Form** and **Interjurisdictional Tuberculosis Notification Follow-up Form**

CASE DEFINITION

Clinical Description

A chronic bacterial infection due to *Mycobacterium tuberculosis*, characterized pathologically by the formation of granulomas. The most common site infection is the lung, but other organs may be involved.

Clinical Case Definition

A case must meet all the following criteria:

- Evidence of tuberculosis infection indicated by a positive tuberculin skin test or positive interferon gamma release assay for *M. tuberculosis*; AND
- Other signs and/or symptoms compatible with tuberculosis, such as an abnormal, unstable (i.e. worsening or improving) chest radiographs, or clinical evidence of current disease; AND
- Treatment with two or more antituberculosis medications; AND
- Completed diagnostic evaluation.

Laboratory Criteria for Diagnosis

- Isolation of *M. tuberculosis* complex from a clinical specimen; OR
- Demonstration of *M. tuberculosis* complex from a clinical specimen by nucleic acid amplification test; OR
- Demonstration of acid-fast bacilli and/or pathology consistent with *M. tuberculosis* in a clinical specimen when a culture has not been or cannot be obtained or is falsely negative or contaminated.

Case Classification

Confirmed

A case that meets the clinical case definition or is laboratory confirmed.

Comment

Only one case should be counted in a person within any consecutive 12-month period. However, a

case in a patient who had previously had verified disease should be reported again if more than 12 months have elapsed since the patient was discharged from treatment. A case should also be reported again if the patient was lost to supervision for >12 months and disease can be verified again. Mycobacterial diseases other than those caused by *M. tuberculosis* complex should not be counted in tuberculosis morbidity statistics unless there is concurrent tuberculosis.

CONTROL MEASURES

[Arizona Administrative Code R9-6-380](#) Tuberculosis

Case Control Measures:

1. A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall isolate and institute airborne precautions for:
 - a. An individual with infectious active tuberculosis until:
 - i. At least three successive sputum smears collected at least eight hours apart, at least one of which is taken first thing in the morning as soon as possible after the individual awakens from sleep, are negative for acid-fast bacilli;
 - ii. Anti-tuberculosis treatment is initiated with multiple antibiotics; and
 - iii. Clinical signs and symptoms of active tuberculosis are improved;
 - b. A suspect case of infectious active tuberculosis until:
 - i. At least two successive tests for tuberculosis, using a product and methodology approved by the U.S. Food and Drug Administration for use when making decisions whether to discontinue isolation and airborne precautions, for the suspect case are negative; or
 - ii. At least three successive sputum smears collected from the suspect case as specified in subsection (A)(1)(a)(i) are negative for acid-fast bacilli, anti-tuberculosis treatment of the suspect case is initiated with multiple antibiotics, and clinical signs and symptoms of active tuberculosis are improved; and
 - c. A case or suspect case of multi-drug resistant active tuberculosis until a tuberculosis control officer has approved the release of the case or suspect case.
2. An administrator of a health care institution, either personally or through a representative, shall notify a local health agency at least one working day before discharging a tuberculosis case or suspect case.
3. A local health agency shall:
 - a. Upon receiving a report under R9-6-202 of a tuberculosis case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
 - b. Exclude an individual with infectious active tuberculosis or a suspect case from working, unless the individual's work setting has been approved by a tuberculosis control officer, until the individual with infectious active tuberculosis or suspect case is released from airborne precautions according to the applicable criteria in subsection (A)(1);
 - c. Conduct an epidemiologic investigation of each reported tuberculosis case, or suspect case, or latent infection in a child five years of age or younger;
 - d. For each tuberculosis case or suspect case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D);
 - e. Ensure that an isolate or a specimen, as available, from each tuberculosis case is submitted to the Arizona State Laboratory; and
 - f. Comply with the requirements specified in R9-6-1202.

Contact Control Measures

1. A contact of an individual with infectious active tuberculosis shall allow a local health agency to evaluate the contact's tuberculosis status.

2. A local health agency shall comply with the tuberculosis contact control measures specified in R9-6-1202.

An individual is not a tuberculosis case if the individual has a positive result from an approved test for tuberculosis but does not have clinical signs or symptoms of disease.

INVESTIGATION FORMS

Complete the appropriate forms, located on the Tuberculosis Control Program Resources page (<http://www.azdhs.gov/preparedness/epidemiology-disease-control/disease-integration-services/index.php#tb-control-programs>):

- **Report of Verified Case of Tuberculosis Form** for confirmed *Mycobacterium tuberculosis* cases
- **ADHS TB Prevention Registry Form** for all contacts to confirmed *Mycobacterium tuberculosis* cases
- If Interjurisdictional: Complete **Interjurisdictional Tuberculosis Notification Form** and **Interjurisdictional Tuberculosis Notification Follow-up Form**

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	No
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	<p>2019: Laboratory criteria modified to include isolation of <i>M. tuberculosis</i> complex or pathology consistent with <i>M. tuberculosis</i>. These changes are not part of the current CSTE definition but are consistent with current practice and with RVCT reporting.</p> <p>2016: Instructions and links for completion of forms updated. No changes to case definition itself.</p> <p>2013: Updated the ADHS case definition to match CDC/CSTE, including addition of interferon gamma release assay criteria.</p>
Most Recent CDC/CSTE Revision Year	2009

TULAREMIA

PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS

LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY

CASE DEFINITION

Clinical Description

An illness characterized by several distinct forms, including:

- Ulceroglandular (cutaneous ulcer with regional lymphadenopathy)
- Glandular (regional lymphadenopathy with no ulcer)
- Oculoglandular (conjunctivitis with preauricular lymphadenopathy)
- Oropharyngeal (stomatitis, pharyngitis, tonsillitis and cervical lymphadenopathy,)
- Pneumonic (primary pleuropulmonary disease)
- Typhoidal (febrile illness without early localizing signs and symptoms)

Clinical diagnosis is supported by evidence or history of a tick or deerfly bite, exposure to tissues of a mammalian host of *Francisella tularensis*, or exposure to potentially contaminated water.

Laboratory Criteria for Diagnosis

Confirmatory Testing

- Isolation of *F. tularensis* from a clinical specimen; OR
- Fourfold or greater rise in serum antibody titer to *F. tularensis* antigen between acute and convalescent specimens.

Presumptive Testing

- Detection of *F. tularensis* in a clinical or autopsy specimen by a polymerase chain reaction (PCR); OR
- Detection of *F. tularensis* in a clinical specimen by fluorescent assay; OR
- Elevated serum antibody titer(s) to *F. tularensis* antigen (without documented fourfold or greater change) in a patient with no history of tularemia vaccination.

Case Classification

Confirmed

A clinically compatible case that that meets the confirmatory laboratory criteria.

Probable

A clinically compatible case with presumptive laboratory evidence.

Criteria to Distinguish a New Case from an Existing Case

Serial or subsequent cases of tularemia experienced by one individual should only be counted if there is an additional epidemiologically compatible exposure and new onset of symptoms. Because the duration of antibodies to *F. tularensis* is not known, mere presence of antibodies without a clinically-compatible illness AND an epidemiologically compatible exposure within 12 months of onset may not indicate a new infection, especially among persons who live in endemic areas.

CONTROL MEASURES

[Arizona Administrative Code R9-6-387](#) Tularemia

Case Control Measures

1. A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall isolate a pneumonic tularemia case until 72 hours of antibiotic therapy have been completed with favorable clinical response.
2. A local health agency shall:
 - a. Upon receiving a report under R9-6-202 of a tularemia case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
 - b. Conduct an epidemiologic investigation of each reported tularemia case or suspect case;
 - c. For each tularemia case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
 - d. Ensure that an isolate or a specimen, as available, from each tularemia case or suspect case is submitted to the Arizona State Laboratory.

INVESTIGATION FORMS

See Tularemia Case Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2017: PCR included as supportive laboratory evidence. Changes to wording of oropharyngeal clinical form. Changes were based on CDC/CSTE definition. 2013: ADHS case definition updated to match CDC/CSTE.
Most Recent CDC/CSTE Revision Year	2017

CASE DEFINITION

Clinical Description

An illness caused by *Salmonella enterica* serotype Typhi (*S. Typhi*) that is often characterized by insidious onset of sustained fever, headache, malaise, anorexia, relative bradycardia, constipation or diarrhea, and nonproductive cough. However, many mild and atypical infections occur. Carriage of *S. Typhi* may be prolonged.

Clinical Criteria

One or more of the following:

- Fever
- Diarrhea
- Abdominal cramps
- Constipation
- Anorexia
- Relative bradycardia

Laboratory Criteria for Diagnosis

Confirmatory Laboratory Evidence

Isolation of *S. typhi* from a clinical specimen.

Presumptive Laboratory Evidence*

Detection of *S. Typhi* in a clinical specimen using a culture-independent diagnostic test (CIDT).

*Serologic testing (i.e., detection of antibodies to *S. Typhi*) should not be utilized for case classification.

Epidemiologic Linkage

- Epidemiological linkage to a confirmed typhoid fever case; OR
- Epidemiological linkage to a probable typhoid fever case with laboratory evidence; OR
- Member of a risk group as defined by public health authorities during an outbreak.

Case Classification

Confirmed

A person with confirmatory laboratory criteria.

Probable

- A clinically compatible illness in a person with presumptive laboratory evidence.
- A clinically compatible illness in a person with an epidemiological linkage.

Criteria to Distinguish a New Case from an Existing Case

A new case should be created when a positive laboratory result is received more than 365 days after the most recent positive laboratory result associated with a previously reported case in the same person.

Comment

It is estimated that approximately 2-5% of persons infected with *S. Typhi* become chronic intestinal carriers who continue to shed *S. Typhi* for more than one year. These people are typically referred to as chronic carriers.

Differentiating whether a person became a chronic carrier or is experiencing a new infection often relies on a variety of factors, including advanced laboratory testing (e.g., pulsed-field gel electrophoresis [PFGE], whole genome sequencing [WGS]) to compare the isolate from the previous infection to the new isolate. While these methodologies can provide detailed information about the genetic make-up of the organisms, there is still significant variability in how two organisms can be defined as different. Given the potential for inconsistent application of the label “different” across jurisdictions, this case definition does not exclude persons with a previously reported *S. Typhi* Infection case from being counted as a new case if the subsequent positive laboratory result is more than 365 days from the most recent positive laboratory result associated with the existing case.

CONTROL MEASURES[Arizona Administrative Code R9-6-388 Typhoid Fever](#)Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a typhoid fever case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported typhoid fever case or suspect case;
3. For each typhoid fever case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D);
4. Exclude a typhoid fever case or suspect case from working as a food handler, caring for children in or attending a child care establishment, or caring for patients or residents in a health care institution until:
 - a. At least one month after the date of onset of illness,; and
 - b. After two successive stool specimens, collected from the typhoid fever case at least 24 hours apart and at least 48 hours after cessation of antibiotic therapy, are negative for *Salmonella typhi*;
5. If a stool specimen from a typhoid fever case who has received antibiotic therapy is positive for *Salmonella typhi*, enforce the exclusions specified in subsection (A)(4) until two successive stool specimens, collected from the typhoid fever case at least one month apart and 12 or fewer months after the date of onset of illness, are negative for *Salmonella typhi*;
6. If a positive stool specimen, collected at least 12 months after onset of illness, is obtained from a typhoid fever case who has received antibiotic therapy, redesignate the case as a carrier; and
7. Exclude a typhoid fever carrier from working as a food handler, caring for children in or attending a child care establishment, or caring for patients or residents in a health care institution until three successive stool specimens, collected from the typhoid fever carrier at least one month apart, are negative for *Salmonella typhi*.

Contact Control Measures

A local health agency shall

1. Exclude a typhoid fever contact from working as a food handler, caring for children in or attending a child care establishment, or caring for patients or residents in a health care institution

until two successive stool specimens, collected from the typhoid fever contact at least 24 hours apart, are negative for *Salmonella typhi*.

INVESTIGATION FORMS

See Typhoid and Paratyphoid Fever Surveillance Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	2019: Clinical criteria added. CIDT added as presumptive testing and probable case classification. Epidemiological linkage defined. Changes based on modifications to CDC/CSTE definition.
Most Recent CDC/CSTE Revision Year	2019

CASE DEFINITION

Clinical Description

An acute febrile disease characterized by fever, headache, myalgia, and a maculopapular rash. The rash is distributed over the trunk, with minimal involvement of the extremities, palms, soles and face.

Laboratory Criteria for Diagnosis

- Single titer > 64 by Indirect Fluorescent Antibody (IFA) test using differentially absorbed sera with the respective rickettsial antigen prior to testing; OR
- Single titer > 16 by Complement-Fixation (CF) test with group-specific rickettsial antigen. Antibody tests usually become positive in the second week.

Case Classification

Confirmed

A case that is laboratory confirmed with symptoms and history as above.

Probable

A compatible history of exposure to domestic rats and their fleas, plus rash and symptoms of typhus.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-389](#) Typhus Fever

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a typhus fever case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported typhus fever case or suspect case; and
3. For each typhus fever case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).
4. Conduct an epidemiologic investigation of each reported typhus fever case or suspect case; and
5. For each typhus fever case, submit to the Department, as specified in Article 2, Table 4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Tick-Borne Rickettsial Disease Case Report Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

CASE DEFINITION**Clinical Description**

Adverse events may include one or more of the following:

- Common adverse reactions
 - Local skin reaction
 - Nonspecific rashes, e.g., reticular maculopapular, generalized urticarial rash
 - Erythema migrans
- Vaccinia-specific reactions
 - Inadvertent inoculation
 - Ocular vaccinia infection (keratitis)
 - Generalized vaccinia: disseminated, non-centrifugal maculopapular or vesicular rash
 - Progressive vaccinia/vaccinia necrosum: an initial lesion which continues to progress without healing for more than 15 days after the vaccination; painless progressive necrosis at the site with or without metastases to other distant sites
 - Eczema vaccinia: localized or generalized popular, vesicular or pustular rash anywhere on the body, especially at sites of previous atopic dermatitis lesions
 - Encephalopathy or encephalomyelitis: most common in infants; symptoms include fever, headache, change in mental status, lethargy, seizures, coma, and is diagnosed by exclusion of other causes
- Other adverse effects
 - Cardiac, e.g., myocarditis, pericarditis
 - Osteomyelitis
 - Transverse myelitis, seizures, paralysis and neuritis
 - Fetal vaccinia: transmission from mother to fetus resulting in skin diseases and other organ involvement leading to fetal or neonatal death
 - Wound complications

Exposure Criteria

- Vaccination with smallpox vaccine within the three months preceding symptom onset; OR
- Contact exposure to someone vaccinated with smallpox vaccine within the three months preceding symptom onset.

Case Classification***Confirmed***

A person who has at least one of the clinical features and meets at least one of the exposure criteria.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

CONTROL MEASURES

[Arizona Administrative Code R9-6-390](#) Vaccinia-related Adverse Event

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a case or suspect case of a vaccinia-related adverse event, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported case or suspect case of a vaccinia-related adverse event; and
3. For each case of a vaccinia-related adverse event, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

There is no specific investigation form for vaccinia-related adverse events. Events following vaccination may be reported to the [Vaccine Adverse Event Reporting System \(VAERS\)](#).

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

**VANCOMYCIN-INTERMEDIATE
STAPHYLOCOCCUS AUREUS
(VISA), or VANCOMYCIN-
RESISTANT STAPHYLOCOCCUS
AUREUS (VRSA)**

PROVIDERS SUBMIT A REPORT WITHIN 24 HOURS

LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING
DAY

CASE DEFINITION

Clinical Description

Staphylococcus aureus can produce a variety of syndromes with clinical manifestations including skin and soft tissue infections, empyema, bloodstream infection, pneumonia, osteomyelitis, septic arthritis, endocarditis, sepsis, and meningitis. *S. aureus* may also colonize individuals who remain asymptomatic. The most frequent site of *S. aureus* colonization is the nares.

Laboratory Criteria for Diagnosis

- Isolation of *Staphylococcus aureus* from any body site; AND
- Intermediate or resistance of the *S. aureus* isolate to vancomycin, detected and defined according to Clinical and Laboratory Standards Institute (CLSI, formerly NCCLS) approved standards and recommendations (Minimum Inhibitory Concentration [MIC]=4-8 µg/ml for VISA and MIC≥16 µg/ml for VRSA).

Case Classification

Confirmed

A case of vancomycin-intermediate or vancomycin-resistant *S. aureus* that is laboratory-confirmed (MIC=4-8 µg/ml for VISA and MIC≥16 µg/ml for VRSA) by a public health laboratory.

Suspect

A case of vancomycin-intermediate or vancomycin-resistant *S. aureus* that is laboratory confirmed (MIC=4-8 µg/ml for VISA and MIC≥16 µg/ml for VRSA), but not confirmed by a public health laboratory.

Note: The suspect definition will generally apply only when testing at a public health laboratory cannot be performed. If a public health laboratory identifies that the specimen/isolate is not vancomycin-intermediate/resistant, the case should be classified as “Not a case”.

References

Clinical and Laboratory Standards Institute/NCCLS. Performance Standards for Antimicrobial Susceptibility Testing. Sixteenth informational supplement. M100-S16. Wayne, PA: CLSI, 2006

CONTROL MEASURES

[Arizona Administrative Code R9-6-391](#) Vancomycin-Resistant or Vancomycin-Intermediate *Staphylococcus aureus*

Case Control Measures

1. A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall isolate and implement contact precautions for a case or suspect case of vancomycin-resistant or vancomycin-intermediate *Staphylococcus aureus*.

2. A diagnosing health care provider or an administrator of a health care institution transferring a known case with active infection or a known carrier of vancomycin-resistant or vancomycin-intermediate *Staphylococcus aureus* to another health care provider or health care institution shall, either personally or through a representative, comply with R9-6-305.
3. A local health agency, in consultation with the Department, shall:
 - a. Upon receiving a report under R9-6-202 of a case or suspect case of vancomycin-resistant or vancomycin-intermediate *Staphylococcus aureus*, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
 - b. Ensure that a case or suspect case of vancomycin-resistant or vancomycin-intermediate *Staphylococcus aureus* is isolated as necessary to prevent transmission;
 - c. Conduct an epidemiologic investigation of each reported case or suspect case of vancomycin-resistant or vancomycin-intermediate *Staphylococcus aureus*;
 - d. For each case of vancomycin-resistant or vancomycin-intermediate *Staphylococcus aureus*, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
 - e. Ensure that an isolate or a specimen, as available, from each case of vancomycin-resistant or vancomycin-intermediate *Staphylococcus aureus* is submitted to the Arizona State Laboratory.

INVESTIGATION FORMS

See Vancomycin-Resistant or Vancomycin-Intermediate *Staphylococcus aureus* Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	No
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	<p>2019: Clarified that confirmation at a public health laboratory is required, to eliminate false positive results received from clinical laboratories.</p> <p>Added suspect case definition to capture cases not confirmed by a public health laboratory.</p> <p>CDC/CSTE case definition does not state that a public health laboratory must confirm the test, but the ADHS confirmed definition otherwise matches.</p>
Most Recent CDC/CSTE Revision Year	2007

**VANCOMYCIN-RESISTANT
STAPHYLOCOCCUS
EPIDERMIDIS (VRSE)**

PROVIDERS AND LABORATORIES SUBMIT A REPORT
WITHIN 24 HOURS

Cases should be reported under the [emerging or exotic disease](#) requirement.

CASE DEFINITION

Clinical Description

Vancomycin-resistant *Staphylococcus epidermidis* (VRSE) can cause a variety of infections ranging from skin infections to deeper tissue/organ involvement such as bacteremia, endocarditis, or urinary tract infections.

Laboratory Criteria for Diagnosis

- Isolation of *Staphylococcus epidermidis* from any body site; AND
- Resistance of *Staphylococcus epidermidis* isolate to vancomycin, detected and defined according to the standards and guidelines approved by the National Committee for Clinical Laboratory Standards (NCCLS) (MIC >32 mg/L (NCCLS 2006)).

Case Classification

Confirmed

A clinically-compatible case of vancomycin-resistant *Staphylococcus epidermidis* that is laboratory confirmed.

CONTROL MEASURES

[Arizona Administrative Code R9-6-333](#) Emerging or Exotic Disease

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of an emerging or exotic disease case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. In consultation with the Department, isolate an emerging or exotic disease case or suspect case as necessary to prevent transmission;
3. Conduct an epidemiologic investigation of each reported emerging or exotic disease case or suspect case; and
4. For each emerging or exotic disease case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Contact Control Measures

A local health agency, in consultation with the Department,

1. Shall quarantine or exclude an emerging or exotic disease contact as necessary, according to R9-6-303, to prevent transmission.

INVESTIGATION FORMS

See Vancomycin-resistant *Staphylococcus epidermidis* (VSRE) at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

CASE DEFINITION

Clinical Description

An illness with acute onset of diffuse (generalized) maculopapular vesicular rash without other apparent cause.

Laboratory Criteria for Diagnosis

- Isolation of varicella virus from a clinical specimen; OR
- Varicella antigen by direct fluorescent antibody (DFA); OR
- Varicella-specific nucleic acid detected by polymerase chain reaction (PCR); OR
- Significant rise in serum varicella immunoglobulin G (IgG) antibody level by any standard serologic assay.

Case Classification (Varicella Case)

Confirmed

An acute illness with diffuse (generalized) maculopapular vesicular rash or a case of varicella reported by a provider or school, AND

- Laboratory confirmation by any of methods above; OR
- Epidemiologic linkage to a confirmed or probable case or known outbreak.

Probable

- A reported case of rash illness by a school or healthcare provider that does not meet the criteria for a confirmed case. Case may be negative on laboratory testing or have a single serology reported.

Suspect

- Laboratory evidence of infection, including single serologic assays, in someone who does not meet the confirmed or probable case definition.

Case Classification (Varicella Death)

Confirmed

A confirmed case of varicella that contributes directly or indirectly to acute medical complications that result in death.

Probable

A probable case of varicella that contributes directly or indirectly to acute medical complications that result in death.

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 6 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

Two probable cases that are epidemiologically linked would be considered confirmed, even in the absence of laboratory confirmation.

Laboratory confirmation of cases of varicella is not routinely recommended; laboratory confirmation is recommended for fatal cases and in other special circumstances, including outbreaks.

For reports meeting the laboratory criteria for diagnosis, and not reported by a school or a healthcare provider, attempts should be made to identify the presence of compatible symptoms. Laboratory reports without evidence of symptoms should be classified as suspect.

In vaccinated persons who develop varicella more than 42 days after vaccination (breakthrough disease), the disease is almost always mild with fewer than 50 skin lesions and shorter duration of illness. The rash may also be atypical in appearance (maculopapular with few vesicles).

CONTROL MEASURES

[Arizona Administrative Code R9-6-392](#) Varicella (Chickenpox)

Case Control Measures:

1. An administrator of a school or child care establishment, either personally or through a representative, shall exclude a varicella case from the school or child care establishment and from school- or child-care-establishment-sponsored events until lesions are dry and crusted.
2. An administrator of a health care institution, either personally or through a representative, shall isolate and implement airborne precautions for a varicella case until the case is no longer infectious.
3. A local health agency shall:
 - a. Conduct an epidemiologic investigation of each reported case of death due to primary varicella infection; and
 - b. For each reported case of death due to varicella infection, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

Contact Control Measures

1. When a varicella case has been at a school or child care establishment, the administrator of the school or child care establishment, either personally or through a representative, shall:
 - a. Consult with the local health agency to determine who shall be excluded and how long each individual shall be excluded from the school or child care establishment, and
 - b. Comply with the local health agency's recommendations for exclusion.
2. A local health agency shall determine which contacts of a varicella case will be:
 - a. Excluded from a school or child care establishment, and
 - b. Advised to obtain an immunization against varicella.

INVESTIGATION FORMS

If case expired, complete the Varicella Death Investigation Form at

<http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	No
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	<p>2013: ADHS removed one laboratory criterion for diagnosis in order to match that of CDC/CSTE. ADHS 2013 kept additional comments not present in CDC/CSTE.</p> <p>Additionally, ADHS case definition includes a Suspect category and criteria for classifying school or provider reports in the absence of information on specific symptoms.</p>
Most Recent CDC/CSTE Revision Year	2010 (Varicella); 1998 (Varicella death)

VIBRIO INFECTION

PROVIDERS REPORT WITHIN 24 HOURS IF AN OUTBREAK IS DETECTED OR CASE HAS A HIGH-RISK OCCUPATION

PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY FOR ALL OTHER CASES

CASE DEFINITION

Clinical Description

An infection of variable severity characterized by watery diarrhea, primary septicemia, or wound infections. Asymptomatic infections may occur, and the organism may cause extra-intestinal infections.

Laboratory Criteria for Diagnosis

Confirmatory Testing

Isolation of a species of the family *Vibrionaceae* (other than toxigenic *Vibrio cholerae* O1 or O139, which are reportable as cholera) from a clinical specimen.

Presumptive Testing

Detection of a species of the family *Vibrionaceae* (other than toxigenic *Vibrio cholerae* O1 or O139, which are reportable as cholera) from a clinical specimen using a culture-independent diagnostic test (CIDT).

Case Classification

Confirmed

A case that meets the laboratory criteria for diagnosis. Note that species identification and, if applicable, serotype designation (i.e., *Vibrio cholerae* non-O1/non-O139 or *Grimontia hollisae*) should be reported.

Probable

A case that meets the presumptive laboratory criteria for diagnosis; OR

A clinically-compatible case that is epidemiologically linked to a case that meets the presumptive or confirmatory laboratory criteria for diagnosis.

Criteria to Distinguish a New Case from an Existing Case

A case should not be counted as a new case if laboratory results were reported within 30 days of a previously reported infection in the same individual.

When two or more different species of the family *Vibrionaceae* are identified in one or more specimens from the same individual, each should be reported as a separate case.

Comment

The use of CIDTs as stand-alone tests for the direct detection of *Vibrio* in stool is increasing. Specific performance characteristics such as sensitivity, specificity, and positive predictive value of these assays likely depend on the manufacturer and are currently unknown. It is therefore useful to collect information on the type(s) of testing performed for reported vibriosis cases. When a specimen is positive using a CIDT it is also helpful to collect information on all culture results for the specimen, even if those results are negative.

Genera in the family *Vibrionaceae* (not all have been recognized to cause human illness) currently include:

- Aliivibrio
- Allomonas
- Catenococcus
- Enterovibrio
- Grimontia
- Listonella
- Photobacterium
- Salinivibrio
- Vibrio

CONTROL MEASURES

[Arizona Administrative Code R9-6-393](#) *Vibrio* Infection

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a *Vibrio* infection case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Exclude a *Vibrio* infection case or suspect case with diarrhea from:
 - a. Working as a food handler, caring for patients or residents in a health care institution, or caring for children in or attending a child care establishment until:
 - i. Diarrhea has resolved, or
 - ii. The local health agency has determined that the case or suspect case is unlikely to infect other individuals; and
 - b. Using an aquatic venue until diarrhea has resolved;
3. Conduct an epidemiologic investigation of each reported *Vibrio* infection case or suspect case; and
4. For each *Vibrio* infection case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D).

INVESTIGATION FORMS

See Cholera & Other *Vibrio* Illness Surveillance Report Form at

<http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2017: Supportive laboratory evidence modified to allow for tests other than culture. Supportive laboratory evidence used for a new probable definition. Added criteria to distinguish a new case from an existing case. Changes based

	<p>on CDC/CSTE definition.</p> <p>2013: ADHS case definition updated to match CDC/CSTE.</p>
<p>Most Recent CDC/CSTE Revision Year</p>	<p>2017</p>

CASE DEFINITION

- Filoviruses (Ebola, Marburg)
- Lassa virus
- Lujo virus
- New World Arenaviruses (Guanarito, Machupo, Junin, Sabia)
- Crimean-Congo Hemorrhagic Fever (Nairovirus)

Clinical Description

A person with acute onset with ALL the following clinical findings:

- A fever > 40°C, AND
- One or more of the following clinical findings:
 - Severe headache
 - Muscle pain
 - Erythematous maculopapular rash on the trunk with fine desquamation 3–4 days after rash onset
 - Vomiting
 - Diarrhea
 - Pharyngitis (arenavirus only)
 - Abdominal pain
 - Bleeding not related to injury
 - Retrosternal chest pain (arenavirus only)
 - Proteinuria (arenavirus only)
 - Thrombocytopenia

Laboratory Criteria for Diagnosis

Laboratory criteria are virus-specific. Diagnostic tests should be performed in consultation with ADHS. Laboratory criteria include one or more of the following laboratory findings:

- Detection of VHF viral antigens in blood by enzyme-linked immunosorbent assay (ELISA) antigen detection
- VHF viral isolation in cell culture for blood or tissues
- Detection of VHF viral genes using reverse transcriptase with polymerase chain reaction amplification (RT-PCR) from blood or tissues
- Detection of VHF viral antigens in tissues by immunohistochemistry

Exposure/Epidemiological Criteria

One or more of the following exposures within the 3 weeks before onset of symptoms:

- Contact with blood or other body fluids of a patient with VHF
- Residence in, or travel to, a VHF endemic area
- Work in a laboratory that handles VHF specimens
- Work in a laboratory that handles bats, rodents, or primates from endemic areas

- Exposure to semen from a confirmed acute or convalescent case of VHF within the 10 weeks of that person's onset of symptoms

Case Classification

Confirmed

A case that meets the clinical and laboratory criteria.

Suspect

A case that meets the clinical and epidemiological linkage (exposure) criteria.

Comment

Viral hemorrhagic fever (VHF) may be due to a variety of etiologies which may have a wide spectrum of clinical presentations. The clinical presentations vary from constitutional symptoms of fever, myalgia, headache to bleeding/hemorrhaging from vascular abnormalities to shock and death. There are four RNA viral families that cause VHF:

- Arenaviridae family (Lassa fever, Argentina HF, Bolivian HF, Venezuelan HF, Brazilian HF);
- Bunyaviridae family (Rift Valley fever, Crimean-Congo HF, Hantavirus, Korean HF);
- Filoviridae (Marburg HF, Ebola HF);
- Flaviviridae (Yellow Fever, Dengue HF, Omsk HF, Kyasanur Forest Disease).

Hemorrhagic cases of dengue, hantavirus, or yellow fever should be reported and counted as those morbidities.

CONTROL MEASURES

[Arizona Administrative Code R9-6-394](#) Viral Hemorrhagic Fever

Case Control Measures

1. A diagnosing health care provider or an administrator of a health care institution, either personally or through a representative, shall isolate and implement both droplet precautions and contact precautions for a viral hemorrhagic fever case or suspect case for the duration of the illness.
2. A local health agency shall:
 - a. Upon receiving a report under R9-6-202 of a viral hemorrhagic fever case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
 - b. Conduct an epidemiologic investigation of each reported viral hemorrhagic fever case or suspect case;
 - c. For each viral hemorrhagic fever case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
 - d. Ensure that one or more specimens from each viral hemorrhagic fever case or suspect case are submitted to the Arizona State Laboratory.

Contact Control Measures

A local health agency, in consultation with the Department, shall:

1. Quarantine a viral hemorrhagic fever contact as necessary to prevent transmission.

INVESTIGATION FORMS

For Ebola Virus, see Ebola Case Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes (with additional comments)
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2011

Outbreaks should be reported under the [Diarrhea, Nausea, or Vomiting](#) requirement.

CASE DEFINITION

Definition

An incident in which two or more epidemiologically-linked persons experience a similar illness after exposure to the same water source and epidemiologic evidence implicates the water as the likely source of the illness.

Clinical Description

Symptoms of illness depend upon etiologic agent.

Laboratory Criteria for Diagnosis

Dependent upon etiologic agent.

Case classification

Confirmed

Any outbreak of an infectious disease, chemical poisoning or toxin-mediated illness where water is indicated as the source by an epidemiological investigation

Comment

The implicated water in these waterborne disease outbreaks may be drinking water, recreational water, water not intended for drinking (e.g., water used for agricultural purposes or in a cooling tower) or water of unknown intent. The route of exposure may be ingestion, inhalation, intranasal, or contact. The agent associated with the waterborne disease outbreak may be a microbe, chemical, or toxin. Water testing to demonstrate contamination or identify the etiologic agent is preferred, but not required for inclusion. Chemicals (including disinfection byproducts) in drinking water or in recreational water that cause health effects either through water exposure or by volatilization leading to poor air quality are included. Reports of waterborne disease outbreaks received through the National Outbreak Reporting System (NORS) are captured in the Waterborne Disease and Outbreak Surveillance System (WBD OSS).

Although not reported through NORS, the WBD OSS also accepts single cases of chemical exposure, wound infection and other illnesses, (e.g., *Naegleria* infections) that are epidemiologically linked to water exposure as well as aquatic facility-related health events (e.g., chemical mixing accidents or air quality problems). However, these single cases or aquatic facility-related health events are not reported or analyzed as waterborne disease outbreaks.

CONTROL MEASURES

[Arizona Administrative Code R9-6-330](#) Diarrhea, Nausea, or Vomiting

Outbreak Control Measures

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported outbreak of diarrhea, nausea, or vomiting;
2. Submit to the Department the information required under R9-6-206(E); and

3. Exclude each case that is part of an outbreak of diarrhea, nausea, or vomiting from:
 - a. Working as a food handler, caring for patients or residents in a health care institution, or caring for children in or attending a child care establishment until:
 - i. Diarrhea and vomiting have resolved, or
 - ii. The local health agency has determined that the case is unlikely to infect other individuals; and
 - b. Using an aquatic venue for two weeks after diarrhea has resolved.

Environmental Control Measures

A local health agency shall:

1. Conduct a sanitary inspection or ensure that a sanitary inspection is conducted of each facility or location regulated under 9 A.A.C. 8 that is associated with an outbreak of diarrhea, nausea, or vomiting.

INVESTIGATION FORMS

See Outbreak Summary Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	2010

WEST NILE VIRUS

PROVIDERS AND LABORATORIES SUBMIT A REPORT
WITHIN 5 WORKING DAYS

For case definition, see [Arboviral infection](#) in this document.

CONTROL MEASURES

[Arizona Administrative Code R9-6-395](#) West Nile Virus Infection

Case control measures:

A local health agency shall:

1. Conduct an epidemiologic investigation of each reported West Nile virus infection case or suspect case; and
2. For each case of West Nile virus infection, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
3. Ensure that each West Nile virus infection case is provided with health education that includes measures to:
 - a. Avoid mosquito bites, and
 - b. Reduce mosquito breeding sites.

Environmental control measures:

In cooperation with the Department, a local health agency or another local agency responsible for vector control within a jurisdiction shall:

1. conduct an assessment of the environment surrounding each West Nile virus infection case or suspect case and implement vector control measures as necessary.

INVESTIGATION FORMS

See the Arboviral Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION

Clinical Description

Most yellow fever virus infections are asymptomatic. Following an incubation period of 3–9 days, approximately one-third of infected people develop symptomatic illness characterized by fever and headache. Other clinical findings include chills, vomiting, myalgia, lumbosacral pain, and bradycardia relative to elevated body temperature. An estimated 5%–25% of patients progress to more severe disease, including jaundice, renal insufficiency, cardiovascular instability, or hemorrhage (e.g., epistaxis, hematemesis, melena, hematuria, petechiae, or ecchymoses). The case-fatality rate for severe yellow fever is 30%–60%.

A clinically compatible case of yellow fever is defined as:

- Acute illness with at least one of the following: fever, jaundice, or elevated total bilirubin ≥ 3 mg/dL, AND
- Absence of a more likely clinical explanation.

Laboratory Criteria for Diagnosis

Confirmatory Laboratory Evidence

- Isolation of yellow fever virus from, or demonstration of yellow fever viral antigen or nucleic acid in, tissue, blood, CSF, or other body fluid.
- Four-fold or greater rise or fall in yellow fever virus-specific neutralizing antibody titers in paired sera.
- Yellow fever virus-specific IgM antibodies in CSF or serum with confirmatory virus-specific neutralizing antibodies in the same or a later specimen.

Presumptive Laboratory Evidence

- Yellow fever virus-specific IgM antibodies in CSF or serum, and negative IgM results for other arboviruses endemic to the region where exposure occurred.

Epidemiologic Linkage

Epidemiologically linked to a confirmed yellow fever case, or visited or resided in an area with a risk of yellow fever in the 2 weeks before onset of illness.

Case Classification

Confirmed

A case that meets the above clinical criteria and meets one or more of the following:

- Isolation of yellow fever virus from, or demonstration of yellow fever viral antigen or nucleic acid in, tissue, blood, CSF, or other body fluid, AND no history of yellow fever vaccination within 30 days before onset of illness unless there is molecular evidence of infection with wild-type yellow fever virus.

- Four-fold or greater rise in yellow fever virus-specific neutralizing antibody titers in paired sera, AND no history of yellow fever vaccination within 30 days before onset of illness.
- Yellow fever virus-specific IgM antibodies in CSF or serum with confirmatory virus-specific neutralizing antibodies in the same or a later specimen, AND no history of yellow fever vaccination.

Probable

A case that meets the above clinical and epidemiologic linkage criteria, and meets the following:

- Presumptive laboratory evidence AND no history of yellow fever vaccination.

CONTROL MEASURES

[Arizona Administrative Code R9-6-396](#) Yellow Fever

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a yellow fever case or suspect case, notify the Department within 24 hours after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported yellow fever case or suspect case;
3. For each yellow fever case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D);
4. Ensure that each yellow fever case is provided with health education that includes measures to:
 - a. Avoid mosquito bites, and
 - b. Reduce mosquito breeding sites; and
5. Ensure that an isolate or a specimen, as available, from each yellow fever case or suspect case is submitted to the Arizona State Laboratory.

Environmental Control Measures

In cooperation with the Department, a local health agency or another local agency responsible for vector control within a jurisdiction shall

1. Conduct an assessment of the environment surrounding each yellow fever case or suspect case and implement vector control measures as necessary.

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	2019: Laboratory criteria updated to include newer tests; classifications better reflect the role of vaccination in interpreting test results. Changes based on modifications to CDC/CSTE definition.

Most Recent CDC/CSTE Revision Year	2019
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YERSINIOSIS (Enteropathogenic *Yersinia*)

PROVIDERS REPORT WITHIN 24 HOURS IF AN OUTBREAK IS DETECTED OR PERSON HAS A HIGH-RISK OCCUPATION

PROVIDERS AND LABORATORIES SUBMIT A REPORT WITHIN 1 WORKING DAY FOR ALL OTHER CASES

CASE DEFINITION

Clinical Description

An illness with either diarrhea or abdominal pain that may be severe enough to mimic appendicitis.

Note: Extra-intestinal manifestations may also be present, such as abscess, which could be a source for testing, and reactive arthritis and erythema nodosum, which are often immunologic phenomena not directly caused by the infection. These manifestations are not required as part of the clinical criteria.

Laboratory Criteria for Diagnosis

Confirmatory Laboratory Evidence

Isolation of *Y. enterocolitica* or *Y. pseudotuberculosis* by culture from a clinical specimen.

Presumptive Laboratory Evidence

Detection of any *Yersinia* non-pestis species in a clinical specimen using a nucleic acid amplification test (NAAT) culture-independent diagnostic test (CIDT).

Epidemiologic Linkage

A person who has had contact with a case that meets the presumptive or confirmatory laboratory criteria.

Case Classification

Confirmed

A case that meets the confirmatory laboratory criteria.

Probable

- A case that meets presumptive laboratory criteria; OR
- A clinically compatible case with an epidemiological linkage.

Criteria to Distinguish a New Case from an Existing Case

A case should not be counted as a new case if additional laboratory results are within 365 days of a previously reported infection in the same individual. When two or more different *Yersinia* non-pestis species are identified in one or more specimens from the same individual, each should be reported as a separate case.

CONTROL MEASURES

[Arizona Administrative Code R9-6-397](#) Yersiniosis (Enteropathogenic *Yersinia*)

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a yersiniosis case or suspect case, notify the

- Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Exclude a yersiniosis case or suspect case with diarrhea from:
 - a. Working as a food handler, caring for patients or residents in a health care institution, or caring for children in or attending a child care establishment until:
 - i. Diarrhea has resolved,
 - ii. A stool specimen negative for enteropathogenic *Yersinia* is obtained from the case or suspect case, or
 - iii. The local health agency has determined that the case or suspect case is unlikely to infect other individuals; and
 - b. Using an aquatic venue for two weeks after diarrhea has resolved;
 3. Conduct an epidemiologic investigation of each reported yersiniosis case or suspect case;
 4. For each yersiniosis case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D); and
 5. Ensure that an isolate or a specimen, as available, from each yersiniosis case is submitted to the Arizona State Laboratory.

INVESTIGATION FORMS

See Yersiniosis Infection Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	No
Justification	<p>2019: CIDT changed from suspect to probable classification. Changes based on modifications to CDC/CSTE definition, although definition is intended to be used by FoodNet sites and is not posted with other CDC NNDSS case definitions.</p> <p>2017: Added supportive laboratory criteria and suspect case definition.</p>
Most Recent CDC/CSTE Revision Year	2019

CASE DEFINITION**Background**

Zika virus, a flavivirus in the family Flaviviridae, is an emerging disease primary transmitted through the bites of *Aedes aegypti* and *Aedes albopictus* mosquitoes. Zika has also been transmitted sexually and from mother-to-child. Transmission through contaminated blood products and organ donation is also possible.

Clinical Description

It is estimated that 80% of individuals infected with Zika virus are asymptomatic. In symptomatic cases, Zika virus can present with acute onset of fever, maculopapular rash, arthralgia, and/or conjunctivitis in addition to myalgia and headache. In congenital cases, Zika virus has been associated with microcephaly, intracranial calcifications, eye abnormalities, hearing loss, and other structural brain or central nervous system abnormalities. Zika virus has also been associated with Guillain-Barré syndrome. Severe illness, hospitalization, and/or death are rare in individuals infected with Zika virus; however, cases have occurred, particularly in immunocompromised patients.

Zika case definitions are categorized as non-congenital/ congenital and disease/infection.

Clinical Criteria for Zika Virus Disease

A clinically compatible case of Zika Virus Disease is defined as follows:

Non-Congenital Disease—A person with one or more of the following not explained by another etiology:

- Clinically compatible illness that includes:
 - Acute onset of fever (measured or reported) **OR**
 - Maculopapular rash **OR**
 - Arthralgia **OR**
 - Conjunctivitis
- Complication or pregnancy
 - Fetal loss **OR**
 - Fetus or neonate with
 - Congenital microcephaly **OR**
 - Congenital intracranial calcifications **OR**
 - Other structural brain or eye abnormalities **OR**
 - Other congenital central nervous system-related abnormalities including defects such as clubfoot or multiple joint contractures
- Guillain-Barré syndrome or other neurologic manifestations

Congenital Disease—Live born infant with one or more of the following not explained by another etiology:

- Congenital microcephaly **OR**
- Intracranial calcifications **OR**
- Structural brain or eye abnormalities **OR**
- Other congenital central nervous system-related

Note: testing for other congenital infections such as syphilis, toxoplasmosis, rubella, cytomegalovirus infection, lymphocytic choriomeningitis infection, and herpes simplex virus infectious should be considered in addition to an assessment of potential genetic and teratogenic causes of congenital anomalies.

Epidemiologic Linkage

- Resides in or recent travel to an area with known local Zika virus transmission **OR**
- Sexual contact with a confirmed or probable case within the infection transmission risk window of Zika virus infection or person with recent travel to an area with known Zika virus transmission **OR**
- Receipt of blood or blood products within 30 days of symptom onset **OR**
- Organ or tissue transplant recipient within 30 days of symptom onset **OR**
- Association in time and place with a confirmed or probable case **OR**
- Likely vector exposure in an area with suitable seasonal and ecological conditions for potential local vector borne transmission

Case Classification: Zika Virus Disease

Confirmed

Non-Congenital Disease

A case that meets the above clinical criteria for non-congenital disease and one or more the following laboratory criteria for a confirmed case:

- Detection of Zika virus by culture, viral antigen or viral RNA in serum, CSF, tissue, or other specimen (e.g. amniotic fluid, urine, semen, saliva) **OR**
- Positive Zika virus IgM antibody test of serum or CSF with positive Zika virus neutralizing antibody titers and negative neutralizing antibody titers against dengue or other flaviviruses endemic to the region where exposure occurred.

Congenital Disease

A case that meets the above clinical criteria for congenital disease and one or more of the following laboratory criteria for a confirmed case:

- Detection of Zika virus by culture, viral antigen or viral RNA in fetal tissue, umbilical cord blood, or amniotic fluid; or neonatal serum, CSF, or urine collected within 2 days of birth **OR**
- Positive Zika virus IgM antibody test of umbilical cord blood, neonatal serum or CSF collected within 2 days of birth **with** positive Zika virus neutralizing antibody titers and negative neutralizing antibody titers against dengue or other flaviviruses endemic to the region where exposure occurred.

Probable

Non-Congenital Disease

A case that meets the above clinical criteria for non-congenital disease **AND** has an epidemiologic linkage **AND** the following laboratory criteria for a probable case:

- Positive Zika virus IgM antibodies in serum or CSF **AND**
- Positive neutralizing antibody titers against Zika virus and dengue or other flaviviruses endemic to the region where exposure occurred **OR** negative dengue virus IgM antibody test

and no neutralizing antibody testing performed

Congenital Disease

A case that meets the above clinical criteria for non-congenital disease **AND** the neonate's mother has an epidemiologic linkage **AND** the following laboratory criteria for a probable case:

- Positive Zika virus IgM antibodies in serum or CSF collected within 2 days of birth **AND**
- Positive neutralizing antibody titers against Zika virus and dengue or other flaviviruses endemic to the region where exposure occurred **OR** negative dengue virus IgM antibody test and no neutralizing antibody testing performed

Case Classification: Zika Virus Infection

Confirmed

Non-Congenital Infection

A case that does not meet the above clinical criteria for non-congenital disease **BUT** meets one or more the following laboratory criteria for a confirmed case:

- Detection of Zika virus by culture, viral antigen or viral RNA in serum, CSF, tissue, or other specimen (e.g. amniotic fluid, urine, semen, saliva) **OR**
- Positive Zika virus IgM antibody test of serum or CSF with positive Zika virus neutralizing antibody titers and negative neutralizing antibody titers against dengue or other flaviviruses endemic to the region where exposure occurred.

Congenital Infection

A case that does not meet the above clinical criteria for non-congenital disease **BUT** meets one or more of the following laboratory criteria for a confirmed case:

- Detection of Zika virus by culture, viral antigen or viral RNA in fetal tissue, umbilical cord blood, or amniotic fluid; or neonatal serum, CSF, or urine collected within 2 days of birth **OR**
- Positive Zika virus IgM antibody test of umbilical cord blood, neonatal serum or CSF collected within 2 days of birth **with** positive Zika virus neutralizing antibody titers and negative neutralizing antibody titers against dengue or other flaviviruses endemic to the region where exposure occurred.

Probable

Non-Congenital Infection

A case that does not meet the above clinical criteria for non-congenital disease **BUT** has an epidemiologic linkage **AND** the following laboratory criteria for a probable case:

- Positive Zika virus IgM antibodies in serum or CSF **AND**
- Positive neutralizing antibody titers against Zika virus and dengue or other flaviviruses endemic to the region where exposure occurred **OR** negative dengue virus IgM antibody test and no neutralizing antibody testing performed

Congenital Infection

A case that does not meet the above clinical criteria for non-congenital disease **BUT** the neonate's mother has an epidemiologic linkage **AND** the following laboratory criteria for a probable case:

- Positive Zika virus IgM antibodies in serum or CSF collected within 2 days of birth **AND**
- Positive neutralizing antibody titers against Zika virus and dengue or other flaviviruses endemic to the region where exposure occurred **OR** negative dengue virus IgM antibody test and no neutralizing antibody testing performed

Criteria to Distinguish a New Case from an Existing Case*

A case should not be counted as a new case if laboratory results were reported within 9 months of a previously reported infection in the same individual.

*Based on ADHS guidelines

Comment

Given the similarity of symptoms between Zika, chikungunya & dengue, in addition to the overlap in areas of endemicity between the viruses, simultaneous testing is recommended for all three arboviruses in symptomatic cases. Simultaneous testing can also assist in isolating the specific diagnosis as cross-reactivity of serum antibodies can occur.

Zika virus is a member of the Flaviviridae family and has sufficient antigenic similarity to have some degree of cross-reactivity with IgM antibody to other flaviviruses. Thus, final interpretation of a positive antibody test result must take into account the likelihood that the patient was recently infected with or vaccinated against another flavivirus (e.g., dengue, West Nile, Saint Louis encephalitis, yellow fever, Japanese encephalitis).

CONTROL MEASURES

[Arizona Administrative Code R9-6-398](#) Zika Virus Infection

Case Control Measures

A local health agency shall:

1. Upon receiving a report under R9-6-202 of a Zika virus infection case or suspect case, notify the Department within one working day after receiving the report and provide to the Department the information contained in the report;
2. Conduct an epidemiologic investigation of each reported Zika virus infection case or suspect case;
3. For each Zika virus infection case, submit to the Department, as specified in Table 2.4, the information required under R9-6-206(D);
4. Ensure that one or more specimens from each Zika virus infection case or suspect case, as required by the Department, are submitted to the Arizona State Laboratory; and
5. Provide to the Zika virus infection case or ensure that another person provides to the Zika virus infection case health education that includes measures to:
 - a. Avoid mosquito bites,
 - b. Reduce mosquito breeding sites, and
 - c. Reduce the risk of sexual or congenital transmission of Zika virus.

Environmental Control Measures

In cooperation with the Department, a local health agency or another local agency responsible for vector control within a jurisdiction shall

1. Conduct an assessment of the environment surrounding each Zika virus infection case or suspect case and implement vector control measures as necessary.

INVESTIGATION FORMS

See Zika Case Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2017: Zika virus was removed from the list of arboviruses and a separated separate Zika virus case definition was created.
Most Recent CDC/CSTE Revision Year	2017

Case Definitions for Communicable Morbidities of Public Health Significance which are not Reportable in Arizona

ACANTHAMOEBA KERATITIS

CASE DEFINITION

Clinical Description

Acanthamoeba keratitis is a local infection of the cornea (outer layer of the visual pathway of the eye) caused by a microscopic, free-living amoeba belonging to the genus *Acanthamoeba*. Symptoms include foreign body sensation, photophobia, decreased visual acuity, tearing, pain, and redness of the eye. It occurs most typically among healthy, contact lens users, but can occur in anyone. Although treatable with topical medications, affected individuals are at risk for permanent visual impairment or blindness. *Acanthamoeba* organisms are ubiquitous in nature and can be found in bodies of water (e.g., lakes and oceans), soil, and air.

Laboratory Criteria for Diagnosis

Laboratory-confirmed *Acanthamoeba* spp. keratitis infections are defined as the detection of *Acanthamoeba* spp.

- Organisms in corneal scraping, or biopsy specimens, OR
- Nucleic acid (e.g., polymerase chain reaction) in corneal scraping, or biopsy specimens, OR
- Antigen (e.g., direct fluorescent antibody) in corneal scraping, or biopsy specimens.

Case Classification

Confirmed

A clinically compatible illness that is laboratory confirmed. When available, species designation and molecular characterization (e.g., genotype) should be documented.

Probable

A clinically compatible illness with positive identification of *Acanthamoeba* trophozoites or cysts using confocal microscopy.

CONTROL MEASURES

A local health agency shall:

1. Conduct an epidemiologic investigation to determine potential sources of infection, in particular ophthalmic medications, solutions or devices.

INVESTIGATION FORMS

Contact ADHS. Depending on the etiology of the encephalitis, an investigation form may or may not be available.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes

Justification	2017: Separated from the list of encephalitis, parasitic since not an encephalitic disease and a separate case definition created
Most Recent CDC/CSTE Revision Year	2012

AFRICAN TICK BITE FEVER

CASE DEFINITION

Clinical Description

A tick-borne illness caused by *Rickettsia africae*, a pathogen endemic to several countries in sub-Saharan Africa, and to Guadeloupe in the Caribbean. Clinic disease generally occurs within 1-15 days (median 4 days) following the bite of an infecting tick.

The illness is characterized by acute onset of fever, and is accompanied by single or multiple eschars. Regional lymphadenopathy and a maculopapular rash also occur in about half of all patients.

Laboratory Criteria for Diagnosis

Confirmed

- A four-fold or greater change in IgG antibody titer to spotted fever group rickettsia antigen in paired serum specimens; OR
- Demonstration of spotted fever group rickettsiae in a biopsy specimen by using an immunohistochemical stain; OR
- Detection of DNA of *R. africae* in a clinical specimen by using PCR; OR
- Isolation of *R. africae* from a clinical specimen cell culture

Probable

A single supportive IgG antibody titer to spotted fever group rickettsiae (cutoff titers are determined by individual laboratories)

Case Classification

A clinically compatible illness in a person with travel to an *R. africae*-endemic region within three weeks of illness onset

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

ASEPTIC MENINGITIS (VIRAL)

CASE DEFINITION

Clinical Description

A syndrome characterized by acute onset of meningeal symptoms, fever, and cerebrospinal fluid pleocytosis, with bacteriologically sterile cultures.

Laboratory Criteria for Diagnosis

No evidence of bacterial or fungal meningitis & evidence of pleocytosis.

Case Classification

Confirmed

A clinically compatible illness diagnosed by a physician as aseptic meningitis with no laboratory evidence of bacterial or fungal meningitis.

Comment

Aseptic meningitis is a syndrome of multiple etiologies, but many cases are caused by a viral agent.

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	Aseptic meningitis is no longer reportable, as of January 1, 2018.
Most Recent CDC/CSTE Revision Year	N/A

ENTEROTOXIGENIC *ESCHERICHIA COLI* (ETEC)

CASE DEFINITION

Clinical Description

Diarrhea caused by enterotoxigenic *E. coli* or ETEC is a self-limited illness lasting 1 to 5 days of moderate severity with watery stools and abdominal cramps. Vomiting, dehydration, and low grade fever may also be present.

Laboratory Criteria for Diagnosis

Demonstration of production of enterotoxin in an *E. coli* isolate by a technique that is able to identify heat-labile toxin (LT) and heat-stable toxin (ST).

Case Classification

Confirmed

A clinically compatible case that is laboratory confirmed

Probable

A clinically compatible case that is epidemiologically linked to a probable or confirmed case

CONTROL MEASURES

None

INVESTIGATION FORMS

See Enterohemorrhagic *E. coli* (Shiga-toxin producing) and/or HUS Investigation Form at <http://azdhs.gov/preparedness/epidemiology-disease-control/index.php#investigations-forms>

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	Enterotoxigenic <i>E. coli</i> is no longer reportable, as of January 1, 2018.
Most Recent CDC/CSTE Revision Year	N/A

GENITAL WARTS

CASE DEFINITION

Clinical Description

An infection characterized by the presence of visible, exophytic (raised) growths on the internal or external genitalia, perineum, or perianal region

Laboratory Criteria for Diagnosis

- Histopathologic changes characteristic of human papillomavirus infection in specimens obtained by biopsy or exfoliative cytology OR
- Demonstration of virus by antigen or nucleic acid detection in a lesion biopsy

Case Classification

Confirmed

A clinically compatible case that is laboratory confirmed

Probable

A clinically compatible case without histopathologic diagnosis and without microscopic or serologic evidence that the growth is the result of secondary syphilis

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	1996

GRANULOMA INGUINALE (GI) (*Calymmatobacterium granulomatis*)

CASE DEFINITION

Clinical Description

A slowly progressive ulcerative disease of the skin and lymphatics of the genital and perianal area caused by infection with *Calymmatobacterium granulomatis*. A clinically compatible case would have one or more painless or minimally painful granulomatous lesions in the anogenital area.

Laboratory Criteria for Diagnosis

Demonstration of intracytoplasmic Donovan bodies in Wright or Giemsa-stained smears or biopsies of granulation tissue

Case Classification

Confirmed

A clinically compatible case that is laboratory confirmed.

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	1997

HERPES GENITALIS

CASE DEFINITION

Clinical Description

An illness characterized by visible, painful genital or anogenital lesions

Laboratory Criteria for Diagnosis

- Isolation of herpes simplex virus from cervix, urethra, or anogenital lesion, OR
- Demonstration of virus by antigen detection technique in clinical specimens from cervix, urethra, or anogenital lesion, OR
- Demonstration of multinucleated giant cells on a Tzanck smear of scrapings from an anogenital lesions

Case Classification

Confirmed

A clinically compatible case that is laboratory confirmed

Probable

A clinically compatible case (in which primary and secondary syphilis have been ruled out by serology and dark field microscopy, when available) with either a diagnosis of genital herpes based on clinical presentation (without laboratory confirmation) or a history of one or more previous episodes of similar genital lesions.

Comment

Herpes should be reported only once per patient. The first diagnosis for a patient with no previous diagnosis should be reported.

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	Herpes genitalis is no longer reportable, as of January 1, 2018.
Most Recent CDC/CSTE Revision Year	N/A

INFLUENZA-ASSOCIATED HOSPITALIZATIONS

CASE DEFINITION

Clinical Description

An influenza-associated hospitalization is defined for surveillance purposes as a hospital admission 14 days or less after influenza identification by an appropriate laboratory or rapid diagnostic test or a hospital admission 3 days or less before influenza identification by an appropriate laboratory or rapid diagnostic test.

Laboratory Criteria for Diagnosis

See laboratory criteria for [Influenza](#).

Case Classification

Confirmed

A case that meets clinical case definition that is laboratory confirmed. Laboratory or rapid diagnostic test confirmation is required as part of the case definition; therefore, all reported hospitalizations will be classified as confirmed.

Comment

Influenza is not a required reportable condition by healthcare providers in Arizona, with the exception of influenza-associated pediatric deaths. However, influenza virus is a laboratory-reportable condition in the state. This definition should be used when designating any reported cases of influenza as “hospitalized”.

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	2012: New CDC/CSTE case definition.
Most Recent CDC/CSTE Revision Year	2012

KAWASAKI SYNDROME

CASE DEFINITION

Clinical Description

A febrile illness of greater than or equal to 5 days' duration, with at least four of the five following physical findings and no other more reasonable explanation for the observed clinical findings:

- Bilateral conjunctival injection
- Oral changes (erythema of lips or oropharynx, strawberry tongue, or fissuring of the lips)
- Peripheral extremity changes (edema, erythema, or generalized or periungual desquamation)
- Rash
- Cervical lymphadenopathy (at least one lymph node greater than or equal to 1.5 cm in diameter)

Laboratory Criteria for Diagnosis

None

Case Classification

Confirmed

A case that meets the clinical case definition

Comment

If fever disappears after intravenous gamma globulin therapy is started, fever may be of less than 5 days' duration, and the clinical case definition may still be met.

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	Kawasaki disease is no longer reportable, as of January 1, 2018.
Most Recent CDC/CSTE Revision Year	N/A

LATENT TUBERCULOSIS INFECTION**IF THE CASE IS LESS THAN 6 YEARS OLD: PROVIDERS SUBMIT A REPORT WITHIN 1 WORKING DAY.**

Not reportable in other age groups.

CASE DEFINITION**Clinical Criteria**

Clinical criteria alone are not sufficient to classify a case of TB infection. Clinical criteria to confirm a suspected case of TB infection are as follows:

No clinical evidence compatible with TB disease including:

- No signs or symptoms consistent with TB disease AND
 - Chest imaging without abnormalities consistent with TB (chest radiograph or CT scan) OR
 - Abnormal chest imaging that could be consistent with TB disease with microbiologic testing that is negative for MTB complex AND where TB disease has been clinically ruled out

Laboratory Criteria

Laboratory/diagnostic criteria alone are not sufficient to confirm a case of TB infection. Laboratory criteria to identify suspected cases of TB infection are as follows:

- A positive tuberculin skin test (TST) OR
- A positive interferon gamma release assay (IGRA)

Case Classification**Confirmed**

A case that meets one of the laboratory criteria for TB infection AND *M. tuberculosis* complex was not isolated from a clinical specimen, if a specimen was collected AND Meets the clinical criteria for TB Infection as listed above.

Suspect

A case that meets one or more of the laboratory criteria AND *M. tuberculosis* complex was not isolated from a clinical specimen, if a specimen was collected.

Criteria to Distinguish a New Case from an Existing Case

A new case is an incident TB Infection case that meets the suspected or confirmed case criteria and has not previously been diagnosed or treated for TB infection OR previously treated for TB disease.

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	N/A
Justification	2018: New CDC/CSTE case definition.
Most Recent CDC/CSTE Revision Year	2018

MUCOPURULENT CERVICITIS (MPC)

CASE DEFINITION

Clinical Description

Cervical inflammation that is not the result of infection with *Neisseria gonorrhoeae* or *Trichomonas vaginalis*. Cervical inflammation is defined by the presence of one of the following criteria:

- Mucopurulent secretion (from the endocervix) that is yellow or green when viewed on a white, cotton-tipped swab (positive swab test)
- Induced endocervical bleeding (bleeding when the first swab is placed in the endocervix)

Laboratory Criteria for Diagnosis

No evidence of *N. gonorrhoeae* by culture, Gram stain, or antigen or nucleic acid detection, and no evidence of *T. vaginalis* on wet mount

Case Classification

Confirmed

A clinically compatible case in a female who does not have either gonorrhea or trichomoniasis

Comment

Mucopurulent cervicitis (MPC) is a clinical diagnosis of exclusion. The syndrome may result from infection with any of several agents. If gonorrhea, trichomoniasis, and chlamydia are excluded, a clinically compatible illness should be classified as MPC. An illness in a female that meets the case definition of MPC and *C. trachomatis* infection (see [Chlamydia trachomatis Infection](#)) should be classified as chlamydia.

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	1996

NONGONOCOCCAL URETHRITIS (NGU)

CASE DEFINITION

Clinical Description

Urethral inflammation that is not the result of infection with *Neisseria gonorrhoeae*. Urethral inflammation may be diagnosed by the presence of one of the following criteria:

- A visible abnormal urethral discharge, OR
- A positive leukocyte esterase test from a male aged less than 60 years who does not have a history of kidney disease or bladder infection, prostate enlargement, urogenital anatomic anomaly, or recent urinary tract instrumentation, OR
- Microscopic evidence of urethritis (greater than or equal to 5 white blood cells per high-power field) on a Gram stain of a urethral smear

Laboratory Criteria for Diagnosis

No evidence of *N. gonorrhoeae* infection by culture, Gram stain, or antigen or nucleic acid detection

Case Classification

Confirmed

A clinically compatible case in a male in whom gonorrhea is not found, either by culture, Gram stain, or antigen or nucleic acid detection

Comment

Nongonococcal urethritis (NGU) is a clinical diagnosis of exclusion. The syndrome may result from infection with any of several agents. If gonorrhea and chlamydia are excluded, a clinically compatible illness should be classified as NGU. An illness in a male that meets the case definition of NGU and *C. trachomatis* infection (see [Chlamydia trachomatis Infection](#)) should be classified as chlamydia.

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	1996

PEDICULOSIS

CASE DEFINITION

Clinical Description

Infestation of the hairy parts of the body with adult or larval lice or their eggs.

Criteria for Diagnosis

Recovery of crawling lice, or eggs (nits) on hair within 1/2 inch of scalp for head lice.

CONTROL MEASURES

[Arizona Administrative Code R9-6-362](#) Pediculosis (Lice Infestation)

Case control measures:

1. An administrator of a school or child care establishment, either personally or through a representative, shall exclude a pediculosis case from the school or child care establishment until the case is treated with a pediculicide.
2. An administrator of a shelter shall ensure that a pediculosis case is treated with a pediculicide and that the case's clothing and personal articles are disinfested.

Contact control measures:

An administrator of a school or child care establishment that excludes a pediculosis case from the school or child care establishment, either personally or through a representative:

1. Shall ensure that a parent or guardian of a child who is a contact is notified that a pediculosis case was identified at the school or child care establishment.

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	N/A

PELVIC INFLAMMATORY DISEASE (PID)

CASE DEFINITION

Clinical Description

A clinical syndrome resulting from the ascending spread of microorganisms from the vagina and endocervix to the endometrium, fallopian tubes, and/or contiguous structures. In a female who has lower abdominal pain and who has not been diagnosed as having an established cause other than pelvic inflammatory disease (PID) (e.g., ectopic pregnancy, acute appendicitis, and functional pain), all the following clinical criteria must be present:

- Lower abdominal tenderness, AND
- Tenderness with motion of the cervix, AND
- Adnexal tenderness

In addition to the preceding criteria, at least one of the following findings must also be present:

- Meets the surveillance case definition of *C. trachomatis* infection or gonorrhea
- Temperature greater than 100.4°F (greater than 38.0°C)
- Leukocytosis greater than 10,000 white blood cells/mm³
- Purulent material in the peritoneal cavity obtained by culdocentesis or laparoscopy
- Pelvic abscess or inflammatory complex detected by bimanual examination or by sonography
- Patient is a sexual contact of a person known to have gonorrhea, chlamydia, or nongonococcal urethritis

Case Classification

Confirmed

A case that meets the clinical case definition

Comment

For reporting purposes, a clinician's report of PID should be counted as a case.

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	Yes
Most Recent CDC/CSTE Revision Year	1996

RESPIRATORY SYNCYTIAL VIRUS (RSV)-ASSOCIATED MORTALITY

CASE DEFINITION

Clinical Description

A respiratory syncytial virus (RSV)-associated death is defined for surveillance purposes as a death resulting from a clinically compatible illness that was confirmed to be RSV by an appropriate laboratory or rapid diagnostic test. There should be no period of complete recovery between the illness and death.

A death should not be categorized as an RSV-associated death if:

1. There is no laboratory confirmation of RSV infection.
2. The RSV illness is followed by full recovery to baseline health status prior to death.
3. After review and consultation, it is determined that RSV infection did not contribute to death.

Laboratory Criteria for Diagnosis

Confirmatory laboratory evidence: Laboratory testing for RSV infection may be done on pre- or post-mortem clinical specimens, and include identification of RSV (A, B, or unspecified) infection by a positive result by at least one of the following:

- a. Isolation of RSV by tissue cell culture
- b. Detection of RSV nucleic acid by reverse-transcriptase polymerase chain reaction (RT-PCR) testing
- c. Detection of RSV antigen by immunofluorescent antibody staining (direct or indirect)
- d. Detection of RSV antigens by immunochromatographic or similar rapid diagnostic testing
- e. Detection of RSV antigens from autopsy specimens by immunohistochemical (IHC) staining

Case Classifications

Confirmed: A death meeting the clinical and laboratory criteria.

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	Yes
Case Definition Matches 2018 ADHS Case Definition?	N/A
Justification	New for 2019. CSTE approved a new case definition, although the condition is not nationally notifiable.
Most Recent CDC/CSTE Revision Year	2019

REYE SYNDROME

CASE DEFINITION

Clinical Description

An illness that meets all of the following criteria:

- Acute, noninflammatory encephalopathy that is documented clinically by:
 - An alteration in consciousness and, if available, a record of the CSF containing ≤ 8 leukocytes/mm³, or
 - A histologic specimen demonstrating cerebral edema without perivascular or meningeal inflammation, AND
- Hepatopathy documented by either:
 - A liver biopsy or an autopsy considered to be diagnostic of Reye syndrome or
 - A threefold or greater increase in the levels of the serum glutamic- oxaloacetic transaminase (SGOT), serum glutamic-pyruvic transaminase (SGPT), or serum ammonia, AND
- No more reasonable explanation for the cerebral and hepatic abnormalities.

Laboratory Criteria for Diagnosis

None

Case Classification

Confirmed

A case that meets the clinical case definition

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	No longer nationally notifiable, but matches CDC/CSTE 1990 case definition.
Case Definition Matches 2018 ADHS Case Definition?	Yes
Justification	Reye syndrome is no longer reportable, as of January 1, 2018.
Most Recent CDC/CSTE Revision Year	N/A

UNEXPLAINED DEATH WITH HISTORY OF FEVER

CASE DEFINITION

Deaths meeting any of the following criteria:

- Hospital or facility or patient-reported death with no known cause AND with a history of fever (>38.0°C) OR a temperature of <36°C within 48 hours of death.

CONTROL MEASURES

None

INVESTIGATION FORMS

None

CASE DEFINITION SUMMARY

Case Definition Matches CDC/CSTE Case Definition?	N/A
Case Definition Matches 2016 ADHS Case Definition?	Yes
Justification	<p>2018: Rules no longer include reporting or investigation of unexplained deaths with a history of fever.</p> <p>2013: The case definition was changed to be more specific. Subjective criteria such as unmeasured fever or unattended deaths were removed. Clinical suspicion of an infectious disease was also removed as these cases should be reported under the suspected disease or should meet the criteria for unexplained deaths.</p>
Most Recent CDC/CSTE Revision Year	N/A

Appendix 1: Specimen types and guidelines for determining “sterile” and “non-sterile” sites

The following section is used by ADHS to determine if a site is considered sterile or non-sterile. This list is to be used as guidance and not set policy as it may not cover all situations. In some situations, it may be important to find out more information from the laboratory or provider when determining whether a site is considered sterile.

If you have questions about whether a specimen is considered sterile or not, please contact ADHS at 602-364-3676.

Specimen Type	Sterile	Non-Sterile	Comments/Notes
Abdominal fluid	✓		
Abscess, unspecified		✓	If collected in operating room still considered as non-sterile
Abscess - Closed *	✓		An abscess that does not communicate with the skin and collected from the operating room is considered as sterile
Amniotic fluid *	✓		
Anus		✓	
Eye aqueous fluid	✓		
Ascitic Fluid (=abdominal fluid)	✓		
Aspirate (needle)	✓		
Aspirate (lung or tracheal)		✓	
Aspirate (unspecified)			If meningococcal, listeria, or <i>H. influenzae</i>, call to find out specific site. If MRSA, <i>S. pneumo</i> , Group A or B Streptococcus, consider non-sterile.
Bile fluid	✓		
Biopsies from certain sites	✓		Example: Biopsies of the breast or internal organs. If uncertain see Epi Manager.
Blood (arterial, capillary, cord, venous, peripheral)*	✓		
Body Fluid	see note below		If meningococcal, listeria, or <i>H. influenzae</i>, call to find out specific site. If MRSA, <i>S. pneumo</i> , Group A or B Streptococcus, consider non-sterile.
Bone	✓		
Bone marrow*	✓		
Brain	✓		
Bronchial		✓	May be listed as "bronchial wash", "bronchial alveolar lavage", or "BAL"

Specimen Type	Sterile	Non-Sterile	Comments/Notes
Bursa	✓		
Cannula		✓	
Cardiac muscle	✓		
Catheter tip		✓	
Cerebral spinal fluid (CSF)*	✓		May be listed as “meninges”, “dura” or “dura mater”, “brain abscess”, “epidural abscess”
Cervical fluid		✓	
Cervix		✓	
Cysts from certain sites	✓		Example: Thyroid cysts, ovarian cysts, subcutaneous cysts, cysts of any internal organ. If uncertain see Epi Manager.
Colostrum		✓	
Conjunctiva		✓	
Cord blood	✓		
Cornea		✓	
Cyst, unspecified		✓	
Cystic fibrosis		✓	Cystic fibrosis is not a specimen site, but may reflect lung aspirate if listed.
Cystocentesis	✓		
Duodenal fluid	✓		
Ear		✓	
Endocardium	✓		
Endometrium		✓	
Fecal or feces		✓	
Fistula			Need to find out location. Call lab and/or provider if location is available. See HAI Program Manager once location is known.
Gastric fluid/contents		✓	
Genital (genital fluid, lochia, mucus, cervix, vaginal)		✓	
Hair		✓	
Intubation tube		✓	
Joint fluid (synovial fluid, arthrocentesis) *	✓		
Kidney tissue	✓		
Knee fluid	✓		
Liver	✓		
Lower respiratory tract *		✓	
Lymph *	✓		
Macrophages	✓		

Specimen Type	Sterile	Non-Sterile	Comments/Notes
Marrow (bone)	✓		
Meconium		✓	
Menstrual blood		✓	
Milk or Breast Milk		✓	
Nail		✓	
Nose / Nasopharynx		✓	
Ocular fluid	✓		
Operating Room (specimen collected in operating room)			If specimen from a non-sterile body site (e.g. nasopharynx, skin) then considered as non-sterile. If tissue collected in operating room, then as considered sterile.
Ovary	✓		
Pancreatic fluid	✓		
Paracentesis fluid	✓		
Pelvic fluid		✓	
Penis		✓	
Pericardial fluid *	✓		
Peritoneal dialysis fluid		✓	
Peritoneal fluid /ascites*	✓		
PICC line	✓		
Placenta		✓	
Plasma	✓		
Plasma bag	✓		
Platelets	✓		
Pluera	✓		
Pleural fluid (thoracentesis)*	✓		
Pus		✓	
Saliva		✓	
Seminal fluid		✓	
Serum	✓		
Skeletal muscle	✓		
Skin		✓	
Spleen tissue	✓		
Sputum		✓	
Stool		✓	
Surgical wound/ Surgical site culture		✓	Considered as non-sterile as it does not indicate if a specimen was collected in the operating room or after surgery
Swab (unspecified)			If meningococcal, listeria, or <i>H. influenzae</i>, call to find out specific

Specimen Type	Sterile	Non-Sterile	Comments/Notes
			site. If MRSA, <i>S. pneumo</i> , Group A or B Streptococcus, consider non-sterile.
Sweat		✓	
Synovial fluid (joint fluid, arthrocentesis)*	✓		
Tears		✓	
Throat		✓	
Thrombocytes (platelet)	✓		
Tissue gall bladder	✓		
Tissue, hallux		✓	
Tissue, large intestine	✓		
Tissue, lung	✓		
Tissue, placenta	✓		
Tissue, small intestine	✓		
Tissue, spinal	✓		
Tissue, ulcer	✓		
Tissue (if type of tissue is specified then refer to the specific site to determine if sterile or non-sterile)			If meningococcal, listeria, or <i>H. influenzae</i>, call to find out specific site. If MRSA, <i>S. pneumo</i> , Group A or B Streptococcus, consider non-sterile. Considered sterile if collected in operating room.
Trachea (such as biopsy, tissue specimen)	✓		
Tracheal aspirate		✓	
Urethra		✓	Cystocentesis is considered sterile
Urine (urine catheter, urine clean catch, urine sediment)		✓	
Vagina		✓	
Vitreous fluid	✓		
Vomit		✓	
Whole Blood	✓		
Wound (wound abscess, wound drainage, wound exudate)		✓	
Another anatomic location other than the skin, upper respiratory tract, middle ear, vaginal tract, or gastrointestinal tract.*	✓		

"Body Fluid" or "Sterile Body Fluid"

Specimens reported as "sterile body fluid" may or may not be from normally sterile sites. "Sterile" may refer to the method of collection.

If meningococcal, listeria, or H. influenzae, call to find out specific site. If MRSA, S. pneumo, Group A or B Streptococcus, consider non-sterile.

*Defined as a "normally sterile site" in the Arizona Administrative Code, R9-06-201.

(http://apps.azsos.gov/public_services/Title_09/9-06.pdf)

"Normally sterile site" means an anatomic location, or tissue or body fluid from an anatomic location, in which microorganisms are not found in the absence of disease.

Appendix 2: Bacteria in the Enterobacteriaceae family

The most commonly encountered carbapenem-resistant Enterobacteriaceae are in the following genera:

<i>Citrobacter</i> spp.	<i>Providencia</i> spp.
<i>Enterobacter</i> spp.	<i>Morganella</i> spp.
<i>Escherichia coli</i>	<i>Raoultella</i> spp.
<i>Klebsiella</i> spp.	<i>Serratia</i> spp.
<i>Proteus</i> spp.	

However, there are many genera in the Enterobacteriaceae family, including:

Alishewanella	Grimonella	Poodoomaamaana
Alterococcus	Hafnia	Pragia
Aquamonas	Izhakiella	Pseudocitrobacter
Aranicola	Kosakonia	Rahnella
Arsenophonus	Kluyvera	Raoultella
Azotivirga	Leclercia	Rosenbergiella
Blochmannia	Lelliottia	Rouxiella
Brenneria	Leminorella	Saccharobacter
Buchnera	Levinea	Salmonella
Budvicia	Lonsdalea	Samsonia
Buttiauxella	Mangrovibacter	Shigella
Cedecea	Moellerella	Shimwellia
Cosenzaea	Obesumbacterium	Siccibacter
Cronobacter	Pantoea	Sodalis
Dickeya	Pectobacterium	Tatumella
Edwardsiella	Phlomobacter	Thorsellia
Enterobacillus	Phaseolibacter	Trabulsiella
Erwinia	Photorhabdus	Wigglesworthia
Ewingella	Phytobacter	Xenorhabdus
Franconibacter	Plesiomonas	Yersinia
Gibbsiella	Pluralibacter	Yokenella

Compiled from <https://www.doh.wa.gov/Portals/1/Documents/5100/420-097-Guideline-CRE.pdf> and <https://en.wikipedia.org/wiki/Enterobacteriaceae> .

Appendix 3: Influenza Case Classification Guide 2018-2019 [Excerpts]

1. Counting Labs as Same Cases, or New Cases, in MEDSIS
 - a. If lab collection date or event date (whichever is earlier) is within 4 months than count as same case, with the exception of different influenza types by DFA, PCR, OR Culture.
 - b. If lab collection date or event date (whichever is earlier) is more than 4 months than count as new case.
 - c. If different flu seasons, OR different Types (see TEST COMBINATIONS Section below), count as new case.
 - d. If influenza positive and RSV positive, count as new case.

[.....]

5. Ask the flu team (flu@azdhs.gov) any questions you may have while classifying influenza cases.

How to Read the Tables Below

Test Results (assume these all refer to positive results, unless otherwise specified)	Lab Observations Tab Key Words from Lab Observation	DSO Tab				Case Details Tab Classification	Notes
		Type	Test Performed	Date Collected	Results		

- **Test Results:** What is noted on the ELR or faxed result. Different labs have different names for tests. I have included a lot of the most commonly used results or key words to look for in the results.
- **Lab Observations Tab:** The test name and result that is usually noted in the labs and observations tab in MEDSIS.

Labs and Observations								
ELR Report	Date Collected	Test Result Date	Specimen Number	Specimen Type	Test Performed	Test Results	Notes	
	10/18/2015	10/18/2015	MR1337904	NP Swab	RAPID IFA	POS INF A	SHEA	
	10/18/2015	11/16/2015	AZ00037312	NASOPHARYNGEAL SWAB	48509-4 INFLUENZA PCR ()	PLR3 Influenza A (H3) PCR POSITIVE FOR INFLUENZA A H3	From ELR on 11/18/2015: Reference Range:	

- **DSO Tab:** What to fill in in the DSO

- **Type** ----->
- **Test Performed** ----->
- **Date Collected** ----->
- **Results** ----->

DSO	
Type	A/H3
Reason for ASL Testing	--Select--
Implemented Sampling Method at County	--Select--
Sampled Case or Special Investigation	--Select--
Tests Performed	
Rapid Test Performed	--Select--
Date Collected	
Results	--Select--
DFA/IFA/Other Test Performed	Yes

- **Case Details Tab:**

- Case classification
 - “Confirmed”
 - “Not a Case”
 - If new test results are entered that change the case classification, transfer the case back to the county for review.

- **Notes:** Additional note for clarification for specific test results.

Influenza Rapid test, DFA/IFA, and Serology Test Results

Test Results (assume these all refer to positive results, unless otherwise specified)	Lab Observations Tab	DSO Tab				Case Details Tab	Notes
	Key Words from Lab Observation	Type	Test Performed	Date Collected	Results	Classification	
Rapid A (Rapid B is similar)	-Rapid A -A Antigen (Ag) -EIA A	A	Rapid Test	MM/DD/YYYY	Flu A	Confirmed	Be careful not to confuse antigen tests (Ag) with antibody tests (Ab). Ab tests cannot be used to confirm cases.
Rapid A/B	-Rapid -Rapid A/B -A and B Antigen (Ag) -Rapid A positive and Rapid B Positive	Type Unknown	Rapid Test	MM/DD/YYYY	Flu A/B* *Do not mark "unknown" if the test is positive	Confirmed	Be careful not to confuse antigen tests (Ag) with antibody tests (Ab). Ab tests cannot be used to confirm cases. <i>*These tests may identify that the specimen is flu positive, but not distinguish A and B.</i>
DFA A (direct fluorescent antibody) (DFA B is similar)	-DFA A	A	DFA/IFA/Other Test	MM/DD/YYYY	Flu A	Confirmed	
Flu	-Flu positive -Flu test	Type Unknown	Rapid Test	MM/DD/YYYY	Flu A/B* *Do not mark "unknown" if the test is positive	Confirmed	If result just marked 'flu' default to rapid test unless a type is mentioned (i.e. H3, H1N1) – THEN assume PCR test.
Flu Smear A (Flu Smear B is similar)	-Flu Smear -SMEAR XXX -Smear/ observations	A	DFA/IFA/Other Test	MM/DD/YYYY	Flu A	Confirmed	
Serology or Antibody Tests	-Flu A AB -Flu A IgM -Flu A IgG -Flu A antibodies	Blank	Blank	Blank	Blank	Not a Case	To count as a confirmed case, we would need a fourfold rise in acute and convalescent specimens.

Influenza PCR and Culture Results

Test Results (assume these all refer to positive results, unless otherwise specified)	Lab Observations Tab	DSO Tab				Case Details Tab	Notes
	Key Words from Lab Observation	Type	Test Performed	Date Collected	Results	Classification	
PCR A	-PCR A -RNA A	A	PCR Performed (select either State Lab or Other Lab)	MM/DD/YYYY	A	Confirmed	PCR results from ASL overrides test results from another lab unless there is a culture from another lab. <i>If the PCR results have more detail than just "A", use one of the more detailed lines in the dropdowns.</i>
PCR 2009 H1N1 or PCR A/pH1N1	-2009 H1 Gene Detected - PCR A/H1N1 (swine-origin) -H1N1 swine detected by PCR -2009 H1N1 -pH1N1	A/H1N1 (Swine-Origin)	PCR Performed (select either State Lab or Other Lab)	MM/DD/YYYY	A/H1N1 (Swine-Origin)	Confirmed	PCR results from ASL overrides test results from another lab unless the other lab has a positive culture.
PCR A/H1	-PCR A/H1 -RNA A/H1 (will say seasonal, or does NOT mention 2009 or swine)	A/H1	PCR Performed (select either State Lab or Other Lab)	MM/DD/YYYY	A/H1	Confirmed	PCR results from ASL overrides test results from another lab unless the other lab has a positive culture.
PCR A/H3	-PCR A/H3 -RNA A/H3	A/H3	PCR Performed (select either State Lab or Other Lab)	MM/DD/YYYY	A/H3	Confirmed	PCR results from ASL overrides test results from another lab unless the other lab has a positive culture.

Influenza PCR and Culture Results

Test Results (assume these all refer to positive results, unless otherwise specified)	Lab Observations Tab	DSO Tab				Case Details Tab	Notes
	Key Words from Lab Observation	Type	Test Performed	Date Collected	Results	Classification	
PCR B	-PCR B -RNA B	B	PCR Performed (select either State Lab or Other Lab)	MM/DD/YYYY	B	Confirmed	PCR results from ASL overrides test results from another lab unless there is a culture from another lab.
PCR Inconclusive	-PCR Inconclusive		PCR Performed (select either State Lab or Other Lab)	MM/DD/YYYY	Unknown	Not a Case	PCR results from ASL overrides test results from another lab unless there is a culture from another lab.
Culture A	-Culture positive for influenza A -Influenza A virus isolated	-A -A/H1 -A/H3 -A/H1N1 -A/H1N1 (swine origin) -A/H3N2	Culture Performed (select either State Lab or Other Lab)	MM/DD/YYYY	-A -A/H1 or -A/H3 -A/H1N1 -A/H1N1 (swine origin) -A/H3N2	Confirmed	
Culture B	-Culture positive for influenza B -Influenza B virus isolated	-B -B/Victoria_ lineage - B/Yamagata_ lineage	Culture Performed (select either State Lab or Other Lab)	MM/DD/YYYY	-B -B/Victoria_ lineage -B/Yamagata_ lineage	Confirmed	

Test Combinations – all of the information below assumes the tests are in the same influenza season. If tests are in different seasons, treat them as completely separate cases.

Test Results	Type	DSO Test Info	Classification	Notes
Rapid or DFA (+) and PCR (-)		Fill out DSO as appropriate for both tests	Not a Case	The collection date must be the same date for both tests to rule out.
Rapid or DFA (+) and Culture (-)		Fill out DSO as appropriate for both tests	Not a Case	The collection date must be the same date for both tests to rule out.
Rapid or DFA (-) and PCR (+) or Culture (+)	Use the type from the PCR or culture	Fill out DSO as appropriate for both tests	Confirmed	(+) PCR or (+) culture will always overrule rapid or DFA tests.
PCR (+) and Culture (-)	Use the type from the PCR	Fill out DSO as appropriate for both tests	Confirmed	
PCR (-) and Culture (+)	Use the type from the culture	Fill out DSO as appropriate for both tests	Confirmed	Even if the PCR is from the state lab and culture is from another lab, the culture should still count as confirmed.
ASL culture (+) and other lab Culture (+)	Use the type from the ASL culture	Fill out DSO as appropriate for both tests	Confirmed	Even if the culture is (-) from the state lab, a positive culture from another lab should still count as confirmed.
Rapid A (+) AND rapid B (+)	Type Unknown	Fill out DSO as appropriate for both tests	Confirmed	Treat as one case, even if we don't know the type. If there are two different reports – one for A and one for B – then include them as two separate observations and pick one for the DSO. If there is one report with a test (+) for both A and B, enter this as one observation and pick the Flu A/B result in the DSO.
Rapid A (+) AND (+) for B on DFA, PCR or Culture	B	Fill out DSO as appropriate for both tests	Confirmed	DFA/PCR/Culture type should overrule the rapid test. Same is true if Rapid B and A on the other tests: type should be A.
DFA A (+) and DFA B (+)	ENTER AS TWO CASES		Confirmed	If you have two positive tests for different types, where both are a rapid test or better, enter as two cases for the same person.
DFA B (+) and PCR A (+)	ENTER AS TWO CASES		Confirmed	If you have two positive tests for different types, where both are a rapid test or better, enter as two cases for the same person.
PCR (+) for A/H3 and PCR (+) for 2009 H1N1	ENTER AS TWO CASES		Confirmed	This is an example of two different kinds of A. Keep these as two separate cases. These will be rare.

Test Combinations – all of the information below assumes the tests are in the same influenza season. If tests are in different seasons, treat them as completely separate cases.

Test Results	Type	DSO Test Info	Classification	Notes
<p>PCR (+) for A/H3 and culture (+) for A</p>	<p>A/H3</p>	<p>Fill out DSO as appropriate for both tests</p>	<p>Confirmed</p>	<p>A/H3 is a more detailed type of A. Enter as ONE CASE. Other examples of PCR and culture combinations that should be entered as one case: -PCR B and culture B/Victoria_lineage -PCR A/H3 and culture A/H3N2 -PCR A and culture 2009H1N1 For the type, pick the most detailed option.</p>
<p>RSV (+) and Influenza (+)</p>	<p>ENTER AS TWO CASES</p>			<p>RSV and influenza should always be entered as separate cases.</p>